2015

Survey of Seat Belt Use

WYOMING

The protocols implemented for this study are in accordance with the federal guidelines established in 2012, which distinguish it from all prior surveys of seat belt use in Wyoming. The standards and protocols align with the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340. The 2014 survey analysis is the third survey conducted under the 2012 guidelines for seat belt use in the state of Wyoming

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Acknowledgments

DLN Consulting, Inc. expresses appreciation to several individuals who were essential to the completion of this project.

- Lydia DeJesus assisted with project coordination; supervised coding, data entry, and quality assurance procedures; and developed spreadsheets, charts, and graphs.
- Katelin Dukart compiled the data and imported the charts and graphs into the narrative
- Bridget White and Vicky Peterson conducted field monitoring.

Without the dedicated hard work of the people who conducted the field observations, we could not complete this survey:

Derek Bacon, Monty Byers, Tonya Dove, Dawn Edwards, Randi Egley, Jill Ellenbecker,
Melissa Garcia, Dorothy Johnstone, Donna Lucas, Doug Peterson, Kayla Schear, Daleen Sebelius,
Bill Spencer, Melissa Thomasma, Patrick White, Logan Wilson,

Finally, special thanks to the staff of the Wyoming Highway Safety Program, especially, Dalene Call, Highway Service Office Manager, for their support during the project period.

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Executive Summary

For the 2015 survey of seat belt use in Wyoming, the statistical estimate of seat belt use by vehicle occupants is 79.8 percent with a standard error of 2.3 percent. The 2015 overall estimate is six-tenths of a percentage point higher than the 2014 rate of 79.2 percent. The estimate was based on observations of 24,682 drivers and outboard passengers in 17,913 vehicles. The range of estimated seat belt use across the last four years of Wyoming surveys is less than five percentage points. The observations were collected in sixteen counties, one observer per county, and eighteen sites in each county, for a total of 288 sites, or intersections. The methodology that was employed was that which was approved by the National Highway Traffic Safety Administration in 2012.

In this report, the following is presented:

- A presentation and discussion of the unweighted frequencies for all of the salient variables in the survey. These include information of type of vehicle occupant (driver or passenger), occupant gender, county frequencies, population density, roadway type, day of the week, vehicle type, and vehicle registration status (Wyoming or out-of-state license plates). Consistent with previous surveys, 2015 results show many more drivers than passengers, more male than female vehicle occupants, county frequencies similar to those of prior years, a typical mix of vehicle types, the largest share of observations collected on weekdays, and many more occupants in Wyoming-registered vehicles than in out-of-state vehicles.

- A presentation of the estimates of seat belt use by occupants. Here are some of the findings:

    - Lower rates of seat belt use for drivers than passengers.

    - A higher rate of seat belt use for females than males.

    - Considerable variation among the counties, with the highest rate in Carbon County and the lowest rate in Sweetwater County.

    - Higher rates of seat belt use in rural sites than in urban sites.

    - The highest rate of seat belt use on primary road sites, while local / rural / city sites had the lowest rate of seat belt use.

    - Slightly higher rates of seat belt use on weekends than on weekdays.

    - Relatively high rates of seat belt use for occupants of automobiles, vans and SUVs; much lower rates of seat belt use for occupants in pickup trucks.

    - Higher rates of seat belt use for females in all types of vehicles.

    - A higher rate of seat belt use for occupants of vehicles registered with out-of-state licenses than in Wyoming-licensed vehicles.

- A discussion of seat belt rates for drivers and passengers. The differences among drivers and passengers were highlighted, broken down by gender and vehicle type. Generally, females had higher rates of seat belt use than males in all types of vehicles. As in the past, the lowest seat belt rate was found for males in pickup trucks, especially for those very few males who were passengers in pickup trucks.

- A final section of the narrative is devoted to the trends across the four years of Wyoming surveys from the baseline 2012 survey to the 2015 survey. All four surveys share the same methodology and the same sample of counties and sites. Among the highlighted trends are the following:

    - Steady increases in the number of observations, with a smaller increase for the most recent survey.

    - Steady rates of seat belt use in 2012, 2014 and 2015, with a somewhat anomalous high rate in 2013.

    - A stable trend in seat belt use for both males and females, with lower rates for males.

    - Usually higher rates of seat belt use across the years for rural sites than urban sites.

    - Consistently higher rates of seat belt use for occupants of out-of-state vehicles across the four years.

    - Considerable variation in seat belt use within counties, with some substantial variation within the same counties across the years. (We caution here that inferences from the data are tricky because of high standard errors associated with seat belt use in the individual counties across the four surveys.

Finally, the appendix contains many tables that are the source of the graphics and tables presented in the narrative of this report. Those tables serve as references for readers of this report.

Quality Assurance

Observers

All observers participated in training. The training session took place in June 2015 immediately prior to the survey. The training included both classroom instruction and field observations.

Observers participated in testing for an inter-accuracy ratio through participation in a minimum of three observation test sites. Selected test sites represented the types of sites and situations observers could expect to encounter during the actual survey. None of the practice test sites were actual sites in the sample of roadway segments. Observers worked in teams of two, observing the same vehicles but recording the observations independently on separate observation forms. Teams rotated throughout the field training to ensure that each observer was paired at least three times with a different partner. Each observer recorded type of vehicle, seat belt use, and gender data during the tests. The average inter-accuracy ratio for all observers after testing was 96.5 percent, higher than the 85 percent required by the methodology.

At the conclusion of the training, observers and quality control monitors received a post-training quiz to ensure they understood the survey terminology, the data collection protocols, and the reporting requirements. The average score for all observers after testing was 91.3 percent, significantly higher than the required 80 percent.

The non-response rate for data collected in the field was monitored with a result of 0.7 percent, well below the required ceiling of 10 percent.

Data Compilation

iPads were used to collect the 2015 seat belt survey, which required an iPad and survey tool training segment. The observers received basic iPad training related to the functions, features, and maintenance. All iPads were preloaded with the 2015 Seat Belt Survey data collection tool. All the observers and quality control staff received training on the individual components of the application in audio, visual, and tactile format. On day one each of the training participants were provided a period to practice using the program during the training session. After practicing in the classroom, the observers had an opportunity to complete a mock data collection period. On day two, the observers completed four data collection sessions. Three of the four data collection sessions were used to calculate their individual inter-accuracy ratios.

Introduction

During the week of June 8th to the 14th, 2015, sixteen observers were dispatched to the 18 sites in each of the sixteen counties, 288 sites in all, to collect observations of seat belt use by drivers and outboard, front seat passengers. Each observer was instructed to follow the specific directions and protocols that were part of their training. There were two veteran observers whose primary role was to conduct quality assurance reviews at randomly determined sites throughout the week of the survey. Additionally, two observers were trained so they could step in as alternate observers, if necessary.

This year, 2015, was the second year that observers recorded their observations directly into their iPads, bypassing paper and pencil records. As was the case in 2014, data was directly submitted electronically to the staff at DLN Consulting, Inc. DLN staff exported the data into Excel spreadsheets for drivers, passengers, and all vehicle occupants. Next, the data were imported into the *Statistical Program for the Social Sciences, v.20.0* (SPSS) software that was used to analyze the results. Throughout these processes, the data were reviewed to identify and "clean" any data errors. Once cleaned and in SPSS, the files for the drivers, passengers and total occupants received variable names, value labels for the categories of each variable, missing value codes, and other identifying information necessary to complete the data analysis. In addition, the sampling procedures and sample probabilities associated with each site became part of the "sampling plan" used to produce estimates of seat belt use. These estimates take into account the probabilities associated with each observation within each site and county in the data set. The "sampling plan" became part of the SPSS "Complex Samples" Module, which permitted the calculation of accurate, weighted estimates of seat belt use for Wyoming in 2015.

The weighted estimates of seat belt use are the most important part of this report. However, the unweighted frequencies are presented first to provide context for the estimates. The contextual variables include information like type of vehicle occupant (driver or passenger), occupant gender, vehicle type, urban or rural population density, and so on. Since these frequencies are unweighted and do not account for sampling probabilities, they are presented primarily for the purposes of full disclosure. The reader should be careful to avoid inferences from the unweighted frequencies because they do not take into account the probabilities that standardize the results and make them comparable to other surveys of seat belt use.

The weighted estimates, which take into account the effects of sampling probabilities, are reported next. In addition to the overall results on seat belt usage, including measures of standard error and statistical confidence intervals, the estimates are also presented within the categories of the contextual variables that are relevant for the assessment of seat belt use. Throughout, this narrative will attempt to provide commentary and graphics that are intended to elucidate and clarify the numbers.

Overall Estimate, with Standard Error and Confidence Intervals

The overall estimate of seat belt use in Wyoming 2015 is 79.8 percent. This estimate is based on observations of 24,682 vehicle occupants, which include drivers and outboard passengers. The estimate is a product of weighting the actual observations by the sampling probabilities associated with each observation. For the remainder of the occupants, 19.6 percent were not wearing seat belts, and observers were not sure of seat belt use for six-tenths of one percent of the vehicle occupants. The 24,682 observed vehicle occupants included 17,913 drivers and 6,769 passengers.

Statistical calculations produced a standard error of 2.3 percent for the vehicle occupants, which is less than the allowable standard error of 2.5 percent. Additional calculations show the 95 percent confidence intervals at a low estimate of 68.3 percent and a high estimate of 87.9 percent belted.

Table 1 presents these results.

Table 1: Occupant Belt Use in Wyoming, 2015

		Estimate	Standard Error	95% Confidence Interval		Unweighted Count
				Lower	Upper	
Percent of Total	Belted	79.8%	2.3%	68.3%	87.9%	19,613
	Not Belted	19.6%	2.3%	11.5%	31.2%	4,900
	Unsure	0.6%	0.0%	0.6%	0.6%	169
	Total	100.0%				24,682

Observers

The quality of any data depends on the accuracy of the recorded observations. As in previous Wyoming surveys, the observers for the 2015 study were trained, monitored, and the accuracy of their observations was evaluated by quality control measures. The skills of the observers were harnessed by the directions and protocols that guided their data collection. These observers always had access to DLN staff whenever issues arose. Their progress was monitored by DLN staff.

The following table identifies each observer, his or her assigned county, and the number of observations each observer recorded. The average number of observations for 2015 was 1,543 vehicle occupants, but there was a considerable range due to the relative traffic in each county. The largest number of observations occurred in Teton County with 3,824, and the lowest number was 516 in Big Horn County.

Table 2: Observers by County of Observations, Wyoming 2015

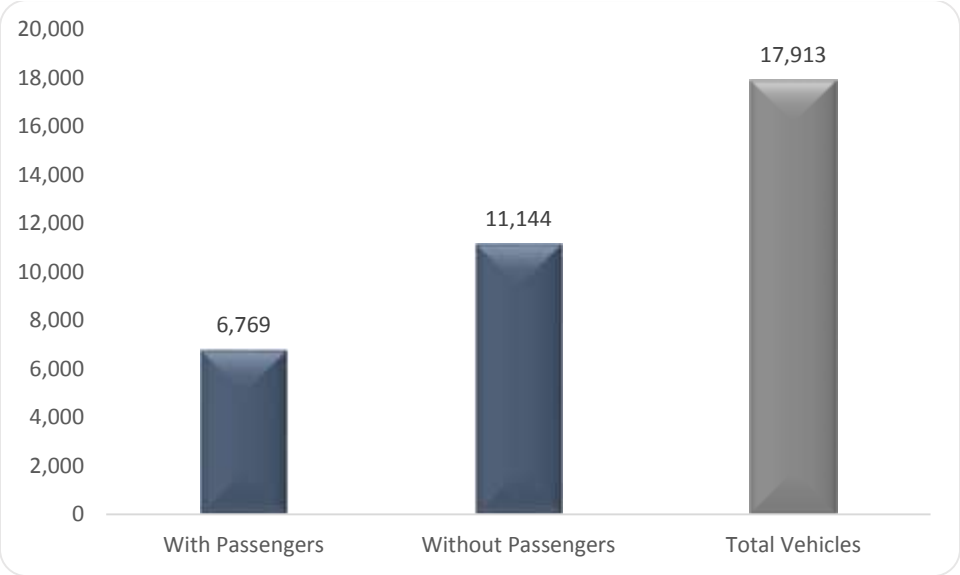
Observers	County	Observations	Percent
Monty Byers	Albany	1,761	7.1%
Dorothy Johnstone	Big Horn	516	2.1%
Daleen Sebelius	Campbell	2,204	8.9%
Bill Spencer	Carbon	1,383	5.6%
Melissa Garcia	Fremont	1,145	4.6%
Derek Bacon	Johnson	1,873	7.6%
Patrick White	Laramie	728	2.9%
Dawn Edwards	Lincoln	1,385	5.6%
Donna Lucas	Park	1,664	6.7%
Jill Ellenbecker	Natrona	1,011	4.1%
Doug Peterson	Platte	1,695	6.9%
Logan Wilson	Sheridan	1,267	5.1%
Tonya Dove	Sublette	598	2.4%
Kayla Shear	Sweetwater	1,836	7.4%
Melissa Thomasma	Teton	3,824	15.5%
Randi Egley	Uinta	1,792	7.3%
	Total	24,682	100.0%

Frequencies

This section presents the *unweighted* frequencies for the vehicle occupants. These "raw" frequencies do not take into account the adjustments made for sampling probabilities. As a result, they do not constitute accurate estimates of seat belt use and are likely to be misleading, which suggests that readers should be cautious about generalizing from these frequencies. In order to avoid those errors of inference, the percentages were typically excluded from these tables, although there is at least one table where percentages are not misleading; i.e., the first table presented in this section.

Observers recorded observations of seat belt use for occupants of 17,913 vehicles. For nearly two-thirds of the vehicles, there were no outboard passengers. Passengers were present in 6,769 vehicles, which is also the total number of passengers observed. Figure 1 illustrates these results.

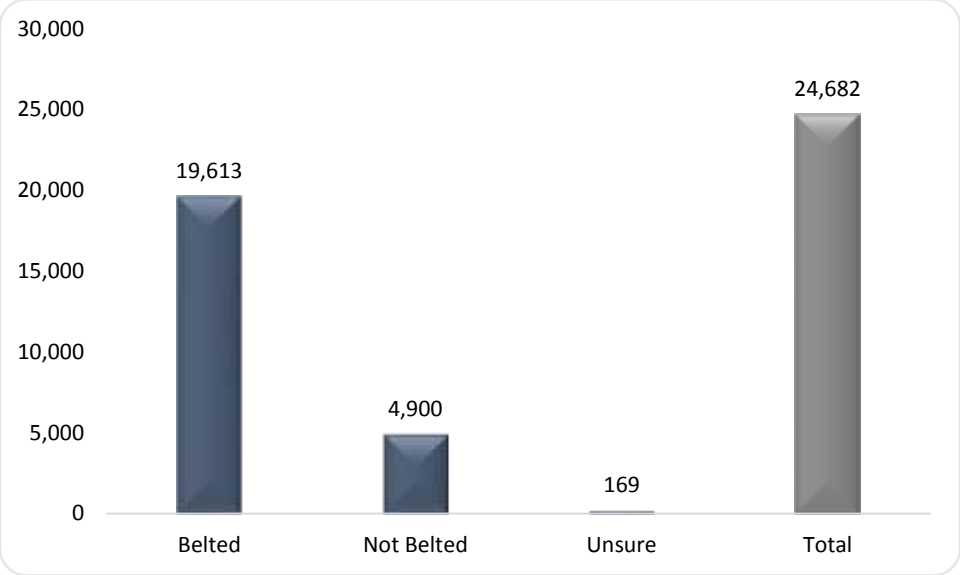
Figure 1: Frequencies with and without passengers



Occupant Belt Use:

For the 24,682 vehicle occupants, 19,613 were observed as wearing seat belts; 4,900 were not belted, and observers were unsure about the belt use of 169 vehicle occupants. There were 959 more vehicle occupants observed for the 2015 survey than there were in 2014 (23,723), but the frequencies were generally comparable for the last two years. Figure 2 illustrates these frequencies.

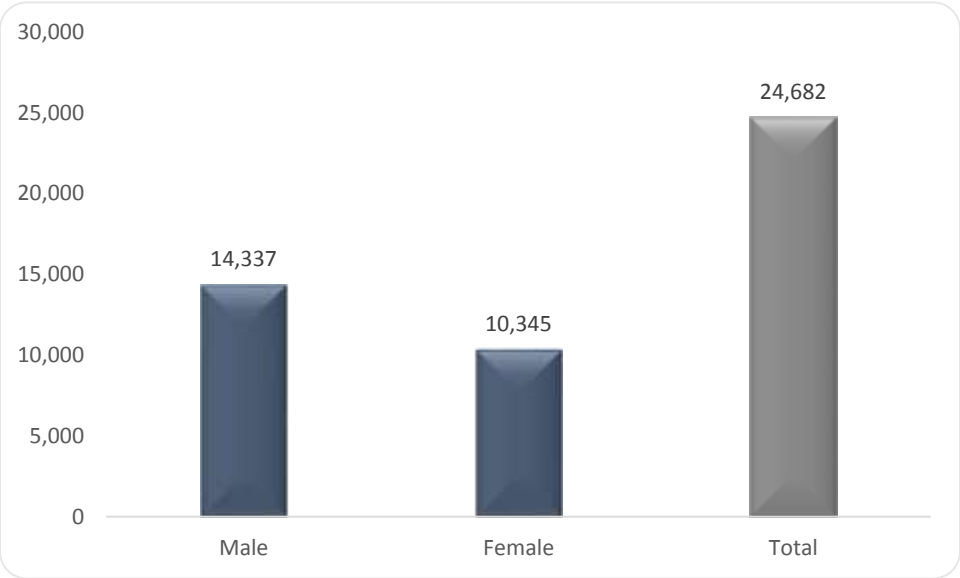
Figure 2: Frequencies by Occupant Belt Use



Occupant Gender:

Observers identified 14,337 male and 10,345 female vehicle occupants. Observers did not identify any instances in which they were unsure of the occupants' gender. See the following chart for a visual representation.

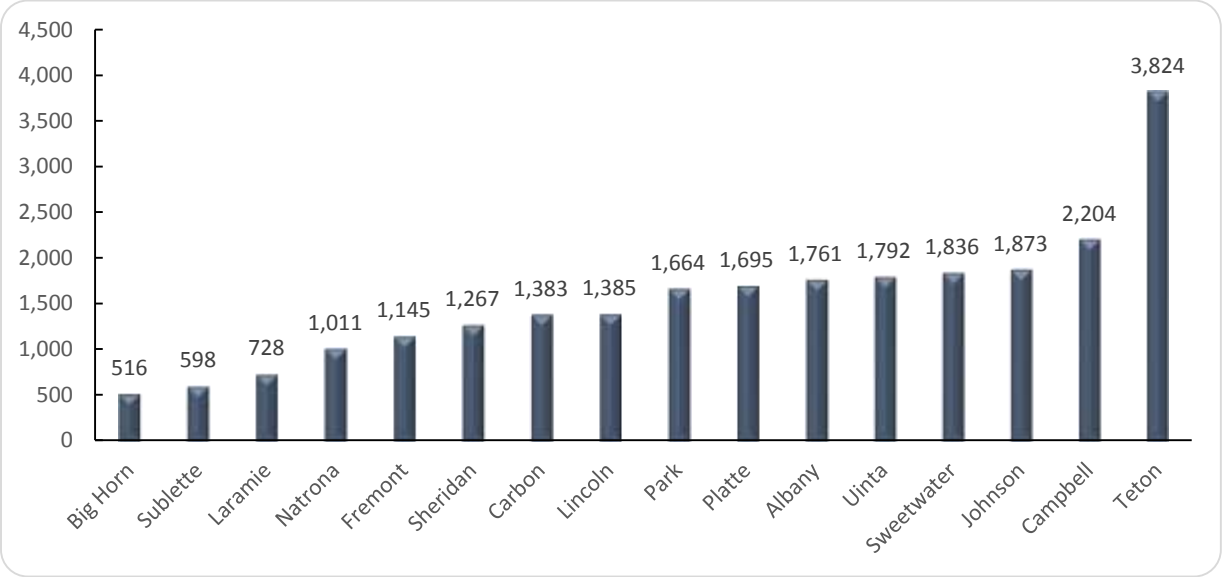
Figure 3: Frequencies by Occupant Gender



County Frequencies:

Observations were collected in all of the sixteen counties. The average number of observations was 1,543 vehicle occupants per county, but there was considerable variation among the counties. The range was from a low of 516 observations in Big Horn County to a high of 3,824 observations in Teton County. Counties with above average observations included Albany, Campbell, Johnson, Park, Platte, Sweetwater, Teton, and Uinta Counties. Big Horn (516), Laramie (728), and Sublette Counties each had fewer than a thousand observations. Figure 4 illustrates the frequencies by county.

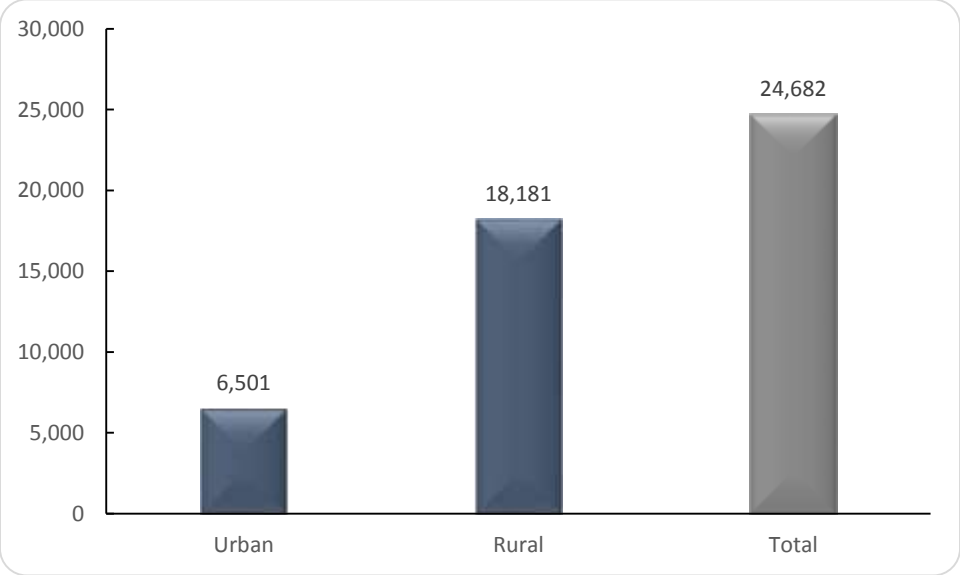
Figure 4: Frequencies by County



Population Density:

In Wyoming, sites with fewer than 5,000 residents were defined by the state as *rural*, while *urban* sites have a population of more than 5,000. Given these definitions, the great majority of sites are rural, and most of the observations were collected within those rural sites. For this 2015 survey, 18,181 observations were collected in rural sites and 6,501 were collected in urban sites. These results reflect the sparsely populated, rural character of Wyoming. Figure 5 illustrates the results for population density.

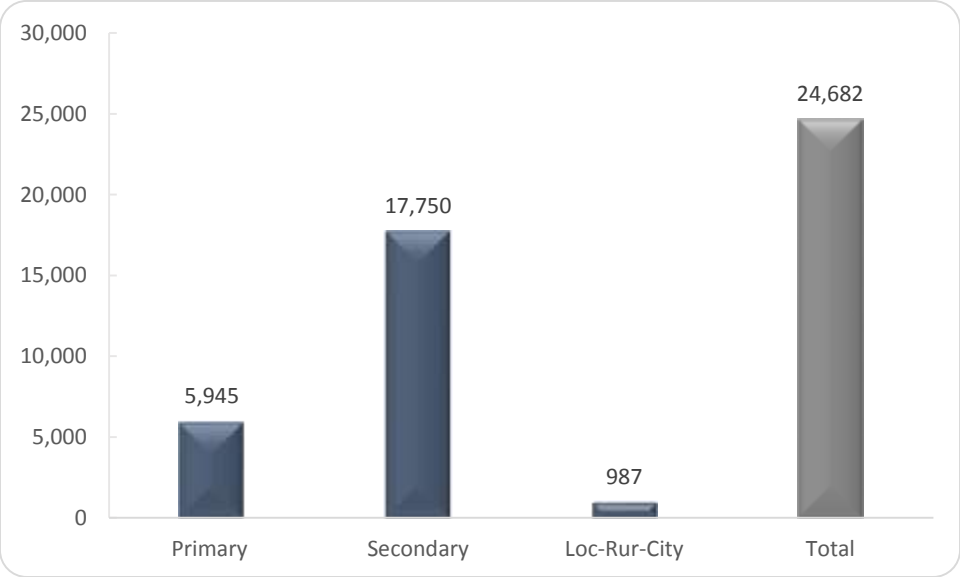
Figure 5: Frequencies by Population Density



Roadway Type

The type of roadway associated with each site is one of the factors that influence the sampling process. The three types of roadway in the sample are primary roads, which generally include four-lane highways and interstates; secondary roads, which are mostly federal and state-maintained highways, and local roadways, which are mostly local roads and city streets. As is typical for the Wyoming seat belt use surveys, most of the observations are collected from secondary roadways, and that is true for the current survey: 17,750 observations from secondary roadways, 5,945 observations from primary roadways, and 987 observations from local, rural, and city roadways. Figure 6 illustrates these results.

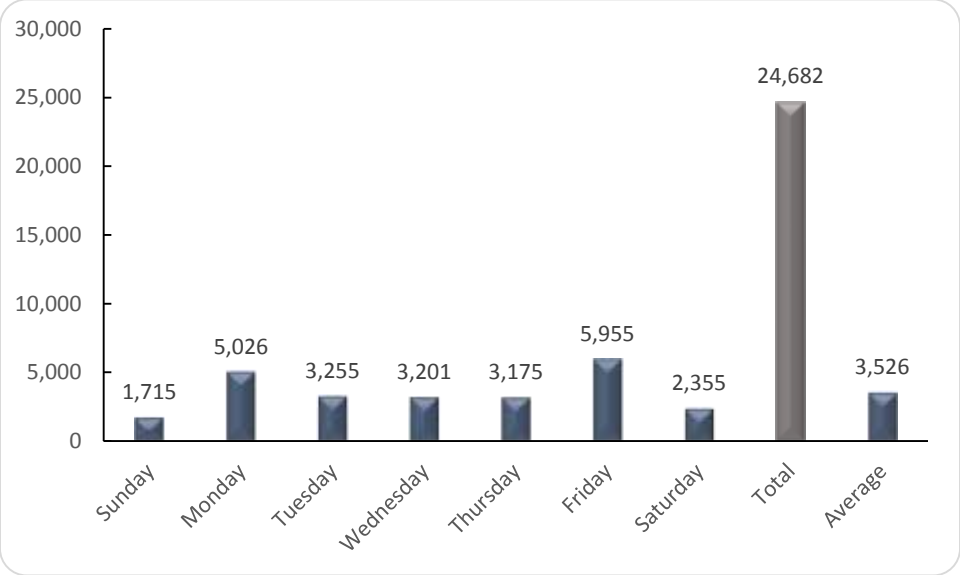
Figure 6: Frequencies by Roadway Type



Weekday:

Observers collect data across all seven weekdays. For the 2015 survey, the largest numbers of observations were collected on Monday (5,026) and Friday (5,955). These were the only two weekdays with a higher than average (3,526) number of observations per day. Saturday and Sunday were the two days with the fewest number of observations. These results are very similar to the results for the 2014 survey. Figure 7 illustrates the frequencies by day of the week.

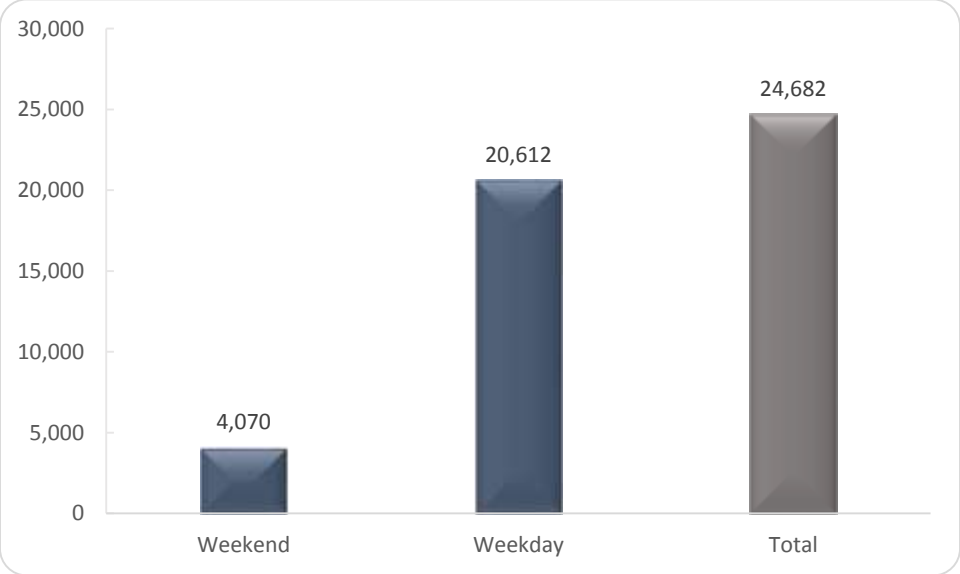
Figure 7: Frequencies by Day of Week



Weekday and Weekend:

For the purposes of illustration, we collapsed the categories for day of week into Saturday and Sunday for the "weekend," and called the rest of the days "weekdays." The following chart adds emphasis to the finding by day of the week: 20,612 observations were collected on weekdays, while 4,070 observations were collected on the weekend.

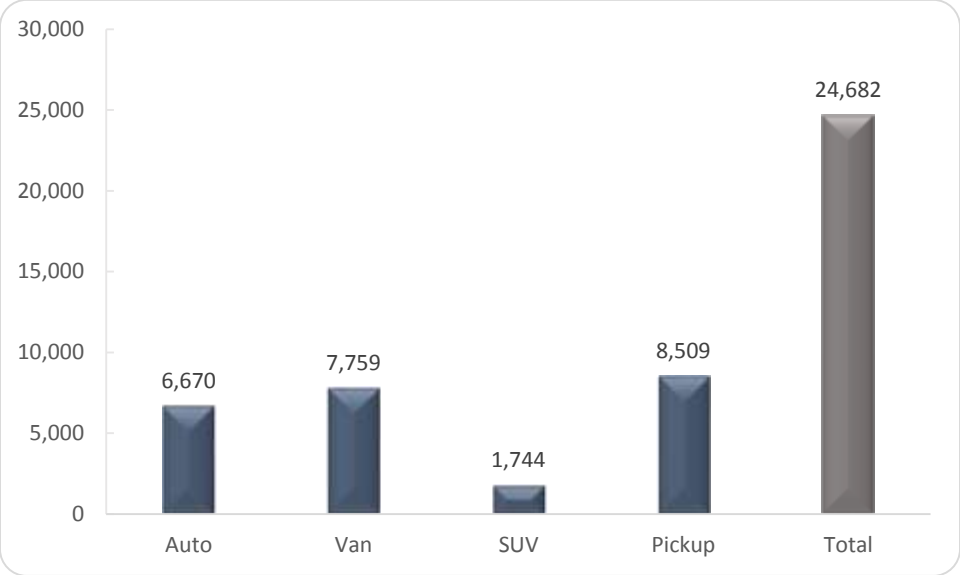
Figure 8: Frequencies by Weekend and Weekday



Vehicle Type:

Automobiles and pickup trucks are usually the most common vehicles observed in Wyoming seat belt use surveys. For the current 2015 survey, pickup trucks remained the most common vehicles carrying occupants, but vans surged ahead of automobiles as the second most common carrier. The difference is not enormous – 1,089 more occupants in vans than in automobiles, out of 24,682 vehicle occupants – but it does suggest a possible trend in vehicle types that bear watching. Occupants of SUVs were 1,744 for 2015, which is close to the number in SUVs observed in 2014 (1,783). In general, the pickup truck has been and still is the most common carrier of vehicle occupants in Wyoming. It is noted here that vans may be replacing automobiles as common carriers in Wyoming. Figure 9 illustrates these results.

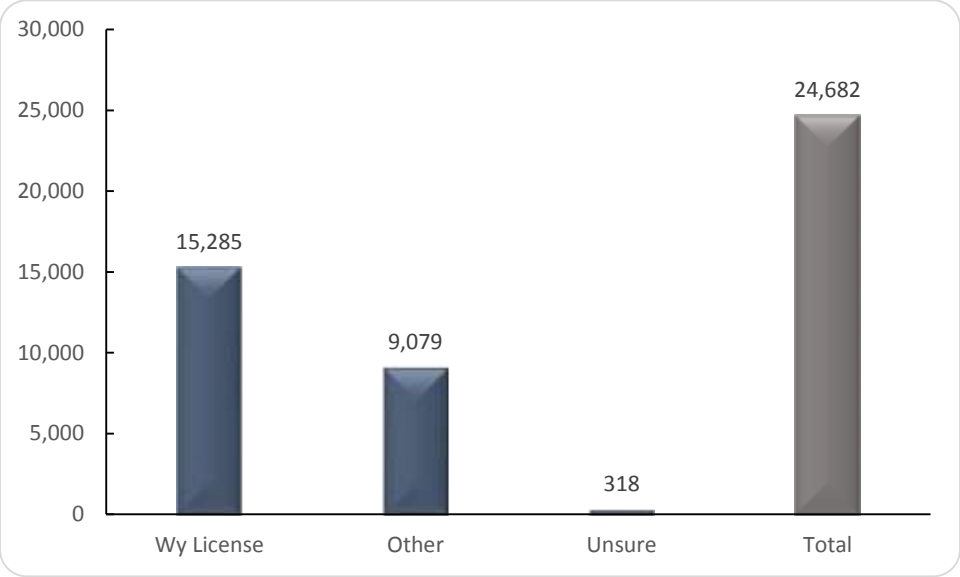
Figure 9: Frequencies by Vehicle Type



Vehicle Registration:

Observers noted whether vehicle occupants were in vehicles with license plates registered in Wyoming or out-of-state vehicles. As expected, and typical of previous years, most of the occupants were in Wyoming vehicles (15,285). "Other" is the code used for out-of-state vehicles, and 9,079 occupants were in those vehicles. Observers were unsure of the license type for 318 vehicles. These results are similar to those in previous surveys. Figure 10 illustrates the frequencies by license type.

Figure 10: Frequencies by Registration Type



Frequencies by Observer:

In the accompanying table, there is a listing of the number of observations collected by each observer. While there may be some differences among observers, most of the variation by observer is due to the variation in the traffic in the counties to which the observer was assigned. Because there was one observer for each county, the frequencies by observer are parallel to the observations by county. Figure 11 illustrates the frequencies by observer.

Table 3: Observers by County and Frequency of Observations, Wyoming 2015

Observers	County	Observations
Monty Byers	Albany	1,761
Dorothy Johnstone	Big Horn	516
Daleen Sebelius	Campbell	2,204
Bill Spencer	Carbon	1,383
Melissa Garcia	Fremont	1,145
Derek Bacon	Johnson	1,873
Patrick White	Laramie	728
Dawn Edwards	Lincoln	1,385
Donna Lucas	Park	1,664
Jill Ellenbecker	Natrona	1,011
Doug Peterson	Platte	1,695
Logan Wilson	Sheridan	1,267
Tonya Dove	Sublette	598
Kayla Shear	Sweetwater	1,836
Melissa Thomasma	Teton	3,824
Randi Egley	Uinta	1,792
	Total	24,682

Other Variables:

Additional information was collected about observations, but it has not usually been included in the narrative of the report. (Note that all the frequency tables are presented in full in the appendix to this report.) One such variable is the direction in which the vehicles travel for the site. Generally, the vehicles heading west and south had a slight edge over the other directions in the 2015 survey, but there did not seem to be any systematic differences by direction.

Another variable is the number of lanes covered by the observer in any given site. For the 2015 survey, almost equal numbers of occupants were observed across one lane or two lanes. The former, one lane, typically means a two-lane highway and the observer is collecting data going in one direction. For "two lanes," the most common situation is that the observer is collecting observations from two lanes of a four-lane highway. No observers collected data across three or four lanes, which can occur in more urban, "freeway" sites.

In addition, the frequencies by the time of day and the observers' classification of weather conditions when data was collected are presented in the appendix at the end of this report.

Vehicle Type by County

It is common to find a large number of vehicle occupants in pickup trucks in Wyoming. In this year's survey, over a third of the vehicle occupants, 34.5 percent, were observed in pickups. On the other hand, occupants in pickups were more common in some counties than in others. For example, the number approached half of the vehicle occupants in Campbell County (46.6 percent) and Sublette County (45.1 percent). The lowest proportion of occupants in pickup trucks was found in Teton County (25.4 percent), and even in Teton County, one-in-four vehicle occupants was in a pickup truck.

These results are presented here because they provide some context for estimated seat belt use for occupants of different vehicle types. For example, a county with a high number of occupants in trucks and a low percentage of belted occupants in pickups, may wish to emphasize these characteristics in any educational campaigns to increase seat belt use, i.e., to target this demographic.

Table 3 illustrates the results by vehicle type and county.

Table 4: Frequencies of Vehicle Types by County, Wyoming 2015

	Vehicle Type					
County	Auto	Van	SUV	Pickup	Total	Percent Pickups
Albany	553	484	132	592	1,761	33.6%
Big Horn	124	152	30	210	516	40.7%
Campbell	545	578	139	942	2,204	42.7%
Carbon	356	443	88	496	1,383	35.9%
Fremont	329	352	66	398	1,145	34.8%
Johnson	477	507	144	745	1,873	39.8%
Laramie	199	269	38	222	728	30.5%
Lincoln	302	439	95	549	1,385	39.6%
Natrona	270	363	52	326	1,011	32.2%
Park	505	440	97	622	1,664	37.4%
Platte	413	631	97	554	1,695	32.7%
Sheridan	394	310	163	400	1,267	31.6%
Sublette	106	192	34	266	598	44.5%
Sweetwater	589	483	100	664	1,836	36.2%
Teton	951	1,617	353	903	3,824	23.6%
Uinta	557	499	116	620	1,792	34.6%
Total	6,670	7,759	1,744	8,509	24,682	34.5%
Average	417	485	109	532	1,543	34.5%

Estimates of Occupant Seat Belt Use

In this section, the estimates of seat belt use were reported for the 2015 Wyoming survey. These estimates were calculated after the data are statistically weighted to take into account sampling probabilities associated with each site in the survey. The estimates were presented for each of the major variables and the categories within those variables.

Note that frequencies are not reported in this section, for the same reason percentages were not reported for the prior section on frequencies. Either is likely to be misleading because of the weighting process. Note also that the percent of seat belt use is synonymous with the "rate" of seat belt use in the language of this report.

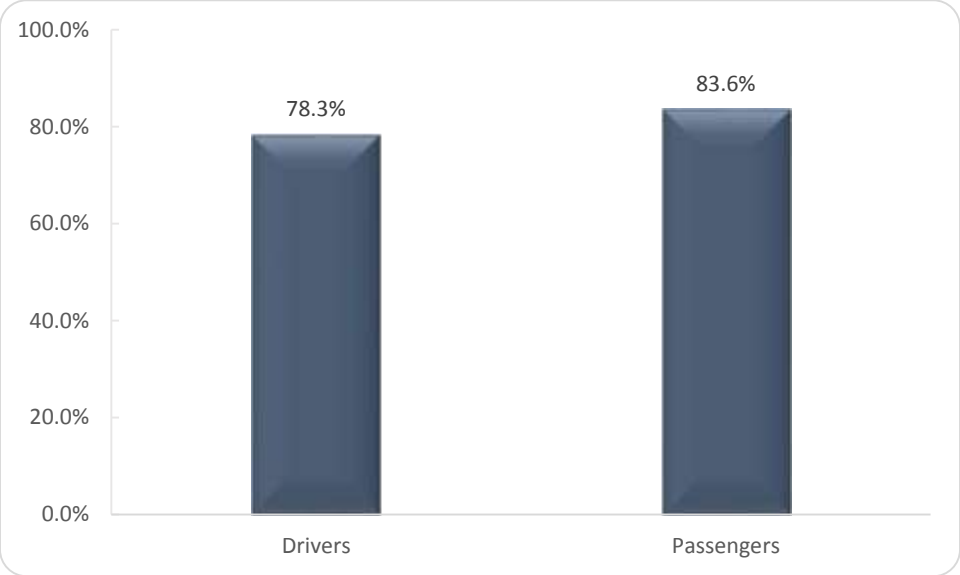
Type of Vehicle Occupant:

Usually, passengers have had a higher rate of seat belt use than drivers have, and this was true for 2015: 78.3 percent of drivers and 83.6 percent of passengers were observed as belted, a difference of 5.3 percentage points. In 2014, the rate for passengers was 6.0 points greater.

Observers were very seldom "unsure" about the seat belt use of vehicle occupants. In most instances, the "unsure" category amounted to less than 1.0 percent. In keeping with the editorial decision for last year's report, the small number of "unsure" observations will not be reported in the discussion of the estimates. However, they will be reported in the full tables that appear in the appendix to the narrative.

The following chart illustrates the seat belt use by type of vehicle occupant.

Figure 11: Percent Belted by Occupant Type

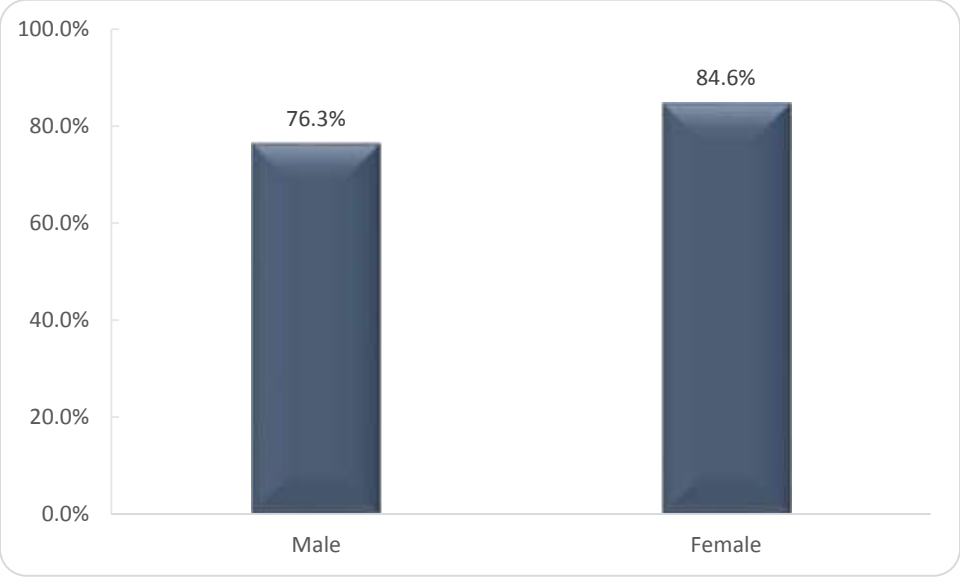


Occupant Gender:

The estimated seat belt use for females in 2015 was 84.6 percent, compared to 76.3 percent for males, a difference of 8.3 percentage points. In 2014, the difference was 10.1 points, while in 2013 the difference was 6.6 percentage points. While the differences vary across the years by small amounts, these results are consistent with the general finding across many surveys in Wyoming, and in other states, that females are more likely to wear seat belts than males.

Figure 13 illustrates the results for the estimates of seat belt use by occupant gender.

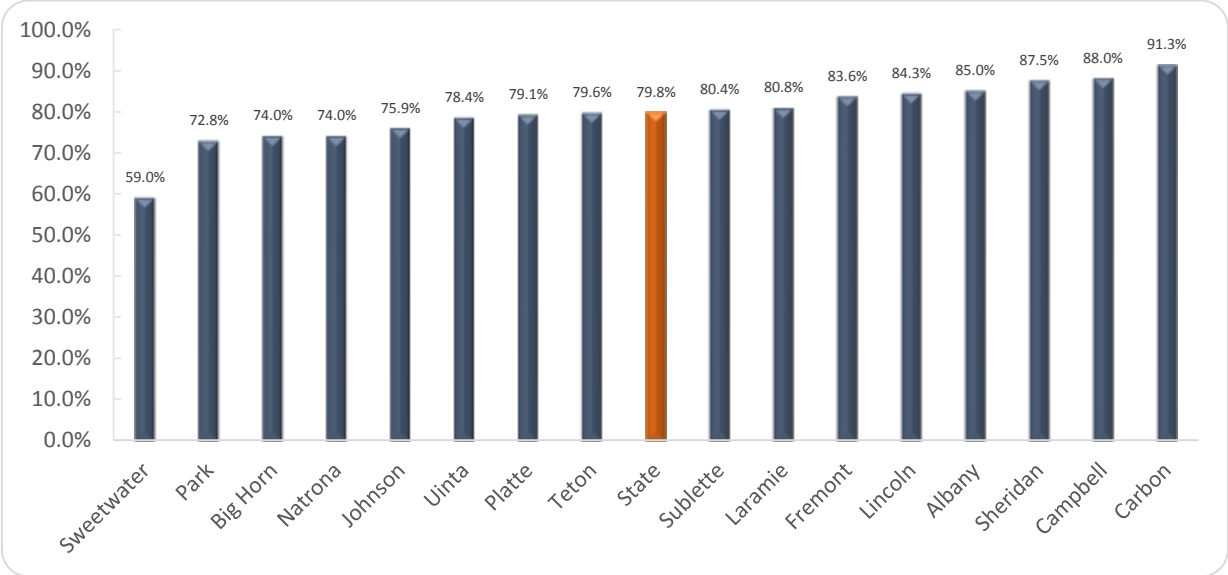
Figure 12: Percent Belted by Occupant Gender



Seat Belt Use by County:

Figure 14 demonstrates the estimates of seat belt use for each of the counties, ranked in ascending order of the seat belt rate.

Figure 13: Percent Belted by County of Observation



The county with the highest rate of seat belt use was Carbon (91.3 percent belted), followed by Campbell (88.0 percent), Sheridan (87.5%), Albany (85.0%), and Lincoln (84.3%). These "top five" counties in occupant seat belt use were all well above the overall average of 79.8 percent belted. The lowest rate, by a considerable margin, was found in Sweetwater County (59.0%).

It should be noted that there is greater variation in rates of seat belt use by county than for any other major variable in the Wyoming surveys. For example, Carbon County was close to the middle of the counties in seat belt use for 2014, while Sheridan had the lowest rate of seat belt use in 2014. Similarly, we have usually found that Teton County has a very high rate of seat belt use in the low to high ninety percent rate, while this year the rate is 79.6 percent, which is below the statewide average (79.8%).

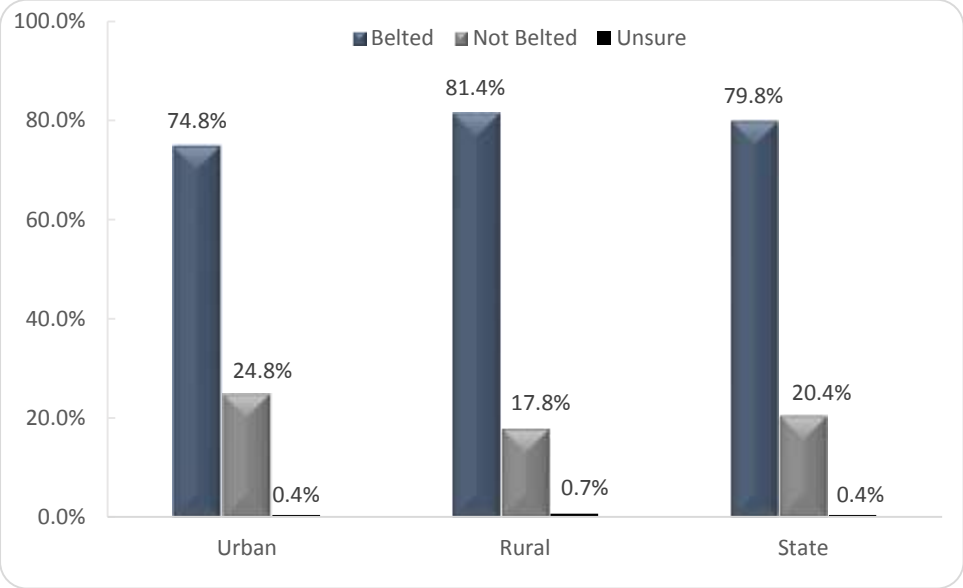
We have no special knowledge of why seat belt use rates should be so different among the counties from one year to the next, other than to suspect that much of the variation may be due to the particular variations in traffic at different times and days of observation. There may be any number of factors that may produce this variation, perhaps known by those state and county officials who have a more intimate knowledge of the different counties. It has been noted in past reports that the variation by counties may affect the standard error for the survey, and this year's standard error is at 2.3 percent, still acceptable, but higher than in last year's survey.

The most important point may be that, aside from some unexpected changes in county rates, the great bulk of the results are much more similar than different across the surveys and for almost all the categories of the variables that were measured in the survey. It is likely that the variation across the years by county are due to factors that are unknown or are not measured in our correlational surveys.

Seat Belt Use by Population Density[1]

For the 2015 survey, 74.8 percent of vehicle occupants in urban areas were observed wearing seat belts; this is 5 percent less than the overall seat belt rate of 79.8 percent. For the rural areas, the estimated rate of seat belt use was 81.4 percent. While the rural rate is only 1.6 percentage points greater than the overall rate, it has the statistical effect of raising the overall rate. This occurred because nearly 75 percent of the vehicle occupants were observed in rural sites, which are, by far, the most common sites in Wyoming. The following chart illustrates the relationship between population density and seat belt use for 2015 in Wyoming.

Figure 14: Percent Belted by Population

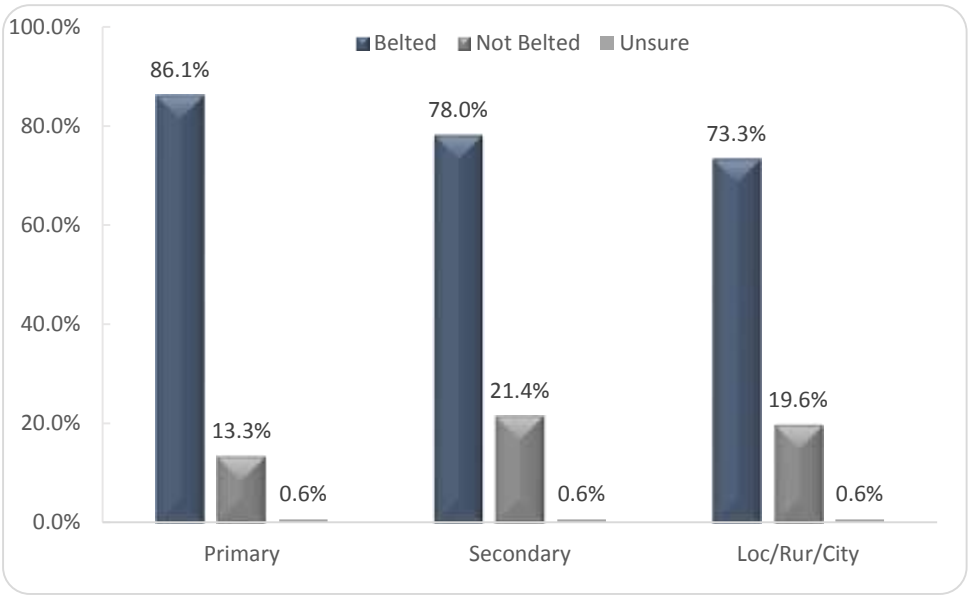


1 Please recall that, in Wyoming, a site that has less than 5,000 residents is defined as rural, while sites with more than 5,000 residents are considered urban.

Roadway Type

The rates of seat belt use for vehicle occupants are 86.1 percent for observations on primary roadways, 78.0 percent on secondary roadways, and 73.3 percent on local/rural/city roadways. Most of the overall rate is determined by vehicle occupants observed on secondary roads because they represent about seven out of every ten vehicle occupants in the sample. A note about the highest rate found for occupants on primary roadways: the primary roadways include four-lane highways and interstates where seat belt use tends to be higher in every seat belt use survey DLN has conducted. The chart that follows illustrates seat belt use by roadway type.

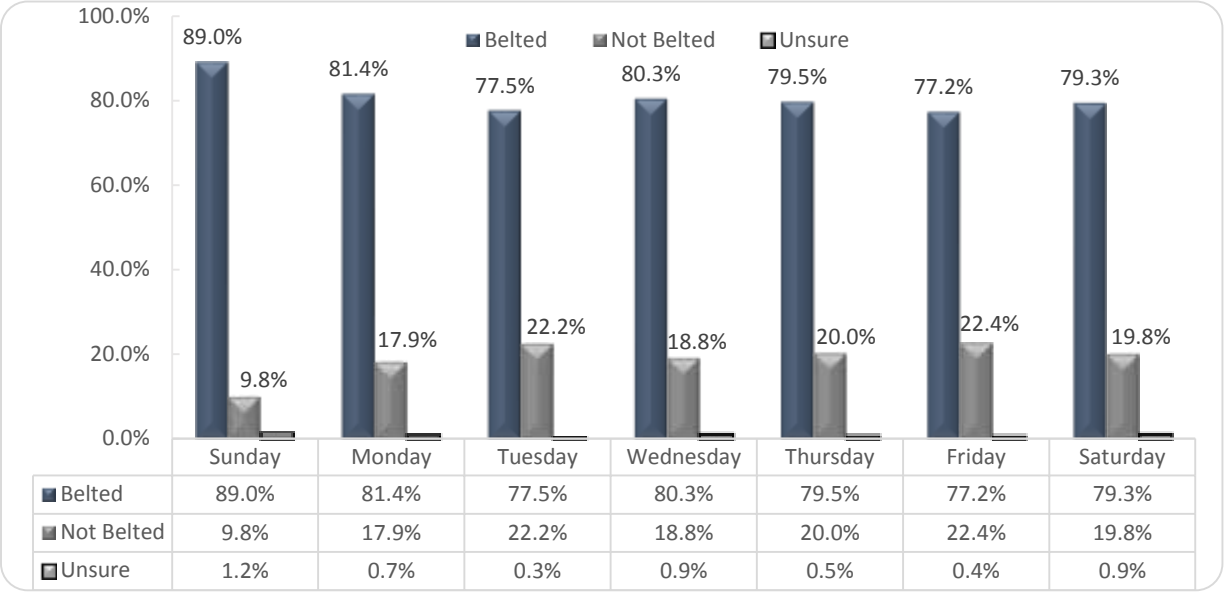
Figure 15: Percent Belted by Roadway Type



Seat Belt Use by Weekday

For all vehicle occupants, front seat and outboard passenger seat occupants, 89.0 percent of those observed on Sunday were belted, the highest rate by day of the week. The next highest rates were for observed occupants on Monday (81.4%) and Wednesday (80.3%). Occupants observed on the rest of the weekdays all have rates below the overall rate of 79.8 percent. The days with the lowest rates were Tuesday (77.5%) and Friday (77.2%). Figure 17 illustrates these results.

Figure 16: Percent Belted by the Day of the Week

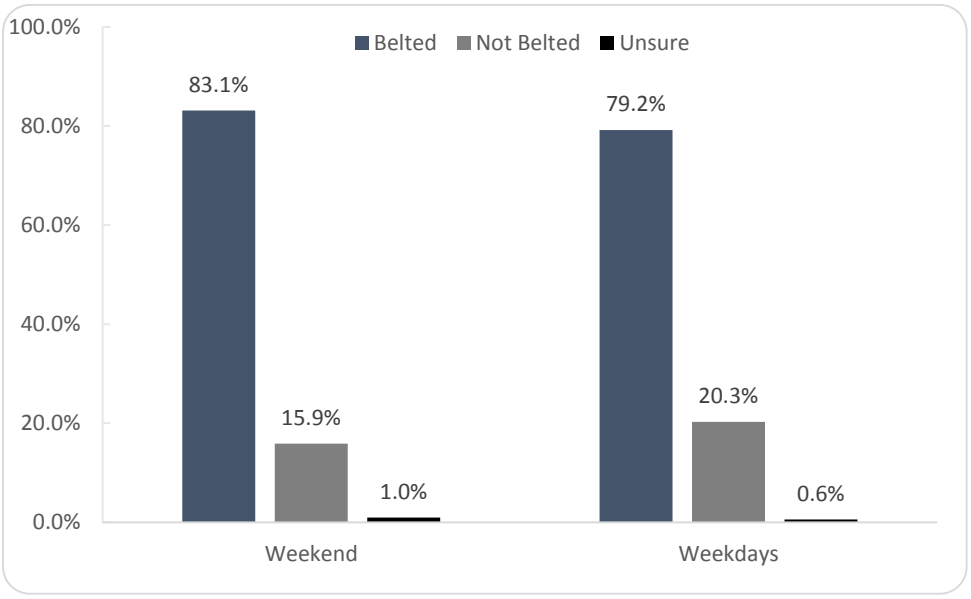


	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Belted	89.0%	81.4%	77.5%	80.3%	79.5%	77.2%	79.3%
Not Belted	9.8%	17.9%	22.2%	18.8%	20.0%	22.4%	19.8%
Unsure	1.2%	0.7%	0.3%	0.9%	0.5%	0.4%	0.9%

Weekdays and Weekend

To simplify matters, the data were collapsed into two categories, weekdays, and the weekend. This assumes that the major difference by day of the week involves different patterns of traffic and seat belt use on weekends, as distinct from weekdays. For 2014, the difference between the seat belt rates on weekdays was 3.3 percentage points lower than on the weekend; for 2015, the difference was 3.9 points. In both cases, the seat belt rate was higher on weekends, but the relatively low differences suggest that the day of the week was not a major factor affecting seat belt use. Here are the results for 2015, illustrated by a bar graph.

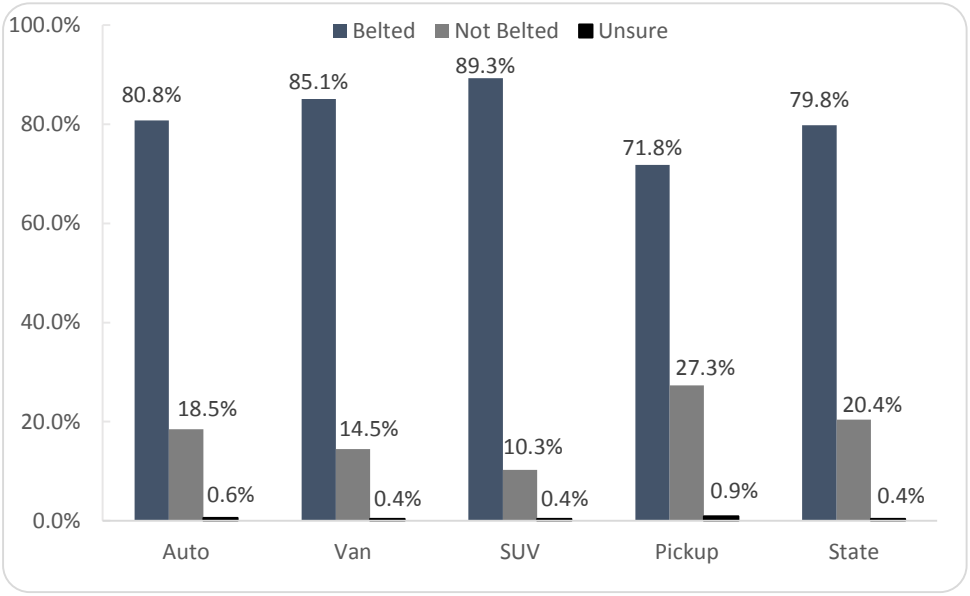
Figure 17: Percent Belted by Weekdays vs. Weekend



Seat Belt Use by Vehicle Type

For 2015, just as in 2013 and 2014 in Wyoming, seat belt use rates were higher for vehicle occupants in automobiles, vans and SUVs than for vehicle occupants in general. Occupants of pickup trucks had a much lower rate of seat belt use for each year, which has the effect of pulling down the overall rate. For 2015, the occupants of automobiles had a rate of 80.8 percent; for vans, 85.1 percent; for SUVs, 89.3 percent. The seat belt use rate for occupants of pickup trucks in 2015 is 71.8 percent. That rate is 17.5 percentage points lower than the rate in SUVS, 13.3 points lower than the rate in vans, and 9 points lower than the rate in automobiles. The significance of these figures derives from the low rate of seat belt use in pickups and the fact that more than one-third of the vehicle occupants were observed in pickup trucks. The following chart illustrates seat belt use by vehicle type.

Figure 18: Percent Belted by Vehicle Type

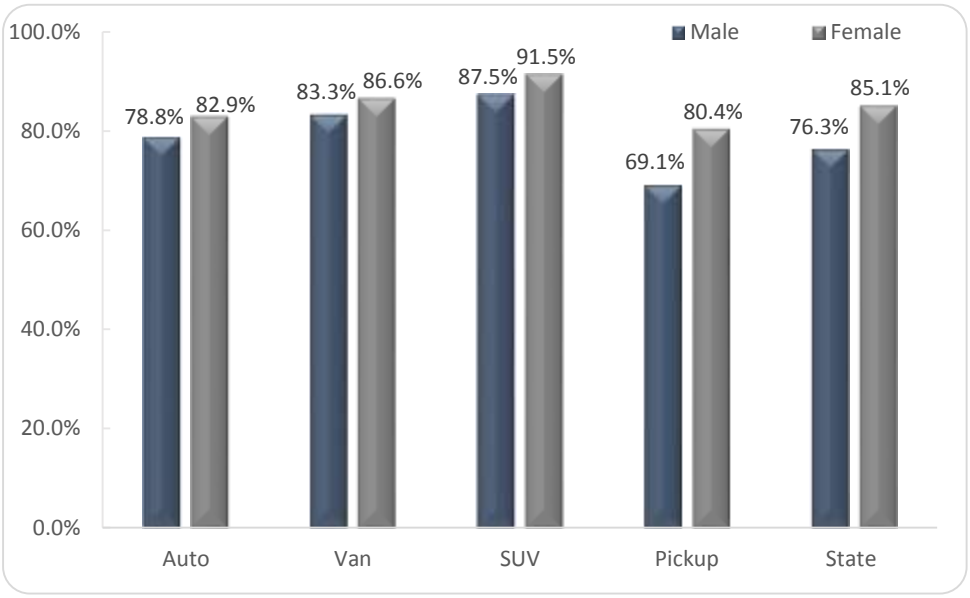


Gender and Vehicle Type

Female vehicle occupants had higher rates of seat belt use than males for every vehicle type. The overall difference for men (76.3 percent) and women (85.1 percent) was 8.8 percent, and that difference was reflected in the specific differences by vehicle types: autos, 4.1 percentage points; vans, 3.3 points; and SUVs, 4.0 points. But notice that these differences are not particularly large until pickup trucks are included: the female seat belt use rate for females in pickups was 80.4 percent, while the pickup rate for males was 69.1 percent, a difference of 11.3 percentage points. It is true that the rates across vehicle types were higher for females, but parallel to the male rates, except that the gap increased significantly for pickups. This has been a relatively consistent finding across several years of surveys, just as in 2015. It is noteworthy to point out that men represented more than three-fourths of the pickup truck occupants in the survey. Even though women had above average seat belt use in pickups, their use was not able to offset the lower rate and larger sample size of males in pickups.

Figure 20 illustrates the rates of seat belt use by gender and vehicle type.

Figure 19: Percent Belted by Vehicle Gender



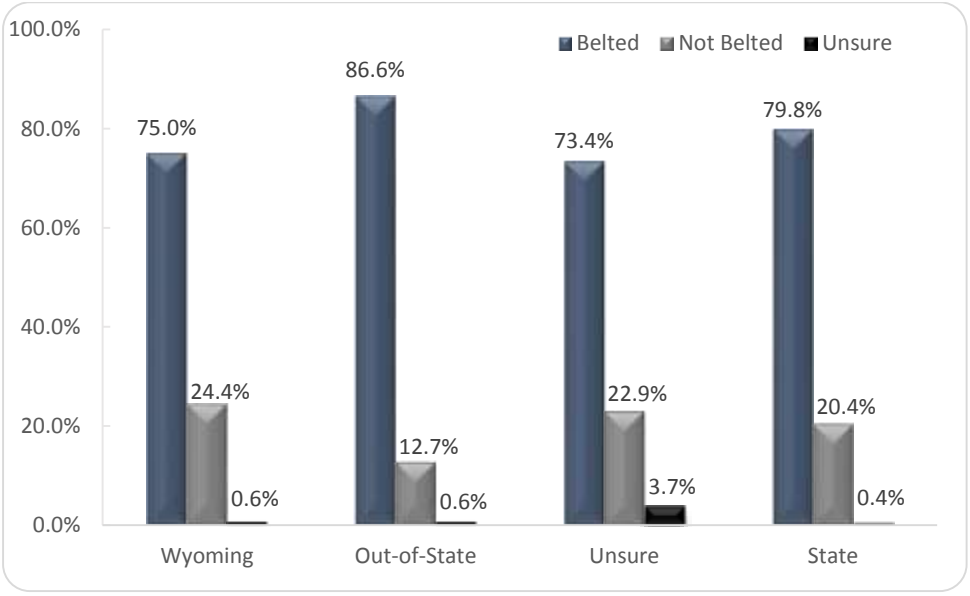
Vehicle Registration Type

As noted before, observers classified vehicles as registered in Wyoming or out-of-state. In some cases, they were unsure of the state registration. In past surveys, it was found that vehicle occupants of Wyoming-licensed vehicles had lower rates of seat belt use. This was also true for 2015.

Occupants of Wyoming-licensed vehicles were belted at a rate of 75.0 percent, while occupants of out-of-state vehicles were belted at a rate of 86.6 percent, a difference of 11.6 percentage points. Although the out-of-state rate tended to increase the overall rate, the effect was limited in that more than six of every 10 occupants were observed in Wyoming vehicles. Relatively speaking, Wyoming likely has a significant number of visitors than may be found in some other states, especially in areas with national parks. It could be likely that many of those visitors are from states with primary seat belt laws, which tend to increase habits of seat belt use. Still, the rate of seat belt use by occupants of Wyoming vehicles is likely the most significant factor in the survey.

Figure 21 illustrates the results of seat belt use by license type.

Figure 20: Percent Belted by Registration Type

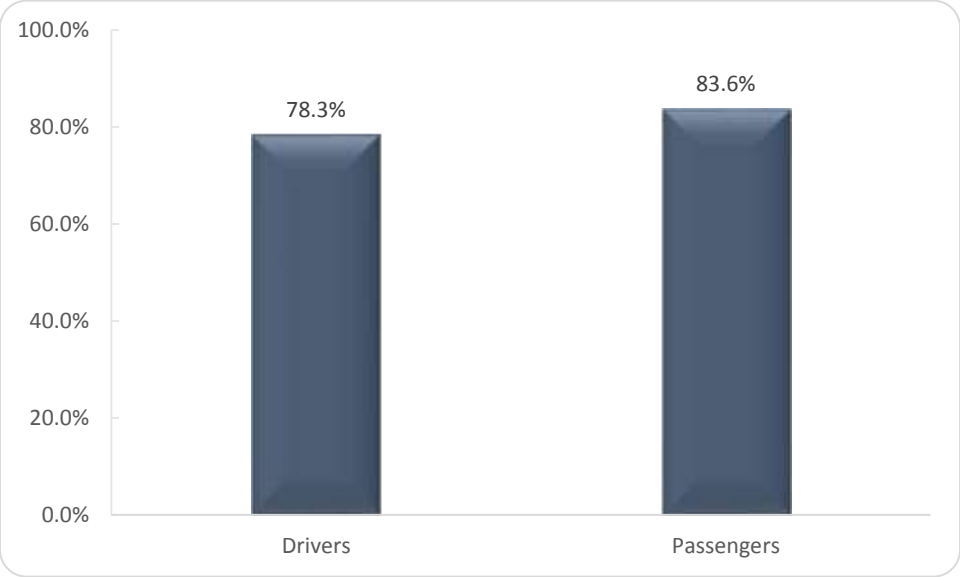


Estimates of Seat Belt Use for Drivers and Passengers

In previous reports, results have been presented separately for drivers and passengers across all of the major variables. We continue to provide those tables in the appendix to this report. However, this report focuses on rates for drivers and passengers by the variables of gender and vehicle type. These are the classifications that are likely to be of the most use to officials who are planning targeted seat belt use campaigns.

First, it is appropriate to repeat the overall results for type of vehicle occupant. Below is an illustration of those results.

Figure 21: Occupant Belt Use by Type of Occupant

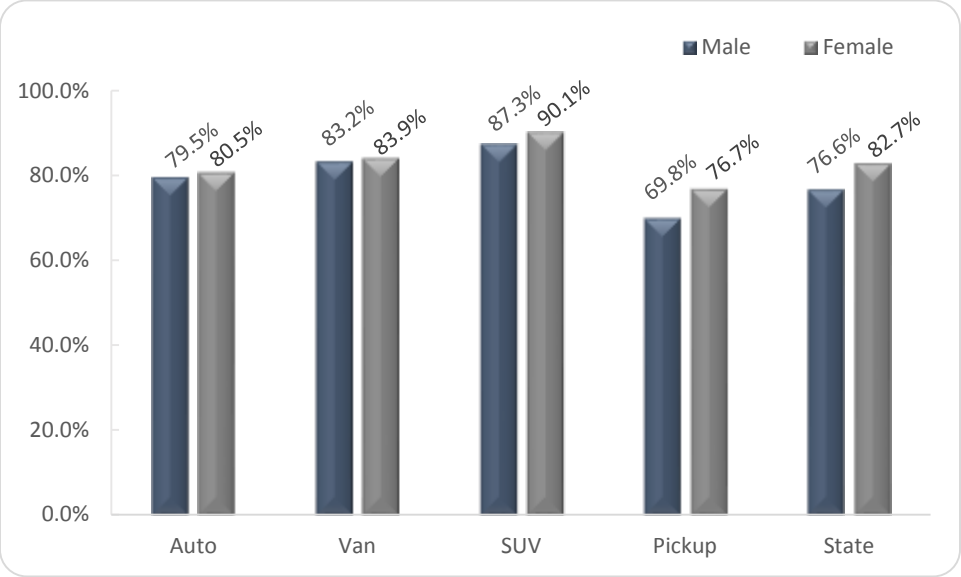


Note that passengers had a higher rate of seat belt use than drivers: 83.6 percent for passengers and 78.3 percent for drivers, a difference of 5.3 percentage points. That difference tends to hold across all variables, partly because passengers were more likely to be female and females have higher rates of seat belt use, as has been demonstrated for all occupants. However, drivers had a greater impact on the overall rate, largely because drivers were a little more than seven of every ten vehicle occupants in the 2015 survey.

Driver Belt Use by Gender and Vehicle Type

The following chart illustrates the relationship between gender and vehicle type for drivers.

Figure 22: Driver Belt Use by Gender and Vehicle Type



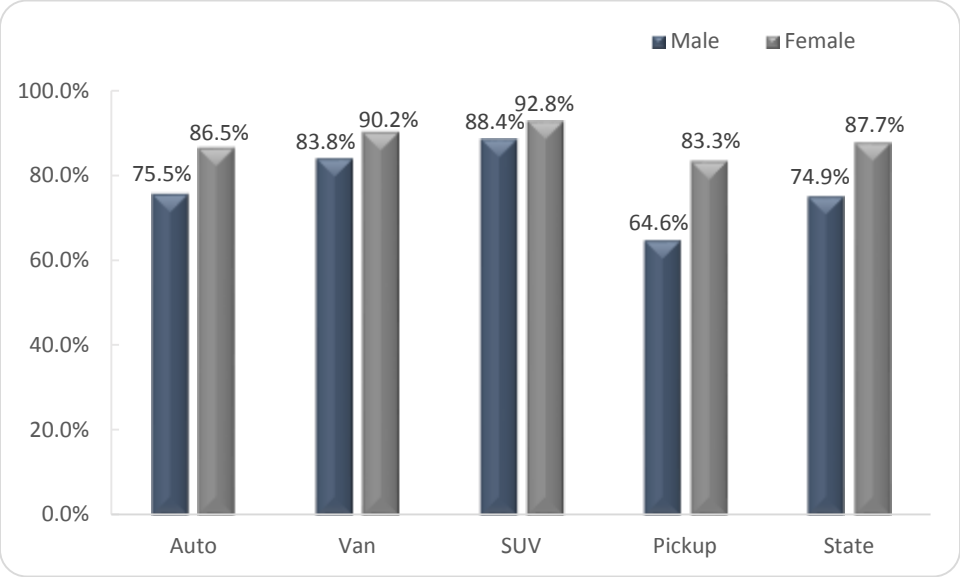
The major insight from this chart is that women drivers had higher rates of seat belt use for every vehicle type, but the gender difference was particularly pronounced for drivers of pickup trucks. In pickups, the female driver rate of 76.7 percent was 6.9 percentage points greater than the rate of 69.8 percent for male drivers. For the other vehicle types, the gender differences were less pronounced. As a contextual note, males made up 86.0 percent of the drivers in the 2015 survey; females made up about 14 percent of the pickup truck drivers. Even though the female pickup truck drivers' belt use rate was the lowest for females in all vehicle types, there were so few female pickup drivers in the sample that they had much less impact than the male drivers.

Passenger Belt Use by Gender and Vehicle Type

As has been, passengers made up far fewer of the vehicle occupants: 72.6 percent of vehicle occupants were drivers. However, the passengers are important because they were more likely to be observed wearing seat belts: 83.6 percent for passengers, 78.3 percent for drivers in this survey.

When the variables of gender and vehicle type for passengers were introduced, it was generally found that the rates were higher for females across the board, just as for drivers. However, there were two anomalies for male passengers that can be pointed out.

Figure 23: Passenger Belt Use by Gender and Vehicle Type



The chart above shows that the female passengers had higher rates of seat belt use across all types of vehicles. Again, as with drivers, the greatest difference occurred for pickup trucks: female passengers in pickups were belted at a rate of 83.8 percent, and male passengers in pickups were belted at a rate of 64.6 percent, a difference of 19.2 percentage points. For surveys of this type, this difference may be called a "whopping" difference.

For reference purposes, it is noteworthy that passengers in pickups were more likely to be female: 57.2 percent of pickup truck passengers in this survey were women.

The anomalies occur within the seat belt use for male passengers compared to male drivers. If the passenger chart is compared with the driver chart, it is found that the seat belt use rate for male passengers in automobiles was 75.5 percent, while it was 79.5 percent for their driver counterparts. Similarly, the rate for male passengers in pickups was 64.6 percent, while the rate for male drivers in pickups was 69.8 percent. Otherwise, the general rule of higher

seat belt use for passengers across vehicle types tended to hold. In fact, the relatively small number of male passengers in automobiles and in pickups may mean that there may be no significance attached to these findings.

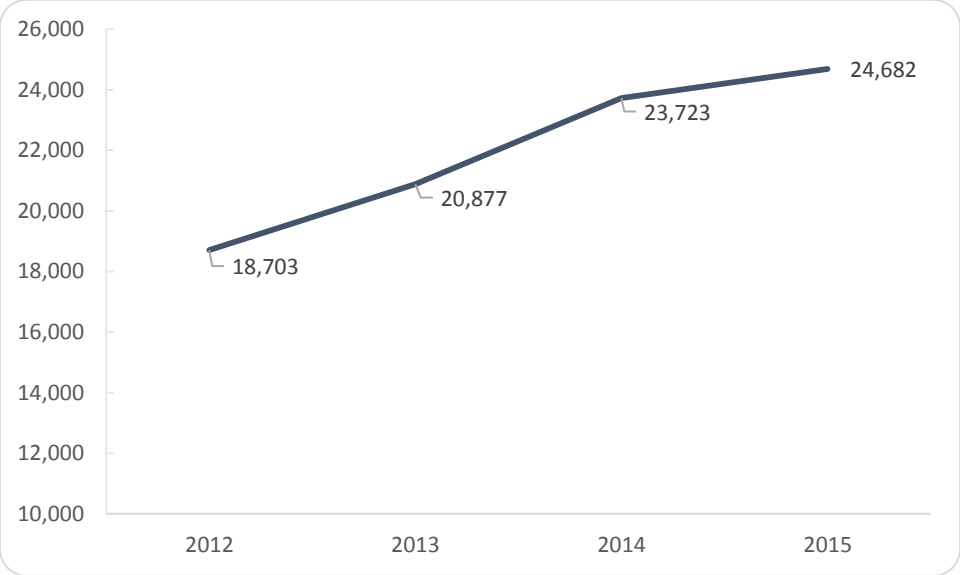
Trends

For this section, we compiled selected tables across the years from 2012 to 2015. These surveys reflect the new methodology developed and first implemented in 2012. Since then, the sample sites and the procedures for data collection have been the same. One exception is that the method of recording observations has moved to direct data entry in iPads using an application developed for this process. That method was introduced last year and enhanced for this year's survey. This change simplified the process of downloading the data files into Excel and uploading the data files into SPSS. The Complex Samples module in SPSS permitted the calculation of seat belt use estimates for occupants, drivers and passengers in separate files.

Trend in Frequency of Occupants

The number of observed vehicle occupants has increased substantially over the last four years. Figure 25 illustrates these increases.

Figure 24: Frequencies of Vehicle Occupants, Wyoming, 2015 to 2015



The number of observed occupants increased from 18,703 in 2012 to 20,877 in 2013. The number increased again in 2014 to 23,723 in 2014, an increase of 2,846 occupants. The number of occupants in the 2015 survey was 24,682, an increase of 959 vehicle occupants over the number in 2014.

It is possible that these increases are due to increases in traffic. However, in last year's survey, we speculated that the change between 2013 and 2014 might be a consequence of the change from "paper and pencil" recording to the direct recording system using iPads. Once observers were trained and tested the new system, increased simplicity and efficiency of the new system may have increased the number of observations. This methodological effect should be running its course as observers reach the point of diminishing returns from the new recording process.

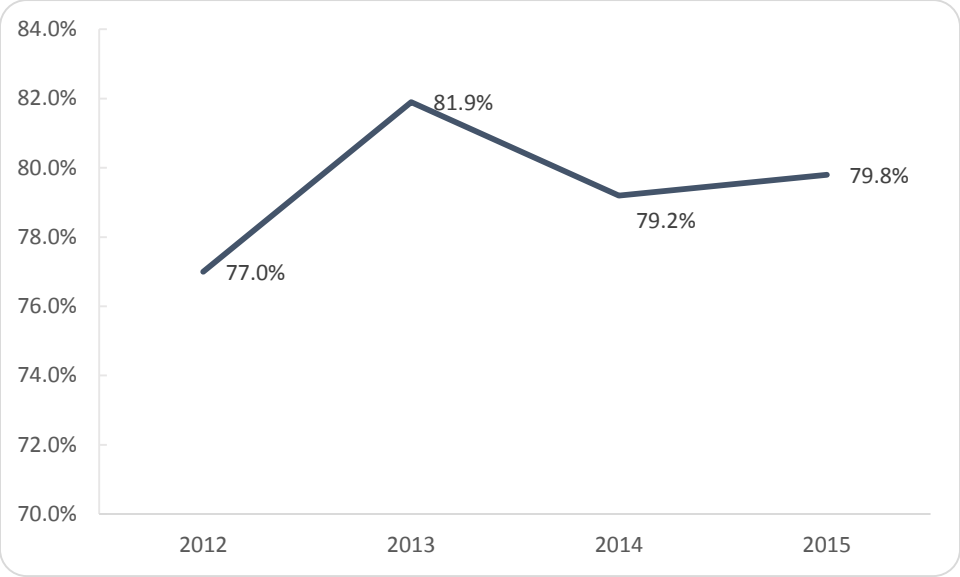
The effects of this new direct recording arrangement would likely benefit from an evaluative study comparing the different methods. However, we can say, anecdotally, that there seem to be fewer errors that need to be addressed when the data is "cleaned." This year, there were very few errors and almost no missing cases. The new system seems to have significant advantages.

Trends in Estimates of Seat Belt Use, Wyoming 2012-2015

Overall Estimates

For all vehicle occupants, the rate of seat belt use has generally been in the high seventies. The estimates across the years are illustrated by the following chart.

Figure 25: Occupant Seat Belt Use Rates in Wyoming, 2012 to 2015



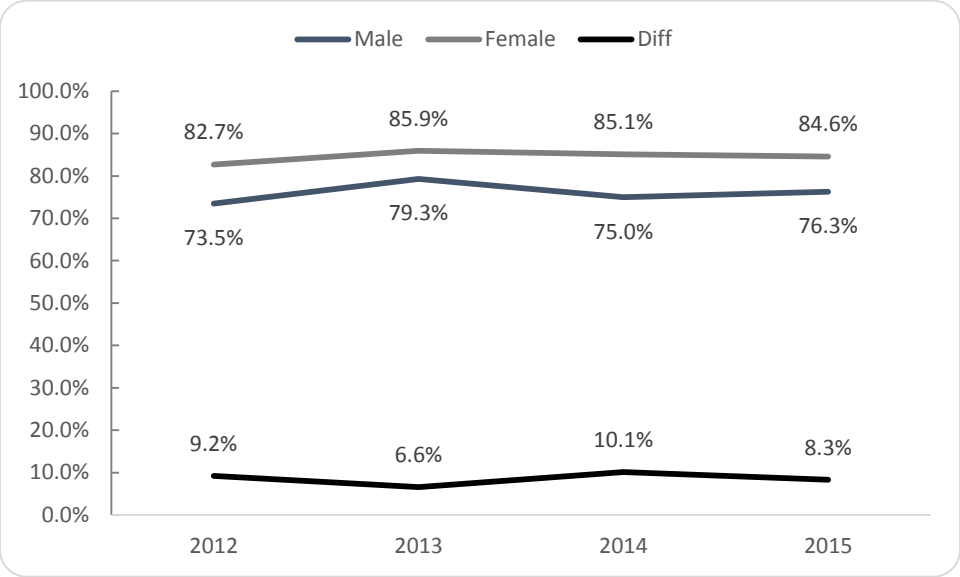
The major change over the years was the increase from 77.0 percent in the baseline year of 2012 to 81.9 percent in 2013, an increase of 4.9 percent. That increase now appears to be an anomaly, given the rate of 79.2 percent in 2014, a decline of 2.7 percentage points. This year, the rate increased to 79.8 percent, a 0.6 percentage point increase in the estimate of seat belt use.

Although large numbers of observations tend to make even small changes statistically significant, the variation in these results is not large enough to warrant major inferences, other than the fact that the overall estimate seemed to have settled at a rate just below the eighty percent mark. Given Wyoming's wide open spaces, relatively low traffic density, a lot of vehicles that are perceived as "work" rather than "family" vehicles, and secondary seat belt laws, it is not surprising that the rates are lower than in some other states.

Gender and Seat Belt Use

Figure 27 illustrates the trend in seat belt use for all vehicle occupants.

Figure 26: Occupant Seat Belt Use Rates by Gender, Wyoming 2012 to 2015

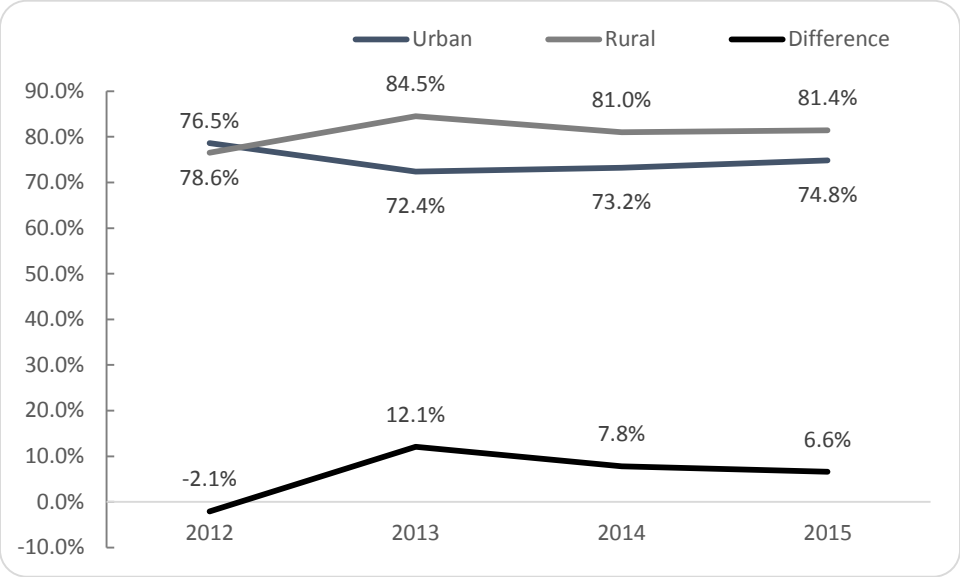


The female rate of seat belt use has been relatively stable in the mid-eighty percent range over the past four years. The male range has been in the mid-seventy percent range. The results for the 2013 survey year are somewhat different, when both male and female rates reached high points. The rates of seat belt use for females have typically been eight to ten percent higher than the male rate, except for 2013 when the male rate was high enough to reduce the difference to 6.6 percentage points.

Population Density

Typically, seat belt use has been higher in rural areas, with one exception. Figure 28 illustrates these results.

Figure 27: Occupant Seat Belt Use Rates by Population Density, 2012 to 2015

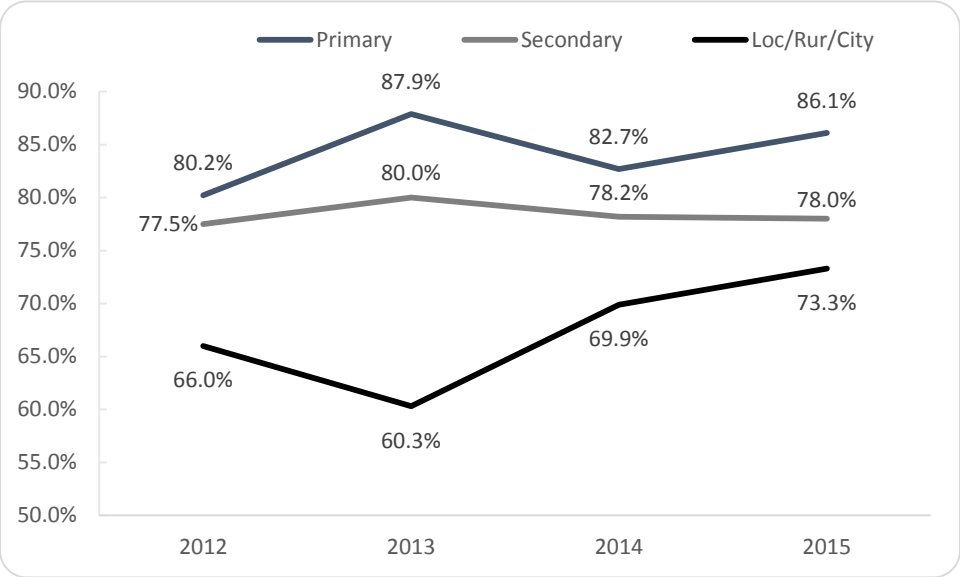


The urban rate was 2.1 percentage points higher than the rural rate in 2012, the baseline year. The rural rates have been higher over the past three surveys. The difference in the two rates was greatest in 2012, at 12.1 percent, but the difference seems to have stabilized at 7.8 percent in 2014 and 6.6 percent in 2015.

Roadway Type

Across all four years, seat belt use has been highest on primary roadways and lowest on local / rural / city roadways, and the differences have been double-digit between these two roadway types. Seat belt use on secondary roadways falls between the primary and the category of local, city and rural roadways. These results are illustrated by the following chart.

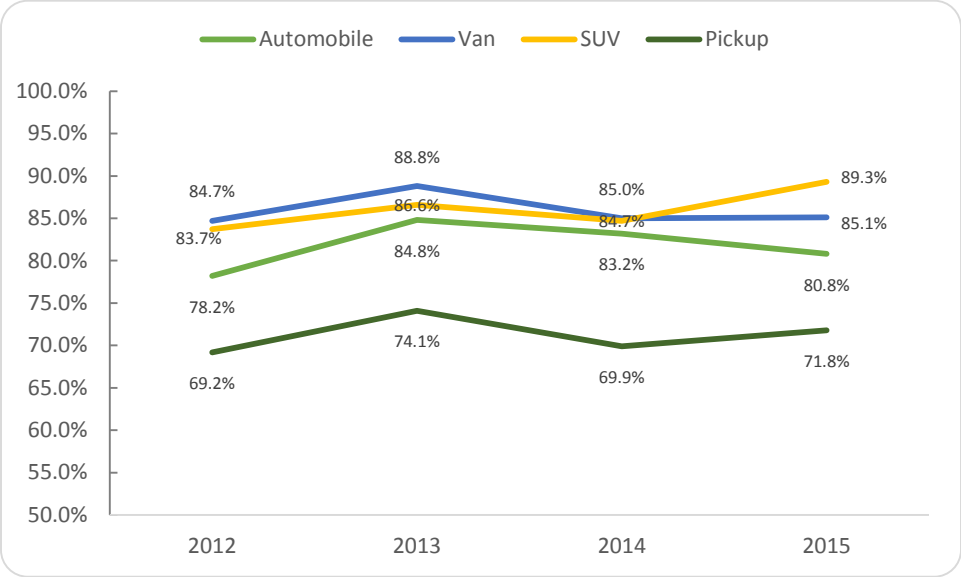
Figure 28: Occupant Seat Belt Use by Roadway Type, 2012 to 2015



Vehicle Type

Figure 30 illustrates the results for seat belt use by vehicle type.

Figure 29: Occupant Seat Belt Use by Vehicle Type, 2012 to 2015



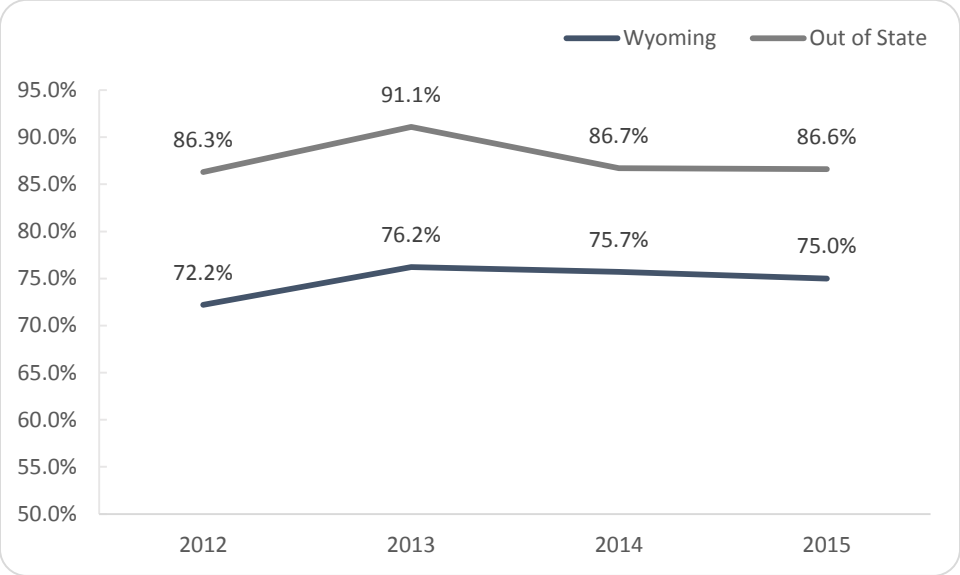
Seat belt use for automobiles, vans and pickups have typically been in the low to high eighty percent range. Between vans and SUVs, seat belt use has typically been greatest in vans, except for 2015 when the rate was higher for SUVs. Although automobiles and vans outnumbered SUVs in all surveys, SUVs appear to be an emerging family vehicle in Wyoming.

However, the pickup truck is still the most ubiquitous vehicle in Wyoming, at least in the sense that more than a third of vehicle occupants in 2015 were in pickups. Seat belt use in pickup trucks has typically ranged between 69.2 percent in 2012 to 71.8 percent in 2015. There is that anomalous year of 2013 when the rate reached a high of 74.1 percent, but that rate seems to be as atypical as many of the results for that year.

Vehicle Registration

Occupants in out-of-state registered vehicles had much higher rates of seat belt use, typically in the mid- eighty percent range, except for 2013 when many rates reached a high point. Figure 31 illustrates the results by registration type.

Figure 30: Occupant Seat Belt Use Rates by Registration, 2012 to 2015



Occupant seat belt use in out-of-state registered vehicles was higher by 14.1 percentage points in 2012 and 14.9 points in 2013. The differences remained similar, but not as great for 2014 (11.0 percent) and 2015 (11.6 percent).

Seat Belt Use by County

It is harder to describe the trends in seat belt use for the individual counties than for any other categorical variable in Wyoming surveys over the past four years. Let us begin by presenting a table with the seat belt use rates by county for 2012 to 2014. Included in this table is the difference between the 2014 and 2015 rates for each county.

Table 5: Occupant Belt Use by County

Occupant Seat Belt Usage Rates by County, Wyoming 2012-2015						
	Year	**2012**	**2013**	**2014**	**2015**	**Diff***
County	**Albany**	74.2%	84.4%	84.3%	85.0%	0.7%
	Big Horn	60.2%	65.1%	71.5%	74.0%	2.5%
	Campbell	60.3%	62.3%	67.6%	88.0%	20.4%
	Carbon	83.0%	77.0%	78.8%	91.3%	12.5%
	Fremont	72.2%	75.2%	77.0%	83.6%	6.6%
	Johnson	74.8%	97.4%	77.3%	75.9%	-1.4%
	Laramie	74.3%	73.0%	72.9%	80.8%	7.9%
	Lincoln	81.4%	82.7%	81.5%	84.3%	2.8%
	Natrona	63.1%	63.9%	72.8%	74.0%	1.2%
	Park	73.6%	73.0%	80.2%	72.8%	-7.4%
	Platte	84.5%	85.7%	86.7%	79.1%	-7.6%
	Sheridan	65.0%	60.5%	57.3%	87.5%	30.2%
	Sublette	83.0%	86.0%	84.1%	80.4%	-3.7%
	Sweetwater	60.3%	77.1%	78.2%	59.0%	-19.2%
	Teton	98.3%	99.0%	90.1%	79.6%	-10.5%
	Uinta	72.1%	76.8%	64.9%	78.4%	13.5%
	Totals	77.0%	81.9%	79.2%	79.8%	0.6%
	*Difference = (2015-2014) SBU Rates for Occupants.					

One observation is that most counties have had relatively stable rates over time. One example is Sublette County, where the rates have been in the low- to mid-eighty percent range across the four years. Another is Lincoln County where the rates have steadily been in the mid-eighties. However, the more typical trend is for counties that have relatively stable rates, but seem to have one or more years where the rates increased or decreased substantially. For example, Johnson County has typically had a rate in the mid-seventies, except for2013 when it jumped to 97.4 percent; or Park County, which is typically in the low seventies but had a higher rate in 2014.

There are some unusual changes between 2014 and 2015 in some counties. For example, the rate in Campbell County jumped up by 20.4 percentage points, and in Sheridan, the increase was 30.2 points. Some counties experienced a decrease between the years; most notably in Sweetwater and Teton Counties.

Many factors might account for the relatively unstable trends in seat belt use by county. Traffic patterns can change from year to year, as can events associated with the timing of the surveys, or weather patterns, or road construction factors, and so on. Most of these effects fall into the category of spurious factors in that there is not enough information to determine if they have any systematic consequences for seat belt use.

On the other hand, the variations – increases in some county rates, decreases in others – tend to cancel each other out in such a way as to give us a reliable, overall estimate of seat belt use, or, at least an estimate that falls within acceptable parameters when it comes to standard errors. Those standard errors tend to be very high when it comes to individual counties, so not put much stock should be put in any inferences from the county rates. We are on our most stable footing when we are examining overall rates that are not broken down by large numbers of variable categories, as is the case with county rates.

Closing

The rest of this report offers a considerable appendix where the reader will find detailed tables summarizing the results. In particular, the details of seat belt use by drivers and passengers are offered but are not reviewed extensively in the narrative.

Appendix A: State seat belt use reporting form

State Seat Belt Use Survey Reporting Form

PART A

State: Wyoming Calendar Year of Survey: 2015

Statewide Seat Belt use Rate: 79.8 Percent

I hereby certify that: The Governor designated Matt Carlson as the State's Highway Safety Representative (GR), and has the authority to sign the certification in writing.

The reported Statewide seat belt use rate is based on a survey design that received approval by NHTSA, in writing, as conforming to the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340.

The survey design remained unchanged since NHTSA approved the survey.

Dr. James G. Leibert[2], a qualified survey statistician, reviewed the seat belt use rate reported above and information reported in Part B and determined that they meet the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340.

See last page for signature

_____
Signature

_____
Date

_____
Printed name of signing official

2 In accordance with the final rule published in Federal Register Vol. 76 No. 63, April 1, 2011, Rules and Regulations, pp. 18042-18059, DLN contracted with statistician, Dr. James G. Leibert to determine that the methods used to process the collected data met the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340. Dr. Leibert reviewed the SPSS output files and related data tables to confirm the data are accurate and true. A copy of Dr. Leibert's abbreviated resume follows.

5820 York Ave. S. Phone 952.922.0018

Edina, MN. 55410 E-mail
1jleibert@gmail.com

James G. Leibert, PhD.

Summary – Creative problem solver with knowledge of and experience in a broad array of statistical and computational tools and techniques. I understand that there is no one tool or technique that can be used for every situation. I can quickly see connections and use tools and techniques from other fields as appropriate.

Employment

Research Scientist III, Minnesota Department of Human Services, Disability Services Division, St. Paul, MN. Current

Chair, Dept. of Political Science and Public Administration / Director of the Master of Public Administration Program / Dean of Graduate and Undergraduate Studies, Kazakhstan Institute of Management, Economics, and Strategic Research (KIMEP), Almaty, Republic of Kazakhstan, 2001-2002.

Associate Professor (1999-2001) / International Programs Coordinator (2000 – 2001)

Chairman of the Department of Social Sciences (1999 – 2000) \ Assistant Professor (1993-1998), Dickinson State University Dickinson, ND, 1993-2001.

Leadership

Team Player

Problem Solving

Appendix B: Survey design for Wyoming

The Wyoming Department of Transportation Highway Safety Program in collaboration with DLN Consulting, Inc. designed the following sampling, data collection, and estimation plan. The National Highway Traffic Safety Administration accepted and approved the plan on April 24, 2012. A copy of the approval notification can be found in Appendix C.

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Seat Belt Use Survey Design for Wyoming

Sampling, Data Collection and Estimation Plan

January 3, 2012
Revised March 7, 2012

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Introduction

This document provides the details of the methods proposed for a survey of seat belt use in the State of Wyoming in 2012. These methods have been developed by Wyoming to comply with the new Uniform Criteria for State Observational Surveys of Seat Belt Use issued in 2011 by the National Highway Traffic Safety Administration (NHTSA).[1]

This proposal includes the following:

- The general parameters of the study design, which produced the proposed sampling frame for the survey of Wyoming seat belt use.
- The sample design, including the proposed sample size and the methods to be used for the selection of road segments.
- The proposed data collection methods, including the training of observers, and the protocols that will guide observers in data collection, and the proposed quality control procedures.
- The proposed analytical methods to be used in producing an estimate of seat belt use in Wyoming, including the statistical use of sampling weights, the methods to adjust for nonresponsive data, and the methods of variance estimation.

This plan is compliant with the Uniform Criteria and will be used for the implementation of Wyoming's 2012 seat belt survey, upon approval.

Study Design

There are 23 counties in the State of Wyoming. Fatality Analysis Reporting System (FARS) data for the years 2005 – 2009 by county was examined to identify the counties that accounted for at least 85 per cent of the cumulative crash–related fatalities during that period of time. Five years of data was selected to produce the largest number of counties available for the sample. Sixteen of the 23 counties accounted for 87.7 percent of the fatalities during this five-year period. Table 1 lists the fatality counts, and cumulative percentage of fatalities by county in Wyoming.

Road segment data was acquired from NHTSA, as developed by the U.S. Census Bureau in the form of 2010 TIGER data, for each of the 16 counties in the sample frame. All roads, with the exception of rural local roads, non-public roads, unnamed roads, unpaved roads, vehicular trails, access ramps, cul-de-sacs, traffic circles, and service drivers. These exclusions are compliant under § 1340.5.a.2.ii. The data include the length of the road segments and the classification of the road segments by road type (MTFCC).[2] This classification scheme locates each road segment within three different types of roads, as follows:

- Primary roads (MTFCC Code S1100), which are generally divided, limited-access highways within the interstate highway system or under state management, and are distinguished by the presence of interchanges. These highways are accessible by ramps and may include toll highways, although there are no toll highways in Wyoming.

[1] The final rule was published in Federal Register Vol. 76 No. 63, April 1, 2011, Rules and Regulations, pp. 18042 – 18059.

[2] The classification scheme uses the MAF/TIGER feature Class Code, or MTFCC in the database.

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- Secondary roads (MTFCC Code S1200), which are main arteries, usually in the U.S. Highway, State Highway, or County Highway system. These roads have one or more lanes of traffic in each direction, may or may not be divided, and usually have at-grade intersections with many other roads and driveways. They often have both a local name and a route number.
- Local neighborhood roads, rural roads, and city streets (MTFCC Code S1400), including paved non-arterial streets, roads or byways that usually have a single lane of traffic in each direction. The roads in this class may be privately or publicly maintained. Scenic park roads would be included, as would some unpaved roads, in this classification.

This classification scheme will be used to stratify the road segments in each county. The road segments to be included in the statewide sample will be drawn from the strata within each of the selected counties.

Sample Design

The proposed design is intended to conform to the requirements of the Uniform Criteria. The objective of the design is to generate annual estimates of occupant restraint use for adults and children using booster seats in the front seats of passenger vehicles. Wyoming intends to update the sample of data collection sites every five years in order to have survey results that reflect those counties with more than 85 percent of crash–related fatalities. The sample design described here was provided to Wyoming under a consultant agreement with DLN Consulting, Inc. and Dr. Jamil Ibriq of Dickinson State University in Dickinson, North Dakota.[3] The sample design is for a stratified, systematic, randomly selected sample of data collection segments, with the following detailed steps:

- All 23 counties in Wyoming were listed in descending order of the average number of motor vehicle crash-related fatalities for the period of 2005 to 2009. Fatality Analysis Reporting System (FARS) data were used to determine the number of crash-related fatalities per county. It was determined that 16 of the counties accounted for more than 85.0 percent of traffic-related fatalities.[4] A decision was made by the Wyoming Department of Transportation to include all 16 counties for observation in order to maximize the numbers of counties to be observed. This method used in the first sampling stage resulted in all counties in the sample being selected with certainty and a probability factor of 1. Table 1 lists Wyoming's counties, fatality counts, and cumulative fatality percentages.
- The road segments were selected randomly from all eligible segments in each of the strata in the sampled counties. The road segments were stratified on the basis of the MTFCC road type classification[5]. A total sample of 18 road segments was identified for each county based on the historical number of observations collected over the past five years in Wyoming. This stage of the sampling process resulted in the selection of 288 road segments (16 counties X 18 sites per county).

[3] Dr. Jamil Ibriq's résumé is included in Appendix A.
[4] The 16 counties account for 87.7 percent of traffic-related fatalities in the FARS cumulative data from 2005-2009.
[5] The road types, previously described, are (S1100) primary roads, (S1200) secondary roads, and (S1400) local neighborhood roads, rural roads, and city streets.

- The sampling process included the random selection of additional road segments within each road-type strata and county. These segments are part of a pool of reserve sites that can be substituted for existing segments in the sample that become unavailable due to extensive construction, weather-related problems, or other unanticipated events.
- It is expected that this process will produce approximately 28,800 observations, based on prior surveys of seat belt use in Wyoming. Given this sample size, the standard error should be less than the 2.5 percent maximum specified by the Uniform Criteria. In the event that the standard error exceeds 2.5 percent, additional observations will be collected from existing sites.
- Randomization procedures will be used to determine protocols regarding the initial road segment for observation within each county, the direction of traffic flow for observation, etc., to be described later in this proposal.

Table 1: Wyoming's Average Motor Vehicle Crash-Related Fatalities By County 2005 - 2009

STATE CODE	COUNTY NAME	Average fatality counts for 5 years	Fatality percentage within the state	Cumulative fatality percentage
Wyoming	FREMONT	20.6	12.4	12.4
Wyoming	SWEETWATER	19	11.4	23.8
Wyoming	NATRONA	13.2	7.9	31.8
Wyoming	CAMPBELL	11.8	7.1	38.9
Wyoming	LARAMIE	11.2	6.7	45.6
Wyoming	CARBON	10	6	51.7
Wyoming	ALBANY	7.6	4.6	56.2
Wyoming	JOHNSON	6.8	4.1	60.3
Wyoming	PARK	6.8	4.1	64.4
Wyoming	TETON	6.4	3.9	68.3
Wyoming	UINTA	6.4	3.9	72.1
Wyoming	SHERIDAN	5.4	3.3	75.4
Wyoming	SUBLETTE	5.4	3.3	78.6
Wyoming	LINCOLN	5.2	3.1	81.8
Wyoming	BIG HORN	5	3	84.8
Wyoming	PLATTE	4.8	2.9	87.7
Wyoming	CONVERSE	4.2	2.5	90.2
Wyoming	GOSHEN	3.3	2	92.2
Wyoming	CROOK	3.2	1.9	94.1
Wyoming	WESTON	3	1.8	95.9
Wyoming	NIOBRARA	2.8	1.7	97.6
Wyoming	HOT SPRINGS	2	1.2	98.8
Wyoming	WASHAKIE	2	1.2	100

Sample Size and Precision

A standard error of less than 2.5% for the seat belt use estimates is required by the Final Rule. Since 2006, Wyoming has conducted annual seat belt use studies that have historically obtained standard error rates below this threshold (e.g. 1.1%, 1.2%, 0.9%, 1.0%, and 0.8% in the past five years) via

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observed sample sizes between 23,404 and 27,274. These observed sample sizes have been obtained from previous sample designs using nine counties and 23 road segments per county. Therefore, since the proposed design is expected to yield a sample of about 28,800 observations (16 counties X 18 sites per county X 100 vehicles per observation site), the precision objective should be achieved without problem. In the event that the precision objective of a 2.5% or less standard error is not met, additional observations will be taken starting with sites having the fewest observations. New data will be added to existing data until the desired precision is achieved.

County Selection

All 16 counties within the sample were selected with certainty. This was a decision made by the Wyoming Department of Transportation to measure seat belt use in all the top fatality counties within the state. As certainty counties, each was assigned a probability factor of 1 (16 counties selected from the 16 counties in the sample) and represented the first stage of sampling.

Road Segment Selection

After determining the number of road segments in each stratum, the probabilities of selection were determined. Based on the probability calculations, no certainty road segments were identified. The road segments in each stratum in each county were then selected randomly using a simple java program. The program randomly selected a particular site from the list of eligible sites in the stratum. Once a site was selected, it was removed from the list of eligible sites in the stratum. The next site was then selected randomly from the remaining sites. This random process continued until all the sites in the stratum were selected.

Table 2: Roadway Functional Strata by County, Road Segments Population (N), Length, and Number of Segments Selected (n)

County		MTFCC Strata			Total
		Primary	Secondary	Local	
Albany	N	149	992	0	1141
	Length	60.639697	247.87805	0	308.517747
	n	2	16	0	18
Big Horn	N	0	1182	0	1182
	Length	0	271.087301	0	271.087301
	n	0	18	0	18
Campbell	N	267	1041	0	1308
	Length	97.912343	275.346207	0	373.25855
	n	4	14	0	18
Carbon	N	222	1311	0	1533
	Length	80.064222	419.42926	0	499.493482
	n	3	15	0	18
Fremont	N	1	1891	0	1892
	Length	0.115489	486.099588	0	486.215077
	n	0	18	0	18
Johnson	N	698	862	0	1560
	Length	234.830117	196.282768	0	431.112885
	n	8	10	0	18
Laramie	N	447	966	10768	12181
	Length	170.462425	242.350688	2127.917681	2540.730794
	n	1	1	16	18
Lincoln	N	94	1312	0	1406
	Length	34.119548	284.555377	0	318.674925
	n	1	17	0	18
Natrona	N	402	1516	11520	13438
	Length	124.83999	273.858866	1699.585696	2098.284552
	n	1	2	15	18
Park	N	0	1593	0	1593
	Length	0	365.12326	0	365.12326
	n	0	18	0	18
Platte	N	401	754	0	1155
	Length	145.526417	168.650462	0	314.176879
	n	6	12	0	18
Sheridan	N	228	1470	0	1698
	Length	85.030844	222.495535	0	307.526379
	n	2	16	0	18
Sublette	N	0	1064	0	1064
	Length	0	258.890084	0	258.890084
	n	0	18	0	18
Sweetwater	N	329	1162	0	1491
	Length	154.80921	374.258433	0	529.067643
	n	4	14	0	18
Teton	N	0	785	0	785
	Length	0	226.731063	0	226.731063
	n	0	18	0	18
Uinta	N	223	624	0	847
	Length	74.802936	132.715057	0	207.517993
	n	5	13	0	18

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Reserve Sample

In the event that an original road segment is permanently unavailable, a reserve road segment will be used for data collection. The reserve road segment sample consists of two additional road segments per original road segment selected, resulting in a reserve sample of 576 road segments. The reserve sample is generated by selecting the road segments immediately preceding and immediately following each randomly selected road segment, and constitutes the original sample. Since the road segments in the database for any road type and county are organized geographically by their longitude and latitude values, this implies that the road segments in the reserve sample for a particular road type and county are located in close proximity to each other. For example, if V_i-1 and V_i+1 are the same type as V_i, i.e., primary road type, and located in the same geographical region, they therefore have similar characteristics in terms of traffic flow and population mix. The reserve sample is developed using simple random sampling in which v road segments are selected from V road segments in a particular road classification and county in such a way that every possible combination of v road segments is equally likely to be the sample selected.

For the purposes of data weighting, the reserve road segments inherit all probabilities of selection and weighting components up to and including the road segment stage of selection from the original road segments actually selected.

Data Collection

Site Selection

Each of the road segments in the sample, including those in the reserve sample, was mapped according to the latitude and longitude of their midpoints. Observation sites were identified by the intersections that occurred within the road segment, except when there was no identifiable intersection or interchange. In the latter case, the midpoint within the road segment was selected for observation.

The data collection sites on the road segments were selected in a location approximately fifty yards from any controlled intersection. For interstate highways, data collection will occur on a ramp carrying traffic that is exiting the highway. In every case, the choice of the observation site will be based on maximizing observer safety and line of sight for reliable data collection.

The observed direction of travel was randomly assigned for each road segment. The locations of the data collection sites were described on Site Assignment Sheets for each county, and maps were developed to assist the observers and quality control monitors in travelling to the assigned locations.

Training

Wyoming will hire a minimum of 16 observers, one for each county in the sample, to collect the data. Additional observers will be hired as reserve observers and to assist assigned observers in high traffic sites, defined by known traffic patterns associated with the general area of the sample sites.[6]

Two quality control monitors will be hired. Each will be responsible for half the state. Observers and quality control monitors will be recruited by a contracted firm with preference given to individuals who have experience in past seat belt use surveys or other field data collection. Law enforcement personnel will be excluded from the hiring base to reduce data collection bias.

There will be two quality control monitors assigned to cover the data collectors. Quality control monitors will make unannounced visits at ten percent of the total sites for purposes of determining data reliability through the separate collection of data. The quality control monitors will not serve as both observer and quality control monitor.

Training for observers and quality control monitors will be conducted at a central location in the state prior to the state's pre-survey held the last week in April each year. The training session will include lecture, classroom, and field exercises. Each observer and quality control monitor will be tested through participation at a minimum of three observation test sites to acquire an inter-observer agreement ratio.

Test sites will be selected to represent the types of sites and situations observers will encounter in the field. No actual sites in the sample of roadway segments will be used as test sites. During field training, observers and quality control monitors will record data independently on separate observation forms. Each person will document vehicle type, gender, and seat belt use of drivers and outboard front seat passengers. Individual observations will be compared to the group to calculate the agreement rate. All agreement rates must be sufficiently high (85% or higher) or additional training will be conducted.

At the conclusion of the training, observers and quality control monitors will be given a post-training quiz to ensure they understand the survey terminology, the data collection protocols, and the reporting requirements.

Quality control monitors will be given an additional half-day training session that focuses on their specific duties. These include conducting unannounced site visits to a minimum of two sites (10%) for each observer and reviewing the field protocols with the observers during the visits. The quality control monitors will be available to respond to questions and offer assistance to observers as needed.

The training syllabus can be found in Appendix D.

Data Collection Protocols

Observers will collect data on the seat belt use of drivers and outboard passengers, including children in booster seats,[7] on the weekdays and weekends during the collection period during the first full week of

[6] The definition of high traffic sites includes the number of observations in similar areas from a combination of data from prior Wyoming SBU surveys, and/or demographic information from densely populated areas.

June 2012. Data collection will occur in 45-minute observation periods between the hours of 7:00 a.m. and 6:00 p.m. Start times will be staggered to ensure that a representative number of weekday/weekend sites and rush hour/non-rush hour sites will be included. Observers will cover between four and five sites per day, depending on the accessibility of sites and the travel time needed to arrive at the sites.

All observers will have packets of maps showing the location of assigned sites and data collection forms specific to each assigned site. Additional information will include the road segment names; the location of the intersection within the road segment; the assigned date, time, and direction of travel; and any additional instructions which may apply at any given site. Sites in close geographic proximity to each other will be clustered to increase efficiency of data collection. The first site to be observed within a cluster will be chosen randomly and observations at subsequent sites will be scheduled by geographic proximity to minimize travel within the cluster. The clustering process will be designed so that an observer can cover all the sites within the cluster in a single day.

Some sites will have much heavier traffic than others. An additional observer will be assigned to sites identified as having heavy traffic patterns. One person will be responsible for the visual observation and the second observer will record the observations as verbally provided by the first observer. The objective here is to maximize coverage and minimize those observations where seat belt use cannot be determined due to the volume of traffic. The number of second observers will be determined once all sites have been physically located.

Data Collection

All passenger vehicles, including commercial vehicles weighing less than 10,000 pounds, will be eligible for observation. Observers will be provided data collection forms, a sample of which is included in Appendix C.[8] Cover sheets for each site will provide for documentation of important site information, including the location of the road segment, assigned date, time, direction of traffic flow, lanes observed, start and end times, and additional information as appropriate, including weather conditions, road construction, or any other factors which might affect data collection. Observers will fill in the cover form at each site. If observers need to move to an alternate site, the reasons, along with all other information, will be detailed on the cover sheet.

For each vehicle, observers will record the type of vehicle, the gender of each driver and passenger, the belt status for each driver and passenger, and the vehicle license registration (Wyoming or out-of-state). These variables, along with belt use by county and roadway type, will be analyzed for the state of Wyoming. [9]

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[7] Front seat occupants who are child passengers traveling in child seats with harness straps will not be included in the observations.

[8] The sample form included in the appendix may need some modifications before data collection occurs, but any changes are likely to be minor.

[9] Once all statistical calculations have been completed by Dr. Ibriq, Dr. Keith Fernsler will serve as the analyst of the data. Dr. Fernsler's resume can be found in Appendix A.

Belt status for each driver and passenger will be recorded as follows:

- Belted, which is defined as an observable shoulder belt in front of the occupant's shoulder;
- Not belted, when the shoulder belt is not in front of the occupant's shoulder;
- Unknown, which is the code used for the occupant or occupants when the observer cannot determine whether the driver or outboard passenger is belted.
- A code which indicates that no passenger is present.[10] This code would also apply to children restrained in safety seats with harnesses.

For sites with two-way traffic, the direction of the traffic to be observed will be predetermined through a random selection process. For road segments with two or more lanes of traffic traveling in the same direction, observations will be made in the lane closest to the observer.

Generally, observations will occur from observer vehicles. The vehicles will be parked in safe locations that do not hinder normal traffic and are not a traffic hazard. The objective is for the observer to find a safe site from which drivers and front seat outboard passenger seat belt use can be determined. Other considerations include light conditions and the direction of the sun, so as to minimize glare in making observations.

In some instances, observers will not be able to collect data from their vehicles. In those cases, observers may exit the vehicle and stand as close to the intersection as is safely feasible. Whenever they make observations outside the vehicle, observers will wear safety vests and hard hats as required by Wyoming Department of Transportation policy. This safety equipment will be issued to all observers and quality control monitors by the Wyoming Department of Transportation.

Alternate Sites and Rescheduling

Assigned sites on assigned days and times may not be available for a variety of reasons. When a site is temporarily unavailable due to inclement weather or a crash, data collection will be rescheduled for a similar time of day and day of week. If a site is permanently unavailable, such as on a detoured road segment or within a gated community, then an alternate site, selected as part of the reserve sample, will be used as the permanent replacement. The two alternate locations for each site will be clearly identified and listed on the Site Assignment Sheet. Observers will select one of the reserve sites at random. If the selected reserve site is also permanently unavailable, then the observer will use the second reserve site listed.

Quality Control

Quality control monitors will be randomly assigned to two data collection sites within each of the sixteen counties in the Wyoming sample. At each site, the monitor will evaluate the observer's general performance and will work alongside the observer to ensure that the observer is following all survey

[10] It is possible that separate lines of data for drivers and passengers during the data analysis stage may be created. This process will make it easier to combine drivers and passengers when reporting on seat belt use for all vehicle occupants.

protocols. The quality control monitor will include in the performance evaluation all or more of the following:

- Was the observer on time at the assigned sites?
- Did the observer complete the cover sheets and observation forms correctly?
- Were the observer's observations of seat belt use accurate?

The quality control monitors will prepare full reports on each of their site visits within a reasonable time after a site visit occurs. If there are problems with an observer's performance, the monitor should report these problems to the survey supervisor immediately so problems can be corrected.

Quality control monitors will be especially sensitive to any indications that an observer may have falsified data. Any such falsification will be reported by the monitor immediately so that the observer can be replaced by a reserve observer. This back-up observer will be assigned to revisit all sites where it is proven or suspected that falsification of data may have occurred.

Under normal circumstances, observers will be required to mail completed observation forms to the data entry supervisor at DLN Consulting, Inc. when observations are completed for all sites within the observer's assigned county, provided that no problems are identified by the quality control monitors for any given observer. When problems are identified, observers may be required to return forms from a given site immediately after observations are completed for that site so that the forms can be reviewed. Also, forms may need to be returned as soon as possible if either the quality control monitor or the observer encounters a large number of observations where seat belt use is coded as "unknown ."

The data entry supervisor will review all returned forms from the observers to ascertain if the rate of observations coded as "unknown" for seat belt use approximates or exceeds 10 percent of the observations for any given site. If this occurs, the observer will be sent back to any such site for an additional observation period.

Imputation, Estimation, and Variance

This section includes a discussion of the sampling weights and formulas; the procedures for adjustments for "nonresponse;" the estimators, with formulas; and the variance estimation.

Imputation

No imputation will be done on missing data.

Variance Estimation

A stratified multistage sample design has been proposed, and as such, direct variance estimation for the seat belt use estimator can be a complicated mathematical process, in addition to being time-consuming and costly. For the variance estimator, the ratio estimation procedure in *The Statistical Package for the Social Sciences (SPSS)* software package, its corresponding *Complex Sample Module for* SPSS, and the joint PSU selection probabilities to calculate the seat belt use rate and its variance will be employed.

Estimation

The following computation is based on the NHTSA guidelines provided in [1]. NHTSA provides two seat belt rate estimators: a ratio estimator, and an estimator using road segment level VMT. DLN implements the ratio estimator to compute the seat belt rate use.

Notation

The following notations are used in developing the seat use rate estimator

- The following are the subscripts used:
  - c used for county (PSU)
  - h used for road segment strata.
  - i used for road segment.
  - j used for time segment.
  - k used for road direction.
  - l used for the lane.
  - m used for vehicle.
  - n used for front seat occupants.
- π denote the inclusion probability, and
  - π_c represents the inclusion probability for a county.
  - $\pi_{hi|c}$ represents the inclusion probability for road segment.
  - $\pi_{j|chi}$ represents the inclusion probability for time segment.
  - $\pi_{k|chij}$ represents the inclusion probability for direction
  - $\pi_{l|chij}$ represents the inclusion probability for lane
  - $\pi_{m|chijl}$ represents the inclusion probability for vehicle.
- $w_{chijklm}$ denote the sampling weight for vehicle m and is computed as follows:

$$w_{chijklm} = \frac{1}{\pi_{chijklm}} \tag{1}$$

$\pi_{chijklm}$ in Equation (1) represents the overall vehicle inclusion probability which is the product of the selection probabilities at all stages in the sample design. $\pi_{chijklm}$ is computed as follows:

$$\pi_{chijklm} = \pi_c \cdot \pi_{hi|c} \cdot \pi_{j|chi} \cdot \pi_{k|chij} \cdot \pi_{l|chij} \cdot \pi_{m|chijl}$$

- *Length* denote the length of the road segment.
- p denote the rate estimator.

Nonresponse Adjustment

Given the data collection protocol described in this plan, including the provision for the use of alternate observation sites, road segments with non-zero eligible volume and yet zero observations conducted should be a rare event. Nevertheless, if eligible vehicles passed an eligible site or an alternate eligible site during the observation time but no usable data were collected for some reason, then this site will be considered as a "non-responding site." The weight for a non-responding site will be distributed over other sites in the same road type in the same PSU. Let

$$\pi_{ehi} = \pi_e \cdot \pi_{k|e}$$

be the road segment selection probability, and

$$w_{ehi} = \frac{1}{\pi_{ehi}}$$

be the road segment weight. The nonresponding site nonresponse adjustment factor:

$$f_{eh} = \frac{\sum_{\forall\ i}\ w_{ehi}}{\sum_{responding\ i}\ w_{ehi}}$$

will be multiplied to all weights of non-missing road segments in the same road type of the same county and the missing road segments will be dropped from the analysis file. However, if there were no vehicles passing the site during the selected observation time (60 minutes), then this is simply an empty block at this site and this site will not be considered as a nonresponding site, and will not require nonresponse adjustment.

In rare cases, the Nonresponse Adjustment procedure described above fails. For example, if in a county, only one road segment was drawn from a road type and that this segment was nonresponding and both alternate segments were unavailable, then the nonresponse adjustment will not work. In such a rare case, this cell would be collapsed with a cell of a different road type within the same county.

Seat Use Rate Estimator

The first stratum rate estimator can be obtained using the following equation:

$$p_{ehi} = \frac{\sum_{\forall\ ehijklmn}\ w_{ehijklm}\ Length_{ehi}\ y_{ehijklmn}}{\sum_{\forall\ ehijklmn}\ w_{ehijklm}\ Length_{ehi}} \tag{2}$$

where

$$y_{ehijklmn} = \begin{cases} 1 & if\ belt\ is\ used \\ 0 & otherwise \end{cases} \tag{3}$$

In the proposed sample design, it is assumed that after the selecting the road segment i, the selection probabilities for all vehicles at segment i are equal. Hence, $w_{jklmn|chi}$ values for the same road segment i are equal and can be cancelled in the calculation of the first seat belt rate use estimator. Furthermore, since the $Length_{chi}$ values for all vehicles at road segment i are the same, the length $Length_{chi}$ can also be cancelled from the first seat belt rate use estimator. Thus, the first stratum rate estimator for road segment i that is provided in equation (2) reduces to the following:

$$p_{chi} = \frac{1}{n_{chi}} \sum_{\forall jklmn \in chi} y_{chijklmn} \tag{4}$$

where n_{chi} is the sample size at road segment i.

Based on the above analysis, our design does not record amount of observation time, the number of directions, the number of lanes, and the number of vehicles passing the site i.

For the second stratum, namely the road type, the following formula is used:

$$p_{ch} = \frac{\sum_{\forall\ i\ in\ h} \ w_{chi}\ Length_{chi}\ p_{chi}}{\sum_{\forall\ i\ in\ h} \ w_{chi}\ Length_{chi}} \tag{5}$$

where

$$w_{chi} = \frac{1}{\pi_{chi}} \tag{6}$$

Another method can be used for the calculation of P_{chi}. Since stratified random sampling is proposed in this methodology where the sample is selected by simple random sampling, that is random sampling without replacement in each stratum, the following equation can be used to calculate the rate estimator at stratum h.

$$p_{ch} = \frac{1}{n_h} \sum_{i=1}^{n_h} p_{chi} \tag{7}$$

where n_h is number of road segments each road stratum.

For the county, the following rate estimator will be used:

$$p_c = \frac{\sum_{\forall\ h\ in\ c} \ w_{ch} \cdot Length_{ch} \cdot p_{ch}}{\sum_{\forall\ h\ in\ c} \ w_{chi} \cdot Length_{ch}} \tag{8}$$

where

$$w_{ch} = \frac{1}{\pi_{ch}} \tag{9}$$

The following equation can also be used to compute p_c.

$$p_c = \frac{1}{n_c} \sum_{i=1}^{n_c} p_{ch} \tag{10}$$

where n_c is number of road strata in the county.

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For the state, the following rate estimator will be used:

$$p = \frac{\sum_{\forall\, c} \; w_c \cdot Length_c \cdot p_c}{\sum_{\forall\, c} \; w_c \cdot Length_c} \tag{11}$$

where

$$w_c = \frac{1}{\pi_c} \tag{12}$$

The following equation can also be used to compute p.

$$p = \frac{1}{n} \sum_{i=1}^{n} p_c \tag{13}$$

where n is number of counties in the frame.

Appendix A

Resumés

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12/27/2011

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CURRENT EMPLOYMENT ACTIVITIES

Research Analyst, Evaluation Research, both quantitative and qualitative. Survey and Observational Research. Focus Group Design and Analysis. Data Analysis and Report Writing. Resident Analyst at DLN Consulting, Inc., 1999 – Present.

EDUCATION AND PROFESSIONAL ACTIVITIES

AB ('67) and MA ('72) Indiana University, Bloomington, IN; Ph.D. University of Montana, 1979.

College Teaching from 1968 – 1973 and 1978 - 2008 at St. Ambrose College (Iowa), Marycrest College (Iowa), Christopher Newport College (Virginia), and Dickinson State University. Several Bush Foundation Faculty Development Awards at Dickinson State; Social Science Department Chair (five years); DSU Professor Emeritus, 2008 – Present.

Membership in American Sociological Association (1976 – Present); Charter Member of ASA Teaching Resource Center; Author of two editions of the manual for Deviant Behavior courses. American Association of Public Opinion Research membership, 2003 – Present.

Knowledge of Microsoft Word and Excel, the Statistical Package for the Social Sciences; analysis of Census Data; and knowledge of the General Social Survey.

Specializations in sociology include methodology, theory, deviant behavior, criminology, sociological practice and public sociology.

RECENT CONSULTING ACTIVITIES

Wyoming seat belt pre-surveys and main surveys, research design and methodology development, data analysis, report writing (Wyoming Department of Transportation, 2006-2011; currently assisting in development of 2011 methodology under new Federal rules.

North Dakota Workforce Safety and Insurance, Employer and Injured Worker Surveys; research design, data analysis, and report writing; 2009 – present.

Focus group design, observation, analysis and report writing on topic of underage drinking (youth, law enforcement, educators, university students),

Community Action Partnership.

Alcohol, Tobacco and Other Drugs, data analysis and report writing, Dickinson Community Action Program.

North Dakota Seat Belt Use Surveys: Research design and data analysis consultation, 1999-2009, including major redesign in 2006; report writing; data analysis using SPSS.

CURRENT COMMUNITY SERVICE

Roughrider Country Kiwanis Club; First Congregational Church, UCC; North Dakota Public Employees Association.

REFERENCES

Deb Nelson, CEO and Owner, DLN Consulting, Inc. 2493 4th Ave W, Dickinson, ND 58601 (701/483-2801). deb@dlnconsulting.com

Becky Byzewski, SWCSC Coordinator, Community Action Partnership, 202 Villard St W, Dickinson, ND 58601 (701/227-0131).

Jamil Ibriq, Ph.D., Assistant Professor, Department of Mathematics and Computer Science, Dickinson State University, 291 Campus Drive, Dickinson, ND 58601 (701/483-2333) jamil.ibriq@dickinsonstate.edu

Steven Doherty, Ph.D., Assistant Professor of Political Science, Department of Social Science, Dickinson State University, 291 Campus Drive, Dickinson, ND 58601 (701/483-2065) steven.doherty@dickinsonstate.edu

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Appendix B

Selected Road Segments within Each County and Their Probabilities of Selection

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STATEFP	COUNTYFP	MTFCC	FULLNAME	TLID	Alt_Name	DIVROAD	DECKEDROAD	Longitude	Latitude	SegLen_Mi	SRSWOR
56	1	S1100	I- 80	168749730	US Hwy 30	Y	N	-105.378496	41.145686	0.831622	0.01342282
56	1	S1100	I- 80	604512124		N	N	-105.976683	41.455622	0.185331	0.01342282
56	1	S1200	US Hwy 30	604512235	US Hwy 30	N	N	-105.613789	41.436288	0.487287	0.01612903
56	1	S1200	S 3rd St	168748704	US Hwy 287	N	N	-105.591913	41.28322	0.082576	0.01612903
56	1	S1200	State Hwy 130	168722835		N	N	-106.287656	41.350363	0.427204	0.01612903
56	1	S1200	S 3rd St	604506806	US Hwy 287	N	N	-105.594072	41.294338	0.176844	0.01612903
56	1	S1200	Snowy Range Rd	168750353	State Hwy 130	N	N	-106.138426	41.297205	0.029432	0.01612903
56	1	S1200	N 3rd St	168757040	N 3rd St	N	N	-105.591733	41.328609	0.047988	0.01612903
56	1	S1200	State Hwy 13	168722017		N	N	-106.005865	41.719918	0.045972	0.01612903
56	1	S1200	N 3rd St	604510122	N 3rd St	N	N	-105.589465	41.349592	0.023102	0.01612903
56	1	S1200	Snowy Range Rd	168738815	State Hwy 130	N	N	-105.695098	41.328608	0.311022	0.01612903
56	1	S1200	Happy Jack Rd	168744760	State Hwy 210	N	N	-105.309387	41.191091	0.653912	0.01612903
56	1	S1200	Bus I- 80	168756901	US Hwy 30	N	N	-105.568899	41.309599	0.005935	0.01612903
56	1	S1200	State Hwy 10	168745008		N	N	-105.994902	41.032165	0.213298	0.01612903
56	1	S1200	US Hwy 30	168737539	US Hwy 30	N	N	-105.618617	41.445781	0.55288	0.01612903
56	1	S1200	State Hwy 11	168755506		N	N	-106.090934	41.193713	0.3791	0.01612903
56	1	S1200	State Hwy 210	604505747		N	N	-105.438008	41.239964	0.011093	0.01612903
56	1	S1200	N 4th St	168755958	Co Rd 67	N	N	-105.975505	41.75157	0.062117	0.01612903
56	3	S1200	US Hwy 14 E	605633431		N	N	-107.749401	44.549772	0.01933	0.01522843
56	3	S1200	US Hwy 14A E	180494288		NA	NA	-108.222314	44.854737	0.237779	0.01522843
56	3	S1200	US Hwy 14A E	180493968		NA	NA	-108.320407	44.840598	0.062603	0.01522843
56	3	S1200	US Hwy 14A E	605624056		NA	NA	-108.354114	44.840581	0.053415	0.01522843
56	3	S1200	State Hwy 32	180493545		N	N	-108.415772	44.800116	0.006963	0.01522843
56	3	S1200	State Hwy 32	605621594		N	N	-108.587279	44.732075	0.173849	0.01522843
56	3	S1200	US Hwy 14	180484672		N	N	-108.015517	44.49378	0.057181	0.01522843
56	3	S1200	State Hwy 30	605616914		N	N	-108.339589	44.417795	0.321328	0.01522843
56	3	S1200	3rd St E	180505210	US Hwy 310	N	N	-108.46286	44.87988	0.015607	0.01522843
56	3	S1200	US Hwy 14 Alt	626936823		Y	N	-108.016292	44.79296	0.353805	0.01522843
56	3	S1200	US Hwy 16	180500795		N	N	-107.224785	44.177728	0.893127	0.01522843
56	3	S1200	US Hwy 14 Alternate Rte	180501932		N	N	-108.376118	44.839933	0.099877	0.01522843
56	3	S1200	US Hwy 310	180490602		N	N	-108.584372	44.89102	0.036785	0.01522843
56	3	S1200	State Hwy 32	180506937		N	N	-108.49826	44.776846	0.166397	0.01522843
56	3	S1200	State Hwy 433	180507017		N	N	-107.938854	44.197309	0.474787	0.01522843
56	3	S1200	Marshall St	180508412	State Hwy 31	N	N	-107.962173	44.274582	0.04248	0.01522843
56	3	S1200	State Hwy 433	180499656		N	N	-107.979944	44.249642	0.248082	0.01522843
56	3	S1200	C St	180485070	State Hwy 36	N	N	-108.041229	44.381112	0.071452	0.01522843

56	5	S1100	I- 90	607415957	I- 90	NA	NA	-105.248589	44.294692	0.2338	0.01498127
56	5	S1100	I- 90	607413318	I- 90	NA	NA	-105.383825	44.295056	0.565923	0.01498127
56	5	S1100	I- 90	146326960	US Hwy 14	N	N	-105.352327	44.289556	0.032443	0.01498127
56	5	S1100	I- 90	146347844	US Hwy 14	N	N	-105.378563	44.294171	0.039906	0.01498127
56	5	S1200	State Hwy 59	146348156		N	N	-105.526384	44.352279	0.035885	0.01344861
56	5	S1200	E 2nd St	146325159	E 2nd St	N	N	-105.489034	44.292555	0.006099	0.01344861
56	5	S1200	US Hwy 14	146349851	State Hwy 59	N	N	-105.529311	44.296796	0.051126	0.01344861
56	5	S1200	State Hwy 50	146329404		N	N	-105.62461	44.181178	0.128849	0.01344861
56	5	S1200	State Hwy 50	146334309		N	N	-105.724815	43.993419	0.268938	0.01344861
56	5	S1200	State Hwy 50	146353809		N	N	-105.719015	44.07693	0.152303	0.01344861
56	5	S1200	State Hwy 59	607396191		N	N	-105.464887	44.022166	0.220383	0.01344861
56	5	S1200	State Hwy 50	146333806		N	N	-105.750504	43.925684	0.026796	0.01344861
56	5	S1200	US Hwy 14	146321054	US Hwy 16	N	N	-105.538015	44.391359	0.066024	0.01344861
56	5	S1200	State Hwy 50	146353348		N	N	-105.711349	44.114846	0.837201	0.01344861
56	5	S1200	State Hwy 51	607406131		N	N	-105.283045	44.288769	0.020793	0.01344861
56	5	S1200	US Hwy 14	146346688	State Hwy 59	N	N	-105.530279	44.30921	0.060938	0.01344861
56	5	S1200	State Hwy 59	635532528		N	N	-105.44592	43.969271	0.227319	0.01344861
56	5	S1200	State Hwy 387	146342308		N	N	-105.979091	43.5588	0.24863	0.01344861
56	7	S1100	I- 80	611197576		N	N	-106.521149	41.752786	0.67332	0.01351351
56	7	S1100	I- 80	148702972	I- 80	N	N	-106.948342	41.751102	0.026198	0.01351351
56	7	S1100	I- 80	148729076	I- 80	Y	N	-107.373738	41.786936	0.145819	0.01351351
56	7	S1200	3rd St	622138133	US Hwy 287	N	N	-107.22921	41.807878	0.184918	0.01144165
56	7	S1200	State Hwy 70	148737136		N	N	-107.034068	41.156663	0.828525	0.01144165
56	7	S1200	State Hwy 789	148752555		N	N	-107.730909	41.291091	1.697048	0.01144165
56	7	S1200	State Hwy 130	148712671		N	N	-106.760293	41.392624	0.460732	0.01144165
56	7	S1200	State Hwy 130	148715207		N	N	-106.651357	41.343293	0.077775	0.01144165
56	7	S1200	State Hwy 230	148718040		N	N	-106.610856	41.172584	0.416111	0.01144165
56	7	S1200	State Hwy 220	148695417		N	N	-107.243952	42.428181	0.229884	0.01144165
56	7	S1200	N Higley Blvd	148729803	US Hwy 287 Byp	N	N	-107.215405	41.795669	0.069431	0.01144165
56	7	S1200	State Hwy 72	148707454		N	N	-106.453685	41.718692	0.74372	0.01144165
56	7	S1200	Lincoln Hwy	148702076	US Hwy 30	N	N	-106.277868	41.901903	1.701502	0.01144165
56	7	S1200	State Hwy 230	148743798		N	N	-106.701352	41.218277	0.116587	0.01144165
56	7	S1200	State Hwy 789	148736405		N	N	-107.693147	41.220518	0.326679	0.01144165
56	7	S1200	State Hwy 230	148714894		N	N	-106.776349	41.255209	0.053899	0.01144165
56	7	S1200	State Hwy 487	148727630		N	N	-106.186809	42.097454	1.894335	0.01144165
56	7	S1200	State Hwy 130	148716025		N	N	-106.496624	41.32687	0.364838	0.01144165

56	13	S1200	Fremont St	628694209	Fremont St	N	N	-108.739361	42.824433	0.041387	0.00951877
56	13	S1200	US Hwy 287	148440001	State Hwy 789	N	N	-108.355944	42.651302	0.917551	0.00951877
56	13	S1200	S Fifth St	148435866	S Fifth St	N	N	-108.735391	42.83345	0.075688	0.00951877
56	13	S1200	US Hwy 287	634121244	US Hwy 287	N	N	-107.749138	42.488102	0.108102	0.00951877
56	13	S1200	US Hwy 26	148495718		N	N	-108.56709	43.112365	0.083409	0.00951877
56	13	S1200	US Hwy 26	148494149	US Hwy 26	N	N	-109.43973	43.416155	0.271117	0.00951877
56	13	S1200	US Hwy 20	148486152	State Hwy 789	N	N	-108.160355	43.394654	0.521853	0.00951877
56	13	S1200	Blue Sky Hwy	148473776	Blue Sky Hwy	N	N	-108.766271	43.086613	0.493145	0.00951877
56	13	S1200	US Hwy 26	148485578	US Hwy 26	N	N	-109.940564	43.65715	0.666155	0.00951877
56	13	S1200	Gas Hills Rd	148433925	State Hwy 136	N	N	-108.336608	42.993204	0.029512	0.00951877
56	13	S1200	US Hwy 26	148495394		N	N	-108.879131	43.224349	0.382653	0.00951877
56	13	S1200	US Hwy 20	148468455	State Hwy 789	N	N	-108.115049	43.35974	0.359517	0.00951877
56	13	S1200	US Hwy 26	148486961		N	N	-108.920264	43.213638	0.606161	0.00951877
56	13	S1200	US Hwy 287	148429899	State Hwy 789	N	N	-107.580341	42.462137	0.201633	0.00951877
56	13	S1200	US Hwy 20	148448781	US Hwy 20	N	N	-107.689438	43.151979	0.292919	0.00951877
56	13	S1200	Missouri Valley Rd	148470962	Missouri Valley Rd	N	N	-108.610016	43.214772	0.456474	0.00951877
56	13	S1200	State Hwy 789	148433053		N	N	-108.553074	42.911615	0.035458	0.00951877
56	13	S1200	State Hwy 789	148432511		N	N	-108.569408	42.910442	0.085218	0.00951877
56	19	S1100	I- 25	624471389	I- 25	Y	N	-106.646302	43.995016	0.300971	0.01146132
56	19	S1100	I- 25	147364609	US Hwy 87	Y	N	-106.533561	43.598253	0.116223	0.01146132
56	19	S1100	I- 25	147364620	US Hwy 87	Y	N	-106.608497	43.644685	0.809497	0.01146132
56	19	S1100	I- 90	635198026		Y	N	-106.160823	44.212252	0.230765	0.01146132
56	19	S1100	I- 90	635203662		Y	N	-106.306087	44.217749	0.201378	0.01146132
56	19	S1100	I- 90	147303287		Y	N	-106.156158	44.212943	0.018582	0.01146132
56	19	S1100	I- 90	147364484		Y	N	-106.390326	44.235006	0.124988	0.01146132
56	19	S1100	I- 90	147365807		Y	N	-106.104178	44.219162	0.078479	0.01146132
56	19	S1200	Sussex Rd	147321002	Sussex Rd	N	N	-106.297982	43.698467	0.019054	0.01160093
56	19	S1200	N Main St	624035496	State Hwy 196	N	N	-106.697436	44.360852	0.066349	0.01160093
56	19	S1200	N Main St	147299782	State Hwy 196	N	N	-106.698941	44.34753	0.093436	0.01160093
56	19	S1200	Old Hwy 87	147375368	Old Hwy 87	N	N	-106.70217	44.152286	0.414683	0.01160093
56	19	S1200	Sussex Rd	147320405	State Hwy 1002	N	N	-106.52221	43.69458	0.231502	0.01160093
56	19	S1200	US Hwy 16	147301629		N	N	-106.917457	44.161293	0.182867	0.01160093
56	19	S1200	US Hwy 16	147301697		N	N	-106.92537	44.233648	0.042325	0.01160093
56	19	S1200	US Hwy 16	147330545		N	N	-106.686296	44.354195	0.03269	0.01160093
56	19	S1200	US Hwy 16	617881865		N	N	-106.7265	44.341227	0.069923	0.01160093
56	19	S1200	Sussex Rd	147320871	State Hwy 1002	N	N	-106.373653	43.706753	0.085488	0.01160093

56	21	S1100	I- 25	622388802	I- 25	N	N	-104.838174	41.198768	0.794488	0.00223714
56	21	S1200	E Four Mile Rd	624043730	E Four Mile Rd	N	N	-104.81166	41.189258	0.093536	0.0010352
56	21	S1400	Draper Rd	160176358		N	N	-104.822959	41.096529	0.061319	0.00148588
56	21	S1400	Harriman Rd	160145448	Co Rd 102	N	N	-105.255088	41.000815	0.014499	0.00148588
56	21	S1400	Hirsig Rd	160162024	Hirsig Rd	N	N	-105.164265	41.552454	0.505235	0.00148588
56	21	S1400	E 5th St	160151376		N	N	-104.793841	41.128595	0.05956	0.00148588
56	21	S1400	Foothills Rd	160148179		N	N	-104.773765	41.169918	0.052044	0.00148588
56	21	S1400	Clear View Cir	160171828		N	N	-104.797632	41.199493	0.174119	0.00148588
56	21	S1400	Jack Rabbit Rd	160148102		N	N	-104.772682	41.195892	0.201315	0.00148588
56	21	S1400	Douglas St	160148214		N	N	-104.769206	41.167367	0.028956	0.00148588
56	21	S1400	E 20th St	160149935		N	N	-104.810315	41.138992	0.061455	0.00148588
56	21	S1400	Bus Park	160172654	Bus Park	N	N	-104.057737	41.182368	0.016854	0.00148588
56	21	S1400	Carroll Ave	160147641		N	N	-104.827405	41.165087	0.123116	0.00148588
56	21	S1400	Monroe Ave	160152283		N	N	-104.758935	41.135548	0.125386	0.00148588
56	21	S1400	Co Rd 138	160160311		N	N	-104.566438	41.120511	0.223542	0.00148588
56	21	S1400	McDonald Rd	160176882		N	N	-105.067974	41.152391	0.087434	0.00148588
56	21	S1400	McAllister Ln	160179037		N	N	-104.808831	41.174821	0.015039	0.00148588
56	21	S1400	Military Rd	608318324		N	N	-104.885953	41.13547	0.003858	0.00148588
56	23	S1100	US Hwy 30	611001502		NA	NA	-110.063887	41.684366	0.185933	0.0106383
56	23	S1200	Hwy 238	130299361	State Hwy 238	N	N	-110.997509	42.736914	0.321042	0.01295732
56	23	S1200	US Hwy 30	130309240		N	N	-110.975366	41.842883	2.388625	0.01295732
56	23	S1200	US Hwy 26	130324547	US Hwy 89A	N	N	-111.02474	43.180649	0.251294	0.01295732
56	23	S1200	US Hwy 89	130316044	US Hwy 89A	N	N	-111.017462	43.167187	0.031132	0.01295732
56	23	S1200	US Hwy 26	130316740	US Hwy 89	N	N	-110.933792	43.191983	0.115793	0.01295732
56	23	S1200	Hwy 236	611004110	State Hwy 236	N	N	-110.961819	42.692569	0.058369	0.01295732
56	23	S1200	US Hwy 189	611001556		N	N	-110.571305	41.633032	0.036267	0.01295732
56	23	S1200	State Hwy 89	635503417		N	N	-111.04699	42.347346	0.288851	0.01295732
56	23	S1200	Hwy 237	130297921	State Hwy 237	N	N	-110.950765	42.793945	0.227784	0.01295732
56	23	S1200	State Hwy 239	619637613		N	N	-111.030837	42.982527	0.060775	0.01295732
56	23	S1200	US Hwy 30	130324450		N	N	-110.954794	41.923748	0.658579	0.01295732
56	23	S1200	US Hwy 89	611008956	US Hwy 89A	N	N	-111.025859	43.13296	0.053011	0.01295732
56	23	S1200	State Hwy 235	130301475		N	N	-110.242527	42.261535	0.421719	0.01295732
56	23	S1200	US Hwy 30	130301732		N	N	-110.981435	42.153542	0.502008	0.01295732
56	23	S1200	US Hwy 26	130316677	US Hwy 89	N	N	-110.943822	43.192256	0.401259	0.01295732
56	23	S1200	US Hwy 89	611008950	US Hwy 89A	N	N	-111.026041	43.133785	0.062243	0.01295732
56	23	S1200	US Hwy 189	130303332		N	N	-110.185824	42.179875	0.328363	0.01295732

56	25	S1100	I- 25	149010081	I- 25	N	N	-106.335419	43.056092	0.413891	0.00248756
56	25	S1200	Cy Ave	149022110	Cy Ave	N	N	-106.366423	42.82324	0.017426	0.00131926
56	25	S1200	Cole Creek Rd	149038958	Cole Creek Rd	N	N	-106.188882	42.891713	0.027375	0.00131926
56	25	S1400	Co Rd 607	149017131		N	N	-106.154287	42.66765	0.463712	0.00130208
56	25	S1400	E A St	607727858		N	N	-106.300759	42.85147	0.033396	0.00130208
56	25	S1400	Star Ln	617962807		NA	NA	-106.340114	42.849249	0.007403	0.00130208
56	25	S1400	S 5th Ave	149021251		N	N	-106.392876	42.84351	0.0661	0.00130208
56	25	S1400	Gooder Ave	149019813		N	N	-106.45744	42.894276	0.202048	0.00130208
56	25	S1400	Lakeshore Dr	607699609	Lakeshore Dr	N	N	-106.778388	42.529729	0.036057	0.00130208
56	25	S1400	E 13th St	149024110		N	N	-106.313672	42.837542	0.017916	0.00130208
56	25	S1400	Co Rd 602	149026356		N	N	-106.225292	42.853349	0.012091	0.00130208
56	25	S1400	N 6 Mile Rd	149020050	Co Rd 119	N	N	-106.434416	42.899062	0.408276	0.00130208
56	25	S1400	Second St	607727056		N	N	-106.365773	42.841959	0.030995	0.00130208
56	25	S1400	Oregon Trl	148992543	Turkey Track Rd	N	N	-107.479794	42.473862	0.38719	0.00130208
56	25	S1400	Missouri Ave	607718345	Missouri Ave	N	N	-106.29305	42.83014	0.109077	0.00130208
56	25	S1400	N East St	149039592		N	N	-106.24357	43.414304	0.02002	0.00130208
56	25	S1400	Goose Egg Cir	607701450		N	N	-106.515294	42.760538	0.070234	0.00130208
56	25	S1400	Granada Ave	617963960		N	N	-106.342498	42.814829	0.029059	0.00130208
56	29	S1200	Beartooth Hwy	612523424	US Hwy 212	N	N	-109.633519	44.922577	1.645067	0.01129944
56	29	S1200	Chief Joseph Hwy	612522810	Chief Joseph Hwy	N	N	-109.644082	44.866408	0.069016	0.01129944
56	29	S1200	N Fork Hwy	627160085	US Hwy 14	N	N	-109.619865	44.463599	0.38333	0.01129944
56	29	S1200	Rd 18	149194387	Badger Basin Rd	N	N	-108.916337	44.703963	0.240759	0.01129944
56	29	S1200	N Fork Hwy	149206406	US Hwy 14	N	N	-109.911367	44.482239	0.238308	0.01129944
56	29	S1200	E Entrance Rd	626966347	US Hwy 14	N	N	-110.363413	44.560993	0.680702	0.01129944
56	29	S1200	17th St	612520875	17th St	N	N	-109.054089	44.51858	0.033156	0.01129944
56	29	S1200	Hwy 114	612522765	Hwy 114	N	N	-108.665672	44.875669	0.469234	0.01129944
56	29	S1200	US Hwy 14 Alt	624469118		N	N	-108.683333	44.77285	0.003999	0.01129944
56	29	S1200	Ln 13	612517654	State Hwy 295	N	N	-108.750575	44.695729	0.017968	0.01129944
56	29	S1200	W Coulter Ave	149194643	W US Hwy 14A	N	N	-108.781521	44.744254	0.145786	0.01129944
56	29	S1200	Powell Hwy	612521823	Powell Hwy	N	N	-108.926863	44.679533	0.055645	0.01129944
56	29	S1200	State Hwy 120	149212941		N	N	-108.823272	44.12936	0.036804	0.01129944
56	29	S1200	State Hwy 294	149202036	State Hwy 294	N	N	-109.016527	44.855058	0.095278	0.01129944
56	29	S1200	Rd 9	612468763	Hwy 295	N	N	-108.75993	44.7847	0.219583	0.01129944
56	29	S1200	US Hwy 191	149216474		N	N	-111.055155	44.933339	0.096348	0.01129944
56	29	S1200	W Coulter Ave	625076103	W US Hwy 14A	N	N	-108.776052	44.745846	0.085806	0.01129944
56	29	S1200	R 9	612522218	Rd 9	N	N	-108.759912	44.741851	0.051305	0.01129944

56	31	S1100	I- 25	160436166	I- 25	N	N	-105.033471	42.488013	0.150221	0.01496259
56	31	S1100	I- 25	606897806	I- 25	NA	NA	-105.002408	42.181889	0.336848	0.01496259
56	31	S1100	I- 25	604828586	I- 25	N	N	-104.828994	41.694975	1.05719	0.01496259
56	31	S1100	I- 25	606897551	I- 25	NA	NA	-104.791379	41.788735	0.107012	0.01496259
56	31	S1100	I- 25	604829666	I- 25	NA	NA	-105.048003	42.280869	0.749704	0.01496259
56	31	S1100	I- 25	618035322	I- 25	NA	NA	-104.96093	42.014929	0.189146	0.01496259
56	31	S1200	N Pioneer Rd	604823280	N Pioneer Rd	N	N	-104.750109	41.89528	0.703969	0.01591512
56	31	S1200	Hartville Hwy	160432353	State Hwy 270	N	N	-104.724922	42.320239	0.333096	0.01591512
56	31	S1200	Lake Side Dr	604817760	Lake Side Dr	N	N	-104.747501	42.33979	1.191051	0.01591512
56	31	S1200	US Hwy 26	624031047		N	N	-104.847177	42.248395	0.091746	0.01591512
56	31	S1200	W Whalen St	604820352	US Hwy 26	N	N	-104.748604	42.269744	0.140121	0.01591512
56	31	S1200	State Hwy 34	160445492		N	N	-105.082689	41.953594	0.428089	0.01591512
56	31	S1200	N Wheatland Hwy	160445589	State Hwy 320	N	N	-104.936079	42.12393	0.519234	0.01591512
56	31	S1200	S Glendo Hwy	160431220	S Glendo Hwy	N	N	-104.992648	42.360525	0.223112	0.01591512
56	31	S1200	Hartville Hwy	160441567	State Hwy 270	N	N	-104.694803	42.501143	0.777523	0.01591512
56	31	S1200	el Rancho Rd	604820453	el Rancho Rd	N	N	-105.049222	42.271762	0.09635	0.01591512
56	31	S1200	Slater Rd	160442550	State Hwy 314	N	N	-104.830403	41.871476	0.442447	0.01591512
56	31	S1200	Iron Mountain Rd	160425201	State Hwy 211	N	N	-104.836275	41.756586	0.136607	0.01591512
56	33	S1100	I-90	629143491		NA	NA	-106.936971	44.802617	0.025825	0.00877193
56	33	S1100	I- 90	634774573		NA	NA	-106.828618	44.582922	3.868549	0.00877193
56	33	S1200	US Hwy 14	147411270	US Hwy 16	N	N	-106.534251	44.567071	0.032397	0.01088435
56	33	S1200	Big Goose Rd	147421444	State Hwy 331	N	N	-107.062538	44.76667	0.019143	0.01088435
56	33	S1200	E 5th St	605384408	State Hwy 336	N	N	-106.955285	44.806844	0.031902	0.01088435
56	33	S1200	US Hwy 14	147398734		N	N	-107.364785	44.799827	0.737105	0.01088435
56	33	S1200	Coffeen Ave	147408472	Coffeen Ave	N	N	-106.94748	44.736972	0.051388	0.01088435
56	33	S1200	Front St	147409609	US Hwy 14	N	N	-106.382235	44.637732	0.032159	0.01088435
56	33	S1200	US Hwy 14	147400215		N	N	-107.500689	44.714898	0.029523	0.01088435
56	33	S1200	State Hwy 345	147396185		N	N	-107.321543	44.948465	0.756063	0.01088435
56	33	S1200	N Piney Rd	147420545	N Piney Rd	N	N	-106.900559	44.578041	0.177454	0.01088435
56	33	S1200	US Hwy 87	605368387		N	N	-106.885561	44.63175	0.031174	0.01088435
56	33	S1200	Fish Hatchery Rd	147419891	State Hwy 194	N	N	-106.918967	44.568667	0.147106	0.01088435
56	33	S1200	Big Goose Rd	147399687	State Hwy 331	N	N	-107.070202	44.7648	0.393307	0.01088435
56	33	S1200	State Hwy 335	147408335		N	N	-106.980318	44.700411	0.029008	0.01088435
56	33	S1200	US Hwy 14	147398523		N	N	-107.476861	44.77952	0.069219	0.01088435
56	33	S1200	W Loucks St	614721355	W Loucks St	N	N	-106.973517	44.796617	0.05157	0.01088435
56	33	S1200	Main St	147417308	Main St	N	N	-107.262715	44.871275	0.020451	0.01088435

56	35	S1200	Big Piney Calpet Rd	149346148	Big Piney Calpet Rd	N	N	-110.283783	42.393018	0.195383	0.01691729
56	35	S1200	Big Piney Calpet Rd	149347154	Big Piney Calpet Rd	N	N	-110.284863	42.37851	0.385055	0.01691729
56	35	S1200	State Hwy 352	149330874		N	N	-109.989113	42.956827	0.497131	0.01691729
56	35	S1200	State Hwy 352	149342158		N	N	-110.023781	43.098791	0.126517	0.01691729
56	35	S1200	Bloomfield Ave	617103316		NA	NA	-109.879699	42.882772	0.190991	0.01691729
56	35	S1200	US Hwy 189	614284845	US Hwy 189	N	N	-110.409656	43.20366	0.12783	0.01691729
56	35	S1200	State Hwy 352	631784199		N	N	-109.989064	42.97478	0.225948	0.01691729
56	35	S1200	Big Piney Calpet Rd	149328921	Big Piney Calpet Rd	N	N	-110.290572	42.358646	0.278765	0.01691729
56	35	S1200	Middle Piney Rd	149319272	Middle Piney Rd	N	N	-110.285006	42.538177	0.847708	0.01691729
56	35	S1200	Big Piney Calpet Rd	149327486	Big Piney Calpet Rd	N	N	-110.282524	42.387895	0.261669	0.01691729
56	35	S1200	State Hwy 354	611631792		N	N	-110.124057	42.890585	0.348304	0.01691729
56	35	S1200	State Hwy 353	149335729		N	N	-109.714446	42.749503	0.046943	0.01691729
56	35	S1200	Big Piney Calpet Rd	149349722	Big Piney Calpet Rd	N	N	-110.28701	42.453728	0.154211	0.01691729
56	35	S1200	State Hwy 352	149348298		N	N	-110.024543	43.100778	0.158921	0.01691729
56	35	S1200	Fox Willow Dr	624696401		NA	NA	-109.863534	42.858926	0.039994	0.01691729
56	35	S1200	US Hwy 189	149341811	US Hwy 191	N	N	-110.167302	43.096316	0.195055	0.01691729
56	35	S1200	State Hwy 353	149343493		N	N	-109.509085	42.67973	0.040054	0.01691729
56	35	S1200	US Hwy 191	611631778		N	N	-110.070024	42.890439	0.046435	0.01691729
56	37	S1100	I- 80	624231944	I- 80	NA	NA	-108.780959	41.678094	0.163315	0.01215805
56	37	S1100	I- 80	633104230	US Hwy 30	N	N	-109.316632	41.554826	0.039476	0.01215805
56	37	S1100	I- 80 Interstate Rmp	149499689		N	N	-109.587987	41.555451	0.259911	0.01215805
56	37	S1100	I- 80	149487238	I- 80	N	N	-108.066013	41.661045	0.136447	0.01215805
56	37	S1200	US Hwy 191	618328344		N	N	-109.437956	42.043985	0.338956	0.01204819
56	37	S1200	State Hwy 374	149511333		N	N	-109.482509	41.541523	0.131587	0.01204819
56	37	S1200	Uinta Dr	149500497	Uinta Dr	N	N	-109.472709	41.511854	0.0531	0.01204819
56	37	S1200	State Hwy 414	149464554		N	N	-109.985213	41.027126	0.131917	0.01204819
56	37	S1200	State Hwy 28	149493695		N	N	-109.808056	41.858995	0.147627	0.01204819
56	37	S1200	Lower Farson Cutoff Rd	149492132	California-Mormon Emigr	N	N	-109.666317	41.965696	0.038819	0.01204819
56	37	S1200	Dewar Dr	149503912	Dewar Dr	N	N	-109.226073	41.584776	0.04782	0.01204819
56	37	S1200	US Hwy 191	149496622		N	N	-109.325226	41.744334	0.329502	0.01204819
56	37	S1200	Pilot Butte Ave	611877695	Pilot Butte Ave	NA	NA	-109.216939	41.59261	0.030201	0.01204819
56	37	S1200	State Hwy 430	149458823		N	N	-108.78958	41.049775	0.243255	0.01204819
56	37	S1200	US Hwy 191	149461346	State Hwy 373	N	N	-109.310187	41.437909	1.183344	0.01204819
56	37	S1200	State Hwy 372	149499742	State Hwy 374	N	N	-109.591055	41.555985	0.056765	0.01204819
56	37	S1200	D St	149502711	State Hwy 430	N	N	-109.2125	41.581594	0.037972	0.01204819
56	37	S1200	State Hwy 430	149457693		N	N	-108.836841	41.204642	0.057298	0.01204819

56	39	S1200	Grand Loop Rd	130447128	US Hwy 89	N	N	-110.647369	44.4336	0.335289	0.02292994
56	39	S1200	State Hwy 22	130412425		N	N	-111.023765	43.531226	0.014713	0.02292994
56	39	S1200	W Broadway Ave	626815081	US Hwy 26	N	N	-110.767775	43.479528	0.008592	0.02292994
56	39	S1200	US Hwy 26	130414136	US Hwy 26	N	N	-110.747679	43.393058	0.052961	0.02292994
56	39	S1200	US Hwy 26	130440602	US Hwy 26	N	N	-110.519893	43.822999	0.705899	0.02292994
56	39	S1200	State Hwy 22	235945248		N	N	-111.044466	43.542907	0.121907	0.02292994
56	39	S1200	N Cache St	130449024	US Hwy 26	N	N	-110.762232	43.489123	0.002913	0.02292994
56	39	S1200	Grand Loop Rd	130410308	US Hwy 89	N	N	-110.849699	44.487252	0.476339	0.02292994
56	39	S1200	US Hwy 26	130442142	US Hwy 26	N	N	-110.140642	43.785674	0.058013	0.02292994
56	39	S1200	US Hwy 26	130414163	US Hwy 26	N	N	-110.745142	43.384441	0.015347	0.02292994
56	39	S1200	US Hwy 26	130416881	US Hwy 26	N	N	-110.179349	43.812532	0.085526	0.02292994
56	39	S1200	John D Rockefeller Jr Pkwy	625696810	US Hwy 89	N	N	-110.632246	43.929951	0.644068	0.02292994
56	39	S1200	US Hwy 26	633121288	US Hwy 26	N	N	-110.748242	43.394564	0.107092	0.02292994
56	39	S1200	Grand Loop Rd	130435259	US Hwy 20	N	N	-110.418215	44.54549	0.012986	0.02292994
56	39	S1200	N Moose Wilson Rd	130421972	N Moose Wilson Rd	N	N	-110.846204	43.500474	0.111366	0.02292994
56	39	S1200	W Broadway Ave	626815080	US Hwy 26	N	N	-110.767992	43.479487	0.01271	0.02292994
56	39	S1200	US Hwy 189	130430099	US Hwy 189	Y	N	-110.730176	43.322355	0.075306	0.02292994
56	39	S1200	John D Rockefeller Jr Pkwy	130438888	US Hwy 89	N	N	-110.617709	43.904563	0.02257	0.02292994
56	41	S1100	I- 80	160262564		N	N	-110.424833	41.332567	0.082322	0.02242152
56	41	S1100	I- 80	160262989		N	N	-110.382457	41.349435	0.884846	0.02242152
56	41	S1100	I- 80	160263878		N	N	-110.369274	41.354538	0.581572	0.02242152
56	41	S1100	I- 80	160276521		N	N	-110.449606	41.328957	0.025325	0.02242152
56	41	S1100	I- 80 Bus	625848180		N	N	-110.374475	41.316471	0.467979	0.02242152
56	41	S1200	State Hwy 150	160278118	State Hwy 150	N	N	-110.948574	41.26097	0.069808	0.02083333
56	41	S1200	State Hwy 89	160256726	State Hwy 89 N	N	N	-111.041282	41.406968	0.045853	0.02083333
56	41	S1200	State Hwy 414	160278610		N	N	-110.33637	41.272014	0.050479	0.02083333
56	41	S1200	State Hwy 414	160276641		N	N	-110.32857	41.269014	0.002005	0.02083333
56	41	S1200	State Hwy 89	160259758	State Hwy 89 N	N	N	-110.982831	41.297753	0.059565	0.02083333
56	41	S1200	State Hwy 414	160269401		N	N	-110.121784	41.048317	0.287048	0.02083333
56	41	S1200	State Hwy 412	160258496		N	N	-110.423572	41.4321	0.102188	0.02083333
56	41	S1200	State Hwy 410	160266210		N	N	-110.493857	41.1882	0.094194	0.02083333
56	41	S1200	US Hwy 189	160257875		N	N	-110.625197	41.430625	0.935336	0.02083333
56	41	S1200	Carter Cutoff Rd	160258469	Carter Cutoff Rd	N	N	-110.441935	41.452999	0.052881	0.02083333
56	41	S1200	State Hwy 414	160269069		N	N	-110.178426	41.097522	0.74704	0.02083333
56	41	S1200	State Hwy 150	606738273	State Hwy 150 S	N	N	-110.953165	41.262237	0.015361	0.02083333
56	41	S1200	State Hwy 89	160275943		N	N	-110.957224	41.281488	0.07992	0.02083333

Appendix C

Sample Data Collection Form and Cover Sheet

31

WYDOT SEAT BELT SURVEY DATA COLLECTION FORM

Observer _____ Total # of observation pages: _____

County _____ Date: _____

Site # _____

Site Location _____

Alternate Site Information

Available alternate sites:

1. _____

2. _____

Is this an alternate site? Yes No (Please circle response)

If yes, which site was selected? 1 2 (Please circle response)

Please provide reason for using alternate site:

_____

_____

_____

Site Description

Please circle your responses:

Assigned traffic flow North South East West

Number of lanes in this direction: _____

Weather conditions clear/sunny cloudy light fog light rain light snow

Observation Site start and end times:

Start Time: _____ AM PM End Time: _____ AM PM

(Total observation period MUST last EXACTLY 45 minutes)

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

Vehicle Type				WY License		
(1) Auto	(2) Van	(3) SUV	(4) PU	(1) Y	(2) N	(9) Unsure
Driver	(1) M	(2) F	(1) Y	(2) N	(3) UK	
Pass.	(1) M	(2) F	(1) Y	(2) N	(3) UK	(4) NP

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Appendix D

Training Syllabus

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Day One

Welcome and introduction of all participants

- Trainers
- Employer
- Highway Safety Office Personnel
- Observers
- Alternate (reserve) observers
- Quality Control Monitors

Distribution of equipment

- Checklist of materials, including WYDOT authorization letter, safety materials, all forms & observation materials

Survey overview

- Steps
- Importance of Data Collection process

Data Collection Techniques

- Definition of vehicles
- Definition of passengers & belt/booster seat use
- Weekday/weekend
- Heavy traffic v. light traffic
    - Use of second observers
- Weather conditions
- Observation duration

Scheduling and Rescheduling

- Site assignment sheet
- Daylight observation
- Problems encountered because of temporary impediments (i.e., weather)
- Permanent problems at data collection sites

Site locations

- Site location & description sheet
- Parking
- Interstate ramps and surface streets
- Direction of travel/number of observed lanes
- Non-intersection requirement
- Alternate site selection

Data Collection Forms

- Cover sheet
- Recording observations
- Recording temporary problems/weather conditions
- Recording alternate site information

Safety and Security

Field Testing

- Practice field site

Day Two (AM)

Review of maps
- Locating all sites on county maps

Shipment of Forms and materials
- Review materials
- Essential timeline

Timesheet and expense reporting

Field Testing
- 3 Test Sites

Post Training Quiz

Day Two (PM)

Quality Control Training
- Review of randomly selected QC sites
- Checklist of field protocols to address during site
- Inter-observer agreement ratio testing
- Procedures in cases of suspected or confirmed data falsification
- Reporting

Appendix C: NHTSA Approval and Final Review

National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

April 24, 2012

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Dear Wyoming,

The review of your most recent seat belt use survey plan has been completed, and the final review is enclosed. All the design requirements listed in 1340.10 of the Final Rule were evaluated. We are pleased to inform you that your survey plan is fully compliant with the Uniform Criteria for State Observational Surveys of Seat Belt Use. Congratulations!

Sincerely,
NHTSA

Requirement Type		Design Requirement	Status	Comments
Operational	8	Is the process of assigning observation sites to observation time periods explained? Is it compliant with 1340.6?	Compliant	All observations will be conducted during weekdays and weekends between 7 a.m. and 6 p.m. (p.11). Sites within relatively close geographic proximity will be assigned as data collection clusters. The first site within each cluster will be assigned a random day and time for completion. All other sites within a cluster will be assigned to the same day and scheduled in order of operational efficiency (p.11).
Statistical	9	Is the state statistician named and his/her qualifications described? Does the statistician meet the requirements in 1340.8.c?	Compliant	The statistician's resume is Appendix A (p.19).
Operational	10	Is an observation period defined?	Compliant	45 minutes (p.11)
Operational	11	Are the procedures used to reschedule and substitute observation sites specified and compliant with 1340.5.c?	Compliant	When a site is temporarily unavailable, data collection will be rescheduled for a similar day of the week and time of day. In the event that the site is permanently unworkable, an alternate site, selected as part of the reserve sample, will be used as a permanent replacement (p.12).
Statistical	12	Are the procedures for collecting additional data to reduce the nonresponse rate specified and compliant with 1340.9.f.2?	Compliant	If a site exceeds 10% nonresponse, data collectors will be sent back to that site for an additional observation period (p.13).
Operational	13	Are the data collection procedures described?	Compliant	Data collection will primarily be performed by single observers, except at high volume sites where two data collectors will be assigned (p.11). The observed direction of traffic will be predetermined and randomly assigned (p.12). The appropriate vehicles, occupants, belt use definitions, and data elements are included in the survey (pp.10-12).
Operational	14	Are the number of observers and quality control monitors specified?	Compliant	16 data collectors and 2 QC Monitors will be hired (p.10). QC Monitors will visit 2 sites per county (or 11%) (p.10). Training will take place prior to data collection, during the last week of April (p.10). The training agenda is Appendix D (p.35).
Statistical	15	Is there a description of how the seat belt use rate estimate will be calculated?	Compliant	A ratio estimator will be used (pp.15-16).
Statistical	16	Is there a description of how the variance will be calculated? Is it compliant with 1340.9.g?	Compliant	Complex Sample Module for SPSS will be used to calculate the variance (p.13).

Requirement Type		Design Requirement	Status	Comments
Statistical	17	If any imputation is planned, are the methods specified and compliant with 1340.9.c?	Compliant	No imputation is planned (p.13).
Statistical	18	Are the weighting procedures appropriate for the design, including base weights, and adjustments for observation sites with no usable data, and specified and compliant with 1340.9.d and 1340.9.e?	Compliant	Weights and estimators are appropriate for the SRS design (pp.14-17). The nonresponse adjustment is also appropriate for the proposed plan (p.15).
Statistical	19	If the standard error exceeds 2.5 percentage points, are the procedures to reduce it specified and compliant with 1340.9.g?	Compliant	If the standard error exceeds 2.5%, more data will be collected from existing sites (p.6).

Appendix D: Detailed tables of collected data

Frequencies

Frequencies of vehicle types by county, Wyoming 2015

	Vehicle Type					
County	Auto	Van	SUV	Pickup	Total	% Pickups
Albany	553	484	132	592	1,761	33.6%
Big Horn	124	152	30	210	516	40.7%
Campbell	545	578	139	942	2,204	42.7%
Carbon	356	443	88	496	1,383	35.9%
Fremont	329	352	66	398	1,145	34.8%
Johnson	477	507	144	745	1,873	39.8%
Laramie	199	269	38	222	728	30.5%
Lincoln	302	439	95	549	1,385	39.6%
Natrona	270	363	52	326	1,011	32.2%
Park	505	440	97	622	1,664	37.4%
Platte	413	631	97	554	1,695	32.7%
Sheridan	394	310	163	400	1,267	31.6%
Sublette	106	192	34	266	598	44.5%
Sweetwater	589	483	100	664	1,836	36.2%
Teton	951	1,617	353	903	3,824	23.6%
Uinta	557	499	116	620	1,792	34.6%
State	6,670	7,759	1,744	8,509	24,682	34.5%
Average	417	485	109	532	1,543	34.5%

Frequencies by Category

Variable	Category	Unwtd Counts		Variable	Category	Unwtd Counts
Occupant Belt Use	Belted	19,613		Occupant Gender	Male	14,337
	Not Belted	4,900			Female	10,345
	Unsure	169			Total	24,682
	Total	24,682				
				Road Direction	North	5,588
Weekday	Sunday	1,715			South	6,012
	Monday	5,026			East	5,254
	Tuesday	3,255			West	7,828
	Wednesday	3,201			Total	24,682
	Thursday	3,175				
	Friday	5,955		Lanes	One Lane	12,295
	Saturday	2,355			Two Lanes	12,387
	Total	24,682			Three Lanes	0
	Average	3,526			Four Lanes	0
					Total	24,682
Vehicle Type	Auto	6,670				
	Van	7,759		Weather	Clear/Sunny	18,895
	SUV	1,744			Cloudy	3,721
	Pickup	8,509			Light Rain	1,600
	Total	24,682			Heavy Rain	267
					Occasional Rain	199
Time of Day	7:30-9:30	3,017			Total	24,682
	9:30-11:30	5,520				
	11:30-1:30	4,301		Registration	Wy License	15,285
	1:30-3:30	5,359			Other	9,079
	3:30-5:30	6,485			Unsure	318
	Total	24,682			Total	24,682
Population Density	Urban	6,501		Weekend	Weekend	4,070
	Rural	18,181			Weekday	20,612
	Total	24,682			Total	24,682
Roadway Type	Primary	5,945				
	Secondary	17,750				
	Loc-Rur-City	987				
	Total	24,682				

Frequencies by observer			
Observers	County	Observations	% of Total
Monty Byers	Albany	1,761	7.1%
Dorothy Johnstone	Big Horn	516	2.1%
Daleen Sebelius	Campbell	2,204	8.9%
Bill Spencer	Carbon	1,383	5.6%
Melissa Garcia	Fremont	1,145	4.6%
Derek Bacon	Johnson	1,873	7.6%
Patrick White	Laramie	728	2.9%
Dawn Edwards	Lincoln	1,385	5.6%
Donna Lucas	Park	1,664	6.7%
Jill Ellenbecker	Natrona	1,011	4.1%
Doug Peterson	Platte	1,695	6.9%
Logan Wilson	Sheridan	1,267	5.1%
Tonya Dove	Sublette	598	2.4%
Kayla Shear	Sweetwater	1,836	7.4%
Melissa Thomasma	Teton	3,824	15.5%
Randi Egley	Uinta	1,792	7.3%
	State	24,682	100.0%

Occupant seat belt use

Overall seat belt use, Wyoming 2015						
			Standard	95% Confidence Interval		Unweighted
		Estimate	Error	Lower	Upper	Count
% of Total	Belted	79.8%	2.3%	68.3%	87.9%	19,613
	Not Belted	19.6%	2.3%	11.5%	31.2%	4,900
	Unsure	0.6%	0.0%	0.6%	0.6%	169
	Total	100.0%				24,682

Occupant Belt Use by Occupant Gender, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Gender	Male	76.3%	22.9%	0.8%	100.0%	14,337
	Female	84.6%	14.9%	0.4%	99.9%	10,345
	State	79.8%	19.6%	0.6%	100.0%	24,682

Occupant Belt Use by County of Observations 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
County	Albany	85.0%	15.0%	0.0%	100.0%	1,761
	Big Horn	74.0%	25.2%	0.8%	100.0%	516
	Campbell	88.0%	10.7%	1.2%	99.9%	2,204
	Carbon	91.3%	8.6%	0.1%	100.0%	1,383
	Fremont	83.6%	15.5%	0.9%	100.0%	1,145
	Johnson	75.9%	23.8%	0.3%	100.0%	1,873
	Laramie	80.8%	18.0%	1.1%	99.9%	728
	Lincoln	84.3%	11.0%	4.8%	100.1%	1,385
	Natrona	74.0%	26.0%	0.0%	100.0%	1,011
	Park	72.8%	26.6%	0.5%	99.9%	1,664
	Platte	79.1%	20.9%	0.0%	100.0%	1,695
	Sheridan	87.5%	12.4%	0.1%	100.0%	1,267
	Sublette	80.4%	17.4%	2.2%	100.0%	598
	Sweetwater	59.0%	40.4%	0.5%	99.9%	1,836
	Teton	79.6%	20.4%	0.0%	100.0%	3,824
	Uinta	78.4%	20.8%	0.8%	100.0%	1,792
	State	79.8%	19.6%	0.6%	100.0%	24,682

Occupant Belt Use by the Day of the Week, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Weekday	Sunday	89.0%	9.8%	1.2%	100.0%	1,715
	Monday	81.4%	17.9%	0.7%	100.0%	5,026
	Tuesday	77.5%	22.2%	0.3%	100.0%	3,255
	Wednesday	80.3%	18.8%	0.9%	100.0%	3,201
	Thursday	79.5%	20.0%	0.5%	100.0%	3,175
	Friday	77.2%	22.4%	0.4%	100.0%	5,955
	Saturday	79.3%	19.8%	0.9%	100.0%	2,355
	State	79.8%	20.4%	0.4%	100.6%	24,682

Occupant Belt Use by Weekdays and Weekend, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Day-of-Week	Weekend	83.1%	15.9%	1.0%	100.0%	4,070
	Weekdays	79.2%	20.3%	0.6%	100.0%	20,612
	State	79.8%	20.4%	0.4%	100.0%	24,682

Occupant Belt Use by Type of Occupant, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Occupant	Drivers	78.3%	21.1%	0.6%	100.0%	17,913
	Passengers	83.6%	15.7%	0.8%	100.1%	6,769
	State	79.8%	19.6%	0.6%	100.0%	24,682

Occupant Belt Use by License Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
License	Wyoming	75.0%	24.4%	0.6%	100.0%	15,285
	Out-of-State	86.6%	12.7%	0.6%	99.9%	9,079
	Unsure	73.4%	22.9%	3.7%	100.0%	318
	State	79.8%	20.4%	0.4%	100.6%	24,682

Occupant Belt Use by Population Density, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Population	Urban	74.8%	24.8%	0.4%	100.0%	6,501
	Rural	81.4%	17.8%	0.7%	100.0%	18,181
	State	79.8%	20.4%	0.4%	100.0%	24,682

Occupant Belt Use by Roadway Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Roadway	Primary	86.1%	13.3%	0.6%	100.0%	5,945
	Secondary	78.0%	21.4%	0.6%	100.0%	17,750
	Loc/Rur/City	73.3%	19.6%	0.6%	93.5%	987
	State	79.8%	20.4%	0.4%	100.6%	24,682

Occupant Belt Use by Vehicle Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Vehicle Type	Auto	80.8%	18.5%	0.6%	100.0%	6,670
	Van	85.1%	14.5%	0.4%	100.0%	7,759
	SUV	89.3%	10.3%	0.4%	100.0%	1,744
	Pickup	71.8%	27.3%	0.9%	100.0%	8,509
	State	79.8%	20.4%	0.4%	100.0%	24,682

Occupant Belt Use by Vehicle Type and Gender, Wyoming 2015						
Gender	Vehicle Type	Belted	Not Belted	Unsure	Total	Unwtd Count
Male	Auto	78.8%	20.4%	0.8%	100.0%	3,375
	Van	83.3%	16.2%	0.5%	100.0%	3,563
	SUV	87.5%	11.9%	0.5%	99.9%	943
	Pickup	69.1%	29.9%	1.0%	100.0%	6,456
	State	76.3%	22.9%	0.8%	100.0%	14,337
Female	Auto	82.9%	16.6%	0.5%	100.0%	3,295
	Van	86.6%	13.0%	0.3%	99.9%	4,196
	SUV	91.5%	8.3%	0.2%	100.0%	801
	Pickup	80.4%	18.9%	0.7%	100.0%	2,053
	State	85.1%	14.3%	0.6%	100.0%	10,345
	All Occupants	79.8%	19.6%	0.6%	100.0%	24,682

Driver seat belt use

Driver Belt Use by Driver Gender, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Gender	Male	76.6%	22.7%	0.7%	100.0%	12,111
	Female	82.0%	17.6%	0.3%	99.9%	5,802
	State	78.3%	21.1%	0.6%	100.0%	17,913

Driver Belt Use by County, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
County	Albany	82.3%	17.7%	0.0%	100.0%	1,333
	Big Horn	71.2%	28.5%	0.3%	100.0%	379
	Campbell	87.0%	11.6%	1.4%	100.0%	1,748
	Carbon	91.0%	8.9%	0.2%	100.1%	998
	Fremont	81.6%	17.2%	1.2%	100.0%	847
	Johnson	74.6%	25.1%	0.4%	100.1%	1,299
	Laramie	80.3%	18.7%	1.1%	100.1%	591
	Lincoln	82.9%	12.7%	4.4%	100.0%	975
	Natrona	71.3%	28.7%	0.0%	100.0%	798
	Park	70.8%	28.6%	0.6%	100.0%	1,208
	Platte	77.2%	22.8%	0.0%	100.0%	1,169
	Sheridan	85.1%	14.8%	0.1%	100.0%	878
	Sublette	78.7%	19.1%	2.1%	99.9%	423
	Sweetwater	60.1%	39.7%	0.2%	100.0%	1,429
	Teton	78.4%	21.6%	0.0%	100.0%	2,559
	Uinta	75.9%	23.7%	0.4%	100.0%	1,279
	State	78.3%	21.1%	0.6%	100.0%	17,913

Driver Belt Use by Population Density, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Population	Urban	73.5%	26.1%	0.3%	99.9%	4,984
	Rural	80.0%	19.4%	0.7%	100.1%	12,929
	State	77.6%	22.3%	0.1%	100.0%	17,913

Driver Belt Use by Roadway Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Roadway	Primary	84.5%	14.9%	0.6%	100.0%	4,245
	Secondary	76.5%	22.9%	0.6%	100.0%	12,873
	Loc/Rur/City	72.4%	27.4%	0.3%	100.1%	795
	State	78.3%	21.1%	0.6%	100.0%	17,913

Driver Belt Use by Weekday, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Weekday	Sunday	88.6%	10.3%	1.0%	99.9%	1,128
	Monday	79.8%	19.5%	0.7%	100.0%	3,798
	Tuesday	76.0%	23.7%	0.2%	100.0%	2,333
	Wednesday	79.3%	20.0%	0.7%	100.0%	2,324
	Thursday	77.7%	21.8%	0.5%	100.0%	2,339
	Friday	75.5%	24.1%	0.4%	100.0%	4,409
	Saturday	78.0%	21.0%	1.0%	100.0%	1,582
	State	78.3%	21.1%	0.6%	100.0%	17,913

Driver Belt Use by Weekend and Weekdays, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Weekend	Weekend	82.1%	16.9%	1.0%	100.0%	2,710
	Weekdays	77.6%	21.9%	0.5%	100.0%	15,203
	State	77.6%	22.3%	0.1%	100.0%	17,913

Driver Belt Use by Vehicle Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Vehicle Type	Auto	79.9%	19.5%	0.6%	100.0%	4,837
	Van	83.5%	16.1%	0.4%	100.0%	5,420
	SUV	88.2%	11.4%	0.4%	100.0%	1,145
	Pickup	70.7%	28.4%	0.8%	100.0%	6,511
	Total	78.3%	21.1%	0.6%	100.0%	17,913

		Driver Belt Use by License Type, Wyoming 2015				
		Belted	Not Belted	Unsure	Total	Unwtd Count
License Type	Wyoming	74.1%	25.4%	0.5%	100.0%	11,855
	Out-of-State	85.7%	13.7%	0.6%	100.0%	5,832
	Unsure	74.8%	22.2%	3.0%	100.0%	226
	Total	78.3%	21.1%	0.6%	100.0%	17,913

Driver Belt Use by Gender and Vehicle Type, Wyoming 2015						
Gender	Vehicle Type	Belted	Not Belted	Unsure	Total	Unwtd Count
Male	Auto	79.5%	19.8%	0.7%	100.0%	2,820
	Van	83.2%	16.3%	0.4%	99.9%	2,951
	SUV	87.3%	12.2%	0.5%	100.0%	740
	Pickup	69.8%	29.4%	0.9%	100.1%	5,600
	Total	76.6%	22.7%	0.7%	100.0%	12,111
Female	Auto	80.5%	19.2%	0.4%	100.1%	2,017
	Van	83.9%	15.9%	0.3%	100.1%	2,469
	SUV	90.1%	9.7%	0.2%	100.0%	405
	Pickup	76.7%	22.7%	0.6%	100.0%	911
	Total	82.7%	17.2%	0.1%	100.0%	5,802

Passenger seat belt use

Passenger Belt Use by Gender, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Gender	Male	74.9%	24.0%	1.2%	100.1%	2,226
	Female	87.7%	11.7%	0.6%	100.0%	4,543
	State	83.6%	15.7%	0.8%	100.1%	6,769

Passenger Belt Use by County, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
County	Albany	93.7%	6.3%	0.0%	100.0%	428
	Big Horn	81.8%	16.1%	2.2%	100.1%	137
	Campbell	92.0%	7.3%	0.6%	99.9%	456
	Carbon	92.0%	8.0%	0.0%	100.0%	385
	Fremont	89.3%	10.7%	0.0%	100.0%	298
	Johnson	79.1%	20.9%	0.0%	100.0%	574
	Laramie	83.4%	15.3%	1.3%	100.0%	137
	Lincoln	87.6%	6.8%	5.6%	100.0%	410
	Natrona	83.5%	16.5%	0.0%	100.0%	213
	Park	78.3%	21.3%	0.4%	100.0%	456
	Platte	83.2%	16.8%	0.0%	100.0%	526
	Sheridan	93.1%	6.9%	0.0%	100.0%	389
	Sublette	84.6%	13.1%	2.3%	100.0%	175
	Sweetwater	55.3%	43.0%	1.7%	100.0%	407
	Teton	81.9%	18.1%	0.0%	100.0%	1,265
	Uinta	84.7%	13.5%	1.8%	100.0%	513
	State	83.6%	15.7%	0.8%	100.1%	6,769

Passenger Belt Use by Population Density, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Population	Urban	78.6%	20.9%	0.5%	100.0%	1,517
	Rural	84.9%	14.2%	0.8%	99.9%	5,252
	State	83.6%	15.2%	1.2%	100.0%	6,769

Passenger Belt Use by Roadway Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Roadway	Primary	89.9%	9.3%	0.8%	100.0%	1,700
	Secondary	81.7%	17.6%	0.7%	100.0%	4,877
	Loc/Rur/City	77.3%	21.6%	1.1%	100.0%	192
	State	83.6%	15.7%	0.8%	100.0%	6,769

Passenger Belt Use by Weekday, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Weekday	Sunday	89.6%	9.0%	1.4%	100.0%	587
	Monday	86.0%	13.1%	0.9%	100.0%	1,228
	Tuesday	81.1%	18.3%	0.6%	100.0%	922
	Wednesday	82.9%	15.8%	1.3%	100.0%	877
	Thursday	84.3%	15.2%	0.5%	100.0%	836
	Friday	81.7%	17.9%	0.4%	100.0%	1,546
	Saturday	81.8%	17.5%	0.7%	100.0%	773
	State	83.6%	15.7%	0.8%	100.0%	6,769

Passenger Belt Use by Weekend and Weekdays, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Weekend	Weekend	85.0%	14.1%	1.0%	100.1%	1,360
	Weekdays	83.2%	16.1%	0.7%	100.0%	5,409
	State	83.6%	15.7%	0.8%	100.1%	6,769

Passenger Belt Use by Vehicle Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
Vehicle Type	Auto	83.2%	16.0%	0.8%	100.0%	1,833
	Van	88.6%	10.9%	0.5%	100.0%	2,339
	SUV	91.3%	8.4%	0.3%	100.0%	599
	Pickup	75.2%	23.6%	1.2%	100.0%	1,998
	State	83.6%	15.7%	0.8%	100.0%	6,769

Passenger Belt Use by License Type, Wyoming 2015						
		Belted	Not Belted	Unsure	Total	Unwtd Count
License Type	Wyoming	78.4%	20.8%	0.8%	100.0%	3,430
	Out-of-State	88.3%	11.0%	0.7%	100.0%	3,247
	Unsure	69.9%	24.5%	5.6%	100.0%	92
	State	83.6%	15.7%	0.8%	100.1%	6,769

Passenger Belt Use by Gender and Vehicle Type, Wyoming 2015						
Gender	Vehicle Type	Belted	Not Belted	Unsure	Total	Unwtd Count
Male	Auto	75.5%	23.6%	0.9%	100.0%	555
	Van	83.8%	15.4%	0.8%	100.0%	612
	SUV	88.4%	11.1%	0.4%	99.9%	203
	Pickup	64.6%	33.6%	1.7%	99.9%	856
	Total	74.9%	24.0%	1.2%	100.1%	2,226
Female	Auto	86.5%	12.8%	0.7%	100.0%	1,278
	Van	90.2%	9.4%	0.4%	100.0%	1,727
	SUV	92.8%	7.0%	0.2%	100.0%	396
	Pickup	83.3%	15.9%	0.7%	99.9%	1,142
	Total	87.7%	11.7%	0.6%	100.0%	4,543

Trend data

Occupant Seat Belt Use Rates in Wyoming, 2012 to 2015				
Year	2012	2013	2014	2015
Occupants	77.0%	81.9%	79.2%	79.8%

Occupant Seat Belt Use Rates by Gender, Wyoming 2012 to 2015					
	Year	2012	2013	2014	2015
Gender	Male	73.5%	79.3%	75.0%	76.3%
	Female	82.7%	85.9%	85.1%	84.6%
	Diff	9.2%	6.6%	10.1%	8.3%

Occupant Seat Belt Use Rates by Population Density, Wyoming, 2012-2015					
	Year	2012	2013	2014	2015
Population	Urban	78.6%	72.4%	73.2%	74.8%
	Rural	76.5%	84.5%	81.0%	81.4%
	Diff	-2.1%	12.1%	7.8%	6.6%

Occupant Seat Belt Use Rates by Roadway Type, Wyoming, 2012-2015					
	Year	2012	2013	2014	2015
Roadway	Primary	80.2%	87.9%	82.7%	86.1%
	Secondary	77.5%	80.0%	78.2%	78.0%
	Loc/Rur/City	66.0%	60.3%	69.9%	73.3%

Occupant Seat Belt Use by Vehicle Type, Wyoming 2012-2015					
	Year	2012	2013	2014	2015
Vehicle Type	Automobile	78.2%	84.8%	83.2%	80.8%
	Van	84.7%	88.8%	85.0%	85.1%
	SUV	83.7%	86.6%	84.7%	89.3%
	Pickup	69.2%	74.1%	69.9%	71.8%

Occupant Seat Belt Use Rates by Registration Type, Wyoming 2012-2015					
	Year	2012	2013	2014	2015
Registration	Wyoming	72.2%	76.2%	75.7%	75.0%
	Out of State	86.3%	91.1%	86.7%	86.6%

Observational Frequencies of Vehicle Occupants, Wyoming Seat Belt Survey, 2012-2015.					
Occupants	Year	2012	2013	2014	2015
	Frequencies	18,703	20,877	23,723	24,682

Appendix E: Observer field test rating

	F-Test 1	F-Test 2	F-Test 3	Avg. Field Test	Written
Monty Beyers	97.10%	98.02%	96.03%	97.05%	90.00%
Dorothy Johnstone	97.18%	87.50%	95.12%	93.27%	90.00%
Daleen Sebelius	97.32%	98.08%	98.28%	97.89%	90.00%
Bill Spencer	99.07%	93.17%	95.93%	96.06%	90.00%
Melissa Garcia	100.00%	100.00%	90.91%	96.97%	85.00%
Derek Bacon	97.00%	94.33%	99.08%	96.80%	95.00%
Patrick White	97.26%	95.05%	98.19%	96.83%	95.00%
Dawn Edwards	92.24%	97.24%	96.77%	95.42%	90.00%
Jill Ellenbecker	99.07%	99.26%	96.48%	98.27%	95.00%
Donna Lucas	100.00%	97.98%	95.87%	97.95%	90.00%
Doug Peterson	96.66%	92.67%	94.74%	94.69%	100.00%
Logan Wilson	96.58%	85.71%	90.00%	90.76%	95.00%
Tonya Dove	98.45%	98.04%	95.76%	97.42%	95.00%
Kayla Schear	98.25%	97.51%	99.09%	98.28%	85.00%
Melissa Thomasma	96.93%	100.00%	98.22%	98.38%	100.00%
Randi Egley	98.21%	94.63%	98.31%	97.05%	90.00%
Carolyn Waldron	96.84%	95.10%	94.87%	95.60%	70.00%
Cary Ingerle	96.55	98.47%	99.26%	98.09%	95.00%
Vicky Peterson	96.69%	97.65%	95.00%	96.45%	90.00%
Bridget White	96.21%	96.88%	96.60%	96.56%	95.00%
	97.73%	95.88%	96.03%	96.49%	91.25%
				Field Test Overall Average	96.49%
				Written Overall Average	91.25%

Appendix F: Unknown seat belt use

County	County Code	Unknown Driv+Pass	Total Obsv. Driv+Pass	County Rate
Albany	1	0	1760	0.000000
Big Horn	3	4	513	0.007797
Campbell	5	27	1902	0.014196
Carbon	7	2	1383	0.001446
Fremont	13	10	1145	0.008734
Johnson	19	5	1873	0.002670
Laramie	21	8	726	0.011019
Lincoln	23	66	1362	0.048458
Natrona	25	0	1011	0.000000
Park	29	9	1662	0.005415
Platte	31	0	1695	0.000000
Sheridan	33	1	1267	0.000789
Sublette	35	13	594	0.021886
Sweetwater	37	10	1829	0.005467
Teton	39	0	3824	0.000000
Uinta	41	14	1783	0.007852
State		169	24329	0.006946

Appendix G: Reporting requirements – data collected at observation sites

1. Standard Error of Statewide Belt Use Rate: 2.3 percent

2. Nonresponse Rate as provided in §1340.9 (f)

    a. Nonresponse rate for the survey variable seat belt use: 0.6946 percent

PART B-DATA COLLECTED AT OBSERVATION SITES

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
168749730	1: Original	6/12/2015	7.657718121	182	86	251	17	0
604512124	2: Original	6/10/2015	7.657718121	62	20	74	8	0
604516236	3: Original	6/11/2015	1.150201613	172	56	186	42	0
168748704	4: Original	6/8/2015	1.150201613	138	44	139	43	0
168722835	5: Original	6/9/2015	1.150201613	8	6	11	3	0
604506806	6: Original	6/8/2015	1.150201613	140	30	139	31	0
168750353	7: Original	6/9/2015	1.150201613	30	11	34	7	0
168757040	8: Original	6/8/2015	1.150201613	88	14	75	27	0
168722017	9: Original	6/11/2015	1.150201613	8	0	6	2	0
604510122	10: Original	6/12/2015	1.150201613	110	36	118	28	0
168738815	11: Original	6/10/2015	1.150201613	37	10	45	2	0
168744760	12: Original	6/13/2015	1.150201613	12	7	18	1	0
168756901	13: Original	6/8/2015	1.150201613	235	54	251	38	0
168745008	14: Original	6/14/2015	1.150201613	5	3	6	2	0
168737539	15: Original	6/11/2015	1.150201613	41	22	60	3	0
168755506	16: Original	6/9/2015	1.150201613	2	0	0	2	0
604505747	17: Original	6/12/2015	1.150201613	22	7	29	0	0
168755958	18: Original	6/11/2015	1.150201613	41	22	60	3	0
605633431	1: Original	6/11/2015	1	22	15	33	4	0
180494288	2: Original	6/9/2015	1	16	8	21	2	1
180493968	3: Original	6/9/2015	1	37	17	44	7	3
605624056	4: Original	6/8/2015	1	25	6	26	5	0
180493545	5: Original	6/10/2015	1	5	2	7	0	0
605621594	6: Original	6/10/2015	1	4	1	5	0	0
180484672	7: Original	6/11/2015	1	38	18	44	12	0
605616914	8: Original	6/12/2015	1	12	3	10	5	0
180505210	9: Original	6/8/2015	1	36	9	28	17	0
626936823	10: Original	6/9/2015	1	7	4	10	1	0
180500795	11b: Alternate	6/14/2015	1	32	13	30	15	0
180501932	12: Original	6/8/2015	1	34	10	30	14	0
180490602	13: Original	6/8/2015	1	34	10	40	4	0
180506937	14: Original	6/10/2015	1	2	0	2	0	0
180507017	15: Original	6/13/2015	1	5	1	5	1	0

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
180508412	16: Original	6/13/2015	1	4	3	2	5	0
180499656	17: Original	6/13/2015	1	7	4	8	3	0
180485070	18: Original	6/12/2015	1	59	13	37	35	0
607415957	1: Original	6/8/2015	4.898876404	159	78	212	24	1
607413318	2: Original	6/8/2015	4.898876404	143	20	139	20	4
146326960	3: Original	6/8/2015	4.898876404	162	31	175	16	2
146347844	4: Original	6/8/2015	4.898876404	132	48	168	11	1
146348156	5: Original	6/12/2015	1.25648415	48	12	51	8	1
146325159	6: Original	6/10/2015	1.25648415	144	27	140	28	3
146349851	7: Original	6/10/2015	1.25648415	197	32	188	34	7
146329404	8: Original	6/10/2015	1.25648415	39	6	41	4	0
146334309	9: Original	6/11/2015	1.25648415	38	16	51	3	0
146353809	10: Original	6/10/2015	1.25648415	42	8	42	7	1
607396191	11: Original	6/9/2015	1.25648415	65	16	71	8	2
146333806	12: Original	6/13/2015	1.25648415	15	5	17	2	1
146321054	13: Original	6/12/2015	1.25648415	30	6	35	1	0
146353348	14: Original	6/11/2015	1.25648415	56	11	60	6	1
607406131	15: Original	6/8/2015	1.25648415	140	55	181	14	0
146346688	16: Original	6/12/2015	1.25648415	185	33	179	38	1
635532528	17: Original	6/9/2015	1.25648415	96	31	117	10	0
146342308	18: Original	6/14/2015	1.25648415	57	21	72	4	2
611197576	1: Original	6/11/2015	6.905405405	115	37	151	1	0
148702972	2: Original	6/11/2015	6.905405405	184	75	256	3	0
148729076	3: Original	6/12/2015	6.905405405	142	59	196	5	0
622138133	4: Original	6/12/2015	1.169336384	93	31	96	26	2
148737136	5: Original	6/8/2015	1.169336384	17	4	19	2	0
148752555	6: Original	6/8/2015	1.169336384	24	13	32	5	0
148712671	7: Original	6/10/2015	1.169336384	48	10	53	5	0
148715207	8: Original	6/10/2015	1.169336384	24	10	31	3	0
148718040	9: Original	6/9/2015	1.169336384	10	3	10	3	0
148695417	10: Original	6/14/2015	1.169336384	76	44	120	0	0
148729803	11: Original	6/12/2015	1.169336384	156	66	164	58	0
148707454	12: Original	6/11/2015	1.169336384	4	0	4	0	0
148702076	13: Original	6/13/2015	1.169336384	8	0	7	1	0
148743798	14: Original	6/9/2015	1.169336384	9	2	9	2	0

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
148736405	15: Original	6/8/2015	1.169336384	38	13	46	5	0
148714894	16: Original	6/9/2015	1.169336384	34	13	40	7	0
148727630	17: Original	6/13/2015	1.169336384	13	5	17	1	0
148716025	18: Original	6/10/2015	1.169336384	3	0	3	0	0
148435993	1: Original	6/12/2015	1.000528821	21	4	21	4	0
148440001	2: Original	6/10/2015	1.000528821	22	8	28	2	0
148435866	3: Original	6/11/2015	1.000528821	71	11	46	34	2
634121244	4: Original	6/8/2015	1.000528821	15	4	18	1	0
148495718	5: Original	6/9/2015	1.000528821	52	12	56	7	1
148494149	6: Original	6/8/2015	1.000528821	45	26	62	9	0
148486152	7: Original	6/9/2015	1.000528821	80	37	106	9	2
148473776	8: Original	6/8/2015	1.000528821	33	12	24	21	0
148485578	9: Original	6/11/2015	1.000528821	32	24	46	10	0
148433925	10: Original	6/12/2015	1.000528821	2	1	3	0	0
148495394	11: Original	6/10/2015	1.000528821	28	15	41	2	0
148468455	12: Original	6/13/2015	1.000528821	79	30	104	5	0
148486961	13: Original	6/8/2015	1.000528821	23	12	34	1	0
148429899	14: Original	6/14/2015	1.000528821	20	10	25	5	0
148448781	15: Original	6/11/2015	1.000528821	82	39	116	4	1
148470962	16: Original	6/9/2015	1.000528821	12	3	13	2	0
148433053	17: Original	6/12/2015	1.000528821	97	16	92	18	3
148432511	18: Original	6/11/2015	1.000528821	133	34	122	44	1
624034874	1: Original	6/11/2015	2.23495702	42	18	46	14	0
147364609	2: Original	6/9/2015	2.23495702	58	22	69	11	0
147364620	3: Original	6/9/2015	2.23495702	69	29	78	19	1
635203226	4: Original	6/10/2015	2.23495702	86	51	112	25	0
635203662	5: Original	6/10/2015	2.23495702	110	61	136	32	3
147347862	6: Original	6/10/2015	2.23495702	98	46	124	20	0
147364484	7: Original	6/10/2015	2.23495702	102	57	134	24	1
147365807	8: Original	6/10/2015	2.23495702	65	24	71	18	0
147321002	9: Original	6/14/2015	1.80974478	6	2	3	5	0
147312456	10: Original	6/13/2015	1.80974478	104	45	97	52	0
147299440	11: Original	6/12/2015	1.80974478	235	86	223	98	0
147375368	12: Original	6/11/2015	1.80974478	5	2	4	3	0
147320405	13: Original	6/9/2015	1.80974478	6	1	3	4	0

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
147301635	14: Original	6/8/2015	1.80974478	30	22	45	7	0
147301707	15: Original	6/8/2015	1.80974478	23	17	32	8	0
147330545	16: Original	6/12/2015	1.80974478	180	60	183	57	0
617881865	17: Original	6/13/2015	1.80974478	77	30	61	46	0
147320871	18: Original	6/14/2015	1.80974478	3	1	2	2	0
622388802	1: Original	6/12/2015	27.25055928	174	32	179	24	3
624043730	2: Original	6/12/2015	12.60973085	37	10	34	12	1
160176358	3: Original	6/9/2015	1.13122214	0	0	0	0	0
160145448	4: Original	6/9/2015	1.13122214	7	1	6	2	0
160162024	5: Original	6/14/2015	1.13122214	0	0	0	0	0
160151376	6: Original	6/10/2015	1.13122214	100	17	77	40	0
160148179	7: Original	6/11/2015	1.13122214	3	0	1	2	0
160171828	8: Original	6/11/2015	1.13122214	2	0	2	0	0
160148102	9: Original	6/11/2015	1.13122214	0	0	0	0	0
160148214	10: Original	6/11/2015	1.13122214	12	3	12	3	0
160149935	11a: Alternate	6/9/2015	1.13122214	2	0	1	1	0
160172654	12: Original	6/13/2015	1.13122214	17	7	16	8	0
160147641	13: Original	6/12/2015	1.13122214	4	3	3	4	0
160152283	14: Original	6/10/2015	1.13122214	4	2	1	5	0
160160311	15: Original	6/10/2015	1.13122214	22	5	21	6	0
160176882	16: Original	6/8/2015	1.13122214	0	0	0	0	0
160179037	17: Original	6/12/2015	1.13122214	204	57	226	31	4
608318324	18: Original	6/8/2015	1.13122214	3	0	2	1	0
611001502	1: Original	6/8/2015	14.95744681	18	10	23	4	1
130299361	2: Original	6/11/2015	1.071646341	26	4	25	5	0
130309240	3: Original	6/10/2015	1.071646341	42	8	33	17	0
130324547	4: Original	6/13/2015	1.071646341	66	36	84	17	1
130316044	5: Original	6/13/2015	1.071646341	141	64	160	29	16
130316740	6: Original	6/14/2015	1.071646341	107	52	141	4	14
611004110	7: Original	6/11/2015	1.071646341	27	8	29	6	0
611001556	8: Original	6/8/2015	1.071646341	28	9	25	4	8
611004390	9: Original	6/11/2015	1.071646341	19	6	21	3	1
130297921	10: Original	6/11/2015	1.071646341	19	4	19	3	1
619637613	11: Original	6/12/2015	1.071646341	30	7	29	6	2
130324450	12: Original	6/10/2015	1.071646341	31	18	39	7	3

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
611008956	13: Original	6/12/2015	1.071646341	115	56	160	9	2
130301475	14: Original	6/9/2015	1.071646341	10	2	9	3	0
130301732	15: Original	6/10/2015	1.071646341	38	19	48	5	4
130316677	16: Original	6/14/2015	1.071646341	80	40	111	6	3
611008950	17: Original	6/12/2015	1.071646341	159	66	195	21	9
130303332	18: Original	6/9/2015	1.071646341	19	1	16	3	1
149010081	1: Original	6/14/2015	33.4278607	134	56	159	31	0
149022110	2: Original	6/8/2015	8.864116095	207	52	187	72	0
149038958	3: Original	6/11/2015	8.864116095	42	8	33	17	0
149017131	4: Original	6/13/2015	1.166493056	0	0	0	0	0
607727858	5: Original	6/12/2015	1.166493056	18	6	18	6	0
617962807	6: Original	6/10/2015	1.166493056	10	3	7	6	0
149021251	7: Original	6/10/2015	1.166493056	0	0	0	0	0
149019867	8: Original	6/10/2015	1.166493056	19	2	12	9	0
607699609	9: Original	6/9/2015	1.166493056	17	7	17	7	0
149024110	10: Original	6/12/2015	1.166493056	197	42	152	87	0
149026356	11: Original	6/11/2015	1.166493056	39	5	27	17	0
607739973	12: Original	6/10/2015	1.166493056	5	2	5	2	0
607727056	13: Original	6/8/2015	1.166493056	6	3	9	0	0
607699508	14: Original	6/9/2015	1.166493056	34	15	46	3	0
607718345	15: Original	6/12/2015	1.166493056	5	1	2	4	0
149039592	16: Original	6/14/2015	1.166493056	0	0	0	0	0
607701450	17: Original	6/9/2015	1.166493056	16	4	17	3	0
617963960	18: Original	6/8/2015	1.166493056	49	7	41	15	0
612523424	1: Original	6/10/2015	1	20	20	36	4	0
612522810	2: Original	6/10/2015	1	10	4	12	1	1
627160085	3: Original	6/8/2015	1	46	43	85	4	0
149194387	4: Original	6/11/2015	1	17	7	20	4	0
149206406	5: Original	6/8/2015	1	17	15	32	0	0
626966347	6: Original	6/8/2015	1	158	41	118	81	0
612520875	7: Original	6/9/2015	1	142	70	182	26	4
612522765	8: Original	6/13/2015	1	30	16	29	17	0
624469118	9: Original	6/13/2015	1	82	32	85	29	0
612517654	10: Original	6/12/2015	1	22	4	15	11	0
149194643	11: Original	6/12/2015	1	173	52	151	73	1

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
612521823	12: Original	6/11/2015	1	155	44	135	64	0
149212941	13: Original	6/9/2015	1	36	16	46	6	0
149202036	14: Original	6/11/2015	1	10	1	11	0	0
612468763	15: Original	6/13/2015	1	18	7	24	1	0
612523179	16: Original	6/14/2015	1	1	0	1	0	0
625076103	17: Original	6/12/2015	1	176	58	152	79	3
612522218	18: Original	6/12/2015	1	95	26	78	43	0
160436166	1: Original	6/14/2015	2.880299252	195	99	252	42	0
606897806	2: Original	6/12/2015	2.880299252	150	68	159	59	0
604828586	3: Original	6/10/2015	2.880299252	128	50	160	18	0
606897551	4: Original	6/10/2015	2.880299252	178	75	220	33	0
620601368	5: Original	6/13/2015	2.880299252	156	92	233	15	0
618035322	6: Original	6/8/2015	2.880299252	127	40	120	47	0
604823280	7: Original	6/9/2015	1.531830239	2	1	3	0	0
160432353	8: Original	6/11/2015	1.531830239	20	13	19	14	0
604817760	9: Original	6/11/2015	1.531830239	12	8	12	8	0
624031047	10: Original	6/12/2015	1.531830239	56	29	61	24	0
604820352	11: Original	6/11/2015	1.531830239	94	36	66	64	0
160445492	12: Original	6/8/2015	1.531830239	18	5	13	10	0
160445589	13: Original	6/8/2015	1.531830239	16	1	8	9	0
160431220	14: Original	6/14/2015	1.531830239	3	2	5	0	0
160441567	15: Original	6/11/2015	1.531830239	5	3	4	4	0
604820453	16: Original	6/13/2015	1.531830239	7	4	10	1	0
160442550	17: Original	6/9/2015	1.531830239	1	0	0	1	0
160425201	18: Original	6/10/2015	1.531830239	1	0	0	1	0
629143491	1: Original	6/12/2015	7.447368421	116	54	151	19	0
634774573	2: Original	6/10/2015	7.447368421	114	61	161	13	1
147411270	3: Original	6/14/2015	1.155102041	28	13	41	0	0
147421444	4: Original	6/13/2015	1.155102041	53	20	64	9	0
605384408	5: Original	6/12/2015	1.155102041	66	39	94	11	0
147398734	6: Original	6/9/2015	1.155102041	31	13	38	6	0
147408472	7: Original	6/11/2015	1.155102041	101	33	106	28	0
147409609	8: Original	6/14/2015	1.155102041	24	13	36	1	0
147400215	9: Original	6/9/2015	1.155102041	18	9	27	0	0
147396185	10: Original	6/8/2015	1.155102041	12	4	11	5	0

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
147420545	11: Original	6/10/2015	1.155102041	17	11	23	5	0
605368387	12: Original	6/11/2015	1.155102041	19	7	23	3	0
147419891	13: Original	6/10/2015	1.155102041	5	0	4	1	0
147399687	14: Original	6/13/2015	1.155102041	63	30	77	16	0
147408335	15: Original	6/11/2015	1.155102041	68	18	78	8	0
147398523	16: Original	6/9/2015	1.155102041	27	18	42	3	0
614721355	17: Original	6/12/2015	1.155102041	72	23	86	9	0
147417308	18: Original	6/8/2015	1.155102041	44	23	49	18	0
149346148	1: Original	6/8/2015	1	7	1	5	2	1
149347154	2: Original	6/8/2015	1	5	0	4	1	0
149330874	3: Original	6/12/2015	1	10	5	10	4	1
149342158	4: Original	6/13/2015	1	22	13	22	10	3
617103316	5: Original	6/11/2015	1	109	41	120	26	4
614284845	6: Original	6/14/2015	1	52	31	74	9	0
631784199	7: Original	6/12/2015	1	14	3	14	3	0
149328921	8b: Alternate	6/9/2015	1	3	0	2	1	0
149319272	9: Original	6/9/2015	1	1	0	1	0	0
149327486	10: Original	6/8/2015	1	7	0	5	2	0
611631792	11: Original	6/11/2015	1	13	3	9	7	0
149335729	12: Original	6/10/2015	1	20	6	14	12	0
149349722	13: Original	6/8/2015	1	0	0	0	0	0
149348298	14: Original	6/13/2015	1	8	3	7	4	0
624696401	15: Original	6/11/2015	1	17	1	12	6	0
149341811	16: Original	6/14/2015	1	62	31	91	1	1
149343493	17: Original	6/10/2015	1	1	1	2	0	0
611631778	18: Original	6/11/2015	1	72	36	89	16	3
624231944	1: Original	6/9/2015	4.531914894	122	30	89	61	2
633104230	2: Original	6/8/2015	4.531914894	157	35	101	88	3
149499689	3a: Alternate	6/11/2015	4.531914894	3	1	4	0	0
149487238	4: Original	6/9/2015	4.531914894	108	47	104	51	0
618328344	5: Original	6/10/2015	1.28313253	68	39	80	27	0
149511333	6: Original	6/11/2015	1.28313253	63	13	44	31	1
618324181	7: Original	6/11/2015	1.28313253	297	70	206	158	3
149464554	8: Original	6/14/2015	1.28313253	35	20	38	17	0
149493695	9: Original	6/10/2015	1.28313253	18	7	13	12	0

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
149491956	10: Original	6/10/2015	1.28313253	11	3	11	3	0
149503912	11: Original	6/12/2015	1.28313253	293	73	192	174	0
149496622	12: Original	6/12/2015	1.28313253	55	16	44	27	0
611877695	13: Original	6/12/2015	1.28313253	128	36	99	65	0
149458823	14: Original	6/13/2015	1.28313253	6	0	5	1	0
149461346	15: Original	6/8/2015	1.28313253	16	7	21	2	0
149499742	16: Original	6/11/2015	1.28313253	14	2	10	6	0
149502711	17: Original	6/12/2015	1.28313253	33	8	21	19	1
149457693	18: Original	6/13/2015	1.28313253	2	0	2	0	0
130447128	1: Original	6/13/2015	1	121	103	198	26	0
130412425	2: Original	6/10/2015	1	81	44	102	23	0
626815081	3: Original	6/9/2015	1	348	133	380	101	0
130414136	4: Original	6/8/2015	1	171	66	182	55	0
130440602	5: Original	6/11/2015	1	107	78	161	24	0
235945248	6: Original	6/10/2015	1	76	22	83	15	0
130449024	7: Original	6/9/2015	1	277	159	348	88	0
130410308	8: Original	6/13/2015	1	86	66	125	27	0
130442142	9: Original	6/11/2015	1	32	27	50	9	0
130414163	10: Original	6/8/2015	1	181	53	184	50	0
130416881	11: Original	6/11/2015	1	35	26	51	10	0
625696810	12: Original	6/12/2015	1	44	29	67	6	0
633121288	13: Original	6/8/2015	1	132	63	144	51	0
130435259	14: Original	6/14/2015	1	119	94	186	27	0
130421972	15: Original	6/9/2015	1	266	65	209	122	0
626815080	16: Original	6/9/2015	1	302	109	319	92	0
130430099	17: Original	6/8/2015	1	41	21	44	18	0
130438888	18: Original	6/12/2015	1	140	107	210	37	0
160262564	1: Original	6/8/2015	3.798206278	113	56	158	8	3
160262989	2: Original	6/8/2015	3.798206278	74	32	103	2	1
160263878	3: Original	6/8/2015	3.798206278	86	33	108	7	4
160276521	4: Original	6/8/2015	3.798206278	117	50	154	12	1
625848180	5: Original	6/10/2015	3.798206278	58	15	49	22	2
160278118	6: Original	6/13/2015	1.357371795	129	43	114	57	1
160256726	7: Original	6/12/2015	1.357371795	65	37	99	3	0
160278610	8: Original	6/10/2015	1.357371795	122	47	98	70	1

Site ID	Site type[1]	Date observed	Sample weight	Number of drivers	Number of front passengers	Number of occupants[2] belted	Number of occupants unbelted	Number of occupants with unknown belt use
160276641	9: Original	6/10/2015	1.357371795	39	15	31	22	1
160259758	10: Original	6/12/2015	1.357371795	108	46	116	38	0
160269401	11: Original	6/9/2015	1.357371795	6	2	8	0	0
160258496	12: Original	6/11/2015	1.357371795	6	2	7	1	0
160266210	13: Original	6/10/2015	1.357371795	3	2	3	2	0
160257875	14: Original	6/14/2015	1.357371795	27	13	39	1	0
160258469	15: Original	6/11/2015	1.357371795	11	4	14	1	0
160269069	16: Original	6/9/2015	1.357371795	14	7	18	3	0
606738273	17: Original	6/13/2015	1.357371795	171	70	173	68	0
160275943	18: Original	6/12/2015	1.357371795	130	39	108	61	0
Total				17913	6769	19613	4900	169

Standard Error of Statewide Belt Use Rate[3]: 2.3 percent

Nonresponse Rate as provided in §1340.9 (f)

Nonresponse rate for the survey variable seat belt use: 0.6946 percent

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[1]Identify if the observation site is an original observation site or an alternate observation site.
[2]Occupants refer to both drivers and passengers
[3]The standard error may not exceed 2.5 percent

Appendix H: SPSS data dictionary

```
GET
  FILE='B:\495-WYDOT Seat Belt Survey\SPSS 2015\Occupants\occupants wy 2015.s
av'.
DATASET NAME DataSet2 WINDOW=FRONT.
DISPLAY DICTIONARY.
```

File Information

```
[DataSet2] B:\495-WYDOT Seat Belt Survey\SPSS 2015\Occupants\occupants wy 201
5.sav
```

Variable Information

Variable	Position	Label	Measurement Level	Role	Column Width	Alignment
InclProbOfRoadType	1	InclProbOfRoadType	Scale	Input	12	Right
TLID	2	TLID	Scale	Input	12	Right
SRSWOR	3	SRSWOR	Scale	Input	12	Right
County	4	County	Nominal	Input	12	Right
observer	5	Observer	Nominal	Input	12	Right
Site#	6	Site #	Nominal	Input	10	Left
Population	7	Population Density	Nominal	Input	12	Right
Roadway	8	Roadway Type	Scale	Input	12	Right
Weekday	9	Weekday	Nominal	Input	12	Right
Roaddirection	10	Road direction	Nominal	Input	12	Right
lanes	11	Lanes	Nominal	Input	12	Right
weather	12	Weather	Nominal	Input	12	Right
timeStamp	13	Time Stamp	Nominal	Input	12	Right
Case#	14	Case#	Nominal	Input	6	Left
Vehicle	15	Vehicle Type	Nominal	Input	12	Right
License	16	License Type	Nominal	Input	12	Right
OccupSex	17	Occ Gender	Nominal	Input	12	Right
Occup	18	Occ Belted	Nominal	Input	12	Right
Roadway2	19	Roadway Type 2	Nominal	Input	10	Right
Weekend	20	Weekend	Nominal	Input	10	Right

Variable Information

Variable	Print Format	Write Format	Missing Values
InclProbOfRoadType	F12.7	F12.7	
TLID	F12	F12	
SRSWOR	F12.9	F12.9	
County	F12	F12	99
observer	F12	F12	99
Site#	A3	A3	
Population	F12	F12	9
Roadway	F12	F12	99
Weekday	F12	F12	9
Roaddirection	F12	F12	9
lanes	F12	F12	9
weather	F12	F12	9
timeStamp	F12	F12	9
Case#	A6	A6	
Vehicle	F12	F12	9
License	F12	F12	
OccupSex	F12	F12	9
Occup	F12	F12	9
Roadway2	F8	F8	99
Weekend	F8	F8	9

Variables in the working file

Variable Values

Value		Label
County	1	Albany
	3	Big Horn
	5	Campbell
	7	Carbon
	13	Fremont
	19	Johnson
	21	Laramie
	23	Lincoln
	25	Natrona
	29	Park
	31	Platte
	33	Sheridan
	35	Sublette
	37	Sweetwater
	39	Teton
	41	Uinta
observer	1	Donna Lucas
	20	Randi Egley
	23	Monty Byers
	27	Dorothy Johnstone
	30	Bill Spencer
	35	Kayla Shear
	38	Derek Bacon
	39	Daleen Sebelius
	40	Melissa Garcia
	41	Patrick White
	42	Dawn Edwards
	43	Jill Ellenbecker
	44	Doug Peterson
	45	Logan Wilson
	46	Tonya Dove
	47	Melissa Thomasma
Population	1	Urban
	2	Rural

Variable Values

Value		Label
Roadway	11	Primary
	12	Secondary
	14	Loc-Rur-City
Weekday	1	Sunday
	2	Monday
	3	Tuesday
	4	Wednesday
	5	Thursday
	6	Friday
	7	Saturday
Roaddirection	1	North
	2	South
	3	East
	4	West
lanes	1	One Lane
	2	Two Lanes
	3	Three lanes
	4	Four Lanes
weather	1	Clear / Sunny
	2	Cloudy
	3	Foggy
	4	Light Rain
	5	Snow / Ice
	6	Heavy Rain
	7	Occasional Rain
timeStamp	1	7:30 - 9:30 AM
	2	9:30 - 11:00 AM
	3	11:30 AM - 1:30 PM
	4	1:30 - 3:30 PM
	5	3:30 -5:30 PM
Vehicle	1	Auto
	2	Van
	3	SUV
	4	Pickup

Variable Values

Value		Label
License	1	Wyoming License
	2	Out-of-State License
	9	Unsure
OccupSex	1	Male
	2	Female
Occup	1	Belted
	2	Not Belted
	3	Unsure
Roadway2	11	Primary
	12	Secondary
	14	Loc-Rur-City
Weekend	1	Weekend
	2	Weekday

State Seat Belt Use Survey Reporting Form

PART A

State: Wyoming

Calendar Year of Survey: 2015

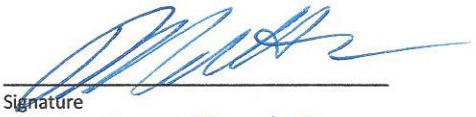
Statewide Seat Belt use Rate: 79.8 Percent

I hereby certify that: The Governor designated Matt Carlson as the State's Highway Safety Representative (GR), and has the authority to sign the certification in writing.

The reported Statewide seat belt use rate is based on a survey design that received approval by NHTSA, in writing, as conforming to the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340.

The survey design remained unchanged since NHTSA approved the survey.

Dr. James G. Leibert[1], a qualified survey statistician, reviewed the seat belt use rate reported above and information reported in Part B and determined that they meet the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340.



Signature

9-28-15

Date

Matthew D. Carlson, P.E.

Printed name of signing official

[1] In accordance with the final rule published in Federal Register Vol. 76 No. 63, April 1, 2011, Rules and Regulations, pp. 18042-18059, DLN contracted with statistician, Dr. James G. Leibert to determine that the methods used to process the collected data met the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340. Dr. Leibert reviewed the SPSS output files and related data tables to confirm the data are accurate and true. A copy of Dr. Leibert's abbreviated resume follows.