SURVEY ANALYSIS OF SEAT BELT USE IN WYOMING

Wyoming State Government

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2018 WYOMING SEAT BELT SURVEY

The protocols implemented for this study were per the federal guidelines set up 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 2018 survey analysis is the sixth survey conducted under the 2012 guidelines for seat belt use in the state of Wyoming

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- Deb Nelson served as the project administrator
- Lydia DeJesus assisted with project coordination; observer training, supervised coding, data entry, and quality assurance procedures; and developed spreadsheets, charts, and graphs.
- Bridget White coordinated and secured the acquisition of contractors to conduct the survey observations.
- Bridget White and Vicky Peterson conducted field monitoring.

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Executive Summary

Seat belt use in Wyoming during 2018 is the subject of the narrative and appendices in this report. This study was developed in accordance with the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR § 1340. The sample of counties and sites was developed in 2017 and the report for last year served as a baseline for this 2018 survey.

The narrative begins with the 2018 estimates of seat belt use for all vehicle occupants, with separate estimates of drivers and outboard passengers. The seat belt use rates for the vehicle occupants were then presented within the categories of several variables that offered more details about patterns of seat belt use. For example, there were estimates of seat belt use within the categories of population density, within counties, by in-state and out-of-state licensed vehicles, vehicle type, gender, weekdays compared to weekends, and the combination of gender and vehicle type. Next, there was a series of comparisons between driver and passenger seat belt use for these same variables. The report concludes with an examination of trends in seat belt use in Wyoming. The comparison of the results for 2017 and 2018 relied on the same sample of counties and sites. While earlier surveys from 2012 to 2016 used a different sample and procedures, a comparison across the years from 2012 to 2018 is also presented, with the caveat that the different surveys were not directly comparable because of the changed samples.

In this report, the measures of seat belt use are characterized as estimates rather than raw numbers. These estimates were derived from data that was weighted by the probabilities associated with the sites within counties where observations were collected. The statistical weighting process was accomplished by utilizing the Complex Samples module in the Statistical Package for the Social Sciences; the process prepared the weighted data for analysis utilizing commands within the module.

The following are the interpretive highlights from the results of the data analysis.

- Observers were in the field at each of the seventeen data collection sites within each of the seventeen counties between Monday, June 4th to Sunday June 10th, 2018. They collected a total of 25,046 observations of seat belt use for occupants of 18,255 vehicles.
- For all vehicle occupants, the estimate of seat belt use is 86.3 percent wearing seat belts, with 12.7 percent not belted. Observers were unsure about seat belt use for 0.4 percent of the observations. The standard error for all vehicle occupants is 0.3 percent, and the ninety-five percent confidence intervals range from a lower limit of 85.7 percent to a higher limit of 86.9 percent.
- Estimated seat belt use for drivers was 86.9 percent belted, with a standard error of 0.3 percent. The estimate of seat belt use for passengers was 84.5 percent belted, with a standard error of 0.7 percent. Drivers made up 72.9 percent of all observations, so they had the greatest effect on overall estimates.
- The overall estimate of seat belt use for 2018 increased by a modest 1.5 percent from the 2017 result of 84.8 percent belted to the 2018 rate of 86.3 percent belted.
- There are eight counties with seat belt use rates above the overall average of 86.3 percent and nine counties below the overall rate. Each county's seat belt use is presented in detail.

- Most of the sites, where observations were collected, are identified as rural. There is slightly higher seat belt use in rural areas, but the difference is not great: 88.1 percent belted in rural areas compared to 86.2 percent in urban areas.
- Occupants of out-of-state vehicles were observed as wearing seat belts at a rate of 90.7 percent, compared to a rate of 84.8 percent of occupants in Wyoming licensed vehicles.
- The highest seat belt usage rate was for vehicle occupants observed within a catch-all category of local, rural, and city roadways. However, the range of seat belt use across the three roadway types is less than five percentage points.
- Vehicle occupants observed on weekends were slightly more likely to be wearing seat belts, with rates of 89.0 percent on weekends and 85.3 percent on weekdays.
- 58.1 percent of the observed vehicle occupants were males, and they had a seat belt usage rate of 82.2 percent, compared to a rate of 91.0 percent for female vehicle occupants, a difference of 8.8 percentage points.
- There are a lot of pickup trucks in Wyoming, and 36.4 percent of the vehicle occupants were in these trucks. The seat belt use rate was lowest for those in pickup trucks at 82.5 percent, but it was only 3.8 points below the statewide average of 86.3 percent across all vehicle types. Seat belt use rates were above average for occupants of all other types of vehicles (automobiles, vans and SUVs).
- Females had higher rates of seat belt use in every type of vehicle.
- The comparisons between drivers and passengers produced varied results. Within some categories of the selected variables, passengers had higher rates of seat belt use, which means that the rates were not always consistent with the lower overall rate of seat belt use for passengers.
- The trends in Wyoming seat belt use from 2017 to 2018 showed a modest increase in the number of observations and in the rate of seat belt use. Across the years, the rate of seat belt use has increased from a low point in 2012 (77.0 percent belted) to the high point in the 2018 survey of 86.3 percent. Over the seven years, observers have recorded a total of 161,699 observations of seat belt use.

Introduction to the Survey

From Monday June 4, 2018 to Sunday June 10, 2018, nineteen trained observers collected observations of seat belt use in assigned counties. Two of the observers were alternates who provided support in two of the counties, Laramie and Niobrara.

There were seventeen counties in the sample, each with seventeen individual sites where efforts were made to collect data. A total of seven of the 289 sites had no vehicle traffic, so no observations were collected. Those sites were site 12 in Albany County; sites 3, 5 and 9 in Laramie County; and sites 2, 6 and 13 in Natrona County.

Observers identified 76 vehicle occupants whose seat belt use could not be determined and were coded as "unsure."[1] Once the data was weighted to account for sample probabilities, the "unknown" rate became 0.4 percent of the sample. The list of counties, observers, and the number of observations collected by each observer are all presented in Table 1.

Table 1: frequencies by observer and county, WY 2018

Counties	Observers	Frequency
Albany	Candy Hunter	1,337
Big Horn	Patrick White	546
Campbell	Lucinda Pope	1,817
Carbon	Brooke Darden	1,346
Converse	Sarah N'Tula	1,705
Crook	Derald Maddison	1,592
Fremont	Jaclyn Davison	1,484
Johnson	Deb Eutsler	1,131
Laramie	Bridget White	21
	Kolter Elder	378
Lincoln	Dawn Edwards	1,379
Natrona	Molly Laidlaw	834
Niobrara	Bill Spencer	493
	Chrissy Lira	396
Park	Dixie Elder	1,901
Platte	Doug Peterson	1,511
Sheridan	Susan Parkinson	1,657
Sweetwater	Kayla Schear	2,229
Teton	Peggy Dowers	3,289
	Total	25,046

[1] Dividing 76 "unsure" by 25,046 vehicle occupants produced the "unknown" rate of .0030344, or 0.3 percent. However, this calculation did not account for sample probabilities, which changed the unweighted, unknown rate from 0.3 percent to a weighted rate of 0.4 percent. There were similar differences between the unknown rates for drivers (0.2 percent unweighted; 0.0 percent weighted), and passengers (0.5 percent unweighted; 1.6 percent weighted).

Seat Belt Observer Training

iPads were used to record the observations of seat belt use in the 2018 Wyoming survey. Observers were provided the iPads and were trained to use them. All the iPads were preloaded with the 2018 seat belt survey collection tool. Every observer, alternate, and quality control staff received training on the individual components of the data collection application using audio, visual and "hands-on" instruction. On the first day of training, each of the participants practiced using the program in the classroom. Next, the observers completed a mock data collection activity. On the second day, observers completed four data collection sessions. Three of those four data collection sessions were used to calculate their individual inter-accuracy ratios, which were used to determine their readiness to collect the data for this survey.

Quality Control

For the 2018 Wyoming Seat Belt Use Survey, observer training began in the classroom. The observers were presented with survey procedures and methods, using the protocols set up for surveys of seat belt use. The DLN staff placed special emphasis on directions for parking and locations for optimal observation of seat belt use.

Following the classroom training, observers took part in a series of pilot tests that assessed their skills and measured the accuracy of their observations. Pairs of observers viewed the same traffic but independently recorded their observations. The staff calculated each pair's inter-accuracy ratios, a minimum of 85 percent agreement needed to be shown before observers could qualify. This step exists in the training process used to insure the reliability of the data before any observations were collected.

A third part of the training involved written tests of each observer's knowledge of observation rules and procedures. A minimum passing grade of 80 percent was required for all the observers, alternates and quality control supervisors.

Once in the field, quality control monitors conducted random spot checks on the reliability of the observations for different observers. These monitors were required to attend training sessions with observers, and received additional training separate from the observers in a half-day session. That quality control monitoring session included an extensive review of the directions that applied to the monitors. During that session, the random site selections were determined for reliability spot checks where monitoring would occur.

During the survey, DLN staff were readily available to help observers with questions and issues. This included situations where conditions might have required changes to alternate sites or other adjustments that observers might needed to be made to insure the quality of observations.

When observers completed an electronic record of observations for each site, they transferred the data electronically to the DLN staff person assigned the task of compiling the data. DLN staff took steps to insure the data was accurate and contained correct codes, working with observers in order to resolve any issues to insure reliable data going forward. Once the data was "cleaned" of any errors, it was moved to Excel files and examined further for any anomalies. At that point, the Excel files were loaded into the *Statistical Package for the Social Sciences*, where variable

and value labels were created along with other preparations for analysis. The initial SPSS files were reviewed for any additional cleaning that might have been needed. At that point, the Complex Samples plan in SPSS was developed to weight the data by the sampling probabilities required to generate estimates of seat belt use.

At every step, from observer training to data analysis, DLN followed standard protocols to insure the reliability and accuracy of the data used to compile this report.

Estimates of Seat Belt Use[2]

The estimates of seat belt use were calculated using the "Complex Samples" procedure in SPSS. This module utilized a complex sample plan that specified the sampling methods and probabilities to weight the raw data, thereby producing statistically reliable estimates of seat belt use.

The results for all vehicle occupants are presented in the following table:

Table 2: estimates of seat belt use for vehicle occupants, WY 2018

		Standard	95 % Confidence Level		Unweighted
SBU	Estimate	Error	Lower	Upper	Count
Belted	86.3%	0.3%	85.7%	86.9%	20,990
Not Belted	13.2%	0.3%	12.7%	13.8%	3,980
Observer Unsure	0.4%	0.1%	0.3%	0.6%	76
Total	99.9%	0.0%	100.0%	100.0%	25,046

There were 25,046 vehicle occupants observed. Of these, observers recorded 86.3 percent were wearing seat belts; 12.7 percent were not belted; and observers were "unsure" about seat belt use for 0.4 percent of the occupants. The table shows a standard error for all vehicle occupants at 0.3 percent and a 95 percent confidence interval for belted vehicle occupants ranging from a lower limit of 85.7 percent to a higher limit at 86.9 percent for the 25,046 vehicle occupants.

The estimates for drivers are presented in the following table:

Table 3: estimates of seat belt use for vehicle drivers, WY 2018

		Standard	95 % Confidence Level		Unweighted
SBU	Estimate	Error	Lower	Upper	Count
Belted	86.9%	0.3%	86.3%	87.6%	15,044
Not Belted	13.0%	0.3%	12.4%	13.7%	3,170
Observer Unsure	0.0%	0.0%	0.0%	0.0%	41
Total	99.9%	0.0%	100.0%	100.0%	18,255

For drivers, the weighted estimate of belt use was 86.9 percent, with a standard error of 0.3 percent, and 95 percent confidence intervals with a lower range of 86.3 percent and a higher range of 87.6 percent for the 18,255 drivers.

[2] The term "estimate" was used throughout this report to emphasize the difference between the unweighted data and the data weighted by the sample probabilities associated with the sampling methodology. The process of weighting was accomplished with the "Complex Samples" module in the Statistical Package for the Social Sciences (SPSS).

The next table presents the estimates for passengers:

Table 4: estimates of seat belt use for vehicle passengers, WY 2018

		Standard	95 % Confidence Level		Unweighted
SBU	Estimate	Error	Lower	Upper	Count
Belted	84.5%	0.7%	83.2%	85.7%	5,946
Not Belted	13.9%	0.6%	12.7%	15.1%	810
Observer Unsure	1.6%	0.2%	1.2%	2.2%	35
Total	100.0%	0.0%	100.0%	100.0%	6,791

The estimate of passenger seat belt use was 84.5 percent belted, with a standard error of 0.7 percent, and 95 percent confidence levels with a lower level at 83.2 percent and a higher level of 85.7 percent.

A summary of these results is presented in the following table:

Table 5: percentage estimates of seat belt use for occupants, drivers and passengers, WY 2018

	Drivers	Passengers	All Occupants
Percent	86.9%	84.5%	86.3%
Unweighted Count	18,255	6,791	25,046
% of Sample	72.9%	27.1%	100.0%

The overall rate of 86.3 percent belted reflected the higher rate for drivers. Because drivers were 72.9 percent of the unweighted number of vehicle occupants, they were likely to have a greater effect on the overall estimate of seat belt use. Passengers had a lower rate of 84.5 percent belted, but passengers represented a much lower proportion, 27.1 percent, of the vehicle occupants.

The next table compares the results for 2018 with last year's baseline survey of seat belt use in Wyoming.

Table: comparison of 2017 and 2018 estimates of seat belt use in WY

	2017	2018	Difference
Drivers	82.7%	86.9%	4.2%
Passengers	90.0%	84.5%	-5.5%
All Occupants	84.8%	86.3%	1.5%
Unweighted Count	23,775	25,046	1,271

This is the second year of the new sample redesigned and redrawn in 2017. The 2017 results established the baseline for Wyoming surveys of seat belt use with this new sample of counties and sites. The results for this year and last year are presented in the above table.

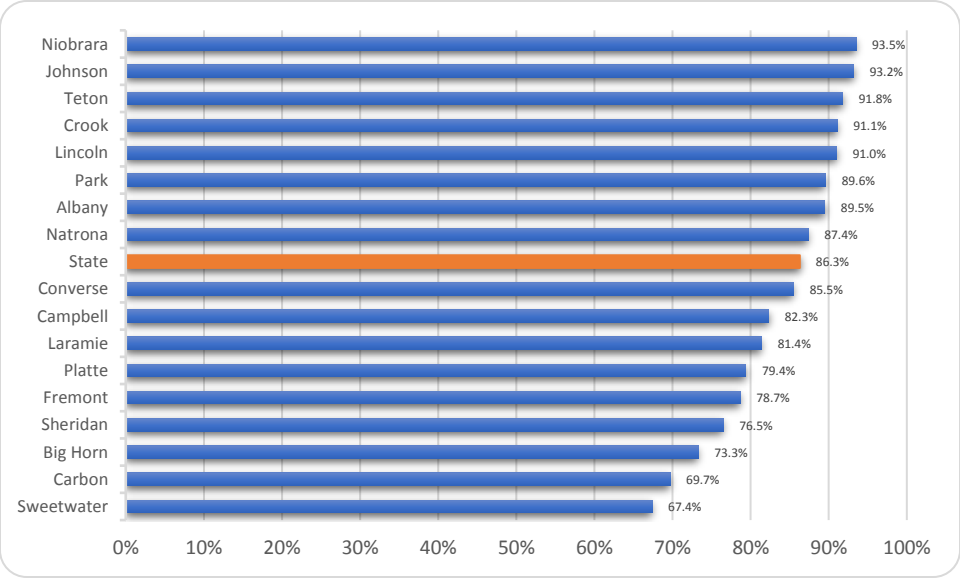
The estimated rate of seat belt use for drivers increased from 82.7 percent in 2017 to 86.9 percent for 2018, an increase of 4.2 percentage points for drivers. The estimate for passengers was 90.0 percent in 2017 and it was 84.5 percent in 2018, a minus 5.5-point difference. Overall, the estimate for all vehicle occupants increased by a modest 1.5 percent from 84.8 percent belted in 2017 to 86.3 percent belted in 2018. It is also noted in the table that the number of observations increased from 23,775 in 2017 to 25,046 in 2018, a difference of 1,271 observations.

Estimates of Seat Belt Use by County

The estimates of occupant seat belt use by County for 2018 are presented in Figure 1.[3]

The chart shows eight counties with occupant seat belt use rates above the overall average of 86.3 percent. Those counties are Albany (89.5%), Crook (91.1%), Johnson (93.2%), Lincoln (91.1%), Natrona (87.4%), Niobrara (93.5%), Park (89.6%), and Teton (91.8%). There are nine counties below the overall rate of 86.3 percent belted. They include Big Horn (73.3%) Campbell (82.3%), Carbon (69.7%), Converse (85.5%), Fremont (78.7%), Laramie (81.4%), Platte (79.4%), Sheridan (76.5%), and Sweetwater (67.4%).

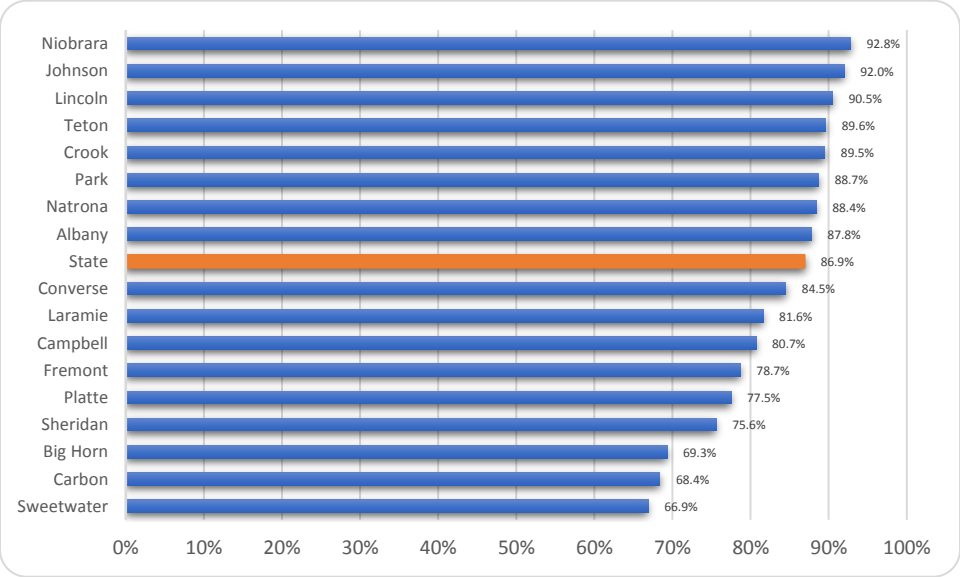
Figure 1: estimates of percent belted for occupants, WY 2018



[3] The complete tables, including the percentages for the "not belted" and the category of observer "unsure" are found in the appendix to this report. From this point forward the narrative of the report was simplified, while the extensive details are found in the appendix.

The overall belt use rate for drivers was 86.9 percent belted. The following chart shows that the same counties that are above the overall rate for all occupants are also above the overall rate for drivers. This was an expected outcome because drivers made up more than seven of every ten vehicle occupants.

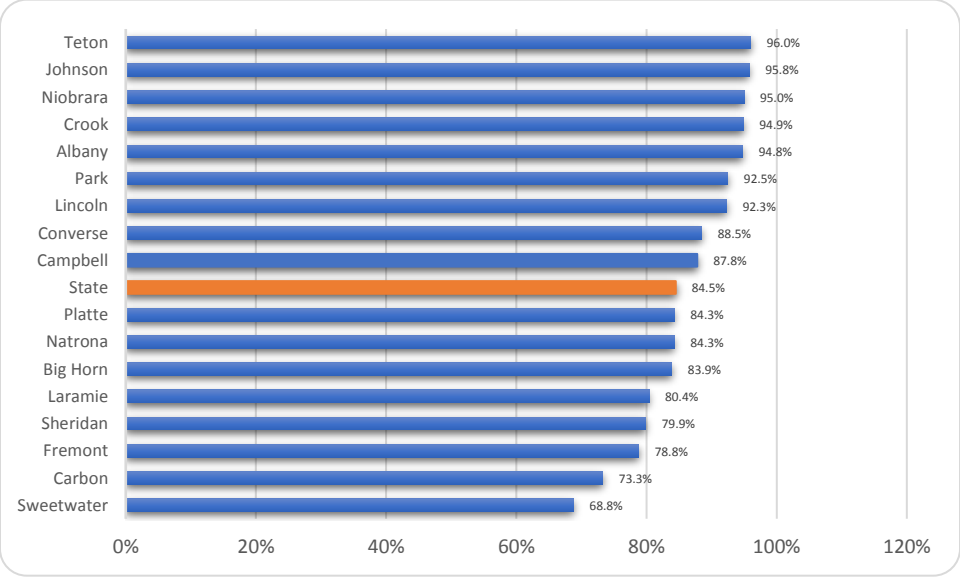
Figure 2: estimates of percent belted for drivers, WY 2018



On the other hand, passengers made up fewer than three of every ten vehicle occupants, so it was not surprising that in some counties the passenger rates departed from the pattern. In this case, there were three such counties: Campbell, Converse and Natrona.

Here is the chart illustrating seat belt use by county for passengers:

Figure 3: estimates of percent belted for passengers, WY 2018



In Campbell County, the rate for passengers (87.8%) was higher than the comparable rate for drivers (80.7%) and the overall rate (84.5%). Similarly, the passengers in Converse County had a higher rate for passengers (88.5%) than for either drivers (84.5%) or all vehicle occupants (85.5%). Natrona County provided an exception to the pattern. In Natrona, drivers had a higher rate (88.4%) than the County's overall rate (87.4%) or the County's passenger rate (84.3%).

In general, the counties that were above the statewide average for all vehicle occupants were also above the average for both drivers and passengers. The anomalies were found in Campbell, Converse, and Natrona Counties.

A comparison of 2017 and 2018 occupant seat belt use rates is presented in Table 6.

Table 6: seat belt use by county, WY 2017-2018

County	Occupants 2017	Occupants 2018	Difference
Albany	85.6%	89.5%	3.9%
Big Horn	86.6%	73.3%	-13.3%
Campbell	78.3%	82.3%	4.0%
Carbon	86.9%	69.7%	-17.2%
Converse	81.6%	85.5%	3.9%
Crook	93.1%	91.1%	-2.0%
Fremont	74.6%	78.7%	4.1%
Johnson	91.9%	93.2%	1.3%
Laramie	71.9%	81.4%	9.5%

Lincoln	84.7%	91.0%	6.3%
Natrona	80.2%	87.4%	7.2%
Niobrara	94.9%	93.5%	-1.4%
Park	76.0%	89.6%	13.6%
Platte	78.0%	79.4%	1.4%
Sheridan	78.8%	76.5%	-2.3%
Sweetwater	64.4%	67.4%	3.0%
Teton	89.7%	91.8%	2.1%
Total	84.8%	86.3%	1.5%

The 2017 survey of seat belt use established the baseline data for Wyoming due to the application of new sampling methodologies, as well as new sample of sites where observations occurred in each county. As the chart indicates, 84.8 percent of vehicle occupants were observed as belted in 2017; the comparable percentage for 2018 is 86.3 percent, a modest increase of 1.5 percentage points. For most of the individual counties, the percentages were comparable from last year to this year. However, the small overall change suggested that the increased rates in some counties are offset by decreased rates in other counties.[4]

The most notable declines in seat belt usage were in Carbon (-17.2 percent) and Big Horn Counties (-13.3 percent). On the other hand, significant increases from 2017 to 2018 were found in Park (+13.6 percent) and Laramie (+9.5 percent) Counties, along with smaller increases in Natrona (+7.2 percent) and Lincoln (6.3 percent) Counties.

More information on the statewide trends in Wyoming seat belt use will be presented later in this report.

[4] The reasons for the changes were not immediately obvious from the data. Any explanations are likely to require an intimate knowledge of the counties involved, including any localized events or other changes that may have affected the seat belt rates in those specific counties.

Occupant Belt Use for Selected Variables

The next section of this report presents estimates of seat belt use within the categories of several variables. For example, each site is pre-coded for population density (urban or rural), and the type of roadway (primary, secondary, and an "other" category) characteristic of the site. As a result, these factors were connected to each observation, so belt use associated with population density and type of roadway can be identified. In addition, observers noted the vehicle occupant's gender, the type of vehicle, whether the vehicle was registered in Wyoming or out of state, and the day of the week the observations were collected. The relationships between these variables and seat belt use is reported on the next several pages.

First, occupant seat belt use for the selected variables are reported. Next are the associations for drivers, and last, for passengers.[5]

Next, this report focuses on the relationship between seat belt use and other factors, like population density, the type of roadway, occupant gender differences in seat belt use, the vehicle type, whether the occupants are in vehicles registered in Wyoming or out-of-state, and whether the observations were made on weekdays or the weekend. This analysis is followed by a review of the seat belt use of drivers and passengers and, finally, a brief examination of trend lines in seat belt use for Wyoming.

Population Density[6]

In Wyoming, sites in areas with more than 5,000 residents are defined as "urban," while sites in areas with fewer than 5,000 residents are designated as "rural." For last year's 2017 baseline survey, DLN staff consulted maps and U.S. Census data to determine the appropriate code for each site. For example, a site found within a city with a population of 5,000 or greater, was coded as "urban." If the site was located outside of a city, the basis of the code became the area within the county population. Similarly, sites in cities or outside a city in a county were coded as "rural" when the population was fewer than 5,000 residents.

A threshold of 5,000 residents may seem less than urban to readers more accustomed to more densely populated states, but Wyoming is the land of "wide open spaces" and relatively few spaces. The U.S. Census Bureau estimates the Wyoming population at about 579,315 people, which ranks fiftieth in the nation among fifty states. Given an area of 97,093.14 square miles, the estimate is 5.85 people per square mile. The least populated county in our sample and all of Wyoming is Niobrara County, with a population density of .9 people per square mile. The three largest cities are Cheyenne (63,335) in Laramie County, Casper (60,285) in Natrona County, and Laramie (32,158) in Albany County.[7]

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[5] Again, we note that full tables are found in the appendix while the focus in the narrative is on percentages.

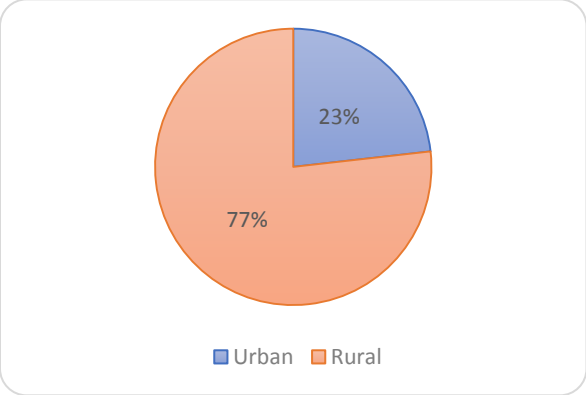
[6] An exact definition of "population density" is usually based not on the population count but the population of residents per square mile. For example, Wyoming is the least populous state in the U.S., but it is the second least "densely" populated. In this report, we aren't that exact. We used the threshold of below and above a locus population of 5,000 for a dichotomous distinction.

[7] We used two sources for Wyoming population facts: https://www.census.gov/quickfacts/wy and http://worldpopulationreview.com/states/wyoming-population/.

Given this context, it was not surprising that 76.8 percent of the vehicle occupants were identified in rural sites, with 23.2 percent in urban sites.

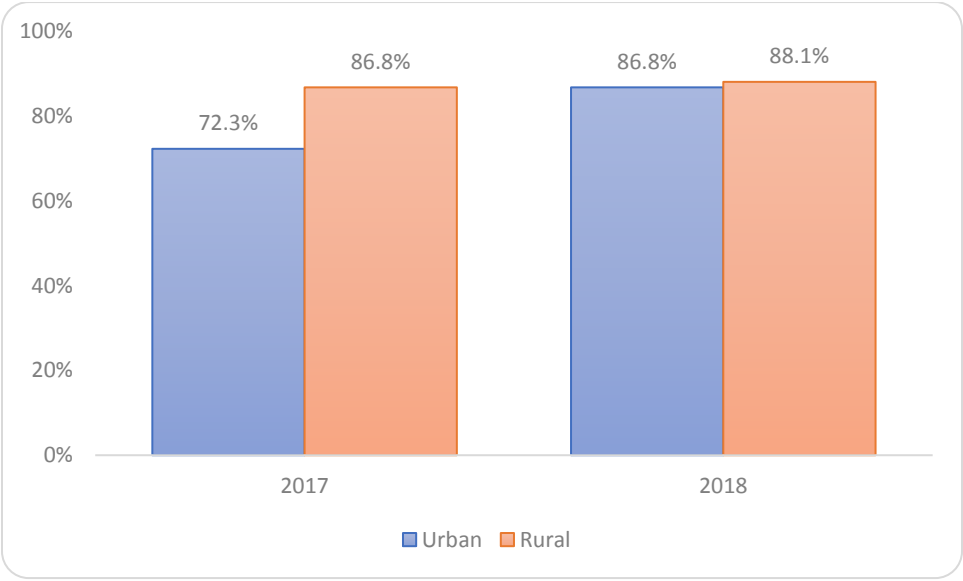
In past surveys of seat belt use in Wyoming, including the 2017 baseline survey, vehicle occupants in rural areas were more likely to be observed wearing seat belts. That result was also true for this 2018 survey, although the difference was not as pronounced, as illustrated by the following chart.

Figure 4: Percent belted by population density, WY 2018



As illustrated, 88.1 percent of rural vehicle occupants were belted, while 86.2 percent of urban vehicle occupants were belted, an almost negligible difference of 1.9 percent. In 2017, rural vehicle occupants were 14.5 percentage points more likely to be belted, this being one of the largest differences found in the baseline 2017 survey. A comparison of vehicle occupant seat belt use is illustrated by the following chart.

Figure 5: Percent of Vehicle Occupants Belted by Population Density, WY 2017and 2018



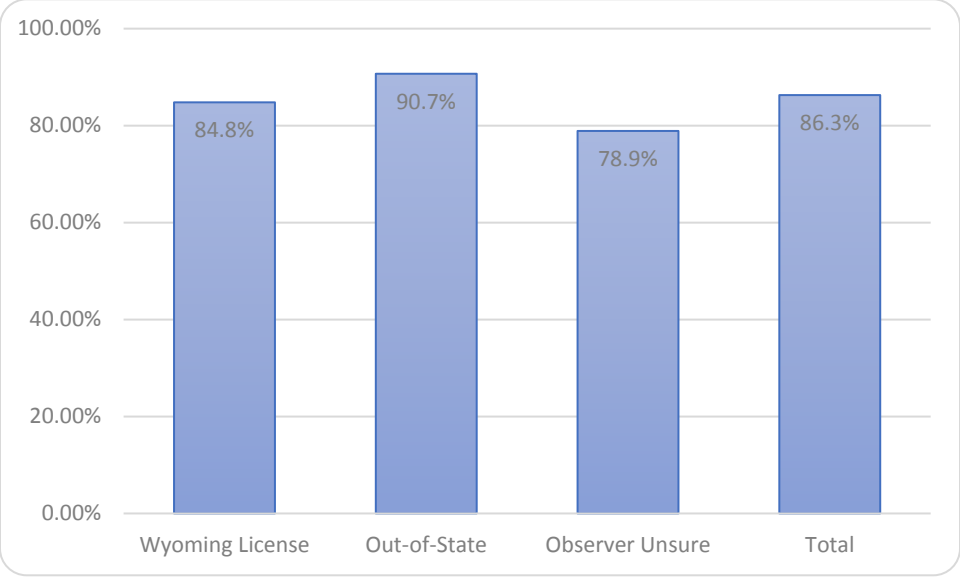
Part of the reason for this change might be due to the relatively small number of vehicle occupants in urban areas: only 5,814 of the 25,046 vehicle occupants, or 23.2 percent of the sample. It may be that seat belt use had increased substantially in urban areas to the point that use is almost the same as in rural areas, but hard to determine due to the small number of urban observations.

Occupant Seat Belt Use by Vehicle Registration

Observers noted whether the occupants were in vehicles with Wyoming license plates or out-of-state plates, based on the assumption that the license plate identified was the state in which the vehicle was registered. When observers were unable to identify the vehicle license, the data was coded as "unsure."

As in past studies, occupants in out-of-state vehicles were more likely to be observed wearing seat belts. The results are illustrated by the following chart.

Figure 6: percent belted by vehicle registration, WY 2018



As shown, occupants of out-of-state vehicles were belted at a rate of 90.7 percent and those in Wyoming registered vehicles were belted at a rate of 84.8 percent, a difference of 5.9 points. However, as in the case of population density, the differences in the categories are lower. Last year, 2017, the difference was a 12 percent higher rate of seat belt use in out-of-state vehicles, twice the difference found in the 2018 study.

Observers were unsure about vehicle registration for 279 of the 25,046 vehicle occupants, or about 1.1 percent of all observations.

Occupant Belt Use by Type of Roadway

For the 2017 baseline survey, NHTSA provided a description for the type of roadway associated with each observational site. The codes assigned identified three categories of roadways, as follows:

- S1100 roads are generally federally or state-maintained primary roads and include the interstate highways that run through Wyoming. These are likely to include the four-lane highways associated with the sites in the data. In fact, 98.1 percent of the observations for this roadway type were collected across two of the four lanes on the roadway.[8] Of the total of 25,046 observations, 30.1 percent occurred within these roadways.
- S1200 roads were likely to be a mixture of two- and four-lane highways – 74.2 percent of the observations were collected from one-lane of traffic and 25.8 percent of the observations were collected across traffic moving in the same direction across two lanes. (Therefore, on primary roads, most observations were collected from four-lane highways, while on secondary roads, most were collected on two-lane highways.) Overall, 65.5 percent of the observations of vehicle occupant's seat belt use were collected on these secondary roads.
- S1400 road category is defined as a mixture of local, rural, and city roadways. These roadways are paved, as are all in the sample, but these roads have the least amount of traffic: 4.3 percent of the total observations were collected on these local, rural and city roadways. About a of third of the observations were collected from one lane of traffic, while about two-thirds were collected on four-lane roadways.

Overall, 51.7 percent of the observations were collected from traffic moving in one direction on one lane of a two-lane highway, while 48.3 percent of the observations were collected across two-lanes moving in the same direction on a four-lane highway.

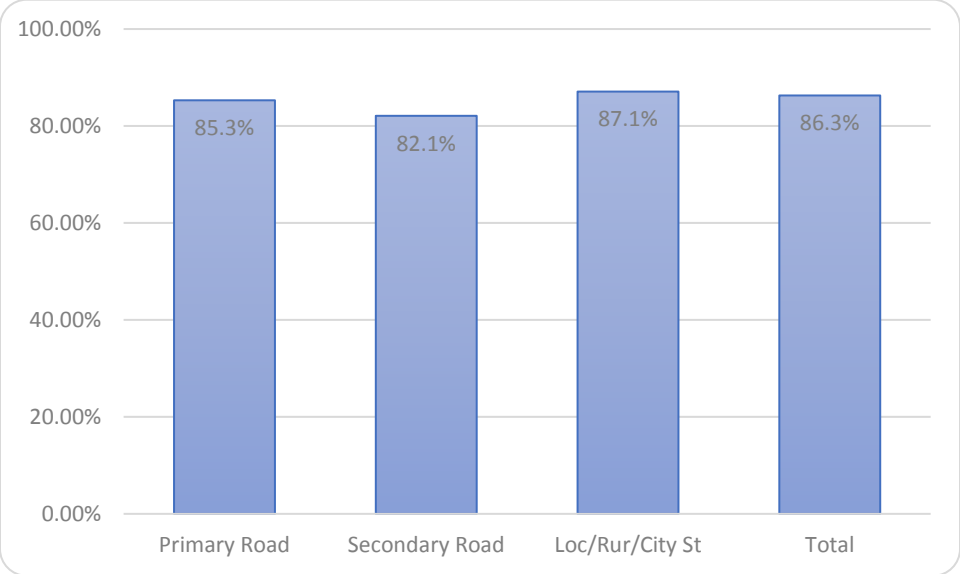
Table 7: unweighted observations by roadway type and lanes observed, WY 2018

	Number of Lanes Observed		
Roadway Type	One Lane	Two Lanes	Total
S1100-Primary	1.2%	98.8%	100.0%
S1200-Seconndary	74.2%	25.8%	100.0%
S1400-Loc/Rur/City	34.0%	66.0%	100.0%
Total	51.7%	48.3%	100.0%

[8] We mean by this that observers were typically collecting observations for the two lanes of traffic moving in the same direction, while the traffic moving in the other two lanes in an opposite direction was not observed.

There are relatively small differences in seat belt use across these three roadway types, as illustrated in Figure 7.

Figure 7: occupant seat belt use by type of roadway, WY 2018



On primary roads, 85.3 percent of the vehicle occupants were observed as belted; 82.1 percent on secondary roads; and 87.1 percent of vehicle occupants were observed as belted on the combination of local, rural, and city roadways. The percentage difference between the highest belt use rate (S1400) and the lowest rate (S1200) by roadway is 5 percent.

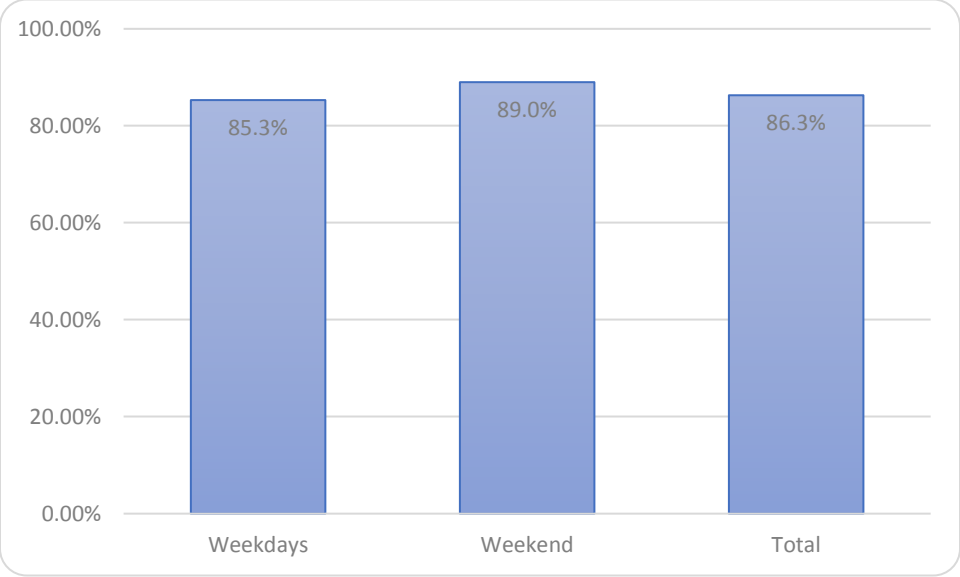
Occupant Belt Use by Weekdays and Weekends

Observers noted the day of the week observations were collected. For this report, we collapsed the days into a dichotomy, weekdays (Monday through Friday) and weekends (Saturday and Sunday).

Observers collected 79.2 percent of the observations over the five weekdays, and the remaining observations, 20.9 percent, were collected on the two days of the weekend.

Seat belt use did vary somewhat depending on the days the observations occurred. We found that 85.3 percent of the vehicle occupants observed during weekdays were wearing seat belts, compared to 89.0 percent on weekends, a difference of 3.7 points. These results are illustrated by the following chart.

Figure 8: occupant seat belt use by weekdays and weekend, WY 2018

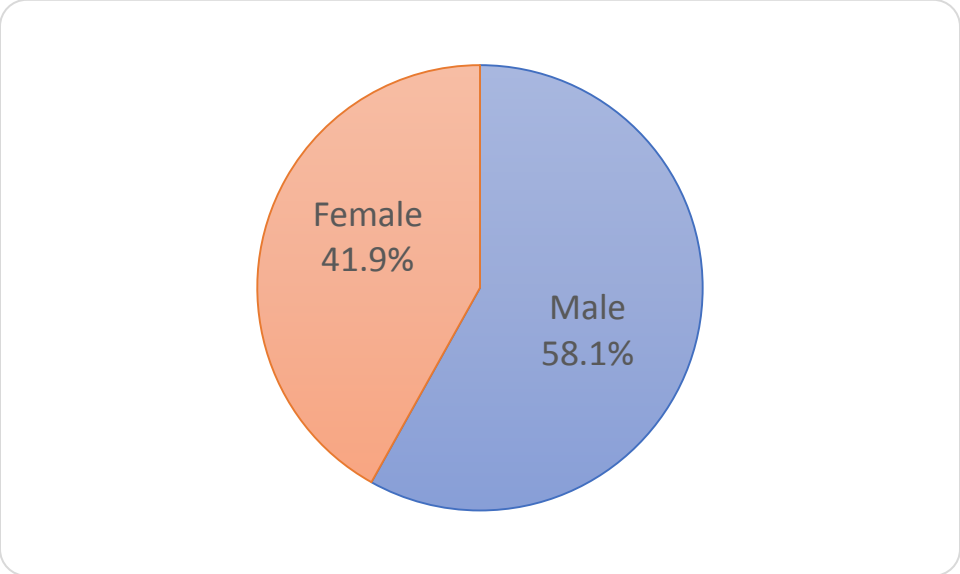


Occupant Belt Use by Occupant Gender

Observers made their best guess about the gender of the vehicle occupants. Obviously, sometimes they may have made mistakes. However, in our experience, different observers were likely to agree with each other when it came to any individual observation.[9] This is important because prior surveys have usually found higher seat belt rates for female than male vehicle occupants, while male occupants tended to outnumber their female counterparts. Both of these results appear true for the 2018 Wyoming survey.

For the 2018 Wyoming data, males made up 14,553 of the 25,045 vehicle occupants, or 58.1 percent. Conversely, females made up 10,492 of the vehicle occupants, or 41.9 percent of the sample. In other words, there were 16.2 percent fewer females than males among the vehicle occupants.

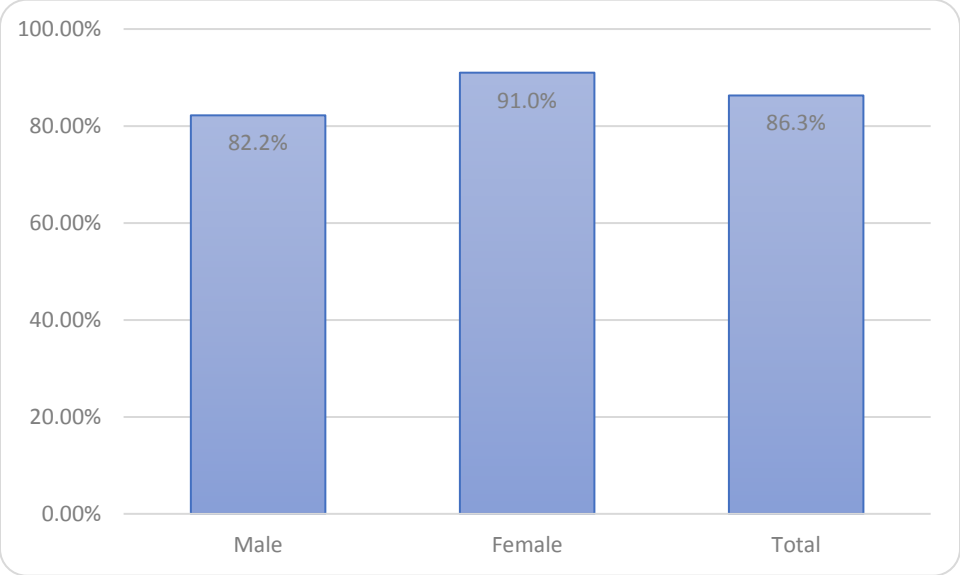
Figure 9: male/female observed occupants



[9] There was only one instance when an observer did not code the gender of the vehicle occupant. Therefore, gender is identified for 25,045 of the 25,046 vehicle occupants.

There were fewer females, but they had a higher seat belt use rate. For Wyoming 2018, female vehicle occupants are belted at a rate of 91.0, while the comparable rate for males is 82.2 percent, a difference of 8.8 percent. The results are illustrated by the following chart.

Figure 10: percentage of occupants belted by gender

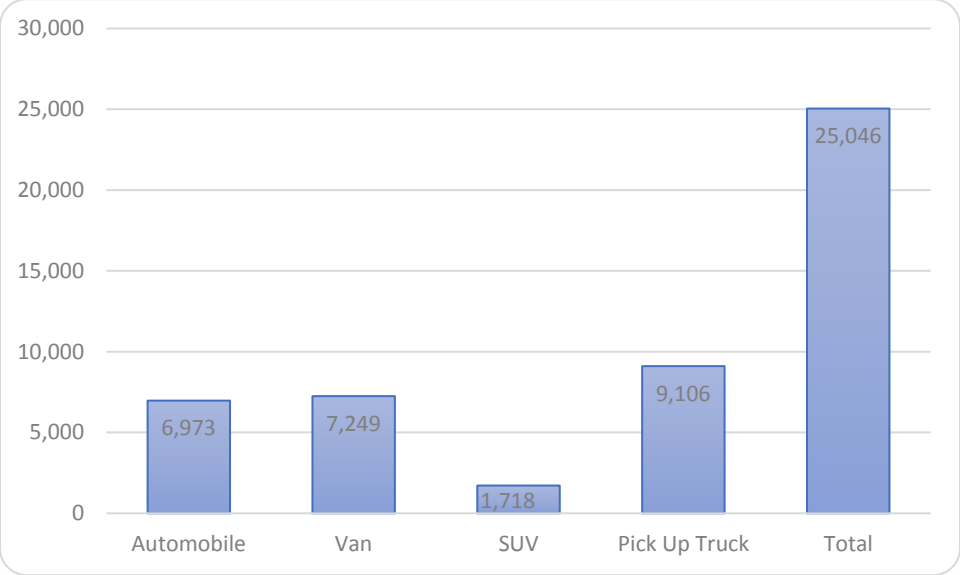


One way to sum up the differences by gender is to say this: vehicle occupants, male seat belt use carried more weight in determining overall seat belt use because there were more of them; however, females tended to raise the overall estimates of seat belt use because they were much more likely to wear seat belts. This has been the case in all the seat belt surveys DLN Consulting, Inc has done to date.

Occupant Belt Use by Vehicle Type

There is a saying, "Nothing says country like a truck." This statement accurately was found true in this study. Pickup trucks made up more than any of the other three types of vehicles: automobiles, vans, and sports utility vehicle (SUVs). The following chart illustrates the relative frequency of occupants for each.

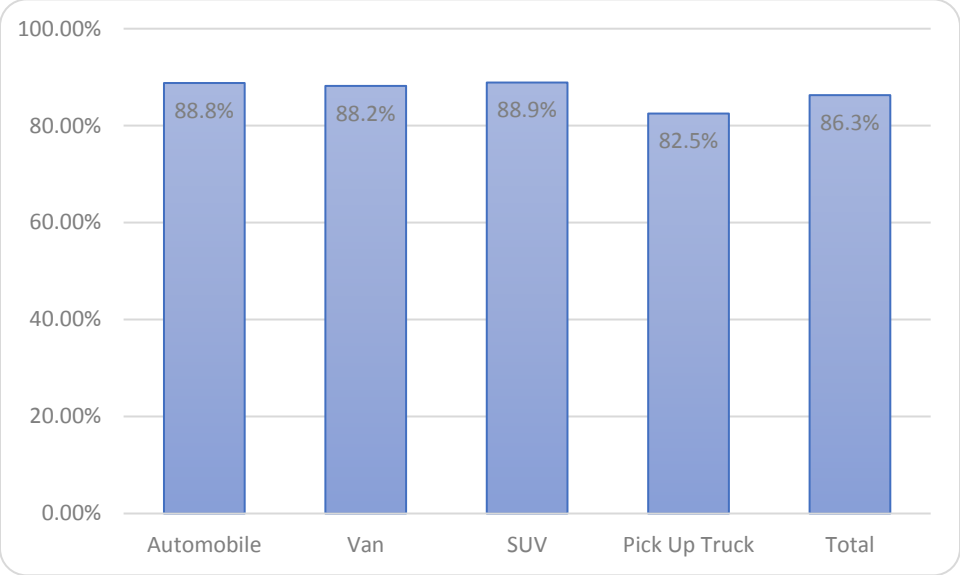
Figure 11: occupant frequencies by vehicle type



Pickup trucks were the vehicle for 36.4 percent of the vehicle occupants. The second most common vehicles were vans with 28.9 percent of the vehicle occupants, and these two categories of vehicles contained 65.3 percent of the occupants. Automobiles contained almost as many occupants, 27.8 percent, as vans. Only 6.9 percent of all vehicle occupants were observed in SUVs.

The dominance of the pickup truck was important because its drivers and passengers are known to be the lowest percentage of seat belts users. For example, in the 2017 baseline survey in Wyoming, 77.6 percent of pickup occupants were observed as belted compared to the overall rate of 84.8 percent. However, this year's seat belt use rate for occupants of pickup trucks was 82.5 percent, once again the lowest rate for the vehicle types, but higher than last year. The seat belt usage rates for occupants of each type of vehicle are illustrated by the following chart.

Figure 12: percentage of occupants belted by vehicle type



Seat belt use in the other types of vehicles varied by less than a percent: 88.8 percent in automobiles, 88.2 percent in vans, and 88.9 percent in SUVs. Other than lower rate in pickups, vehicle type seemed to have made very little difference for the vehicle occupants in 2018. It remained the case that the dominance of the pickup truck and somewhat a lower rate of seat belt use tended to pull the overall rate down from an average of nearly nine of ten belted occupants to 86.3 percent.

Occupant Belt Use by Vehicle Type and Gender

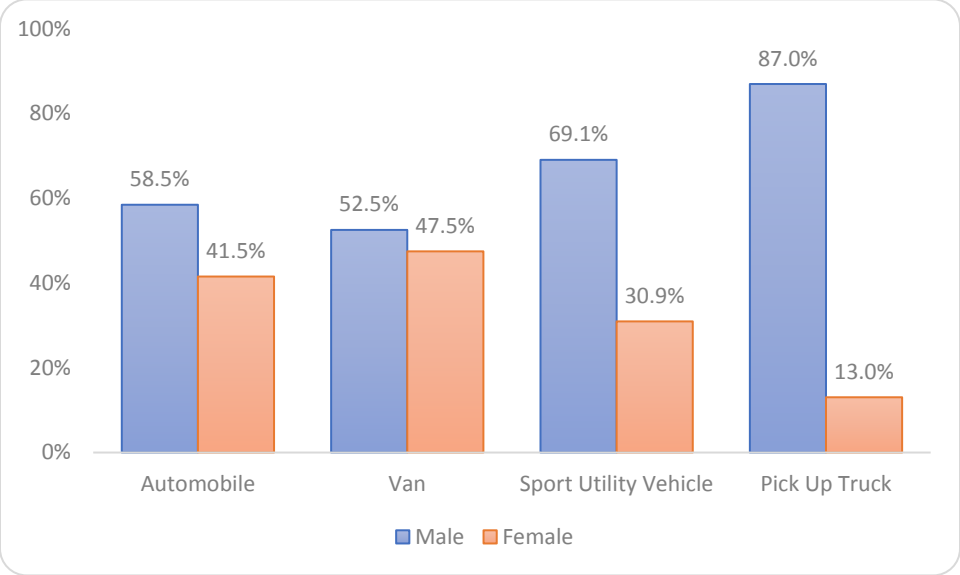
We noted earlier in this report that males outnumbered females at 58.1 percent to 41.9 percent. We also showed that females had higher rates of seat belt use across all vehicle types, 91.0 percent to 82.2 percent. When the two variables are cross tabulated, the differences in gender representation among the vehicle types emerges. The following table illustrates this.

Table 8: Occupant Belt Use by Vehicle Type and Gender, WY 2018

Vehicle Type	Gender	Belted	Not Belted	Observer Unsure
Automobile	Male	85.2%	14.7%	0.1%
	Female	91.2%	8.2%	0.6%
	Total	88.8%	10.9%	0.4%
Van	Male	82.9%	17.1%	0.0%
	Female	92.1%	7.9%	0.0%
	Total	88.2%	11.8%	0.0%
Sport Utility Vehicle	Male	83.3%	13.5%	3.3%
	Female	94.7%	2.1%	3.3%
	Total	88.9%	7.8%	3.3%
Pick Up Truck	Male	80.4%	19.5%	0.1%
	Female	87.9%	11.1%	1.0%
	Total	82.5%	17.1%	0.3%

The most noticeable differences when looking at the observation of gender and vehicle type was in pickup trucks. Pickup trucks are the definitive male vehicle: 87 percent of the vehicle occupants were male and only 13 percent were female.[10]

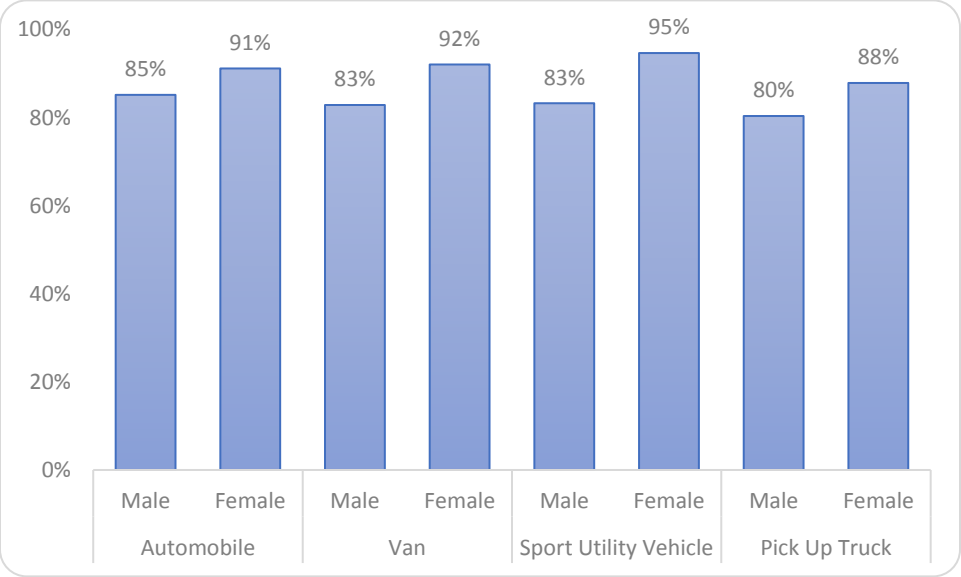
Figure 9: percent of sample by vehicle type and gender



[10] We have seen women who sport a bumper sticker on their pickups that say, "Silly cowboy; pickups are for girls." This may be an admirable sentiment, but it belies the numbers in our survey.

It was reported in the previous section that seat belt use rates are about equal for automobiles, vans and SUVs, while the rate is lower in pickup trucks. This is illustrated by the following chart.

Figure 10: percent belted by vehicle type and gender, WY 2018



The percent belted was higher in automobiles for females (91.2%) than for males (85.2%). In vans, females (92.1%) had a higher rate than males (82.9%). In SUVs, females (94.7%) had a higher rate than males (83.3%), a difference of 11.4 percentage points. In pickup trucks, females are belted at a rate of 87.9 percent, compared to 80.4 percent for males. In other words, females were more likely than males to wear their seat belts in every type of vehicle.

There may be something to the combination of maleness and pickup trucks that produced the lowest rate for this combination of variables, but, still, that rate finds eight of ten men belted, a significant increase in seat belt use over the comparable rate in 2017 when it was 75.9 percent.

Drivers and Passengers

For the seat belt survey, observations of seat belt use were collected for drivers and front seat outboard passengers, who together make up what we have called "vehicle occupants." The data did not include seat belt use for middle front seat or back seat passengers, so the data, no doubt, underestimate total vehicle occupants.

It may seem obvious, but it is noted here that every vehicle had a driver. There were 25,046 vehicles with drivers in the 2018 survey. Most vehicles had only drivers: 18,255 for the 2018 survey. There were 6,791 outboard passengers who were also in observed vehicles. In other words, 72.9 percent of vehicles had only drivers, 27.1 percent also had passengers, for a total of 25,046 vehicle occupants. It should be clarified that drivers were the main determinant of seat belt use in the survey.

This information is summarized by the following table.

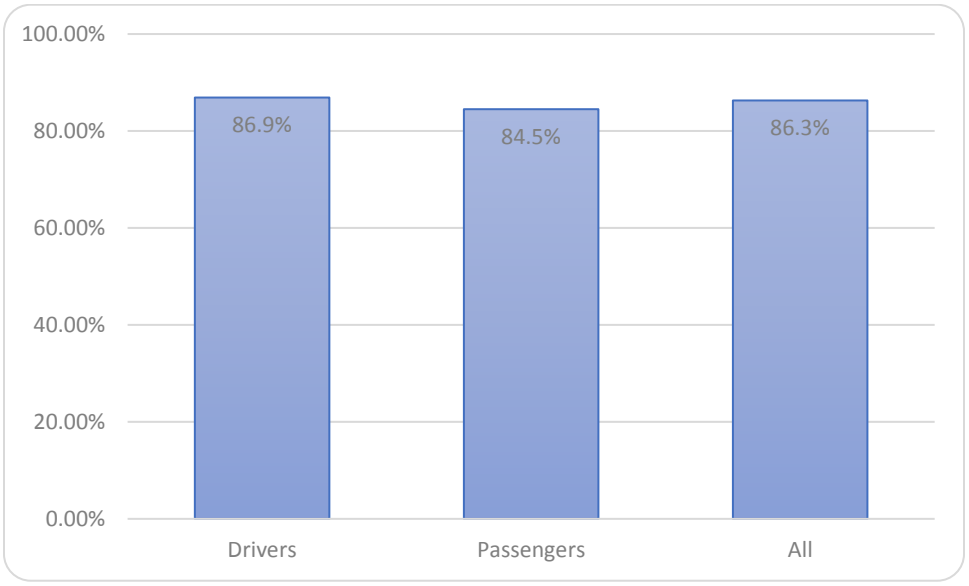
Figure 11: frequencies by Type of Vehicle Occupant, WY 2018

Occupant	unweighted Count	Percent
Drivers	18,255	72.9%
Passengers	6,791	27.1%
All	25,046	100.0%

Overall, drivers were observed as belted at a rate of 86.9 percent, while the rate for passengers was 84.5 percent. This was somewhat of an anomaly, since prior surveys found that passengers had a higher rate of seat belt use. For example, in the 2017 Wyoming survey, the usage rate for drivers was 82.7 percent, compared to 90.0 percent for passengers.

The seat belt usage results for drivers and passengers in Wyoming, 2018, are illustrated in Figure 12.

Figure 12: percentage of drivers and passengers belted, WY 2018

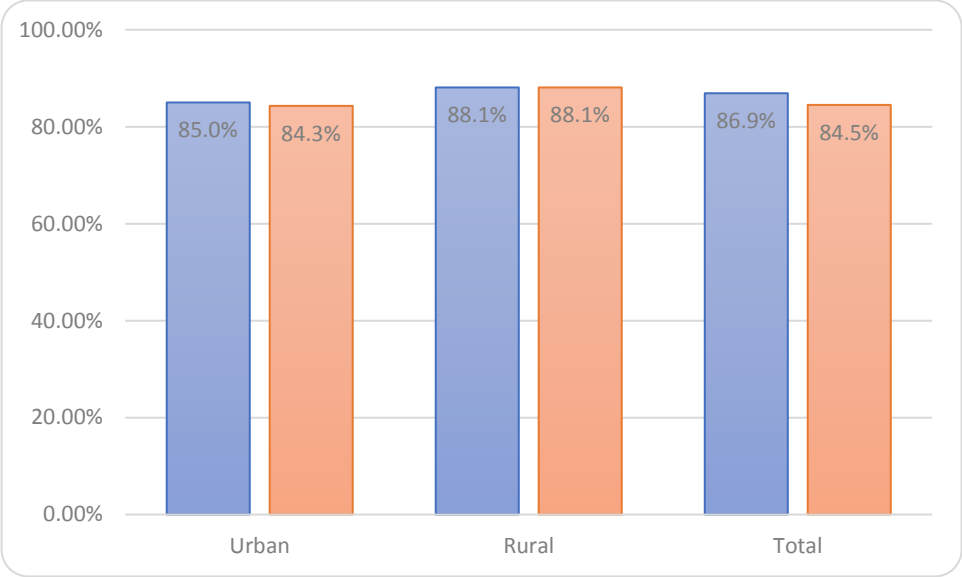


The following tables and graphs in this section will provide a direct comparison of seat belt use for drivers and passengers within the categories of the usual selected variables.

Drivers, Passengers and Population Density

The following graph illustrates the percentage belted for drivers, passengers, and drivers and passengers combined, or "all" vehicle occupants.[11] It shows that both drivers and passengers in rural areas have slightly higher rates of seat belt use, although the difference is less than four percent.

Figure 13: percentage of drivers and passengers belted by population density, WY 2018



[11] The graphs in this section used the percentages belted for each of the categories. Complete tables are found in the appendix.

Driver and Passenger Belt Use by County

The following graph illustrates seat belt use for drivers, passengers, and the combination of drivers and passengers, all vehicle occupants:

Table 9: percentage of drivers and passengers belted by County, WY 2018

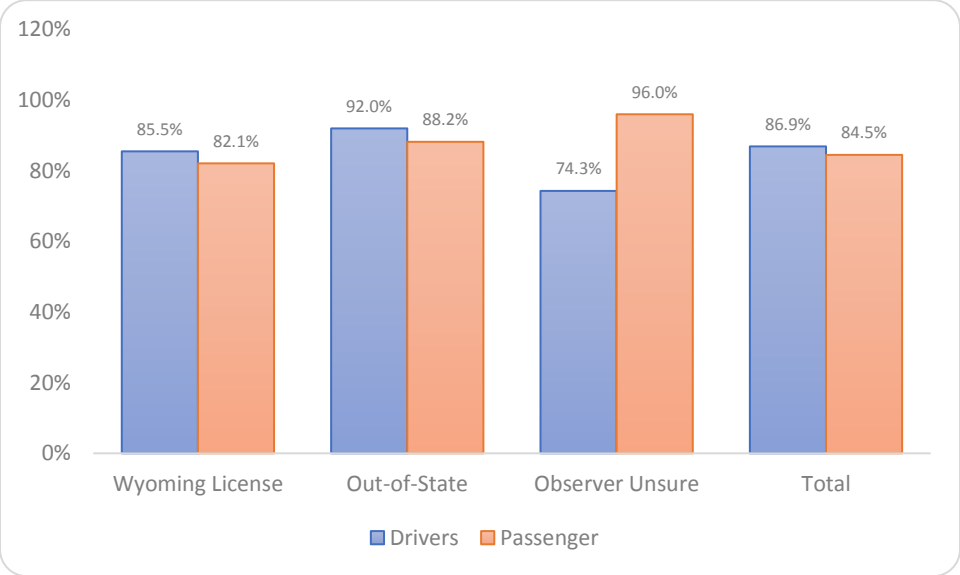
County	Drivers	Passengers	All Occupants
Albany	87.8%	94.8%	89.5%
Big Horn	69.3%	83.9%	73.3%
Campbell	80.7%	87.8%	82.3%
Carbon	68.4%	73.3%	69.7%
Converse	84.5%	88.5%	85.5%
Crook	89.5%	94.9%	91.1%
Fremont	78.7%	78.8%	78.7%
Johnson	92.0%	95.8%	93.2%
Laramie	81.6%	80.4%	81.4%
Lincoln	90.5%	92.3%	91.0%
Natrona	88.4%	84.3%	87.4%
Niobrara	92.8%	95.0%	93.5%
Park	88.7%	92.5%	89.6%
Platte	77.5%	84.3%	79.4%
Sheridan	75.6%	79.9%	76.5%
Sweetwater	66.9%	68.8%	67.4%
Teton	89.6%	96.0%	91.8%
Total	86.9%	84.5%	86.3%

Small numbers of passengers and different sample weights in some counties made this data difficult to interpret. However, one county had very different rates for drivers and passengers: passengers had an 18.4 percent higher rate of seat belt use in Big Horn County, where the overall rate remains relatively low because most of the vehicle occupants were drivers. For the rest of the counties, the differences between drivers and passengers amounted to less than ten percent. Typically, the behavior of drivers and passengers in the counties was more alike than different.

Driver and Passenger Belt Use by Vehicle Registration

The next graph illustrates seat belt use by drivers and passengers within the categories of vehicle registration.

Figure 14: percentage of drivers and passengers belted by vehicle registration, WY 2018

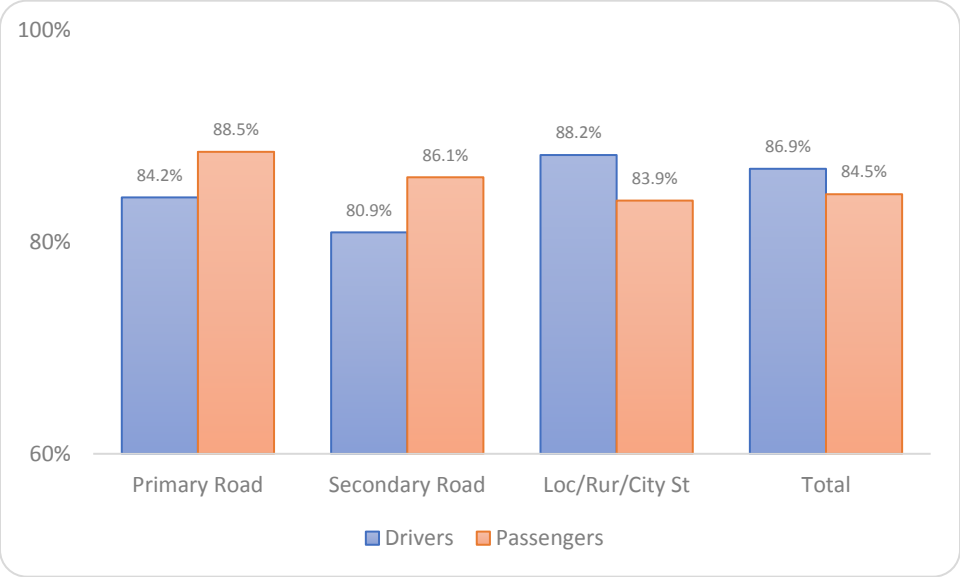


Both drivers and passengers in out-of-state licensed vehicles were more likely to be observed wearing seat belts than were vehicle occupants in Wyoming-licensed vehicles. The differences, however, were no more than three or four percent.

Driver and Passenger Belt Use by Type of Roadway

As the following graph illustrates, passengers had higher rates of seat belt use than drivers within primary and secondary roads. However, drivers had a higher rate of seat belt use than passengers in the catchall category of local roads, rural roads, and city streets.

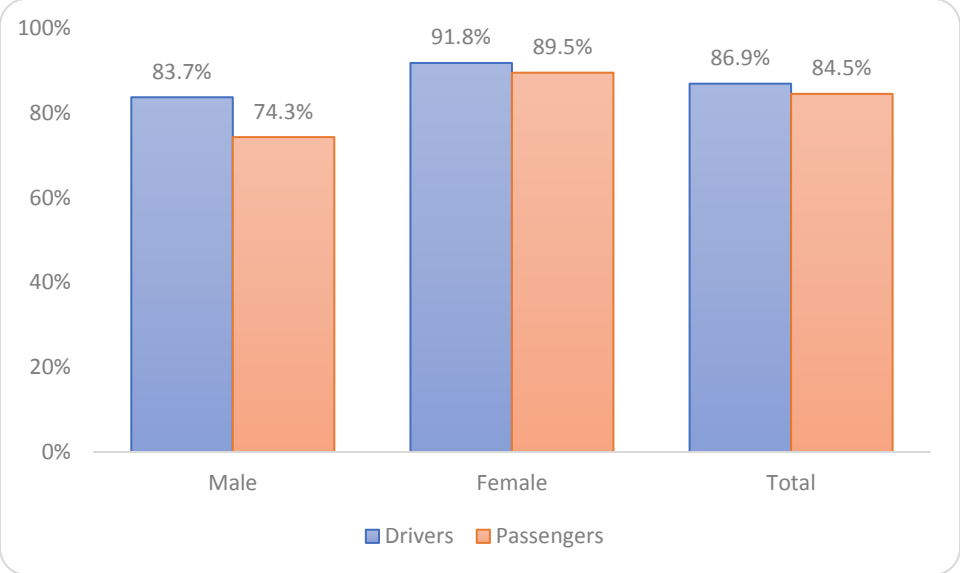
Figure 15: percentage of drivers and passengers belted by type of roadway, WY 2018



Driver and Passenger Belt Use by Gender

Female drivers and female passengers both had higher rates of seat belt use than their male counterparts, as illustrated by the following graph.

Figure 16: percentage of drivers and passengers belted by gender, WY 2018

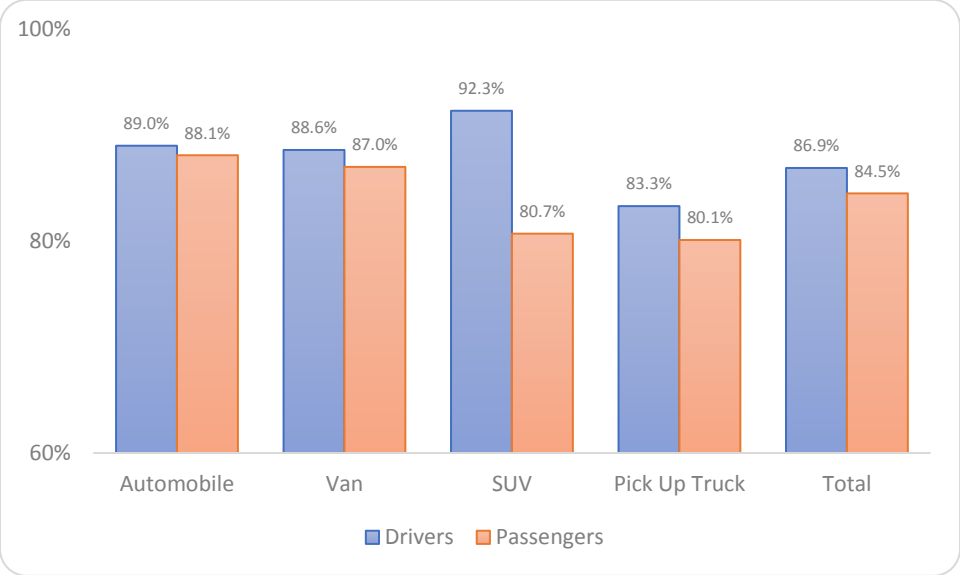


For drivers, the percentage of females who are belted is 8.1 points higher than the comparable percentage for males. For passengers, the female seat belt usage rate was 15.2 points higher than for males. For all occupants, drivers and passengers combined, passengers were nearly nine percentage points (8.8%) more likely to be observed wearing seat belts.

Drivers, Passengers and Vehicle Type

Passengers had slightly lower rates of seat belt use than drivers in every vehicle type. However, the difference was most pronounced for vehicle occupants in SUVs, where drivers were 11.6 points more likely to be observed as belted than are passengers. These results are illustrated in Figure 17.

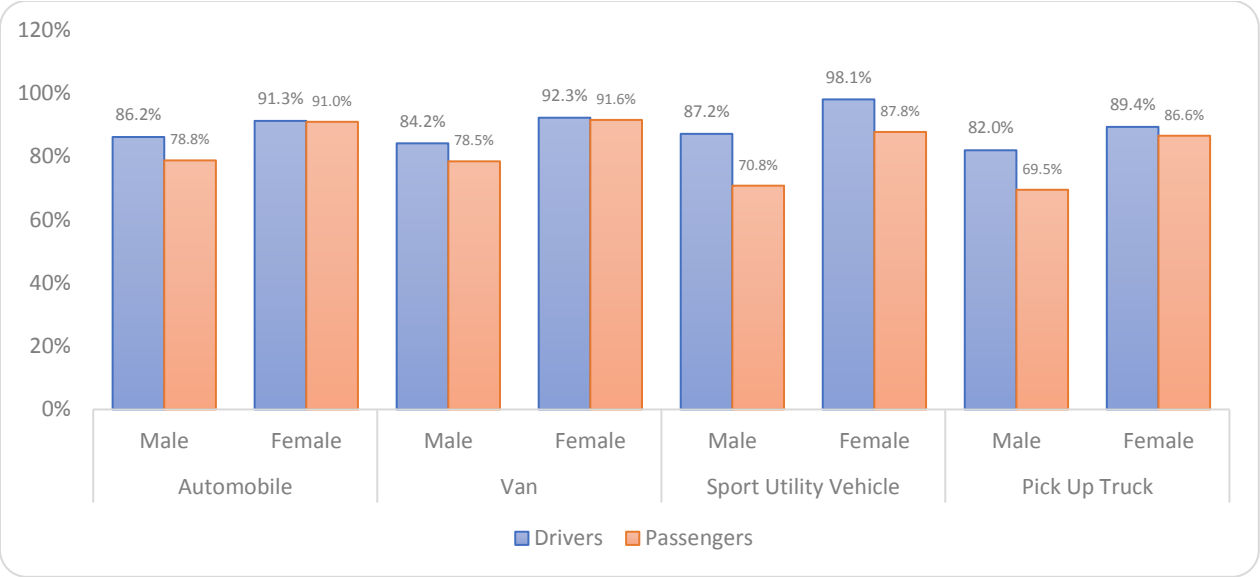
Figure 17: percentage of drivers and passengers by vehicle type, WY 2018



Drivers, Passengers, Gender and Vehicle Type

The following graph illustrates seat belt use for drivers and passengers within the categories of gender and vehicle type.

Figure 18: percentage of drivers and passengers belted by vehicle type and gender



In general, both female drivers and female passengers had higher seat belt use rates than their male counterparts. However, the seat belt use rate was particularly low for male passengers in some vehicles. For example, the seat belt use rate for male passengers in automobiles was 78.8 percent; for male passengers in vans, the rate was 78.5 percent; for males in SUVs, the rate was 70.8 percent; and for male passengers in pickup trucks, the seat belt use rate was 69.5 percent, amongst the lowest rates for any combination of variables in this survey.

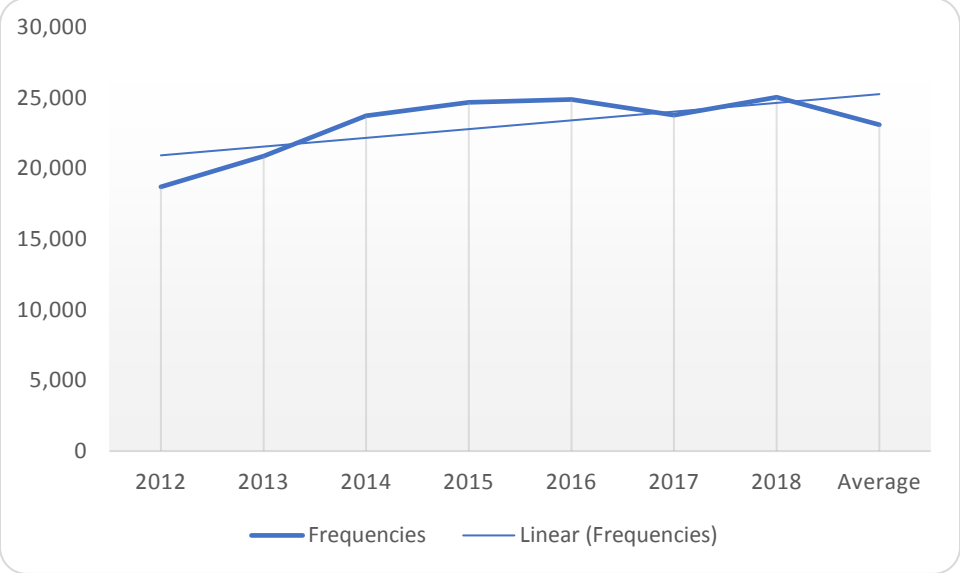
Trends in Seat Belt Use in Wyoming, 2012-2018

In this final section, the topic is about trends in seat belt use in Wyoming across the past seven surveys over the last seven years. Technically, we should only have compared the first five years from 2012 to 2016 because each of those surveys used the same sample, beginning with the former baseline survey in 2012. A new sample of counties and sites was drawn for the new baseline survey in 2017, which can be compared to the results in 2018. Comparisons are always questionable among surveys using changed sampling methods, changed units, and even changed observation protocols. Over the years, for example, DLN Consulting, Inc. has moved from paper and pencil records of observations to digital records utilizing iPads. How much difference that makes was difficult to establish objectively. Subjectively, the staff tended to believe that observations have become easier to record as training and experience has increased the skills of the observers.

If we can put aside those technical issues, comparisons can be offered. However, those comparisons have been limited to the broadest of categories, frequencies and rates by years, to minimize the potential for distortion of claims.

First, there are the frequencies by year, presented in Figure 19.

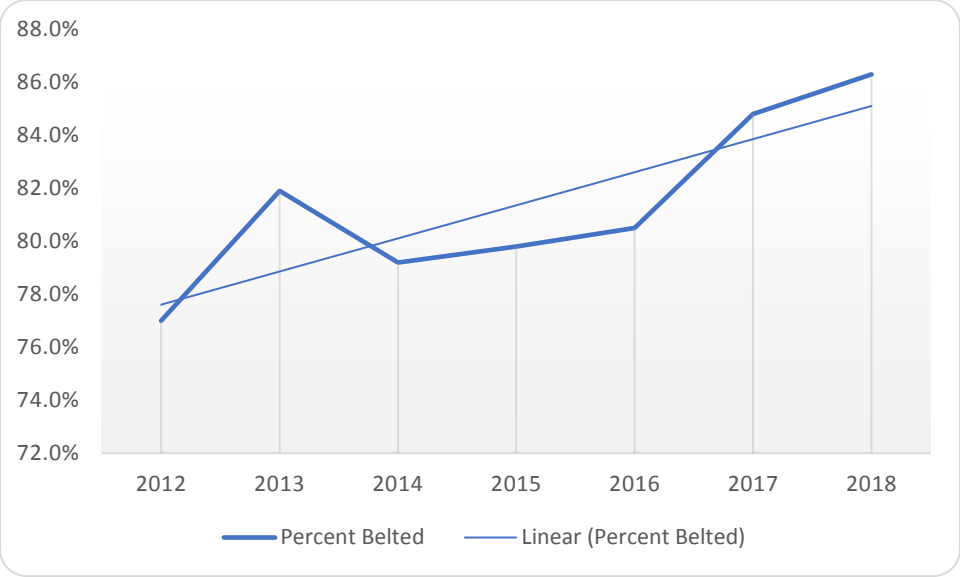
Figure 19: occupant frequencies by year



There was a steady increase in observations from 2012 to 2016. The frequency dropped by 1,118 observations between the 2016 survey and the new baseline survey in 2017. The increase resumed this year, reaching a high point of 25,046 observations of seat belt use. For the past seven surveys, the average number of observations per year is 23,100. Over the seven-year time span, 2012-2018, observers have recorded a total of 161,699 observations of seat belt use.

What remains for this report is the trend in the seat belt rate for all vehicle occupants. The following graph illustrates the trend in the rates.

Figure 20: occupant seat belt usage rate, 2012-2018



The lowest rate of seat belt use in Wyoming was recorded in 2012: 77.0 percent belted. The rate hovered in the high seventies to low eighties from 2012 to 2016. The rate increased to 84.8 percent belted in the new baseline survey of 2017. This year, the rate was the highest it has been at 86.3 percent belted, a modest increase of 1.5 percent for the first two years of the new baseline survey. The increase was small, but respectable, especially for Wyoming, or any state for that matter, which has a "secondary" rather than a "primary" seat belt law. It may be difficult to raise the rate any higher unless a primary law would be passed. This conclusion follows from the general observation that rates usually do not move into the ninety percent belted range except in states with primary laws.

Appendices

Appendix A: State Seat Belt Use Reporting Form

state seat belt use reporting form

State Seat Belt Use Survey Reporting Form

PART A

State: Wyoming

Calendar Year of Survey: 2018

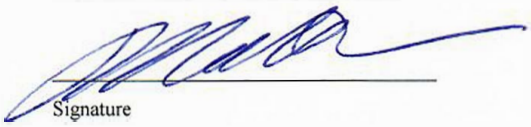
Statewide Seat Belt Use Rate: 86.3 Percent

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[12], 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

10-2-18

Date

Matthew D Carlson

Printed name of signing official

Matthew Carlson

12 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

Wyoming survey design

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.

Seat Belt Use Survey Design for Wyoming

Sampling, Data Collection and Estimation Plan

Revised 04-03-2012

Seat Belt Use Survey Design for Wyoming

Sampling, Data Collection and Estimation Plan

January 3, 2012
Revised March 7, 2012

Submitted to:

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

Submitted by:

Wyoming Department of Transportation
Highway Safety Program
5300 Bishop Boulevard
Cheyenne, WY, 82009-3340

DLN Consulting, Inc.
2493 4th Ave W
Suite G
Dickinson, ND 58601

Table of Contents

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.

- 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

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	273.855866	1699.565696	2098.261552
	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

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

$$\pi_{chi} = \pi_c \cdot \pi_{h|c}$$

be the road segment selection probability, and

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

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

$$f_{ch} = \frac{\sum_{\forall\ i}\ w_{chi}}{\sum_{responding\ i}\ w_{chi}}$$

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:

$$p_{chi} = \frac{\sum_{\forall\ chijklmn}\ w_{chijklm}\ Length_{chi}\ y_{chijklmn}}{\sum_{\forall\ chijklmn}\ w_{chijklm}\ Length_{chi}} \tag{2}$$

where

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

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, $w_{jklm|chi}$ 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.

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

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

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

Jamil Ibriq

Summary

Dr. Jamil Ibriq is an assistant professor at Dickinson State University with extensive experience in simulation modeling that involves sampling and optimization techniques. Dr. Ibriq has expertise in area of data processing and survey research methodology. Dr. Ibriq is a proficient user of many programming languages and software packages, including SPSS.

Education

Ph.D., Computer Engineering, Florida Atlantic University, 2007
M.S., Computer Science, 2000
B.A. Biochemistry, University of Texas at Austin, 1979

Professional Associations

IEEE
ACM

Computer Skills

- Operation Systems: Windows, UNIX/LINUX, and UNIX shell scripts.
- Programming Languages: C, C++, Java, Visual Basic, SQL, Oracle PL/SQL, Motorola 68000 Assembly Language, PHP, Python, HTML, and Perl
- Software: Windows database, spreadsheet, and presentation software, TeX and LaTeX, SPSS, MatLab.

Publications

- J. Ibriq, I. Mahgoub, and M. Ilyas. Handbook of Information & Communication Security chapter Secure Routing in Wireless Sensor Networks, pages 549-574. Springer, Germany, December 2010.
- J. Ibriq and I. Mahgoub, "Hierarchical Key Management Scheme for Wireless Sensor Networks," in Proceedings of the 21st IEEE International Conference on Advanced Information Networking and Applications (AINA '07) Niagara Falls, Canada, May 2007, pages 210-219.
- J. Ibriq, I. Mahgoub, M. Ilyas and M. Cardei, Encyclopedia of Wireless and Mobile Communications chapter: Key Management Schemes in Wireless Sensor Networks, CRC Press, Boca Raton, FL, December 2007, pages 1509-1522.
- J. Ibriq and I. Mahgoub,"A hierarchical key management scheme for wireless sensor networks," Technical report, Florida Atlantic University, Boca Raton, FL, April 2006.
- J. Ibriq and I. Mahgoub, "A secure hierarchical routing protocol for wireless sensor networks," in Proceedings of the 10th IEEE International Conference on Communication Systems (ICCS '06),Singapore, October 2006, pages 1-6.
- J. Ibriq and I. Mahgoub,"Cluster-based Routing in Wireless Sensor Networks: Issues and Challenges," in Proceedings of the 2004 International Symposium on Performance Evaluation of Computer and Telecommunication Systems San Jose, CA, July 2004, pages 759 –766.

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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

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Appendix B

Selected Road Segments within Each County and Their Probabilities of Selection

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

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

Appendix D

Training Syllabus

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**

Uniform Criteria for State Observational Surveys of Seat Belt Use

Per the required procedures, the sample first created in 2012 reached its expiration date and necessitated a new sampling. What follows is the certification form submitted for NHTSA approval.

Uniform Criteria for State Observational Surveys of Seat Belt Use

Certification Form

1. CONTACT INFORMATION

Submit Form

State: Wyoming

Name: Contact Name

Address: Street Address

City | State | Zip Code

Email: Email Address

Phone number:

2. VERIFICATION

I verify that this sample design is consistent with the previously NHTSA approved design plan (i.e., the sample design characteristics (stratification, stages of selection, etc.) and sample sizes have not changed). I verify that all of the information provided is complete and accurate.

(●) Yes ( ) No

3. ROAD SEGMENT SAMPLING FRAME

a. What road segment sample frame was used? TIGER

If Other, please specify:

b. If you are not using NHTSA provided road segment data please verify the following:

I verify that every road in the state is represented in the database, with the exception of rural local roads in counties that are not within Metropolitan Statistical Areas (MSAs), other non-public roads, unnamed roads, unpaved roads, vehicular trails, access ramps, cul-de-sacs, traffic circles, and service drives. If the database is a sample of roads, I verify that all in-scope roads had a chance to be selected and the overall probability of selection is trackable.

(●) Yes ( ) No

4. EXCLUSIONS

a. Was the optional FARS 85% fatality exclusion implemented? (●) Yes ( ) No
[1340.5.a.1 allows for exclusions of counties proivded that the sample frame accounts for at least 85% of the state's fatalities in the last 3, 4, 5 years based on FARS.]

i. If yes, please specify years of FARS data used:

Year 2014 and range 5 years

b. Was the optional rural local roads exclusion implemented? (●) Yes ( ) No
[1340.5.a.2.iii allows for exclusions of rural local roads that are not within a Metropolitan Statistical Area (MSA).]

c. Were the optional road types exclusions implemented? (●) Yes ( ) No
[1340.5.a.2.iii allows for exclusions of non-public roads, unnamed roads, unpaved roads, vehicular trails, access ramps, cul-de-sacs, traffic circles, and service drives.]

5. STAGES OF SELECTION

a. How many stages of selection? 2 Stages

b. Please specify the definition of units:

Stage	Unit	
1	County	If Other, please specify:
2	Road segments	If Other, please specify:
3	Select Unit	If Other, please specify:
4	Select Unit	If Other, please specify:

c. Was stratification of sampling units used for each for each stage (i.e., PSUs/counties, road segments, etc.)? (●) Yes ( ) No

i. If yes, please specify:
County Stratification: By Region
Road Segment Stratification: By Road Type

6. **PROBABILITIES OF SELECTION**

a. Probabilities of selection: Other | SRS by County and Road Type

i. If PPS, please specify measure of size: Specify PPS Measure of Size:

7. **ALLOCATION**

a. Please provide the following information on the allocation of the road segment sample:

Stratum/County	Description	Population	Sample Count
Albany	S1100	254	4
Albany	S1200	954	13
Big Horn	S1200	1258	17
Campbell	S1100	234	3
Campbell	S1200	990	14
Carbon	S1100	385	4
Carbon	S1200	1216	13
Converse	S1100	310	5
Converse	S1200	765	12
Crook	S1100	315	5
Crook	S1200	820	12
Fremont	S1200	1613	17
Johnson	S1100	667	8
Johnson	S1200	842	9
Laramie	S1100	527	1
Laramie	S1200	964	1
Laramie	S1400	13007	15
Lincoln	S1200	1430	17
Natrona	S1200	1335	1
Natrona	S1400	28117	16
Niobrara	S1200	495	17
Park	S1200	1561	17
Platte	S1100	372	6
Platte	S1200	751	11
Sheridan	S1100	218	2
Sheridan	S1200	1422	15
Sweetwater	S1100	534	5
Sweetwater	S1200	1135	12
Teton	S1200	617	17

Submit Form

Appendix C: NHTSA Approval

NHTSA approval and final review

State Seatbelt Survey Plan

NHTSA Final Review

Wyoming

Version 4

Requirement Type		Design Requirement	Status	Comments
Statistical	1	Are the sampling units, with measures of size, defined and compliant with 1340.5.a?	Compliant	16 counties account for approximately 85% of the passenger vehicle crash-related fatalities according to FARS data averages for the period 2005 to 2009 (p.4).
GIS	2	Is the source for the sample frame road segments specified and compliant with 1340.5.a.2.i?	Compliant	Westat supplied 2010 TIGER data (p.4).
Statistical	3	If there are any exclusions to the sampling frame, are they specified and compliant with 1340.5.a.2.ii?	Compliant	Wyoming exercised the available exclusion option and removed rural local roads in counties that are not within Metropolitan Statistical Areas (MSAs), and other non-public roads, unnamed roads, unpaved roads, vehicular trails, access ramps, cul-de-sacs, traffic circles, and service drivers from the dataset (p.4).
Statistical	4	Are the stratification methods for each stage of sampling defined along with a description of methods that were used for allocating the sample units into the strata?	Compliant	1) County: 16 of 23 counties accounted for 85% of the traffic-related fatalities; all 16 counties were selected for the sample (p.5). 2) Road segment: Stratified by MTFCC road classification into three groups (Primary, Secondary, and Local) (pp.4-5).
Statistical	5	Is the method used for selecting road segments for observation sites specified and compliant with 1340.5.b?	Compliant	Segments were sampled by random sampling (p.5). The reserve sample segments were also selected SRS within a particular road classification and county (p.9).
Statistical	6	Is there a list of all observation sites and their probabilities of selection?	Compliant	A list of sites is found in Appendix B (p.23). The probabilities represent an SRS.
Statistical	7	Is there an explanation of how the sample sizes were determined? Is that explanation compliant with section 1340.5.d?	Compliant	Based on historical data, the state estimates a total of 28,800 vehicle observations (16 counties * 18 sites in each county * 100 observations per site) (pp.6-7).

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).

U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

Region 8
Colorado, Nevada, North Dakota,
South Dakota, Utah, Wyoming

12300 West Dakota Avenue
Suite 140
Lakewood, CO 80228
Phone: 720-963-3100
Fax: 720-963-3124

February 9, 2017

Kenneth Ledet, Grants Manager
Highway Safety Behavioral Program
Wyoming Department of Transportation
5300 Bishop Boulevard
Cheyenne, WY 52009

Dear Ken:

NHTSA has completed its review of your Uniform Criteria for State Observational Surveys of Seat Belt Use Certification form and supporting documentation, evaluating the four requirements related to the re-selection of observation sites listed in 1340.10 of the Final Rule. We are pleased to inform you that your re-selection is fully compliant with the Uniform Criteria for State Observational Surveys of Seat Belt Use.

Sincerely,

Gina Mia Espinosa-Salcedo
Regional Administrator

cc: Karson James

NHTSA
www.nhtsa.gov

Appendix D: Data Tables

Detailed table of collected data

Occupant Frequencies

Weekday

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sunday	2478	9.9	9.9	9.9
	Monday	3540	14.1	14.1	24.0
	Tuesday	4323	17.3	17.3	41.3
	Wednesday	4277	17.1	17.1	58.4
	Thursday	3302	13.2	13.2	71.5
	Friday	4382	17.5	17.5	89.0
	Saturday	2744	11.0	11.0	100.0
	Total	25046	100.0	100.0	

Weather

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clear/Sunny	21908	87.5	87.5	87.5
	Cloudy	2993	12.0	12.0	99.4
	Light Rain	9	.0	.0	99.5
	Snow/Ice	136	.5	.5	100.0
	Total	25046	100.0	100.0	

Lanes Observed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One Lane	12300	49.1	51.7	51.7
	Two Lanes	11478	45.8	48.3	100.0
	Total	23778	94.9	100.0	
Missing	9	1268	5.1		
Total		25046	100.0		

Traffic Direction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	North	4692	18.7	18.7	18.7
	South	5559	22.2	22.2	40.9
	East	7648	30.5	30.5	71.5
	West	7020	28.0	28.0	99.5
	Northwest	127	.5	.5	100.0
	Total	25046	100.0	100.0	

Observer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bridget White	21	.1	.1	.1
	Bill Spencer	493	2.0	2.0	2.1
	Kayla Shear	2229	8.9	8.9	11.0
	Patrick White	546	2.2	2.2	13.1
	Dawn Edwards	1379	5.5	5.5	18.6
	Doug Peterson	1511	6.0	6.0	24.7
	Dixie Elder	1901	7.6	7.6	32.3
	Deb Eutsler	1131	4.5	4.5	36.8
	Brooke Darden	1346	5.4	5.4	42.2
	Susan Parkinson	1657	6.6	6.6	48.8
	Derald Maddison	1592	6.4	6.4	55.1
	Jaclyn Davison	1484	5.9	5.9	61.0
	Molly Laidlaw	834	3.3	3.3	64.4
	Candy Hunter	1337	5.3	5.3	69.7
	Lucinda Pope	1817	7.3	7.3	77.0
	Kolter Elder	378	1.5	1.5	78.5
	Peggy Dowers	3289	13.1	13.1	91.6
	Chrissy Lira	396	1.6	1.6	93.2
	Sarah N'Tula	1705	6.8	6.8	100.0
	Total	25046	100.0	100.0	

Type of Roadway

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	S1100-Primary Road	7551	30.1	30.1	30.1
	S1200-Secondary Road	16415	65.5	65.5	95.7
	S1400 Loc/Rur/City St	1080	4.3	4.3	100.0
	Total	25046	100.0	100.0	

Occupant Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	14553	58.1	58.1	58.1
	Female	10492	41.9	41.9	100.0
	Total	25045	100.0	100.0	
Missing	9	1	.0		
Total		25046	100.0		

Occupant Belt Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Belted	20990	83.8	83.8	83.8
	Not Belted	3980	15.9	15.9	99.7
	Observer Unsure	76	.3	.3	100.0
	Total	25046	100.0	100.0	

Vehicle Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Automobile	6973	27.8	27.8	27.8
	Van	7249	28.9	28.9	56.8
	Sport Utility Vehicle	1718	6.9	6.9	63.6
	Pick Up Truck	9106	36.4	36.4	100.0
	Total	25046	100.0	100.0	

Registration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wyoming License	13941	55.7	55.7	55.7
	Out-of-State	10826	43.2	43.2	98.9
	Observer Unsure	279	1.1	1.1	100.0
	Total	25046	100.0	100.0	

Weekday-Weekend

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Weekdays	19824	79.2	79.2	79.2
	Weekend	5222	20.8	20.8	100.0
	Total	25046	100.0	100.0	

Population Density * Occupant Belt Use

Population Density			Occupant Belt Use		
			Belted	Not Belted	Observer Unsure
Urban	% within Population Density	Estimate	85.0%	14.6%	0.3%
		Unweighted Count	4322	1485	7
Rural	% within Population Density	Estimate	88.1%	11.3%	0.6%
		Unweighted Count	16668	2495	69
Total	% within Population Density	Estimate	86.3%	13.2%	0.4%
		Unweighted Count	20990	3980	76

Population Density * Occupant Belt Use

Population Density			Occupant ...
			Total
Urban	% within Population Density	Estimate	100.0%
		Unweighted Count	5814
Rural	% within Population Density	Estimate	100.0%
		Unweighted Count	19232
Total	% within Population Density	Estimate	100.0%
		Unweighted Count	25046

Vehicle Type * Occupant Belt Use

Vehicle Type			Occupant Belt Use	
			Belted	Not Belted
Automobile	% within Vehicle Type	Estimate	88.8%	10.9%
		Unweighted Count	6034	920
Van	% within Vehicle Type	Estimate	88.2%	11.8%
		Unweighted Count	6434	803
Sport Utility Vehicle	% within Vehicle Type	Estimate	88.9%	7.8%
		Unweighted Count	1525	189
Pick Up Truck	% within Vehicle Type	Estimate	82.5%	17.1%
		Unweighted Count	6997	2068
Total	% within Vehicle Type	Estimate	86.3%	13.2%
		Unweighted Count	20990	3980

Occupant Variables

Vehicle Type * Occupant Belt Use

Vehicle Type			Occupant Belt Use: Observer Unsure	Occupant Belt Use: Total
Automobile	% within Vehicle Type	Estimate	0.4%	100.0%
		Unweighted Count	19	6973
Van	% within Vehicle Type	Estimate	0.0%	100.0%
		Unweighted Count	12	7249
Sport Utility Vehicle	% within Vehicle Type	Estimate	3.3%	100.0%
		Unweighted Count	4	1718
Pick Up Truck	% within Vehicle Type	Estimate	0.3%	100.0%
		Unweighted Count	40	9105
Total	% within Vehicle Type	Estimate	0.4%	100.0%
		Unweighted Count	75	25045

Subpopulation Tables

Vehicle Type * Occupant Belt Use

Occupant Gender	Vehicle Type			Occupant Belted
Male	Automobile	% within Vehicle Type	Estimate	85.2%
			Unweighted Count	2924
	Van	% within Vehicle Type	Estimate	82.9%
			Unweighted Count	2797
	Sport Utility Vehicle	% within Vehicle Type	Estimate	83.3%
			Unweighted Count	819
	Pick Up Truck	% within Vehicle Type	Estimate	80.4%
			Unweighted Count	5147
	Total	% within Vehicle Type	Estimate	82.2%
			Unweighted Count	11687
Female	Automobile	% within Vehicle Type	Estimate	91.2%
			Unweighted Count	3110
	Van	% within Vehicle Type	Estimate	92.1%
			Unweighted Count	3637
	Sport Utility Vehicle	% within Vehicle Type	Estimate	94.7%
			Unweighted Count	706
	Pick Up Truck	% within Vehicle Type	Estimate	87.9%
			Unweighted Count	1850
	Total	% within Vehicle Type	Estimate	91.0%
			Unweighted Count	9303

Vehicle Type * Occupant Belt Use

Occupant Gender	Vehicle Type			Occupant Belt Not Belted
Male	Automobile	% within Vehicle Type	Estimate	14.7%
			Unweighted Count	527
	Van	% within Vehicle Type	Estimate	17.1%
			Unweighted Count	426
	Sport Utility Vehicle	% within Vehicle Type	Estimate	13.5%
			Unweighted Count	124
	Pick Up Truck	% within Vehicle Type	Estimate	19.5%
			Unweighted Count	1737
	Total	% within Vehicle Type	Estimate	17.5%
			Unweighted Count	2814
Female	Automobile	% within Vehicle Type	Estimate	8.2%
			Unweighted Count	393
	Van	% within Vehicle Type	Estimate	7.9%
			Unweighted Count	377
	Sport Utility Vehicle	% within Vehicle Type	Estimate	2.1%
			Unweighted Count	65
	Pick Up Truck	% within Vehicle Type	Estimate	11.1%
			Unweighted Count	331
	Total	% within Vehicle Type	Estimate	8.4%
			Unweighted Count	1166

Vehicle Type * Occupant Belt Use

Occupant Gender	Vehicle Type			Occupant Belt .. Observer Unsure
Male	Automobile	% within Vehicle Type	Estimate	0.1%
			Unweighted Count	13
	Van	% within Vehicle Type	Estimate	0.0%
			Unweighted Count	7
	Sport Utility Vehicle	% within Vehicle Type	Estimate	3.3%
			Unweighted Count	3
	Pick Up Truck	% within Vehicle Type	Estimate	0.1%
			Unweighted Count	29
	Total	% within Vehicle Type	Estimate	0.2%
			Unweighted Count	52
Female	Automobile	% within Vehicle Type	Estimate	0.6%
			Unweighted Count	6
	Van	% within Vehicle Type	Estimate	0.0%
			Unweighted Count	5
	Sport Utility Vehicle	% within Vehicle Type	Estimate	3.3%
			Unweighted Count	1
	Pick Up Truck	% within Vehicle Type	Estimate	1.0%
			Unweighted Count	11
	Total	% within Vehicle Type	Estimate	0.6%
			Unweighted Count	23

Vehicle Type * Occupant Belt Use

Occupant Gender	Vehicle Type			Occupant ... Total
Male	Automobile	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	3464
	Van	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	3230
	Sport Utility Vehicle	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	946
	Pick Up Truck	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	6913
	Total	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	14553
Female	Automobile	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	3509
	Van	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	4019
	Sport Utility Vehicle	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	772
	Pick Up Truck	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	2192
	Total	% within Vehicle Type	Estimate	100.0%
			Unweighted Count	10492

Occupant Gender * Occupant Belt Use

Occupant Gender			Occupant Belt Use		
			Belted	Not Belted	Observer Unsure
Male	% within Occupant Gender	Estimate	82.2%	17.5%	0.2%
		Unweighted Count	11687	2814	52
Female	% within Occupant Gender	Estimate	91.0%	8.4%	0.6%
		Unweighted Count	9303	1166	23
Total	% within Occupant Gender	Estimate	86.3%	13.2%	0.4%
		Unweighted Count	20990	3980	75

Occupant Gender * Occupant Belt Use

Occupant Gender			Occupant ... Total
Male	% within Occupant Gender	Estimate	100.0%
		Unweighted Count	14553
Female	% within Occupant Gender	Estimate	100.0%
		Unweighted Count	10492
Total	% within Occupant Gender	Estimate	100.0%
		Unweighted Count	25045

Type of Roadway * Occupant Belt Use

Type of Roadway			Occupant Belt Use	
			Belted	Not Belted
S1100-Primary Road	% within Type of Roadway	Estimate	85.3%	14.4%
		Unweighted Count	6524	1000
S1200-Secondary Road	% within Type of Roadway	Estimate	82.1%	17.6%
		Unweighted Count	13546	2824
S1400 Loc/Rur/City St	% within Type of Roadway	Estimate	87.1%	12.4%
		Unweighted Count	920	156
Total	% within Type of Roadway	Estimate	86.3%	13.2%
		Unweighted Count	20990	3980

Type of Roadway * Occupant Belt Use

Type of Roadway			Occupant Belt Use	
			Observer Unsure	Total
S1100-Primary Road	% within Type of Roadway	Estimate	0.3%	100.0%
		Unweighted Count	27	7551
S1200-Secondary Road	% within Type of Roadway	Estimate	0.2%	100.0%
		Unweighted Count	45	16415
S1400 Loc/Rur/City St	% within Type of Roadway	Estimate	0.5%	100.0%
		Unweighted Count	4	1080
Total	% within Type of Roadway	Estimate	0.4%	100.0%
		Unweighted Count	76	25046

Roadway Type * Lanes Observed Crosstabulation

			Lanes Observed		
			One Lane	Two Lanes	Total
Roadway Type	S1100-Primary Road	Count	83	6650	6733
		% within Roadway Type	1.2%	98.8%	100.0%
	S1200-Secondary Road	Count	11850	4115	15965
		% within Roadway Type	74.2%	25.8%	100.0%
	S1400 Loc/Rur/City St	Count	367	713	1080
		% within Roadway Type	34.0%	66.0%	100.0%
Total		Count	12300	11478	23778
		% within Roadway Type	51.7%	48.3%	100.0%

Weekday-Weekend * Occupant Belt Use

Weekday-Weekend			Occupant Belt Use		
			Belted	Not Belted	Observer Unsure
Weekdays	% within Weekday-Weekend	Estimate	85.3%	14.4%	0.3%
		Unweighted Count	16493	3267	64
Weekend	% within Weekday-Weekend	Estimate	89.0%	10.3%	0.7%
		Unweighted Count	4497	713	12
Total	% within Weekday-Weekend	Estimate	86.3%	13.2%	0.4%
		Unweighted Count	20990	3980	76

Weekday-Weekend * Occupant Belt Use

Weekday-Weekend			Occupant ...
			Total
Weekdays	% within Weekday-Weekend	Estimate	100.0%
		Unweighted Count	19824
Weekend	% within Weekday-Weekend	Estimate	100.0%
		Unweighted Count	5222
Total	% within Weekday-Weekend	Estimate	100.0%
		Unweighted Count	25046

Registration * Occupant Belt Use

Registration			Occupant Belt Use		
			Belted	Not Belted	Observer Unsure
Wyoming License	% within Registration	Estimate	84.8%	14.9%	0.3%
		Unweighted Count	11090	2812	39
Out-of-State	% within Registration	Estimate	90.7%	8.5%	0.8%
		Unweighted Count	9689	1104	33
Observer Unsure	% within Registration	Estimate	78.9%	20.9%	0.2%
		Unweighted Count	211	64	4
Total	% within Registration	Estimate	86.3%	13.2%	0.4%
		Unweighted Count	20990	3980	76

Registration * Occupant Belt Use

Registration			Occupant ...
			Total
Wyoming License	% within Registration	Estimate	100.0%
		Unweighted Count	13941
Out-of-State	% within Registration	Estimate	100.0%
		Unweighted Count	10826
Observer Unsure	% within Registration	Estimate	100.0%
		Unweighted Count	279
Total	% within Registration	Estimate	100.0%
		Unweighted Count	25046

County * Occupant Belt Use

County			Occupant Belt Use			
			Belted	Not Belted	Observer Unsure	Total
Albany	% within County	Estimate	89.5%	9.9%	0.5%	100.0%
		Unweighted Count	1199	131	7	1337
Big Horn	% within County	Estimate	73.3%	25.5%	1.3%	100.0%
		Unweighted Count	400	139	7	546
Campbell	% within County	Estimate	82.3%	17.7%		100.0%
		Unweighted Count	1492	325		1817
Carbon	% within County	Estimate	69.7%	29.5%	0.8%	100.0%
		Unweighted Count	937	398	11	1346
Converse	% within County	Estimate	85.5%	13.6%	0.9%	100.0%
		Unweighted Count	1459	231	15	1705
Crook	% within County	Estimate	91.1%	8.2%	0.7%	100.0%
		Unweighted Count	1454	127	11	1592
Fremont	% within County	Estimate	78.7%	21.1%	0.2%	100.0%
		Unweighted Count	1168	313	3	1484
Johnson	% within County	Estimate	93.2%	6.8%		100.0%
		Unweighted Count	1056	75		1131
Laramie	% within County	Estimate	81.4%	18.6%		100.0%
		Unweighted Count	326	73		399
Lincoln	% within County	Estimate	91.0%	8.6%	0.4%	100.0%
		Unweighted Count	1255	118	6	1379
Natrona	% within County	Estimate	87.4%	12.1%	0.5%	100.0%
		Unweighted Count	729	101	4	834
Niobrara	% within County	Estimate	93.5%	6.3%	0.2%	100.0%
		Unweighted Count	831	56	2	889
Park	% within County	Estimate	89.6%	10.4%		100.0%
		Unweighted Count	1704	197		1901
Platte	% within County	Estimate	79.4%	20.5%	0.1%	100.0%
		Unweighted Count	1206	304	1	1511
Sheridan	% within County	Estimate	76.5%	23.4%	0.1%	100.0%
		Unweighted Count	1260	395	2	1657
Sweetwater	% within County	Estimate	67.4%	32.6%		100.0%
		Unweighted Count	1494	735		2229
Teton	% within County	Estimate	91.8%	8.0%	0.2%	100.0%
		Unweighted Count	3020	262	7	3289
Total	% within County	Estimate	86.3%	13.2%	0.4%	100.0%
		Unweighted Count	20990	3980	76	25046

Driver Frequencies

Population Density

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	4620	25.3	25.3	25.3
	Rural	13635	74.7	74.7	100.0
	Total	18255	100.0	100.0	

Type of Roadway

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	S1100-Primary Road	5488	30.1	30.1	30.1
	S1200-Secondary Road	11941	65.4	65.4	95.5
	S1400 Loc/Rur/City St	826	4.5	4.5	100.0
	Total	18255	100.0	100.0	

Driver Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	12472	68.3	68.3	68.3
	Female	5783	31.7	31.7	100.0
	Total	18255	100.0	100.0	

Driver Belt Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Belted	15044	82.4	82.4	82.4
	Not Belted	3170	17.4	17.4	99.8
	Observer Unsure	41	.2	.2	100.0
	Total	18255	100.0	100.0	

Vehicle Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Automobile	5042	27.6	27.6	27.6
	Van	5117	28.0	28.0	55.7
	Sport Utility Vehicle	1141	6.3	6.3	61.9
	Pick Up Truck	6955	38.1	38.1	100.0
	Total	18255	100.0	100.0	

Registration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wyoming License	10931	59.9	59.9	59.9
	Out-of-State	7116	39.0	39.0	98.9
	9	208	1.1	1.1	100.0
	Total	18255	100.0	100.0	

Weekday-Weekend

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Weekday	14933	81.8	81.8	81.8
	Weekend	3322	18.2	18.2	100.0
	Total	18255	100.0	100.0	

County

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Albany	1004	5.5	5.5	5.5
	Big Horn	397	2.2	2.2	7.7
	Campbell	1409	7.7	7.7	15.4
	Carbon	995	5.5	5.5	20.8
	Converse	1293	7.1	7.1	27.9
	Crook	1111	6.1	6.1	34.0
	Fremont	1069	5.9	5.9	39.9
	Johnson	785	4.3	4.3	44.2
	Laramie	314	1.7	1.7	45.9
	Lincoln	990	5.4	5.4	51.3
	Natrona	630	3.5	3.5	54.8
	Niobrara	611	3.3	3.3	58.1
	Park	1420	7.8	7.8	65.9
	Platte	1082	5.9	5.9	71.8
	Sheridan	1347	7.4	7.4	79.2
	Sweetwater	1652	9.0	9.0	88.2
	Teton	2146	11.8	11.8	100.0
	Total	18255	100.0	100.0	

Driver Variables

Driver Belt Use

		Estimate	Standard Error	95% Confidence Interval		Unweighted Count
				Lower	Upper	
% of Total	Belted	86.9%	0.3%	86.3%	87.6%	15044
	Not Belted	13.0%	0.3%	12.4%	13.7%	3170
	Observer Unsure	0.0%	0.0%	0.0%	0.0%	41
	Total	100.0%	0.0%	100.0%	100.0%	18255

Population Density * Driver Belt Use

			Driver ...
Population Density			Total
Urban	% within Population Density	Estimate	100.0%
		Unweighted Count	4620
Rural	% within Population Density	Estimate	100.0%
		Unweighted Count	13635
Total	% within Population Density	Estimate	100.0%
		Unweighted Count	18255

Type of Roadway * Driver Belt Use

			Driver Belt Use	
Type of Roadway			Belted	Not Belted
S1100-Primary Road	% within Type of Roadway	Estimate	84.2%	15.7%
		Unweighted Count	4679	797
S1200-Secondary Road	% within Type of Roadway	Estimate	80.9%	18.9%
		Unweighted Count	9652	2260
S1400 Loc/Rur/City St	% within Type of Roadway	Estimate	88.2%	11.8%
		Unweighted Count	713	113
Total	% within Type of Roadway	Estimate	86.9%	13.0%
		Unweighted Count	15044	3170

Type of Roadway * Driver Belt Use

			Driver Belt Use	
Type of Roadway			Observer Unsure	Total
S1100-Primary Road	% within Type of Roadway	Estimate	0.2%	100.0%
		Unweighted Count	12	5488
S1200-Secondary Road	% within Type of Roadway	Estimate	0.2%	100.0%
		Unweighted Count	29	11941
S1400 Loc/Rur/City St	% within Type of Roadway	Estimate		100.0%
		Unweighted Count		826
Total	% within Type of Roadway	Estimate	0.0%	100.0%
		Unweighted Count	41	18255

Registration * Driver Belt Use

Registration			Driver Belt Use		
			Belted	Not Belted	Observer Unsure
Wyoming License	% within Registration	Estimate	85.5%	14.4%	0.0%
		Unweighted Count	8627	2278	26
Out-of-State	% within Registration	Estimate	92.0%	8.0%	0.0%
		Unweighted Count	6266	837	13
Observer Unsure	% within Registration	Estimate	74.3%	25.6%	0.1%
		Unweighted Count	151	55	2
Total	% within Registration	Estimate	86.9%	13.0%	0.0%
		Unweighted Count	15044	3170	41

Registration * Driver Belt Use

Registration			Driver ...
			Total
Wyoming License	% within Registration	Estimate	100.0%
		Unweighted Count	10931
Out-of-State	% within Registration	Estimate	100.0%
		Unweighted Count	7116
Observer Unsure	% within Registration	Estimate	100.0%
		Unweighted Count	208
Total	% within Registration	Estimate	100.0%
		Unweighted Count	18255

Weekday-Weekend * Driver Belt Use

Weekday-Weekend			Driver Belt Use		
			Belted	Not Belted	Observer Unsure
Weekday	% within Weekday-Weekend	Estimate	86.0%	14.0%	0.0%
		Unweighted Count	12253	2645	35
Weekend	% within Weekday-Weekend	Estimate	89.7%	10.2%	0.0%
		Unweighted Count	2791	525	6
Total	% within Weekday-Weekend	Estimate	86.9%	13.0%	0.0%
		Unweighted Count	15044	3170	41

Weekday-Weekend * Driver Belt Use

Weekday-Weekend			Driver ...
			Total
Weekday	% within Weekday-Weekend	Estimate	100.0%
		Unweighted Count	14933
Weekend	% within Weekday-Weekend	Estimate	100.0%
		Unweighted Count	3322
Total	% within Weekday-Weekend	Estimate	100.0%
		Unweighted Count	18255

Driver Gender * Driver Belt Use

Driver Gender			Driver Belt Use		
			Belted	Not Belted	Observer Unsure
Male	% within Driver Gender	Estimate	83.7%	16.3%	0.1%
		Unweighted Count	10043	2392	37
Female	% within Driver Gender	Estimate	91.8%	8.2%	0.0%
		Unweighted Count	5001	778	4
Total	% within Driver Gender	Estimate	86.9%	13.0%	0.0%
		Unweighted Count	15044	3170	41

Driver Gender * Driver Belt Use

Driver Gender			Driver ...
			Total
Male	% within Driver Gender	Estimate	100.0%
		Unweighted Count	12472
Female	% within Driver Gender	Estimate	100.0%
		Unweighted Count	5783
Total	% within Driver Gender	Estimate	100.0%
		Unweighted Count	18255

Vehicle Type * Driver Belt Use

Vehicle Type			Driver Belt Use	
			Belted	Not Belted
Automobile	% within Vehicle Type	Estimate	89.0%	11.0%
		Unweighted Count	4291	741
Van	% within Vehicle Type	Estimate	88.6%	11.3%
		Unweighted Count	4488	623
Sport Utility Vehicle	% within Vehicle Type	Estimate	92.3%	7.7%
		Unweighted Count	999	141
Pick Up Truck	% within Vehicle Type	Estimate	83.3%	16.7%
		Unweighted Count	5266	1665
Total	% within Vehicle Type	Estimate	86.9%	13.0%
		Unweighted Count	15044	3170

Vehicle Type * Driver Belt Use

Vehicle Type			Driver Belt Use	
			Observer Unsure	Total
Automobile	% within Vehicle Type	Estimate	0.0%	100.0%
		Unweighted Count	10	5042
Van	% within Vehicle Type	Estimate	0.0%	100.0%
		Unweighted Count	6	5117
Sport Utility Vehicle	% within Vehicle Type	Estimate	0.0%	100.0%
		Unweighted Count	1	1141
Pick Up Truck	% within Vehicle Type	Estimate	0.1%	100.0%
		Unweighted Count	24	6955
Total	% within Vehicle Type	Estimate	0.0%	100.0%
		Unweighted Count	41	18255

Subpopulation Tables

Driver Gender * Driver Belt Use

Vehicle Type	Driver Gender			Driver Belt Use: Belted	Driver Belt Use: Not Belted
Automobile	Male	% within Driver Gender	Estimate	86.2%	13.7%
			Unweighted Count	2487	452
	Female	% within Driver Gender	Estimate	91.3%	8.7%
			Unweighted Count	1804	289
	Total	% within Driver Gender	Estimate	89.0%	11.0%
			Unweighted Count	4291	741
Van	Male	% within Driver Gender	Estimate	84.2%	15.8%
			Unweighted Count	2338	345
	Female	% within Driver Gender	Estimate	92.3%	7.7%
			Unweighted Count	2150	278
	Total	% within Driver Gender	Estimate	88.6%	11.3%
			Unweighted Count	4488	623
Sport Utility Vehicle	Male	% within Driver Gender	Estimate	87.2%	12.8%
			Unweighted Count	682	105
	Female	% within Driver Gender	Estimate	98.1%	1.9%
			Unweighted Count	317	36
	Total	% within Driver Gender	Estimate	92.3%	7.7%
			Unweighted Count	999	141
Pick Up Truck	Male	% within Driver Gender	Estimate	82.0%	18.0%
			Unweighted Count	4536	1490
	Female	% within Driver Gender	Estimate	89.4%	10.6%
			Unweighted Count	730	175

Driver Gender * Driver Belt Use

Vehicle Type	Driver Gender			Driver Belt Use: Belted	Driver Belt Use: Not Belted
	Total	% within Driver Gender	Estimate	83.3%	16.7%
			Unweighted Count	5266	1665

Driver Gender * Driver Belt Use

Vehicle Type	Driver Gender			Driver Belt Use: Observer Unsure	Driver Belt Use: Total
Automobile	Male	% within Driver Gender	Estimate	0.1%	100.0%
			Unweighted Count	9	2948
	Female	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	1	2094
	Total	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	10	5042
Van	Male	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	5	2688
	Female	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	1	2429
	Total	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	6	5117
Sport Utility Vehicle	Male	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	1	788
	Female	% within Driver Gender	Estimate		100.0%
			Unweighted Count		353
	Total	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	1	1141
Pick Up Truck	Male	% within Driver Gender	Estimate	0.1%	100.0%
			Unweighted Count	22	6048
	Female	% within Driver Gender	Estimate	0.0%	100.0%
			Unweighted Count	2	907

Driver Gender * Driver Belt Use

Vehicle Type	Driver Gender			Driver Belt Use: Observer Unsure	Driver Belt Use: Total
	Total	% within Driver Gender	Estimate	0.1%	100.0%
			Unweighted Count	24	6955

County * Driver Belt Use

County			Driver Belt Use			
			Belted	Not Belted	Observer Unsure	Total
Albany	% within County	Estimate	87.8%	11.7%	0.5%	100.0%
		Unweighted Count	883	116	5	1004
Big Horn	% within County	Estimate	69.3%	29.5%	1.3%	100.0%
		Unweighted Count	275	117	5	397
Campbell	% within County	Estimate	80.7%	19.3%		100.0%
		Unweighted Count	1135	274		1409
Carbon	% within County	Estimate	68.4%	30.8%	0.8%	100.0%
		Unweighted Count	680	307	8	995
Converse	% within County	Estimate	84.5%	15.2%	0.2%	100.0%
		Unweighted Count	1094	196	3	1293
Crook	% within County	Estimate	89.5%	9.7%	0.8%	100.0%
		Unweighted Count	997	105	9	1111
Fremont	% within County	Estimate	78.7%	21.1%	0.2%	100.0%
		Unweighted Count	841	226	2	1069
Johnson	% within County	Estimate	92.0%	8.0%		100.0%
		Unweighted Count	724	61		785
Laramie	% within County	Estimate	81.6%	18.4%		100.0%
		Unweighted Count	257	57		314
Lincoln	% within County	Estimate	90.5%	9.0%	0.5%	100.0%
		Unweighted Count	896	89	5	990
Natrona	% within County	Estimate	88.4%	11.6%		100.0%
		Unweighted Count	557	73		630
Niobrara	% within County	Estimate	92.8%	6.9%	0.3%	100.0%
		Unweighted Count	567	42	2	611
Park	% within County	Estimate	88.7%	11.3%		100.0%
		Unweighted Count	1259	161		1420
Platte	% within County	Estimate	77.5%	22.5%		100.0%
		Unweighted Count	843	239		1082
Sheridan	% within County	Estimate	75.6%	24.3%	0.1%	100.0%
		Unweighted Count	1014	332	1	1347
Sweetwater	% within County	Estimate	66.9%	33.1%		100.0%
		Unweighted Count	1099	553		1652
Teton	% within County	Estimate	89.6%	10.3%	0.0%	100.0%
		Unweighted Count	1923	222	1	2146
Total	% within County	Estimate	86.9%	13.0%	0.0%	100.0%
		Unweighted Count	15044	3170	41	18255

Passenger Frequencies

Passenger Belt Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Belted	5946	32.6	87.6	87.6
	Not Belted	810	4.4	11.9	99.5
	Observer Unsure	35	.2	.5	100.0
	Total	6791	37.2	100.0	
Missing	System	11465	62.8		
Total		18256	100.0		

Population Density

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	1194	6.5	17.6	17.6
	Rural	5597	30.7	82.4	100.0
	Total	6791	37.2	100.0	
Missing	System	11465	62.8		
Total		18256	100.0		

Type of Roadway

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	11.00	2063	11.3	30.4	30.4
	12.00	4474	24.5	65.9	96.3
	14.00	254	1.4	3.7	100.0
	Total	6791	37.2	100.0	
Missing	System	11465	62.8		
Total		18256	100.0		

Registration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wyoming License	3010	16.5	44.3	44.3
	Out-of-State	3710	20.3	54.6	99.0
	Observer Unsure	71	.4	1.0	100.0
	Total	6791	37.2	100.0	
Missing	System	11465	62.8		
Total		18256	100.0		

Weekday-Weekday

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Weekday	4891	26.8	72.0	72.0
	Weekend	1900	10.4	28.0	100.0
	Total	6791	37.2	100.0	
Missing	System	11465	62.8		
Total		18256	100.0		

Passenger Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	2081	11.4	30.6	30.6
	Female	4709	25.8	69.4	100.0
	Total	6790	37.2	100.0	
Missing	9	1	.0		
	System	11465	62.8		
	Total	11466	62.8		
Total		18256	100.0		

Vehicle Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Automobile	1931	10.6	28.4	28.4
	Van	2132	11.7	31.4	59.8
	Sport Utility Vehicle	577	3.2	8.5	68.3
	Pick Up Truck	2151	11.8	31.7	100.0
	Total	6791	37.2	100.0	
Missing	System	11465	62.8		
Total		18256	100.0		

County

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Albany	333	1.8	4.9	4.9
	Big Horn	149	.8	2.2	7.1
	Campbell	408	2.2	6.0	13.1
	Carbon	351	1.9	5.2	18.3
	Converse	412	2.3	6.1	24.3
	Crook	481	2.6	7.1	31.4
	Fremont	415	2.3	6.1	37.5
	Johnson	346	1.9	5.1	42.6
	Laramie	85	.5	1.3	43.9
	Lincoln	389	2.1	5.7	49.6
	Natrona	204	1.1	3.0	52.6
	Niobrara	278	1.5	4.1	56.7
	Park	481	2.6	7.1	63.8
	Platte	429	2.3	6.3	70.1
	Sheridan	310	1.7	4.6	74.7
	Sweetwater	577	3.2	8.5	83.2
	Teton	1143	6.3	16.8	100.0
	Total	6791	37.2	100.0	
Missing	System	11465	62.8		
Total		18256	100.0		

Passenger Variables

Passenger Belt Use

		Estimate	Standard Error	95% Confidence Interval		Unweighted Count
				Lower	Upper	
% of Total	Belted	84.5%	0.7%	83.2%	85.7%	5946
	Not Belted	13.9%	0.6%	12.7%	15.1%	810
	Observer Unsure	1.6%	0.2%	1.2%	2.2%	35
	Total	100.0%	0.0%	100.0%	100.0%	6791

Population Density * Passenger Belt Use

Population Density			Passenger Belt Use		
			Belted	Not Belted	Observer Unsure
Urban	% within Population Density	Estimate	80.7%	17.7%	1.6%
		Unweighted Count	900	290	4
Rural	% within Population Density	Estimate	88.1%	10.2%	1.7%
		Unweighted Count	5046	520	31
Total	% within Population Density	Estimate	84.5%	13.9%	1.6%
		Unweighted Count	5946	810	35

Type of Roadway * Passenger Belt Use

Type of Roadway			Passenger Belt Use		
			Belted	Not Belted	Observer Unsure
11.00	% within Type of Roadway	Estimate	88.5%	11.0%	0.6%
		Unweighted Count	1845	203	15
12.00	% within Type of Roadway	Estimate	86.1%	13.6%	0.3%
		Unweighted Count	3894	564	16
14.00	% within Type of Roadway	Estimate	83.9%	14.2%	1.9%
		Unweighted Count	207	43	4
Total	% within Type of Roadway	Estimate	84.5%	13.9%	1.6%
		Unweighted Count	5946	810	35

Type of Roadway * Passenger Belt Use

Type of Roadway			Passenge...
			Total
11.00	% within Type of Roadway	Estimate	100.0%
		Unweighted Count	2063
12.00	% within Type of Roadway	Estimate	100.0%
		Unweighted Count	4474
14.00	% within Type of Roadway	Estimate	100.0%
		Unweighted Count	254
Total	% within Type of Roadway	Estimate	100.0%
		Unweighted Count	6791

Registration * Passenger Belt Use

Registration			Passenger Belt Use		
			Belted	Not Belted	Observer Unsure
Wyoming License	% within Registration	Estimate	82.1%	16.6%	1.3%
		Unweighted Count	2463	534	13
Out-of-State	% within Registration	Estimate	88.2%	9.6%	2.2%
		Unweighted Count	3423	267	20
Observer Unsure	% within Registration	Estimate	96.0%	3.5%	0.5%
		Unweighted Count	60	9	2
Total	% within Registration	Estimate	84.5%	13.9%	1.6%
		Unweighted Count	5946	810	35

Registration * Passenger Belt Use

Registration			Passenge...
			Total
Wyoming License	% within Registration	Estimate	100.0%
		Unweighted Count	3010
Out-of-State	% within Registration	Estimate	100.0%
		Unweighted Count	3710
Observer Unsure	% within Registration	Estimate	100.0%
		Unweighted Count	71
Total	% within Registration	Estimate	100.0%
		Unweighted Count	6791

Weekday-Weekday * Passenger Belt Use

Weekday-Weekday			Passenger Belt Use		
			Belted	Not Belted	Observer Unsure
Weekday	% within Weekday-Weekday	Estimate	82.6%	16.0%	1.4%
		Unweighted Count	4240	622	29
Weekend	% within Weekday-Weekday	Estimate	87.4%	10.5%	2.0%
		Unweighted Count	1706	188	6
Total	% within Weekday-Weekday	Estimate	84.5%	13.9%	1.6%
		Unweighted Count	5946	810	35

Weekday-Weekday * Passenger Belt Use

Weekday-Weekday			Passenge...
			Total
Weekday	% within Weekday-Weekday	Estimate	100.0%
		Unweighted Count	4891
Weekend	% within Weekday-Weekday	Estimate	100.0%
		Unweighted Count	1900
Total	% within Weekday-Weekday	Estimate	100.0%
		Unweighted Count	6791

Passenger Gender * Passenger Belt Use

Passenger Gender			Passenger Belt Use		
			Belted	Not Belted	Observer Unsure
Male	% within Passenger Gender	Estimate	74.3%	24.4%	1.3%
		Unweighted Count	1644	422	15
Female	% within Passenger Gender	Estimate	89.5%	8.7%	1.8%
		Unweighted Count	4302	388	19
Total	% within Passenger Gender	Estimate	84.5%	13.9%	1.6%
		Unweighted Count	5946	810	34

Passenger Gender * Passenger Belt Use

Passenger Gender			Passenge...
			Total
Male	% within Passenger Gender	Estimate	100.0%
		Unweighted Count	2081
Female	% within Passenger Gender	Estimate	100.0%
		Unweighted Count	4709
Total	% within Passenger Gender	Estimate	100.0%
		Unweighted Count	6790

Vehicle Type * Passenger Belt Use

Vehicle Type			Passenger Belt Use	
			Belted	Not Belted
Automobile	% within Vehicle Type	Estimate	88.1%	10.5%
		Unweighted Count	1743	179
Van	% within Vehicle Type	Estimate	87.0%	12.9%
		Unweighted Count	1946	180
Sport Utility Vehicle	% within Vehicle Type	Estimate	80.7%	7.9%
		Unweighted Count	526	48
Pick Up Truck	% within Vehicle Type	Estimate	80.1%	18.6%
		Unweighted Count	1731	403
Total	% within Vehicle Type	Estimate	84.5%	13.9%
		Unweighted Count	5946	810

Vehicle Type * Passenger Belt Use

Vehicle Type			Passenger Belt Use	
			Observer Unsure	Total
Automobile	% within Vehicle Type	Estimate	1.4%	100.0%
		Unweighted Count	9	1931
Van	% within Vehicle Type	Estimate	0.1%	100.0%
		Unweighted Count	6	2132
Sport Utility Vehicle	% within Vehicle Type	Estimate	11.4%	100.0%
		Unweighted Count	3	577
Pick Up Truck	% within Vehicle Type	Estimate	1.2%	100.0%
		Unweighted Count	17	2151
Total	% within Vehicle Type	Estimate	1.6%	100.0%
		Unweighted Count	35	6791

Subpopulation Tables

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenger Belted
Automobile	Male	% within Passenger Gender	Estimate	78.8%
			Unweighted Count	437
	Female	% within Passenger Gender	Estimate	91.0%
			Unweighted Count	1306
	Total	% within Passenger Gender	Estimate	88.1%
			Unweighted Count	1743
Van	Male	% within Passenger Gender	Estimate	78.5%
			Unweighted Count	459
	Female	% within Passenger Gender	Estimate	91.6%
			Unweighted Count	1487
	Total	% within Passenger Gender	Estimate	87.0%
			Unweighted Count	1946
Sport Utility Vehicle	Male	% within Passenger Gender	Estimate	70.8%
			Unweighted Count	137
	Female	% within Passenger Gender	Estimate	87.8%
			Unweighted Count	389
	Total	% within Passenger Gender	Estimate	80.7%
			Unweighted Count	526
Pick Up Truck	Male	% within Passenger Gender	Estimate	69.5%
			Unweighted Count	611
	Female	% within Passenger Gender	Estimate	86.6%
			Unweighted Count	1120

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenger .. Not Belted
Automobile	Male	% within Passenger Gender	Estimate	21.0%
			Unweighted Count	75
	Female	% within Passenger Gender	Estimate	7.2%
			Unweighted Count	104
	Total	% within Passenger Gender	Estimate	10.5%
			Unweighted Count	179
Van	Male	% within Passenger Gender	Estimate	21.5%
			Unweighted Count	81
	Female	% within Passenger Gender	Estimate	8.3%
			Unweighted Count	99
	Total	% within Passenger Gender	Estimate	12.9%
			Unweighted Count	180
Sport Utility Vehicle	Male	% within Passenger Gender	Estimate	15.6%
			Unweighted Count	19
	Female	% within Passenger Gender	Estimate	2.4%
			Unweighted Count	29
	Total	% within Passenger Gender	Estimate	7.9%
			Unweighted Count	48
Pick Up Truck	Male	% within Passenger Gender	Estimate	30.4%
			Unweighted Count	247
	Female	% within Passenger Gender	Estimate	11.6%
			Unweighted Count	156

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenger .. Not Belted
	Total	% within Passenger Gender	Estimate	18.6%
			Unweighted Count	403

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenger Belt .. Observer Unsure
Automobile	Male	% within Passenger Gender	Estimate	0.1%
			Unweighted Count	4
	Female	% within Passenger Gender	Estimate	1.8%
			Unweighted Count	5
	Total	% within Passenger Gender	Estimate	1.4%
			Unweighted Count	9
Van	Male	% within Passenger Gender	Estimate	0.1%
			Unweighted Count	2
	Female	% within Passenger Gender	Estimate	0.1%
			Unweighted Count	4
	Total	% within Passenger Gender	Estimate	0.1%
			Unweighted Count	6
Sport Utility Vehicle	Male	% within Passenger Gender	Estimate	13.6%
			Unweighted Count	2
	Female	% within Passenger Gender	Estimate	9.8%
			Unweighted Count	1
	Total	% within Passenger Gender	Estimate	11.4%
			Unweighted Count	3
Pick Up Truck	Male	% within Passenger Gender	Estimate	0.1%
			Unweighted Count	7
	Female	% within Passenger Gender	Estimate	1.9%
			Unweighted Count	9

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenger Belt .. Observer Unsure
	Total	% within Passenger Gender	Estimate	1.2%
			Unweighted Count	16

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenge... Total
Automobile	Male	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	516
	Female	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	1415
	Total	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	1931
Van	Male	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	542
	Female	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	1590
	Total	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	2132
Sport Utility Vehicle	Male	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	158
	Female	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	419
	Total	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	577
Pick Up Truck	Male	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	865
	Female	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	1285

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenger Belted
	Total	% within Passenger Gender	Estimate	80.1%
			Unweighted Count	1731

Passenger Gender * Passenger Belt Use

Vehicle Type	Passenger Gender			Passenge... Total
	Total	% within Passenger Gender	Estimate	100.0%
			Unweighted Count	2150

County * Passenger Belt Use

County			Passenger Belt Use			
			Belted	Not Belted	Observer Unsure	Total
Albany	% within County	Estimate	94.8%	4.6%	0.6%	100.0%
		Unweighted Count	316	15	2	333
Big Horn	% within County	Estimate	83.9%	14.8%	1.3%	100.0%
		Unweighted Count	125	22	2	149
Campbell	% within County	Estimate	87.8%	12.2%		100.0%
		Unweighted Count	357	51		408
Carbon	% within County	Estimate	73.3%	25.9%	0.9%	100.0%
		Unweighted Count	257	91	3	351
Converse	% within County	Estimate	88.5%	8.6%	2.9%	100.0%
		Unweighted Count	365	35	12	412
Crook	% within County	Estimate	94.9%	4.7%	0.4%	100.0%
		Unweighted Count	457	22	2	481
Fremont	% within County	Estimate	78.8%	21.0%	0.2%	100.0%
		Unweighted Count	327	87	1	415
Johnson	% within County	Estimate	95.8%	4.2%		100.0%
		Unweighted Count	332	14		346
Laramie	% within County	Estimate	80.4%	19.6%		100.0%
		Unweighted Count	69	16		85
Lincoln	% within County	Estimate	92.3%	7.5%	0.3%	100.0%
		Unweighted Count	359	29	1	389
Natrona	% within County	Estimate	84.3%	13.7%	2.0%	100.0%
		Unweighted Count	172	28	4	204
Niobrara	% within County	Estimate	95.0%	5.0%		100.0%
		Unweighted Count	264	14		278
Park	% within County	Estimate	92.5%	7.5%		100.0%
		Unweighted Count	445	36		481
Platte	% within County	Estimate	84.3%	15.5%	0.3%	100.0%
		Unweighted Count	363	65	1	429
Sheridan	% within County	Estimate	79.9%	19.8%	0.3%	100.0%
		Unweighted Count	246	63	1	310
Sweetwater	% within County	Estimate	68.8%	31.2%		100.0%
		Unweighted Count	395	182		577
Teton	% within County	Estimate	96.0%	3.5%	0.5%	100.0%
		Unweighted Count	1097	40	6	1143
Total	% within County	Estimate	84.5%	13.9%	1.6%	100.0%
		Unweighted Count	5946	810	35	6791

Appendix E: Observer Field Test Ratings

Field Test Scores by Observer

Observer Written Exam & Field Observations

	Written	1	2	3	Field Avg
Brooke Darden	100.00%	79.25%	99.32%	81.89%	86.82%
Jaclyn Davison	95.00%	97.66%	97.52%	98.33%	97.84%
Peggy Dowers	95.00%	97.93%	96.46%	92.59%	95.66%
Dawn Edwards	100.00%	87.17%	96.41%	90.00%	91.19%
Kolter Elder	95.00%	97.84%	96.37%	86.56%	93.59%
Dixie Elder	95.00%	85.83%	91.30%	95.54%	90.89%
Deb Eutsler	90.00%	95.57%	94.30%	98.16%	96.01%
Candy Hunter	100.00%	98.00%	96.18%	96.61%	96.93%
Molly Laidlaw	95.00%	98.06%	96.61%	87.12%	93.93%
Chrissy Lira	90.00%	98.02%	98.10%	98.15%	98.09%
Derald Maddison	85.00%	97.96%	97.81%	89.74%	95.17%
Sarah N'Tula	90.00%	100.00%	98.52%	90.82%	96.45%
Susan Parkinson	100.00%	100.00%	98.33%	99.12%	99.15%
Doug Peterson	95.00%	97.87%	92.07%	94.25%	94.73%
Vicky Peterson	80.00%	79.74%	94.22%	92.59%	88.85%
Lucinda Pope	90.00%	98.00%	97.85%	86.63%	94.16%
Kayla Schear	90.00%	98.32%	98.14%	82.17%	92.88%
Bill Spencer	90.00%	97.89%	96.48%	91.57%	95.31%
Patrick White	90.00%	95.78%	95.19%	99.32%	96.76%
Bridget White	90.00%	97.69%	99.12%	96.27%	97.69%
Total	92.75%	94.93%	96.52%	92.37%	94.61%

Appendix F: SBU Unknown Rate

Seat Belt Survey Unknown Rates

County	County Code	Unknown Driv+Pass	Total Obsv. Driv+Pass	County Rate
Albany	01	7	1337	0.0052
Big Horn	03	7	546	0.0128
Campbell	05	0	1817	0.0000
Carbon	07	11	1346	0.0081
Converse	09	15	1705	0.0088
Crook	11	11	1592	0.0069
Fremont	13	3	1484	0.0020
Johnson	19	0	1131	0.0000
Laramie	21	0	399	0.0000
Lincoln	23	6	1379	0.0043
Natrona	25	4	834	0.0048
Niobrara	27	2	889	0.0022
Park	29	0	1901	0.0000
Platte	31	0	1511	0.0010
Sheridan	33	2	1657	0.0012
Sweetwater	37	0	2229	0.0000
Teton	39	7	3289	0.0021
State		75	25046	0.3034

Appendix G: Reporting requirements

Data Collected at Observation Sites

1. Standard Error of Statewide Belt Use Rate: 0.3 percent
2. Nonresponse Rate as provided in §1340.9 (f)
    a. Nonresponse rate for the survey variable seat belt use: 0.3034 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
168744812	1-Original	6/8/2018	0.001650855	138	57	187	11	0
604506604	2-Original	6/8/2018	0.001650855	151	67	212	6	0
604518733	3-Original	6/5/2018	0.001650855	119	33	133	16	3
618090887	4-Original	6/7/2018	0.001650855	187	28	183	30	2
168721954	5-Original	6/4/2018	0.00536996	1	0	1	0	0
168724202	6-Original	6/10/2018	0.00536996	17	15	30	2	0
168736409	7-Original	6/5/2018	0.00536996	1	1	2	0	0
168736812	8-Original	6/6/2018	0.00536996	3	0	1	2	0
168736818	9-Original	6/6/2018	0.00536996	2	0	1	1	0
168739458	10-Original	6/7/2018	0.00536996	66	23	79	10	0
168744758	11-Original	6/8/2018	0.00536996	33	13	43	2	1
168755794	12-Original	6/5/2018	0.00536996	0	0	0	0	0
168756946	13-Original	6/7/2018	0.00536996	96	19	101	13	1
168759492	14-Original	6/7/2018	0.00536996	32	7	34	5	0
604505737	15-Original	6/9/2018	0.00536996	67	31	80	18	0
604508028	16-Original	6/9/2018	0.00536996	69	34	92	11	0
639960821	17-Original	6/4/2018	0.00536996	22	5	23	4	0
180485518	1-Original	6/6/2018	0.00675	27	8	29	6	0

180488087	2-Original	6/5/2018	0.00675	8	6	13	1	0
180490194	3-Original	6/4/2018	0.00675	18	3	15	6	0
180496628	4-Original	6/6/2018	0.00675	58	10	45	23	0
180498297	5-Original	6/7/2018	0.00675	9	4	9	3	1
180499677	6-Original	6/9/2018	0.00675	24	10	28	6	0
180499711	7-Original	6/8/2018	0.00675	12	4	12	3	1
180499713	8-Original	6/8/2018	0.00675	13	7	16	4	0
180500800	9-Original	6/10/2018	0.00675	21	15	30	6	0
180502805	10-Original	6/5/2018	0.00675	46	17	46	17	0
605615639	11-Original	6/4/2018	0.00675	13	3	9	6	1
605622874	12-Original	6/5/2018	0.00675	15	5	16	1	3
605628846	13-Original	6/4/2018	0.00675	41	17	45	13	0
605634311	14-Original	6/9/2018	0.00675	2	0	0	2	0
605635819	15-Original	6/4/2018	0.00675	39	15	34	20	0
629140276	16-Original	6/7/2018	0.00675	40	16	36	19	1
640075189	17a-Alternate	6/6/2018	0.00675	11	9	17	3	0
146322365	1-Original	6/4/2018	0.00122368	135	68	190	13	0
607412531	2-Original	6/4/2018	0.00122368	78	20	78	20	0
635167239	3-Original	6/6/2018	0.00122368	203	92	261	34	0
146318474	4-Original	6/9/2018	0.00570204	6	3	7	2	0
146328862	5-Original	6/4/2018	0.00570204	23	7	24	6	0
146332262	6-Original	6/5/2018	0.00570204	66	16	67	15	0
146339526	7-Original	6/8/2018	0.00570204	40	9	47	2	0
146342003	8-Original	6/7/2018	0.00570204	7	1	6	2	0

146343481	9-Original	6/8/2018	0.00570204	58	13	62	9	0
146347374	10-Original	6/10/2018	0.00570204	4	1	4	1	0
146350916	11-Original	6/6/2018	0.00570204	135	28	119	44	0
146351033	12-Original	6/5/2018	0.00570204	366	84	348	102	0
146353423	13-Original	6/6/2018	0.00570204	90	21	86	25	0
607412366	14-Original	6/7/2018	0.00570204	26	4	26	4	0
624031392	15-Original	6/9/2018	0.00570204	17	8	19	6	0
633856780	16-Original	6/5/2018	0.00570204	80	25	81	24	0
637303141	17-Original	6/5/2018	0.00570204	75	8	67	16	0
611196911	1-Original	6/10/2018	0.0012506	118	56	147	27	0
611197521	2-Original	6/7/2018	0.0012506	156	67	150	72	1
611197813	3-Original	6/7/2018	0.0012506	79	26	75	28	2
611197839	4-Original	6/6/2018	0.0012506	140	25	125	40	0
148697142	5-Original	6/8/2018	0.004063325	95	28	93	28	2
148703998	6-Original	6/7/2018	0.004063325	11	3	6	7	1
148709091	7-Original	6/6/2018	0.004063325	27	9	21	15	0
148715351	8-Original	6/5/2018	0.004063325	17	10	17	9	1
148715791	9-Original	6/4/2018	0.004063325	19	3	14	6	2
148729069	10-Original	6/10/2018	0.004063325	44	14	41	17	0
148729548	11-Original	6/8/2018	0.004063325	149	59	130	77	1
610950022	12-Original	6/5/2018	0.004063325	16	1	12	4	1
622138132	13-Original	6/9/2018	0.004063325	60	28	54	34	0
622152589	14-Original	6/9/2018	0.004063325	9	1	5	5	0
634320706	15-Original	6/6/2015	0.004063325	52	19	43	28	0

636227437	16-Original	6/4/2018	0.004063325	2	1	2	1	0
638995814	17-Original	6/4/2018	0.004063325	1	1	2	0	0
146991744	1-Original	6/5/2018	0.00232162	129	34	141	18	4
147011297	2-Original	6/6/2018	0.00232162	139	34	164	8	1
606576236	3-Original	6/4/2018	0.00232162	165	38	170	24	9
638018831	4-Original	6/6/2018	0.00232162	186	60	218	28	0
639999220	5-Original	6/9/2018	0.00232162	188	86	256	18	0
146973757	6-Original	6/5/2018	0.00558606	35	9	37	7	0
146990064	7-Original	6/6/2018	0.00558606	44	11	46	9	0
146992776	8-Original	6/4/2018	0.00558606	26	4	25	5	0
146999066	9-Original	6/10/2018	0.00558606	4	1	4	1	0
147014316	10-Original	6/10/2018	0.00558606	9	7	14	2	0
147015716	11-Original	6/8/2018	0.00558606	86	29	93	22	0
606568024	12-Original	6/8/2018	0.00558606	73	42	108	7	0
606572349	13-Original	6/7/2018	0.00558606	83	27	81	29	0
606573014	14-Original	6/7/2018	0.00558606	65	12	41	35	1
635660664	15-Original	6/9/2018	0.00558606	17	8	19	6	0
635660675	16-Original	6/8/2018	0.00558606	12	3	13	2	0
638996176	17-Original	6/5/2018	0.00558606	32	7	29	10	0
147162757	1-Original	6/8/2018	0.002206125	98	33	129	2	0
610821880	2-Original	6/6/2018	0.002206125	131	34	160	5	0
610821966	3-Original	6/6/2018	0.002206125	130	46	163	9	4
610822060	4-Original	6/6/2018	0.002206125	139	73	204	8	0
634779349	5-Original	6/8/2018	0.002206125	89	45	126	7	1

147156838	6-Original	6/10/2018	0.00527425	63	42	94	9	2
147158424	7-Original	6/7/2018	0.00527425	25	13	37	1	0
147159706	8-Original	6/10/2018	0.00527425	27	15	40	2	0
147159927	9-Original	6/9/2018	0.00527425	30	11	31	8	2
147160775	10-Original	6/9/2018	0.00527425	28	20	32	15	1
147172557	11-Original	c	0.00527425	113	27	121	18	1
147177000	12-Original	6/5/2018	0.00527425	65	48	109	4	0
610822469	13-Original	6/7/2018	0.00527425	34	17	38	13	0
610824002	14-Original	6/4/2018	0.00527425	43	15	45	13	0
610824055	15-Original	6/4/2018	0.00527425	42	10	47	5	0
610824506	16-Original	6/5/2018	0.00527425	26	13	35	4	0
636266007	17-Original	6/5/2018	0.00527425	28	19	43	4	0
148431519	1-Original	6/9/2018	0.00525	76	34	86	24	0
148433356	2-Original	6/6/2018	0.00525	98	25	93	29	1
148434220	3-Original	6/6/2018	0.00525	2	1	1	2	0
148436040	4-Original	6/8/2018	0.00525	70	5	65	10	0
148444989	5-Original	6/9/2018	0.00525	50	41	85	6	0
148448765	6-Original	6/5/2018	0.00525	73	35	93	15	0
148470147	7-Original	6/5/2018	0.00525	52	15	43	23	1
148470268	8-Original	6/4/2018	0.00525	28	13	35	5	1
148472074	9-Original	6/5/2018	0.00525	11	5	12	4	0
148472781	10-Original	6/4/2018	0.00525	41	17	45	13	0
148483099	11-Original	6/4/2018	0.00525	30	7	24	13	0
628693352	12-Original	6/7/2018	0.00525	97	26	100	23	0

633721362	13-Original	6/8/2018	0.00525	93	22	66	49	0
635524645	14-Original	6/10/2018	0.00525	55	34	80	9	0
638997913	15-Original	6/7/2018	0.00525	87	40	109	18	0
639777342	16-Original	6/9/2018	0.00525	130	52	129	53	0
641181426	17b-Alternate	6/10/2018	0.00525	76	43	102	17	0
147299629	1-Original	6/8/2018	0.002652	51	12	56	7	0
147364555	2-Original	6/4/2018	0.002652	51	12	56	7	0
147364574	3-Original	6/5/2018	0.002652	90	34	123	1	0
147364598	4-Original	6/4/2018	0.002652	95	41	133	3	0
147364618	5-Original	6/6/2018	0.002652	57	16	72	1	0
635199539	6-Original	6/7/2018	0.002652	141	59	196	4	0
635832919	7-Original	6/10/2018	0.002652	91	59	136	14	0
641441511	8-Original	6/6/2018	0.002652	42	17	58	1	0
147304101	9-Original	6/8/2018	0.0029853	3	1	3	1	0
147307397	10-Original	6/5/2018	0.0029853	9	2	4	7	0
147307449	11-Original	6/5/2018	0.0029853	6	5	7	4	0
147318882	12-Original	6/5/2018	0.0029853	4	1	1	4	0
147326253	13-Original	6/9/2018	0.0029853	69	47	110	6	0
147326365	14-Original	6/9/2018	0.0029853	47	25	70	2	0
147328662	15-Original	6/7/2018	0.0029853	3	1	0	4	0
147375707	16-Original	6/6/2018	0.0029853	1	1	0	2	0
635127767	17-Original	6/10/2018	0.0029853	25	13	31	7	0
606515905	1-Original	6/7/2018	0.00003458	62	21	73	10	0
160144721	2-Original	6/6/2018	0.00003325	38	12	44	6	0

160143522	3-Original	6/5/2018	0.00053826	0	0	0	0	0
160145521	4-Original	6/6/2018	0.00053826	5	1	4	2	0
160147391	5-Original	6/4/2018	0.00053826	0	0	0	0	0
160149538	6-Original	6/7/2018	0.00053826	13	3	12	4	0
160154128	7-Original	6/4/2018	0.00053826	5	2	3	4	0
160158288	8-Original	6/10/2018	0.00053826	8	4	9	3	0
160158469	9-Original	6/9/2018	0.00053826	0	0	0	0	0
160163562	10-Original	6/8/2018	0.00053826	160	37	157	40	0
160167119	11-Original	6/5/2018	0.00053826	4	0	4	0	0
160169067	12-Original	6/9/2018	0.00053826	5	0	3	2	0
604943907	13-Original	6/4/2018	0.00053826	7	2	9	0	0
604970409	14-Original	6/10/2018	0.00053826	2	0	1	1	0
606518225	15-Original	6/8/2018	0.00053826	1	1	2	0	0
624678718	16-Original	6/7/2018	0.00053826	2	0	1	1	0
641616454	17-Original	6/4/2018	0.00053826	2	2	4	0	0
130301448	1-Original	6/8/2018	0.00595	16	5	18	3	0
130306325	2-Original	6/8/2018	0.00595	23	15	36	2	0
130309542	3-Original	6/10/2018	0.00595	39	18	52	4	1
130310021	4-Original	6/9/2018	0.00595	11	4	10	5	0
130314658	5-Original	6/10/2018	0.00595	68	34	91	11	0
130315195	6-Original	6/5/2018	0.00595	28	18	41	5	0
130320929	7-Original	6/9/2018	0.00595	20	13	31	2	0
130326826	8-Original	6/5/2018	0.00595	118	49	152	15	0
611004677	9-Original	6/7/2018	0.00595	8	1	6	3	0

611005970	10-Original	6/5/2018	0.00595	76	15	83	8	0
611009251	11-Original	6/4/2018	0.00595	150	53	190	12	1
611012866	12-Original	6/7/2018	0.00595	42	22	62	2	0
619637622	13-Original	6/6/2018	0.00595	9	5	10	4	0
621121926	14-Original	6/6/2018	0.00595	138	51	171	18	0
625338589	15-Original	6/9/2018	0.00595	18	7	24	0	1
626692093	16-Original	6/4/2018	0.00595	102	32	123	11	0
635537076	17-Original	6/4/2018	0.00595	124	47	155	13	3
607714377	1-Original	6/8/2018	0.000002245	18	2	18	2	0
160336980	2b-Alternate	6/6/2018	0.00004725	0	0	0	0	0
149002674	3-Original	6/10/2018	0.00004725	114	58	153	17	2
149003362	4-Original	6/10/2018	0.00004725	4	0	1	3	0
149005355	5-Original	6/10/2018	0.00004725	56	27	80	3	0
160347211	6b-Alternate	6/4/2018	0.00004725	0	0	0	0	0
149022917	7-Original	6/8/2018	0.00004725	45	10	38	17	0
149023334	8-Original	6/7/2018	0.00004725	2	2	4	0	0
149027199	9-Original	6/9/2018	0.00004725	3	2	3	2	0
607713464	10-Original	6/5/2018	0.00004725	6	0	5	1	0
607730056	11-Original	6/8/2018	0.00004725	259	60	283	35	1
607752291	12-Original	6/4/2018	0.00004725	103	36	120	18	1
607765363	13-Original	6/9/2018	0.00004725	0	0	0	0	0
617964312	14-Original	6/7/2018	0.00004725	11	3	12	2	0
633093763	15-Original	6/6/2018	0.00004725	4	2	5	1	0
639002442	16-Original	6/5/2018	0.00004725	1	0	1	0	0

640696510	17-Original	6/7/2018	0.00004725	4	2	6	0	0
160334094	1-Original	6/8/2018	0.01715	3	1	4	0	0
160336972	2-Original	6/9/2018	0.01715	55	38	81	12	0
160337605	3-Original	6/10/2018	0.01715	112	61	167	6	0
160344999	4-Original	6/4/2018	0.01715	90	32	118	3	1
160345686	5-Original	6/5/2018	0.01715	54	12	65	1	0
160347161	6-Original	6/4/2018	0.01715	17	7	24	0	0
160348581	7-Original	6/7/2018	0.01715	12	3	12	3	0
160348895	8-Original	6/7/2018	0.01715	7	0	7	0	0
160349055	9-Original	6/7/2018	0.01715	5	2	5	2	0
160351946	10-Original	6/4/2018	0.01715	77	37	114	0	0
160353063	11-Original	6/8/2018	0.01715	8	0	8	0	0
160353822	12-Original	6/10/2018	0.01715	69	45	95	19	0
607001764	13-Original	6/6/2018	0.01715	1	0	1	0	0
607027600	14-Original	6/9/2018	0.01715	12	4	12	4	0
607028034	15-Original	6/9/2018	0.01715	6	5	5	6	0
607029627	16-Original	6/5/2018	0.01715	31	13	44	0	1
629141429	17-Original	6/6/2018	0.01715	52	18	69	0	0
149193090	1-Original	6/7/2018	0.00545	122	23	130	15	0
149201740	2-Original	6/8/2018	0.00545	25	15	39	1	0
149201930	3-Original	6/8/2018	0.00545	47	22	63	6	0
149202730	4-Original	6/8/2018	0.00545	29	20	48	1	0
149211406	5-Original	6/10/2018	0.00545	59	53	110	2	0
149216185	6-Original	6/5/2018	0.00545	153	22	158	17	0

611835705	7-Original	6/5/2018	0.00545	120	26	123	23	0
611870412	8-Original	6/4/2018	0.00545	8	3	11	0	0
611874198	9-Original	6/6/2018	0.00545	138	43	169	12	0
611879443	10-Original	6/6/2018	0.00545	131	27	151	7	0
612517261	11-Original	6/4/2018	0.00545	49	20	63	6	0
612522792	12-Original	6/9/2018	0.00545	51	44	90	5	0
612523438	13-Original	6/9/2018	0.00545	22	12	31	3	0
612523439	14-Original	6/10/2018	0.00545	14	6	17	3	0
612525148	15-Original	6/4/2018	0.00545	90	42	122	10	0
612525641	16-Original	6/7/2018	0.00545	70	9	71	8	0
614771184	17-Original	6/5/2018	0.00545	292	94	308	78	0
160436335	1-Original	6/5/2018	0.002666965	93	29	96	26	0
604830837	2-Original	6/4/2018	0.002666965	161	63	209	15	0
604831395	3-Original	6/8/2018	0.002666965	178	84	193	69	0
606895018	4-Original	6/7/2018	0.002666965	84	29	110	3	0
635826409	5-Original	6/9/2018	0.002666965	168	89	220	37	0
638080329	6-Original	6/10/2018	0.002666965	88	42	115	15	0
160424975	7-Original	6/10/2018	0.00488151	3	3	0	6	0
160427396	8-Original	6/9/2018	0.00488151	15	6	11	10	0
160433447	9-Original	6/7/2018	0.00488151	84	22	66	40	0
160434518	10-Original	6/8/2018	0.00488151	19	7	19	7	0
604821382	11-Original	6/8/2018	0.00488151	83	12	48	47	0
604823624	12-Original	6/9/2018	0.00488151	29	8	22	15	0
634659728	13-Original	6/6/2018	0.00488151	10	7	15	2	0

635549418	14-Original	6/4/2018	0.00488151	13	4	13	4	0
638072853	15-Original	6/6/2018	0.00488151	8	5	13	0	0
635549382	16-Original	6/5/2018	0.00488151	6	3	7	1	1
638522178	17-Original	6/7/2018	0.00488151	40	16	49	7	0
608774680	1-Original	6/7/2018	0.0006118	174	49	195	28	0
639689837	2-Original	6/6/2018	0.0006118	143	52	173	22	0
147401116	3-Original	6/4/2018	0.00455175	18	4	20	2	0
147403821	4-Original	6/8/2018	0.00455175	211	54	200	65	0
147404413	5-Original	6/7/2018	0.00455175	82	22	69	35	0
147410535	6-Original	6/5/2018	0.00455175	5	1	4	2	0
147411652	7-Original	6/5/2018	0.00455175	8	3	9	2	0
147413279	8-Original	6/7/2018	0.00455175	246	38	210	74	0
147419984	9-Original	6/4/2018	0.00455175	24	6	19	10	1
605374149	10-Original	6/6/2018	0.00455175	241	24	187	78	0
605388659	11-Original	6/10/2018	0.00455175	9	5	10	4	0
605396189	12-Original	6/9/2018	0.00455175	8	4	10	2	0
608774654	13-Original	6/4/2018	0.00455175	10	2	8	4	0
618572901	14-Original	6/9/2018	0.00455175	12	3	10	5	0
629142524	15-Original	6/6/2018	0.00455175	22	2	12	11	1
637972373	16-Original	6/8/2018	0.00455175	121	37	113	45	0
638535884	17-Original	6/5/2018	0.00455175	13	4	11	6	0
618327492	1-Original	6/4/2018	0.001504	227	85	243	69	0
618328108	2-Original	6/5/2018	0.001504	110	46	107	49	0
634704011	3-Original	6/9/2018	0.001504	212	83	198	97	0

637926770	4-Original	6/5/2018	0.001504	114	40	105	49	0
641460901	5-Original	6/5/2018	0.001504	158	79	188	49	0
149462214	6-Original	6/10/2018	0.003604	42	21	40	23	0
149462365	7-Original	6/10/2018	0.003604	64	28	62	30	0
149462690	8-Original	6/9/2018	0.003604	16	12	23	5	0
149475167	9-Original	6/6/2018	0.003604	34	10	32	12	0
149475533	10-Original	6/6/2018	0.003604	25	8	26	7	0
149498901	11-Original	6/7/2018	0.003604	8	1	8	1	0
149503682	12-Original	6/4/2018	0.003604	137	29	99	67	0
612218179	13-Original	6/4/2018	0.003604	71	12	41	42	0
618324746	14-Original	6/8/2018	0.003604	22	3	17	8	0
618324787	15-Original	6/8/2018	0.003604	58	12	40	30	0
618325371	16-Original	6/8/2018	0.003604	343	107	257	193	0
636258685	17-Original	6/7/2018	0.003604	11	1	8	4	0
130412723	1-Original	6/6/2018	0.0138	96	36	122	10	0
130415393	2-Original	6/9/2018	0.0138	126	101	221	5	1
130422037	3-Original	6/7/2018	0.0138	173	56	207	21	1
130422578	4-Original	6/5/2018	0.0138	108	60	157	10	1
130427569	5-Original	6/5/2018	0.0138	282	102	332	52	0
130435783	6-Original	6/6/2018	0.0138	169	50	176	42	1
130437592	7-Original	6/4/2018	0.0138	52	30	81	1	0
130437880	8-Original	6/4/2018	0.0138	65	35	99	1	0
130438888	9-Original	6/8/2018	0.0138	146	121	256	10	1
130441420	10-Original	6/8/2018	0.0138	72	48	113	7	0

130450400	11-Original	6/7/2018	0.0138	47	31	75	3	0
130450450	12-Original	6/8/2018	0.0138	69	40	100	9	0
235938924	13-Original	6/10/2018	0.0138	97	86	174	8	1
235940231	14-Original	6/9/2018	0.0138	100	92	190	1	1
618913726	15-Original	6/5/2018	0.0138	91	34	110	15	0
635879991	16-Original	6/10/2018	0.0138	142	128	269	1	0
637241907	17-Original	6/6/2018	0.0138	311	93	338	66	0
Total				18255	6791	20993	3980	76

Standard Error of Statewide Belt Use Rate[3]: 0.3 percent

Nonresponse Rate as provided in §1340.9 (f)

Nonresponse rate for the survey variable seat belt use: 0.3034 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 Codes

SPSS Data Dictionary

```
 GET
  FILE='C:\Users\keith\Documents\Wyoming 2018\SPSS Data Files 2018\Occupants
DATASET NAME DataSet1 WINDOW=FRONT.
DISPLAY DICTIONARY.
```

File Information: Vehicle Occupants, Wyoming 2018

Notes

Output Created		05-SEP-2018 09:25:00
Comments		
Input	Data	C:\Users\keith\Documents\Wyoming 2018\SPSS Data Files 2018\Occupants Wyoming 2018.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		DISPLAY DICTIONARY.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.03

```
[DataSet1] C:\Users\keith\Documents\Wyoming 2018\SPSS Data Files 2018\Occupan
ts Wyoming 2018.sav
```

Variable Information

Variable	Position	Label	Measurement Level	Role	Column Width	Alignment
InclProbOfRoadType	1	Inclusive Probs	Scale	Input	12	Right
TLID	2	TLID	Scale	Input	12	Right
SRSWOR	3	Sampling Code	Scale	Input	12	Right
County	4	County	Nominal	Input	12	Right
Site	5	Site Number	Nominal	Input	12	Right
Population	6	Population Density	Nominal	Input	12	Right
Roadway	7	Roadway Type	Nominal	Input	12	Right
weight	8	Sample Weight	Scale	Input	12	Right
day	9	Weekday	Nominal	Input	12	Right
observer	10	Observer	Nominal	Input	12	Right
weather	11	Weather	Nominal	Input	12	Right
lanes	12	Lanes Observed	Nominal	Input	12	Right
direction	13	Traffic Direction	Nominal	Input	12	Right
OccupGender	14	Occupant Gender	Nominal	Input	12	Right
OccupBelt	15	Occupant Belt Use	Nominal	Input	12	Right
carType	16	Vehicle Type	Nominal	Input	12	Right
wyPlate	17	Registration	Nominal	Input	12	Right
timeStamp	18	Time of Observation	Nominal	Input	12	Right
Weekend	19	Weekday-Weekend	Nominal	Input	10	Right
Roadway2	20	Type of Roadway	Nominal	Input	10	Right
SRSWORinvert	21	SRSWORinvert	Scale	Input	14	Right

Variable Information

Variable	Print Format	Write Format	Missing Values
InclProbOfRoadType	F12.4	F12.4	
TLID	F12	F12	
SRSWOR	F12.5	F12.5	
County	F12	F12	
Site	F12	F12	
Population	F12	F12	
Roadway	F12	F12	
weight	F12.5	F12.5	
day	F12	F12	
observer	F12	F12	
weather	F12	F12	
lanes	F12	F12	9
direction	F12	F12	
OccupGender	F12	F12	9
OccupBelt	F12	F12	
carType	F12	F12	
wyPlate	F12	F12	
timeStamp	F12	F12	
Weekend	F8	F8	
Roadway2	F8	F8	
SRSWORinvert	F8.2	F8.2	

Variables in the working file

Variable Values

Value		Label
County	1	Albany
	3	Big Horn
	5	Campbell
	7	Carbon
	9	Converse
	11	Crook
	13	Fremont
	19	Johnson
	21	Laramie
	23	Lincoln
	25	Natrona
	27	Niobrara
	29	Park
	31	Platte
	33	Sheridan
	37	Sweetwater
	39	Teton
Population	1	Urban
	2	Rural
Roadway	11	S1100-Primary Road
	12	S1200-Secondary Road
	14	S1400 Loc/Rur/City St
day	1	Sunday
	2	Monday
	3	Tuesday
	4	Wednesday
	5	Thursday
	6	Friday
	7	Saturday
observer	7	Bridget White
	14	Vicky Peterson
	30	Bill Spencer
	35	Kayla Shear
	41	Patrick White
	42	Dawn Edwards

Variable Values

Value		Label
	44	Doug Peterson
	47	Dixie Elder
	48	Deb Eutsler
	50	Brooke Darden
	51	Susan Parkinson
	54	Derald Maddison
	55	Jaclyn Davison
	56	Molly Laidlaw
	57	Candy Hunter
	58	Lucinda Pope
	60	Kolter Elder
	61	Savanna Thornburg
	62	Peggy Dowers
	63	Chrissy Lira
	64	Sarah N'Tula
weather	1	Clear/Sunny
	2	Cloudy
	3	Foggy
	4	Light Rain
	5	Snow/Ice
	6	Heavy Rain
	7	Occasional Rain
lanes	1	One Lane
	2	Two Lanes
direction	1	North
	2	South
	3	East
	4	West
	5	Northwest
	6	Northeast
	7	Southwest
	8	Southeast
OccupGender	1	Male
	2	Female

Variable Values

Value		Label
OccupBelt	1	Belted
	2	Not Belted
	3	Observer Unsure
carType	1	Automobile
	2	Van
	3	Sport Utility Vehicle
	4	Pick Up Truck
wyPlate	1	Wyoming License
	2	Out-of-State
	3	Observer Unsure
timeStamp	1	7:30-9:30 AM
	2	9:30-11-30 AM
	3	11:30 AM-1:30 PM
	4	1:30-3:30 PM
	5	3:30-5:30 PM
Weekend	1	Weekdays
	2	Weekend
Roadway2	11	S1100-Primary Road
	12	S1200-Secondary Road
	14	S1400 Loc/Rur/City St