

2019

SEAT BELT SURVEY ANALYSIS



Wyoming State Government

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Transportation**
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survey analysis of seat belt use in Wyoming

2019 WYOMING SEAT BELT SURVEY

The protocols implemented for this study were per the 2012 federal guidelines. The standards and protocols align with the Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR Part 1340. The 2019 survey analysis is the seventh 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.
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Executive Summary

Observers collected the data analyzed in this report during the first week of June 2019. The results are the subject of the narrative and the appendices that follow. The survey followed The Uniform Criteria for State Observational Surveys of Seat Belt Use, 23 CFR § 1340. The baseline survey done in 2017 identified the counties and sites sampled for survey observations.

The following narrative begins with the estimates of seat belt use for all vehicle occupants, then for the drivers and outboard passengers. Next is an exploration of seat belt use by county, and the association between seat belt use and variables, i.e., population density, in-state and out-of-state registration, and other variables. Next is a review of seat belt use within categories of gender, vehicle type, and type of vehicle occupant (drivers and passengers). The routine analysis ends with a brief discussion of the trends in sample size and seat belt use over the eight years between 2012 and 2019. The concluding remarks that end the narrative give special attention to the comparing rate of seat belt use between 2018 and 2019.

Throughout the narrative, the reported seat belt use percentages are estimates derived from the raw data. Calculation of the estimates follows an approved statistical procedure that weights the data depending on sampling probabilities. Weighting the raw data to produce estimates insures that the statistical results are reliably representative of real-world seat belt use in Wyoming.

Here are some of the general results from the data analysis.

- Observers were at 289 sites within seventeen counties between June 3rd and June 9, 2019. They collected a total of 24,821 observations of drivers and passengers in 18,286 vehicles.
- The 2019 estimated rate of seat belt use is 78.3 percent belted. The calculation of the standard error and confidence levels validates the statistical legitimacy of this result. The result is 8.0 percentage points lower than the rate from the 2018 survey of seat belt use in Wyoming.
- The estimate for drivers is 76.9 percent belted. The estimate for outboard, front-seat passengers is 84.1 percent belted. The basis for these rates is from observations of 18,286 drivers and 6,535 passengers.
- Eleven counties have seat belt use rates above the statewide rate of 78.3 percent. Six counties have seat belt use percentages below the statewide rate. The seat belt use rate varies from a low of 63.5 percent belted in Sweetwater County to a high of 97.8 percent belted in Niobrara County. Driver and passenger rates are reported separately.
- Seat belt use is higher at those sites within rural counties compared to sites in urban counties.
- Vehicle occupants in Wyoming vehicles have lower rates of seat belt use than occupants of out-of-state vehicles.
- Vehicles traveling on secondary roads contained nearly two-thirds of the vehicle occupants, but seat belt use was higher for occupants observed on primary roadways. Vehicle occupants observed on secondary roads and local roads, rural roads, and city streets had similar rates of seat belt use. Observers tracked one-

lane of traffic the great majority of the time. However, observers tracked two of four lanes of traffic for about four of every ten vehicle occupants.

- Observers collected data on three-fourths of the vehicle occupants during weekdays; however, seat belt use was higher on weekends.
- Males comprised more than 80 percent of all vehicle occupants, but males are 13.7 percent less likely to be wearing seat belts than the female vehicle occupants in the survey. The estimated belt use for males is 72.0 percent belted compared to 85.7 percent for females.
- Vehicle occupants are most likely to be observed wearing seat belts when in Sport Utility Vehicles and vans. The rates are lower for occupants of automobiles and lowest for occupants of pickup trucks. There are substantial declines from 2018 rates for vehicle occupants in automobiles and pickup trucks, the two most common vehicles in Wyoming.
- Female seat belt use is generally higher than male seat belt use for vehicle occupants in all four types of vehicles.
- The report includes separate analyses of driver and passenger seat belt use.
- The report presents the trend lines across the eight years of surveys from the original base-line 2012 survey to the current survey of 2019. There is an illustration of Sample sizes and seat belt use rates.
- The concluding remarks address two of the factors associated with the decline in seat belt use between 2018 and 2019. Seat belt use rates for three counties are discussed, as are declines among drivers in automobiles and pickup trucks.

Introduction to the Survey

From Monday, June 3, 2019, to Sunday, June 9, 2019, seventeen trained observers collected observations of seat belt use within seventeen sites in each of seventeen counties. The observers collected seat belt usage information on a total of 24,821 drivers and front-seat outboard passengers, together identified in this report as “vehicle occupants.” The average number of observations per observer was 1,460 vehicle occupants. Since each vehicle has a driver, the number of total vehicles is the same as the number of drivers, or 18,286. Some of those vehicles also contained front-seat outboard passengers; 6,535 in this 2019 sample of observations. To put it another way, 73.7 percent of the vehicles contained only drivers; 26.3 percent of the vehicles contained both drivers and passengers.

The following table summarizes the number of observations collected by each observer in each county.

Table 1: frequencies of occupant belt use by county and observer, Wyoming 2019

County	Observer	Belt Use			Total
		Belted	Not Belted	Unsure	
Albany	Monty Byers	1,269	172	0	1,441
Big Horn	Dixie Elder	731	115	0	846
Campbell	Lucinda Pope	1,152	558	0	1,710
Carbon	Brooke Darden	1,041	500	0	1,541
Converse	Kayla Walters	1,363	466	33	1,862
Crook	Skyler Elder	1,336	101	0	1,437
Fremont	Molly Laidlaw	1,115	220	0	1,335
Johnson	Deb Eutsler	859	117	0	976
Laramie	Kolter Elder	369	120	0	489
Lincoln	Dawn Edwards	1,112	135	7	1,254
Natrona	Makenzie Valerio	636	175	0	811
Niobrara	Lori Cole	1,002	22	1	1,025
Park	Tonya Dove	1,214	464	2	1,680
Platte	Doug Peterson	1,168	194	0	1,362
Sheridan	Susan Parkinson	1,308	339	0	1,647
Sweetwater	Kayla Schear	1,414	821	0	2,235
Teton	Peggy Dowers	2,904	265	1	3,170
	Total	19,993	4,784	44	24,821
	Average				1,460

Seat Belt Observer Training

iPads were used to record the observations of seat belt use in the 2019 Wyoming survey. Observers were provided the iPads and were trained to use them. All the iPads were preloaded with the 2019 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 2019 Wyoming Seat Belt Use Survey, observer training began in the classroom. The observers were presented with survey procedures and methods, using the protocols established for the 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 score 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 required changes to alternate sites or other adjustments that observers needed 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 for any issue resolution 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 (SPSS)*, where variable and value labels were created along with other preparations for analysis. The initial SPSS files were reviewed for

any additional necessary cleaning. 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

The estimates of seat belt use were calculated using the “Complex Samples” procedure in SPSS. The procedure uses the sampling methods and probabilities to weigh the raw data, thereby producing statistically reliable estimates of seat belt use.

The following table presents the estimate of seat belt use for all vehicle occupants.

Table 2: estimates of seat belt use for vehicle occupants, Wyoming 2019

	Occupant Belt Use		95% Confidence Interval		Unweighted
	Estimate	Standard Error	Lower	Upper	Count
BELTED	78.3%	0.3%	77.6%	79.0%	19,993
NOT BELTED	21.6%	0.3%	21.0%	22.3%	4,784
UNSURE	0.0%	0.0%	0.0%	0.0%	44
TOTAL	100.0%	0.0%	100.0%	100.0%	24,821

Observers collected seat belt use data on 24,281 vehicle occupants. Of these, 78.3 percent were wearing seat belts, and 21.6 percent were not. Observers were unsure about the seat belt use of 44 of the occupants, but the weighted estimate for unsure observations is below one-tenth of a percent. The standard error for all occupants is 0.3 percent. The calculation of the 95 percent confidence interval produced a low estimate of 77.6 percent and a high estimate of 79.0 percent.

The next table summarizes the estimates for drivers.

Table 3: estimates of seat belt use for vehicle drivers, Wyoming 2019

	Occupant Belt Use		95% Confidence Interval		Unweighted
	Estimate	Standard Error	Lower	Upper	Count
BELTED	76.9%	0.4%	76.0%	77.7%	14,367
NOT BELTED	23.1%	0.4%	22.3%	24.0%	3,878
UNSURE	0.0%	0.0%	0.0%	0.0%	41
TOTAL	100.0%	0.0%	100.0%	100.0%	18,286

Driver seat belt use is estimated at 76.9 percent belted and 23.1 percent not belted. Observers were unsure about seat belt use for 41 drivers, but that number produced an estimate of less than one-tenth of a percent in the weighted calculation. The standard error is 0.4 percent, and the calculation of confidence intervals shows a low estimate of 76.0 percent and a high estimate of 77.7 percent for drivers.

The next table presents the estimates for passengers.

Table 4: estimates of seat belt use for vehicle outboard passengers, Wyoming 2019

	Occupant Belt Use		95% Confidence Interval		Unweighted
	Estimate	Standard Error	Lower	Upper	Count
BELTED	84.1%	0.7%	82.7%	85.4%	5,626
NOT BELTED	15.9%	0.7%	14.6%	17.3%	906
UNSURE	0.0%	0.0%	0.0%	0.0%	3
TOTAL	100.0%	0.0%	100.0%	100.0%	6,535

The seat belt use rates for passengers in 2019 is 84.1 percent belted and 15.9 percent not belted. Observers were unsure about three passengers out of 6,535 total. The standard error is 0.7 percent, higher than for drivers because of the lower number of passengers. For 95 percent confidence intervals, the low estimate is 82.7 percent, and the high estimate is 85.4 percent.

The following table is a summary of seat belt use for drivers, passengers, and all occupants (drivers and passengers combined) for Wyoming in 2019.

Table 5: percentage estimates of seat belt use for occupants, drivers and passengers, Wyoming 2019

	Drivers	Passengers	All Occupants
PERCENT	76.9%	84.1%	78.3%
UNWEIGHTED COUNT	18,286	6,535	24,821
% OF SAMPLE	73.7%	26.3%	100.0%

The rate for drivers is 76.9 percent. Because drivers represent 73.7 percent of all observations, that rate is the most significant determinant of the overall rate. Passenger seat belt use is higher, 84.1 percent belted; passengers constituted only 26.3 percent of the sample.

The next table compares the 2019 estimates with 2018 estimates.

Table 6: comparison of 2018 and 2019 estimates of seat belt use in Wyoming

	2018	2019	Difference
DRIVERS	86.9%	76.9%	-10.0%
PASSENGERS	84.5%	84.1%	-0.4%
ALL OCCUPANTS	86.3%	78.3%	-8.0%
UNWEIGHTED COUNT	25,046	24,821	-225

Overall, the rate of seat belt use declined from 86.3 percent in 2018 to 78.3 percent in 2019, a decline of 8.0 percentage points. The rate for drivers is down by 10.0 percentage points from 86.9 percent in 2018 to 76.9 percent in 2019, representing nearly all of the decline for all vehicle occupants. The rate for passengers is 84.5 percent for 2018 and 84.1 percent for 2019, a change of only -0.4 percentage points.

This change represents a reversal from the results of the 2018 survey compared to estimates from 2017. Then, driver seat belt use increased by 4.2 percent from 82.7 percent in 2017 to 86.9 percent belted in 2018. Although seat belt use declined for passengers between 2017 and 2018 (from 90.0 percent to 84.5 percent), the rate for all occupants increased by 1.5 percent, largely due to seat belt use by drivers.

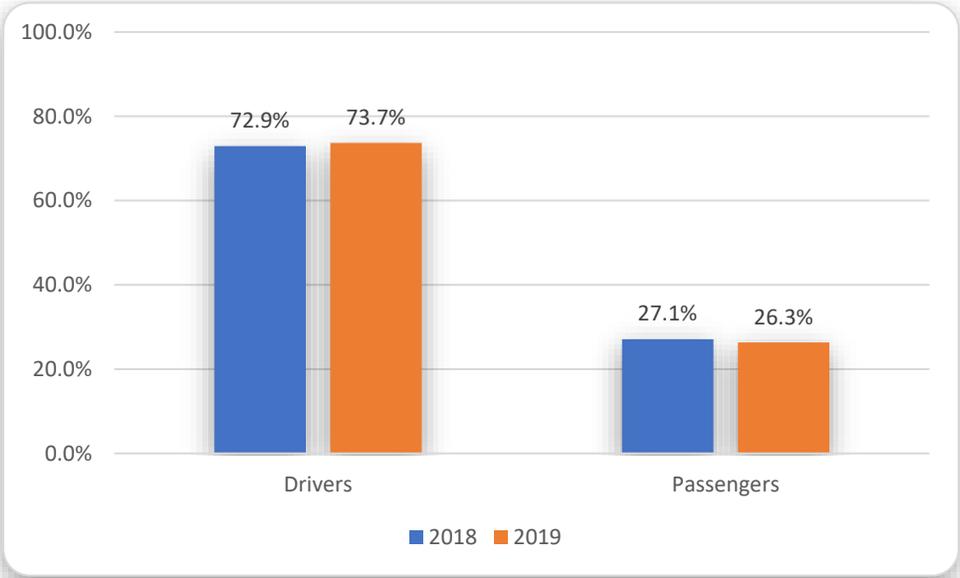
The total sample size in 2019 is 24,821 compared to 25,046 in 2018. All of that decline is due to 256 fewer passengers in 2019. Drivers increased by 31 observations, so the net change for all occupants is 225 fewer observations. A summary of this information on the sample is in the following table.

Table 7: frequencies by type of vehicle occupant, Wyoming 2019

OCCUPANT	Unweighted	
	Count	Percent
DRIVERS	18,286	73.7%
PASSENGERS	6,535	26.3%
ALL	24,821	100.0%

In general, the 2018 and 2019 samples are comparable in terms of the percentage of drivers and passengers: 72.9 percent drivers in 2018 and 73.7 percent drivers in 2019; 27.1 percent of passengers in 2018 and 26.3 percent of passengers in 2019. Overall the differences amount to a change of 0.8 percentage points. The following chart summarizes this finding.

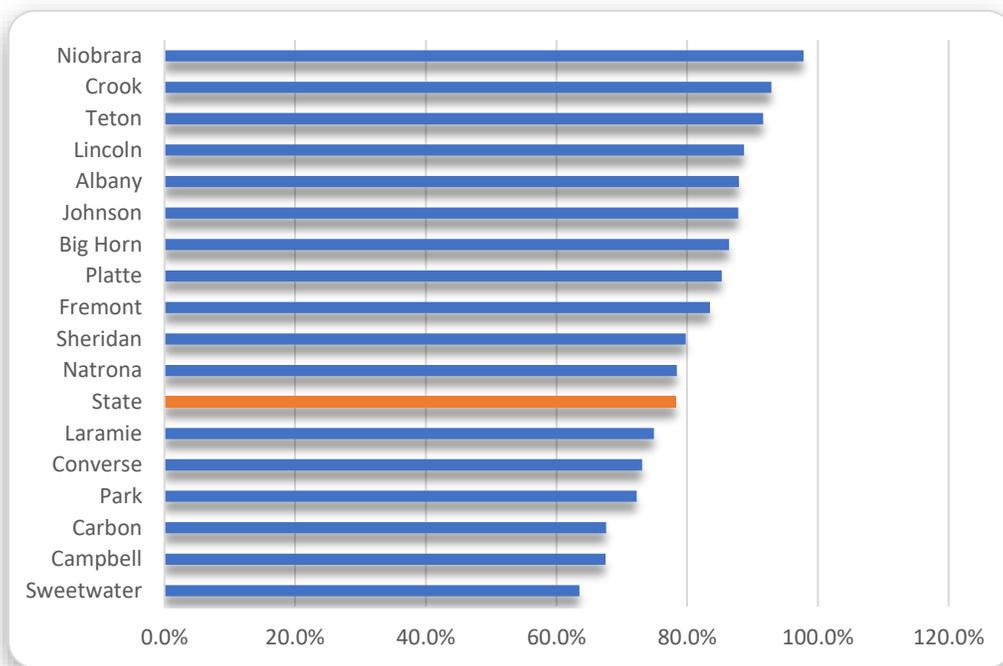
Figure 1: comparison drivers/passenger 2018 vs 2019



Estimates of Seat Belt Use by County

The following chart illustrates the estimates of occupant belt use by County for 2019 with the counties ranked from the highest rate of seat belt use to the lowest rate of seat belt use for vehicle occupants.

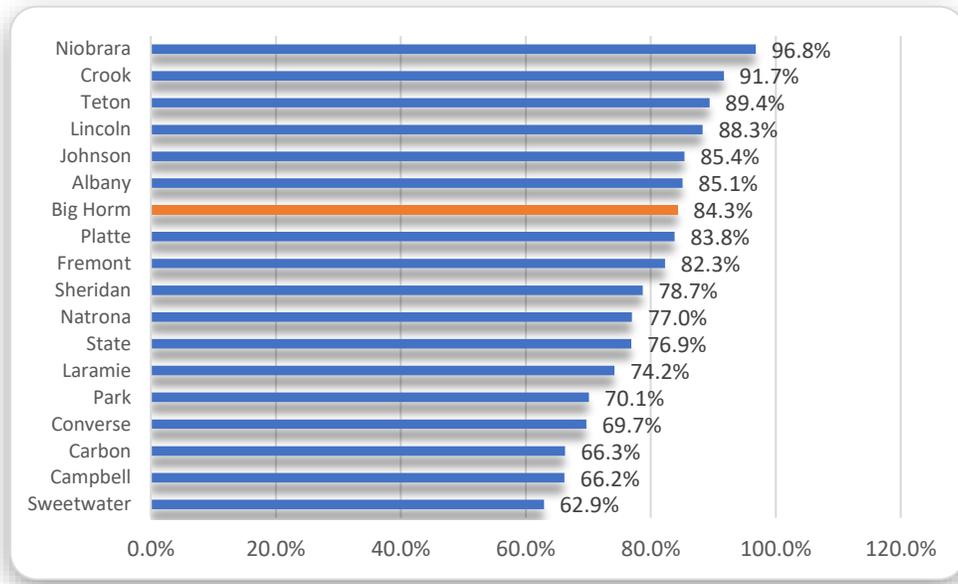
Figure 2: estimates of percent belted for occupants. WY 2019



Occupant belt use is above the state rate of 78.3 percent belted for eleven of the seventeen counties. Niobrara has the highest rate of occupant belt use at 97.8 percent belted. Crook County (92.9%) and Teton county (91.6%) are other counties where more than nine of ten vehicle occupants are belted. The other counties with rates above the overall state rate are Lincoln (88.7%), Albany (87.9%), Johnson (87.8%), Big Horn (86.4%), Platte (85.3%), Fremont (83.5%), Sheridan (79.8%), and Natrona (78.4%). The six remaining counties all have rates of occupant seat belt use below the state rate of 78.3 percent. They are Laramie (74.9%), Converse (73.1%), Park (72.3%), Carbon (67.6%), Campbell (67.5%), and Sweetwater (63.5%).

The next chart is of seat belt use by drivers in 2019.

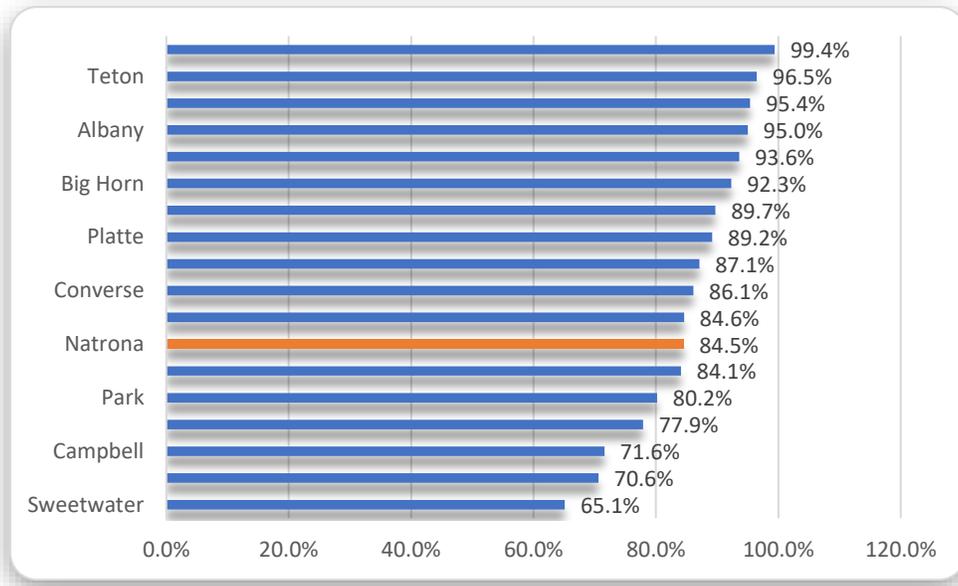
Figure 3: estimates of percent belted for drivers. WY 2019



In general, the seat belt use for drivers parallels the overall rate, although often slightly lower. The same eleven counties are above the state average for drivers as they were for all occupants.

The next chart is of seat belt use by passengers in 2019.

Figure 4: estimates of percent belted for passengers. WY 2019



The rates for passengers, like those for drivers, are parallel to the overall state rate. As for drivers, the same eleven counties are above the state average for passengers. The passenger rates tend to be higher than the rates for drivers in all of the counties.

Next is a table of the changes in the seat belt use for Vehicle occupants by county between 2018 and 2019.

Table 8: occupant estimated belt use by county, Wyoming 2018 and 2019*

COUNTY	Estimate 2018	Estimate 2019	Difference Percent
NIOBRARA	93.5%	97.8%	4.3%
CROOK	91.1%	92.9%	1.8%
TETON	91.8%	91.6%	-0.2%
LINCOLN	91.0%	88.7%	-2.3%
ALBANY	89.5%	87.9%	-1.6%
JOHNSON	93.2%	87.8%	-5.4%
BIG HORN	73.3%	86.4%	13.1%
PLATTE	79.4%	85.3%	5.9%
FREMONT	78.7%	83.5%	4.8%
SHERIDAN	76.5%	79.8%	3.3%
NATRONA	87.4%	78.4%	-9.0%
LARAMIE	81.4%	74.9%	-6.5%
CONVERSE	85.5%	73.1%	-12.4%
PARK	89.6%	72.3%	-17.3%
CARBON	69.7%	67.6%	-2.1%
CAMPBELL	82.3%	67.5%	-14.8%
SWEETWATER	67.4%	63.5%	-3.9%
STATE	86.3%	78.3%	-8.0%
*RANKED BY 2019 ESTIMATES			

The seat belt use rate for vehicle occupants varies by less than plus or minus 10.0 percentage points between 2018 and 2019. However, there are some notable exceptions.

- The rate in Big Horn County increased by 13.1 points between 2018 and 2019. This change is the only major increase in belt use. Similarly, the rate for Big Horn changed between 2017 and 2018, but, in that case, there was a *decline* of 13.3 percent. The swings may represent the operation of some unknown factors that make Big Horn an anomaly in Wyoming.
- Rates in Park County show variation similar to that in Big Horn, although the change is a decline instead of an increase. Between 2017 and 2018, the seat belt use rate for occupants increased from 76.0 percent to 89.6 percent, a change of + 13.6 percent. Between 2018 and 2019, the rate decreased from 89.6 percent in

2018 to 72.3 percent in 2019, a change of -17.3 points. Like the situation in Big Horn, there may be factors outside of this data that influence these changes.

- Campbell County is another county where the changes in seat belt use are significant. Between 2017 and 2018, the rate in Campbell County changed modestly, from 78.3 percent belted to 82.3 percent belted. However, the rate changed from 82.3 percent belted to 67.5 percent belted in 2019, a change of -14.8 points.
- The third county to present unexpected findings in 2019 is Converse County. Between 2017 and 2018, the seat belt rate rose 3.9 percent, from 81.6 percent to 85.5 percent. But in 2019 the rate for vehicle occupants dropped to 73.1 percent, a change of -12.4 points.

Summing up the rates by county between 2018 and 2019, there are decreases in the seat belt rate for vehicle occupants in eleven of the seventeen counties, ranging from -0.2 to -14.8. The seat belt use rate increased in six of the counties, from 1.8 percentage points in Crook County to 13.1 points in Big Horn County.

Occupant Belt Use for Selected Variables

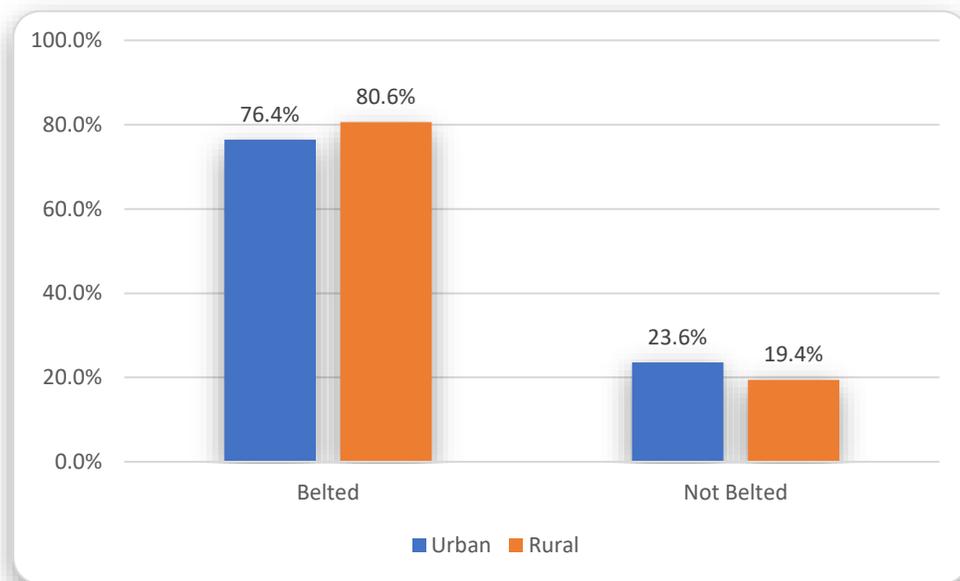
Next, the focus is on occupant seat belt use for a variety of factors known to be associated with seat belt use patterns. While collecting data, observers record data into preset categories. For example, some sites are pre-coded for population density (urban or rural), and the type of roadway (primary, secondary, and a third category for “other” types). Each of these, and other, characteristics connect to each observation, so that belt use is associated with these categories of population density and roadway type. Also, observers note the vehicle occupant’s gender, the type of vehicle, whether the vehicle is registered in Wyoming or out-of-state, and the day of the week when the observation occurs. In this section, the report focuses on the associations between the categories of these variables and seat belt use.

Population Density

In Wyoming, sites in areas with more than 5,000 residents are defined as “urban,” while sites with fewer than 5,000 residents are designated as “rural.” During the development of the 2017 baseline survey in Wyoming, DLN staff consulted maps and U.S. Census data to determine the appropriate code for each site. A site found within a city of 5,000 or more is coded as “urban.” Sites located in smaller cities or outside of cities were coded as “rural” when the population base was fewer than 5,000 residents.¹

For 2019, 76.1 percent of the observations in the sample are in rural areas, with 23.9 percent in urban settings. The next chart presents the seat belt use rates for all vehicle occupants by the urban-rural dichotomy.

Figure 5: occupant belt use by population density, WY 2019



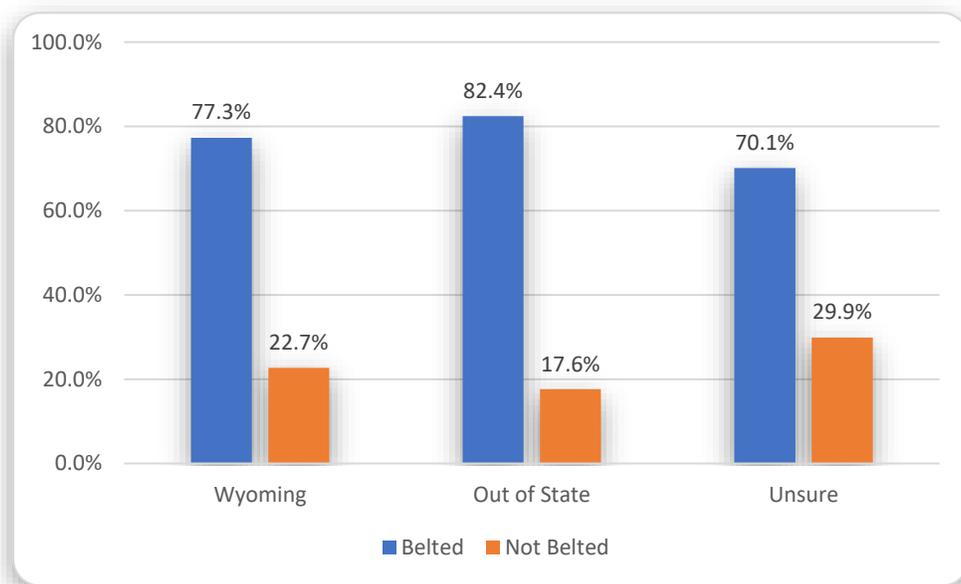
¹ “Urban” and “rural” have a different meaning than in more populous states. Wyoming has fewer than six hundred thousand residents spread over a little less than ninety-seven thousand square miles. Niobrara County has a population density of less than one person per square mile. Two of the largest cities, Cheyenne and Casper, have about sixty thousand residents each. Laramie has a little more than thirty-two thousand residents. Given this context, the notion of population density is very different than in more populated and smaller, geographically, states.

Vehicle Registration

Observers record whether occupants are in vehicles with Wyoming license plates or out-of-state plates, assuming that the plates identify the state of registration. A third code, “unsure,” is used when observers are unable to identify the registration.

As in past surveys, Wyoming seat belt use, occupants in out-of-state vehicles are more likely to be wearing seat belts than their Wyoming counterparts. The next chart illustrates this result in 2019.

Figure 6: occupant belt use by vehicle registration, WY 2019



The seat belt use rate for occupants in out-of-state vehicles is 82.4 percent belted, compared to 77.3 percent of in-state vehicle occupants, a difference of 5.1 percentage points. Wyoming vehicle occupants are 57.0 percent of the vehicle occupants in this survey; statistically, they have a greater impact on the overall seat belt use rate of 78.3 percent. Observers were unsure about the registration of vehicles containing a total of 158 occupants (0.6%).

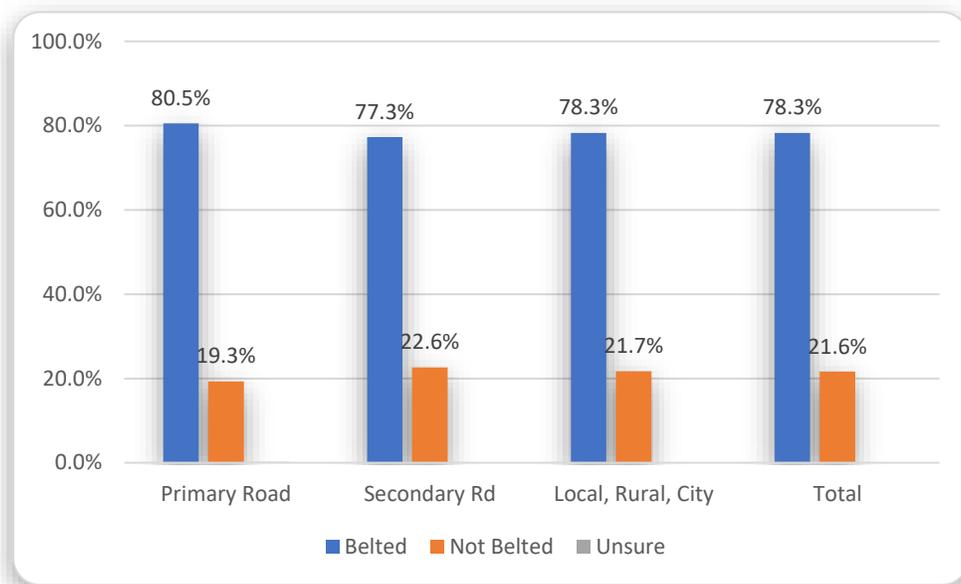
Type of Roadway

When the baseline survey for Wyoming was developed in 2017, NHTSA described the type of roadway associated with each observational site. The codes and types are as follows:

- S1100 roads are federally or state-maintained primary roads and include the interstate highways that cross Wyoming and some other four-lane highways. In the 2019 survey, 89.3 percent of observations collected on primary roads involved four-lane highways. The remaining observations, 10.7 percent, occurred on two-lane primary roads. There are 24,281 total vehicle occupants in this survey; 31.3 percent are from S1100 primary roads.
- S1200 roads are secondary, state, or federally maintained, and most are two-lane highways. For 2019, 79.3 percent of observations collected on secondary roadways were two-lane roads; 20.7 percent were collected on four-lane roads. Overall, 64.2 percent of all observations are from these secondary roadways.
- S1400 roadways are a mixture of local, rural, and city roadways. All are paved roadways. About half of the observations collected on this roadway type, 49.1 percent, involve two lanes while the rest, 50.9 percent, are from four-lane roadways. The fewest observations come from this roadway type: 4.5 percent of the 24,281 observations in this survey.

The following chart illustrates occupant belt use by roadway type.

Figure 7: occupant belt use by roadway type, WY 2019



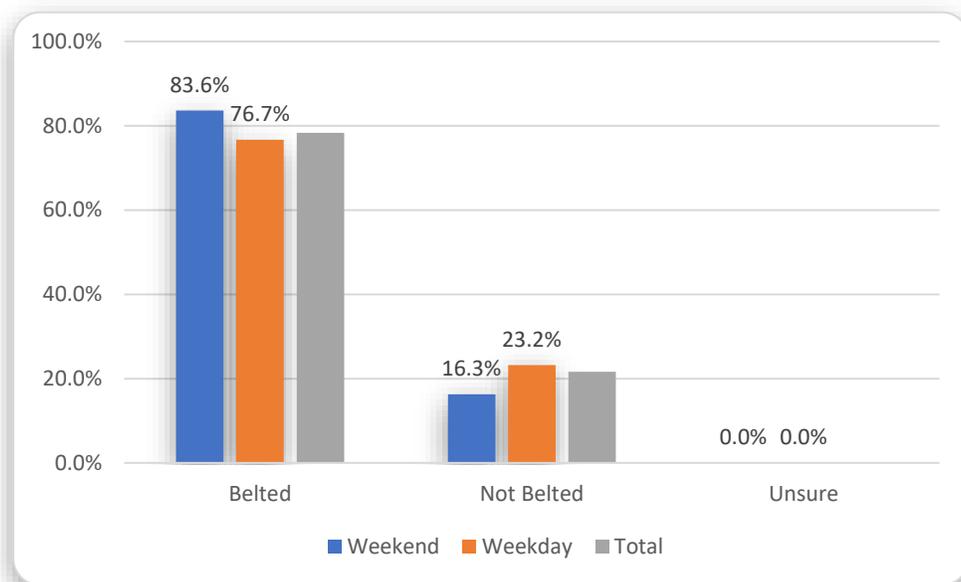
On primary roads, 80.5 percent of vehicle occupants were observed as belted, 77.3 percent on secondary roads, and 78.3 percent belted on the combination of local, rural, and city roadways. There is not much variation in belt use by roadway type. The difference between the high rate on primary roads, 80.5 percent, and the lowest rate on secondary roads, 77.3 percent, is 3.2 points.

Weekdays and Weekends

In the survey process, observers code observations by the day of the week. For this report, observations are presented in a dichotomy: weekends, Saturday and Sunday, and weekdays, Monday through Friday. Weekend observations are 15.7 percent of the observed occupants, while most, 84.3 percent, are from weekdays.

The following chart illustrates belt use by the weekend-weekday categories.

Figure 8: occupant seat belt use by weekdays and weekend, WY 2019



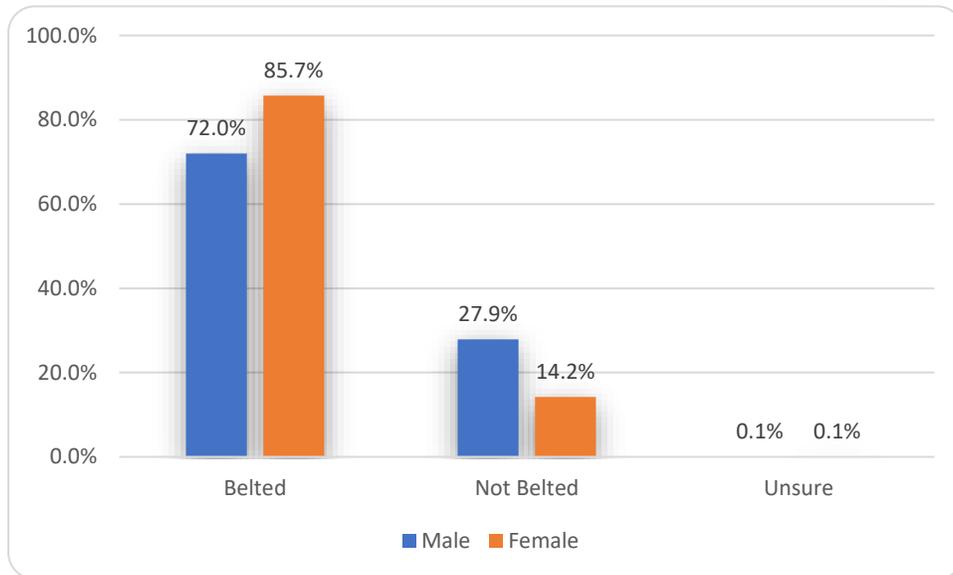
Vehicle occupants are more likely to be belted on weekends, 83.6 percent, than on weekdays, 76.7 percent, a difference of 6.9 points. Both of these percentages are lower than those reported in 2018 when it was found that 89.0 percent were belted on weekends and 85.3 percent were wearing seat belts on weekdays.

Occupant Gender

Observers make their best guess about the gender of the vehicle occupants. Mistakes are possible, but inter-rater reliability testing shows high levels of agreement among Wyoming observers.

It is a consistent finding of seat belt surveys, including those in Wyoming, that women make more use of seat belts than do men. This gender difference is true for Wyoming in 2019, as illustrated by the following chart.

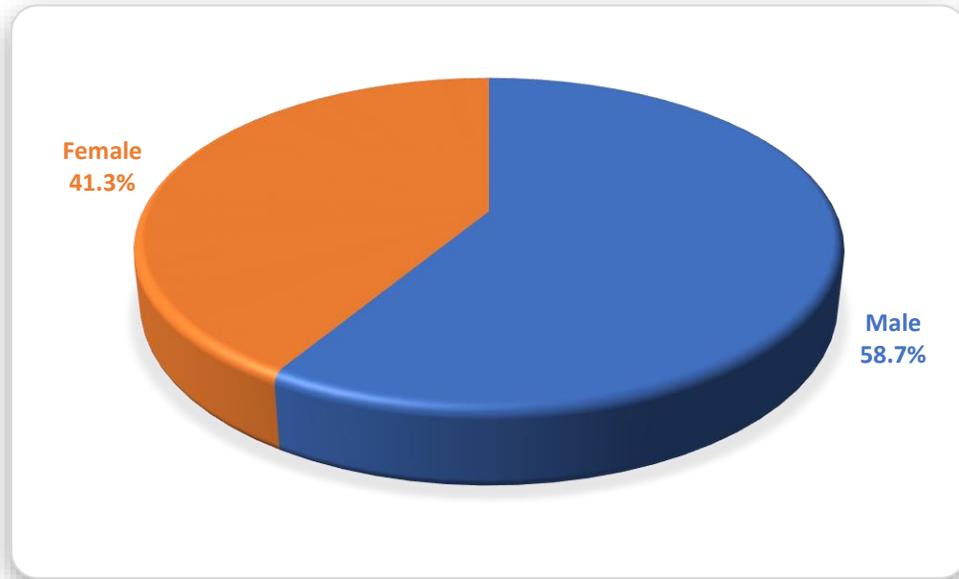
Figure 9: occupant belt use by gender, WY2019



Male vehicle occupants are belted 72.0 percent, while the comparable rate for females is 85.7 percent, a difference of 13.7 points. Both these percents are lower than in the 2018 Wyoming survey. The seat belt rate for males in 2018 was 82.2 percent, 10.2 percentage points higher than this year's rate. For females, the rate was 91.0 percent, which is 5.3 points higher than the 2019 rate for female vehicle occupants.

The low rate for males is of consequence because they outnumber females in the survey, as the following chart illustrates.

Figure 10: male vs. female occupants, WY 2019

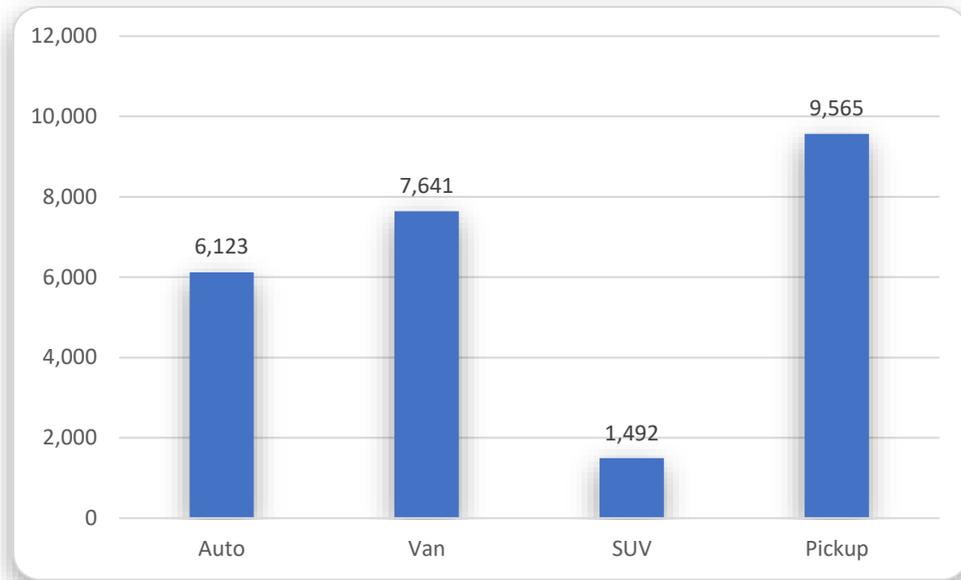


Males are 58.7 percent of all vehicle occupants in the 2019 survey, while females are 41.3 percent, which means that males outnumber females by 17.4 points. There are more male vehicle occupants than females, and they are less likely to wear seat belts, a combination that tends to pull the state rate downward. Another way to say this is that female vehicle occupants tend to push the overall rate upward because they are much more likely to wear seat belts. Every seat belt survey done by DLN Consulting has produced this same conclusion. The difference for 2019 is that the rate for males dropped by twice as much as the female rate, a 10.2 percentage points decline for males and a 5.3 percentage point drop in seat belt use for females.

Vehicle Type

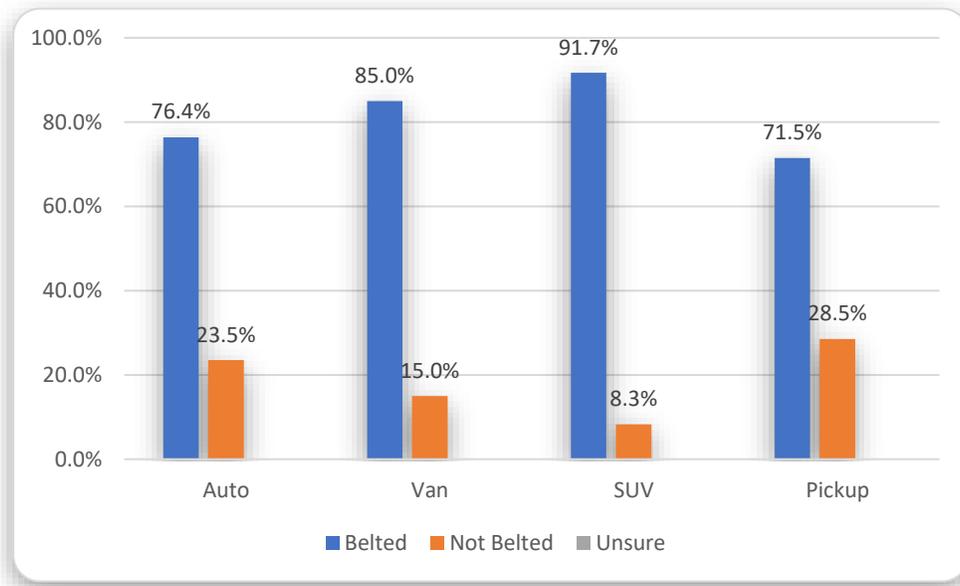
In the 2019 survey, observers saw almost four of every ten vehicle occupants in pickup trucks: 9,565 out of 24,821 vehicle occupants, or 38.5 percent. The following chart illustrates the distribution of occupants by vehicle type. The fewest occupants were recorded in sport utility vehicles. The following chart illustrates the frequency of occupants in each of the vehicle types.

Figure 11: occupant belt use by vehicle type, WY 2019



The following chart presents the seat belt use by vehicle occupants for each vehicle type.

Figure 12: occupant belt use by vehicle type, WY 2019



Occupants observed in sport utility vehicles (SUVs) have the highest rate of seat belt use at 91.7 percent belted, followed by occupants in vans at 85.0 percent belted. Both are above the state rate of 78.3 percent. The rate of seat belt use by occupants of automobiles is 76.4 percent or 1.9 points below the state rate. It is with occupants of pickup trucks that the rate of seat belt use falls well below the state rate (78.3 percent). The results of this survey show that belt use by occupants of pickup trucks is 71.5 percent wearing seat belts. This rate is 6.8 points below the state rate.

This rate, 71.5 percent belted for occupants of pickup trucks, contrasts to a comparable rate of 82.5 percent in 2018, an 11.0 point decrease in 2019. The rates for occupants of other vehicle types were similar in 2018 to the rates in 2019 for vans and SUVs: 88.9 percent belt use rate in SUVs and 88.2 percent belted in vans in 2018, a 2.8 point increase in SUVs and a 3.2 point decline for occupants of vans. The seat belt use rate for automobile occupants was 88.8 percent in 2018 and is 76.4 percent in 2019, a decrease in seat belt use of 12.4 points.

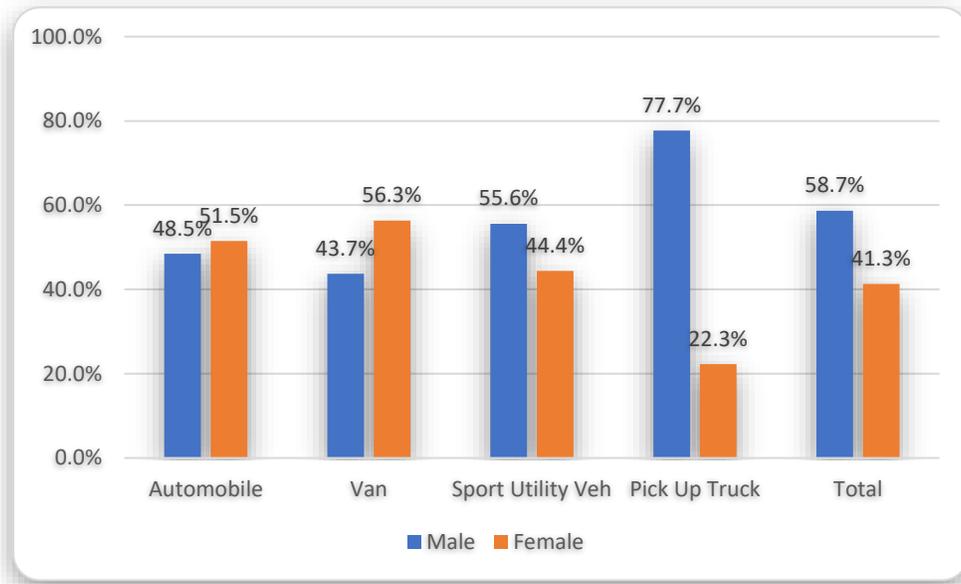
There is more variation in belt use by occupants in 2019 than there was in 2018, and the major declines in belt use by occupants of automobiles and pickup trucks are associated with the overall decline in belt use of 8.0 percentage points for the state. There is a pronounced effect on the state rate, not only because of the declines in seat belt use for occupants in pickup trucks and automobiles but because, together, 63.2 percent of vehicle occupants are in these two types of vehicles, automobiles and pickup trucks, the types of vehicles associated with the lowest rates of occupant seat belt use.

Vehicle Type and Gender

The next analysis is to determine how gender and vehicle type combined are associated with seat belt use.

The first step is to identify whether gender is associated with different vehicle types. The following chart shows the gender association by type of vehicles.

Figure 13: percent of sample by vehicle type, WY 2019

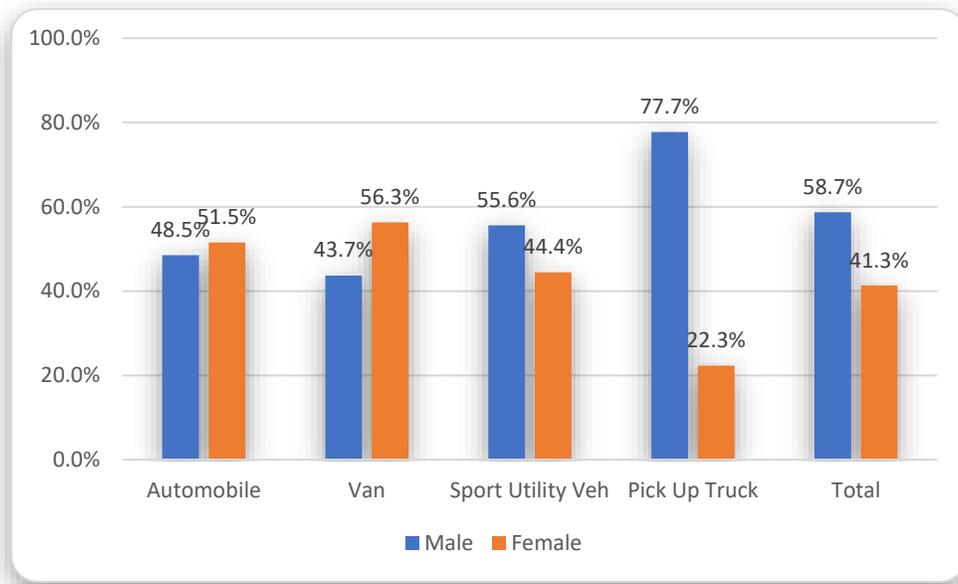


First, pickup trucks are the transport of male occupants: 77.7 percent of vehicle occupants in pickup trucks are male, and 22.3 percent are female. Second, vans are the closest to a female-type vehicle: 56.3 percent of van occupants are female, 43.7 percent are male, a difference of 12.6 points. Third, SUVs are more male than female transportation: 55.6 percent of van occupants are male, 44.4 percent female, an 11.2 point difference. Finally, automobiles are close to being gender-neutral: 51.5 percent of occupants of vans are female, 48.5 percent are male, a difference of 3.0 points.

Because females have higher rates of seat belt use, a likely hypothesis is that vehicles associated strongly with females, primarily vans, will have occupants with higher rates of seat belt use. Conversely, “male” vehicles, pickup trucks and SUVs, will have occupants with lower rates of seat belt use.

The following chart identifies whether the hypothesis is correct.

Figure 14: occupant percent belted by vehicle type & gender, WY 2019



Here are some of the details revealed by the chart, proceeding through the different vehicle types:

- For occupants of automobiles (recall that automobiles are relatively “gender-neutral”), 82.0 percent of females are belted compared to 71.1 percent of males, a difference of 10.9 points.
- For occupants of vans (more female than male), 87.9 percent of females are belted compared to 78.7 percent of males, a difference of 9.2 points. The male rate is higher, but so is the female rate, so the gender difference remains consistent.
- For occupants of SUVs (more male than female transport), 96.4 percent of females are belted compared to 88.2 percent of males, a difference of 8.2 points. As in the case of vans, male seat belt use is high, but female seat belt use is even higher in SUVs.
- For occupants of pickup trucks (a male transport), 81.4 percent of females are belted compared to 68.2 percent of females, a difference of 13.2 points.

Our hypothesis has mixed results. Female rates of seat belt use are consistently higher than male rates in all vehicle types. Both male and female rates of seat belt use are higher in vans and SUVs, but the gap between the genders persists. The female seat belt rate is above the statewide rate across all vehicle types, even when they are in that most “male” of all vehicles, the pickup truck.

Females are more likely to wear seat belts in all types of vehicles; males not as much. The most positive statement about male seat belt use is that most do wear their seat belts, even in pickup trucks, where the rate is 68.2 percent of males belted.

Drivers and Passengers

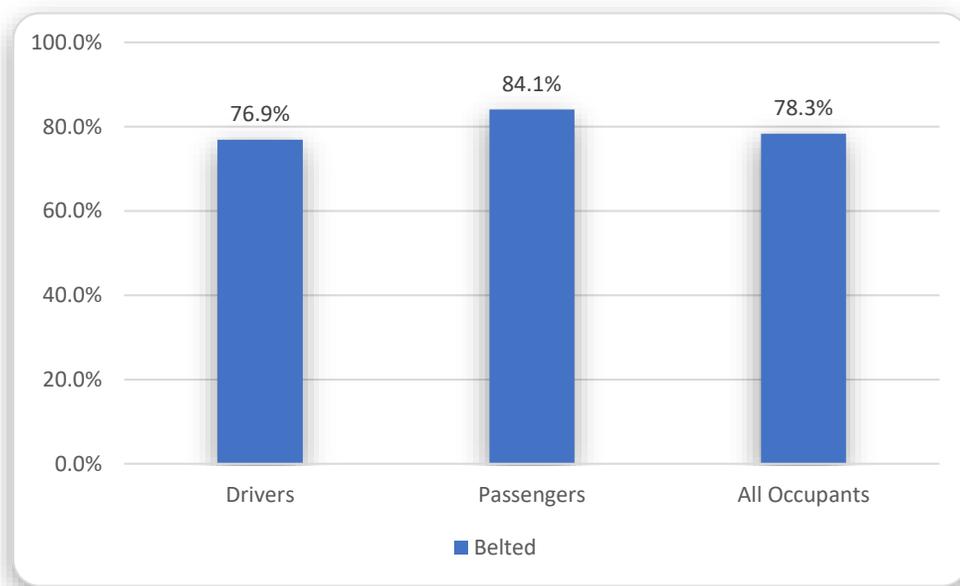
Observers collect data on drivers and front-seat outboard passengers, who, together, make up the vehicle occupants. The data do not include observations of middle front-seat or back seat occupants, so the data necessarily underestimate total vehicle occupants. It is also true that many vehicles have only a driver and no other passenger. For example, we know that absent middle and back-seat occupants, 18,286 vehicles had drivers and no outboard passengers. Put another way, 73.7 percent of vehicle occupants were the drivers and sole front seat occupants of their vehicles. However, 6,535 outboard passengers joined the drivers in the remaining 26.3 percent of the vehicles. The next chart illustrates these observations about the sample.

Table 9: frequencies by type of vehicle occupant, Wyoming 2019

OCCUPANT	Unweighted Count	Percent
DRIVERS	18,286	73.7%
PASSENGERS	6,535	26.3%
ALL	24,821	100.0%

The next chart illustrates seat belt use for drivers and passengers.

Figure 15: estimated seat belt use for drivers and passengers, WY 2019

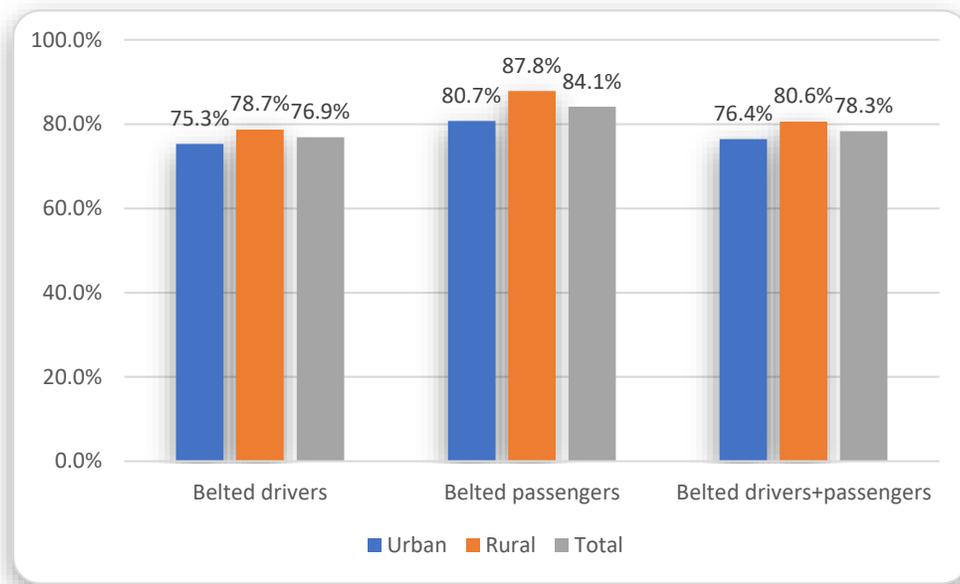


The seat belt rate for drivers is 76.9 percent, and for passengers, it is 84.1 percent, a difference of 7.2 points. This result will appear in most comparisons of driver and passenger seat belt use: drivers will pull down the overall rate, and passengers will push it up. Because there are far more drivers than passengers (47.4 points more), the drivers have a much greater effect on the overall rate. The next part of the report illustrates this tendency for the selected variables.

Population Density

The following chart illustrates seat belt use for drivers and passengers by population density.

Figure 16: estimate of driver and passenger belted by population type, WY 2019



Passengers have higher rates of seat belt use in both rural and urban areas. In rural areas, the passenger rate is 87.8 percent, 9.1 points higher than the 78.7 percent rate for rural drivers. In urban areas, the passenger rate is 80.7 percent, which is 5.4 points higher than the 75.3 percent rate for urban drivers.

County

The table below presents the rates of belt use for drivers and passengers by county.

Table 10: estimate of belt use by drivers, passengers and occupants by county, Wyoming 2019

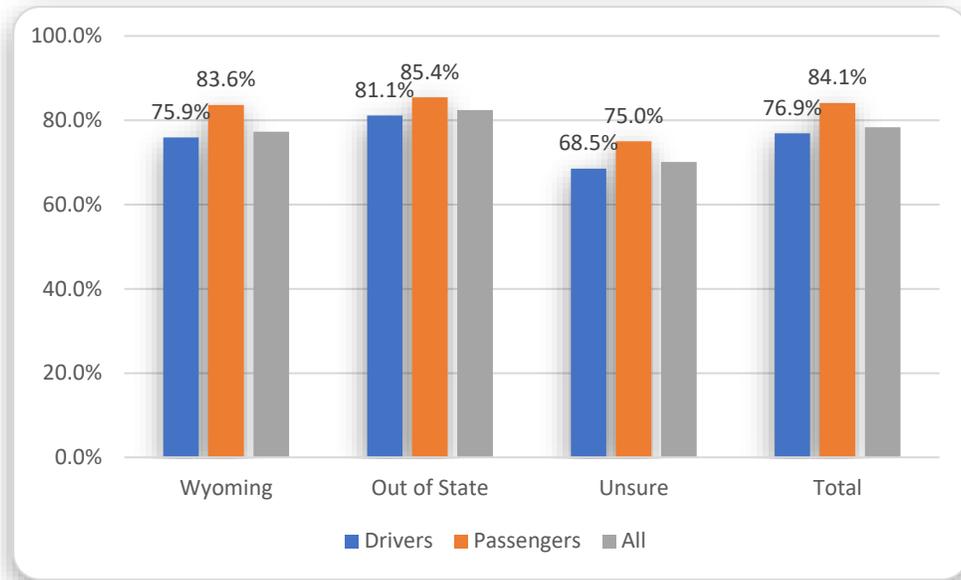
COUNTY	Belted Drivers	Belted Passengers	All Occupants
ALBANY	85.1%	95.0%	87.9%
BIG HORN	84.3%	92.3%	86.4%
CAMPBELL	66.2%	71.9%	67.5%
CARBON	66.3%	70.6%	67.6%
CONVERSE	69.7%	86.1%	73.1%
CROOK	91.7%	95.4%	92.9%
FREMONT	82.3%	87.1%	83.5%
JOHNSON	85.4%	93.6%	87.8%
LARAMIE	74.2%	77.9%	74.9%
LINCOLN	88.3%	89.7%	88.7%
NATRONA	77.0%	84.5%	78.4%
NIOBRARA	96.8%	99.4%	97.8%
PARK	70.1%	80.2%	72.3%
PLATTE	83.8%	89.2%	85.3%
SHERIDAN	78.7%	84.6%	79.8%
SWEETWATER	62.9%	65.1%	63.5%
TETON	89.4%	96.5%	91.6%
TOTAL	76.9%	84.1%	78.3%
FREQUENCY (BELTED)	14,367	5,626	19,993

In every county, the seat belt use rate is greater for passengers than for drivers, and the differences tend to be ten percentage points or less. The most significant difference is in Converse County; the passenger seat belt rate is 16.4 points higher than the driver rate. The second-highest difference appears in Park County, where the passenger rate is 10.1 points higher than the driver rate.

Vehicle Registration

Figure 17 illustrates seat belt use rates for drivers and passengers by vehicle registration.

Figure 17: estimate of driver and passenger belted by registration, WY 2019



Passengers are more likely to wear seat belts than drivers in both Wyoming and out-of-state vehicles. However, the differences are smaller for occupants of out-of-state vehicles. For out-of-state vehicles, the rate for passengers is 85.4 percent, a difference of 4.3 points. For Wyoming vehicles, the rate for passengers is 83.6 percent, and the rate for drivers is 75.9 percent, a difference of 7.7 points. In general, drivers and passengers in out-of-state vehicles are more alike in their seat belt use than are drivers and passengers in Wyoming vehicles.

Type of Roadway

The next chart illustrates seat belt use for drivers and passengers by type of roadway.

Figure 18: estimate of driver and passenger belted by roadway type, WY 2019

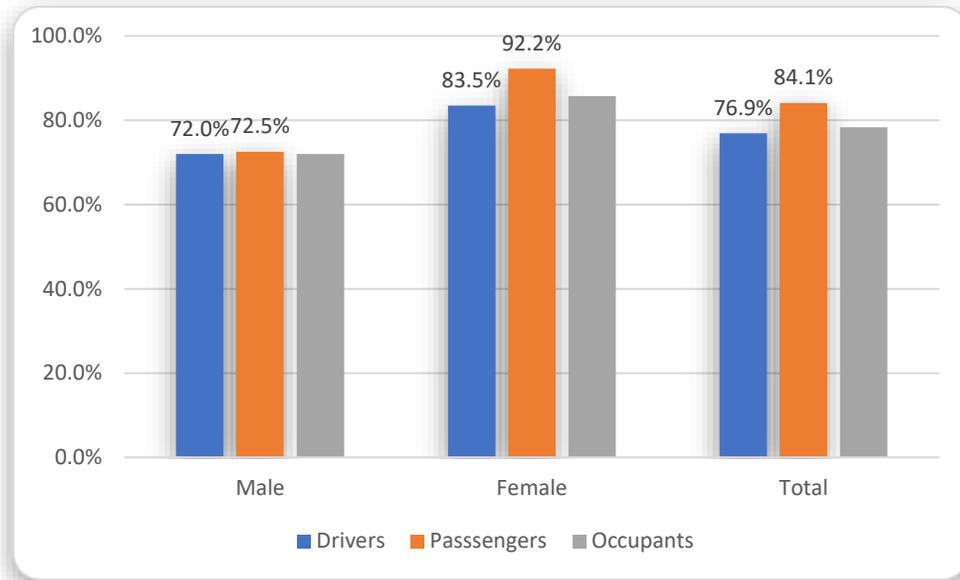


Passengers have higher rates of belt use across all three types of roadways. However, the differences between drivers and passengers vary by roadway type. For the secondary roads, 85.4 percent of passengers and 75.1 percent of drivers are belted, a difference of 10.3 points. For the local, rural, and city roads, the passenger rate is 83.8 percent, and the driver rate is 77.0 percent, a difference of 6.8 points. The smallest difference between drivers and passengers is within primary roads; the passenger rate is 84.5 percent, and the driver rate is 79.0 points, a difference of 5.5 percentage points.

Gender

The following chart illustrates the percent belted for drivers and passengers by gender in the 2019 Wyoming survey.

Figure 19: estimate of driver and passenger belted by gender type, WY 2019



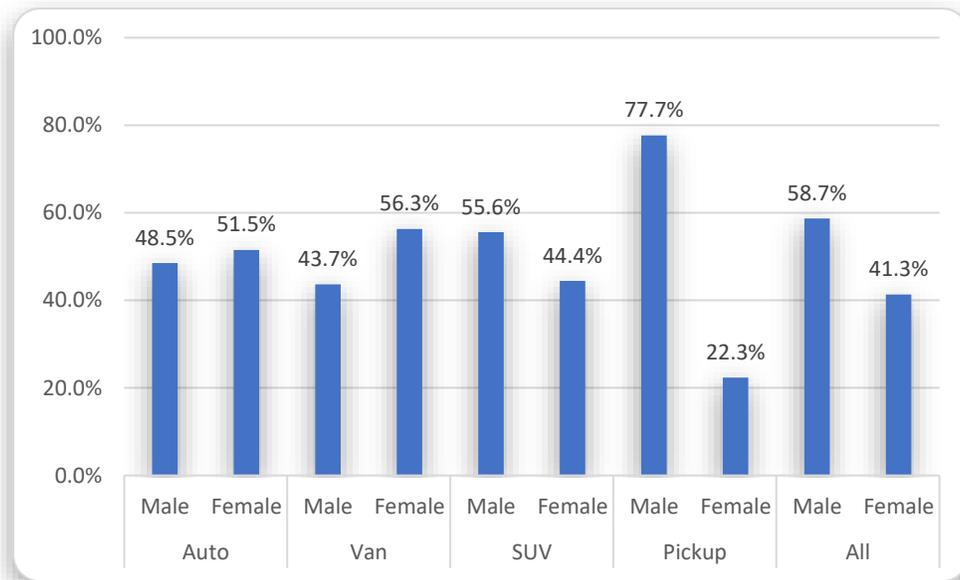
The seat belt use rate for male drivers is 72.0 percent, and for male passengers, it is 72.5 percent. The rate is almost the same for the different types of vehicle occupants. The seat belt use rate for female drivers is 83.5 percent, compared to 92.2 percent for female passengers. The female passenger rate is 8.2 points higher than the female driver rate. The percent belted for females is above the statewide rate for all occupants (78.3 percent) for both drivers and passengers, which pulls the overall rate up. However, the consistently lower rates for male drivers and passengers, and the greater representation of males in the total sample pushes the overall rate down.

These findings are consistent with the results from the 2018 Wyoming survey in that female rates are higher than male rates. However, the male percentage of belted drivers was 83.7 percent in 2018, compared to 72.0 percent in 2019, a decline of 11.7 points from the 2018 result. This change helps explain why the statewide rate dropped between 2018 and 2019. Males and drivers outnumber females and passengers, so the decrease in the rate for male drivers has a considerable impact on the change between the two surveys. As we will see in the next section, the significant decline shows up when vehicle type is added to the gender variable.

Gender and Vehicle Type

To provide a context for the data in this section, here is a chart showing the frequency percent of males and females by vehicle type.

Figure 20: percent of males and females by vehicle type, WY 2019



This chart shows that there are relatively equal percentages of males and females in automobiles, a difference of 3.0 points more females. For occupants of vans, 56.3 percent are female, and 43.7 percent are male, a difference of 12.6 points. If vans are identified more with females than males, then the opposite is true for SUVs, where 55.6 percent are male, and 44.4 percent are female, a difference of 11.2 points favoring males. Finally, pickup trucks are clearly “male,” with 77.7 percent of the occupants male, and 22.3 percent female, a difference of 55.4 points.

The next table illustrates seat belt use for drivers and passengers by gender and vehicle type.

Table 11: estimate of driver and passenger belted by gender and vehicle type. Wyoming 2019

VEHICLE TYPE	GENDER	DRIVERS	PASSENGERS	OCCUPANTS
AUTO	Male	72.1%	66.0%	71.1%
	Female	78.9%	93.5%	82.0%
	Total	75.4%	80.8%	76.4%
VAN	Male	75.6%	91.8%	78.7%
	Female	87.2%	90.5%	87.9%
	Total	83.4%	90.9%	85.0%
SUV	Male	89.9%	81.8%	88.2%
	Female	96.0%	97.1%	96.4%
	Total	92.2%	90.2%	91.7%
PICKUP TRUCK	Male	69.1%	62.4%	68.2%
	Female	74.1%	93.0%	81.4%
	Total	70.0%	77.6%	71.5%

Seat belt use is usually higher for females than for males, and higher for passengers than for drivers in all vehicle types. However, some details are worth highlighting as examples of the general principles.

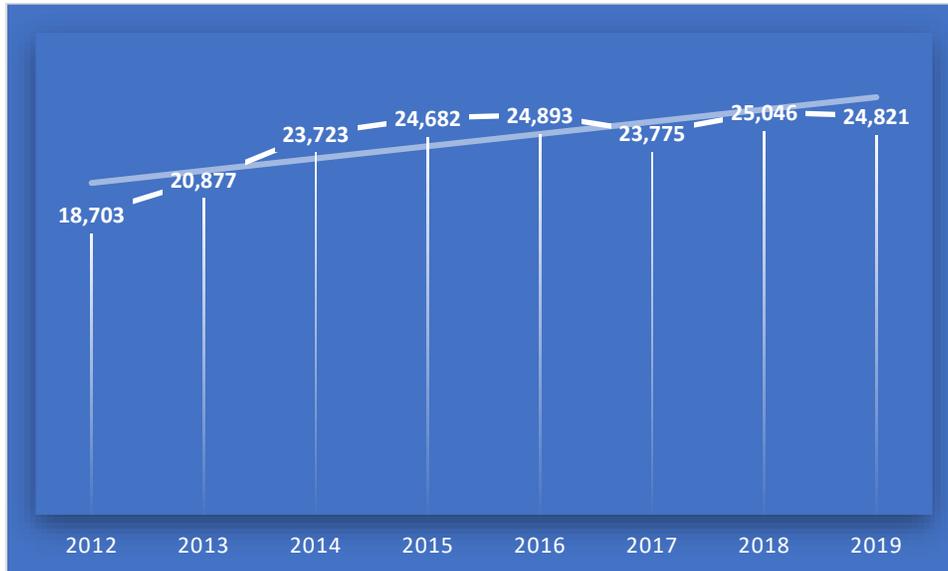
- In automobiles, 93.5 percent of female passengers are wearing seat belts, compared to 66.0 percent of male passengers, a difference of 27.5 percentage points.
- In pickup trucks, 93.0 percent of female passengers are belted, compared to 62.4 percent of male passengers, a difference of 30.6 points.
- In SUVs, 97.1 percent of female passengers and 81.8 percent of male passengers are wearing seat belts, a difference of 15.3 percentage points.
- Among drivers in automobiles, 6.8 percentage points more females are wearing seat belts than males; in vans, 11.6 points more females are belted; in SUVs, 7.0 points more females are belted; and in pickup trucks, 5.0 percentage points more females are belted than males.

Out of all these details, a few main observations have emerged, and they are the subject of the next sections. First, there is a discussion of the long term trend in sample size and the rate of seat belt use. The last section features a discussion of the change in seat belt use from 2018 to 2019.

Trends

The following chart presents the sample sizes from 2012 to 2019.

Figure 21: occupant frequencies by year

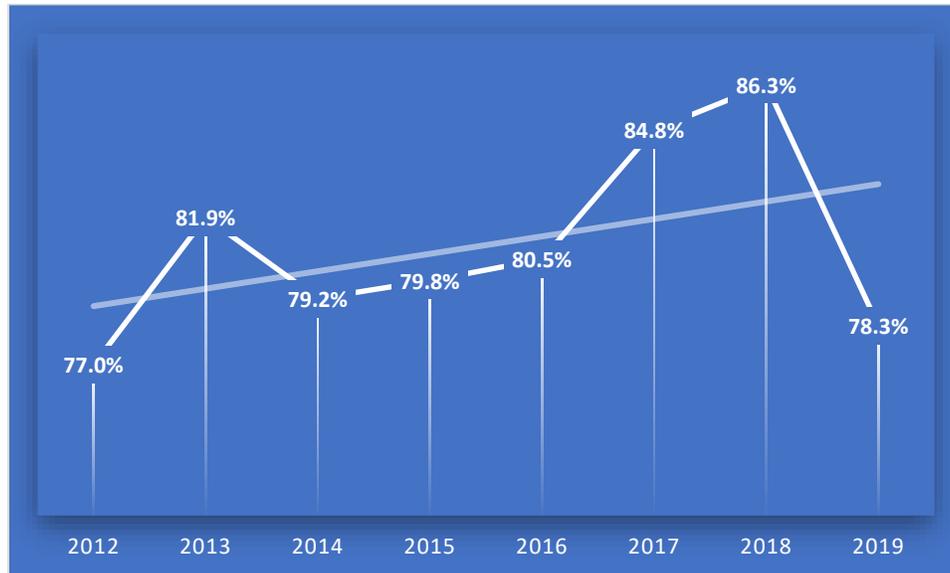


The chart shows a steady increase in total vehicle occupants observed from 2012 to 2016. The increases are likely due to efficiencies in collecting and recording data, especially because of a shift to electronic recording by observers. The original sample was drawn in 2012 and used until 2016.

A new sample debuted for a baseline survey in 2017, the same sample used in 2018 and this year, 2019. Since 2017, the frequency of observations is steady, fluctuating between the middle twenty-three thousand to the low twenty-five thousand vehicle occupants. The frequencies of observations are up to 186,520 vehicle occupants over the eight years from 2012-2019. The average number of vehicle occupants observed averages 23,315 across those years.

Because of changes in sampling methods, site selection criteria, even changed observation protocols, comparisons involving the original baseline of 2012 and the new baseline survey from 2017 to the present are complicated. As a result, here is the major trend: the percent of occupants wearing seat belts for each year.

Figure 22: estimate of belt use by year



The lowest percent of occupants belted is in the original baseline survey, 77.0 percent belted in 2012. The percent belted increased to 81.9 in 2013, and then remained steady from 79.2 percent in 2014 to 80.5 percent in 2016. The use rate jumped to 84.8 percent in 2017, and then again to 86.3 percent in 2018. That last percent belted 86.3 percent in 2018 set a high watermark for seat belt use by vehicle occupants in Wyoming.

The rate is 78.3 percent vehicle occupants belted in 2019; the lowest percent belted since 2012, representing a decrease of 8.0 percentage points.

Given this change, the staff at DLN has looked for signs that point to significant changes. Mapping the change within the data is the first step. The next step is to locate the source of the change, the reasons why seat belt use declined, that will be found outside this data.

Concluding Remarks

Previously in this report, there was a discussion of occupant seat belt use by county. Three findings stood out:

- Seat belt use in Park County increased substantially between 2017 and 2018, from 76.0 percent to 89.6 percent, before dropping to 72.3 percent in 2019.
- Seat belt use in Campbell County changed from 78.3 percent in 2017 to 82.3 percent belted in 2018, then dropped to 67.5 percent belted in 2019, a 14.8 point decrease in seat belt use.
- Seat belt use in Converse County rose from 81.6 percent belted to 85.5 percent in 2018. Then in 2019, the percent belted dropped to 73.1 percent, a change of -12.4 points.

Together, these changes are unlikely to account for the overall 8.0 percentage point decline in seat belt use from 2018 to 2019. However, the instability of seat belt use in these three counties does suggest a need for further examination.

The next changes may be more significant. It has long been a staple of seat belt surveys that females have higher rates of seat belt use, as do passengers, partly because passengers have a larger proportion of females than do drivers. It has also been true that males in pickup trucks tend to have relatively low rates of seat belt use, and pickup trucks are likely plentiful in Wyoming. This line of reasoning leads to an examination of drivers and passengers by gender and vehicle type, comparing the results for 2019 with the results for 2018.

The following two tables present the findings. The first table is for male drivers and passengers, and the second is for female drivers and passengers, presenting the seat belt use by vehicle type in 2018 and 2019.

Table 12: comparison of 2018 and 2019 percents belted for male drivers and passengers by vehicle type

VEHICLE	MALE DRIVERS			MALE PASSENGERS		
	2018	2019	Change	2018	2019	Change
AUTOMOBILE	86.2%	72.1%	-14.1%	78.8%	66.0%	-12.8%
VAN	84.2%	75.6%	-8.6%	78.5%	91.8%	13.3%
SUV	87.2%	89.9%	2.7%	70.8%	89.9%	19.1%
PICKUP TRUCK	82.0%	69.1%	-12.9%	69.5%	62.4%	-7.1%

Table 13: comparison of 2018 and 2019 percents belted for female drivers and passengers by vehicle type

VEHICLE	FEMALE DRIVERS			FEMALE PASSENGERS		
	2018	2019	Change	2018	2019	Change
AUTOMOBILE	91.3%	78.9%	-12.4%	91.0%	93.5%	2.5%
VAN	92.3%	87.2%	-5.1%	91.6%	90.5%	-1.1%
SUV	98.1%	96.0%	-2.1%	87.8%	97.1%	9.3%
PICKUP TRUCK	89.4%	74.1%	-15.3%	86.6%	93.0%	6.4%

There are several observations to highlight, as follows.

- First, there are some major changes involving male drivers in three of the four vehicle types, especially in automobiles and pickup trucks. For male drivers in automobiles, the seat belt use rate dropped by 14.1 percentage points between 2018 and 2019, from 86.2 percent belted to 72.1 percent belted. For male drivers in pickup trucks, the percent belted dropped by 12.9 percentage points belted, from 82.0 percent to 69.1 percent. Seat belt use also dropped for male drivers in vans, from 84.2 percent to 75.6 percent belted, a decrease in belt use of 8.6 points. These particular changes represent a large enough component of the sample to at least partly affect the change between 2018 and 2019.
- Second, seat belt use declined for male passengers in both automobiles and pickup trucks. In automobiles, male passenger seat belt use is 78.8 percent belted in 2018 to 66.0 percent in 2019, a decrease of 12.8 points. For male passengers in pickup trucks, the percent belted dropped from 69.5 percent to 62.4 percent, a decline of 7.1 points. These drops in seat belt use for male drivers are balanced, in part, by increases in seat belt use for male drivers in vans and SUVs. However, there are relatively few male passengers, especially in vans and SUVs. Also, there are probably too few male passengers overall to emphasize these changes. However, since automobiles and pickup trucks are the most common vehicles in Wyoming, these results bear mention.
- Seat belt use declined for female drivers in all four types of vehicles, but especially in automobiles and pickup trucks. For female drivers in automobiles, seat belt use dropped from 91.3 percent in 2018 to 78.9 percent in 2019, a decline of 12.4 points. For female drivers in pickup trucks, seat belt use declined from 89.4 percent in 2018 to 74.1 percent in 2019, a decline of 15.3 points. There are comparable decreases in seat belt use for female drivers in vans (-5.1 points) and SUVs (-2.1 points), but those decreases are not as dramatic.
- The tables and graphs show relatively little change in female passenger seat belt use between 2018 and 2019. Seat belt use rates increased from 2018 to 2019 for female passengers in SUVs (+9.3 points), and in pickup trucks (+6.4 points). These increases likely had the modest effect of very slightly reducing the declined statewide seat belt use rate.

These factors are only part of the changes responsible for the drop in seat belt use in Wyoming from 2018 to 2019. For nearly every type of vehicle occupant in all categories of the different variables, it seemed that there were decreases in belt use. In this analysis, the numbers highlight the most dramatic changes. The most likely scenario is that these dramatic changes combined with cumulative and usually smaller changes to produce the overall decline in seat belt use.

The change in seat belt usage in Wyoming 2019 does not establish a trend. It is not the lowest of the eight years of Wyoming surveys, and, if prior patterns hold, it could increase again next year. What happens to seat belt use in Wyoming depends on causal processes that operate outside of this data, and how those factors change over the next year.

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: 2019

Statewide Seat Belt Use Rate: 78.3 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. Leibert², 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

10-1-19

Date



Printed name of signing official

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Edina, MN. 55410

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E-mail ljeibert@gmail.com

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

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

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Introduction

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

This proposal includes the following:

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

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

Study Design

There are 23 counties in the State of Wyoming. Fatality Analysis Reporting System (FARS) data for the years 2005 – 2009 by county was examined to identify the counties that accounted for at least 85 percent 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 classification⁵. 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

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:

$$w_{chijklm} = \frac{1}{\pi_{chijklm}} \quad (1)$$

$\pi_{chijklm}$ 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:

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

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:

$$p_{chi} = \frac{\sum_{\forall chijklmn} w_{chijklm} \text{Length}_{chi} y_{chijklmn}}{\sum_{\forall chijklmn} w_{chijklm} \text{Length}_{chi}} \quad (2)$$

where

$$y_{gchijklmn} = \begin{cases} 1 & \text{if belt is used} \\ 0 & \text{otherwise} \end{cases} \quad (3)$$

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:

$$p_{chi} = \frac{1}{n_{chi}} \sum_{\forall jklm \in chi} y_{chijklmn} \quad (4)$$

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:

$$p_{ch} = \frac{\sum_{\forall i \text{ in } h} w_{chi} \cdot Length_{chi} \cdot p_{chi}}{\sum_{\forall i \text{ in } h} w_{chi} \cdot Length_{chi}} \quad (5)$$

where

$$w_{chi} = \frac{1}{n_{chi}} \quad (6)$$

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 .

$$p_{ch} = \frac{1}{n_h} \sum_{i=1}^{n_h} p_{chi} \quad (7)$$

where n_h is number of road segments each road stratum.

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

$$p_c = \frac{\sum_{\forall h \text{ in } c} w_{ch} \cdot Length_{ch} \cdot p_{ch}}{\sum_{\forall h \text{ in } c} w_{ch} \cdot Length_{ch}} \quad (8)$$

where

$$w_{ch} = \frac{1}{n_{ch}} \quad (9)$$

The following equation can also be used to compute p_c .

$$p_c = \frac{1}{n_c} \sum_{i=1}^{n_c} p_{ch} \quad (10)$$

where n_c is number of road strata in the county.

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

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

where

$$w_c = \frac{1}{\pi_c} \quad (12)$$

The following equation can also be used to compute p .

$$p = \frac{1}{n} \sum_{i=1}^n p_c \quad (13)$$

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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12/27/2011

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CURRENT EMPLOYMENT ACTIVITIES

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

EDUCATION AND PROFESSIONAL ACTIVITIES

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

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

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

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

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

RECENT CONSULTING ACTIVITIES

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

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

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

Community Action Partnership.

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

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

CURRENT COMMUNITY SERVICE

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

REFERENCES

Deb Nelson, CEO and Owner, DLN Consulting, Inc. 2493 4th Ave W, Dickinson, ND
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Appendix B

Selected Road Segments within Each County and Their Probabilities of Selection

STATEFP	COUNTYFP	INTFC	FULLNAME	TID	Alt_Name	DIVROAD	DECKEDROAD	Longitude	Latitude	SegLen_Mi	SRSWOR
56	1	51100	I-80	168749730	US Hwy 30	Y	N	-105.378496	41.145686	0.831622	0.01342282
56	1	51100	I-80	604512124		N	N	-105.976683	41.455622	0.185331	0.01342282
56	1	51200	US Hwy 30	604512235	US Hwy 30	N	N	-105.613789	41.436288	0.487287	0.01612903
56	1	51200	S3rd St	168748704	US Hwy 287	N	N	-105.591913	41.28322	0.082576	0.01612903
56	1	51200	State Hwy 130	168722835		N	N	-106.287656	41.350363	0.427204	0.01612903
56	1	51200	S3rd St	604506806	US Hwy 287	N	N	-105.594072	41.294338	0.176844	0.01612903
56	1	51200	Snowy Range Rd	168750353	State Hwy 130	N	N	-106.138426	41.297205	0.029432	0.01612903
56	1	51200	N3rd St	168757040	N 3rd St	N	N	-105.591733	41.328609	0.047988	0.01612903
56	1	51200	State Hwy 13	168722017		N	N	-106.005865	41.719918	0.045972	0.01612903
56	1	51200	N3rd St	604510122	N 3rd St	N	N	-105.589465	41.349592	0.023102	0.01612903
56	1	51200	Snowy Range Rd	168738815	State Hwy 130	N	N	-105.695098	41.328608	0.311022	0.01612903
56	1	51200	Happy Jack Rd	168744760	State Hwy 210	N	N	-105.309387	41.191091	0.653912	0.01612903
56	1	51200	Bus I-80	168756901	US Hwy 30	N	N	-105.568899	41.309599	0.005935	0.01612903
56	1	51200	State Hwy 10	168745008		N	N	-105.994902	41.032165	0.213298	0.01612903
56	1	51200	US Hwy 30	168737539	US Hwy 30	N	N	-105.618617	41.445781	0.55288	0.01612903
56	1	51200	State Hwy 11	168755506		N	N	-106.090934	41.193713	0.3791	0.01612903
56	1	51200	State Hwy 210	604505747		N	N	-105.438008	41.239964	0.011093	0.01612903
56	1	51200	N4th St	168755958	Co Rd 67	N	N	-105.975505	41.75157	0.062117	0.01612903
56	3	51200	US Hwy 14 E	605633431		N	N	-107.749401	44.549772	0.01933	0.01522843
56	3	51200	US Hwy 14A E	180494288		NA	NA	-108.222314	44.854737	0.237779	0.01522843
56	3	51200	US Hwy 14A E	180493968		NA	NA	-108.320407	44.840598	0.062603	0.01522843
56	3	51200	US Hwy 14A E	605624056		NA	NA	-108.354114	44.840581	0.053415	0.01522843
56	3	51200	State Hwy 32	180493545		N	N	-108.415772	44.800116	0.006963	0.01522843
56	3	51200	State Hwy 32	605621594		N	N	-108.587279	44.732075	0.173849	0.01522843
56	3	51200	US Hwy 14	180484672		N	N	-108.015517	44.49378	0.057181	0.01522843
56	3	51200	State Hwy 30	605616914		N	N	-108.339589	44.417795	0.321328	0.01522843
56	3	51200	3rd St E	180505210	US Hwy 310	N	N	-108.46286	44.87988	0.015607	0.01522843
56	3	51200	US Hwy 14 Alt	626936823		Y	N	-108.016292	44.79296	0.353805	0.01522843
56	3	51200	US Hwy 16	180500795		N	N	-107.224785	44.177728	0.893127	0.01522843
56	3	51200	US Hwy 14 Alternate Rte	180501932		N	N	-108.376118	44.839933	0.099877	0.01522843
56	3	51200	US Hwy 310	180490602		N	N	-108.584372	44.89102	0.036785	0.01522843
56	3	51200	State Hwy 32	180506937		N	N	-108.49826	44.776846	0.166397	0.01522843
56	3	51200	State Hwy 433	180507017		N	N	-107.938854	44.197309	0.474787	0.01522843
56	3	51200	Mars hall St	180508412	State Hwy 31	N	N	-107.962173	44.274582	0.04248	0.01522843
56	3	51200	State Hwy 433	180499656		N	N	-107.979944	44.249642	0.248082	0.01522843
56	3	51200	C St	180485070	State Hwy 36	N	N	-108.041229	44.381112	0.071452	0.01522843

56	5	51100	I-90	I-90	607415957	I-90	NA	NA	-105.248589	44.294692	0.2338	0.01498127
56	5	51100	I-90	I-90	607413318	I-90	NA	NA	-105.383825	44.295056	0.565923	0.01498127
56	5	51100	I-90	US Hwy 14	146326960	US Hwy 14	N	N	-105.352327	44.289556	0.032443	0.01498127
56	5	51100	I-90	US Hwy 14	146347844	US Hwy 14	N	N	-105.378563	44.294171	0.039906	0.01498127
56	5	51200	State Hwy 59	State Hwy 59	146348156	State Hwy 59	N	N	-105.526384	44.352279	0.035885	0.01344861
56	5	51200	E 2nd St	E 2nd St	146325159	E 2nd St	N	N	-105.489034	44.292555	0.006099	0.01344861
56	5	51200	US Hwy 14	State Hwy 59	146349851	State Hwy 59	N	N	-105.529311	44.296796	0.051126	0.01344861
56	5	51200	State Hwy 50	State Hwy 50	146329404	State Hwy 50	N	N	-105.62461	44.181178	0.128849	0.01344861
56	5	51200	State Hwy 50	State Hwy 50	146334309	State Hwy 50	N	N	-105.724815	43.993419	0.268938	0.01344861
56	5	51200	State Hwy 50	State Hwy 50	146353809	State Hwy 50	N	N	-105.719015	44.07693	0.152303	0.01344861
56	5	51200	State Hwy 59	State Hwy 59	607395191	State Hwy 59	N	N	-105.464887	44.022166	0.220383	0.01344861
56	5	51200	State Hwy 50	State Hwy 50	146333806	State Hwy 50	N	N	-105.750504	43.925684	0.026796	0.01344861
56	5	51200	US Hwy 14	US Hwy 16	146321054	US Hwy 16	N	N	-105.538015	44.391359	0.066024	0.01344861
56	5	51200	State Hwy 50	State Hwy 50	146353348	State Hwy 50	N	N	-105.711349	44.114846	0.837201	0.01344861
56	5	51200	State Hwy 51	State Hwy 51	607406131	State Hwy 51	N	N	-105.283045	44.288769	0.020793	0.01344861
56	5	51200	US Hwy 14	State Hwy 59	146346688	State Hwy 59	N	N	-105.530279	44.30921	0.060938	0.01344861
56	5	51200	State Hwy 59	State Hwy 59	635532528	State Hwy 59	N	N	-105.44592	43.969271	0.227319	0.01344861
56	5	51200	State Hwy 387	State Hwy 387	146342308	State Hwy 387	N	N	-105.979091	43.5588	0.24863	0.01344861
56	7	51100	I-80	I-80	611197576	I-80	N	N	-106.521149	41.752786	0.67332	0.01351351
56	7	51100	I-80	I-80	148702972	I-80	N	N	-106.948342	41.751102	0.026198	0.01351351
56	7	51100	I-80	I-80	148729076	I-80	Y	N	-107.373738	41.786936	0.145819	0.01351351
56	7	51200	3rd St	US Hwy 287	622138133	US Hwy 287	N	N	-107.22921	41.807878	0.184918	0.01144165
56	7	51200	State Hwy 70	State Hwy 70	148737136	State Hwy 70	N	N	-107.034068	41.156663	0.828525	0.01144165
56	7	51200	State Hwy 789	State Hwy 789	148752555	State Hwy 789	N	N	-107.730909	41.291091	1.697048	0.01144165
56	7	51200	State Hwy 130	State Hwy 130	148712671	State Hwy 130	N	N	-106.760293	41.392624	0.460732	0.01144165
56	7	51200	State Hwy 130	State Hwy 130	148715207	State Hwy 130	N	N	-106.651357	41.343293	0.077775	0.01144165
56	7	51200	State Hwy 230	State Hwy 230	148718040	State Hwy 230	N	N	-106.610856	41.172584	0.416111	0.01144165
56	7	51200	State Hwy 220	State Hwy 220	148695417	State Hwy 220	N	N	-107.243952	42.428181	0.229884	0.01144165
56	7	51200	N Higley Blvd	US Hwy 287 Byp	148729803	US Hwy 287 Byp	N	N	-107.215405	41.795669	0.069431	0.01144165
56	7	51200	State Hwy 72	State Hwy 72	148707454	State Hwy 72	N	N	-106.453685	41.718692	0.74372	0.01144165
56	7	51200	Lincoln Hwy	US Hwy 30	148702076	US Hwy 30	N	N	-106.277868	41.901903	1.701502	0.01144165
56	7	51200	State Hwy 230	State Hwy 230	148743798	State Hwy 230	N	N	-106.701352	41.218277	0.116587	0.01144165
56	7	51200	State Hwy 789	State Hwy 789	148736405	State Hwy 789	N	N	-107.693147	41.220518	0.326679	0.01144165
56	7	51200	State Hwy 230	State Hwy 230	148714894	State Hwy 230	N	N	-106.776349	41.255209	0.053899	0.01144165
56	7	51200	State Hwy 487	State Hwy 487	148727630	State Hwy 487	N	N	-106.186809	42.097454	1.894335	0.01144165
56	7	51200	State Hwy 130	State Hwy 130	148716025	State Hwy 130	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	42.833345	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	-108.567709	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 Hillis 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	-108.53074	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	62238802	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	S1400	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	EA 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	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	1473996185		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-Morrison 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	149495742	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	-110.336637	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	-110.421784	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
<u>(Total observation period MUST last EXACTLY 45 minutes)</u>	

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

State:

Name:

Address:

Email:

Phone number:

Submit Form

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?

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 provided 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 and range

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?

b. Please specify the definition of units:

Stage	Unit
1	<input type="text" value="County"/> If Other, please specify:
2	<input type="text" value="Road segments"/> If Other, please specify:
3	<input type="text" value="Select Unit"/> If Other, please specify:
4	<input type="text" value="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:

6. PROBABILITIES OF SELECTION

a. Probabilities of selection:

i. If PPS, please specify 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

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,

A handwritten signature in cursive script, appearing to read "Gina Mia Espinosa-Salcedo".

Gina Mia Espinosa-Salcedo
Regional Administrator

cc: Karson James

Appendix D: Data Tables

Detailed table of collected data

Occupant Frequencies

Frequency Table

		County			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Albany	1441	5.8	5.8	5.8
	Big Horn	846	3.4	3.4	9.2
	Campbell	1710	6.9	6.9	16.1
	Carbon	1541	6.2	6.2	22.3
	Converse	1862	7.5	7.5	29.8
	Crook	1437	5.8	5.8	35.6
	Fremont	1335	5.4	5.4	41.0
	Johnson	976	3.9	3.9	44.9
	Laramie	489	2.0	2.0	46.9
	Lincoln	1254	5.1	5.1	51.9
	Natrona	811	3.3	3.3	55.2
	Niobrara	1025	4.1	4.1	59.3
	Park	1680	6.8	6.8	66.1
	Platte	1362	5.5	5.5	71.6
	Sheridan	1647	6.6	6.6	78.2
	Sweetwater	2235	9.0	9.0	87.2
	Teton	3170	12.8	12.8	100.0
	Total	24821	100.0	100.0	

Population Density

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	5936	23.9	23.9	23.9
	Rural	18885	76.1	76.1	100.0
	Total	24821	100.0	100.0	

Day of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sunday	1714	6.9	6.9	6.9
	Monday	3925	15.8	15.8	22.7
	Tuesday	4622	18.6	18.6	41.3
	Wednesday	5114	20.6	20.6	61.9
	Thursday	3097	12.5	12.5	74.4
	Friday	4170	16.8	16.8	91.2
	Saturday	2179	8.8	8.8	100.0
	Total	24821	100.0	100.0	

Observer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monty Byers	1441	5.8	5.8	5.8
	Kayla Schear	2235	9.0	9.0	14.8
	Dawn Edwards	1254	5.1	5.1	19.9
	Doug Peterson	1362	5.5	5.5	25.3
	Tonya Dove	1680	6.8	6.8	32.1
	Dixie Elder	846	3.4	3.4	35.5
	Deb Eutsler	972	3.9	3.9	39.4
	Brooke Darden	1541	6.2	6.2	45.7
	Susan Parkinson	1647	6.6	6.6	52.3
	Molly Laidlaw	1339	5.4	5.4	57.7
	Lucinda Pope	1710	6.9	6.9	64.6
	Kolter Elder	489	2.0	2.0	66.5
	Peggy Dowers	3170	12.8	12.8	79.3
	Kayla Walters	1862	7.5	7.5	86.8
	Skyler Elder	1437	5.8	5.8	92.6
	Makenzie Valerio	811	3.3	3.3	95.9
	Lori Cole	1025	4.1	4.1	100.0
	Total	24821	100.0	100.0	

Lanes Observed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One Lane	14013	56.5	56.5	56.5
	Two Lanes	10808	43.5	43.5	100.0
	Total	24821	100.0	100.0	

Direction of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	North	4429	17.8	17.8	17.8
	South	5043	20.3	20.3	38.2
	East	7697	31.0	31.0	69.2
	West	7652	30.8	30.8	100.0
	Total	24821	100.0	100.0	

Occupant Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	14564	58.7	58.7	58.7
	Female	10257	41.3	41.3	100.0
	Total	24821	100.0	100.0	

Occupant Belt Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Belted	19993	80.5	80.5	80.5
	Not Belted	4784	19.3	19.3	99.8
	Unsure	44	.2	.2	100.0
	Total	24821	100.0	100.0	

Weather

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clear and Sunny	17433	70.2	70.2	70.2
	Cloudy	5369	21.6	21.6	91.9
	Foggy	70	.3	.3	92.1
	Light Rain	1152	4.6	4.6	96.8
	Snow and Ice	358	1.4	1.4	98.2
	Heavy Rain	353	1.4	1.4	99.7
	Occasional Rain	86	.3	.3	100.0
	Total	24821	100.0	100.0	

Vehicle type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Auto	6123	24.7	24.7	24.7
	Van	7641	30.8	30.8	55.5
	Sport Utility Vehicle	1492	6.0	6.0	61.5
	Pick Up Truck	9565	38.5	38.5	100.0
	Total	24821	100.0	100.0	

Wyoming Registration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14150	57.0	57.0	57.0
	No	10513	42.4	42.4	99.4
	Unsure	158	.6	.6	100.0
	Total	24821	100.0	100.0	

Time of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7:30-9:30 AM	4451	17.9	17.9	17.9
	9:30-11:30 AM	4367	17.6	17.6	35.5
	11:30 AM-1:30 PM	5676	22.9	22.9	58.4
	1:30-3:30 PM	3947	15.9	15.9	74.3
	3:30-5:30 PM	6379	25.7	25.7	100.0
	Total	24820	100.0	100.0	
Missing	System	1	.0		
	Total	24821	100.0		

Roadway Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	S1100-Primary Road	7770	31.3	31.3	31.3
	S1200-Secondary Road	15939	64.2	64.2	95.5
	S1400-Local/Rural Rd/City St	1112	4.5	4.5	100.0
	Total	24821	100.0	100.0	

Weekday/Weekend

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Weekend	3893	15.7	15.7	15.7
	Weekday	20928	84.3	84.3	100.0
	Total	24821	100.0	100.0	

Occupant Variables

County * Occupant Belt Use

County			Occupant Belt Use			
			Belted	Not Belted	Unsure	Total
Albany	% within County	Estimate	87.9%	12.1%		100.0%
		Unweighted Count	1269	172		1441
Big Horn	% within County	Estimate	86.4%	13.6%		100.0%
		Unweighted Count	731	115		846
Campbell	% within County	Estimate	67.5%	32.5%		100.0%
		Unweighted Count	1152	558		1710
Carbon	% within County	Estimate	67.6%	32.4%		100.0%
		Unweighted Count	1041	500		1541
Converse	% within County	Estimate	73.1%	25.1%	1.8%	100.0%
		Unweighted Count	1363	466	33	1862
Crook	% within County	Estimate	92.9%	7.1%		100.0%
		Unweighted Count	1336	101		1437
Fremont	% within County	Estimate	83.5%	16.5%		100.0%
		Unweighted Count	1115	220		1335
Johnson	% within County	Estimate	87.8%	12.2%		100.0%
		Unweighted Count	859	117		976
Laramie	% within County	Estimate	74.9%	25.1%		100.0%
		Unweighted Count	369	120		489
Lincoln	% within County	Estimate	88.7%	10.8%	0.6%	100.0%
		Unweighted Count	1112	135	7	1254
Natrona	% within County	Estimate	78.4%	21.6%		100.0%
		Unweighted Count	636	175		811
Niobrara	% within County	Estimate	97.8%	2.1%	0.1%	100.0%
		Unweighted Count	1002	22	1	1025
Park	% within County	Estimate	72.3%	27.6%	0.1%	100.0%
		Unweighted Count	1214	464	2	1680
Platte	% within County	Estimate	85.3%	14.7%		100.0%
		Unweighted Count	1168	194		1362
Sheridan	% within County	Estimate	79.8%	20.2%		100.0%
		Unweighted Count	1308	339		1647
Sweetwater	% within County	Estimate	63.5%	36.5%		100.0%
		Unweighted Count	1414	821		2235
Teton	% within County	Estimate	91.6%	8.4%	0.0%	100.0%
		Unweighted Count	2904	265	1	3170
Total	% within County	Estimate	78.3%	21.6%	0.0%	100.0%
		Unweighted Count	19993	4784	44	24821

Population Density * Occupant Belt Use

Population Density			Occupant Belt Use			
			Belted	Not Belted	Unsure	Total
Urban	% within Population Density	Estimate	76.4%	23.6%	0.0%	100.0%
		Unweighted Count	4070	1857	9	5936
Rural	% within Population Density	Estimate	80.6%	19.4%	0.0%	100.0%
		Unweighted Count	15923	2927	35	18885
Total	% within Population Density	Estimate	78.3%	21.6%	0.0%	100.0%
		Unweighted Count	19993	4784	44	24821

Day of Observation * Occupant Belt Use

Day of Observation			Occupant Belt Use		
			Belted	Not Belted	Unsure
Sunday	% within Day of Observation	Estimate	87.7%	12.3%	0.0%
		Unweighted Count	1472	240	2
Monday	% within Day of Observation	Estimate	76.6%	23.4%	0.0%
		Unweighted Count	3101	815	9
Tuesday	% within Day of Observation	Estimate	74.0%	25.9%	0.1%
		Unweighted Count	3656	961	5
Wednesday	% within Day of Observation	Estimate	72.5%	27.3%	0.2%
		Unweighted Count	4276	823	15
Thursday	% within Day of Observation	Estimate	69.4%	30.5%	0.1%
		Unweighted Count	2437	654	6
Friday	% within Day of Observation	Estimate	78.9%	21.1%	0.0%
		Unweighted Count	3215	951	4
Saturday	% within Day of Observation	Estimate	66.8%	33.2%	0.0%
		Unweighted Count	1836	340	3
Total	% within Day of Observation	Estimate	78.3%	21.6%	0.0%
		Unweighted Count	19993	4784	44

Day of Observation * Occupant Belt Use

Day of Observation			Occupant ...
			Total
Sunday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	1714
Monday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	3925
Tuesday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	4622
Wednesday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	5114
Thursday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	3097
Friday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	4170
Saturday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	2179
Total	% within Day of Observation	Estimate	100.0%
		Unweighted Count	24821

Weather * Occupant Belt Use

Weather			Occupant Belt Use			
			Belted	Not Belted	Unsure	Total
Clear and Sunny	% within Weather	Estimate	79.0%	21.0%	0.0%	100.0%
		Unweighted Count	13907	3492	34	17433
Cloudy	% within Weather	Estimate	72.6%	27.3%	0.0%	100.0%
		Unweighted Count	4277	1083	9	5369
Foggy	% within Weather	Estimate	94.3%	5.7%		100.0%
		Unweighted Count	66	4		70
Light Rain	% within Weather	Estimate	82.6%	17.3%	0.1%	100.0%
		Unweighted Count	974	177	1	1152
Snow and Ice	% within Weather	Estimate	99.2%	0.8%		100.0%
		Unweighted Count	355	3		358
Heavy Rain	% within Weather	Estimate	96.5%	3.5%		100.0%
		Unweighted Count	342	11		353
Occasional Rain	% within Weather	Estimate	83.3%	16.7%		100.0%
		Unweighted Count	72	14		86
Total	% within Weather	Estimate	78.3%	21.6%	0.0%	100.0%
		Unweighted Count	19993	4784	44	24821

Lanes Observed * Occupant Belt Use

Lanes Observed			Occupant Belt Use		
			Belted	Not Belted	Unsure
One Lane	% within Lanes Observed	Estimate	73.4%	26.6%	0.0%
		Unweighted Count	11498	2500	15
Two Lanes	% within Lanes Observed	Estimate	81.2%	18.8%	0.0%
		Unweighted Count	8495	2284	29
Total	% within Lanes Observed	Estimate	78.3%	21.6%	0.0%
		Unweighted Count	19993	4784	44

Lanes Observed * Occupant Belt Use

Lanes Observed			Occupant ...
			Total
One Lane	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	14013
Two Lanes	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	10808
Total	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	24821

Direction of Observation * Occupant Belt Use

Direction of Observation			Occupant Belt Use			
			Belted	Not Belted	Unsure	Total
North	% within Direction of Observation	Estimate	83.0%	16.9%	0.1%	100.0%
		Unweighted Count	3714	695	20	4429
South	% within Direction of Observation	Estimate	77.4%	22.5%	0.1%	100.0%
		Unweighted Count	4076	956	11	5043
East	% within Direction of Observation	Estimate	77.5%	22.5%	0.0%	100.0%
		Unweighted Count	6008	1678	11	7697
West	% within Direction of Observation	Estimate	75.9%	24.1%	0.0%	100.0%
		Unweighted Count	6195	1455	2	7652
Total	% within Direction of Observation	Estimate	78.3%	21.6%	0.0%	100.0%
		Unweighted Count	19993	4784	44	24821

Occupant Gender * Occupant Belt Use

Occupant Gender			Occupant Belt Use			
			Belted	Not Belted	Unsure	Total
Male	% within Occupant Gender	Estimate	72.0%	27.9%	0.0%	100.0%
		Unweighted Count	11202	3326	36	14564
Female	% within Occupant Gender	Estimate	85.7%	14.2%	0.0%	100.0%
		Unweighted Count	8791	1458	8	10257
Total	% within Occupant Gender	Estimate	78.3%	21.6%	0.0%	100.0%
		Unweighted Count	19993	4784	44	24821

Vehicle type * Occupant Belt Use

Vehicle type			Occupant Belt Use		
			Belted	Not Belted	Unsure
Auto	% within Vehicle type	Estimate	76.4%	23.5%	0.0%
		Unweighted Count	5069	1043	11
Van	% within Vehicle type	Estimate	85.0%	15.0%	0.0%
		Unweighted Count	6553	1081	7
Sport Utility Vehicle	% within Vehicle type	Estimate	91.7%	8.3%	
		Unweighted Count	1295	197	
Pick Up Truck	% within Vehicle type	Estimate	71.5%	28.5%	0.0%
		Unweighted Count	7076	2463	26
Total	% within Vehicle type	Estimate	78.3%	21.6%	0.0%
		Unweighted Count	19993	4784	44

Vehicle type * Occupant Belt Use

Vehicle type			Occupant ...
			Total
Auto	% within Vehicle type	Estimate	100.0%
		Unweighted Count	6123
Van	% within Vehicle type	Estimate	100.0%
		Unweighted Count	7641
Sport Utility Vehicle	% within Vehicle type	Estimate	100.0%
		Unweighted Count	1492
Pick Up Truck	% within Vehicle type	Estimate	100.0%
		Unweighted Count	9565
Total	% within Vehicle type	Estimate	100.0%
		Unweighted Count	24821

Wyoming Registration * Occupant Belt Use

Wyoming Registration			Occupant Belt Use			
			Belted	Not Belted	Unsure	Total
Yes	% within Wyoming Registration	Estimate	77.3%	22.7%	0.0%	100.0%
		Unweighted Count	10750	3373	27	14150
No	% within Wyoming Registration	Estimate	82.4%	17.6%	0.1%	100.0%
		Unweighted Count	9132	1364	17	10513
Unsure	% within Wyoming Registration	Estimate	70.1%	29.9%		100.0%
		Unweighted Count	111	47		158
Total	% within Wyoming Registration	Estimate	78.3%	21.6%	0.0%	100.0%
		Unweighted Count	19993	4784	44	24821

Time of Observation * Occupant Belt Use

Time of Observation			Occupant Belt Use		
			Belted	Not Belted	Unsure
7:30-9:30 AM	% within Time of Observation	Estimate	71.4%	28.5%	0.1%
		Unweighted Count	3569	870	12
9:30-11:30 AM	% within Time of Observation	Estimate	80.1%	19.9%	0.0%
		Unweighted Count	3599	752	16
11:30 AM-1:30 PM	% within Time of Observation	Estimate	73.3%	26.7%	0.0%
		Unweighted Count	4611	1061	4
1:30-3:30 PM	% within Time of Observation	Estimate	74.1%	25.8%	0.0%
		Unweighted Count	3195	748	4
3:30-5:30 PM	% within Time of Observation	Estimate	84.4%	15.6%	0.0%
		Unweighted Count	5019	1352	8
Total	% within Time of Observation	Estimate	78.3%	21.6%	0.0%
		Unweighted Count	19993	4783	44

Time of Observation * Occupant Belt Use

Time of Observation			Occupant ...
			Total
7:30-9:30 AM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	4451
9:30-11:30 AM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	4367
11:30 AM-1:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	5676
1:30-3:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	3947
3:30-5:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	6379
Total	% within Time of Observation	Estimate	100.0%
		Unweighted Count	24820

Roadway Type * Occupant Belt Use

Roadway Type			Occupant Belt Use	
			Belted	Not Belted
S1100-Primary Road	% within Roadway Type	Estimate	80.5%	19.3%
		Unweighted Count	6365	1383
S1200-Secondary Road	% within Roadway Type	Estimate	77.3%	22.6%
		Unweighted Count	12775	3142
S1400-Local/Rural Rd/City St	% within Roadway Type	Estimate	78.3%	21.7%
		Unweighted Count	853	259
Total	% within Roadway Type	Estimate	78.3%	21.6%
		Unweighted Count	19993	4784

Roadway Type * Occupant Belt Use

Roadway Type			Occupant Belt Use	
			Unsure	Total
S1100-Primary Road	% within Roadway Type	Estimate	0.2%	100.0%
		Unweighted Count	22	7770
S1200-Secondary Road	% within Roadway Type	Estimate	0.1%	100.0%
		Unweighted Count	22	15939
S1400-Local/Rural Rd/City St	% within Roadway Type	Estimate		100.0%
		Unweighted Count		1112
Total	% within Roadway Type	Estimate	0.0%	100.0%
		Unweighted Count	44	24821

Weekday/Weekend * Occupant Belt Use

Weekday/Weekend			Occupant Belt Use		
			Belted	Not Belted	Unsure
Weekend	% within	Estimate	83.6%	16.3%	0.0%
	Weekday/Weekend	Unweighted Count	3308	580	5
Weekday	% within	Estimate	76.7%	23.2%	0.0%
	Weekday/Weekend	Unweighted Count	16685	4204	39
Total	% within	Estimate	78.3%	21.6%	0.0%
	Weekday/Weekend	Unweighted Count	19993	4784	44

Weekday/Weekend * Occupant Belt Use

Weekday/Weekend			Occupant ...
			Total
Weekend	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	3893
Weekday	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	20928
Total	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	24821

Driver Frequencies

Frequency Table

		County			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Albany	1030	5.6	5.6	5.6
	Big Horn	625	3.4	3.4	9.1
	Campbell	1320	7.2	7.2	16.3
	Carbon	1075	5.9	5.9	22.1
	Converse	1472	8.0	8.0	30.2
	Crook	979	5.4	5.4	35.6
	Fremont	986	5.4	5.4	40.9
	Johnson	687	3.8	3.8	44.7
	Laramie	391	2.1	2.1	46.8
	Lincoln	914	5.0	5.0	51.8
	Natrona	656	3.6	3.6	55.4
	Niobrara	664	3.6	3.6	59.1
	Park	1322	7.2	7.2	66.3
	Platte	993	5.4	5.4	71.7
	Sheridan	1362	7.4	7.4	79.2
	Sweetwater	1622	8.9	8.9	88.0
	Teton	2188	12.0	12.0	100.0
	Total	18286	100.0	100.0	

		Population Density			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	4725	25.8	25.8	25.8
	Rural	13561	74.2	74.2	100.0
Total		18286	100.0	100.0	

Day of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sunday	1134	6.2	6.2	6.2
	Monday	2884	15.8	15.8	22.0
	Tuesday	3486	19.1	19.1	41.0
	Wednesday	3857	21.1	21.1	62.1
	Thursday	2372	13.0	13.0	75.1
	Friday	3108	17.0	17.0	92.1
	Saturday	1445	7.9	7.9	100.0
	Total	18286	100.0	100.0	

Observer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monty Byers	1030	5.6	5.6	5.6
	Kayla Schear	1622	8.9	8.9	14.5
	Dawn Edwards	914	5.0	5.0	19.5
	Doug Peterson	993	5.4	5.4	24.9
	Tonya Dove	1322	7.2	7.2	32.2
	Dixie Elder	625	3.4	3.4	35.6
	Deb Eutsler	684	3.7	3.7	39.3
	Brooke Darden	1075	5.9	5.9	45.2
	Susan Parkinson	1362	7.4	7.4	52.6
	Molly Laidlaw	989	5.4	5.4	58.1
	Lucinda Pope	1320	7.2	7.2	65.3
	Kolter Elder	391	2.1	2.1	67.4
	Peggy Dowers	2188	12.0	12.0	79.4
	Kayla Walters	1472	8.0	8.0	87.4
	Skyler Elder	979	5.4	5.4	92.8
	Makenzie Valerio	656	3.6	3.6	96.4
	Lori Cole	664	3.6	3.6	100.0
	Total	18286	100.0	100.0	

Weather

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clear and Sunny	12978	71.0	71.0	71.0
	Cloudy	3946	21.6	21.6	92.6
	Foggy	40	.2	.2	92.8
	Light Rain	852	4.7	4.7	97.4
	Snow and Ice	194	1.1	1.1	98.5
	Heavy Rain	214	1.2	1.2	99.7
	Occasional Rain	62	.3	.3	100.0
	Total	18286	100.0	100.0	

Lanes Observed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One Lane	10189	55.7	55.7	55.7
	Two Lanes	8097	44.3	44.3	100.0
	Total	18286	100.0	100.0	

Direction of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	North	3314	18.1	18.1	18.1
	South	3760	20.6	20.6	38.7
	East	5661	31.0	31.0	69.6
	West	5551	30.4	30.4	100.0
	Total	18286	100.0	100.0	

Driver Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	12469	68.2	68.2	68.2
	Female	5817	31.8	31.8	100.0
	Total	18286	100.0	100.0	

Driver Belt Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Belted	14367	78.6	78.6	78.6
	Not Belted	3878	21.2	21.2	99.8
	Unsure	41	.2	.2	100.0
	Total	18286	100.0	100.0	

Vehicle Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Auto	4478	24.5	24.5	24.5
	Van	5378	29.4	29.4	53.9
	Sport Utility Vehicle	1015	5.6	5.6	59.4
	Pick Up Truck	7415	40.6	40.6	100.0
	Total	18286	100.0	100.0	

Wyoming Registration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11239	61.5	61.5	61.5
	No	6931	37.9	37.9	99.4
	Unsure	116	.6	.6	100.0
	Total	18286	100.0	100.0	

Time of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7:30-9:30 AM	3417	18.7	18.7	18.7
	9:30-11:30 AM	3222	17.6	17.6	36.3
	11:30 AM-1:30 PM	4138	22.6	22.6	58.9
	1:30-3:30 PM	2797	15.3	15.3	74.2
	3:30-5:30 PM	4711	25.8	25.8	100.0
	Total	18285	100.0	100.0	
Missing	System	1	.0		
Total		18286	100.0		

Roadway Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	S1100-Primary Road	5598	30.6	30.6	30.6
	S1200-Secondary Road	11787	64.5	64.5	95.1
	S1400-Local/Rural Road/City St.	901	4.9	4.9	100.0
	Total	18286	100.0	100.0	

Weekday/Weekend

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Weekend	2579	14.1	14.1	14.1
	Weekday	15707	85.9	85.9	100.0
	Total	18286	100.0	100.0	

Driver Variables

County * Driver Belt Use

County			Driver Belt Use			
			Belted	Not Belted	Unsure	Total
Albany	% within County	Estimate	85.1%	14.9%		100.0%
		Unweighted Count	878	152		1030
Big Horn	% within County	Estimate	84.3%	15.7%		100.0%
		Unweighted Count	527	98		625
Campbell	% within County	Estimate	66.2%	33.8%		100.0%
		Unweighted Count	874	446		1320
Carbon	% within County	Estimate	66.3%	33.7%		100.0%
		Unweighted Count	712	363		1075
Converse	% within County	Estimate	69.7%	28.1%	2.2%	100.0%
		Unweighted Count	1027	412	33	1472
Crook	% within County	Estimate	91.7%	8.3%		100.0%
		Unweighted Count	899	80		979
Fremont	% within County	Estimate	82.3%	17.7%		100.0%
		Unweighted Count	811	175		986
Johnson	% within County	Estimate	85.4%	14.6%		100.0%
		Unweighted Count	588	99		687
Laramie	% within County	Estimate	74.2%	25.8%		100.0%
		Unweighted Count	292	99		391
Lincoln	% within County	Estimate	88.3%	11.2%	0.5%	100.0%
		Unweighted Count	807	102	5	914
Natrona	% within County	Estimate	77.0%	23.0%		100.0%
		Unweighted Count	505	151		656
Niobrara	% within County	Estimate	96.8%	3.0%	0.2%	100.0%
		Unweighted Count	643	20	1	664
Park	% within County	Estimate	70.1%	29.7%	0.2%	100.0%
		Unweighted Count	927	393	2	1322
Platte	% within County	Estimate	83.8%	16.2%		100.0%
		Unweighted Count	837	156		993
Sheridan	% within County	Estimate	78.7%	21.3%		100.0%
		Unweighted Count	1068	294		1362
Sweetwater	% within County	Estimate	62.9%	37.1%		100.0%
		Unweighted Count	1016	606		1622
Teton	% within County	Estimate	89.4%	10.6%		100.0%
		Unweighted Count	1956	232		2188
Total	% within County	Estimate	76.9%	23.1%	0.0%	100.0%
		Unweighted Count	14367	3878	41	18286

Population Density * Driver Belt Use

Population Density			Driver Belt Use			
			Belted	Not Belted	Unsure	Total
Urban	% within Population	Estimate	75.3%	24.7%	0.0%	100.0%
	Density	Unweighted Count	3200	1516	9	4725
Rural	% within Population	Estimate	78.7%	21.2%	0.1%	100.0%
	Density	Unweighted Count	11167	2362	32	13561
Total	% within Population	Estimate	76.9%	23.1%	0.0%	100.0%
	Density	Unweighted Count	14367	3878	41	18286

Day of Observation * Driver Belt Use

Day of Observation			Driver Belt Use		
			Belted	Not Belted	Unsure
Sunday	% within Day of	Estimate	84.6%	15.4%	0.0%
	Observation	Unweighted Count	947	185	2
Monday	% within Day of	Estimate	76.2%	23.7%	0.0%
	Observation	Unweighted Count	2225	651	8
Tuesday	% within Day of	Estimate	72.0%	27.9%	0.1%
	Observation	Unweighted Count	2695	786	5
Wednesday	% within Day of	Estimate	73.7%	26.1%	0.2%
	Observation	Unweighted Count	3149	695	13
Thursday	% within Day of	Estimate	66.4%	33.5%	0.1%
	Observation	Unweighted Count	1832	534	6
Friday	% within Day of	Estimate	77.9%	22.1%	0.0%
	Observation	Unweighted Count	2332	772	4
Saturday	% within Day of	Estimate	63.4%	36.5%	0.0%
	Observation	Unweighted Count	1187	255	3
Total	% within Day of	Estimate	76.9%	23.1%	0.0%
	Observation	Unweighted Count	14367	3878	41

Day of Observation * Driver Belt Use

Day of Observation			Driver ...
			Total
Sunday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	1134
Monday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	2884
Tuesday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	3486
Wednesday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	3857
Thursday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	2372
Friday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	3108
Saturday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	1445
Total	% within Day of Observation	Estimate	100.0%
		Unweighted Count	18286

Observer * Driver Belt Use

Observer			Driver Belt Use		
			Belted	Not Belted	Unsure
Monty Byers	% within Observer	Estimate	85.1%	14.9%	
		Unweighted Count	878	152	
Kayla Schear	% within Observer	Estimate	62.9%	37.1%	
		Unweighted Count	1016	606	
Dawn Edwards	% within Observer	Estimate	88.3%	11.2%	0.5%
		Unweighted Count	807	102	5
Doug Peterson	% within Observer	Estimate	83.8%	16.2%	
		Unweighted Count	837	156	
Tonya Dove	% within Observer	Estimate	70.1%	29.7%	0.2%
		Unweighted Count	927	393	2
Dixie Elder	% within Observer	Estimate	84.3%	15.7%	
		Unweighted Count	527	98	
Deb Eutsler	% within Observer	Estimate	85.4%	14.6%	
		Unweighted Count	586	98	
Brooke Darden	% within Observer	Estimate	66.3%	33.7%	
		Unweighted Count	712	363	
Susan Parkinson	% within Observer	Estimate	78.7%	21.3%	
		Unweighted Count	1068	294	

Observer * Driver Belt Use

Observer			Driver ...
			Total
Monty Byers	% within Observer	Estimate	100.0%
		Unweighted Count	1030
Kayla Schear	% within Observer	Estimate	100.0%
		Unweighted Count	1622
Dawn Edwards	% within Observer	Estimate	100.0%
		Unweighted Count	914
Doug Peterson	% within Observer	Estimate	100.0%
		Unweighted Count	993
Tonya Dove	% within Observer	Estimate	100.0%
		Unweighted Count	1322
Dixie Elder	% within Observer	Estimate	100.0%
		Unweighted Count	625
Deb Eutsler	% within Observer	Estimate	100.0%
		Unweighted Count	684
Brooke Darden	% within Observer	Estimate	100.0%
		Unweighted Count	1075
Susan Parkinson	% within Observer	Estimate	100.0%
		Unweighted Count	1362

Observer * Driver Belt Use

Observer			Driver Belt Use		
			Belted	Not Belted	Unsure
Molly Laidlaw	% within Observer	Estimate	82.2%	17.8%	
		Unweighted Count	813	176	
Lucinda Pope	% within Observer	Estimate	66.2%	33.8%	
		Unweighted Count	874	446	
Kolter Elder	% within Observer	Estimate	74.2%	25.8%	
		Unweighted Count	292	99	
Peggy Dowers	% within Observer	Estimate	89.4%	10.6%	
		Unweighted Count	1956	232	
Kayla Walters	% within Observer	Estimate	69.7%	28.1%	2.2%
		Unweighted Count	1027	412	33
Skyler Elder	% within Observer	Estimate	91.7%	8.3%	
		Unweighted Count	899	80	
Makenzie Valerio	% within Observer	Estimate	77.0%	23.0%	
		Unweighted Count	505	151	
Lori Cole	% within Observer	Estimate	96.8%	3.0%	0.2%
		Unweighted Count	643	20	1
Total	% within Observer	Estimate	76.9%	23.1%	0.0%
		Unweighted Count	14367	3878	41

Observer * Driver Belt Use

Observer			Driver ...
			Total
Molly Laidlaw	% within Observer	Estimate	100.0%
		Unweighted Count	989
Lucinda Pope	% within Observer	Estimate	100.0%
		Unweighted Count	1320
Kolter Elder	% within Observer	Estimate	100.0%
		Unweighted Count	391
Peggy Dowers	% within Observer	Estimate	100.0%
		Unweighted Count	2188
Kayla Walters	% within Observer	Estimate	100.0%
		Unweighted Count	1472
Skyler Elder	% within Observer	Estimate	100.0%
		Unweighted Count	979
Makenzie Valerio	% within Observer	Estimate	100.0%
		Unweighted Count	656
Lori Cole	% within Observer	Estimate	100.0%
		Unweighted Count	664
Total	% within Observer	Estimate	100.0%
		Unweighted Count	18286

Weather * Driver Belt Use

Weather			Driver Belt Use			
			Belted	Not Belted	Unsure	Total
Clear and Sunny	% within Weather	Estimate	77.7%	22.3%	0.0%	100.0%
		Unweighted Count	10113	2834	31	12978
Cloudy	% within Weather	Estimate	70.7%	29.2%	0.1%	100.0%
		Unweighted Count	3071	866	9	3946
Foggy	% within Weather	Estimate	92.5%	7.5%		100.0%
		Unweighted Count	37	3		40
Light Rain	% within Weather	Estimate	80.1%	19.7%	0.1%	100.0%
		Unweighted Count	700	151	1	852
Snow and Ice	% within Weather	Estimate	99.0%	1.0%		100.0%
		Unweighted Count	192	2		194
Heavy Rain	% within Weather	Estimate	94.5%	5.5%		100.0%
		Unweighted Count	203	11		214
Occasional Rain	% within Weather	Estimate	81.8%	18.2%		100.0%
		Unweighted Count	51	11		62
Total	% within Weather	Estimate	76.9%	23.1%	0.0%	100.0%
		Unweighted Count	14367	3878	41	18286

Lanes Observed * Driver Belt Use

Lanes Observed			Driver Belt Use		
			Belted	Not Belted	Unsure
One Lane	% within Lanes Observed	Estimate	72.1%	27.8%	0.0%
		Unweighted Count	8154	2022	13
Two Lanes	% within Lanes Observed	Estimate	79.7%	20.3%	0.0%
		Unweighted Count	6213	1856	28
Total	% within Lanes Observed	Estimate	76.9%	23.1%	0.0%
		Unweighted Count	14367	3878	41

Lanes Observed * Driver Belt Use

Lanes Observed			Driver ...
			Total
One Lane	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	10189
Two Lanes	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	8097
Total	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	18286

Direction of Observation * Driver Belt Use

Direction of Observation			Driver Belt Use			
			Belted	Not Belted	Unsure	Total
North	% within Direction of Observation	Estimate	80.7%	19.2%	0.1%	100.0%
		Unweighted Count	2706	589	19	3314
South	% within Direction of Observation	Estimate	76.4%	23.5%	0.1%	100.0%
		Unweighted Count	2967	782	11	3760
East	% within Direction of Observation	Estimate	76.3%	23.7%	0.0%	100.0%
		Unweighted Count	4309	1343	9	5661
West	% within Direction of Observation	Estimate	74.6%	25.4%	0.0%	100.0%
		Unweighted Count	4385	1164	2	5551
Total	% within Direction of Observation	Estimate	76.9%	23.1%	0.0%	100.0%
		Unweighted Count	14367	3878	41	18286

Driver Gender * Driver Belt Use

Driver Gender			Driver Belt Use			
			Belted	Not Belted	Unsure	Total
Male	% within Driver Gender	Estimate	72.0%	28.0%	0.0%	100.0%
		Unweighted Count	9556	2879	34	12469
Female	% within Driver Gender	Estimate	83.5%	16.5%	0.0%	100.0%
		Unweighted Count	4811	999	7	5817
Total	% within Driver Gender	Estimate	76.9%	23.1%	0.0%	100.0%
		Unweighted Count	14367	3878	41	18286

Vehicle Type * Driver Belt Use

Vehicle Type			Driver Belt Use		
			Belted	Not Belted	Unsure
Auto	% within Vehicle Type	Estimate	75.4%	24.6%	0.0%
		Unweighted Count	3619	849	10
Van	% within Vehicle Type	Estimate	83.4%	16.6%	0.0%
		Unweighted Count	4524	847	7
Sport Utility Vehicle	% within Vehicle Type	Estimate	92.2%	7.8%	
		Unweighted Count	862	153	
Pick Up Truck	% within Vehicle Type	Estimate	70.0%	29.9%	0.0%
		Unweighted Count	5362	2029	24
Total	% within Vehicle Type	Estimate	76.9%	23.1%	0.0%
		Unweighted Count	14367	3878	41

Vehicle Type * Driver Belt Use

Vehicle Type			Driver ...
			Total
Auto	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	4478
Van	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	5378
Sport Utility Vehicle	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	1015
Pick Up Truck	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	7415
Total	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	18286

Wyoming Registration * Driver Belt Use

Wyoming Registration			Driver Belt Use			
			Belted	Not Belted	Unsure	Total
Yes	% within Wyoming Registration	Estimate	75.9%	24.1%	0.0%	100.0%
		Unweighted Count	8412	2802	25	11239
No	% within Wyoming Registration	Estimate	81.1%	18.8%	0.1%	100.0%
		Unweighted Count	5876	1039	16	6931
Unsure	% within Wyoming Registration	Estimate	68.5%	31.5%		100.0%
		Unweighted Count	79	37		116
Total	% within Wyoming Registration	Estimate	76.9%	23.1%	0.0%	100.0%
		Unweighted Count	14367	3878	41	18286

Time of Observation * Driver Belt Use

Time of Observation			Driver Belt Use		
			Belted	Not Belted	Unsure
7:30-9:30 AM	% within Time of Observation	Estimate	68.5%	31.4%	0.1%
		Unweighted Count	2666	741	10
9:30-11:30 AM	% within Time of Observation	Estimate	79.7%	20.3%	0.0%
		Unweighted Count	2588	618	16
11:30 AM-1:30 PM	% within Time of Observation	Estimate	70.6%	29.3%	0.0%
		Unweighted Count	3285	849	4
1:30-3:30 PM	% within Time of Observation	Estimate	72.3%	27.6%	0.0%
		Unweighted Count	2197	597	3
3:30-5:30 PM	% within Time of Observation	Estimate	82.7%	17.2%	0.0%
		Unweighted Count	3631	1072	8
Total	% within Time of Observation	Estimate	76.9%	23.1%	0.0%
		Unweighted Count	14367	3877	41

Time of Observation * Driver Belt Use

Time of Observation			Driver ...
			Total
7:30-9:30 AM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	3417
9:30-11:30 AM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	3222
11:30 AM-1:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	4138
1:30-3:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	2797
3:30-5:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	4711
Total	% within Time of Observation	Estimate	100.0%
		Unweighted Count	18285

Roadway Type * Driver Belt Use

Roadway Type			Driver Belt Use	
			Belted	Not Belted
S1100-Primary Road	% within Roadway Type	Estimate	79.0%	20.7%
		Unweighted Count	4485	1091
S1200-Secondary Road	% within Roadway Type	Estimate	75.1%	24.8%
		Unweighted Count	9200	2568
S1400-Local/Rural Road/City St.	% within Roadway Type	Estimate	77.0%	23.0%
		Unweighted Count	682	219
Total	% within Roadway Type	Estimate	76.9%	23.1%
		Unweighted Count	14367	3878

Roadway Type * Driver Belt Use

Roadway Type			Driver Belt Use	
			Unsure	Total
S1100-Primary Road	% within Roadway Type	Estimate	0.3%	100.0%
		Unweighted Count	22	5598
S1200-Secondary Road	% within Roadway Type	Estimate	0.1%	100.0%
		Unweighted Count	19	11787
S1400-Local/Rural Road/City St.	% within Roadway Type	Estimate		100.0%
		Unweighted Count		901
Total	% within Roadway Type	Estimate	0.0%	100.0%
		Unweighted Count	41	18286

Weekday/Weekend * Driver Belt Use

Weekday/Weekend			Driver Belt Use		
			Belted	Not Belted	Unsure
Weekend	% within	Estimate	80.2%	19.8%	0.0%
	Weekday/Weekend	Unweighted Count	2134	440	5
Weekday	% within	Estimate	75.9%	24.1%	0.0%
	Weekday/Weekend	Unweighted Count	12233	3438	36
Total	% within	Estimate	76.9%	23.1%	0.0%
	Weekday/Weekend	Unweighted Count	14367	3878	41

Weekday/Weekend * Driver Belt Use

Weekday/Weekend			Driver ...
			Total
Weekend	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	2579
Weekday	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	15707
Total	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	18286

Passenger Frequencies

Frequency Table

		County			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Albany	411	6.3	6.3	6.3
	Big Horn	221	3.4	3.4	9.7
	Campbell	390	6.0	6.0	15.6
	Carbon	466	7.1	7.1	22.8
	Converse	390	6.0	6.0	28.7
	Crook	458	7.0	7.0	35.7
	Fremont	349	5.3	5.3	41.1
	Johnson	289	4.4	4.4	45.5
	Laramie	98	1.5	1.5	47.0
	Lincoln	340	5.2	5.2	52.2
	Natrona	155	2.4	2.4	54.6
	Niobrara	361	5.5	5.5	60.1
	Park	358	5.5	5.5	65.6
	Platte	369	5.6	5.6	71.2
	Sheridan	285	4.4	4.4	75.6
	Sweetwater	613	9.4	9.4	85.0
	Teton	982	15.0	15.0	100.0
	Total	6535	100.0	100.0	

		Population Density			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	1211	18.5	18.5	18.5
	Rural	5324	81.5	81.5	100.0
Total		6535	100.0	100.0	

Day of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sunday	580	8.9	8.9	8.9
	Monday	1041	15.9	15.9	24.8
	Tuesday	1136	17.4	17.4	42.2
	Wednesday	1257	19.2	19.2	61.4
	Thursday	725	11.1	11.1	72.5
	Friday	1062	16.3	16.3	88.8
	Saturday	734	11.2	11.2	100.0
	Total	6535	100.0	100.0	

Observer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Monty Byers	411	6.3	6.3	6.3
	Kayla Schear	613	9.4	9.4	15.7
	Dawn Edwards	340	5.2	5.2	20.9
	Doug Peterson	369	5.6	5.6	26.5
	Tonya Dove	358	5.5	5.5	32.0
	Dixie Elder	221	3.4	3.4	35.4
	Deb Eutsler	288	4.4	4.4	39.8
	Brooke Darden	466	7.1	7.1	46.9
	Susan Parkinson	285	4.4	4.4	51.3
	Molly Laidlaw	350	5.4	5.4	56.6
	Lucinda Pope	390	6.0	6.0	62.6
	Kolter Elder	98	1.5	1.5	64.1
	Peggy Dowers	982	15.0	15.0	79.1
	Kayla Walters	390	6.0	6.0	85.1
	Skyler Elder	458	7.0	7.0	92.1
	Makenzie Valerio	155	2.4	2.4	94.5
	Lori Cole	361	5.5	5.5	100.0
	Total	6535	100.0	100.0	

Weather

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clear and Sunny	4455	68.2	68.2	68.2
	Cloudy	1423	21.8	21.8	89.9
	Foggy	30	.5	.5	90.4
	Light Rain	300	4.6	4.6	95.0
	Snow and Ice	164	2.5	2.5	97.5
	Heavy Rain	139	2.1	2.1	99.6
	Occasional Rain	24	.4	.4	100.0
	Total	6535	100.0	100.0	

Lanes Observed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One Lane	3824	58.5	58.5	58.5
	Two Lanes	2711	41.5	41.5	100.0
	Total	6535	100.0	100.0	

Direction of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	North	1115	17.1	17.1	17.1
	South	1283	19.6	19.6	36.7
	East	2036	31.2	31.2	67.9
	West	2101	32.1	32.1	100.0
	Total	6535	100.0	100.0	

Passenger Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	2095	32.1	32.1	32.1
	Female	4440	67.9	67.9	100.0
	Total	6535	100.0	100.0	

Passenger Belt Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Belted	5626	86.1	86.1	86.1
	Not Belted	906	13.9	13.9	100.0
	Unsure	3	.0	.0	100.0
	Total	6535	100.0	100.0	

Vehicle Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Auto	1645	25.2	25.2	25.2
	Van	2263	34.6	34.6	59.8
	Sport Utility Vehicle	477	7.3	7.3	67.1
	Pick Up Truck	2150	32.9	32.9	100.0
	Total	6535	100.0	100.0	

Wyoming Registration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2911	44.5	44.5	44.5
	No	3582	54.8	54.8	99.4
	Unsure	42	.6	.6	100.0
	Total	6535	100.0	100.0	

Time of Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7:30-9:30 AM	1034	15.8	15.8	15.8
	9:30-11:30 AM	1145	17.5	17.5	33.3
	11:30 AM-1:30 PM	1538	23.5	23.5	56.9
	1:30-3:30 PM	1150	17.6	17.6	74.5
	3:30-5:30 PM	1668	25.5	25.5	100.0
	Total	6535	100.0	100.0	

Roadway Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	S1100-Primary Road	2172	33.2	33.2	33.2
	S1200-Secondary Road	4152	63.5	63.5	96.8
	S1400-Local/Rural Rd/City St	211	3.2	3.2	100.0
	Total	6535	100.0	100.0	

Weekday/Weekend

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Weekend	1314	20.1	20.1	20.1
	Weekday	5221	79.9	79.9	100.0
	Total	6535	100.0	100.0	

Passenger Variables

County * Passenger Belt Use

County			Passenger Belt Use			
			Belted	Not Belted	Unsure	Total
Albany	% within County	Estimate	95.0%	5.0%		100.0%
		Unweighted Count	391	20		411
Big Horn	% within County	Estimate	92.3%	7.7%		100.0%
		Unweighted Count	204	17		221
Campbell	% within County	Estimate	71.6%	28.4%		100.0%
		Unweighted Count	278	112		390
Carbon	% within County	Estimate	70.6%	29.4%		100.0%
		Unweighted Count	329	137		466
Converse	% within County	Estimate	86.1%	13.9%		100.0%
		Unweighted Count	336	54		390
Crook	% within County	Estimate	95.4%	4.6%		100.0%
		Unweighted Count	437	21		458
Fremont	% within County	Estimate	87.1%	12.9%		100.0%
		Unweighted Count	304	45		349
Johnson	% within County	Estimate	93.6%	6.4%		100.0%
		Unweighted Count	271	18		289
Laramie	% within County	Estimate	77.9%	22.1%		100.0%
		Unweighted Count	77	21		98
Lincoln	% within County	Estimate	89.7%	9.7%	0.6%	100.0%
		Unweighted Count	305	33	2	340
Natrona	% within County	Estimate	84.5%	15.5%		100.0%
		Unweighted Count	131	24		155
Niobrara	% within County	Estimate	99.4%	0.6%		100.0%
		Unweighted Count	359	2		361
Park	% within County	Estimate	80.2%	19.8%		100.0%
		Unweighted Count	287	71		358
Platte	% within County	Estimate	89.2%	10.8%		100.0%
		Unweighted Count	331	38		369
Sheridan	% within County	Estimate	84.6%	15.4%		100.0%
		Unweighted Count	240	45		285
Sweetwater	% within County	Estimate	65.1%	34.9%		100.0%
		Unweighted Count	398	215		613
Teton	% within County	Estimate	96.5%	3.4%	0.1%	100.0%
		Unweighted Count	948	33	1	982
Total	% within County	Estimate	84.1%	15.9%	0.0%	100.0%
		Unweighted Count	5626	906	3	6535

Population Density * Passenger Belt Use

Population Density			Passenger Belt Use			
			Belted	Not Belted	Unsure	Total
Urban	% within Population Density	Estimate	80.7%	19.3%		100.0%
		Unweighted Count	870	341		1211
Rural	% within Population Density	Estimate	87.8%	12.2%	0.0%	100.0%
		Unweighted Count	4756	565	3	5324
Total	% within Population Density	Estimate	84.1%	15.9%	0.0%	100.0%
		Unweighted Count	5626	906	3	6535

Day of Observation * Passenger Belt Use

Day of Observation			Passenger Belt Use		
			Belted	Not Belted	Unsure
Sunday	% within Day of Observation	Estimate	98.6%	1.4%	
		Unweighted Count	525	55	
Monday	% within Day of Observation	Estimate	77.7%	22.3%	0.0%
		Unweighted Count	876	164	1
Tuesday	% within Day of Observation	Estimate	82.0%	18.0%	
		Unweighted Count	961	175	
Wednesday	% within Day of Observation	Estimate	69.2%	30.7%	0.1%
		Unweighted Count	1127	128	2
Thursday	% within Day of Observation	Estimate	86.4%	13.6%	
		Unweighted Count	605	120	
Friday	% within Day of Observation	Estimate	83.5%	16.5%	
		Unweighted Count	883	179	
Saturday	% within Day of Observation	Estimate	87.4%	12.6%	
		Unweighted Count	649	85	
Total	% within Day of Observation	Estimate	84.1%	15.9%	0.0%
		Unweighted Count	5626	906	3

Day of Observation * Passenger Belt Use

Day of Observation			Passenge...
			Total
Sunday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	580
Monday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	1041
Tuesday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	1136
Wednesday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	1257
Thursday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	725
Friday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	1062
Saturday	% within Day of Observation	Estimate	100.0%
		Unweighted Count	734
Total	% within Day of Observation	Estimate	100.0%
		Unweighted Count	6535

Observer * Passenger Belt Use

Observer			Passenger Belt Use		
			Belted	Not Belted	Unsure
Monty Byers	% within Observer	Estimate	95.0%	5.0%	
		Unweighted Count	391	20	
Kayla Schear	% within Observer	Estimate	65.1%	34.9%	
		Unweighted Count	398	215	
Dawn Edwards	% within Observer	Estimate	89.7%	9.7%	0.6%
		Unweighted Count	305	33	2
Doug Peterson	% within Observer	Estimate	89.2%	10.8%	
		Unweighted Count	331	38	
Tonya Dove	% within Observer	Estimate	80.2%	19.8%	
		Unweighted Count	287	71	
Dixie Elder	% within Observer	Estimate	92.3%	7.7%	
		Unweighted Count	204	17	
Deb Eutsler	% within Observer	Estimate	93.5%	6.5%	
		Unweighted Count	270	18	
Brooke Darden	% within Observer	Estimate	70.6%	29.4%	
		Unweighted Count	329	137	
Susan Parkinson	% within Observer	Estimate	84.6%	15.4%	
		Unweighted Count	240	45	

Observer * Passenger Belt Use

Observer			Passenge...
			Total
Monty Byers	% within Observer	Estimate	100.0%
		Unweighted Count	411
Kayla Schear	% within Observer	Estimate	100.0%
		Unweighted Count	613
Dawn Edwards	% within Observer	Estimate	100.0%
		Unweighted Count	340
Doug Peterson	% within Observer	Estimate	100.0%
		Unweighted Count	369
Tonya Dove	% within Observer	Estimate	100.0%
		Unweighted Count	358
Dixie Elder	% within Observer	Estimate	100.0%
		Unweighted Count	221
Deb Eutsler	% within Observer	Estimate	100.0%
		Unweighted Count	288
Brooke Darden	% within Observer	Estimate	100.0%
		Unweighted Count	466
Susan Parkinson	% within Observer	Estimate	100.0%
		Unweighted Count	285

Observer * Passenger Belt Use

Observer			Passenger Belt Use		
			Belted	Not Belted	Unsure
Molly Laidlaw	% within Observer	Estimate	87.1%	12.9%	
		Unweighted Count	305	45	
Lucinda Pope	% within Observer	Estimate	71.6%	28.4%	
		Unweighted Count	278	112	
Kolter Elder	% within Observer	Estimate	77.9%	22.1%	
		Unweighted Count	77	21	
Peggy Dowers	% within Observer	Estimate	96.5%	3.4%	0.1%
		Unweighted Count	948	33	1
Kayla Walters	% within Observer	Estimate	86.1%	13.9%	
		Unweighted Count	336	54	
Skyler Elder	% within Observer	Estimate	95.4%	4.6%	
		Unweighted Count	437	21	
Makenzie Valerio	% within Observer	Estimate	84.5%	15.5%	
		Unweighted Count	131	24	
Lori Cole	% within Observer	Estimate	99.4%	0.6%	
		Unweighted Count	359	2	
Total	% within Observer	Estimate	84.1%	15.9%	0.0%
		Unweighted Count	5626	906	3

Observer * Passenger Belt Use

Observer			Passenge...
			Total
Molly Laidlaw	% within Observer	Estimate	100.0%
		Unweighted Count	350
Lucinda Pope	% within Observer	Estimate	100.0%
		Unweighted Count	390
Kolter Elder	% within Observer	Estimate	100.0%
		Unweighted Count	98
Peggy Dowers	% within Observer	Estimate	100.0%
		Unweighted Count	982
Kayla Walters	% within Observer	Estimate	100.0%
		Unweighted Count	390
Skyler Elder	% within Observer	Estimate	100.0%
		Unweighted Count	458
Makenzie Valerio	% within Observer	Estimate	100.0%
		Unweighted Count	155
Lori Cole	% within Observer	Estimate	100.0%
		Unweighted Count	361
Total	% within Observer	Estimate	100.0%
		Unweighted Count	6535

Weather * Passenger Belt Use

Weather			Passenger Belt Use			
			Belted	Not Belted	Unsure	Total
Clear and Sunny	% within Weather	Estimate	84.2%	15.8%	0.0%	100.0%
		Unweighted Count	3794	658	3	4455
Cloudy	% within Weather	Estimate	81.3%	18.7%		100.0%
		Unweighted Count	1206	217		1423
Foggy	% within Weather	Estimate	96.7%	3.3%		100.0%
		Unweighted Count	29	1		30
Light Rain	% within Weather	Estimate	90.5%	9.5%		100.0%
		Unweighted Count	274	26		300
Snow and Ice	% within Weather	Estimate	99.4%	0.6%		100.0%
		Unweighted Count	163	1		164
Heavy Rain	% within Weather	Estimate	100.0%			100.0%
		Unweighted Count	139			139
Occasional Rain	% within Weather	Estimate	87.3%	12.7%		100.0%
		Unweighted Count	21	3		24
Total	% within Weather	Estimate	84.1%	15.9%	0.0%	100.0%
		Unweighted Count	5626	906	3	6535

Lanes Observed * Passenger Belt Use

Lanes Observed			Passenger Belt Use		
			Belted	Not Belted	Unsure
One Lane	% within Lanes Observed	Estimate	78.9%	21.0%	0.0%
		Unweighted Count	3344	478	2
Two Lanes	% within Lanes Observed	Estimate	86.6%	13.4%	0.0%
		Unweighted Count	2282	428	1
Total	% within Lanes Observed	Estimate	84.1%	15.9%	0.0%
		Unweighted Count	5626	906	3

Lanes Observed * Passenger Belt Use

Lanes Observed			Passenge...
			Total
One Lane	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	3824
Two Lanes	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	2711
Total	% within Lanes Observed	Estimate	100.0%
		Unweighted Count	6535

Direction of Observation * Passenger Belt Use

Direction of Observation			Passenger Belt Use			
			Belted	Not Belted	Unsure	Total
North	% within Direction of Observation	Estimate	92.2%	7.8%	0.0%	100.0%
		Unweighted Count	1008	106	1	1115
South	% within Direction of Observation	Estimate	81.6%	18.4%		100.0%
		Unweighted Count	1109	174		1283
East	% within Direction of Observation	Estimate	83.1%	16.8%	0.0%	100.0%
		Unweighted Count	1699	335	2	2036
West	% within Direction of Observation	Estimate	80.1%	19.9%		100.0%
		Unweighted Count	1810	291		2101
Total	% within Direction of Observation	Estimate	84.1%	15.9%	0.0%	100.0%
		Unweighted Count	5626	906	3	6535

Passenger Gender * Passenger Belt Use

Passenger Gender			Passenger Belt Use			
			Belted	Not Belted	Unsure	Total
Male	% within Passenger Gender	Estimate	72.5%	27.5%	0.0%	100.0%
		Unweighted Count	1646	447	2	2095
Female	% within Passenger Gender	Estimate	92.2%	7.8%	0.0%	100.0%
		Unweighted Count	3980	459	1	4440
Total	% within Passenger Gender	Estimate	84.1%	15.9%	0.0%	100.0%
		Unweighted Count	5626	906	3	6535

Vehicle Type * Passenger Belt Use

Vehicle Type			Passenger Belt Use		
			Belted	Not Belted	Unsure
Auto	% within Vehicle Type	Estimate	80.8%	19.2%	0.0%
		Unweighted Count	1450	194	1
Van	% within Vehicle Type	Estimate	90.9%	9.1%	
		Unweighted Count	2029	234	
Sport Utility Vehicle	% within Vehicle Type	Estimate	90.2%	9.8%	
		Unweighted Count	433	44	
Pick Up Truck	% within Vehicle Type	Estimate	77.6%	22.4%	0.0%
		Unweighted Count	1714	434	2
Total	% within Vehicle Type	Estimate	84.1%	15.9%	0.0%
		Unweighted Count	5626	906	3

Vehicle Type * Passenger Belt Use

Vehicle Type			Passenge...
			Total
Auto	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	1645
Van	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	2263
Sport Utility Vehicle	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	477
Pick Up Truck	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	2150
Total	% within Vehicle Type	Estimate	100.0%
		Unweighted Count	6535

Wyoming Registration * Passenger Belt Use

Wyoming Registration			Passenger Belt Use			
			Belted	Not Belted	Unsure	Total
Yes	% within Wyoming Registration	Estimate	83.6%	16.4%	0.0%	100.0%
		Unweighted Count	2338	571	2	2911
No	% within Wyoming Registration	Estimate	85.4%	14.6%	0.0%	100.0%
		Unweighted Count	3256	325	1	3582
Unsure	% within Wyoming Registration	Estimate	75.0%	25.0%		100.0%
		Unweighted Count	32	10		42
Total	% within Wyoming Registration	Estimate	84.1%	15.9%	0.0%	100.0%
		Unweighted Count	5626	906	3	6535

Time of Observation * Passenger Belt Use

Time of Observation			Passenger Belt Use		
			Belted	Not Belted	Unsure
7:30-9:30 AM	% within Time of Observation	Estimate	90.3%	9.6%	0.1%
		Unweighted Count	903	129	2
9:30-11:30 AM	% within Time of Observation	Estimate	82.0%	18.0%	
		Unweighted Count	1011	134	
11:30 AM-1:30 PM	% within Time of Observation	Estimate	83.2%	16.8%	
		Unweighted Count	1326	212	
1:30-3:30 PM	% within Time of Observation	Estimate	80.0%	20.0%	0.0%
		Unweighted Count	998	151	1
3:30-5:30 PM	% within Time of Observation	Estimate	90.1%	9.9%	
		Unweighted Count	1388	280	
Total	% within Time of Observation	Estimate	84.1%	15.9%	0.0%
		Unweighted Count	5626	906	3

Time of Observation * Passenger Belt Use

Time of Observation			Passenge...
			Total
7:30-9:30 AM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	1034
9:30-11:30 AM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	1145
11:30 AM-1:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	1538
1:30-3:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	1150
3:30-5:30 PM	% within Time of Observation	Estimate	100.0%
		Unweighted Count	1668
Total	% within Time of Observation	Estimate	100.0%
		Unweighted Count	6535

Roadway Type * Passenger Belt Use

Roadway Type			Passenger Belt Use	
			Belted	Not Belted
S1100-Primary Road	% within Roadway Type	Estimate	84.5%	15.5%
		Unweighted Count	1880	292
S1200-Secondary Road	% within Roadway Type	Estimate	85.4%	14.5%
		Unweighted Count	3575	574
S1400-Local/Rural Rd/City St	% within Roadway Type	Estimate	83.8%	16.2%
		Unweighted Count	171	40
Total	% within Roadway Type	Estimate	84.1%	15.9%
		Unweighted Count	5626	906

Roadway Type * Passenger Belt Use

Roadway Type			Passenger Belt Use	
			Unsure	Total
S1100-Primary Road	% within Roadway Type	Estimate		100.0%
		Unweighted Count		2172
S1200-Secondary Road	% within Roadway Type	Estimate	0.1%	100.0%
		Unweighted Count	3	4152
S1400-Local/Rural Rd/City St	% within Roadway Type	Estimate		100.0%
		Unweighted Count		211
Total	% within Roadway Type	Estimate	0.0%	100.0%
		Unweighted Count	3	6535

Weekday/Weekend * Passenger Belt Use

Weekday/Weekend			Passenger Belt Use		
			Belted	Not Belted	Unsure
Weekend	% within	Estimate	97.1%	2.9%	
	Weekday/Weekend	Unweighted Count	1174	140	
Weekday	% within	Estimate	80.2%	19.7%	0.0%
	Weekday/Weekend	Unweighted Count	4452	766	3
Total	% within	Estimate	84.1%	15.9%	0.0%
	Weekday/Weekend	Unweighted Count	5626	906	3

Weekday/Weekend * Passenger Belt Use

Weekday/Weekend			Passenge...
			Total
Weekend	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	1314
Weekday	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	5221
Total	% within	Estimate	100.0%
	Weekday/Weekend	Unweighted Count	6535

Appendix E: Observer Field Test Ratings

Field Test Scores by Observer

Observer Written Exam & Field Observations

	Written	Practice	1	2	3	Field Average
Monty Byers	100.00%	98.78%	98.34%	98.81%	81.90%	94.46%
Lori Cole	100.00%	89.01%	98.32%	81.71%	83.20%	88.06%
Brooke Darden	100.00%	94.81%	86.05%	97.95%	83.20%	90.50%
Tonya Dove	95.00%	89.25%	96.72%	94.94%	90.00%	92.73%
Peggy Dowers	100.00%	86.87%	85.83%	98.81%	96.48%	92.00%
Dawn Edwards	100.00%	95.98%	88.57%	88.31%	86.67%	89.88%
Dixie Elder	100.00%	98.90%	100.00%	76.70%	96.55%	93.04%
Kolter Elder	100.00%	100.00%	99.33%	96.70%	98.68%	98.68%
Skyler Elder	100.00%	87.00%	96.91%	86.15%	82.02%	88.02%
Deb Eutsler	85.00%	97.98%	89.26%	93.89%	84.62%	91.44%
Molly Laidlaw	100.00%	97.96%	91.72%	93.18%	98.70%	95.39%
Chrissy Lira	90.00%	99.00%	96.77%	96.70%	94.67%	96.79%
Susan Parkinson	95.00%	95.00%	97.09%	93.71%	81.90%	91.93%
Doug Peterson	95.00%	93.94%	88.57%	82.04%	96.43%	90.25%
Vicky Peterson	100.00%	97.94%	91.82%	90.42%	81.30%	90.37%
Lucinda Pope	100.00%	95.12%	81.20%	93.06%	90.55%	89.98%
Kayla Schear	100.00%	100.00%	88.97%	87.57%	98.41%	93.74%
Makenzie Valerio	100.00%	94.00%	99.33%	95.24%	98.41%	96.75%
Kayla Walters	100.00%	94.81%	87.27%	90.31%	94.72%	91.78%
Bridget White	95.00%	98.00%	100.00%	97.98%	96.55%	98.13%
Average	97.75%	95.22%	93.10%	91.71%	90.75%	92.69%

Appendix F: SBU Unknown Rate

Seat Belt Survey Unknown Rates

County	County Code	Unknown Driv+Pass	Total Obsv. Driv+Pass	County Rate
Albany	1	0	1441	0.000000
Big Horn	3	0	846	0.000000
Campbell	5	0	1710	0.000000
Carbon	7	0	1541	0.000000
Converse	9	33	1862	0.017723
Crook	11	0	1437	0.000000
Fremont	13	0	1335	0.000000
Johnson	19	0	976	0.000000
Laramie	21	0	489	0.000000
Lincoln	23	7	1252	0.005591
Natrona	25	0	811	0.000000
Niobrara	27	1	1025	0.000976
Park	29	2	1680	0.001190
Platte	31	0	1362	0.000000
Sheridan	33	0	1647	0.000000
Sweetwater	37	0	2235	0.000000
Teton	39	1	3169	0.000316
State		44	24818	0.001773

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: 0.1773 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	Original	6/7/2019	0.00165086	155	70	207	18	0
604506604	Original	6/7/2019	0.00165086	181	50	191	40	0
604518733	Original	6/4/2019	0.00165086	150	80	209	21	0
618090887	Original	6/6/2019	0.00165086	265	85	320	30	0
168721954	Original	6/3/2019	0.00536996	2	1	3	0	0
168724202	Original	6/9/2019	0.00536996	13	7	18	2	0
168736409	Original	6/4/2019	0.00536996	1	1	2	0	0
168736812	Original	6/5/2019	0.00536996	5	2	6	1	0
168736818	Original	6/5/2019	0.00536996	2	1	2	1	0
168739458	Original	6/6/2019	0.00536996	0	0	0	0	0
168744758	Original	6/7/2019	0.00536996	25	12	33	4	0
168755794	Original	6/4/2019	0.00536996	1	0	0	1	0
168756946	Original	6/6/2019	0.00536996	52	21	59	14	0
168759492	Original	6/6/2019	0.00536996	39	11	46	4	0
604505737	Original	6/8/2019	0.00536996	56	35	79	12	0
604508028	Original	6/8/2019	0.00536996	65	27	73	19	0
639960821	Original	6/3/2019	0.00536996	18	8	21	5	0
180485518	Original	6/5/2019	0.00675	48	14	57	5	0
180488087	Original	6/4/2019	0.00675	13	7	20	0	0
180490194	Original	6/3/2019	0.00675	40	13	47	6	0
180496628	Original	6/5/2019	0.00675	66	20	62	24	0
180498297	Original	6/5/2019	0.00675	20	10	26	4	0
180499677	Original	6/8/2019	0.00675	33	17	44	6	0
180499711	Original	6/7/2019	0.00675	9	3	12	0	0
180499713	Original	6/7/2019	0.00675	38	15	49	4	0
180500800	Original	6/9/2019	0.00675	39	24	61	2	0
180502805	Original	6/4/2019	0.00675	99	21	91	29	0
605615639	Original	6/3/2019	0.00675	24	7	30	1	0
605622874	Original	6/4/2019	0.00675	9	3	11	1	0
605628846	Original	6/3/2019	0.00675	52	21	61	12	0
605634311	Original	6/8/2019	0.00675	4	2	4	2	0
605635819	Original	6/3/2019	0.00675	55	17	66	6	0
629140276	Original	6/6/2019	0.00675	43	18	57	4	0
640075189	Alternate	6/5/2019	0.00675	33	9	33	9	0
146322365	Original	6/3/2019	0.00122368	126	77	138	65	0

607412531	Original	6/3/2019	0.00122368	99	20	77	42	0
635167239	Original	6/5/2019	0.00122368	154	64	168	50	0
146318474	Original	6/8/2019	0.00570204	7	0	6	1	0
146328862	Original	6/3/2019	0.00570204	35	13	36	12	0
146332262	Original	6/4/2019	0.00570204	69	15	65	19	0
146339526	Original	6/7/2019	0.00570204	32	12	29	15	0
146342003	Original	6/6/2019	0.00570204	9	4	10	3	0
146343481	Original	6/7/2019	0.00570204	58	12	49	21	0
146347374	Original	6/9/2019	0.00570204	4	3	6	1	0
146350863	Alternate	6/5/2019	0.00570204	189	29	137	81	0
146351033	Original	6/4/2019	0.00570204	247	68	159	156	0
146353423	Original	6/5/2019	0.00570204	93	19	79	33	0
607412366	Original	6/6/2019	0.00570204	22	12	24	10	0
624031392	Original	6/8/2019	0.00570204	13	5	14	4	0
633856780	Original	6/4/2019	0.00570204	94	22	90	26	0
637303141	Original	6/4/2019	0.00570204	69	15	65	19	0
611196911	Original	6/9/2019	0.0012506	155	63	156	62	0
611197521	Original	6/6/2019	0.0012506	162	80	168	74	0
611197813	Original	6/6/2019	0.0012506	88	41	90	39	0
611197839	Original	6/5/2019	0.0012506	133	63	133	63	0
148697142	Original	6/7/2019	0.00406333	101	37	100	38	0
148703998	Original	6/6/2019	0.00406333	24	9	20	13	0
148709091	Original	6/5/2019	0.00406333	35	13	37	11	0
148715351	Original	6/4/2019	0.00406333	19	6	23	2	0
148715791	Original	6/3/2019	0.00406333	19	7	19	7	0
148729069	Original	6/9/2019	0.00406333	90	39	68	61	0
148729548	Alternate	6/7/2019	0.00406333	118	50	99	69	0
610950022	Original	6/4/2019	0.00406333	13	8	20	1	0
622138132	Original	6/8/2019	0.00406333	67	32	63	36	0
622152589	Original	6/8/2019	0.00406333	12	6	12	6	0
634320706	Original	6/5/2019	0.00406333	30	12	29	13	0
636227437	Original	6/3/2019	0.00406333	7	0	3	4	0
638995814	Original	6/3/2019	0.00406333	2	0	1	1	0
146991744	Original	6/4/2019	0.00232162	148	40	154	31	3
147011297	Original	6/5/2019	0.00232162	167	46	178	25	10
606576236	Original	6/3/2019	0.00232162	184	54	150	84	4
638018831	Original	6/5/2019	0.00232162	186	64	204	44	2
639999220	Original	6/8/2019	0.00232162	166	49	174	38	3
146973757	Original	6/4/2019	0.00558606	50	13	45	18	0
146990064	Original	6/5/2019	0.00558606	73	21	78	15	1
146992776	Original	6/3/2019	0.00558606	32	10	30	12	0
146999066	Original	6/9/2019	0.00558606	5	0	2	1	2
147014316	Original	6/9/2019	0.00558606	19	8	19	8	0
147015716	Original	6/7/2019	0.00558606	102	26	73	53	2

606568024	Original	6/7/2019	0.00558606	59	14	62	10	1
606572349	Original	6/6/2019	0.00558606	127	20	85	61	1
606573014	Original	6/6/2019	0.00558606	101	11	66	42	4
635660664	Original	6/8/2019	0.00558606	5	4	6	3	0
635660675	Original	6/7/2019	0.00558606	7	1	3	5	0
638996176	Original	6/4/2019	0.00558606	41	9	34	16	0
147162757	Original	6/7/2019	0.00220613	101	52	147	6	0
610821880	Original	6/5/2019	0.00220613	96	36	127	5	0
610821966	Original	6/5/2019	0.00220613	130	62	183	9	0
610822060	Original	6/5/2019	0.00220613	122	57	165	14	0
634779349	Original	6/7/2019	0.00220613	89	33	116	6	0
147156838	Original	6/9/2019	0.00527425	53	44	90	7	0
147158424	Original	6/6/2019	0.00527425	46	32	73	5	0
147159706	Original	6/9/2019	0.00527425	20	15	35	0	0
147159927	Original	6/8/2019	0.00527425	13	6	19	0	0
147160775	Original	6/8/2019	0.00527425	30	9	33	6	0
147172557	Original	6/3/2019	0.00527425	83	17	76	24	0
147177000	Original	6/4/2019	0.00527425	45	33	77	1	0
610822469	Original	6/6/2019	0.00527425	42	11	46	7	0
610824002	Original	6/3/2019	0.00527425	20	8	24	4	0
610824055	Original	6/3/2019	0.00527425	37	13	44	6	0
610824506	Original	6/4/2019	0.00527425	18	10	28	0	0
636266007	Original	6/4/2019	0.00527425	34	20	53	1	0
148431519	Original	6/8/2019	0.00525	67	31	79	19	0
148433356	Original	6/5/2019	0.00525	66	15	70	11	0
148434220	Original	6/5/2019	0.00525	9	1	7	3	0
148436040	Original	6/7/2019	0.00525	79	9	79	9	0
148444989	Original	6/8/2019	0.00525	58	43	95	6	0
148448765	Original	6/4/2019	0.00525	61	19	77	3	0
148470147	Original	6/4/2019	0.00525	48	10	56	2	0
148470268	Alternate	6/3/2019	0.00525	12	5	15	2	0
148472074	Original	6/4/2019	0.00525	14	6	18	2	0
148472781	Original	6/3/2019	0.00525	36	10	41	5	0
148483099	Original	6/3/2019	0.00525	36	17	45	8	0
628693352	Original	6/6/2019	0.00525	62	15	72	5	0
633721362	Original	6/7/2019	0.00525	228	60	187	101	0
635524645	Original	6/9/2019	0.00525	48	36	84	0	0
638997913	Original	6/6/2019	0.00525	83	40	110	13	0
639777342	Original	6/8/2019	0.00525	79	32	80	31	0
641181426	Original	6/9/2019	0.00525	0	0	0	0	0
147299629	Original	6/7/2019	0.002652	51	7	36	22	0
147364555	Original	6/3/2019	0.002652	90	34	119	5	0
147364574	Original	6/4/2019	0.002652	72	37	102	7	0
147364598	Original	6/3/2019	0.002652	80	33	108	5	0

147364618	Original	6/5/2019	0.002652	52	11	62	1	0
635199539	Original	6/6/2019	0.002652	96	50	130	16	0
635832919	Original	6/9/2019	0.002652	82	41	113	10	0
641441511	Original	6/5/2019	0.002652	44	14	47	11	0
147304101	Original	6/7/2019	0.0029853	3	1	3	1	0
147307397	Original	6/4/2019	0.0029853	16	4	6	14	0
147307449	Original	6/4/2019	0.0029853	16	4	6	0	0
147318882	Original	6/4/2019	0.0029853	0	0	0	14	0
147326253	Original	6/8/2019	0.0029853	40	30	66	4	0
147326365	Original	6/8/2019	0.0029853	19	10	24	5	0
147328662	Original	6/6/2019	0.0029853	1	1	2	0	0
147375707	Original	6/5/2019	0.0029853	1	0	1	0	0
635127767	Original	6/9/2019	0.0029853	24	12	34	2	0
606515802	Original	6/6/2019	0.00003458	88	33	99	22	0
160144721	Original	6/5/2019	0.00003325	29	5	28	6	0
160143525	Original	6/4/2019	0.00053826	4	1	4	1	0
160145523	Original	6/5/2019	0.00053826	6	0	4	2	0
160147391	Original	6/3/2019	0.00053826	0	0	0	0	0
160149538	Original	6/6/2019	0.00053826	6	0	3	3	0
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160158469	Original	6/8/2019	0.00053826	1	1	2	0	0
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160167119	Original	6/4/2019	0.00053826	13	4	14	3	0
160169067	Original	6/8/2019	0.00053826	4	1	4	1	0
604943907	Original	6/3/2019	0.00053826	35	6	29	12	0
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624678718	Original	6/6/2019	0.00053826	8	1	3	6	0
641616454	Original	6/3/2019	0.00053826	3	0	2	1	0
130301448	Original	6/7/2019	0.00595	35	13	36	11	1
130306325	Original	6/7/2019	0.00595	17	7	20	4	0
130309542	Original	6/9/2019	0.00595	33	16	46	3	0
130310021	Original	6/8/2019	0.00595	19	13	19	13	0
130314658	Original	6/9/2019	0.00595	11	7	18	0	0
130315195	Original	6/4/2019	0.00595	27	11	35	3	0
130320929	Original	6/8/2019	0.00595	18	15	33	0	0
130326826	Original	6/4/2019	0.00595	94	23	107	10	0
611004677	Original	6/6/2019	0.00595	9	2	6	4	1
611005970	Original	6/4/2019	0.00595	82	18	92	8	0
611009251	Original	6/3/2019	0.00595	138	44	167	15	0
611012866	Original	6/6/2019	0.00595	42	21	57	6	0
619637622	Original	6/5/2019	0.00595	27	7	27	7	0
621121926	Original	6/5/2019	0.00595	122	45	143	23	1

625338589	Original	6/8/2019	0.00595	14	9	23	0	0
626692093	Original	6/3/2019	0.00595	121	46	149	15	3
635537076	Original	6/3/2019	0.00595	105	43	134	13	1
607714377	Original	6/7/2019	2.245E-06	29	4	25	8	0
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149002674	Original	6/9/2019	0.00004725	136	37	154	19	0
149003362	Original	6/9/2019	0.00004725	4	0	2	2	0
149005355	Original	6/9/2019	0.00004725	0	0	0	0	0
149011913	Original	6/3/2019	0.00004725	63	15	62	16	0
149022917	Original	6/7/2019	0.00004725	41	10	39	12	0
149023334	Original	6/6/2019	0.00004725	2	0	2	0	0
149027199	Original	6/8/2019	0.00004725	4	0	2	2	0
607713464	Original	6/4/2019	0.00004725	3	0	1	2	0
607730056	Original	6/7/2019	0.00004725	213	44	207	50	0
607752291	Original	6/3/2019	0.00004725	98	38	102	34	0
607765363	Original	6/8/2019	0.00004725	24	1	15	10	0
617964312	Original	6/6/2019	0.00004725	23	1	15	9	0
633093763	Original	6/5/2019	0.00004725	7	4	5	6	0
639002442	Original	6/4/2019	0.00004725	4	0	3	1	0
640696510	Original	6/6/2019	0.00004725	4	1	2	3	0
160334094	Original	6/7/2019	0.01715	7	1	5	3	0
160336972	Original	6/8/2019	0.01715	67	45	111	1	0
160337605	Original	6/9/2019	0.01715	128	74	202	0	0
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160347161	Original	6/3/2019	0.01715	27	8	32	2	1
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160348895	Original	6/6/2019	0.01715	7	3	9	1	0
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160353063	Original	6/7/2019	0.01715	12	4	10	6	0
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607027600	Original	6/8/2019	0.01715	2	1	2	1	0
607028034	Original	6/8/2019	0.01715	19	8	25	2	0
607029627	Original	6/4/2019	0.01715	25	11	35	1	0
629141429	Original	6/5/2019	0.01715	79	38	116	1	0
149193090	Original	6/6/2019	0.00545	121	31	102	50	
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149211215	Alternate	6/9/2019	0.00545	38	22	57	3	0
149216185	Original	6/4/2019	0.00545	112	25	99	38	0
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611870412	Original	6/3/2019	0.00545	12	1	12	1	0
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612517261	Original	6/3/2019	0.00545	55	13	59	9	0
612522792	Original	6/8/2019	0.00545	0	0	0	0	0
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612523506	Original	6/9/2019	0.00545	17	4	13	8	0
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614771184	Original	6/4/2019	0.00545	298	66	237	127	0
160436335	Original	6/4/2019	0.00266697	83	28	98	13	0
604830837	Original	6/3/2019	0.00266697	155	41	175	21	0
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635826409	Original	6/8/2019	0.00266697	149	73	214	8	0
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604821382	Original	6/7/2019	0.00488151	73	16	57	32	0
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635549382	Original	6/4/2019	0.00488151	4	1	2	3	0
638522178	Original	6/6/2019	0.00488151	49	20	47	22	0
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639689837	Original	6/5/2019	0.0006118	132	56	172	16	0
147401116	Original	6/3/2019	0.00455175	15	2	16	1	0
147403821	Original	6/7/2019	0.00455175	196	44	159	81	0
147404413	Original	6/6/2019	0.00455175	140	37	144	33	0
147410535	Original	6/4/2019	0.00455175	3	2	3	2	0
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147413279	Original	6/6/2019	0.00455175	239	30	211	58	0
147419984	Original	6/3/2019	0.00455175	18	3	18	3	0
605374149	Original	6/5/2019	0.00455175	221	31	186	66	0
605388659	Original	6/9/2019	0.00455175	14	9	23	0	0
605396189	Original	6/8/2019	0.00455175	7	4	10	1	0
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618572901	Original	6/8/2019	0.00455175	22	1	18	5	0
629142524	Original	6/5/2019	0.00455175	25	6	25	6	0
637972373	Original	6/7/2019	0.00455175	88	26	83	31	0
638535884	Original	6/4/2019	0.00455175	9	1	10	0	0

618327492	Original	6/3/2019	0.001504	283	109	252	140	0
618328108	Original	6/4/2019	0.001504	111	56	105	62	0
634704011	Original	6/8/2019	0.001504	206	85	197	94	0
637926770	Original	6/4/2019	0.001504	100	42	90	52	0
641460901	Original	6/4/2019	0.001504	136	69	158	47	0
149462214	Original	6/9/2019	0.003604	22	16	24	14	0
149462365	Original	6/9/2019	0.003604	36	25	37	24	0
149462690	Original	6/8/2019	0.003604	12	9	10	11	0
149475167	Original	6/5/2019	0.003604	33	17	36	14	0
149475533	Original	6/5/2019	0.003604	30	8	32	6	0
149498901	Original	6/6/2019	0.003604	10	2	11	1	0
149503682	Original	6/3/2019	0.003604	133	42	91	84	0
612218179	Original	6/3/2019	0.003604	79	9	37	51	0
618324746	Original	6/7/2019	0.003604	24	2	18	8	0
618324787	Original	6/7/2019	0.003604	79	19	60	38	0
618325371	Original	6/7/2019	0.003604	315	99	247	167	0
636258685	Original	6/6/2019	0.003604	13	4	9	8	0
130412723	Original	6/5/2019	0.0138	101	42	138	5	0
130415393	Original	6/8/2019	0.0138	120	101	219	2	0
130422037	Original	6/6/2019	0.0138	191	69	235	25	0
130422578	Original	6/4/2019	0.0138	104	54	141	17	0
130427569	Original	6/4/2019	0.0138	330	110	398	42	0
130435783	Original	6/5/2019	0.0138	289	95	327	57	0
130437592	Original	6/3/2019	0.0138	41	30	69	2	0
130437880	Original	6/3/2019	0.0138	66	26	88	4	0
130438888	Original	6/7/2019	0.0138	134	106	234	6	0
130441420	Original	6/7/2019	0.0138	70	42	107	5	0
130450400	Original	6/6/2019	0.0138	46	28	73	1	0
130450450	Original	6/7/2019	0.0138	69	49	114	4	0
235938924	Original	6/9/2019	0.0138	0	0	0	0	0
235940231	Original	6/8/2019	0.0138	68	60	127	1	0
618913726	Original	6/4/2019	0.0138	175	41	173	43	0
635879991	Original	6/9/2019	0.0138	0	0	0	0	0
637241907	Original	6/5/2019	0.0138	384	129	461	51	1
Total				18286	6535	19993	4784	44

Standard Error of Statewide Belt Use Rate³: 0.3 percent

Nonresponse Rate as provided in §1340.9 (f)

Nonresponse rate for the survey variable seat belt use: 0.1773 percent

¹Identify if the observation site is an original observation site or an alternate observation site.

²Occupants refer to both drivers and passengers

³The standard error may not exceed 2.5 percent


```

GET DATA /TYPE=XLSX
  /FILE='N:\495-WYDOT Seat Belt Survey\Wyoming SBU 2019\Excel Data Files\Drivers.xlsx'
  /SHEET=name 'Drivers'
  /CELLRANGE=full
  /READNAMES=on
  /ASSUMEDSTRWIDTH=32767.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.

SAVE OUTFILE='N:\495-WYDOT Seat Belt Survey\Wyoming SBU 2019\SPSS Data Files\Drivers Wy 2019.sa'
  /COMPRESSED.
GET
  FILE='N:\495-WYDOT Seat Belt Survey\Wyoming SBU 2019\SPSS Data Files\Occupants Wy 2019.sav',
DATASET NAME DataSet2 WINDOW=FRONT.
DISPLAY DICTIONARY.

```

File Information: Codebook for Wyoming Vehicle Occupants, 2019 SBU Data

Notes

Output Created	23-JUL-2019 14:06:21	
Comments		
Input	Data	N:\495-WYDOT Seat Belt Survey\Wyoming SBU 2019\SPSS Data Files\Occupants Wy 2019.sav
	Active Dataset	DataSet2
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax	DISPLAY DICTIONARY.	
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

[DataSet2] N:\495-WYDOT Seat Belt Survey\Wyoming SBU 2019\SPSS Data Files\Occupants Wy 2019.sav

Variable Information

Variable	Position	Label	Measurement Level	Role	Column Width	Alignment
InclProbOfRoadType	1	InclProbOfRoadType	Scale	Input	12	Right
TLID	2	TLID	Scale	Input	12	Right
SRSWOR	3	SRSWOR	Scale	Input	12	Right
County	4	County	Nominal	Input	12	Right
Site#	5	Site #	Nominal	Input	12	Right
Population	6	Population Density	Nominal	Input	12	Right
Roadway	7	Roadway	Scale	Input	12	Right
weight	8	Sample Weight	Scale	Input	12	Right
day	9	Day of Observation	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	Direction of Observation	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	Wyoming Registration	Nominal	Input	12	Right
timeStamp	18	Time of Observation	Nominal	Input	12	Right
Roadway2	19	Roadway Type	Nominal	Input	10	Right
SRSWORinvert	20	SRSWORinvert	Scale	Input	14	Right
Weekend	21	Weekday/Weekend	Nominal	Input	10	Right

Variable Information

Variable	Print Format	Write Format	Missing Values
InclProbOfRoadType	F12.4	F12.4	
TLID	F12	F12	
SRSWOR	F12.4	F12.4	
County	F12	F12	99
Site#	F12	F12	
Population	F12	F12	
Roadway	F12	F12	
weight	F12.4	F12.4	
day	F12	F12	9
observer	F12	F12	99
weather	F12	F12	9
lanes	F12	F12	9
direction	F12	F12	9
occupGender	F12	F12	9
occupBelt	F12	F12	9
carType	F12	F12	9
wyPlate	F12	F12	
timeStamp	F12	F12	
Roadway2	F8	F8	
SRSWORinvert	F8.4	F8.4	
Weekend	F8	F8	9

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-Local/Rural Rd/City St	
day	1	Sunday	
	2	Monday	
	3	Tuesday	
	4	Wednesday	
	5	Thursday	
	6	Friday	
	7	Saturday	
observer	7	Bridget White	
	14	Vicky Peterson	
	23	Monty Byers	
	35	Kayla Shear	
	42	Dawn Edwards	

Variable Values

Value		Label
	44	Doug Peterson
	46	Tonya Dove
	47	Dixie Elder
	48	Deb Eutsler
	50	Brooke Darden
	51	Susan Parkinson
	56	Molly Laidlaw
	58	Lucinda Pope
	60	Kolter Elder
	62	Peggy Dowers
	65	Kayla Walters
	67	Skyler Elder
	68	Makenzie Valerio
weather	69	Lori Cole
	1	Clear and Sunny
	2	Cloudy
	3	Foggy
	4	Light Rain
	5	Snow and Ice
	6	Heavy Rain
	7	Occasional Rain
lanes	1	One Lane
	2	Two Lanes
direction	1	North
	2	South
	3	East
	4	West
occupGender	1	Male
	2	Female
	3	Unsure
occupBelt	1	Belted
	2	Not Belted
	3	Unsure
carType	1	Auto
	2	Van

Variable Values

Value	Label
	3 Sport Utility Vehicle
	4 Pick Up Truck
wyPlate	1 Yes
	2 No
	9 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
Roadway2	11 S1100-Primary Road
	12 S1200-Secondary Road
	14 S1400-Local/Rural Rd/City St
Weekend	1 Weekend
	2 Weekday



Report prepared by:

