# SEAT BELT USE IN SOUTH DAKOTA

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**Disclaimer**

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# EXECUTIVE SUMMARY

South Dakota's seat belt use study provides statistically reliable data from which generalizations, comparative analyses, and recommendations can be developed based on a field survey of driver and right front-seat passenger seat belt use. This National Occupant Protection Use Survey (NOPUS) is based on national standards for survey design and field observation protocol. It provides the South Dakota Department of Public Safety (SDDPS) with a systematic evaluation of seat belt use rates within the state. The National Highway Traffic Safety Administration (NHTSA) funds NOPUS through the SDDPS's Office of Highway Safety.

In April 2011, NHTSA issued new uniform criteria for the state observational survey of seat belt use in an effort to improve the survey's representativeness. One of the primary changes NHTSA implemented was to focus county selection using crash-related fatalities data, as reported by the Fatality Analysis Reporting System (FARS), instead of the population-based exclusion criterion previously used. The revised criteria, implemented for the 2012 survey and outlined in the Federal Register, Vol. 76 No. 63, resulted in substantial changes to the county selection, sites, road type classifications, and weighting procedures.

The federal rule directs states to update sampling frame data every five years to ensure accurate fatality distribution and a representative inventory of road segments. Accordingly, in 2017 a review of fatalities over the five-year period 2010 to 2014 was performed, resulting in changes in county involvement and a complete reselection of sites.

To choose the survey counties, all 66 counties in South Dakota were listed in descending order based on the average number of motor vehicle crash-related fatalities from 2010 to 2014. The top 38 counties accounted for at least 85% of the state's total crash-related fatalities. These 38 counties were then stratified by region based on statistical differences in seat belt use observed in prior surveys among counties in the western and eastern parts of the state. Therefore, the 38 counties in the sampling frame were stratified according to geographical region with 18 counties in the west and 20 counties in the east. Eight counties were selected from each region using probability proportional to size (PPS) sampling with vehicle miles traveled (VMT) as the measure of size (MOS).

Road segments within each county were then stratified by the MAF/TIGER Feature Class Code (MTFCC) road type and sorted by segment length. A systematic random sample of 20 road segments was selected within each county using PPS sampling with road segment length as the MOS. This represents the second stage of sample selection. This process resulted in the selection of 320 road segments (16 counties with 20 sites per county). Additional sites were also selected for use as alternate sites.

During the week of June –8-14, 2020, trained observers visited each site in their assigned counties to survey seat belt use for drivers and right front-seat passengers in vehicles with a gross vehicle weight up to 10,000 lbs.

For the 2020 statewide survey, observers recorded seat belt use for 18,614 drivers and 5,297 right front-seat passengers, for a total of 23,911 vehicle occupants. The unweighted estimates of seat belt use were 79.5% for drivers, 86.2% for passengers, and 80.97% overall. Adjusting the raw state rate for the survey design and weights resulted in an overall weighted state rate of 68.2% which is the generalizable seat belt use rate for the state. This compares to a weighted rate of 75.2% in 2019. Rates by strata such as gender, vehicle type, region, roadway, and population density are unweighted due to the sample design.

Male occupants were less likely to wear seatbelts than females with overall rates of 75.9% and 87.8%, respectively. When considering occupant position, more drivers, 66.9%, were male. Restraint use for male drivers was 76.0%, compared with female drivers at 88.1%. Passengers, on the other hand, were more likely to be female, at 69.7%. The observed seat belt use for female passengers was 90.7%, compared with 75.1% for male passengers.

Overall seat belt use rates by vehicle type ranged from 75.0% to 92.8%. The trend toward higher female seat belt use rates held for each vehicle type as well; female use ranged from 85.5% to 92.8% over the four vehicle types, while male use ranged from 75.0% to 87.6%. Rates by region indicated occupants in the east were more likely to buckle up (85.6%) than those in the west (76.5%).

Seat belt use was highest on primary roads, 91.2%, followed by secondary roads, 75.6%, and local roads, 66.6%. Rates by road type also showed higher restraint use for more road classes in the east region than the west region. When separating survey counties into metropolitan statistical areas (MSAs) and non-MSAs, higher use on primary roads was found in non-MSA counties compared with MSAs, 91.5% and 84.1%, respectively. This was true on secondary roads, as well, where higher use was demonstrated in non-MSA counties (75.7%) compared with MSAs (73.3%). Local roads were only selected in MSA counties according to survey methodology, and restraint use was 66.6%. There was substantial variation, not only between the different county designations, but also within regions and road classifications.

South Dakota's weighted seat belt rate of 68.3% falls below the most recent seat belt results published in 2019 by NHTSA of 90.7% nationally. The gap is slightly less disparate when compared to states with similar seat belt laws (secondary) where NHTSA reports restraint use of 86.2% (2019). Overall, the findings in the 2020 South Dakota statewide survey shows a decrease in restraint use compared to the findings of previous surveys.

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# INTRODUCTION

The Upper Great Plains Transportation Institute (UGPTI), a research, education, and outreach center at North Dakota State University (NDSU) was contracted by the South Dakota Department of Public Safety (SDDPS) to conduct a field survey of seat belt use in 2020. The study replicates the sampling methodology previously revised and approved by the NHTSA and the SDDPS for the 2012 survey. That methodology was a redesign of an earlier method to yield a more statistically robust estimate of seat belt use on all roadways in South Dakota. In 2017, survey researchers implemented a NHTSA-mandated review of state crash-related fatalities that resulted in modifications to county inclusion and selection, and a complete reselection of observation sites. This reselection is certified for five years. Requirements for conducting statewide seat belt surveys are published in the Federal Register, Vol. 76 No. 63, April 1, 2011, Rules and Regulations, pp. 18042 – 18059.

# OBJECTIVE

The objective of this study was to estimate the statewide rate of seat belt use of drivers and right front-seat passengers in the state of South Dakota.

Additional analyses estimated seat belt use rates in the following categories:

- Occupant position (driver, passenger)
- Gender (male, female)
- Type of vehicle (car, van, sport utility vehicle, truck)
- Region of state (east, west)
- Roadway type (primary, secondary, local)
- Population density/economic activity (MSA, non-MSA)

A description of the tasks involved in conducting the statewide seat belt survey is provided in this report. It includes general information about the methods and protocols. Table 1 summarizes the 2020 survey. Survey sample design methods were employed to ensure that the results were representative of the behavior statewide. One exception to this was that local roads were only sampled in MSA counties per NHTSA protocol.

**Table 1: Summary of the Seat Belt Use Survey**

| | |
|---|---|
| **Methodology** | Multistage Stratified Cluster Design with Probability Proportional to Size Sampling |
| **Source of Samples** | NHTSA supplied FARS, VMT, and road segment data |
| **Geographic Coverage** | State of South Dakota |
| **Identified Regions** | East<br>West |
| **Selected Counties** | East Region:<br>Aurora, Bon Homme, Day, Hamlin, Lincoln, Minnehaha, Moody, Spink<br>West Region:<br>Harding, Jones, Lawrence, Lyman, Meade, Oglala Lakota, Pennington, Ziebach |
| **Number of Sites** | 320 |
| **Survey Period** | June 8-14, 2020 |
| **Observation Duration Per Site** | 60 minutes |
| **Sample Size** | 23,911 vehicle occupants (includes all vehicles where either the driver or passenger or both had a known protection status) |

# METHODOLOGY

Uniform criteria published in 2011 guided the development of methodology used for seat belt surveys in South Dakota from 2012 through 2016. This methodology changed the focus for county sampling from a population-based criterion to a traffic-crash-related fatality criterion. The federal criteria mandated a reselection of observation sites at five-year intervals. This reselection requirement was carried out in 2017 without further modifications to the survey design. A comprehensive explanation of survey methodology is found in Appendix A.

## Standard Error and Confidence Intervals

The standard error of the state seat belt use rate measures the amount of random sampling error in the survey results. The smaller the standard error, the more accurate the seat belt use rate when compared with the true, but unknown, seat belt use rate for South Dakota. Assuming the design of the survey accurately measures the variable of interest, the larger the survey sample the more accurate the results.

The standard error for state seat belt use was calculated to be 0.01% using SAS statistical software. From this, a 95% confidence interval for state seat belt use can be determined. The 95% confidence interval means that, statistically, there is only a 5% chance that the actual statewide seat belt percentage falls outside the range of 66.7 to 69.9%.

**Table 2: Confidence Interval**

| 95% Confidence Interval and Estimated Standard Error for State Seat Belt Use | | | | |
|---|---|---|---|---|
| **Occupants** | **State Rate** | **Standard Error** | **95% CI Lower Limit** | **95% CI Upper Limit** |
| 23,911 | 68.3% | 0.007% | 66.7% | 69.9% |

## Nonresponse Rate

A factor that could potentially bias the results and invalidate the survey is the high nonresponse rate. A nonresponse occurs when the observer tries but cannot determine an occupant's seat belt use. In this year's survey, seat belt use could not be determined for 947 vehicle occupants, resulting in a nonresponse rate of 3.8%. As stipulated in NHTSA's guidelines, the nonresponse rate was well within the allowable maximum of 10%, so no additional sampling was necessary.

## Protocols

### Observers

Observers contracted to conduct the statewide seat belt survey were required to complete online training. The training module covered survey methods and observer responsibilities, as well as knowledge points requiring correct responses in order to move forward in the module. Completion of training was verified by the survey administrator.

All observers were required to have a current driver's license with proof of adequate vehicle insurance. They were required to use seat belts and wear safety vests while conducting field observations.

### Observational Protocols

The observational protocols used in the study adhere to the uniform criteria as outlined in the Federal Register.

Observations were conducted Monday through Sunday. The day of the week and time of day were randomly chosen for one site within each county. The remaining sites within each county were arranged based on the first site to minimize travel time and costs. This predetermined order of daily observation sites was provided to each observer before the survey. A complete list of county observation sites is available in the survey certification documentation submitted to NHTSA. The traffic direction of vehicles to be observed was randomly chosen in advance and was limited to one direction.

An 11-hour block of daylight, from 7 a.m. to 6 p.m., was identified as the observational period. Observations at each site occurred in the predetermined time slot, requiring a 60-minute observation period, which began at the start of the pre-determined time slot—or the first five-minute interval after arrival at the site if the observer was delayed—and ended 60 minutes later.

### Traffic Conditions and Data Collection Problems

Observers were trained to cope with traffic problems in the following manner:

- When traffic was heavy and there were too many vehicles to observe, recording was done as long as possible and then stopped until the observer could catch up with observations. Some vehicles were, therefore, outside the sample. When this occurred, counting resumed after no more than a one-minute pause. Once an observer's eyes were locked on a vehicle, a record of that vehicle was required on the observation form.
- At sites with more than one lane of traffic in the predetermined direction, observations were made from the lane closest to the observer.

**Site Accessibility Problems**

Field observers could terminate observations at a preselected site if any of the following circumstances arose: (1) weather conditions that would hinder the accuracy of the observations, (2) heavy traffic flow that might endanger the safety of the observer, or (3) road conditions that rendered observations unfeasible, such as road construction, detoured traffic, or a crash site. In these circumstances, observers were directed to contact the project coordinator immediately for assignment of an alternate site if a suitable vantage point could not be established.

**Observed Vehicles**

All vehicles with a gross vehicle weight of up to 10,000 lbs. were observed and classified on the observation form as cars, vans, sport utility vehicles, and trucks. Large trucks (semi or large box), large emergency vehicles (ambulance/fire), and RVs/motor homes were not included in the survey.

**Observations**

Type of vehicle, gender, and seat belt use for both drivers and right front seat passengers were recorded. Observations occurred from within the observer's vehicle whenever possible. The observer was parked as close as possible to the road for accurate observation without compromising safety. If observations could not be conducted from within the vehicle, the observer was allowed to stand off the roadway. Observers were required to wear an ANSI-approved Type-2 safety vest at all times to enhance the visibility of the observer.

**Problems Encountered by Observers**

If traffic, observer safety, or construction issues were problematic, alternate sites were available through the project coordinator. Observer placement was managed according to site protocols. Intermittent problems relating to road construction and inclement weather did not seriously impede schedules, and hour-long observations were fulfilled as described in the protocol with on-time arrival at subsequent sites not impacted. In accordance with the Federal Register, if scheduled observations were not carried out for any of the above reasons, a return visit would have been arranged the following week adhering to the original prescribed schedule for data collection. Detailed site information is found in Appendix D.

**Travel Permits**

In response to the COVID-19 pandemic, access to and from tribal land was regulated and restricted to limit the spread of the virus. Those observers travelling onto a reservation were required to obtain a travel permit and complete a health questionnaire upon arrival to the reservation checkpoint. This was also required of observers who were residents of a reservation, travelling off of the reservation to complete observations, upon each instance of passing though the checkpoint. An example of the application required for the permit can be seen in Appendix F.

## Quality Assurance

**Observers**

The SDDPS contracted directly with a nonprofit organization for observers to complete the field work, as they have with previous surveys. Online training was offered at the observers' convenience. All contracted observers were required to complete the online training. Completion was verified prior to survey week.

During observation week, quality control personnel carried out unannounced site visits (one per county) to verify observers were located within valid road segments, conforming to the prearranged day of week/time of day schedules, and properly recording seat belt data. It is required that quality control personnel visit any new observers during their initial observation day to assure protocol compliance and verify safe observation practices.

**Data Entry**

Steps were taken to ensure quality control with respect to data entry. Each site packet was checked to ensure the number of observation sheets submitted was the same as that noted by the observers. Database records were verified to match the number of observations. An accuracy check was done on a systematic sample of records and was measured at greater than 99.9% for every field. Errors discovered during quality assurance checks were corrected prior to completion of all analyses.

# SEAT BELT SURVEY RESULTS

## Statewide Results

### Sample Size by Year

**Table 3: Survey Sample by Occupant Position**

| Occupant Type | 2016 | % of Sample | 2017 | % of Sample | 2018 | % of Sample | 2019 | % of Sample | 2020 | % of Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| Driver | 22,034 | 73.8% | 20,401 | 75.6% | 21,813 | 74.4% | 22,579 | 74.4% | 18,614 | 77.8% |
| Passenger | 7,812 | 26.2% | 6,583 | 24.4% | 7,503 | 25.6% | 7,784 | 25.6% | 5,297 | 22.2% |
| Total | 29,846 | 100% | 26,984 | 100% | 29,316 | 100% | 30,363 | 100% | 23,911 | 100% |

Total occupants in the current year numbered 23,911, consisting of 18,614 drivers representing 77.8% of the sample, and 5,297 passengers for a 22.2% share. These figures include only vehicle occupants where protection status could be determined.

Total sample size can vary from year-to-year depending on site locations and traffic flow. The occupant shares this year are comparable to previous surveys. Complete details on the number of observations and restraint use by site are found in Appendix C. It is not uncommon to have several individual sites capture only a limited number of vehicles. However, these sites are still important to the aggregate measurement of statewide and county seat belt use, therefore, are captured each year.

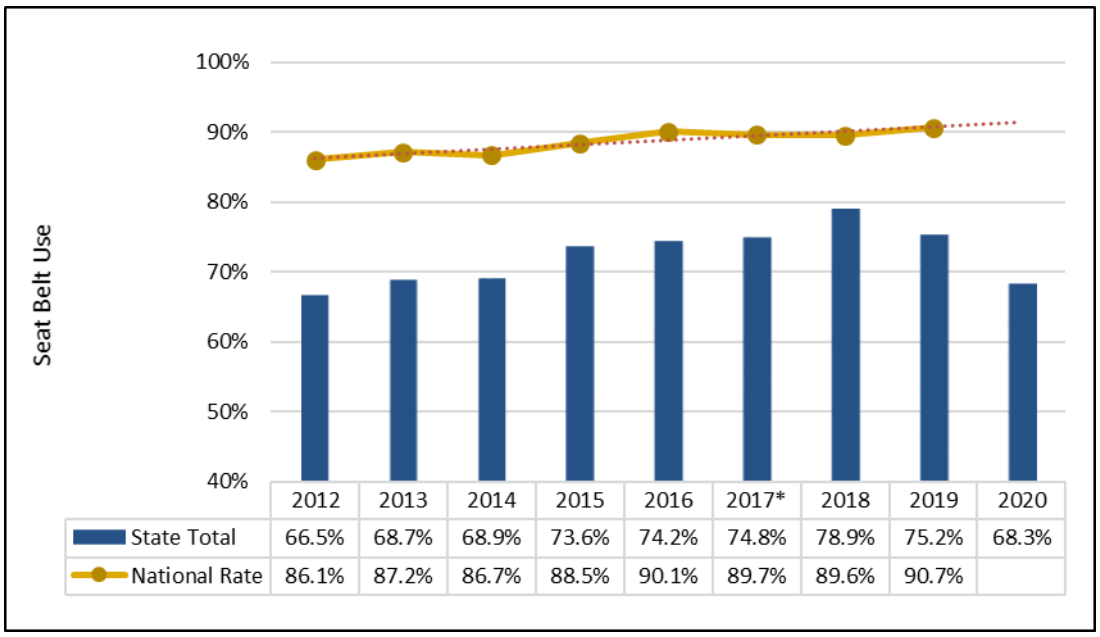
The driver-to-passenger ratio can influence overall use rates. This year the ratio was 3.5 drivers for every occupant, meaning drivers represent 77.8% of the sample. Table 4 shows only minor variations in the most recent five-year period with the driver share of the sample deviating less than 4 percentage points.

**Table 4: Ratio of Drivers to Passengers**

| Ratio | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Drivers:Passengers | 2.8:1 | 3.1:1 | 2.9:1 | 2.9:1 | 3.5:1 |
| Drivers as % of Sample | 73.8% | 75.6% | 74.4% | 74.4% | 77.8% |

Overall unweighted statewide survey results indicated 80.97% of vehicle occupants were observed wearing seat belts on South Dakota roads. Because the survey employs a two-stage stratified random sampling scheme, a more appropriate estimate of seat belt use is found by weighting the unadjusted rate using the formulas and design weights from the methodology section. Using those formulas, the overall weighted rate of seat belt use in South Dakota was 68.3% for 2020. Figure 1 shows annual seat belt use since implementation of the amended methodology in 2012, as well as national use reported by NHTSA. Although South Dakota rates fall below the national level of 90.7% (2019), rates have ranged from a low of 66.5% in 2012 to a high of 78.9% in 2018. The state's current use remains below the overall national rate, as well as NHTSA's published rate of 86.2% for states without primary seat belt laws.[1]

[1] National Highway Traffic Safety Administration. Traffic Safety Facts Research Note. November 2016. https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812351




| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017* | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|
| State Total | 66.5% | 68.7% | 68.9% | 73.6% | 74.2% | 74.8% | 78.9% | 75.2% | 68.3% |
| National Rate | 86.1% | 87.2% | 86.7% | 88.5% | 90.1% | 89.7% | 89.6% | 90.7% | |

## County Results

Restraint use outlined in Figure 2 ranged from a high of 99.0% in Aurora County to a low of 42.4% in Ziebach County in 2020. Higher seat belt use is often observed in counties that follow interstate corridors. The two counties demonstrating the highest rates this year—Aurora and Moody, have a share of this road type, which may influence use rates.

Rates vary from year-to-year at the county level. The changes can represent sampling differences and are not likely to be statistically significant, especially for counties where there are fewer total observations. However, even the rates for counties with more observations may exhibit noticeable change from one year to the next.

**Figure 1: Statewide Seat Belt Use, Weighted**

*2017 rate marks NHTSA-mandated resampling of counties and sites

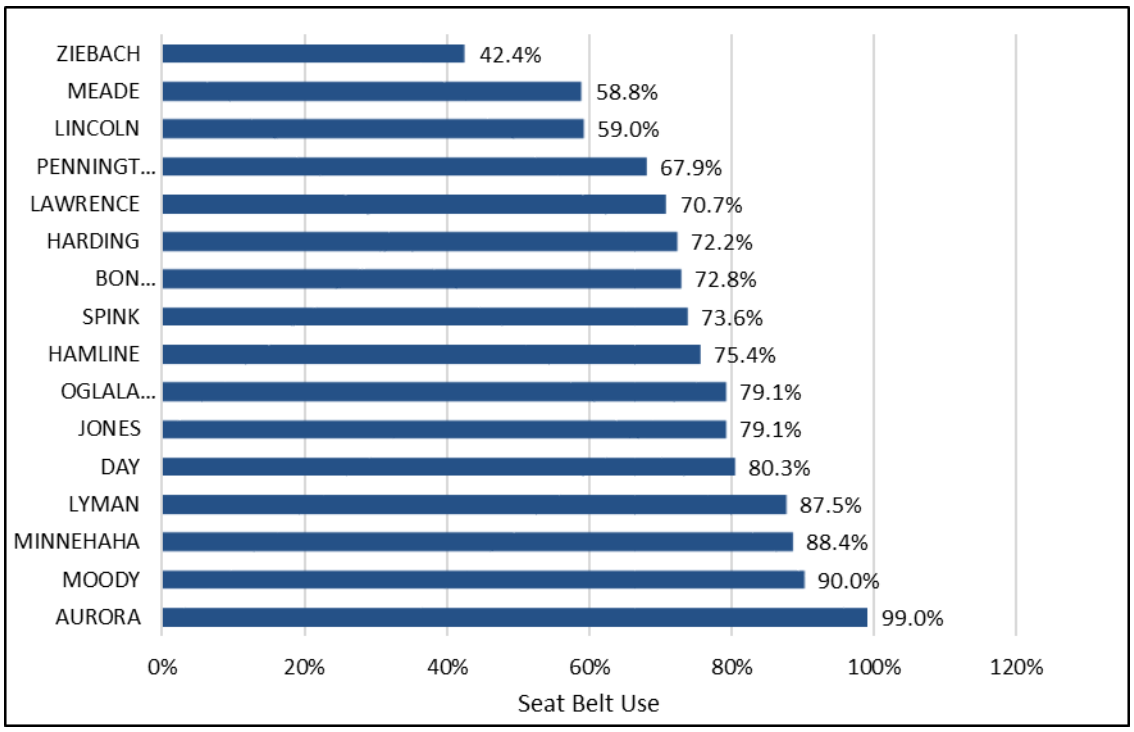



**Figure 2: Seat Belt Use by County, 2020, Weighted**

To smooth the annual variability, three-year averages are graphed in Figure 3 to provide a representation of county rates and trend comparison. The graph shows variations in the level of seat belt use. Counties having six years of available data (some only have three because of the 2017 reselection process) show increased belt use in the 2018-2020 average in all counties except Harding Lawrence, and Pennington Counties which show a reduction in use from 78.2% to 66.7%, 80.3% to 73.9%, and 73.3% to 71.4%. Counties showing significant improvement in seat belt use over the earlier period are Lincoln, from 73.1% to 88.2%, and Oglala Lakota, from 55.7% to 68.6%.

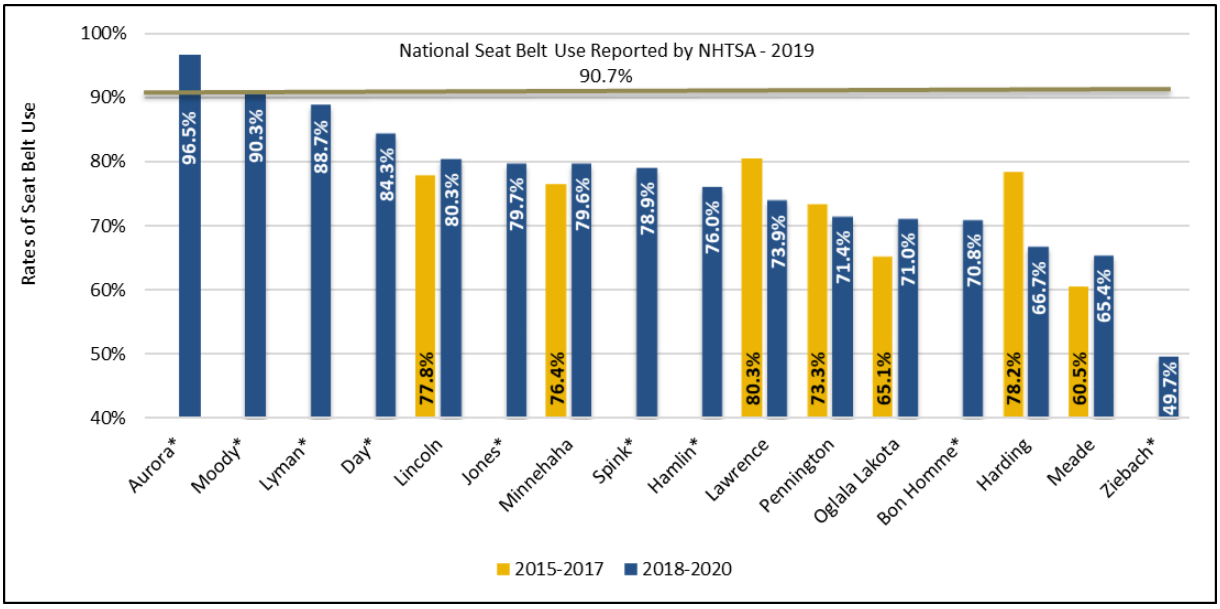
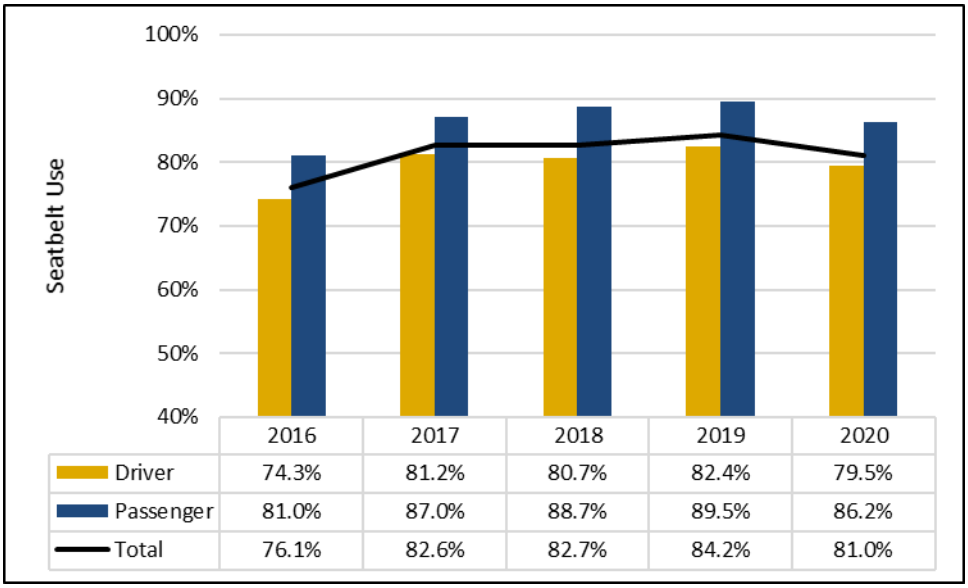



**Figure 3: Seat Belt Use by County, Three-Year Weighted Average**

The preceding statewide data are weighted based on the sampling methodology. However, the following sections of this report describe frequencies that are unadjusted due to survey design.

## Results for Vehicle Occupants by Position

Annual surveys reinforce the fact that passengers buckle up at higher rates overall than drivers in South Dakota, and this continued in 2020. In the state as a whole, the unweighted estimates of seat belt use were 79.5% for drivers and 86.2% for passengers, with an overall seat belt use rate estimate of 81.0% for drivers and passengers combined (Figure 4). These rates compare with 82.4%, 89.5%, and 84.2%, respectively in 2019. A leveling of rates from the previous years' surveys took place from 2017 to 2019. However, the current seat belt rates have decreased for both occupant positions. Driver rates have fluctuated from a low of 74.3% in 2015 to a high of 82.4% in 2019. Passenger rates rose correspondingly from 80.5% in 2015 to 89.5% in 2019.




| | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Driver | 74.3% | 81.2% | 80.7% | 82.4% | 79.5% |
| Passenger | 81.0% | 87.0% | 88.7% | 89.5% | 86.2% |
| Total | 76.1% | 82.6% | 82.7% | 84.2% | 81.0% |

**Figure 4: Percent Belted by Position, Annually, Unweighted**

Figure 5 illustrates seat belt use by occupant position in the current year. Passenger rates were higher than driver rates in all counties. The rate differences range from slight to substantial—less than one percentage in Aurora to 25.5% in Lincoln. Driver use ranged from a low in Ziebach County of 42.8% to a high in Aurora County of 98.9%, while passenger use ranged from a low of 46.2% in Ziebach County to a high of 99.0% in Spink County. Limited passenger observations in some counties may make these figures unstable with regard to generalizing to the county population.

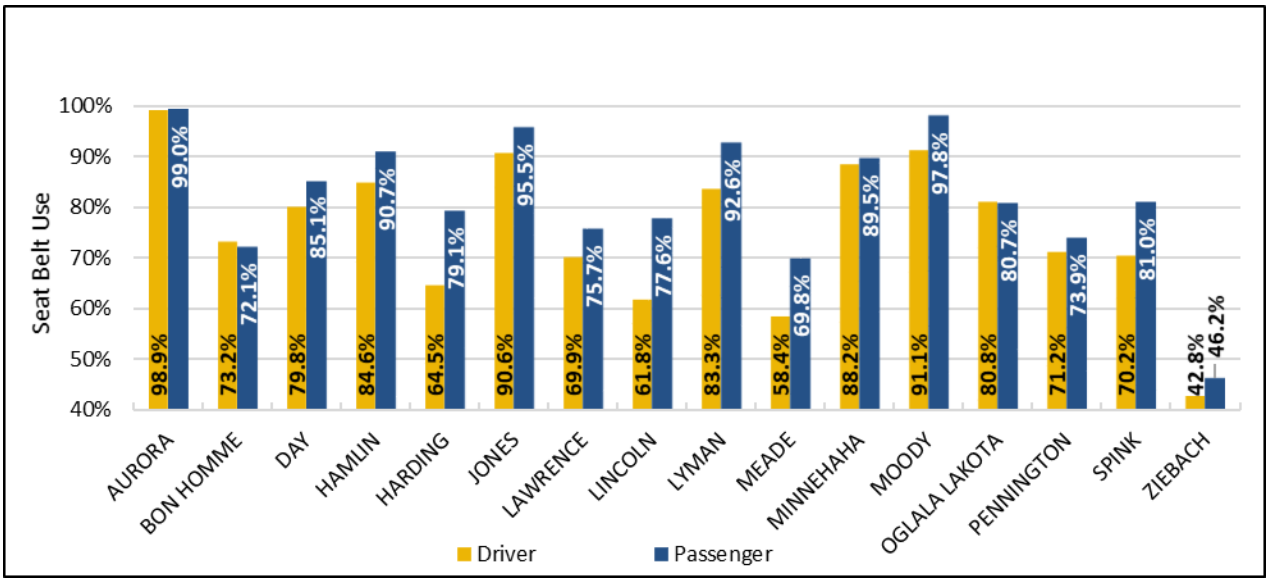



**Figure 5: Percent Belted by Occupant Position and County, 2020, Unweighted**

Efforts to address seat belt use in South Dakota are ongoing. The overall weighted rate this year is 68.3%. The rate continues to be lower than the 90.7% national average reported by NHTSA. Experiences from other states suggest that some impetus to cause a major shift will be necessary to achieve significant increases in seat belt use. One possibility would be enactment of a primary seat belt law, which NHTSA suggests would change seat belt use rates by 10% to 15%. NHTSA's 2019 survey of seat belt use in primary law states showed an average use of 92.0%, while the rate in states with secondary laws was 86.2%. Other possible interventions include heightened education and/or enforcement across the state.

Some factors that may be useful in administering programs to increase seat belt use in South Dakota are found in the remainder of this report. Differences in seat belt use among regions of the state, gender, vehicle type, and roadway type are explored for additional insight.

## Results by South Dakota Regions

The survey sampling methodology groups the state into an east/west regional division. The west region contains three "certainty" counties and five additional counties selected from the remaining counties in the west.[2] The east region is composed of one "certainty" county and seven additional counties from the east.

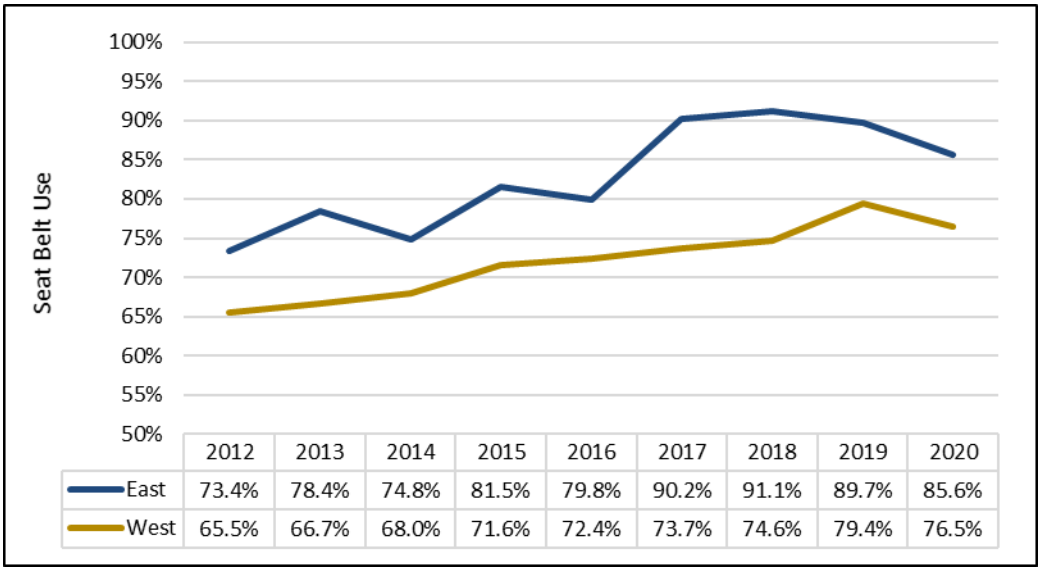
**Table 5: Sample Size by Region (% of Observations)**

| Region | 2016 | % of Sample | 2017 | % of Sample | 2018 | % of Sample | 2019 | % of Sample | 2020 | % of Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| East | 14,654 | 49.1% | 14,687 | 54.4% | 14,422 | 49.2% | 14,181 | 46.7% | 11,788 | 49.3% |
| West | 15,192 | 50.9% | 12,297 | 45.6% | 14,894 | 50.8% | 16,185 | 53.3% | 12,123 | 50.7% |
| Total | 29,846 | 100.0% | 26,984 | 100.0% | 29,316 | 100.0% | 30,366 | 100.0% | 23,911 | 100.0% |

In 2020, relatively equal proportions of occupant data were collected from western and eastern South Dakota. Observations in the west numbered 12,123 occupants compared with 11,788 from the east, or 50.7% and 49.3% of the sample, respectively (Table 5). The regional distribution remains proportional to previous surveys. Minor differences seen from year to year may be associated with changes in travel levels or patterns.

Seat belt use is routinely higher in the east than the west, as shown annually in Figure 6. Both regions have shown increased restraint use over time, with the exception of the current year where a decrease was seen in both regions. Rates in the east indicate more annual fluctuations compared with the steady increase shown in the west.

[2] See the discussion of the sampling methodology for details on certainty counties and the selection processes.




| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|
| East | 73.4% | 78.4% | 74.8% | 81.5% | 79.8% | 90.2% | 91.1% | 89.7% | 85.6% |
| West | 65.5% | 66.7% | 68.0% | 71.6% | 72.4% | 73.7% | 74.6% | 79.4% | 76.5% |

**Figure 6: Percent Belted by Region, Annually, Unweighted**

This higher use is also documented in the form of three-year averages in Figure 7. The rate in the east was 83.8% in 2015-2017, increasing to 88.8% in the more recent three-year period. Seat belt use in the west averaged 72.6%, increasing to 76.8% during the respective time frames.

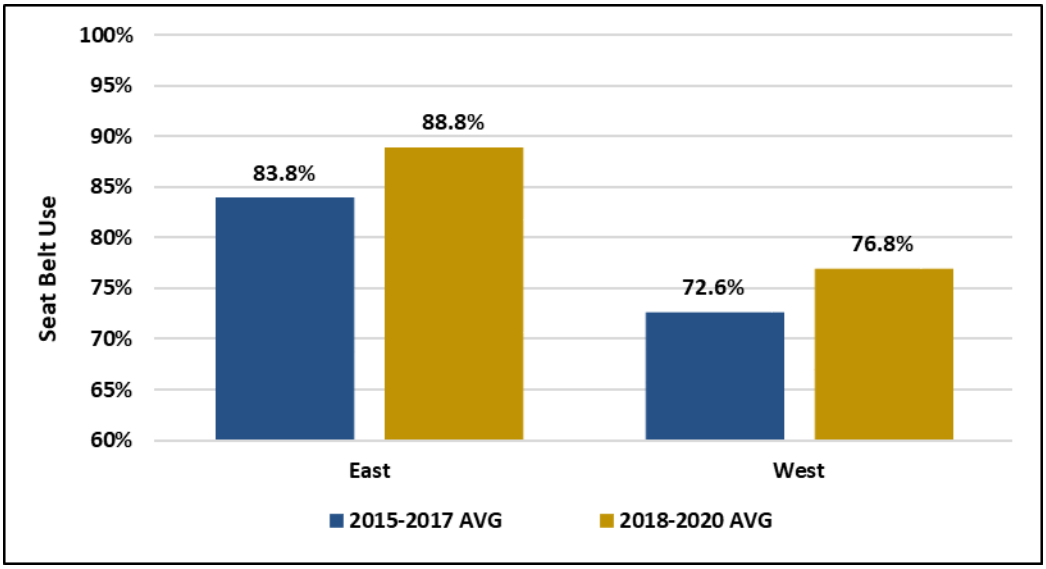



**Figure 7: Seat Belt Use by Region, Three-Year Averages, Unweighted**

Figure 8 shows patterns of restraint use annually by position and region. Rates for positions tended to increase each year, beginning in 2016. Passenger use in the eastern region remains to hold the largest proportion of restraint users. The western region was also the only region to show increased usage in last year's survey, despite a tendency toward decreasing use in the east. An average 3.4% decrease in use among all positions was seen during this survey period.

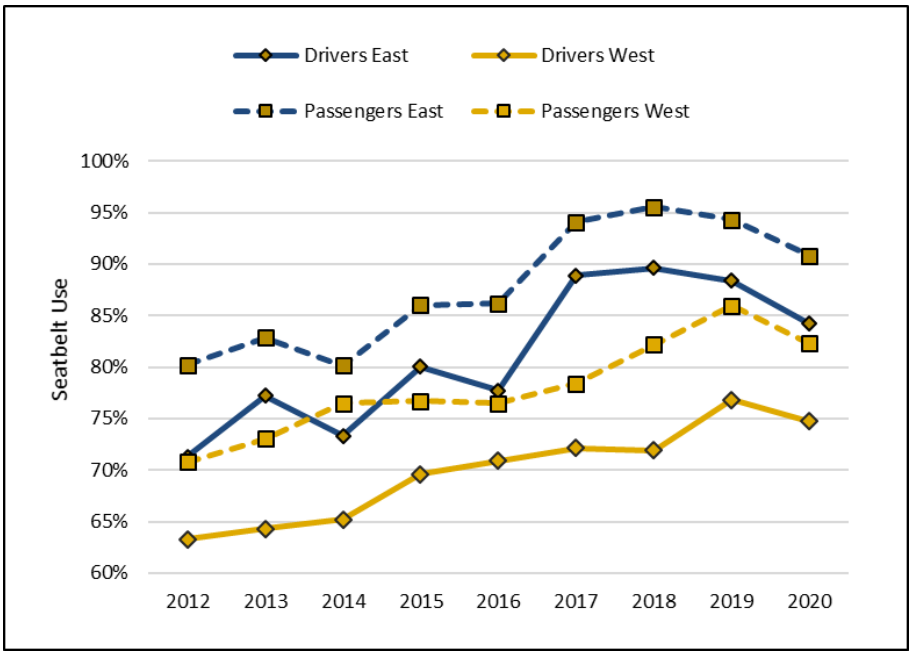



**Figure 8: Percent Belted by Region and Occupant Position, Unweighted**

## Results by Vehicle Type

Beginning with the 2012 statewide seat belt survey, South Dakota incorporated the expanded uniform criteria vehicle eligibility to define a fleet that included all passenger vehicles with a gross vehicle weight of up to 10,000 pounds. This change necessitated the inclusion of various small trucks. Commercial-use trucks, indicated by logos on doors or truck bodies, are within the survey scope.[3]

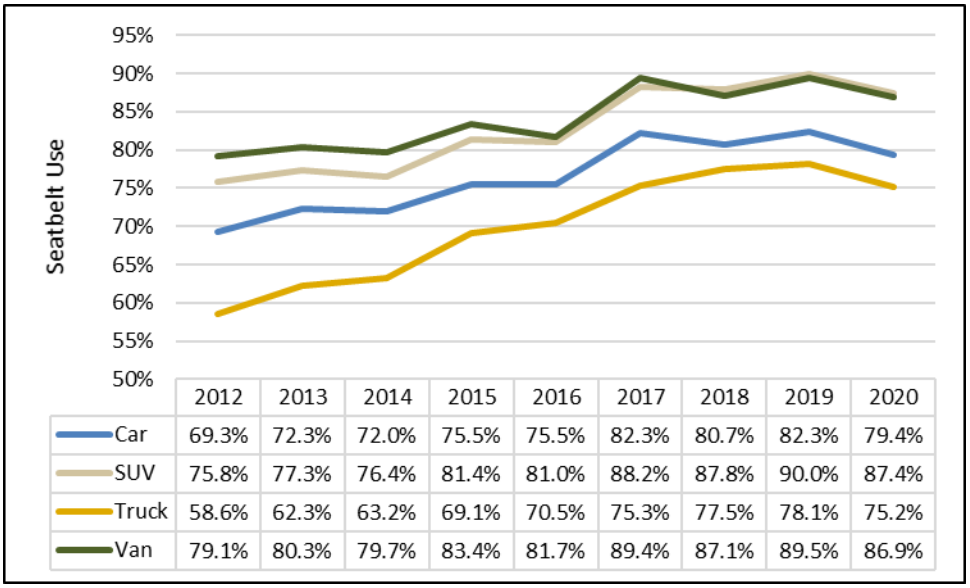
Table 6 shows the annual fleet distribution for the past five years. Throughout this period, trucks have consistently held slightly more than 30% of the overall share. Vans regularly make up 10% of the vehicles. During the same time frame, car and SUV shares have reversed, whereby cars now hold 25% of the vehicle share and SUVs hold approximately 30%.

**Table 6: Sample by Vehicle Type**

| Vehicle Type | 2016 | % of Sample | 2017 | % of Sample | 2018 | % of Sample | 2019 | % of Sample | 2020 | % of Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| Car | 9,377 | 31.4% | 7,607 | 28.2% | 7,216 | 24.6% | 7,245 | 23.9% | 5,706 | 23.9% |
| SUV | 7,888 | 26.4% | 8,212 | 30.4% | 9,931 | 33.9% | 10,003 | 33.1% | 7,438 | 31.1% |
| Truck | 9,370 | 31.4% | 8,374 | 31.0% | 9,349 | 31.9% | 9,873 | 32.6% | 8,745 | 36.6% |
| Van | 3,211 | 10.8% | 2,971 | 10.3% | 2,820 | 9.6% | 3,145 | 10.4% | 2,022 | 8.5% |
| Total | 29,846 | 100.0% | 26,984 | 100.0% | 29,316 | 100.0% | 30,266 | 100.0% | 23,911 | 100.0% |

[3] Truck definition is trucks with a gross vehicle weight of less than 10,000 lbs., including pickups, wrecker tow vehicles, flatbed three- or four-ton trucks, and utility service trucks; excludes semi or large box trucks, and large emergency vehicles.

Annual results for overall seat belt use by vehicle type are shown in Figure 9. Occupant restraint use was observed to be relatively high in SUVs and vans at 87.4% and 86.9% respectively. This was followed by cars at 79.4% and trucks at 75.2%. Rate decreases were observed when compared with the previous year for occupants of all vehicle types. A consistent upward trend in belt use by truck occupants was seen during the eight-year time frame, from a low of 58.6% in 2014 to a high of 78.1% in 2019. Despite the gains seen in previous years, these occupants continue to buckle up at lower rates than those in other vehicle types.




| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|
| Car | 69.3% | 72.3% | 72.0% | 75.5% | 75.5% | 82.3% | 80.7% | 82.3% | 79.4% |
| SUV | 75.8% | 77.3% | 76.4% | 81.4% | 81.0% | 88.2% | 87.8% | 90.0% | 87.4% |
| Truck | 58.6% | 62.3% | 63.2% | 69.1% | 70.5% | 75.3% | 77.5% | 78.1% | 75.2% |
| Van | 79.1% | 80.3% | 79.7% | 83.4% | 81.7% | 89.4% | 87.1% | 89.5% | 86.9% |

**Figure 9: Percent Belted by Vehicle Type, Annually, Unweighted**

Truck rates were not uniformly low in each county in 2020. However, some counties not only had low seat belt use in trucks, but a large proportion of trucks as a share of the total county sample. Truck observations in Ziebach County totaled 51.3% of the county sample with a use rate of 33.8% in 2020. In Spink County, the truck share was 50.7% of the sample with restraint use of 62.5%. Harding, Hamline and Day counties all had truck shares of around 45% and seat belt use between 65% and 77.4% in the current survey. This lower use, coupled with the greater proportion of trucks in the sample, can reduce both county rates and the overall state rate.

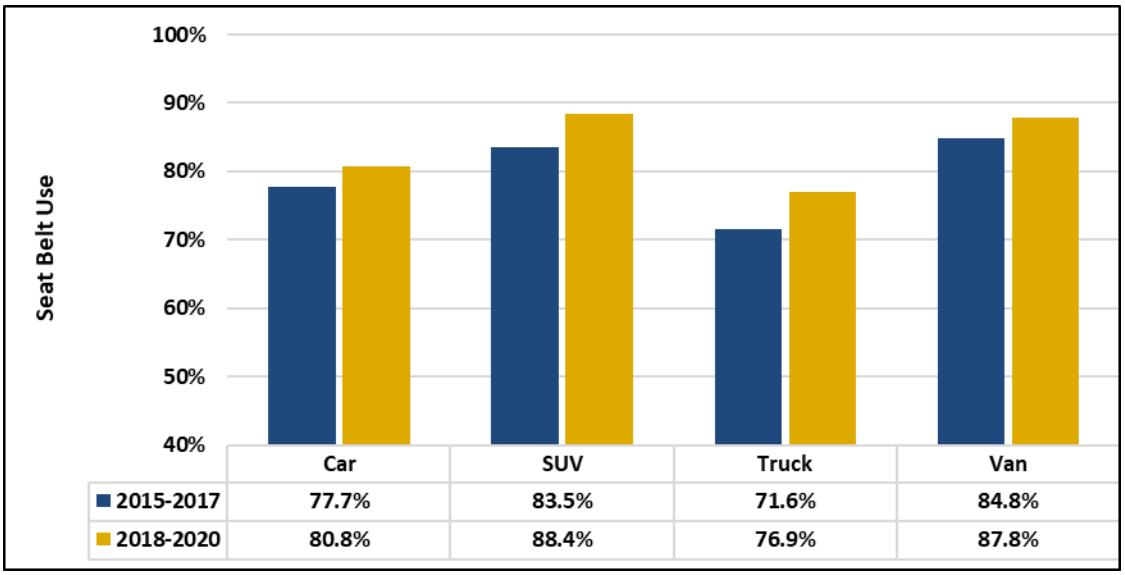



**Figure 10: Seat Belt Use by Vehicle Type, Three-Year Averages, Unweighted**

A comparison of averages shown in Figure 10 indicates greater seat belt use in the 2018-2020 period than the 2015-2017 period. The current three-year averages exceed the earlier averages in each vehicle type by 3% to 5%. Individual county rates by vehicle type for the average use between 2018 and 2020 are outlined in Table 7.

**Table 7: Percent Belted by County and Vehicle Type, Unweighted**

| 2018-2020 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Car** | | **SUV** | | **Truck** | | **Van** | |
| Aurora | 96.5% | Aurora | 98.5% | Aurora | 95.1% | Aurora | 98.3% |
| Bon Homme | 74.0% | Bon Homme | 78.0% | Bon Homme | 66.0% | Bon Homme | 75.2% |
| Day | 82.9% | Day | 93.0% | Day | 76.7% | Day | 88.6% |
| Hamlin | 90.2% | Hamlin | 94.1% | Hamlin | 79.2% | Hamlin | 95.6% |
| Harding | 64.5% | Harding | 70.5% | Harding | 63.6% | Harding | 86.3% |
| Jones | 83.5% | Jones | 91.2% | Jones | 83.9% | Jones | 87.5% |
| Lawrence | 72.0% | Lawrence | 82.0% | Lawrence | 63.2% | Lawrence | 76.5% |
| Lincoln | 81.0% | Lincoln | 88.8% | Lincoln | 77.2% | Lincoln | 83.6% |
| Lyman | 88.2% | Lyman | 91.2% | Lyman | 83.9% | Lyman | 90.7% |
| Meade | 67.2% | Meade | 75.9% | Meade | 57.4% | Meade | 72.5% |
| Minnehaha | 84.4% | Minnehaha | 80.1% | Minnehaha | 77.5% | Minnehaha | 85.4% |
| Moody | 91.2% | Moody | 95.0% | Moody | 89.7% | Moody | 95.2% |
| Oglala Lakota | 69.0% | Oglala Lakota | 81.5% | Oglala Lakota | 70.2% | Oglala Lakota | 80.5% |
| Pennington | 73.3% | Pennington | 79.5% | Pennington | 69.2% | Pennington | 83.8% |
| Spink | 84.6% | Spink | 86.8% | Spink | 71.0% | Spink | 82.7% |
| Ziebach | 41.1% | Ziebach | 61.7% | Ziebach | 44.4% | Ziebach | 62.9% |

The 2020 results by vehicle type are consistent with long-term trends for seat belt use in South Dakota and other states that do not have primary seat belt laws, are largely rural in nature, and have a high proportion of trucks.

## Results by Occupant Gender and Position

**Table 8: Sample by Gender**

| Occupants Observed | 2016 | % of Sample | 2017 | % of Sample | 2018 | % of Sample | 2019 | % of Sample | 2020 | % of Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| **Drivers:** | | | | | | | | | | |
| Male | 16,598 | 55.6% | 15,147 | 56.1% | 16,728 | 57.1% | 16,921 | 55.7% | 13,831 | 57.8% |
| Female | 13,198 | 44.2% | 11,761 | 43.6% | 12,350 | 42.1% | 13,197 | 43.5% | 9,623 | 40.2% |
| **Unknown:** | 50 | 0.2% | 76 | 0.3% | 238 | 0.8% | 248 | 0.8% | 457 | 1.9% |
| **Total** | 29,846 | 100.0% | 26,984 | 100.0% | 29,316 | 100.0% | 30,366 | 100.0% | 23,911 | 100.0% |

Minimal year-to-year variation in gender composition of the sample is observed in the past five years, as summarized in Table 8. Males occupants were 57.8% of the overall sample in the current survey while females were 40.2 %. In a small percentage of observations, occupant gender could not be determined (less than 2%), but occupant protection was still recorded. These cases are included in all of the analyses except where gender is one of the variables of interest. Removing these observations from these parts of the analyses had no effect on the overall numbers, but is mentioned here for comprehensive reporting.

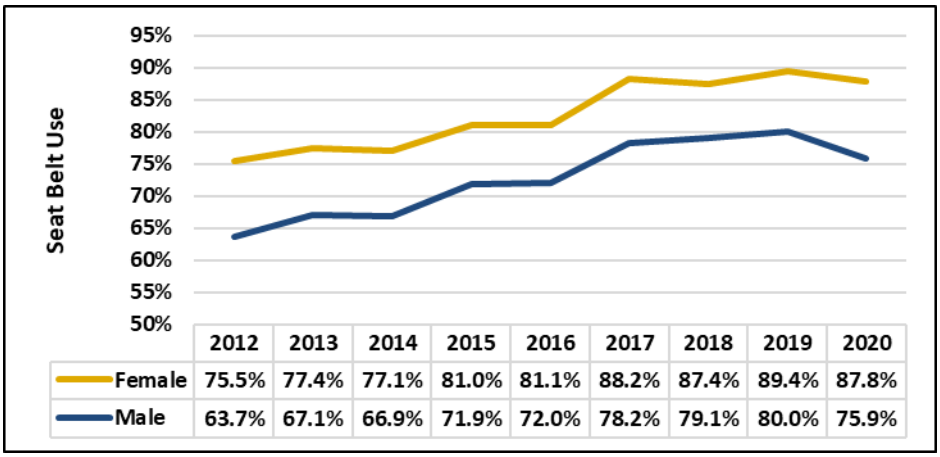



**Figure 11: Percent Belted by Gender, Annually, Unweighted**

Gender use and disparity continued an annual pattern, whereby females had higher rates of seat belt use than males, and the gap between gender usage persisted (Figure 11). The 2020 survey results showed female restraint use of 87.8%, compared with 75.9% for males. Prior rates had shown improvement over time, yet the current survey shows a slight decrease for females and a 4% decrease for males. Female use has registered above 80% since 2015. Male use reached this mark this in 2019, but fell to 75.6% this year.

A review of individual counties found a 40 percentage point range for female occupant use (Table 9). The lowest rate for females, 58.6%, was found in Ziebach County, and the highest in Aurora at 98.5%. Diversity in male rates at the county level indicates a 52 percentage point difference between the lowest rate observed in Ziebach County (43.3%) and the highest rate found in Aurora County (95.7%). Readers are reminded of the variability of rates seen from year to year associated with factors such as site locations, traffic patterns, sample size, road type, road construction projects, and weather impacts.

**Table 9: Percent Belted by Gender & County**

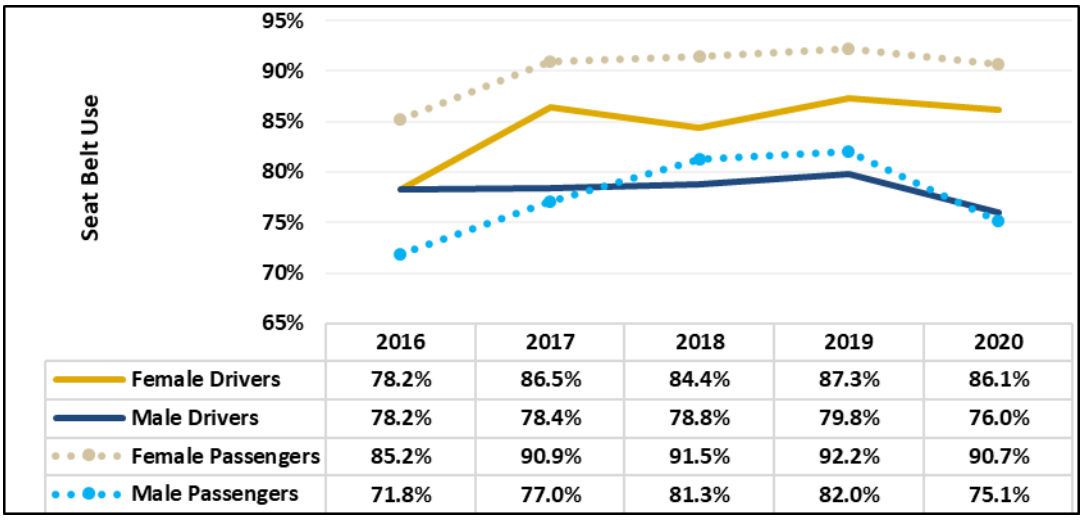
| 2018-2020 | | | |
|---|---|---|---|
| **FEMALE OCCUPANTS** | | **MALE OCCUPANTS** | |
| Aurora | 98.5% | Aurora | 95.7% |
| Bon Homme | 77.6% | Bon Homme | 67.4% |
| Day | 93.4% | Day | 78.2% |
| Hamlin | 95.7% | Hamlin | 82.8% |
| Harding | 75.5% | Harding | 62.9% |
| Jones | 92.5% | Jones | 82.6% |
| Lawrence | 80.7% | Lawrence | 67.0% |
| Lincoln | 89.9% | Lincoln | 77.9% |
| Lyman | 92.4% | Lyman | 84.9% |
| Meade | 76.5% | Meade | 58.9% |
| Minnehaha | 79.2% | Minnehaha | 84.1% |
| Moody | 96.0% | Moody | 89.9% |
| Oglala Lakota | 79.3% | Oglala Lakota | 69.1% |
| Pennington | 78.6% | Pennington | 72.3% |
| Spink | 86.0% | Spink | 73.7% |
| Ziebach | 58.6% | Ziebach | 43.3% |

The sample by gender and occupant position also remains quite stable from year to year with the 2020 sample indicating a gender distribution proportionate to past surveys. As defined in Table 10, drivers were twice as likely to be male than female (12,290 compared with 6,074). In contrast, passengers were nearly two and a half times more likely to be female than male (3,549 compared with 1,541).

**Table 10: Sample by Gender and Position**

| Occupants Observed | 2015 | % of Sample | 2016 | % of Sample | 2017 | % of Sample | 2018 | % of Sample | 2019 | % of Sample | 2020 | % of Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Drivers:** | | | | | | | | | | | | |
| Male | 13,440 | 46.9% | 14,133 | 47.4% | 13,294 | 49.3% | 14,582 | 49.7% | 14,790 | 48.7% | 12,290 | 51.4% |
| Female | 7,451 | 26.0% | 7,868 | 26.4% | 7,045 | 26.1% | 7,126 | 24.3% | 7,618 | 25.1% | 6,074 | 25.4% |
| **Passengers:** | | | | | | | | | | | | |
| Male | 2,477 | 8.6% | 2,465 | 8.3% | 1,853 | 6.9% | 2,146 | 7.3% | 2,131 | 7.0% | 1,541 | 6.4% |
| Female | 5,228 | 18.2% | 5,330 | 17.9% | 4,716 | 17.5% | 5,224 | 17.8% | 5,579 | 18.4% | 3,549 | 14.8% |
| **Unknown:** | 67 | 0.2% | 50 | 0.2% | 76 | 0.3% | 238 | 0.8% | 248 | 0.8% | 457 | 1.9% |
| **Total** | 28,663 | 100.0% | 29,846 | 100.0% | 26,984 | 100.0% | 29,316 | 100.0% | 30,366 | 100.0% | 23911 | 100.0% |

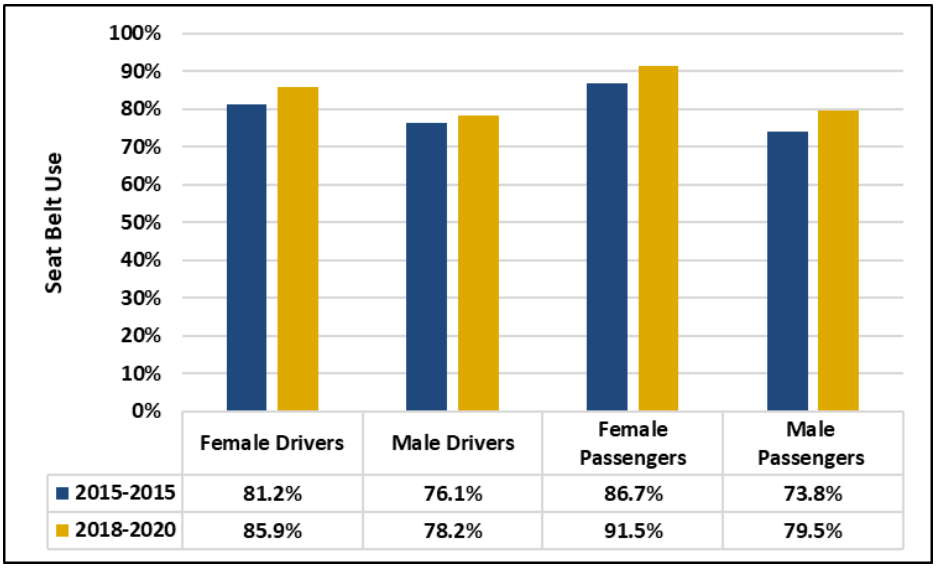
Male drivers were buckled at a rate of 76.0% in the current survey (Figure 12). This measure of restraint use is slightly lower than rates from the prior two years. Rates for male passengers also decreased, reaching 75.1%. A separation between male driver and passenger rates occurred in 2016, but the gap closed again in 2017. The survey results corroborate higher rates of use by females regardless of occupant position, with one exception in 2016 when drivers of both genders were belted at a rate of 78.2%. Female driver and passenger seat belt use in 2019 was 86.1% and 90.7%, respectively.




| | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Female Drivers | 78.2% | 86.5% | 84.4% | 87.3% | 86.1% |
| Male Drivers | 78.2% | 78.4% | 78.8% | 79.8% | 76.0% |
| Female Passengers | 85.2% | 90.9% | 91.5% | 92.2% | 90.7% |
| Male Passengers | 71.8% | 77.0% | 81.3% | 82.0% | 75.1% |

**Figure 12: Percent Belted by Gender and Position, Annually, Unweighted**

Three-year averages identifying rates of seat belt use by both gender and occupant positions show male drivers with an average rate of 72.2% in 2014-2016, compared with 79.0% in the most recent three years (Figure 13). Rates of use for female drivers were 76.9% to 86.0%; and female passenger rates were 84.1% and 91.5% in the respective time frames.




| | Female Drivers | Male Drivers | Female Passengers | Male Passengers |
|---|---|---|---|---|
| 2015-2015 | 81.2% | 76.1% | 86.7% | 73.8% |
| 2018-2020 | 85.9% | 78.2% | 91.5% | 79.5% |

**Figure 13: Seat Belt Use by Gender & Position, Three-Year Averages, Unweighted**

Additional county details found in Table 11 show wide-ranging rates in individual counties in all occupant positions.

**Table 11: Percent Belted by Gender and Position by County, Three-Year Average**

| Average 2018-2020 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FEMALE DRIVERS** | | **FEMALE PASSENGERS** | | **MALE DRIVERS** | | **MALE PASSENGERS** | |
| Aurora | 97.9% | Aurora | 99.3% | Aurora | 95.7% | Aurora | 95.4% |
| Bon Homme | 77.4% | Bon Homme | 78.3% | Bon Homme | 67.6% | Bon Homme | 65.8% |
| Day | 92.7% | Day | 94.4% | Day | 77.8% | Day | 80.2% |
| Hamlin | 95.2% | Hamlin | 97.3% | Hamlin | 81.9% | Hamlin | 92.1% |
| Harding | 66.5% | Harding | 85.2% | Harding | 61.5% | Harding | 72.7% |
| Jones | 90.0% | Jones | 95.0% | Jones | 81.8% | Jones | 87.2% |
| Lawrence | 78.1% | Lawrence | 85.0% | Lawrence | 66.4% | Lawrence | 70.4% |
| Lincoln | 88.6% | Lincoln | 93.2% | Lincoln | 77.7% | Lincoln | 79.9% |
| Lyman | 89.6% | Lyman | 96.0% | Lyman | 84.1% | Lyman | 90.1% |
| Meade | 76.1% | Meade | 77.5% | Meade | 58.6% | Meade | 64.9% |
| Minnehaha | 77.8% | Minnehaha | 88.9% | Minnehaha | 84.4% | Minnehaha | 80.3% |
| Moody | 94.2% | Moody | 98.5% | Moody | 89.5% | Moody | 94.3% |
| Oglala Lakota | 79.7% | Oglala Lakota | 78.7% | Oglala Lakota | 69.7% | Oglala Lakota | 65.5% |
| Pennington | 74.7% | Pennington | 82.8% | Pennington | 72.0% | Pennington | 74.3% |
| Spink | 83.8% | Spink | 94.2% | Spink | 71.9% | Spink | 84.1% |
| Ziebach | 52.0% | Ziebach | 65.1% | Ziebach | 44.9% | Ziebach | 34.3% |

# Results by Gender and Vehicle Type

A breakdown of gender representation identified by vehicle type is shown in Table 12. Males were most commonly observed in trucks and SUVs. Females had the highest representation in SUVs, followed by cars. A large gender imbalance is noticed in the truck category, where males represented 79.5% of the occupant share in this vehicle type.

**Table 12: Sample by Vehicle Type and Gender**

| Occupants Observed | 2016 | % of Sample | 2017 | % of Sample | 2018 | % of Sample | 2019 | % of Sample | 2020 | % of Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| **Male** | | | | | | | | | | |
| Car | 4,619 | 15.5% | 3,649 | 13.5% | 3,629 | 12.4% | 3,536 | 11.6% | 2,800 | 11.7% |
| SUV | 3,595 | 12.0% | 3,719 | 13.8% | 4,488 | 15.3% | 4,323 | 14.2% | 3,145 | 13.2% |
| Truck | 6,935 | 23.2% | 6,403 | 23.7% | 7,164 | 24.4% | 7,516 | 24.8% | 6,865 | 28.7% |
| Van | 1,449 | 4.9% | 1,376 | 5.1% | 1,447 | 4.9% | 1,546 | 5.1% | 1,021 | 4.3% |
| **Female** | | | | | | | | | | |
| Car | 4,741 | 15.9% | 3,940 | 14.6% | 3,507 | 12.0% | 3,740 | 12.3% | 2,792 | 11.7% |
| SUV | 4,278 | 14.3% | 4,467 | 16.6% | 5,372 | 18.3% | 5,588 | 18.4% | 4,082 | 17.1% |
| Truck | 2,421 | 8.1% | 1,948 | 7.2% | 2,128 | 7.3% | 2,304 | 7.6% | 1,772 | 7.4% |
| Van | 1,758 | 5.9% | 1,406 | 5.2% | 1,343 | 4.6% | 1,565 | 5.2% | 977 | 4.1% |
| **Unknown:** | 50 | 0.2% | 76 | 0.3% | 238 | 0.8% | 245 | 0.8% | 457 | 1.9% |
| **Total** | 29,846 | 100.0% | 26,984 | 100.0% | 29,316 | 100.0% | 30,363 | 100.0% | 23,911 | 100.0% |

Differences in seat belt use by gender varied across vehicle types (Figure 14). In the recent survey, male occupants were belted from a low of 72.3% in trucks to a high of 83.0% in SUVs. Females were belted at rates above 80% in all vehicle types, ranging from a low of 83.8% in cars to a high of 92.1% in vans.

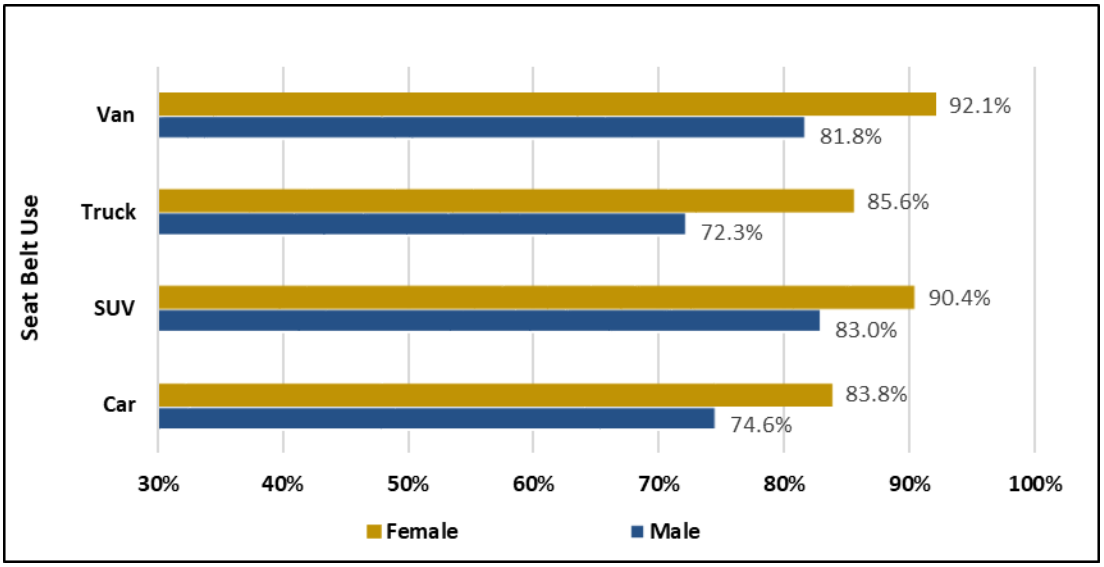



**Figure 14: Percent Belted by Gender and Vehicle Type, 2020, Unweighted**

Although the size of the disparity between male and female seat belt use varies from year to year, male use is shown to be lower than female use in every vehicle type in every year by as much as 14.9 percentage points to as little as 1.7 percentage points (Table 13). Annual rates of belt use for both genders are highest in SUVs and vans throughout the years represented in the table. Males are observed to have the lowest use in trucks, and are consistently the belted least often. Females are observed to be least often belted in cars and trucks.

**Table 13: Annual Percent Belted by Gender and Vehicle Type, Unweighted**

| Male | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|
| Car | 69.3% | 73.1% | 72.7% | 78.9% | 77.5% | 78.9% | 74.6% |
| SUV | 73.1% | 77.9% | 77.1% | 85.2% | 85.7% | 87.6% | 83.0% |
| Truck | 60.0% | 66.1% | 67.1% | 71.9% | 74.7% | 75.0% | 72.3% |
| Van | 77.1% | 80.5% | 80.7% | 86.8% | 84.9% | 86.2% | 81.8% |
| | | | | | | | |
| **Female** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| Car | 74.5% | 77.6% | 78.1% | 85.4% | 83.8% | 85.5% | 83.8% |
| SUV | 79.4% | 84.3% | 84.3% | 90.6% | 89.5% | 91.8% | 90.4% |
| Truck | 74.9% | 78.8% | 80.1% | 86.1% | 86.7% | 87.8% | 85.6% |
| Van | 82.1% | 85.9% | 82.4% | 91.8% | 89.3% | 92.8% | 92.1% |

The three-year averages in Figure 15 demonstrate improvement in rates of seat belt use by both genders across all vehicle types when comparing the 2018-2020 period with the previous three years.

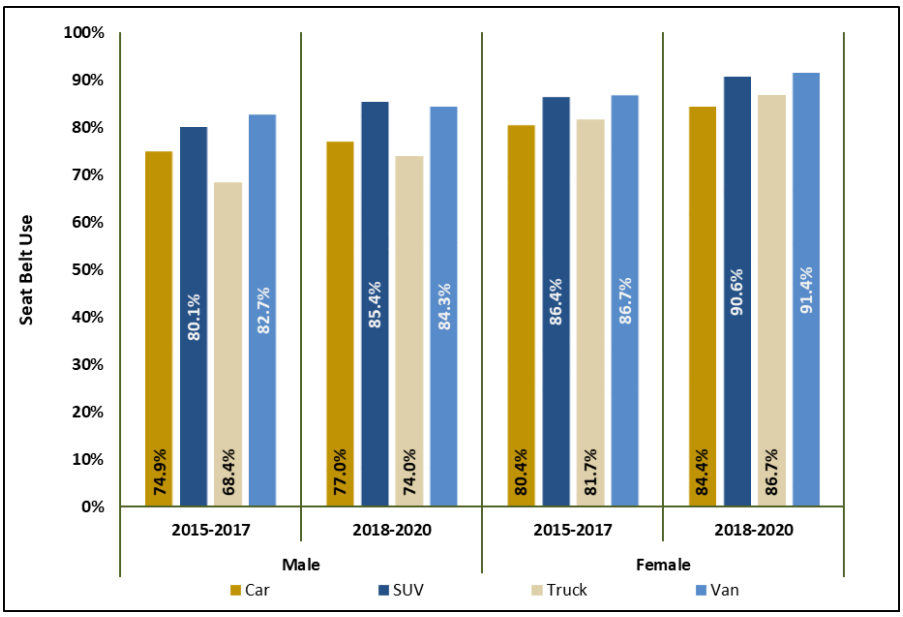



**Figure 15: Seat Belt Use by Gender and Vehicle Type, Three-Year Averages, Unweighted**

## Results by Road Type

Roadways are classified into three road types and broadly described as follows:

- Primary road: divided, limited-access, e.g., interstates
- Secondary road: main arteries usually in the U.S./state/county highway systems
- Local neighborhood road/rural road/city street: paved, non-arterial streets

A more comprehensive definition of road type is provided in Appendix E.

Sample distribution by road type and region is diverse, as shown in Table 14. However, the overall difference in the sample size between regions was tilted slightly toward the west. The west region made up 50.7% of the entire 23,911 observations in the sample, and the east contributed 49.3%. Primary, secondary, and local roadways accounted for 44.3%, 38.9%, and 16.8% of total vehicle occupants, respectively.

**Table 14: Sample by Road Type with Percent of Total Observations (% of Sample)**

| Occupants Observed | 2016 | % of Sample | 2017 | % of Sample | 2018 | % of Sample | 2019 | % of Sample | 2020 | % of Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| **East** | | | | | | | | | | |
| Primary | 4,764 | 16.0% | 7,161 | 26.5% | 7,245 | 24.7% | 6,775 | 22.3% | 5,228 | 21.9% |
| Secondary | 8,058 | 27.0% | 5,747 | 21.3% | 5,482 | 18.7% | 5,739 | 18.9% | 5,078 | 21.2% |
| Local | 1,832 | 6.1% | 1,779 | 6.6% | 1,695 | 5.8% | 1,667 | 5.5% | 1,482 | 6.2% |
| **Total East** | 14,654 | 49.1% | 14,687 | 54.4% | 14,422 | 49.2% | 14,181 | 46.7% | 11,788 | 49.3% |
| **West** | | | | | | | | | | |
| Primary | 2,452 | 8.2% | 3,856 | 14.3% | 6,694 | 22.8% | 7,875 | 25.9% | 5,357 | 22.4% |
| Secondary | 10,614 | 35.6% | 5,384 | 20.0% | 5,647 | 19.3% | 5,570 | 18.3% | 4,230 | 17.7% |
| Local | 2,126 | 7.1% | 3,057 | 11.3% | 2,553 | 8.7% | 2,740 | 9.0% | 2,536 | 10.6% |
| **Total West** | 15,192 | 50.9% | 12,297 | 45.6% | 14,894 | 50.8% | 16,185 | 53.3% | 12,123 | 50.7% |
| **Total** | 29,846 | 100.0% | 26,984 | 100.0% | 29,316 | 100.0% | 30,366 | 100.0% | 23,911 | 100.0% |

While it is typical to see annual variations in the regional sample size by road class, the NHTSA-mandated reselection of sites for the 2017 survey heightened the disparities. A noticeable difference was seen on primary roads, which historically produced 22% to 25% of the overall South Dakota sample. This increased to 40.8% in 2017, and 48.2% in 2019. A further difference was a sizable decline on secondary roads that had previously provided 57% to 63% of the overall sample. This share was reduced to 41.3% in 2017 and 38.9% in 2020, respectively.

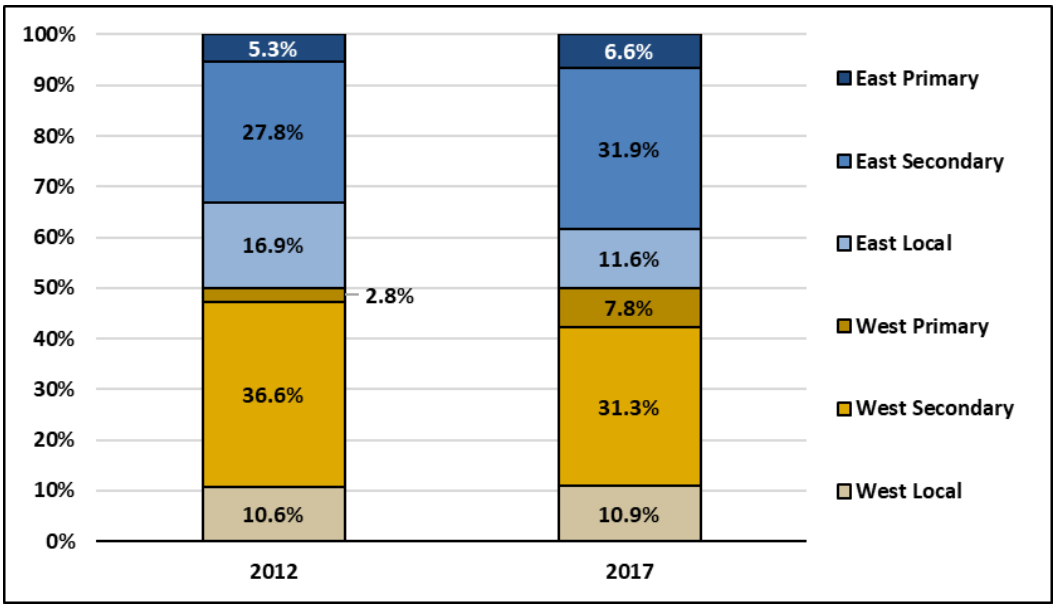



**Figure 16: Survey Sites by Road Type, 2012 and 2017**

Sample variations were associated with revisions in the number of sites drawn for each road type, as well as traffic volumes at new site locations. Contextual information is provided in Figure 16, identifying the proportion of sites by road type established with the amended methodology in 2012 followed by the reselection in 2017. Although the weighted results do include adjustments for changes to road site characteristics, the unweighted results may be influenced by the site mix and underlying characteristics, such as higher use rates on interstate corridors.

Vehicle occupants on primary roadways were belted at a higher rate than occupants on local roads and secondary roads at 91.2%, 75.6%, and 66.6%, respectively (Figure 17). The level of seat belt use on secondary roads outpaced use on local roads from 2014 through 2017. However, in 2018 the occupant protection measured on local roads surpassed secondary roads, but decreased in 2020. The rates for primary and secondary roads were very similar to those from 2019, but local roads decreased by nearly ten percentage points.

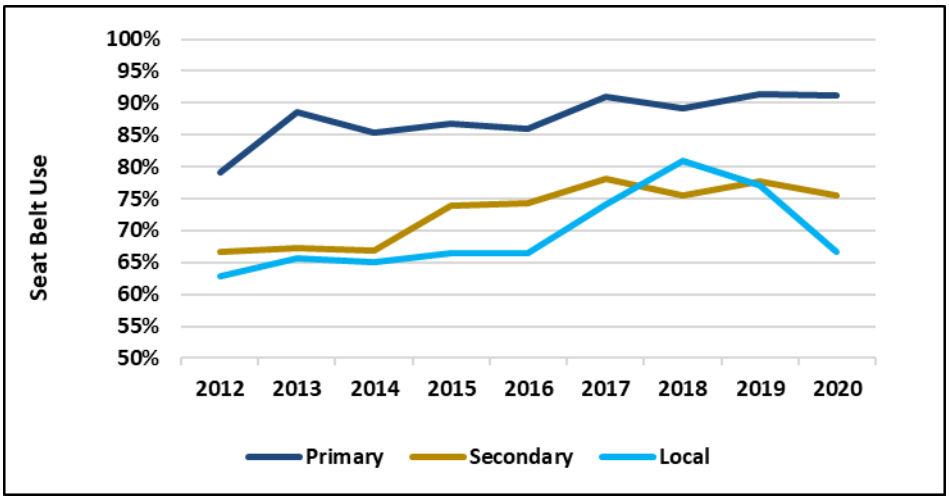



**Figure 17: Percent Belted by Road Type, Annually, Unweighted**

Annual rates stratified by region and road type for the most recent five years are shown in Table 15. Restraint use on primary roads in the east region ranged from 83.1% to 97.1%. Rates on primary roads in the west region ranged from 80.4% to 91.4%. Use on secondary roads fluctuated between 78.9% and 85.1% in the east, and 67.7% and 71.5% in the west. Occupants traveling local roads in both regions have shown a downward trend since reaching a high of 80.9% in 2018. These occupants were belted at rates ranging from 66.0% to 90.6% in the east region, and 58.4% to 74.5% in the west region. Rates for secondary and local roads were higher in the east than the west for all years, whereas higher rates on primary roads fluctuated between the regions.

**Table 15: Annual Percent Belted by Region & Road Type, Unweighted**

| EAST | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Primary | 83.1% | 96.2% | 97.1% | 94.5% | 97.0% |
| Secondary | 78.9% | 85.1% | 83.4% | 83.7% | 79.4% |
| Local | 75.1% | 82.2% | 90.6% | 91.4% | 66.0% |
| **WEST** | **2016** | **2017** | **2018** | **2019** | **2020** |
| Primary | 91.4% | 81.0% | 80.4% | 88.7% | 85.5% |
| Secondary | 70.8% | 70.8% | 67.7% | 71.5% | 70.9% |
| Local | 58.6% | 69.4% | 74.5% | 68.6% | 67.0% |
| **TOTAL** | **2016** | **2017** | **2018** | **2019** | **2020** |
| Primary | 85.9% | 90.9% | 89.1% | 91.4% | 91.2% |
| Secondary | 74.3% | 78.2% | 75.4% | 77.7% | 75.6% |
| Local | 66.4% | 74.1% | 80.9% | 77.2% | 66.6% |

Increases in rates are evident in most road classifications and regions when comparing the previous three years to the average for 2018-2020 (Figure 18). Two exceptions to this trend come from primary roads in the west, where the rate fell from 86.4% to 84.9%, and secondary roads in the west, where the rates stayed close to 70%. Although the extent of the increases varied, the largest improvement over time was found in belt use on local roads in the west, and primary roads in the eat. More divergence is identified regionally within the road types. For example, average restraint use on secondary roads in the east during the recent three-year period was 82.2%, whereas the rate in the west was 70.4%. In the east, occupants on local roads during this period demonstrated 82.7% use, compared with 70.0% in the west region.

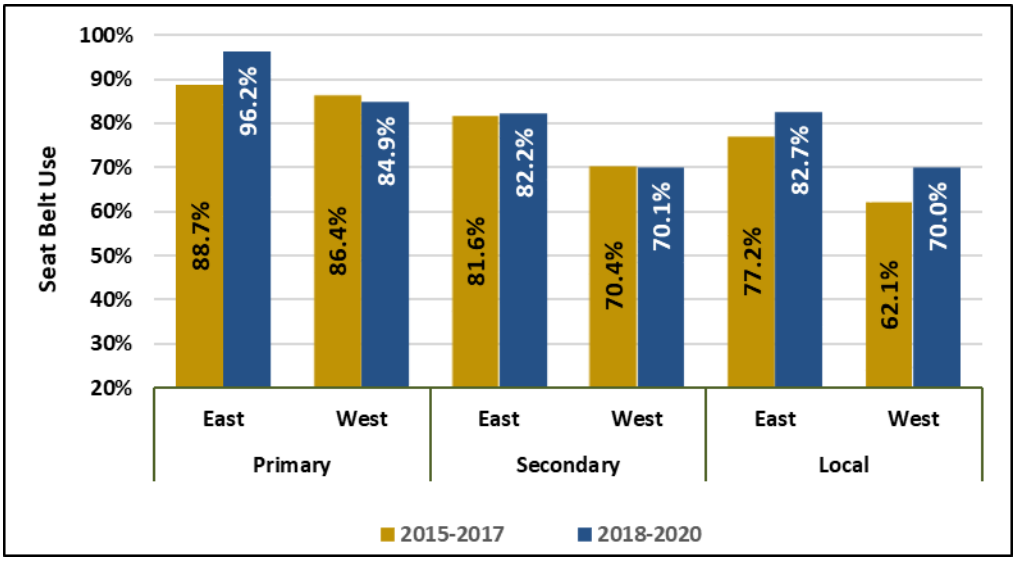



**Figure 18: Seat Belt Use by Roadway Type, Three-Year Averages, Unweighted**

Additional insight is found in delineating restraint use by road type and metropolitan statistical areas (MSA). MSA counties are defined as a core area consisting of a larger population nucleus and adjacent communities with high economic and social involvement (U.S. Census Bureau). The designated MSA counties in the South Dakota observational seat belt survey are Lincoln, Meade, Minnehaha, and Pennington.

The data shown in Figure 19 are unweighted and do not account for the allocation of sites by road type in the two categories. Analysis shows slightly differing rates of use on primary roads in MSA and non-MSA counties of 84% and 91%, respectively. Occupants traveling secondary roads were observed to be restrained at a rate of 73% in MSA counties and 76% in non-MSA counties. Occupants on local roads in MSA counties were restrained at a rate of 67%. Because local road sites were outside the sampling frame in non-MSA counties, a comparison of that road type is not available.

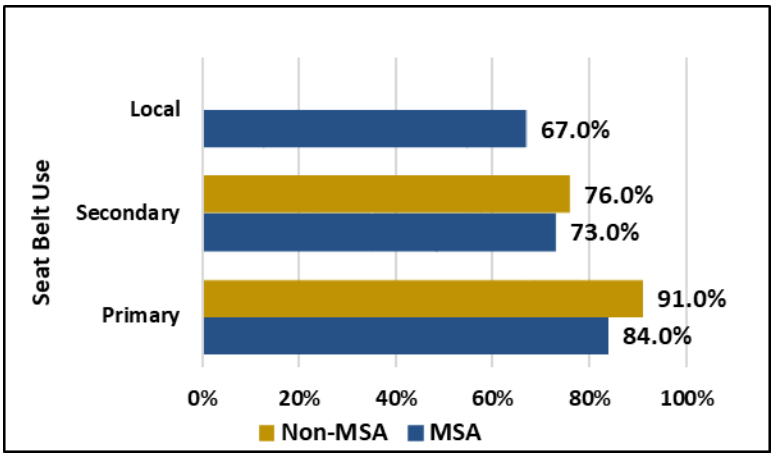



**Figure 19: Percent Belted by Road Type & Metropolitan Statistical Areas, 2020, Unweighted**

Table 16 shows a regional breakdown of sample size and restraint use by county designation and road type. A preponderance of observations for the primary road type was collected in non-MSA counties. The rate for this group was much higher in the east (97.2%) than in the west (85.8%). A similar pattern was seen in MSA counties where occupants were restrained at a rate of 91.7% in the east, compared with 80.2% in the west.

Secondary road occupants were also sampled more heavily in non-MSA counties than MSA counties. Occupants in non-MSA counties on this road type demonstrated rates of 79.7% in the east and 70.6% in the west. Rates in MSA counties were 64.2% and 76.8% in the east and west regions, respectively.

As mentioned previously, observations were collected on local roads in MSA counties only per NHTSA protocol guidance. The rate on local roads was 66.0% in the east and 67.0% in the west.

**Table 16: Seat Belt Use by Region and MSA Designations**

| | | East | | West | |
|---|---|---|---|---|---|
| | | Sample | Belted | Sample | Belted |
| **Primary** | MSA | 145 | 91.7% | 288 | 80.2% |
| | non-MSA | 5083 | 97.2% | 5069 | 85.8% |
| **Secondary** | MSA | 95 | 64.2% | 250 | 76.8% |
| | non-MSA | 4983 | 79.7% | 3980 | 70.6% |
| **Local** | MSA | 1482 | 66.0% | 2536 | 67.0% |
| | non-MSA | n.a | n.a. | n.a. | n.a. |

# SUMMARY

Observers collected data on seat belt use for 18,614 drivers and 5,297 right front-seat passengers for a total of 23,911 vehicle occupants. The observations were conducted at 320 sites across 16 counties. Based on the sampling methodology weighting procedures, the final estimate for statewide seat belt use was 68.3%. Experiences from other states indicate that improvement in seat belt use will likely only occur through some type of significant change, such as implementation of a primary seat belt law, increased funding for additional enforcement, or possibly higher fines (NHTSA).

The following is a summary of major findings from the 2020 survey regarding seat belt use in South Dakota:

- **County.** Weighted rates of seat belt use by county showed Aurora with the highest use at 99.0%. Ziebach County had the lowest use at 42.4%. Pennington, Lincoln, and Meade counties were also observed to be restrained at rates less than 70% in 2020. Trend comparisons for seven counties where historical data were available showed varied rates expressed in three-year averages, comparing 2015-2017 with 2018-2020. Trends were not available in the majority of counties due to the NHTSA-mandated reselection process, which is required every five years as a standard part of the survey process.

- **Vehicle Occupant.** Statewide, driver seat belt use was 79.5% while passenger use was 86.2%. At the county level, Aurora reflected the highest rate of driver use as well as the highest passenger use, 98.9% and 99.0%, respectively. These were followed by Jones and Moody counties with rates for both occupant positions above 90%. Harding, Lawrence, Lincoln, Meade, and Ziebach counties demonstrated driver usage of less than 70%. Passenger use was lowest in Ziebach County at 46.2%.

- **Region.** Overall rates of seat belt use were higher in the east region at 85.6%, compared with 76.5% in the west region. This regional disparity is noted throughout the 2015 to 2020 timeframe. Rates in the east ranged from a low of 79.8% in 2016 to a high of 91.1% in 2018. Rates in the west were considerably lower, ranging from a low of 71.6% in 2015 to a high of 79.4% in 2019. Regional disparity in use rates was also evident in occupant position. Drivers and passengers in the east registered use rates of 84.2% and 90.8%, respectively, compared with their counterparts in the west, with use rates of 74.7% for drivers and 82.3% for passengers.

- **Vehicle Type.** The results of the 2020 statewide survey indicated occupants of SUV and vans demonstrated relatively high restraint use, 87.4%, and 86.9%, respectively. Car and truck occupants, on the other hand, were belted at lower rates, 79.4% and 75.2%, respectively. The sample size of the truck demographic (32.6%), combined with the lower use, continues to negatively influence the overall South Dakota rate. Male occupants in trucks were belted at 72.3% in 2020, compared with 85.6% for females.

- **Gender.** In 2020, female occupants continued to show higher rates of seat belt use overall than male occupants, 87.8% and 79.5%, respectively. When considering rates at the county level, approximately 60% of the survey counties registered female use at or above 80%, whereas male rates were less than that level in roughly 38% of the counties. The rates by gender within the counties varied from 1 to as much as 25 percentage points. Higher rates hold for females whether they are drivers or passengers, not only in South Dakota, but across the nation.

- **Gender and Vehicle Type.** Females had higher rates of seat belt use than males for every vehicle type. The highest rate for males, 83.0%, was found in SUVs and the lowest, 72.3%, in trucks. By comparison, female rates were slightly more consistent across vehicle types, ranging from a high of 92.1% in vans to a low of 83.8% in cars.

- **Road Type.** Primary roads produced the largest share of occupants in the sample at 44.3%, followed by secondary roads with a 38.9% share. Local roads had the smallest share (16.8%) mainly due to their selection in only MSA counties per NHTSA protocol. Seat belt use in 2020 was highest on primary roads (91.2%), followed by secondary roads (75.6%), and local roads (66.6%). A comparison of results defined by MSA versus non-MSA county designation showed variations in sample size and rates of use. Approximately 20% of the sample was from designated MSA counties, with rates of 84.0%, 73.0%, and 67.0% on primary, secondary, and local roads, respectively. The majority of the sample was from non-MSA counties, with rates of 91.0% on primary roads and 76.0% on secondary roads. Regional differences in shares and use rates by road type were also noticed.

**APPENDICES**

# Appendix A: Survey Methodology

## Methodology Overview

On April 1, 2011, NHTSA published revised uniform criteria for the state observational seat belt surveys to guide occupant protection programs. The new rule changed many aspects of the survey design. One of these changes was to include counties in the sampling frame based on a fatality-based inclusion criterion as opposed to the population-based criterion of the past. This methodology was used for surveys from 2012 to 2016. The federal rule directs states to update sampling frame data every five years to ensure accurate fatality distribution as well as a representative inventory of road segments. Accordingly, in 2017, a review of fatalities over the five-year period 2010 to 2014 was performed, resulting in changes in county involvement and a complete reselection of sites.

It was determined that 44 counties accounted for at least 85% of South Dakota's total crash-related fatalities from 2010 to 2014. A subsample of 16 counties was selected for the survey of seat belt use in South Dakota. Counties represent the primary sampling unit. Half of the counties were selected from the western part of the state and the other eight were selected from the eastern half. Within each of those 16 counties, a sample of 20 sites were selected, providing a total of 320 site locations across the state. In the event that any original sites could not be observed due to unforeseen circumstances, a reserve sample of sites was also selected. The sites within the counties are the secondary sampling unit. The sites were stratified by road types, identified within three MAF/TIGER Feature Class Code (MTFCC) classifications: primary roads, secondary roads, and local roads.

The formulas contained in this report use the following definitions.

*g* – denotes the county strata (east or west)
*c* – denotes the county
*h* – denotes the road segment strata (primary, secondary, or local)
*i* – denotes the road segment
*j* – denotes the time segment
*k* – denotes the vehicles direction of travel
*l* – denotes the lane of observation
*m* – denotes the vehicle
*n* – denotes the front-seat occupant (driver or passenger)

Within each stratum, east and west, counties were selected with probability proportional to size (PPS) with the measure of size (MOS) being vehicle miles traveled (VMT). If we let $g = 1{,}2$ be the first stage strata, $v_{gc}$ be the VMT for county $c$ in stratum $g$, and $v_g = \sum_{all\ c\ in\ g} v_{gc}$ be the total VMT for all counties in first stage stratum $g$, then the primary sampling unit (PSU) inclusion probability is: $\pi_{gc} = n_g v_{gc}/v_g$ , here $n_g$is the PSU sample size for first stage stratum $g$ that was allocated. First, each strata was analyzed to identify if any certainty counties existed. A county was selected with certainty if its MOS was equal to or exceeded $v_g/n_g$. Each certainty county identified was set aside and the stratum MOS was reduced by that county's VMT and $n_g$ was reduced by one. This process was repeated until no

county's MOS was equal to or greater than $v_g/n_g$ based on the reduced values for $v_g$ and $n_g$. The probabilities of selection for the remaining counties in the stratum were calculated based on the new values for $v_g$ and $n_g$. Three certainty counties were identified in the west region: Pennington, Meade, and Lawrence. Minnehaha was the only county selected with certainty from the east region. The remaining counties for each region were selected using the SAS procedure PROC SURVEYSELECT based on the re-calculated probabilities of selection.

Next, road segments within each county were stratified by their MTFCC class; primary, secondary and local. The list of eligible road segments within each county was then sorted by segment length within each MTFCC group to obtain an ordered list. Road segments were selected with PPS using length as the MOS. The same procedure that was used to identify certainty counties was used to identify any certainty sites. Only one certainty road segment was identified. A sampling interval (I) was calculated as the total length across all remaining road segments within the county divided by the number of road segments to select within each county (i.e., 20 less the number of certainty sites). A random starting point (RS) was selected between 0 and I, which determined the first road segment selected. Subsequent road segments selected were determined by adding multiples of I to RS until the desired number of road segments was selected and/or the end of the sorted list was reached.

Once the sites were chosen, a random order of the sites to observe within each county was constructed. One of the sites in each county was randomly chosen as the starting site. This site was then randomly assigned to one of the 77 one-hour time slots within the week as mandated by the uniform criteria. The time slots cover Monday through Sunday from 7 a.m. to 6 p.m. Once the initial site was selected and assigned to a time slot, the remaining sites were clustered and arranged within the county to achieve administrative and economic efficiencies. After each site was identified, the direction of travel was chosen randomly as either N/W or S/E. The lane of traffic was chosen as the closest lane to where the observer could find a suitable and safe place to make observations.

Under the stratified multistage sample design, the inclusion probability for each observed vehicle is the product of selection probabilities at all stages:

> $\pi_{gc}$ for county,$\pi_{hi|gc}$ for road segment, $\pi_{j|gchi}$ for time segment, $\pi_{k|gchij}$ for direction, $\pi_{l|gchij}$ for lane, and $\pi_{m|gchijl}$for vehicle.

So the overall vehicle inclusion probability is:

$$\pi_{gchijklm} = \pi_{gc} \cdot \pi_{hi|gc} \cdot \pi_{j|gchi} \cdot \pi_{k|gchij} \cdot \pi_{l|gchij} \cdot \pi_{m|gchijl}$$

The sampling weight (design weight) for vehicle *m* is:

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

Noting that all front-seat occupants were observed and letting the driver/passenger seat belt use status be:

$$y_{gchijklmn} = \begin{cases} 1, & if\ belt\ used \\ 0, & otherwise \end{cases}.$$

Then the seat belt use rate estimator is a ratio estimator calculated as follows:

$$\rho = \frac{\sum_{all\ gchijklmn} w_{gchijklm} y_{gchijklmn}}{\sum_{all\ gchijklmn} w_{gchijklm}}.$$

This estimator captures traffic volume and vehicle miles traveled through design weights (which will include nonresponse adjustment factors) at various stages and it does not require knowledge of VMT/DVMT.

## Appendix B: Survey Instrument

## Seat Belt Survey Form

**Page # _____ of_____**

**Date _____** **Start Time: _____ AM/PM** **End Time _____AM/PM**

**County_____** **Observer Name:_____**

**Site Location Description (including city/town where applicable): _____**

**Site ID Number: _____ (if applicable)**

Traffic Type Being Observed: ❑ Town/City ❑ Highway/County Road (outside of city/town) ❑ Interstate

| Obs | Vehicle Type | | | | | Driver | | | | | | Passenger | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Gender | | | Protection | | | Gender | | | Protection | | |
| 1 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 2 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 3 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 4 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 5 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 6 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 7 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 8 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 9 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 10 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 11 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 12 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 13 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 14 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 15 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 16 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 17 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 18 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 19 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 20 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 21 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 22 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 23 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 24 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 25 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 26 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 27 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 28 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 29 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |
| 30 | Car | Trck | SUV | Van | Mcycl | M | F | DK | Y | N | DK | M | F | DK | Y | N | DK |

## Appendix C: Seat Belt Use Rates with Site and County Weights

**Aurora County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.05035 | 0.19189 | 313 | 313 | 100.0% |
| 2 | 0.10222 | 0.19189 | 217 | 217 | 100.0% |
| 3 | 0.14767 | 0.19189 | 387 | 387 | 100.0% |
| 4 | 0.20058 | 0.19189 | 435 | 435 | 100.0% |
| 5 | 0.27463 | 0.19189 | 401 | 401 | 100.0% |
| 6 | 0.30301 | 0.19189 | 210 | 211 | 99.5% |
| 7 | 0.30591 | 0.19189 | 315 | 315 | 100.0% |
| 8 | 0.44173 | 0.19189 | 310 | 310 | 100.0% |
| 9 | 0.01473 | 0.19189 | 46 | 49 | 93.9% |
| 10 | 0.06036 | 0.19189 | 15 | 15 | 100.0% |
| 11 | 0.09658 | 0.19189 | 8 | 13 | 61.5% |
| 12 | 0.12607 | 0.19189 | 38 | 40 | 95.0% |
| 13 | 0.14341 | 0.19189 | 30 | 30 | 100.0% |
| 14 | 0.15693 | 0.19189 | 21 | 26 | 80.8% |
| 15 | 0.16507 | 0.19189 | 9 | 15 | 60.0% |
| 16 | 0.16856 | 0.19189 | 17 | 21 | 81.0% |
| 17 | 0.17007 | 0.19189 | 15 | 20 | 75.0% |
| 18 | 0.17101 | 0.19189 | 36 | 37 | 97.3% |
| 19 | 0.17200 | 0.19189 | 18 | 18 | 100.0% |
| 20 | 0.19845 | 0.19189 | 32 | 32 | 100.0% |

**Bon Homme County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.00677 | 0.12394 | 5 | 9 | 55.6% |
| 2 | 0.01354 | 0.12394 | 14 | 24 | 58.3% |
| 3 | 0.02130 | 0.12394 | 51 | 64 | 79.7% |
| 4 | 0.02624 | 0.12394 | | 0 | 0.0% |
| 5 | 0.03260 | 0.12394 | 23 | 30 | 76.7% |
| 6 | 0.03993 | 0.12394 | 8 | 14 | 57.1% |
| 7 | 0.04383 | 0.12394 | 56 | 75 | 74.7% |
| 8 | 0.04734 | 0.12394 | 24 | 31 | 77.4% |
| 9 | 0.05213 | 0.12394 | 60 | 77 | 77.9% |
| 10 | 0.05662 | 0.12394 | 10 | 15 | 66.7% |
| 11 | 0.06199 | 0.12394 | 12 | 14 | 85.7% |
| 12 | 0.06954 | 0.12394 | 19 | 31 | 61.3% |
| 13 | 0.07733 | 0.12394 | 44 | 63 | 69.8% |
| 14 | 0.08431 | 0.12394 | 17 | 21 | 81.0% |
| 15 | 0.08981 | 0.12394 | 14 | 20 | 70.0% |
| 16 | 0.09959 | 0.12394 | 13 | 19 | 68.4% |
| 17 | 0.11460 | 0.12394 | 42 | 55 | 76.4% |
| 18 | 0.12924 | 0.12394 | 13 | 21 | 61.9% |
| 19 | 0.14300 | 0.12394 | 24 | 32 | 75.0% |
| 20 | 0.17121 | 0.12394 | 10 | 14 | 71.4% |

**Day County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.00763 | 0.16674 | 74 | 94 | 78.7% |
| 2 | 0.01587 | 0.16674 | 13 | 21 | 61.9% |
| 3 | 0.02587 | 0.16674 | 107 | 116 | 92.2% |
| 4 | 0.03766 | 0.16674 | 97 | 112 | 86.6% |
| 5 | 0.04626 | 0.16674 | 17 | 25 | 68.0% |
| 6 | 0.05194 | 0.16674 | 118 | 168 | 70.2% |
| 7 | 0.06034 | 0.16674 | 96 | 122 | 78.7% |
| 8 | 0.07156 | 0.16674 | 169 | 203 | 83.3% |
| 9 | 0.08272 | 0.16674 | 105 | 128 | 82.0% |
| 10 | 0.09304 | 0.16674 | 7 | 12 | 58.3% |
| 11 | 0.09970 | 0.16674 | 43 | 70 | 61.4% |
| 12 | 0.10886 | 0.16674 | 3 | 7 | 42.9% |
| 13 | 0.12871 | 0.16674 | 17 | 18 | 94.4% |
| 14 | 0.13554 | 0.16674 | 92 | 103 | 89.3% |
| 15 | 0.14992 | 0.16674 | 122 | 146 | 83.6% |
| 16 | 0.16337 | 0.16674 | 10 | 14 | 71.4% |
| 17 | 0.17701 | 0.16674 | 90 | 103 | 87.4% |
| 18 | 0.20885 | 0.16674 | 189 | 237 | 79.7% |
| 19 | 0.21114 | 0.16674 | 142 | 157 | 90.4% |
| 20 | 0.22351 | 0.16674 | 146 | 188 | 77.7% |

**Hamlin County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.15358 | 0.13285 | 126 | 129 | 97.7% |
| 2 | 0.23698 | 0.13285 | 135 | 144 | 93.8% |
| 3 | 0.01384 | 0.13285 | 26 | 43 | 60.5% |
| 4 | 0.02658 | 0.13285 | 55 | 78 | 70.5% |
| 5 | 0.04188 | 0.13285 | 15 | 19 | 78.9% |
| 6 | 0.05948 | 0.13285 | 16 | 20 | 80.0% |
| 7 | 0.07491 | 0.13285 | 23 | 28 | 82.1% |
| 8 | 0.08760 | 0.13285 | 22 | 29 | 75.9% |
| 9 | 0.10508 | 0.13285 | 17 | 18 | 94.4% |
| 10 | 0.11610 | 0.13285 | 10 | 17 | 58.8% |
| 11 | 0.12552 | 0.13285 | 18 | 22 | 81.8% |
| 12 | 0.13577 | 0.13285 | 22 | 22 | 100.0% |
| 13 | 0.15665 | 0.13285 | 50 | 60 | 83.3% |
| 14 | 0.17134 | 0.13285 | 40 | 45 | 88.9% |
| 15 | 0.18804 | 0.13285 | 83 | 87 | 95.4% |
| 16 | 0.19998 | 0.13285 | 11 | 11 | 100.0% |
| 17 | 0.21429 | 0.13285 | 32 | 40 | 80.0% |
| 18 | 0.21527 | 0.13285 | 14 | 17 | 82.4% |
| 19 | 0.21612 | 0.13285 | 26 | 32 | 81.3% |
| 20 | 0.37343 | 0.13285 | 19 | 27 | 70.4% |

**Harding County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.02008 | 0.21203 | 9 | 9 | 100.0% |
| 2 | 0.04026 | 0.21203 | 31 | 44 | 70.5% |
| 3 | 0.05132 | 0.21203 | | 0 | |
| 4 | 0.05907 | 0.21203 | | 0 | |
| 5 | 0.06630 | 0.21203 | | 0 | |
| 6 | 0.07584 | 0.21203 | 28 | 44 | 63.6% |
| 7 | 0.08620 | 0.21203 | 15 | 25 | 60.0% |
| 8 | 0.09559 | 0.21203 | 7 | 12 | 58.3% |
| 9 | 0.10437 | 0.21203 | 4 | 9 | 44.4% |
| 10 | 0.10704 | 0.21203 | 7 | 9 | 77.8% |
| 11 | 0.11705 | 0.21203 | | 0 | |
| 12 | 0.12407 | 0.21203 | 4 | 4 | 100.0% |
| 13 | 0.14668 | 0.21203 | 3 | 5 | 60.0% |
| 14 | 0.16130 | 0.21203 | 3 | 5 | 60.0% |
| 15 | 0.18339 | 0.21203 | 3 | 4 | 75.0% |
| 16 | 0.21183 | 0.21203 | 6 | 7 | 85.7% |
| 17 | 0.24223 | 0.21203 | 4 | 5 | 80.0% |
| 18 | 0.27401 | 0.21203 | 58 | 78 | 74.4% |
| 19 | 0.34095 | 0.21203 | 28 | 54 | 51.9% |
| 20 | 0.49021 | 0.21203 | 43 | 59 | 72.9% |

**Jones County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.04197 | 0.37274 | 132 | 140 | 94.3% |
| 2 | 0.05313 | 0.37274 | 147 | 155 | 94.8% |
| 3 | 0.06438 | 0.37274 | 124 | 135 | 91.9% |
| 4 | 0.07633 | 0.37274 | 204 | 209 | 97.6% |
| 5 | 0.09061 | 0.37274 | 176 | 181 | 97.2% |
| 6 | 0.10413 | 0.37274 | 190 | 200 | 95.0% |
| 7 | 0.12280 | 0.37274 | 162 | 175 | 92.6% |
| 8 | 0.14236 | 0.37274 | 201 | 224 | 89.7% |
| 9 | 0.20049 | 0.37274 | 177 | 184 | 96.2% |
| 10 | 0.33076 | 0.37274 | 215 | 228 | 94.3% |
| 11 | 0.36963 | 0.37274 | 103 | 104 | 99.0% |
| 12 | 0.00525 | 0.37274 | 9 | 51 | 17.6% |
| 13 | 0.03489 | 0.37274 | | 0 | |
| 14 | 0.05222 | 0.37274 | | 0 | |
| 15 | 0.07942 | 0.37274 | 4 | 10 | 40.0% |
| 16 | 0.10054 | 0.37274 | 3 | 6 | 50.0% |
| 17 | 0.13721 | 0.37274 | 1 | 3 | 33.3% |
| 18 | 0.16655 | 0.37274 | 3 | 3 | 100.0% |
| 19 | 0.20673 | 0.37274 | 6 | 6 | 100.0% |
| 20 | 0.36671 | 0.37274 | 1 | 1 | 100.0% |

**Lawrence County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.03584 | 1.00000 | 240 | 353 | 68.0% |
| 2 | 0.04487 | 1.00000 | 195 | 295 | 66.1% |
| 3 | 0.07269 | 1.00000 | 98 | 130 | 75.4% |
| 4 | 0.09063 | 1.00000 | 234 | 310 | 75.5% |
| 5 | 0.12581 | 1.00000 | 214 | 292 | 73.3% |
| 6 | 0.19099 | 1.00000 | 255 | 349 | 73.1% |
| 7 | 0.00300 | 1.00000 | 154 | 209 | 73.7% |
| 8 | 0.01134 | 1.00000 | 92 | 141 | 65.2% |
| 9 | 0.01950 | 1.00000 | 168 | 255 | 65.9% |
| 10 | 0.02725 | 1.00000 | 24 | 39 | 61.5% |
| 11 | 0.03695 | 1.00000 | 91 | 121 | 75.2% |
| 12 | 0.04993 | 1.00000 | 30 | 41 | 73.2% |
| 13 | 0.06129 | 1.00000 | 111 | 135 | 82.2% |
| 14 | 0.07615 | 1.00000 | 28 | 30 | 93.3% |
| 15 | 0.09037 | 1.00000 | 90 | 136 | 66.2% |
| 16 | 0.10017 | 1.00000 | 59 | 89 | 66.3% |
| 17 | 0.11583 | 1.00000 | 21 | 26 | 80.8% |
| 18 | 0.16564 | 1.00000 | 118 | 168 | 70.2% |
| 19 | 0.26954 | 1.00000 | 58 | 91 | 63.7% |
| 20 | 0.36665 | 1.00000 | 79 | 102 | 77.5% |

**Lincoln County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.00075 | 0.95517 | 59 | 92 | 64.1% |
| 2 | 0.00113 | 0.95517 | 10 | 15 | 66.7% |
| 3 | 0.00064 | 0.95517 | 133 | 263 | 50.6% |
| 4 | 0.00275 | 0.95517 | 325 | 421 | 77.2% |
| 5 | 0.00321 | 0.95517 | 37 | 65 | 56.9% |
| 6 | 0.00422 | 0.95517 | 32 | 59 | 54.2% |
| 7 | 0.00063 | 0.95517 | 7 | 24 | 29.2% |
| 8 | 0.00233 | 0.95517 | 3 | 3 | 100.0% |
| 9 | 0.00085 | 0.95517 | 13 | 20 | 65.0% |
| 10 | 0.00321 | 0.95517 | 103 | 166 | 62.0% |
| 11 | 0.00113 | 0.95517 | 29 | 34 | 85.3% |
| 12 | 0.00421 | 0.95517 | 13 | 20 | 65.0% |
| 13 | 0.00763 | 0.95517 | 22 | 36 | 61.1% |
| 14 | 0.01149 | 0.95517 | 6 | 12 | 50.0% |
| 15 | 0.00620 | 0.95517 | 5 | 7 | 71.4% |
| 16 | 0.00657 | 0.95517 | 72 | 97 | 74.2% |
| 17 | 0.00318 | 0.95517 | | 0 | |
| 18 | 0.00396 | 0.95517 | 37 | 62 | 59.7% |
| 19 | 0.01162 | 0.95517 | 22 | 34 | 64.7% |
| 20 | 0.00196 | 0.95517 | 17 | 35 | 48.6% |

**Lyman County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.01033 | 0.73276 | 156 | 169 | 92.3% |
| 2 | 0.02300 | 0.73276 | 165 | 181 | 91.2% |
| 3 | 0.04714 | 0.73276 | 214 | 226 | 94.7% |
| 4 | 0.06524 | 0.73276 | 259 | 299 | 86.6% |
| 5 | 0.07863 | 0.73276 | 133 | 150 | 88.7% |
| 6 | 0.11631 | 0.73276 | 258 | 272 | 94.9% |
| 7 | 0.13672 | 0.73276 | 95 | 108 | 88.0% |
| 8 | 0.00314 | 0.73276 | 10 | 14 | 71.4% |
| 9 | 0.01797 | 0.73276 | 54 | 97 | 55.7% |
| 10 | 0.02754 | 0.73276 | 29 | 35 | 82.9% |
| 11 | 0.03447 | 0.73276 | 5 | 14 | 35.7% |
| 12 | 0.04179 | 0.73276 | 10 | 13 | 76.9% |
| 13 | 0.05414 | 0.73276 | 26 | 36 | 72.2% |
| 14 | 0.06812 | 0.73276 | 8 | 18 | 44.4% |
| 15 | 0.07054 | 0.73276 | 24 | 36 | 66.7% |
| 16 | 0.09146 | 0.73276 | 1 | 1 | 100.0% |
| 17 | 0.11040 | 0.73276 | 12 | 16 | 75.0% |
| 18 | 0.13650 | 0.73276 | 17 | 25 | 68.0% |
| 19 | 0.18173 | 0.73276 | 8 | 14 | 57.1% |
| 20 | 0.25105 | 0.73276 | 26 | 33 | 78.8% |

**Meade County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.00173 | 1.00000 | 7 | 13 | 53.8% |
| 2 | 0.00988 | 1.00000 | 16 | 27 | 59.3% |
| 3 | 0.00032 | 1.00000 | 24 | 49 | 49.0% |
| 4 | 0.00032 | 1.00000 | 14 | 27 | 51.9% |
| 5 | 0.00348 | 1.00000 | 13 | 14 | 92.9% |
| 6 | 0.00032 | 1.00000 | 141 | 234 | 60.3% |
| 7 | 0.00175 | 1.00000 | 56 | 119 | 47.1% |
| 8 | 0.00143 | 1.00000 | 2 | 5 | 40.0% |
| 9 | 0.00121 | 1.00000 | 67 | 84 | 79.8% |
| 10 | 0.04477 | 1.00000 | 13 | 14 | 92.9% |
| 11 | 0.00681 | 1.00000 | 3 | 7 | 42.9% |
| 12 | 0.00435 | 1.00000 | 26 | 41 | 63.4% |
| 13 | 0.00670 | 1.00000 | 3 | 4 | 75.0% |
| 14 | 0.00978 | 1.00000 | 7 | 8 | 87.5% |
| 15 | 0.00249 | 1.00000 | 8 | 25 | 32.0% |
| 16 | 0.01388 | 1.00000 | 9 | 12 | 75.0% |
| 17 | 0.01440 | 1.00000 | 0 | 0 | 0.0% |
| 18 | 0.00484 | 1.00000 | 7 | 13 | 53.8% |
| 19 | 0.00084 | 1.00000 | 18 | 23 | 78.3% |
| 20 | 0.01092 | 1.00000 | 5 | 11 | 45.5% |

**Minnehaha County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.00306 | 1.00000 | 133 | 145 | 91.7% |
| 2 | 0.00191 | 1.00000 | 2 | 3 | 66.7% |
| 3 | 0.00024 | 1.00000 | 2 | 2 | 100.0% |
| 4 | 0.00047 | 1.00000 | 11 | 14 | 78.6% |
| 5 | 0.00047 | 1.00000 | 9 | 13 | 69.2% |
| 6 | 0.00067 | 1.00000 | 7 | 7 | 100.0% |
| 7 | 0.00086 | 1.00000 | 2 | 2 | 100.0% |
| 8 | 0.00053 | 1.00000 | 1 | 1 | 100.0% |
| 9 | 0.00131 | 1.00000 | 2 | 2 | 100.0% |
| 10 | 0.00086 | 1.00000 | 8 | 8 | 100.0% |
| 11 | 0.00198 | 1.00000 | 6 | 7 | 85.7% |
| 12 | 0.00245 | 1.00000 | 2 | 5 | 40.0% |
| 13 | 0.00105 | 1.00000 | 2 | 3 | 66.7% |
| 14 | 0.00366 | 1.00000 | 3 | 5 | 60.0% |
| 15 | 0.00131 | 1.00000 | 25 | 26 | 96.2% |
| 16 | 0.00305 | 1.00000 | 1 | 3 | 33.3% |
| 17 | 0.00565 | 1.00000 | | 0 | |
| 18 | 0.00365 | 1.00000 | | 0 | |
| 19 | 0.00047 | 1.00000 | 10 | 10 | 100.0% |
| 20 | 0.00053 | 1.00000 | 1 | 1 | 100.0% |

**Moody County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.05083 | 0.32382 | 204 | 229 | 89.1% |
| 2 | 0.08886 | 0.32382 | 202 | 213 | 94.8% |
| 3 | 0.10728 | 0.32382 | 206 | 217 | 94.9% |
| 4 | 0.15578 | 0.32382 | 195 | 201 | 97.0% |
| 5 | 0.20432 | 0.32382 | 228 | 244 | 93.4% |
| 6 | 0.23366 | 0.32382 | 262 | 275 | 95.3% |
| 7 | 0.34741 | 0.32382 | 185 | 197 | 93.9% |
| 8 | 0.36261 | 0.32382 | 180 | 192 | 93.8% |
| 9 | 0.55812 | 0.32382 | 204 | 218 | 93.6% |
| 10 | 0.55932 | 0.32382 | 225 | 235 | 95.7% |
| 11 | 0.02071 | 0.32382 | 74 | 85 | 87.1% |
| 12 | 0.05203 | 0.32382 | 38 | 59 | 64.4% |
| 13 | 0.07210 | 0.32382 | 32 | 36 | 88.9% |
| 14 | 0.09211 | 0.32382 | 45 | 48 | 93.8% |
| 15 | 0.10583 | 0.32382 | 28 | 34 | 82.4% |
| 16 | 0.13445 | 0.32382 | 52 | 55 | 94.5% |
| 17 | 0.15909 | 0.32382 | 82 | 94 | 87.2% |
| 18 | 0.19919 | 0.32382 | 100 | 109 | 91.7% |
| 19 | 0.20421 | 0.32382 | 26 | 37 | 70.3% |
| 20 | 0.20578 | 0.32382 | 16 | 17 | 94.1% |

**Oglala Lakota County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.01929 | 0.42510 | 53 | 70 | 75.7% |
| 2 | 0.03308 | 0.42510 | 78 | 104 | 75.0% |
| 3 | 0.04394 | 0.42510 | 88 | 108 | 81.5% |
| 4 | 0.05114 | 0.42510 | 84 | 104 | 80.8% |
| 5 | 0.06254 | 0.42510 | 156 | 192 | 81.3% |
| 6 | 0.07509 | 0.42510 | 15 | 18 | 83.3% |
| 7 | 0.08333 | 0.42510 | 82 | 97 | 84.5% |
| 8 | 0.10421 | 0.42510 | 76 | 101 | 75.2% |
| 9 | 0.12402 | 0.42510 | 66 | 88 | 75.0% |
| 10 | 0.13727 | 0.42510 | 15 | 21 | 71.4% |
| 11 | 0.15818 | 0.42510 | 108 | 128 | 84.4% |
| 12 | 0.18245 | 0.42510 | 16 | 21 | 76.2% |
| 13 | 0.20438 | 0.42510 | 20 | 23 | 87.0% |
| 14 | 0.26934 | 0.42510 | 23 | 28 | 82.1% |
| 15 | 0.29136 | 0.42510 | 27 | 31 | 87.1% |
| 16 | 0.30310 | 0.42510 | 35 | 43 | 81.4% |
| 17 | 0.33269 | 0.42510 | 22 | 26 | 84.6% |
| 18 | 0.36616 | 0.42510 | 21 | 26 | 80.8% |
| 19 | 0.43750 | 0.42510 | 32 | 33 | 97.0% |
| 20 | 0.46074 | 0.42510 | 40 | 46 | 87.0% |

**Pennington County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.00417 | 1.00000 | 231 | 288 | 80.2% |
| 2 | 0.00206 | 1.00000 | 159 | 197 | 80.7% |
| 3 | 0.01345 | 1.00000 | 10 | 13 | 76.9% |
| 4 | 0.00071 | 1.00000 | 4 | 4 | 100.0% |
| 5 | 0.00052 | 1.00000 | 9 | 17 | 52.9% |
| 6 | 0.00035 | 1.00000 | 43 | 71 | 60.6% |
| 7 | 0.00095 | 1.00000 | 250 | 356 | 70.2% |
| 8 | 0.00124 | 1.00000 | 196 | 265 | 74.0% |
| 9 | 0.00095 | 1.00000 | 158 | 210 | 75.2% |
| 10 | 0.00158 | 1.00000 | 279 | 375 | 74.4% |
| 11 | 0.00294 | 1.00000 | 7 | 10 | 70.0% |
| 12 | 0.00346 | 1.00000 | 35 | 45 | 77.8% |
| 13 | 0.00477 | 1.00000 | 4 | 6 | 66.7% |
| 14 | 0.00411 | 1.00000 | 6 | 13 | 46.2% |
| 15 | 0.00035 | 1.00000 | 227 | 363 | 62.5% |
| 16 | 0.00123 | 1.00000 | 15 | 18 | 83.3% |
| 17 | 0.00147 | 1.00000 | 6 | 11 | 54.5% |
| 18 | 0.00343 | 1.00000 | 2 | 4 | 50.0% |
| 19 | 0.00444 | 1.00000 | 8 | 20 | 40.0% |
| 20 | 0.00206 | 1.00000 | 34 | 57 | 59.6% |

**Spink County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.01126 | 0.17868 | 12 | 14 | 85.7% |
| 2 | 0.02329 | 0.17868 | 38 | 45 | 84.4% |
| 3 | 0.03309 | 0.17868 | 55 | 87 | 63.2% |
| 4 | 0.04366 | 0.17868 | 25 | 35 | 71.4% |
| 5 | 0.05127 | 0.17868 | 33 | 38 | 86.8% |
| 6 | 0.05746 | 0.17868 | 12 | 24 | 50.0% |
| 7 | 0.06522 | 0.17868 | 10 | 16 | 62.5% |
| 8 | 0.07646 | 0.17868 | 23 | 37 | 62.2% |
| 9 | 0.08227 | 0.17868 | 28 | 41 | 68.3% |
| 10 | 0.09032 | 0.17868 | 74 | 100 | 74.0% |
| 11 | 0.10165 | 0.17868 | 4 | 11 | 36.4% |
| 12 | 0.11261 | 0.17868 | 4 | 7 | 57.1% |
| 13 | 0.11342 | 0.17868 | 6 | 8 | 75.0% |
| 14 | 0.11365 | 0.17868 | 21 | 27 | 77.8% |
| 15 | 0.11381 | 0.17868 | 101 | 125 | 80.8% |
| 16 | 0.11398 | 0.17868 | 59 | 84 | 70.2% |
| 17 | 0.11414 | 0.17868 | 5 | 9 | 55.6% |
| 18 | 0.11429 | 0.17868 | 52 | 71 | 73.2% |
| 19 | 0.11733 | 0.17868 | 7 | 13 | 53.8% |
| 20 | 0.18051 | 0.17868 | 11 | 13 | 84.6% |

**Ziebach County**

**June, 2020**

| Site Rates With Weights | | | | | |
|---|---|---|---|---|---|
| Site | Site Weight | County Weight | Total Belted | Total Occupants | Seat Belt Rate |
| 1 | 0.05346 | 0.12200 | 12 | 34 | 35.3% |
| 2 | 0.07036 | 0.12200 | 7 | 13 | 53.8% |
| 3 | 0.08918 | 0.12200 | 7 | 19 | 36.8% |
| 4 | 0.09439 | 0.12200 | 5 | 18 | 27.8% |
| 5 | 0.10966 | 0.12200 | 3 | 4 | 75.0% |
| 6 | 0.12806 | 0.12200 | 24 | 35 | 68.6% |
| 7 | 0.15963 | 0.12200 | 1 | 2 | 50.0% |
| 8 | 0.18352 | 0.12200 | 2 | 2 | 100.0% |
| 9 | 0.20028 | 0.12200 | 2 | 2 | 100.0% |
| 10 | 0.21030 | 0.12200 | 16 | 44 | 36.4% |
| 11 | 0.21676 | 0.12200 | | 0 | |
| 12 | 0.22885 | 0.12200 | 1 | 4 | 25.0% |
| 13 | 0.25846 | 0.12200 | 1 | 2 | 50.0% |
| 14 | 0.30727 | 0.12200 | 4 | 10 | 40.0% |
| 15 | 0.35155 | 0.12200 | 4 | 19 | 21.1% |
| 16 | 0.41238 | 0.12200 | 5 | 18 | 27.8% |
| 17 | 0.47518 | 0.12200 | 2 | 9 | 22.2% |
| 18 | 0.58634 | 0.12200 | 3 | 9 | 33.3% |
| 19 | 0.74696 | 0.12200 | 6 | 11 | 54.5% |
| 20 | 1.00000 | 0.12200 | 14 | 22 | 63.6% |

## Appendix D: Site Locations

**Aurora County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 90 | -98.71103597 | 43.71707521 | W | 0.295807 |
| 2 | I- 90 | -98.77545066 | 43.73705404 | W | 0.600553 |
| 3 | I- 90 | -98.33453718 | 43.69590596 | W | 0.867614 |
| 4 | I- 90 | -98.64313649 | 43.70854155 | W | 1.178463 |
| 5 | I- 90 | -98.46574191 | 43.6978363 | W | 1.613522 |
| 6 | I- 90 | -98.69065487 | 43.71457055 | W | 1.780276 |
| 7 | I- 90 | -98.57659899 | 43.70841846 | W | 1.797319 |
| 8 | I- 90 | -98.3914534 | 43.69492717 | E | 2.595301 |
| 9 | 388th Ave | -98.44421879 | 43.69561138 | S | 0.086549 |
| 10 | 388th Ave | -98.45161146 | 43.9343449 | S | 0.354612 |
| 11 | US Hwy 16 | -98.61927927 | 43.72134435 | E | 0.567449 |
| 12 | 388th Ave | -98.43967678 | 43.53625578 | N | 0.7407 |
| 13 | 388th Ave | -98.44543813 | 43.73677104 | N | 0.842584 |
| 14 | US Hwy 16 | -98.45394157 | 43.71187576 | W | 0.922033 |
| 15 | 253rd St | -98.53635068 | 43.71541564 | W | 0.969811 |
| 16 | US Hwy 16 | -98.39536403 | 43.71089606 | W | 0.990334 |
| 17 | US Hwy 16 | -98.4152227 | 43.71122493 | E | 0.999214 |
| 18 | 388th Ave | -98.44276207 | 43.65077172 | S | 1.00475 |
| 19 | Hwy 281 | -98.44548819 | 43.78179036 | N | 1.010563 |
| 20 | US Hwy 281 | -98.43206486 | 43.52008869 | N | 1.165928 |

**Bon Homme County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | W 2nd Ave | -98.0695045 | 43.0063435 | W | 0.039539 |
| 2 | State Hwy 50 Alt | -98.08832704 | 43.0099235 | E | 0.079136 |
| 3 | 303rd St | -97.89117968 | 42.99304934 | E | 0.124469 |
| 4 | State Hwy 50 Alt | -98.08063949 | 43.00673208 | W | 0.153352 |
| 5 | State Hwy 52 | -97.8506035 | 42.9083735 | E | 0.190537 |
| 6 | Hwy 46 Sd | -98.066293 | 43.0826525 | E | 0.233354 |
| 7 | 303rd St | -97.90687648 | 42.99582135 | W | 0.256148 |
| 8 | State Hwy 37 | -97.970135 | 43.1301595 | N | 0.276641 |
| 9 | 304th St | -97.8417754 | 42.98056143 | E | 0.304679 |
| 10 | State Hwy 25 | -97.71589443 | 43.12849339 | N | 0.330905 |
| 11 | State Hwy 46 | -97.691682 | 43.082467 | W | 0.362295 |
| 12 | State Hwy 37 | -97.9704635 | 43.143101 | N | 0.406405 |
| 13 | State Hwy 50 | -97.77909303 | 42.9758641 | W | 0.451929 |
| 14 | State Hwy 52 | -97.86592249 | 42.90835372 | W | 0.492761 |
| 15 | State Hwy 46 | -98.00424849 | 43.08233654 | E | 0.524872 |
| 16 | Hwy 50 Sd | -98.0780165 | 43.01005757 | W | 0.582009 |
| 17 | State Hwy 50 | -97.88305034 | 42.98974999 | E | 0.669763 |
| 18 | Hwy 25 Sd | -97.71430422 | 42.98984802 | S | 0.755341 |
| 19 | State Hwy 52 | -97.666447 | 42.908575 | E | 0.835726 |
| 20 | State Hwy 46 | -98.07848554 | 43.08268167 | W | 1.000613 |

**Day County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | US Hwy 12 | -97.2923115 | 45.340932 | W | 0.03648 |
| 2 | Bryant Ave | -97.490984 | 45.5002775 | E | 0.075864 |
| 3 | US Hwy 12 | -97.9056675 | 45.41398 | W | 0.123693 |
| 4 | US Hwy 12 | -97.84931798 | 45.38584463 | S | 0.180041 |
| 5 | State Hwy 25 | -97.43048386 | 45.54553702 | S | 0.22114 |
| 6 | US Hwy 12 | -97.312833 | 45.3409805 | E | 0.248293 |
| 7 | US Hwy 12 | -97.61934851 | 45.34092213 | W | 0.288462 |
| 8 | US Hwy 12 | -97.4109925 | 45.341006 | E | 0.342129 |
| 9 | US Hwy 12 | -97.59582854 | 45.340735 | E | 0.395454 |
| 10 | State Hwy 27 | -97.83695234 | 45.52644744 | S | 0.444825 |
| 11 | State Hwy 25 | -97.53534719 | 45.16961803 | S | 0.476645 |
| 12 | State Hwy 27 | -97.83760871 | 45.46783586 | S | 0.520453 |
| 13 | State Hwy 27 | -97.83790863 | 45.43792105 | S | 0.615331 |
| 14 | US Hwy 12 | -97.2334427 | 45.33547429 | E | 0.647995 |
| 15 | US Hwy 12 | -97.88582549 | 45.41386495 | E | 0.716732 |
| 16 | State Hwy 27 | -97.8368168 | 45.53853858 | S | 0.781051 |
| 17 | US Hwy 12 | -97.357186 | 45.34101207 | W | 0.846239 |
| 18 | US Hwy 12 | -97.66344951 | 45.34096418 | W | 0.998437 |
| 19 | US Hwy 12 | -97.92978663 | 45.41497659 | E | 1.009388 |
| 20 | US Hwy 12 | -97.3346935 | 45.34101188 | E | 1.068562 |

**Hamlin County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 29 | -96.89381348 | 44.75278323 | N | 0.71176 |
| 2 | I- 29 | -96.949954 | 44.79302409 | N | 1.098312 |
| 3 | State Ave | -96.904386 | 44.5727535 | E | 0.064163 |
| 4 | 192nd St | -97.048644 | 44.602546 | E | 0.123204 |
| 5 | Hwy 28 | -97.3083795 | 44.587005 | W | 0.194079 |
| 6 | E Hwy 22 | -96.98332099 | 44.73177872 | E | 0.275641 |
| 7 | Hwy 28 | -97.367072 | 44.586982 | W | 0.34719 |
| 8 | Sd 22 | -97.103578 | 44.73121617 | E | 0.406006 |
| 9 | E Hwy 22 | -97.011204 | 44.7317625 | W | 0.486994 |
| 10 | Hwy 22 | -97.18373347 | 44.75759505 | W | 0.538064 |
| 11 | 463rd Ave | -96.9455614 | 44.73904036 | W | 0.581707 |
| 12 | Hwy 28 | -97.03626123 | 44.59997926 | E | 0.629229 |
| 13 | S Dakota Highway 28 | -97.19810485 | 44.58593707 | E | 0.726019 |
| 14 | Hwy 28 | -97.31839252 | 44.58700023 | W | 0.794093 |
| 15 | 454th Ave | -97.127786 | 44.6506905 | S | 0.871483 |
| 16 | E Hwy 22 | -96.99553554 | 44.73175645 | W | 0.926795 |
| 17 | 188th St | -97.1787236 | 44.65893586 | E | 0.993124 |
| 18 | Hwy 22 | -97.27909482 | 44.76048803 | W | 0.997691 |
| 19 | Hwy 28 | -97.27983475 | 44.58704482 | E | 1.001614 |
| 20 | 181st St | -97.15080604 | 44.76033838 | W | 1.730673 |

**Harding County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | State Hwy 79 | -103.0945773 | 45.53077606 | S | 0.164416 |
| 2 | US Hwy 85 | -103.3943827 | 45.7896552 | S | 0.329652 |
| 3 | State Hwy 20 | -103.8932997 | 45.56124138 | E | 0.420237 |
| 4 | State Hwy 79 | -102.997048 | 45.6438532 | S | 0.483704 |
| 5 | State Hwy 20 | -103.5581095 | 45.58157139 | W | 0.542908 |
| 6 | US Hwy 85 | -103.3979978 | 45.7832563 | N | 0.621028 |
| 7 | US Hwy 85 | -103.3799622 | 45.81508701 | S | 0.705853 |
| 8 | State Hwy 79 | -103.0048478 | 45.58343862 | N | 0.782695 |
| 9 | State Hwy 79 | -103.0952715 | 45.46462887 | S | 0.854613 |
| 10 | State Hwy 79 | -102.9840197 | 45.78999561 | S | 0.876451 |
| 11 | US Hwy 85 | -103.5566506 | 45.3887682 | S | 0.958474 |
| 12 | State Hwy 79 | -102.9633347 | 45.88531228 | N | 1.015966 |
| 13 | State Hwy 79 | -102.9842133 | 45.8258342 | N | 1.201053 |
| 14 | State Hwy 20 | -103.2016986 | 45.53107562 | E | 1.320746 |
| 15 | State Hwy 79 | -103.1223903 | 45.42044925 | S | 1.50165 |
| 16 | State Hwy 20 | -103.7854401 | 45.58248398 | E | 1.734573 |
| 17 | State Hwy 20 | -102.9843437 | 45.53667758 | W | 1.983486 |
| 18 | US Hwy 85 | -103.4835989 | 45.66761631 | S | 2.24367 |
| 19 | US Hwy 85 | -103.5457812 | 45.53927546 | S | 2.791817 |
| 20 | US Hwy 85 | -103.5456735 | 45.4876375 | S | 4.013973 |

**Jones County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 90 | -100.3725107 | 43.91099732 | E | 0.251204 |
| 2 | I- 90 | -100.8857315 | 43.88794408 | E | 0.317985 |
| 3 | I- 90 | -100.7318449 | 43.8844004 | W | 0.385335 |
| 4 | I- 90 | -100.4713945 | 43.90858555 | W | 0.456865 |
| 5 | I- 90 | -100.4814035 | 43.90858697 | E | 0.542319 |
| 6 | I- 90 | -100.3818934 | 43.91037003 | W | 0.623233 |
| 7 | I- 90 | -100.6451782 | 43.90589385 | E | 0.735012 |
| 8 | I- 90 | -100.6877802 | 43.88356025 | W | 0.852081 |
| 9 | I- 90 | -100.5652695 | 43.90855905 | W | 1.199989 |
| 10 | I- 90 | -100.506666 | 43.90886669 | E | 1.979688 |
| 11 | I- 90 | -100.44477 | 43.90885329 | W | 2.212306 |
| 12 | I- 90 Business Lp | -100.7135555 | 43.8866465 | E | 0.031408 |
| 13 | State Hwy 16 | -100.787837 | 43.87943526 | W | 0.208849 |
| 14 | State Hwy 16 | -100.8700658 | 43.87999813 | E | 0.312541 |
| 15 | US Hwy 83 | -100.681902 | 43.76067348 | N | 0.475371 |
| 16 | US Hwy 83 | -100.6824018 | 43.73528773 | S | 0.601738 |
| 17 | State Hwy 16 | -100.4358944 | 43.91722065 | W | 0.821211 |
| 18 | State Hwy 16 | -100.8810698 | 43.88566429 | E | 0.996826 |
| 19 | State Hwy 16 | -101.0335751 | 43.89385671 | W | 1.237321 |
| 20 | US Hwy 83 | -100.6925452 | 43.80759275 | S | 2.194835 |

**Lawrence County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 90 | -103.7436086 | 44.47720881 | E | 0.296513 |
| 2 | I- 90 | -103.67538 | 44.47886498 | E | 0.371163 |
| 3 | I- 90 | -103.9898342 | 44.54642041 | E | 0.601389 |
| 4 | I- 90 | -103.8559605 | 44.50114152 | W | 0.749744 |
| 5 | I- 90 | -103.6612967 | 44.47739486 | W | 1.040799 |
| 6 | I- 90 | -103.5799549 | 44.43498683 | W | 1.579981 |
| 7 | US Hwy 14 Alt | -103.5858675 | 44.394714 | E | 0.02481 |
| 8 | US Hwy 385 | -103.7370034 | 44.34955758 | N | 0.093836 |
| 9 | US Hwy 85 | -103.7289127 | 44.46587435 | S | 0.161352 |
| 10 | US Hwy 85 | -103.9747997 | 44.21640646 | N | 0.225462 |
| 11 | US Hwy 14 Alt | -103.6503244 | 44.39145129 | W | 0.305658 |
| 12 | US Hwy 385 | -103.6380942 | 44.19707368 | N | 0.41303 |
| 13 | US Hwy 14 Alt | -103.7839572 | 44.33909597 | N | 0.507002 |
| 14 | Spearfish Canyon Hwy | -103.8493784 | 44.46938179 | N | 0.629992 |
| 15 | S Dakota Hwy 34 | -103.769577 | 44.58471644 | S | 0.747612 |
| 16 | S Dakota Hwy 34 | -103.6944015 | 44.52211693 | S | 0.828685 |
| 17 | US Hwy 85 | -104.0096591 | 44.20062659 | W | 0.958227 |
| 18 | US Hwy 14 Alt | -103.6345628 | 44.38879954 | E | 1.370309 |
| 19 | Spearfish Canyon Hwy | -103.881504 | 44.41423388 | S | 2.229856 |
| 20 | Spearfish Canyon Hwy | -103.8646123 | 44.44995797 | N | 3.03321 |

**Lincoln County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | 478th Ave | -96.6486475 | 43.334568 | N | 0.057989 |
| 2 | S Chuck Dr | -96.76177818 | 43.49372128 | N | 0.087256 |
| 3 | W 57th St | -96.72689 | 43.5003495 | E | 0.049149 |
| 4 | 473rd Ave | -96.74734706 | 43.49115666 | N | 0.213002 |
| 5 | 481st Ave | -96.58908119 | 43.33170351 | N | 0.248319 |
| 6 | 297th St | -96.8618635 | 43.0836938 | W | 0.32641 |
| 7 | W 1st St | -96.8410355 | 43.4464795 | W | 0.049143 |
| 8 | 476th Ave | -96.68734701 | 43.12855649 | N | 0.179965 |
| 9 | Cottonwood Dr | -96.71478442 | 43.42511193 | N | 0.065616 |
| 10 | 271st St | -96.743985 | 43.4606875 | W | 0.24842 |
| 11 | Redstone Ave | -96.76236312 | 43.48045512 | N | 0.087248 |
| 12 | 472nd Ave | -96.7670665 | 43.2844475 | N | 0.326184 |
| 13 | Spur Ave | -96.48003786 | 43.0908945 | S | 0.590145 |
| 14 | 278th St | -96.8349925 | 43.35946274 | E | 0.889302 |
| 15 | 476th Ave | -96.68736763 | 43.10426896 | S | 0.479907 |
| 16 | 276th St | -96.65354793 | 43.38800737 | E | 0.508127 |
| 17 | 288th St | -96.6364655 | 43.2140165 | W | 0.246062 |
| 18 | 481st Ave | -96.58912165 | 43.33774699 | N | 0.306513 |
| 19 | 469th Ave | -96.82624407 | 43.32386552 | S | 0.89958 |
| 20 | 466th Ave | -96.88591164 | 43.29489498 | N | 0.152026 |

**Lyman County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 90 | -100.307926 | 43.91252484 | E | 0.151331 |
| 2 | I- 90 | -100.2897441 | 43.91225847 | E | 0.337013 |
| 3 | I- 90 | -100.1971852 | 43.91250769 | W | 0.690732 |
| 4 | I- 90 | -99.36422292 | 43.80656006 | W | 0.955945 |
| 5 | I- 90 | -99.42161506 | 43.81177907 | W | 1.152128 |
| 6 | I- 90 | -99.54280257 | 43.84719324 | W | 1.704269 |
| 7 | I- 90 | -99.98578302 | 43.89716216 | E | 2.003365 |
| 8 | Hwy 16 | -100.0846205 | 43.90525813 | W | 0.046021 |
| 9 | I- 90 Bus | -99.38109135 | 43.8026666 | E | 0.263351 |
| 10 | State Hwy 49 | -99.58160584 | 43.67086691 | N | 0.403507 |
| 11 | Hwy 16 | -99.920628 | 43.8982005 | E | 0.505072 |
| 12 | State Hwy 47 | -99.44621227 | 44.03986218 | S | 0.612317 |
| 13 | State Hwy 47 | -99.606019 | 43.89948849 | S | 0.793347 |
| 14 | State Hwy 47 | -99.60596063 | 43.92698829 | N | 0.998141 |
| 15 | US Hwy 183 | -100.0452075 | 43.83964749 | N | 1.033591 |
| 16 | Hwy 16 | -99.75276308 | 43.88395213 | E | 1.340262 |
| 17 | Hwy 16 | -99.98963201 | 43.89804086 | E | 1.617713 |
| 18 | US Hwy 183 | -100.041115 | 43.774969 | N | 2.000214 |
| 19 | State Hwy 1806 | -99.952271 | 44.16310366 | N | 2.662931 |
| 20 | State Hwy 47 | -99.56091125 | 43.77745996 | N | 3.678782 |

**Meade County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | State Hwy 34 | -102.9477225 | 44.50483256 | W | 0.156862 |
| 2 | State Hwy 34 | -102.4570678 | 44.58609787 | E | 0.893845 |
| 3 | Sturgis Rd | -103.359905 | 44.2043905 | S | 0.029141 |
| 4 | Stage Stop Rd | -103.339911 | 44.19847359 | E | 0.029113 |
| 5 | New Underwood Rd | -102.843425 | 44.39129398 | N | 0.315142 |
| 6 | Sturgis Rd | -103.328103 | 44.1734745 | N | 0.029085 |
| 7 | Sturgis Rd | -103.3175466 | 44.16632964 | S | 0.158732 |
| 8 | Silver St | -103.530318 | 44.4208 | E | 0.129507 |
| 9 | Sturgis Rd | -103.342957 | 44.18907639 | N | 0.109085 |
| 10 | New Underwood Rd | -102.8018524 | 44.42735609 | S | 4.050788 |
| 11 | New Underwood Rd | -102.8138412 | 44.47200626 | N | 0.616616 |
| 12 | Elk Creek Rd | -103.36285 | 44.22626056 | W | 0.393408 |
| 13 | Elk Creek Rd | -103.2444921 | 44.22772221 | W | 0.606507 |
| 14 | New Underwood Rd | -102.8290418 | 44.3055105 | N | 0.884841 |
| 15 | Peaceful Pines Rd | -103.285787 | 44.15477 | W | 0.22491 |
| 16 | New Underwood Rd | -102.843401 | 44.3633773 | N | 1.255786 |
| 17 | Alkali Rd | -103.3441083 | 44.42399003 | E | 1.302863 |
| 18 | New Underwood Rd | -102.8239621 | 44.51223253 | N | 0.438112 |
| 19 | Fulton St | -103.506331 | 44.40604154 | N | 0.076444 |
| 20 | New Underwood Rd | -102.8294892 | 44.20496404 | N | 0.987751 |

**Minnehaha County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 90 | -96.59588599 | 43.609146 | W | 0.387272 |
| 2 | 265th St | -97.04703 | 43.543327 | W | 0.241868 |
| 3 | E 49th St | -96.6996855 | 43.5075445 | E | 0.029999 |
| 4 | E Crestview Dr | -96.70927906 | 43.50673724 | E | 0.059132 |
| 5 | S Dundee Dr | -96.81355531 | 43.53638492 | S | 0.059111 |
| 6 | David Roe Dr | -96.93941101 | 43.625961 | W | 0.085362 |
| 7 | S Camellia Ave | -96.66482777 | 43.50917408 | N | 0.109013 |
| 8 | Clark Ave | -96.713684 | 43.82577918 | N | 0.067455 |
| 9 | W Nancy St | -96.797614 | 43.5380125 | W | 0.166238 |
| 10 | S Chestnut Blvd | -96.552071 | 43.58809065 | N | 0.108827 |
| 11 | N Foss Ave | -96.660701 | 43.549372 | N | 0.250194 |
| 12 | 484th Ave | -96.531631 | 43.65388285 | N | 0.310694 |
| 13 | E Redwood Blvd | -96.57094601 | 43.60188623 | W | 0.132459 |
| 14 | 256th St | -96.846515 | 43.674152 | E | 0.463835 |
| 15 | S Goldenrod Ln | -96.66949794 | 43.5129694 | N | 0.166221 |
| 16 | 250th St | -96.51578548 | 43.761364 | W | 0.386356 |
| 17 | 250th St | -96.57922352 | 43.761314 | E | 0.716209 |
| 18 | 478th Ave | -96.651169 | 43.70752967 | S | 0.462746 |
| 19 | S Alpine Ave | -96.6674535 | 43.525767 | S | 0.059104 |
| 20 | S Gill Ave | -96.83572545 | 43.5366415 | S | 0.067448 |

**Moody County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 29 | -96.759888 | 44.1542675 | S | 0.248652 |
| 2 | I- 29 | -96.75831731 | 43.88247312 | S | 0.434707 |
| 3 | I- 29 | -96.75892155 | 44.04064568 | S | 0.52482 |
| 4 | I- 29 | -96.75914588 | 44.06029601 | N | 0.762099 |
| 5 | I- 29 | -96.7592165 | 44.1162105 | S | 0.999548 |
| 6 | I- 29 | -96.75794542 | 43.87100939 | S | 1.143086 |
| 7 | I- 29 | -96.75855848 | 43.99557751 | N | 1.699543 |
| 8 | I- 29 | -96.75971577 | 44.13629133 | S | 1.773871 |
| 9 | I- 29 | -96.75830736 | 43.9550877 | S | 2.730349 |
| 10 | I- 29 | -96.75866061 | 43.95513461 | N | 2.736208 |
| 11 | SW 3rd St | -96.847908 | 43.97898802 | E | 0.101311 |
| 12 | W Pipestone Ave | -96.61029353 | 44.04848322 | W | 0.254549 |
| 13 | 481st Ave | -96.58761032 | 44.02546299 | N | 0.352698 |
| 14 | 230th St | -96.7530575 | 44.0514095 | W | 0.450598 |
| 15 | 233rd St | -96.54112152 | 44.007588 | E | 0.517702 |
| 16 | 230th St | -96.73552699 | 44.05141344 | W | 0.657724 |
| 17 | SW 3rd St | -96.88097197 | 43.97878 | E | 0.778271 |
| 18 | 235th St | -96.77844415 | 43.97877656 | W | 0.974431 |
| 19 | 235th St | -96.71878493 | 43.97874659 | W | 0.999014 |
| 20 | 481st Ave | -96.5886291 | 44.17463991 | S | 1.006655 |

**Oglala Lakota County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | US Hwy 18 | -102.708446 | 43.174903 | S | 0.058104 |
| 2 | US Hwy 18 | -102.5669485 | 43.06226279 | S | 0.099659 |
| 3 | White Clay Rd | -102.5545256 | 43.01323498 | N | 0.132384 |
| 4 | US Hwy 18 | -102.5666381 | 43.05803144 | S | 0.154064 |
| 5 | US Hwy 18 | -102.579648 | 43.07529499 | N | 0.18843 |
| 6 | US Hwy 18 | -102.1225474 | 43.1264563 | N | 0.226221 |
| 7 | US Hwy 18 | -102.6042633 | 43.09552669 | N | 0.251056 |
| 8 | US Hwy 18 | -102.7046601 | 43.17096878 | S | 0.313964 |
| 9 | US Hwy 18 | -102.6857293 | 43.15053846 | N | 0.373646 |
| 10 | US Hwy 18 | -102.9604696 | 43.18829196 | W | 0.413565 |
| 11 | US Hwy 18 | -102.5873402 | 43.08340237 | S | 0.476543 |
| 12 | US Hwy 18 | -102.1574611 | 43.10176309 | N | 0.549677 |
| 13 | US Hwy 18 | -102.970655 | 43.188399 | W | 0.615742 |
| 14 | US Hwy 18 | -102.2506786 | 43.04655371 | W | 0.811445 |
| 15 | US Hwy 18 | -102.1676098 | 43.09459313 | N | 0.877784 |
| 16 | US Hwy 18 | -102.8466976 | 43.18830345 | W | 0.913149 |
| 17 | US Hwy 18 | -102.3672965 | 43.046542 | W | 1.002304 |
| 18 | US Hwy 18 | -102.8666505 | 43.18834317 | W | 1.103142 |
| 19 | State Hwy 391 | -102.2121177 | 43.00875358 | S | 1.318075 |
| 20 | US Hwy 18 | -102.2765561 | 43.04713296 | W | 1.388081 |

**Pennington County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | I- 90 | -102.8156285 | 44.10342651 | E | 0.691297 |
| 2 | State Hwy 44 | -103.3717046 | 44.06033701 | E | 0.340958 |
| 3 | E Hwy 44 | -102.4973622 | 43.74719135 | S | 2.231841 |
| 4 | City View Dr | -103.2373129 | 44.04977818 | W | 0.117876 |
| 5 | Major Lake Dr | -103.5679644 | 43.93632475 | N | 0.085682 |
| 6 | West Blvd N | -103.2327611 | 44.09874795 | N | 0.058277 |
| 7 | Catron Blvd | -103.2582076 | 44.02454293 | E | 0.157108 |
| 8 | E Saint Patrick St | -103.178733 | 44.06749384 | W | 0.205004 |
| 9 | E Minnesota St | -103.2132486 | 44.04483477 | W | 0.157106 |
| 10 | Sheridan Lake Rd | -103.2615097 | 44.06584184 | N | 0.261684 |
| 11 | Lower Spring Creek Rd | -103.0491769 | 43.89620043 | W | 0.4885 |
| 12 | Deerfield Rd | -103.6405428 | 43.97287933 | S | 0.574091 |
| 13 | Creighton Rd | -102.21804 | 44.11030085 | E | 0.790902 |
| 14 | Samco Rd | -103.2660805 | 44.10144926 | S | 0.681675 |
| 15 | N Haines Ave | -103.221707 | 44.112149 | N | 0.058273 |
| 16 | Flormann St | -103.2433882 | 44.06347213 | W | 0.204848 |
| 17 | Quinn Rd | -102.127648 | 43.9979195 | S | 0.244201 |
| 18 | Deerfield Rd | -103.8333814 | 44.01665331 | S | 0.568243 |
| 19 | Deerfield Rd | -103.8120142 | 44.00596423 | N | 0.736512 |
| 20 | Sheridan Lake Rd | -103.3909098 | 43.99313465 | E | 0.34201 |

**Spink County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | 406th Ave | -98.10455087 | 45.16041301 | N | 0.098914 |
| 2 | 172nd St | -97.984907 | 44.89230638 | W | 0.204589 |
| 3 | 385th Ave | -98.52354635 | 44.8626845 | N | 0.290642 |
| 4 | 172nd St | -98.2370235 | 44.89434421 | E | 0.383492 |
| 5 | 172nd St | -98.70077059 | 44.89691807 | E | 0.450251 |
| 6 | 154th St | -98.4880425 | 45.15796769 | E | 0.504624 |
| 7 | 154th St | -98.30356 | 45.15607129 | E | 0.572837 |
| 8 | 172nd St | -98.1527255 | 44.8936035 | W | 0.671567 |
| 9 | US Hwy 212 | -98.55757003 | 44.88910848 | E | 0.722513 |
| 10 | 386th Ave | -98.514633 | 45.23652642 | N | 0.793278 |
| 11 | 154th St | -98.23655349 | 45.15580656 | W | 0.892749 |
| 12 | 157th St | -98.0532825 | 45.11017947 | W | 0.989022 |
| 13 | 400th Ave | -98.22076566 | 44.842365 | N | 0.996164 |
| 14 | State Hwy 20 | -98.60563 | 45.15897083 | E | 0.998133 |
| 15 | 386th Ave | -98.51381165 | 45.22348979 | S | 0.999569 |
| 16 | 386th Ave | -98.51422467 | 45.22349816 | S | 1.001067 |
| 17 | 154th St | -98.15597598 | 45.15485521 | E | 1.00249 |
| 18 | 386th Ave | -98.51301301 | 44.93356253 | N | 1.003791 |
| 19 | 177th St | -98.53376072 | 44.82148244 | E | 1.030456 |
| 20 | 406th Ave | -98.10416999 | 45.19468546 | S | 1.585336 |

**Ziebach County**

| Site | Location | Longitute | Latitude | Direction | Segment Length |
|---|---|---|---|---|---|
| 1 | US Hwy 212 | -101.570648 | 45.05242073 | E | 0.24799 |
| 2 | US Hwy 212 | -101.7895761 | 45.05508807 | E | 0.326353 |
| 3 | US Hwy 212 | -101.7513815 | 45.0529014 | E | 0.41366 |
| 4 | US Hwy 212 | -101.5930554 | 45.0558271 | W | 0.437826 |
| 5 | State Hwy 34 | -101.9298537 | 44.53497949 | S | 0.508649 |
| 6 | US Hwy 212 | -101.7989078 | 45.05428094 | W | 0.594028 |
| 7 | State Hwy 20 | -101.642382 | 45.38585336 | E | 0.740459 |
| 8 | State Hwy 20 | -101.927706 | 45.4202245 | W | 0.851245 |
| 9 | State Hwy 20 | -101.594656 | 45.385819 | E | 0.928981 |
| 10 | US Hwy 212 | -101.5181472 | 45.0507347 | E | 0.975489 |
| 11 | State Hwy 20 | -101.8709685 | 45.40014204 | E | 1.005468 |
| 12 | State Hwy 20 | -101.7475971 | 45.39309183 | E | 1.06154 |
| 13 | State Hwy 20 | -101.572793 | 45.38579728 | W | 1.198868 |
| 14 | State Hwy 63 | -101.2669871 | 44.78501753 | N | 1.42529 |
| 15 | State Hwy 63 | -101.2787597 | 44.81760856 | N | 1.630667 |
| 16 | State Hwy 63 | -101.2785601 | 44.84299323 | N | 1.912845 |
| 17 | State Hwy 65 | -101.5680876 | 45.12671997 | S | 2.204117 |
| 18 | State Hwy 65 | -101.5425743 | 45.17735496 | S | 2.719772 |
| 19 | State Hwy 63 | -101.2529509 | 44.75205077 | S | 3.464786 |
| 20 | State Hwy 34 | -101.9358781 | 44.57186743 | S | 4.660425 |

## Appendix E: Roadway Classifications

**Roadway Type Classifications**

| Code | Name | Definition |
|---|---|---|
| S1100 | Primary Road | Primary roads 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 some toll highways. |
| S1200 | Secondary Road | Secondary roads 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. |
| S1400 | Local Neighborhood Road, Rural Road, City Street | Generally paved non-arterial streets, roads, or byways that usually have a single lane of traffic in each direction. Roads in this feature class may be privately or publicly maintained. Scenic park roads would be included in this feature class, as would (depending on the region of the country) some unpaved roads. |

# Appendix F: Travel Permits

# CHEYENNE RIVER SIOUX TRIBE COVID-19 TRAVEL PERMIT APPLICATION

Name:_____
Phone #:_____
Address:_____
Location of Travel:_____
Date(s) of Travel: _____
Purpose of Travel: _____

If/When approved, your permit can be **picked up curbside at the CRST Command Center**, **mailed to your address**, or it can be sent to the checkpoint you will be traveling through. If so, please circle which checkpoint: **Glad Valley, Swiftbird, South 63, Faith, Takini, Bridger, Red Scaffold, North Isabel, Timberlake**

***Attach Proof that Travel is Essential (letter from employer, copy of medical appointment, and receipt from nonreservation business that provides goods or services not available on Reservation,)**

**CERTIFICATION**

**(Initial to indicate that you have read and understand each statement below)**

____ I have been given "Summary of CRST COVID-19 Emergency Executive Orders" and "Summary of CRST COVID-19 Checkpoint Policies."

____ I understand and agree that a CRST COVID-19 Travel Permit will only be issued to me if I am traveling for essential work, a medical appointment, or to obtain or deliver essential supplies or services that are not available within the Cheyenne River Sioux Reservation. I have provided proof of such essential travel.

____ As a condition of having the Permit I agree and attest that, when off the Reservation, I will do the following in order to minimize my exposure to the COVID-19 virus:

- Limit the number of encounters or stops I make at businesses/homes/events off the Reservation.
- Practice good social distancing.

✓ Keep 6 feet away from others at all times.

✓ Wash hands or use sanitizer every chance I get.

✓ Cover my coughs and sneezes in my arm or elbow.

- Wear a facemask and gloves when out in public places
- Wash my hands and change my clothes as soon as I am able to after entering the Reservation

____ If the CRST Command Center or CRST Health Department is given verifiable evidence that I have violated the terms of this application, I understand that it will be revoked immediately and, with due process, I will be subject to other penalties as described in Emergency Executive Order #2.3-2020-CR, which may include mandatory 14day quarantine, a civil fine of $1,000 per occurrence, impoundment of my vehicle and $20 per day storage fee, and exclusion or banishment from the Reservation.

_____ _____

**DATE** **APPLICANT**

Please return with appropriate documentation to:

**Email:** crstcovid19safety@gmail.com **Or** **Fax:** 605-964-1072

*FOR OFFICE USE ONLY*

Date Received: _____ Received by: _____

_____Application Approved. Permit # _____

_____Application Denied

_____ _____ DATE

David D. Nelson - CRST COVID-19 Incident Commander

PERMIT VALID UNTIL:_____