2019 LOUISIANA SEAT BELT OBSERVATION SURVEY RESULTS
LHSC Project No. 2019-20-10

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Prepared for:

LOUISIANA HIGHWAY SAFETY COMMISSION
Lisa Freeman, Executive Director
Post Office Box 66336
Baton Rouge, LA 70896
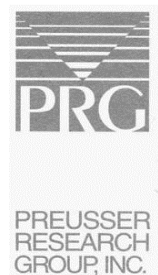
Prepared by:

PREUSSER RESEARCH GROUP, INC.
7100 Main Street
Trumbull, CT 06611

DR. HELMUT SCHNEIDER
Louisiana State University, ISDS Department
Baton Rouge, LA 70803

EXECUTIVE SUMMARY

Background

This report documents Louisiana's annual Statewide Seat Belt Use Survey. The Louisiana Highway Safety Commission (LHSC) is responsible for the State of Louisiana's Highway Safety Program. Occupant protection is among several significant program areas for which LHSC is responsible. A portion of LHSC's occupant protection program funding comes from the Federal Government, which requires administration of a statewide survey of seat belt use that must adhere to Federal Register Guidelines (Schneider, 2012).

The report that follows provides results from the 2019 statewide observational survey. The survey was conducted statewide and it followed National Highway Traffic Safety Administration (NHTSA) procedures that determine the outboard, front-seat occupant belt use rate. Rear-seat belt usage was measured as well. Preusser Research Group, Inc. (PRG) conducted the survey with the support and help of scientist and statistician, Helmut Schneider, Ph.D., of Louisiana State University.

Methodology

NHTSA requires that statewide surveys are updated every five years to include newly sampled survey sites based on the most recent traffic fatality counts. Dr. Schneider complied with NHTSA's requirements. The 2019 survey design included 334 sites across 38 parishes. These sites were first selected and used for the 2017 statewide survey and will continue to be used through 2021. The sites randomly represent all the traffic on various types of roadways around the state.

Parishes Included in Statewide Seat Belt Survey

Observations were randomly scheduled for all days of the week during daylight hours, between 7:00 a.m. and 6:00 p.m. One-hour observations took place at each site. PRG observers recorded information on vehicle type, driver sex, driver race, and driver seat belt use. Observers also recorded information on passenger sex, race, and belt use when an outboard passenger was present in the front seat of the vehicle. The survey effort took place from May 28th to June 14th.
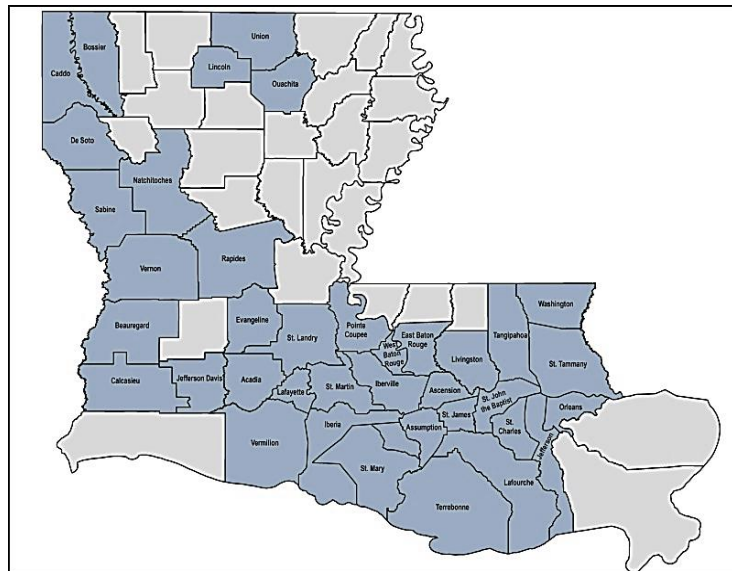
Results

Louisiana's statewide belt usage rate for 2019 is 87.5%. The 2019 survey was conducted mid-year like most statewide surveys in years past. The 2019 statewide use rate of 87.5% exceeded the 2018 rate of 86.9% but fell short of the historic high measured in December 2016 (87.8%). Neither difference was statistically significant.

The 2019 survey included additional information such as: occupant sex, race/ethnicity, and vehicle type. The figure to the right shows that belt use among male occupants was approximately seven percentage points lower compared to female usage (84.2% vs. 91.6%). The figure also shows female belt use well above 90%.

Belt usage has historically differed by occupant race/ethnicity. Most notably, Black occupants are less likely to wear a seat belt compared to other races/ethnicities. This has been the case for each year of this survey.

LHSC directed resources in the recent past towards improving minority belt use while working to improve overall belt usage. The gap in usage between Black occupants and the other races/ethnicities has shrunk in recent years. Please note that Hispanic and Other/Unknown occupant usage rates have large swings from year-to-year, largely due to small sample sizes.

Vehicle type also makes a difference in belt usage (see figure on next page). Operators and passengers in pickup trucks use seat belts less often than occupants in other vehicle types. A large portion of the sample (over one-quarter) from year-to-year includes pickup trucks and that drags the overall statewide average downward. This has been the case every year of the survey. Belt use has improved in all vehicle types over the past five years but the wide gap in usage between occupants in pickup trucks and other vehicle types remains largely unchanged.

2019 Seat Belt Use Rate by Occupant Sex
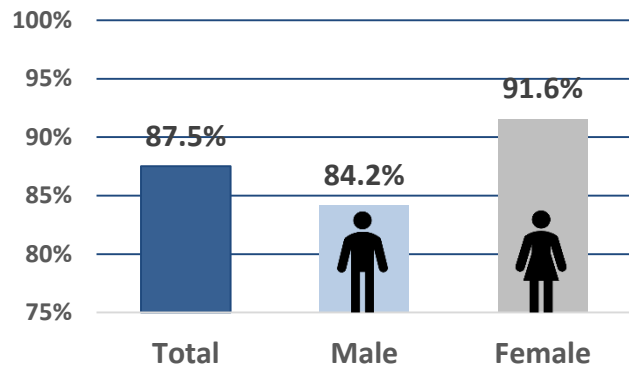
2019 Seat Belt Use Rate by Race/Ethnicity
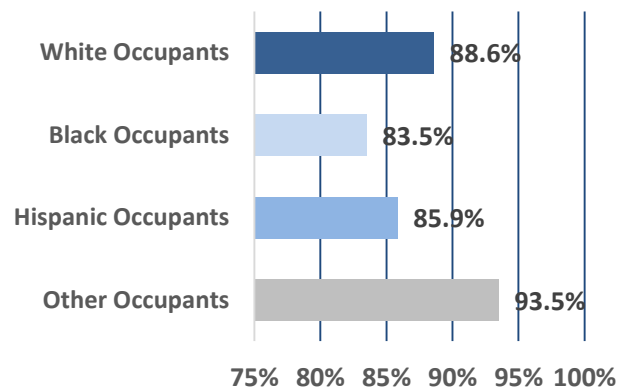
Seat Belt Usage by Race/Ethnicity: 2015-2019
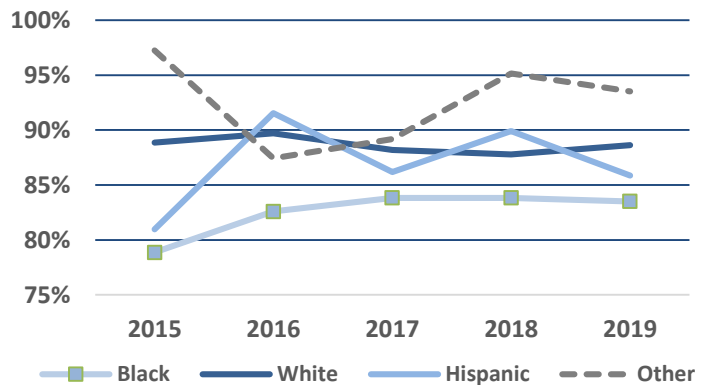
2019 Seat Belt Use Rate by Vehicle Type

Vehicle	Rate
Car	88.4%
Pick-up	82.3%
SUV	91.3%
Van	93.6%
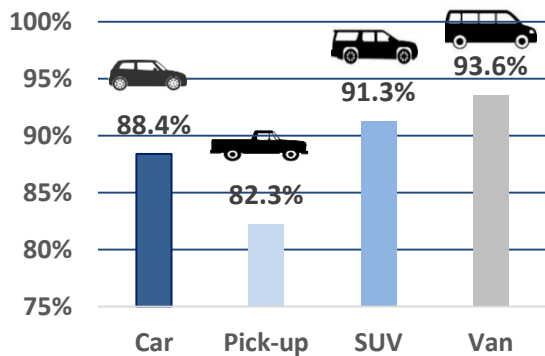
Seat Belt Usage by Vehicle Type: 2015-2019
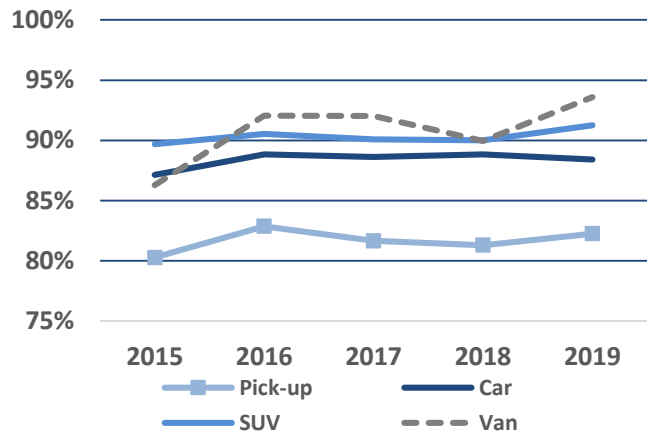
Conclusion

Louisiana's front-seat belt use rate for 2019 is 87.5%. The difference in rates was not statistically significant from the rate determined for 2018 (86.9%) or the belt use rate for 2016 (87.8%) when Louisiana achieved an all-time high. Seat belt usage on Louisiana roadways has generally shown an upward trend, increasing on average one percentage point a year, and 12.7 percentage points since 2006 (74.8%). For a fifth year in a row, all regions of Louisiana had a seat belt use rate above 80.0%.

Louisiana Seat Belt Weighted Use Rates, 1999-2019

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BACKGROUND

Introduction
This report documents Louisiana's annual Statewide Seat Belt Use Survey. The Louisiana Highway Safety Commission (LHSC) is responsible for the State of Louisiana's Highway Safety Program. Occupant protection is among several significant program areas for which LHSC is responsible. A portion of LHSC's occupant protection program funding comes from the Federal Government, which requires administration of a statewide survey of seat belt use that must adhere to Federal Register Guidelines (Schneider, 2012).
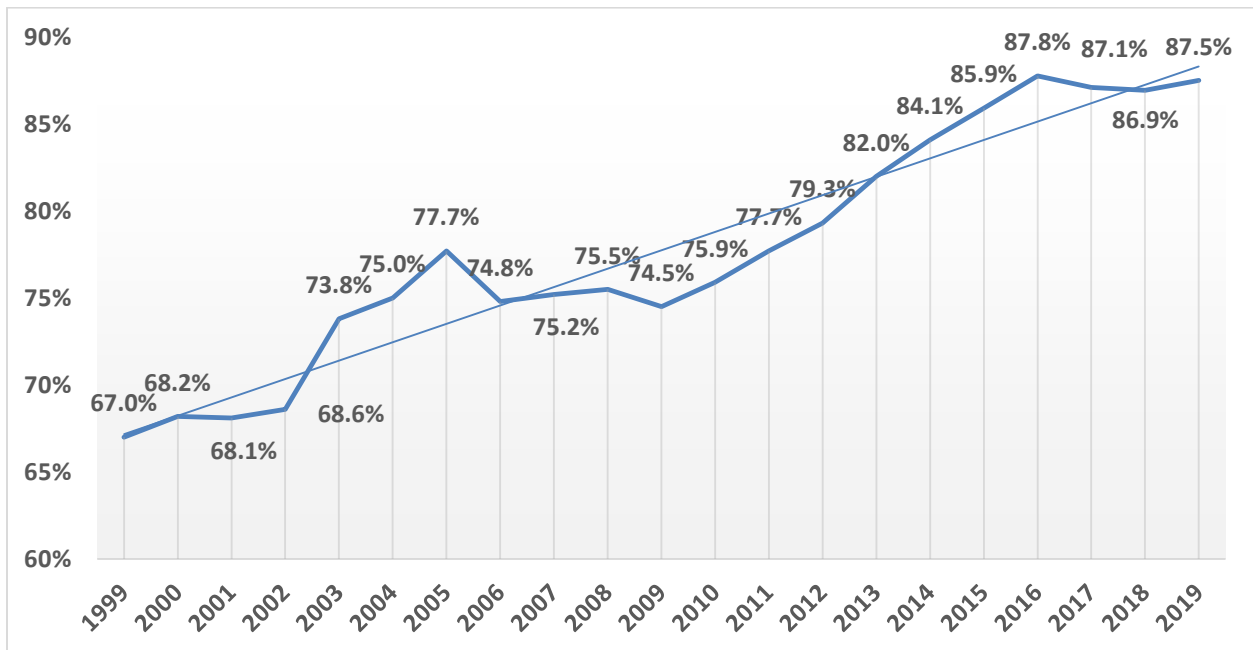
The statewide seat belt survey covered by this report was conducted by Preusser Research Group, Inc. (PRG). All the survey work was completed in late May and throughout the first half of June 2019. The results that follow provide an accurate and reliable estimate of outboard front-seat belt usage in the State of Louisiana.

Seat Belt Law and Seat Belt Use
The Louisiana State Legislature passed the first seat belt law in 1985 and it went into effect July 1, 1986. That law was a secondary enforcement law, meaning law enforcement officers could not stop a vehicle solely for a seat belt violation. The law was changed to a primary enforcement law almost ten years later, in 1995, with the intention of allowing police to stop violators for the sole reason of not wearing a seat belt. However, in 1998, courts ruled that the wording of the bill did not allow violation of the law to be considered a primary offense. It was not until August 15, 1999 that a revised primary enforcement law became effective in Louisiana (McKenzie, III, 2011). The law was amended in 2008 to include rear-seat passengers. According to the current Louisiana seat belt law, if a person is being transported by a motor vehicle, no matter the seating position, a proper restraint should be used.

Seat belt use rates in Louisiana have fluctuated over the past 18 years. From 1999 to 2002, statewide seat belt use rates increased very little from 67.0 to 68.6 percent. Louisiana first participated in the national *Click It or Ticket* campaign in 2003 and a 5-point increase in the statewide use rate (73.8%) was measured that year (Schneider, 2004). Statewide seat belt use rates increased over the next two years peaking at 77.7 percent in June 2005. In 2006, statewide measurements of seat belt use were down 2.9 points to 74.8 (U.S. Department of Transportation, National Highway Traffic Safety Administration, July 2011). It should be noted that Louisiana sustained serious damage from Hurricane Katrina in 2005. The property damage and displacement of many of the State's residents could have influenced seat belt use rates. Use rates climbed back to the peak level seen in 2005 by 2011. By 2016, the annual survey measured seat belt use at an all-time high of 87.8 percent (Preusser Research Group, Inc., 2016).

Statewide Survey Statistician
Dr. Helmut Schneider has developed all the seat belt survey designs approved by the National Highway Traffic Safety Administration (NHTSA) to be used in the State of Louisiana, including the designs PRG, Inc. has used when it has conducted the annual statewide survey. Dr. Schneider is a professor in the E. J. Ourso College of Business, Associate Dean of Research and Economic Development, and an Ourso Family Distinguished Professor at Louisiana State University. Dr. Schneider received his degree in Operations Management and Statistics in 1978 and has taught statistics and statistical sampling for 33 years. He has published over 50 articles in peer reviewed journals and written two books. He has more than 20 years of experience in working with crash data and has analyzed Louisiana's statewide seat belt survey results since 2003 (McKenzie, III, 2011).

Preusser Research Group, Inc. (PRG) planned and implemented Louisiana's 2019 seat belt survey using Dr. Schneider's most recent resample as a guide. Every five years, NHTSA requires that statewide surveys include newly sampled survey sites based on the most recent traffic fatality counts. Dr. Schneider complied with NHTSA's requirements and PRG carried out the survey effort. The 2017 resample and the subsequent survey effort in 2019 are compliant with NHTSA's Uniform Criteria for State Observational Surveys of Seat Belt Use. [1]

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[1]National Highway Traffic Safety Administration. (2011) Uniform Criteria for State Observational Surveys of Seat Belt Use. 23 CFR Part 1340, Docket No. NHTSA-2010-0002, RIN 2127-AK41, Federal Register Vol. 76 No. 63, April 1, 2011, Rules and Regulations, pp. 18042 – 18059.

METHODOLOGY

Survey Design and Site Selection

Louisiana's 2019 Statewide Seat Belt Survey was the second iteration using observation site locations first resampled in 2017. This resample was in response to a NHTSA requirement that new sites be selected every five years. As such, every survey from 2017-2021 will use the same set of sites.
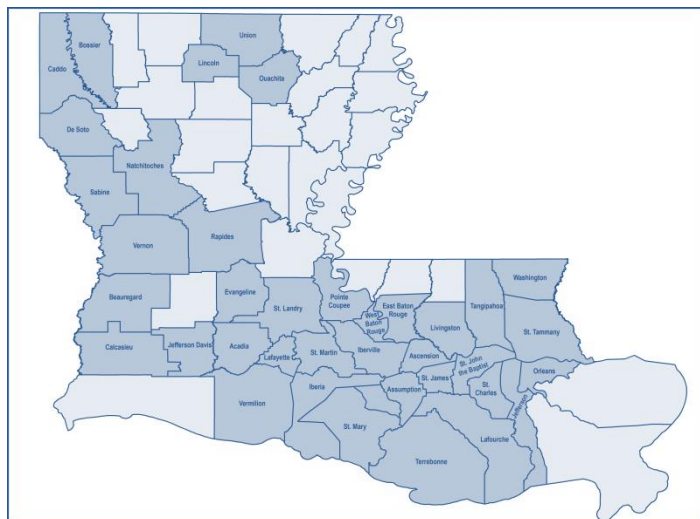
The 2019 survey is rooted in a 2012 design developed by Dr. Helmut Schneider. The 2012 design included 390 observation sites and was approved by NHTSA. The number of observation sites was dropped to 336 in 2013 and that change was accepted by NHTSA as it proved to be both efficient and reliable. The 2017 resample used updated vehicle miles traveled (VMT), numbers of fatalities, and road inventory to determine the number and location of observation sites. The current resample includes 334 sites, two fewer than the 2013 sample. The current sample of observation sites was approved for use by NHTSA in the spring of 2017.

Dr. Schneider used crash-related fatality data from 2010-2014 to select the parishes included in the 2017 resample. According to the Fatality Analysis Reporting System (FARS), 38 of 64 parishes account for 85% of crash-related fatalities in Louisiana. These 38 parishes selected for inclusion in the 2017 resample were identical to those represented in the 2013 design (Schneider, 2013).

The 2013 design divided the sampling frame into eight statewide regions, the parishes within these regions, and highway types. Dr. Schneider used a 2015 TIGER file and a road file from the Louisiana Department of Transportation & Development (DOTD) to identify parish road segments. The selected road segments were classified into three types: Interstates, US and State routes, and

**Figure 1.
Parishes Included in Statewide Seat Belt Survey**

Local roads. A site number reflecting the region, parish, and highway type was assigned to each road segment. Rural roads were excluded from the sample in parishes that were not within Metropolitan Statistical Areas as well as other non-public roads, unnamed roads, unpaved roads, vehicular trails, access ramps, cul-de-sacs, traffic circles, and service drives. Probability sampling using vehicle miles traveled (VMT) in regions, parishes, and road segments was used to determine site locations for Interstates and US and State routes. Local road segments were designated using sampling proportional to the road length.

PRG used specific road segment information provided by Dr. Schneider to pinpoint observation site locations in 2013, and this was done again in 2017 for the newly selected sites (Schneider, 2013). Trained observers selected the exact observation locations (i.e., where data collectors stood to observe vehicles) upon initial site visits during the survey period. Observers created a site map upon the completion of each observation to ensure replication of exact observation locations from year to year.

Scheduling
Observation sites were organized into clusters of three to six sites based on geographical proximity. Each cluster was randomly assigned a single day of week for observation. The first site to be surveyed in each cluster was also randomly assigned. A time efficient route, starting with the randomly selected first site, was developed to determine the order of the remaining sites in the cluster. Observers were given a schedule and a mapped-out route for each cluster. The schedule specified site order, day of week to conduct observations, start times, name of road segment, location to observe, and direction of traffic to observe for each site.

Observations were prescheduled for all days of the week during daylight hours between 7:00 a.m. and 6:00 p.m. Observers were provided with a time frame to use as a guide to schedule sites throughout the day. Depending on the number of sites in a cluster, the time from 7:00 a.m. to 6:00 p.m. was divided into nearly equal-length time periods. For example, for five-site days, time of day was specified as one-of-five, time periods, such as 7:00 – 9:00 a.m., 9:00 – 11:00 a.m., 11:00 a.m. – 2:00 p.m., 2:00 – 4:00 p.m., and 4:00 – 6:00 p.m. Also, for six-site days, time of day was specified as one-of-six, time periods, such as 7:00 – 8:45 a.m., 8:45 – 10:30 a.m., 10:30 a.m. – 12:15 p.m., 12:15 – 2:30 p.m., 2:30 – 4:15 p.m., and 4:15 – 6:00 p.m. Exact times were subject to adjustment but resulted in approximately an equal number of sites being observed throughout the individual 7:00 a.m. – 6:00 p.m. time frames. In all cases, each survey period lasted exactly one hour and was required to take place entirely within the broader allowable time period.

Observers
Observers were hired and trained exclusively by PRG. All had conducted seat belt observations for PRG in previous surveys, and all were trained to the specific requirements for the Louisiana survey, though most observers remained consistent from preceding years. Prior to any data collection, procedures specific to the Louisiana survey were explained to observers in a training session. Observers also participated in hours of supervised street-side practice prior to conducting observations in the field. Additionally, observers were trained on procedures to follow in conditions such as bad weather or temporary traffic impediments which may require rescheduling of sites. Ten observers operated individually, and one quality control monitor was utilized.

Data collectors revisited the Site Map forms created the previous year, which documented details of each new site location upon initial arrival (see Appendix A). Site maps include information about where to stand to make observations, the direction of traffic flow to observe, a point of reference, and any prominent landmarks (names of intersecting roadways, traffic lights, nearby buildings, etc.). Site maps ensure the survey and its data can be accurately reproduced year to year.

Observation Site Details
Most locations for data observation were tentatively selected based on available on-line mapping information such as satellite images and ground-level photos. When convenient, potential site locations were visited in advance. The complete road segments were also described by map details such as road name or number and segment length.

Preference was given to observation points where traffic appeared to naturally slow or stop. For street locations, and assuming they represent segments with generally equivalent traffic along the entire segment, a suitable observation point closest to the latitude and longitude mapped pinpoint was sought; but any location along the segment where accurate observations could be made was accepted. Preferred locations were near intersections which may cause vehicles to slow, increasing the time for

observation and improving data completeness and accuracy. However, observation sites were not confined to intersections only. In some cases, traffic was observed at or near exit ramps for limited access highway segments at a point where traffic slowed enough to allow reliable and accurate observations.

Data Collection Procedures
Passenger vehicles with a gross vehicle weight up to 10,000 pounds were included in the survey. Passenger vehicle drivers, right front-seat passengers (excluding children in child safety seats), and rear-seat passengers 13 years of age and older were observed for seat belt use. Observers noted vehicle type (Car, Truck, SUV, Van), sex of drivers and passengers, race/ethnicity (White, Black, Hispanic, other) of drivers and passengers, and belt use on the data collection form. A copy of the data collection form can be found in Appendix A.

Observers recorded pertinent site information on the data collection form including site number, exact roadway location, observer's initials, date, day of week, time, weather condition, and direction of traffic flow. Each one-page form included space to record information on 25 vehicles. When more than 25 observations were made at a site, additional sheets were used and all sheets for the observation site-period were fastened together. When qualified passengers were present, data were recorded even if "Unknown"; passenger fields in the data form are left blank only if no qualified passenger is present. Observers were instructed to reschedule data collection at the same site for the same time of day and day of week if data could not be collected at a site due to a temporary problem such as bad weather or a traffic impediment. If the site could not be used due to a more permanent factor such as construction, a pre-selected alternate road segment was used.

Quality Control
As noted above, PRG has extensive experience in training seat belt use observers. All observers received training that included both classroom instruction and field (road-side) practice. An additional trained observer also served as a Quality Control Monitor (QCM) and conducted random, unannounced visits to other trained observers in the field. The QCM conducted checks at approximately 5 percent of total sites and ensured that observers were in place and making observations during the scheduled observation period.

All observation data were reviewed when received and no anomalies were found, suggesting the data did not reflect anything other than proper on-site seat belt use observations. Some cues to the contrary would have included repeating patterns within the observation data, unusual proportions of vehicle type, driver or passenger sex, presence of passengers, seat belt use, excessive unknown seat belt use, or very high or low total numbers of observations. Some variation in these values is normal, of course. If any suspicious data patterns had been noted, PRG would have followed up to verify whether observations were done properly. Invalid data would have been replaced in such cases. Again, no problems were detected and thus, corrective actions were not necessary for these survey iterations.

Building a Data Set
Observation data were keypunched by PRG staff into Excel spreadsheets. PRG utilized the Statistical Package for the Social Sciences (SPSS) software to run frequencies and correlations to identify any outliers or coding errors. A thorough check of the data indicated minimal coding or key-punch errors, all of which were corrected pre-analysis. The data set was then forwarded to Dr. Schneider for analyses and the calculation of weighted rates and results.

RESULTS

Sample Characteristics

Data collectors observed seat belt use at all 334 sites across 38 parishes divided into eight regions across the State. Table 1 delineates the site distribution by region. The eight regions represent the following areas: New Orleans, Baton Rouge, Houma, Lafayette, Lake Charles, Alexandria, Shreveport and Monroe.

TABLE 1.
Number of Observation Sites by Region, 2019

Region	Sites per the Design	Sites Completed
1-New Orleans	65	65
2-Baton Rouge	78	78
3-Houma	26	26
4-Lafayette	44	44
5-Lake Charles	24	24
6-Alexandria	23	23
7-Shreveport	49	49
8-Monroe	25	25
State Total	**334**	**334**

Seat belt use information was recorded for 54,572 front-seat occupants over the eight regions. None of the sites in the 2019 survey resulted in zero passenger belt use observations. The distribution of those occupants by region, including occupant type (driver or passenger), is displayed on the next page (Table 2). The observed number of vehicles decreased by 1.6% from 2018 to 2019. Table 3 presents the distribution of observed passenger vehicle types by region. The relative distribution of vehicle type changed only slightly from 2018 to 2019. There was a slightly higher percentage of cars (+0.4 percentage points), SUVs (+0.9 percentage points), and Vans (+0.5 percentage points) but a lower percentage of pickup trucks (-1.8 percentage points) in the 2019 sample compared to 2018. It should be noted that the distribution of vehicle types in 2019 matches closely with the 2018, 2017, 2015, 2014, and 2013 surveys, which were all conducted at the same time of year as the 2019 survey. The 2016 survey took place in December and can be viewed as an outlier.

TABLE 2.
Number of Louisiana Front-Seat Occupants Recorded by Region, 2019

Region	Drivers	Passengers	Total
1-New Orleans	10,478	1,897	12,375
2-Baton Rouge	10,763	2,517	13,280
3-Houma	4,979	1,006	5,985
4-Lafayette	4,053	804	4,857
5-Lake Charles	2,143	446	2,589
6-Alexandria	4,628	832	5,460
7-Shreveport	5,502	1,528	7,030
8-Monroe	2,118	878	2,996
LA Total	**44,664**	**9,908**	**54,572**

TABLE 3.
Distribution of Vehicle Type* by Region, 2019

Region	% Car	% Pickup	% SUV	% Van
1-New Orleans	38.7%	34.4%	21.2%	5.8%
2-Baton Rouge	47.8%	19.3%	29.0%	3.9%
3-Houma	37.9%	25.4%	32.1%	4.6%
4-Lafayette	41.8%	19.1%	34.0%	5.1%
5-Lake Charles	29.2%	30.9%	34.8%	5.1%
6-Alexandria	36.5%	27.3%	31.6%	4.6%
7-Shreveport	40.9%	28.8%	26.4%	3.8%
8-Monroe	34.2%	31.7%	30.1%	4.1%
LA Total	**40.5%**	**26.6%**	**28.3%**	**4.6%**

Unknown vehicle type not included

Observers recorded occupant sex and race/ethnicity. Tables 4 and 5 display these characteristics by region for front-seat occupants. If a characteristic was unclear to the observer, "unknown" was recorded on the data form.

TABLE 4.
Distribution of Occupant Sex by Region, 2019

Region	% Males	% Females	% Unknown
1-New Orleans	53.2%	46.8%	0.01%
2-Baton Rouge	55.4%	44.6%	0.02%
3-Houma	56.2%	43.8%	0.00%
4-Lafayette	58.5%	41.5%	0.00%
5-Lake Charles	56.0%	44.0%	0.00%
6-Alexandria	50.6%	49.4%	0.00%
7-Shreveport	49.5%	50.1%	0.36%
8-Monroe	50.4%	49.6%	0.04%
LA Total	**53.8%**	**46.2%**	**0.05%**

Regarding race/ethnicity, the 2019 sample included a slightly larger proportion of White occupants (+1.0 percentage points), a smaller proportion of Black occupants (-0.7 percentage points), and the same proportion of Hispanic occupants compared to 2018.

TABLE 5.
Distribution of Occupant Race/Ethnicity by Region, 2019

Region	% White Occupants	% Black Occupants	% Hispanic Occupants	% Other Occupants	% Unknown
1-New Orleans	66.4%	28.9%	2.7%	1.9%	0.0%
2-Baton Rouge	68.4%	25.6%	3.7%	2.2%	0.0%
3-Houma	68.0%	24.7%	5.7%	1.6%	0.0%
4-Lafayette	70.7%	23.6%	4.0%	1.6%	0.0%
5-Lake Charles	86.6%	9.8%	1.7%	1.8%	0.0%
6-Alexandria	81.9%	14.6%	2.3%	1.2%	0.0%
7-Shreveport	68.4%	28.5%	2.0%	0.9%	0.0%
8-Monroe	75.9%	23.4%	0.5%	0.3%	0.0%
LA Total	**70.7%**	**24.5%**	**3.1%**	**1.6%**	**0%**

Occupant Seat Belt Use Estimates and Descriptive Results - Based on Weighted Calculations

The 2019 Louisiana seat belt use rate, for drivers and front-seat passengers combined, is 87.5% with a standard error of 0.4%. The 2019 weighted estimate is 0.6 percentage points higher than the 2018 estimate of 86.9%. However, the observed increase is not statistically significant ($p > .05$). Table 6 shows use rate estimates by region with respective standard sample error. Usage varied from a low of 83.5% in the Alexandria region to a high of 91.1% in the Lafayette region. These estimates and the descriptive rates for front-seat occupants that follow are based on weighted results. Monroe and Alexandria regions have rates noticeably higher than in 2018 which are statistically significant at p>0.01. Compared to 2018, the New Orleans region had a statistically significant decrease of 2.6 percentage points ($p < .01$). All other regions had no statistically significant changes ($p > .05$) in seat belt use from 2018 to 2019.

TABLE 6.
Front-Seat Occupant Seat Belt Use Estimates by Region, 2019

Region	Estimate	STD Error	Diff 2018-2019
1-New Orleans	88.7%	0.4%	-2.6%*
2-Baton Rouge	86.2%	0.9%	-1.6%
3-Houma	89.7%	0.7%	0.5%
4-Lafayette	91.1%	0.8%	2.7%
5-Lake Charles	87.6%	1.4%	-1.6%
6-Alexandria	83.5%	0.6%	2.2%*
7-Shreveport	84.9%	1.0%	1.1%
8-Monroe	90.5%	1.4%	5.0%*
LA total	**87.5%**	**0.4%**	**0.6%**

Statistically significant at p = 0.01

Table 7 examines overall occupant belt use weighted by roadway type and shows that belt use continues to be highest on Interstates (89.3%). There was a small observed decrease of 0.7 percentage points compared with 2018 but this difference was not statistically significant ($p > 0.05$). US and state routes had a belt use rate of 87.0%, 0.1 percentage points lower than in 2018, but this difference was also not statistically significant. Belt usage on Local roadways, usually found within neighborhoods in city limits, was 87.8 % in 2019, an increase of 1.8 percentage points from 2018. This decrease was also not statistically significant. Hence, the overall use rate in 2019 by road type was about the same as in 2018.

TABLE 7.
Louisiana Front-Seat Occupant Belt Use Estimates by Road Type, 2019

Road Type	Estimate	STD Error	Diff 2018-2019
Interstate	89.3%	0.4%	-0.7%
US & State	87.0%	0.2%	-0.1%
Local Road	87.8%	0.8%	1.8%

Louisiana has traditionally examined seat belt use rates by the nine Louisiana State Police Troop area designations. The main difference between the regions and Troop areas is that regions 1 and 2 are split into three troops, A, B and L. All other regions/troops cover only slightly different parishes. Table 8 shows use rates per Troop area, along with the standard error. Use rate estimates by Troop area ranged from 81.3% in Troop E to 91.5% in Troop C. Troop B had statistically significant ($p < .001$) decreases in belt use of 2.4 percentage points compared to 2018 and Troop F had a statistically significant ($p < .001$) increase of 5.6 percentage points compared to 2018. No other troops had a statistically significant ($p > 0.05$) change from 2018.

TABLE 8.
Louisiana Front-Seat Occupant Belt Use Estimates by Troop Area, 2019

Troop	Estimate	STD Error	Diff 2018-2019
A-Baton Rouge	86.9%	0.7%	-1.0%
B-New Orleans	87.0%	0.4%	-2.4%*
C-Houma	91.5%	0.9%	1.1%
D-Calcasieu	87.6%	1.4%	-1.6%
E-Natchitoches	81.3%	0.7%	0.7%
F-Monroe	90.7%	1.2%	5.6%*
G-Shreveport	85.9%	1.2%	1.3%
I-Lafayette	91.1%	0.8%	2.7%
L-Hammond	88.5%	1.3%	-2.4%

Statistically significant at p = 0.001

Table 9 presents estimates for all front-seat occupants by parish. The parish use rates presented here should be interpreted with caution. The overall survey design was not intended to provide single parish belt use rates but rather one single, statewide use rate. There is larger variance and standard error with respect to occupant usage at the parish levels due to the lower sample sizes. The table displays the use rate for 2019 and the past four years. Some parishes have consistently high use rates while others have consistently low use rates. Parishes with consistently high use rates over the past five years include the following: Lafourche, Terrebonne, Beauregard and Jefferson Davis. Parishes with consistently low rates include Sabine and De Soto. Some parishes have shown considerable improvements over the past few years such as Washington and Union.

TABLE 9.
Louisiana Front-Seat Occupant Seat Belt Use Estimates by Parish, 2015 to 2019

Parish	2019	2018	2017	2016	2015	5-Year Average
Terrebonne	94.3%	94.0%	93.2%	95.7%	90.0%	93.2%
Lafourche	93.4%	94.4%	87.4%	94.3%	94.8%	91.5%
Beauregard	95.4%	93.2%	77.4%	91.0%	90.9%	89.1%
Jefferson Davis	93.8%	89.7%	96.2%	93.5%	92.5%	93.1%
St. Tammany	92.9%	94.4%	86.9%	86.4%	87.9%	88.5%
St. Charles	90.6%	93.5%	87.0%	93.0%	83.1%	88.2%
Calcasieu	91.3%	92.6%	93.8%	93.4%	78.9%	89.1%
Pointe Coupee	92.6%	92.0%	81.1%	92.4%	83.4%	86.5%
Ascension	88.7%	90.0%	88.7%	88.2%	91.3%	88.9%
St. Landry	89.5%	91.1%	86.7%	89.2%	88.9%	88.3%
St. Martin	91.0%	89.5%	88.3%	92.1%	86.7%	88.7%
Vermilion	89.0%	93.8%	83.1%	89.4%	91.5%	87.3%
Bossier	85.9%	85.2%	90.0%	87.0%	89.6%	88.7%
Caddo	86.8%	84.7%	92.5%	88.9%	89.5%	89.1%
Lincoln	92.4%	87.5%	87.6%	88.7%	87.1%	87.5%
Acadia	93.3%	87.8%	94.9%	87.5%	82.0%	87.9%
Evangeline	86.1%	89.0%	89.4%	88.0%	93.6%	87.9%
East Baton Rouge	88.3%	89.3%	89.1%	89.2%	83.3%	87.0%
Vernon	82.6%	85.4%	87.4%	86.6%	84.5%	86.9%
Jefferson	89.0%	89.5%	89.0%	88.5%	83.6%	86.2%
Lafayette	91.6%	91.5%	87.9%	89.0%	78.7%	86.3%
West Baton Rouge	92.7%	91.0%	92.2%	82.9%	79.9%	86.7%
Livingston	87.1%	89.3%	80.9%	85.8%	82.1%	83.7%
Ouachita	90.4%	85.1%	83.6%	87.1%	83.9%	84.4%
St. Mary	89.7%	90.0%	92.4%	82.0%	82.6%	85.2%
St. James	91.6%	91.5%	84.6%	80.1%	82.3%	85.0%
Assumption	80.1%	75.8%	86.4%	83.9%	94.5%	86.3%
Tangipahoa	86.7%	87.8%	86.8%	82.3%	81.9%	84.0%
De Soto	77.5%	75.9%	86.5%	92.1%	86.3%	85.0%
Iberville	80.7%	77.4%	91.5%	87.1%	80.0%	85.3%
Natchitoches	79.2%	83.8%	92.6%	85.5%	81.5%	84.1%
Orleans	85.8%	91.8%	87.1%	90.1%	75.5%	82.2%
Iberia	91.4%	88.8%	93.6%	84.0%	68.8%	83.4%
Sabine	74.7%	73.7%	75.8%	85.9%	86.2%	80.4%
Rapides	82.7%	78.9%	88.2%	82.0%	87.5%	81.8%
St. John	85.9%	87.1%	87.3%	82.2%	76.0%	80.1%
Washington	82.3%	95.5%	79.3%	76.9%	77.3%	79.7%
Union	84.1%	90.8%	86.3%	76.2%	86.0%	78.4%

*Sorted in descending order of 5-year average*

The 2019 survey also captured occupant gender and race/ethnicity characteristics along with vehicle type. Table 10 provides both driver and passenger use rate estimates for these occupant types. The table shows that male occupant belt usage lagged behind female occupant usage (84.2% vs. 91.6%) and male passengers were less likely to be belted compared to male drivers (83.7% vs. 84.2%).

TABLE 10.
Louisiana Front-Seat Belt Use Estimates by Sex, Race, and Vehicle Type, 2019

	% Use Rate					
	Driver		Passenger		All Front Seat	
	Estimate	STD Error	Estimate	STD Error	Estimate	STD Error
Occupant Sex						
Male	84.2%	0.6%	83.7%	1.1%	84.2%	0.6%
Female	91.6%	0.4%	91.6%	0.7%	91.6%	0.4%
Occupant Race						
White	88.2%	0.5%	90.8%	0.7%	88.6%	0.4%
Black	84.0%	0.7%	81.1%	1.6%	83.5%	0.6%
Hispanic	87.0%	1.8%	82.4%	3.0%	85.9%	2.4%
Other	92.6%	3.1%	97.4%	0.9%	93.5%	2.5%
Vehicle Type						
Car	88.6%	0.5%	87.4%	1.1%	88.4%	0.5%
Pick-up	81.6%	0.9%	85.6%	1.4%	82.3%	0.9%
SUV	91.2%	0.7%	91.7%	1.1%	91.3%	0.6%
Van	93.1%	1.0%	95.1%	0.9%	93.6%	0.8%

Usage among Black occupants measured lower compared to other races/ethnicities (83.5% for Black occupants vs. 88.6% for White occupants vs. 85.9% for Hispanic occupants and 93.5% among "Other" occupants). This general distinction has been recorded for several years (Figure 2). While there was a 1.2 percentage point increase in seat belt use among Black occupants in 2017 and a 3.7 percentage point increase in 2016, there was a slight decline of 0.3 percentage points among Black occupants in 2019. Although these changes were not statistically significant, it suggests that the gap in belt use between Black and White
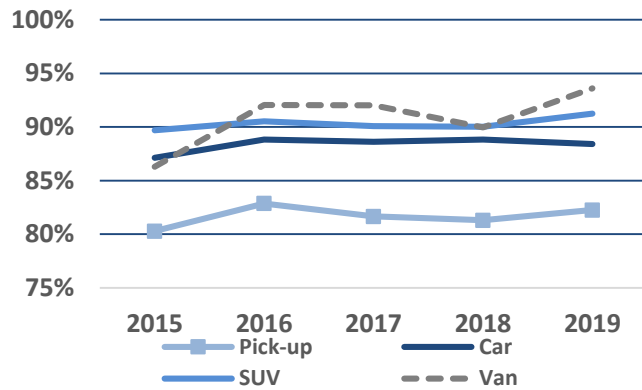
FIGURE 2.
Seat Belt Usage by Race/Ethnicity: 2015-2019
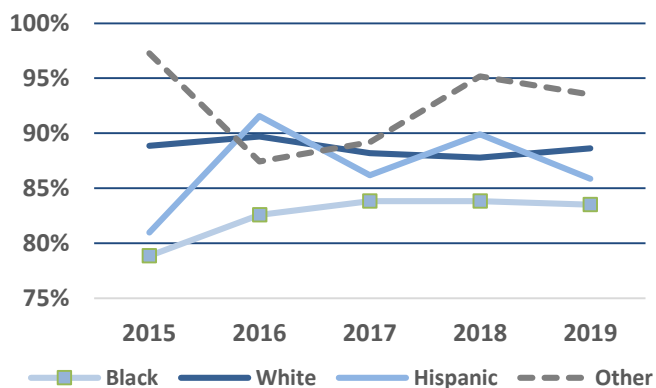
occupants has decreased over time. This includes a decrease in the gap from 10.0 percentage points in 2015 to just 5.1 percentage points in 2019. Please note that Hispanic and Other/Unknown occupant usage rates have some large year-to-year swings due to small sample sizes.

Vehicle type also made a difference in belt usage. Occupants in pickup trucks used seat belts less often than occupants in other vehicle types. A sizeable portion of the sample includes occupants in pickups that drag the overall statewide average downward. That has been the case every year of this survey (Figure 3).

The 2019 survey once again verified that occupant usage in pickup trucks lags compared to other vehicle types. Belt use rates by vehicle type in 2019 were not statistically different from rates in 2018. While cars had a slight decline of 0.4 percentage points, all other vehicle types had increases: vans with a 3.7 percentage points, SUVs with 1.2 percentage points, and pickup trucks with a 1.0 percentage point increase. The van sample size is relatively small and thus large variations are observed from year to year.

FIGURE 3.

Seat Belt Usage by Vehicle Type: 2015-2019

A regional breakdown of occupant belt use by vehicle type (Table 11) shows a fairly consistent pattern of lower observed belt use among occupants in pickup trucks compared to the average of all other vehicle occupants in all regions. Differences in usage rates range from -3.8 percentage points in the Lake Charles Region to -13.3 percentage points in the Baton Rouge Region. The average gap in belt use between pickup truck occupants and other vehicle occupants for Louisiana was -8.8 percentage points. However, as with previous tables, it is important to note the larger standard errors associated with occupant usage estimates at these levels—in some cases due to lower sample sizes and higher variances. Data breakdowns presented here should be carefully interpreted.

TABLE 11.
Louisiana Front-Seat Belt Use Estimates by Region and Vehicle Type, 2019

Region	CAR	STD Error	PICKUP	STD Error	SUV	STD Error	VAN	STD Error	AVG* Diff PKUP
1-New Orleans	88.0%	0.7%	84.1%	1.0%	91.7%	0.6%	92.7%	1.5%	-6.7%
2-Baton Rouge	88.3%	0.9%	78.4%	2.3%	91.6%	1.2%	94.9%	1.3%	-13.3%
3-Houma	88.4%	1.2%	87.1%	1.3%	93.7%	1.2%	98.5%	0.5%	-6.4%
4-Lafayette	93.5%	1.0%	86.9%	2.1%	92.2%	2.0%	96.4%	1.3%	-7.1%
5-Lake Charles	84.1%	3.1%	86.6%	2.1%	91.1%	2.4%	95.9%	2.0%	-3.8%
6-Alexandria	84.9%	0.9%	78.5%	1.2%	87.0%	1.0%	87.7%	2.2%	-8.0%
7-Shreveport	86.5%	1.3%	76.6%	2.5%	90.2%	1.6%	88.8%	3.5%	-11.9%
8-Monroe	93.2%	1.8%	83.7%	3.5%	92.5%	2.0%	97.0%	1.4%	-10.5%
LA total	**88.4%**	**0.5%**	**82.3%**	**0.9%**	**91.3%**	**0.6%**	**93.6%**	**0.8%**	**-8.8%**

Differences of belt usage rate between *pickup trucks and the average of all other vehicles*

Rear-Seat Belt Use

Louisiana began collecting rear-seat passenger data in response to Regular Session 2008, Senate Resolution No. 165 by Senator Walsworth.[2] A total of 574 rear-seat occupants were observed in the 2019 survey. Table 12 presents the distribution of rear-seat observations by vehicle type.

TABLE 12.
Number of Rear-Seat Observations by Vehicle Type, 2019

CAR	PICKUP	SUV	VAN	TOTAL
280	111	127	56	574

Unweighted estimates of belt use for rear-seat occupants, thirteen years of age or older, are presented in Table 13. The estimates presented display use rates by survey year and vehicle type. The use rate in 2019 is estimated to be 68.1%, which is an increase of 2.6 percentage points from 2018. However, this change was not statistically significant.

TABLE 13.
Louisiana Rear Passenger Seat Belt Use Rate, 2008-2011 & 2013-2019

	CAR	PICKUP	SUV	VAN	TOTAL
2008	27.3%	12.5%	31.3%	29.4%	27.2%
2010	50.0%	47.8%	77.2%	90.7%	58.4%
2011	46.0%	40.3%	71.4%	93.6%	53.8%
2013	50.8%	47.0%	67.1%	62.3%	54.8%
2014	48.8%	42.4%	69.3%	77.4%	54.9%
2015	67.9%	55.1%	80.5%	79.2%	68.9%
2016	70.9%	45.8%	80.5%	84.1%	68.8%
2017	65.8%	50.0%	71.2%	77.8%	65.6%
2018	62.0%	57.6%	73.9%	89.5%	65.5%
2019	62.5%	62.2%	81.9%	76.8%	68.1%

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[2] Senate Resolution No. 165 (2008) directed the Louisiana Highway Safety Commission to study the need for all occupants of a motor vehicle thirteen years of age and older to wear a safety belt. An amendment to Louisiana's seat belt law was made during the 2009 regular session of the Louisiana Legislature. The amendment expanded the State's primary seat belt law to include rear-seat occupants 13 years of age and older and went into effect August 15, 2009 (McKenzie, III, 2011). Prior to the law change, in 2008, rear-seat belt use among rear seat-passengers was estimated. The 2010 statewide survey was the first full-scale Louisiana statewide survey to cover both front and rear-seat passengers. Statewide surveys in 2011 and in 2013-2019 also include rear-seat occupants.

CONCLUSION

The State of Louisiana's statewide seat belt use rate for 2019 is 87.5%. The 2019 survey was conducted mid-year like most statewide surveys in years past and the rate represents a 0.6 percentage increase from the 2018 survey. While this increase is not statistically significant, it does represent the highest mid-year use rate measured to date. The 2019 statewide use rate fell short of the historic high measured in December 2016 (87.8%) but the difference is not statistically significant.

The proportion of pickup truck occupants in the 2019 survey is similar compared to previous June statewide surveys. Interestingly, there was a smaller proportion of pickup truck occupants in the December 2016 sample. Lower usage among pickup truck occupants has a downward pull on the overall statewide rate. In other words, the higher the prevalence of pickup trucks, the stronger the downward pull on the overall use rate. Conversely, fewer pickup trucks have less of a pull as evidenced by the December 2016 survey.

It is also worth noting that recurring lower usage rates among Black occupants have improved markedly in recent years. The gap between Black and White occupant belt use has shrunk from 10.0 percentage points in 2015 to only 4.4 points in 2019.

Overall seat belt use in Louisiana generally shows an upward trend with about one percentage point increase per year on average (Figure 4), increasing 12.7 percentage points since 2006 when only three-in-four were observed wearing a seat belt (74.8%).

Figure 4.
Louisiana Seat Belt Weighted Use Rates, 1999-2019
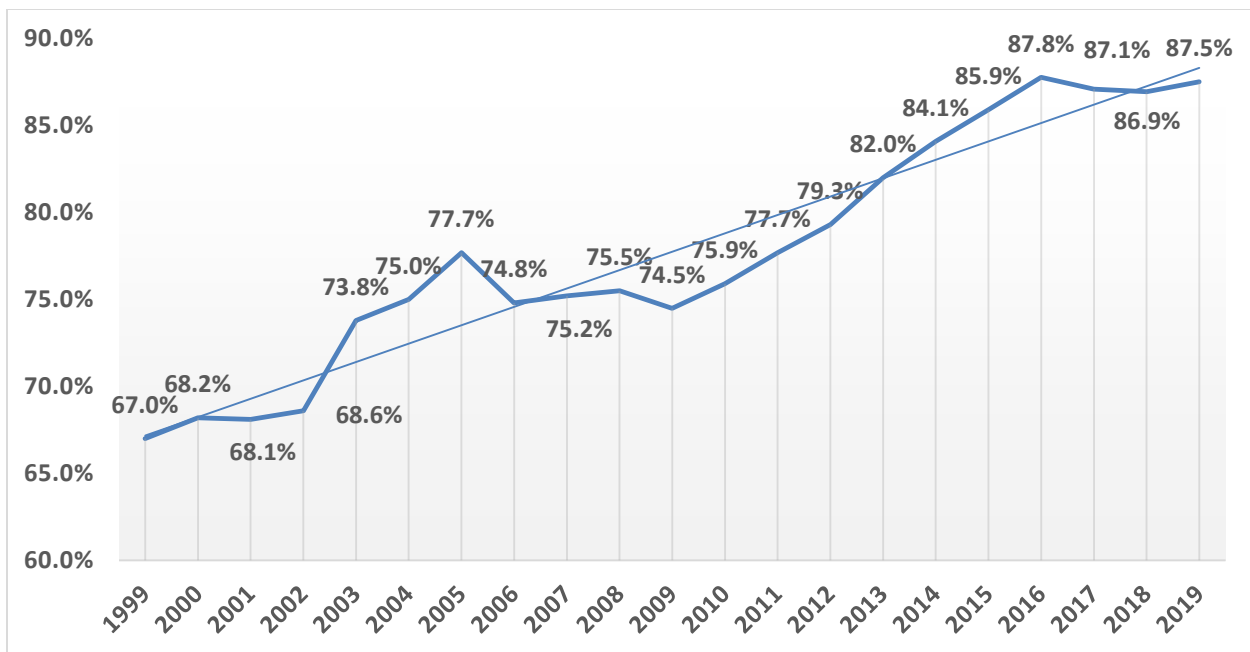
Every region in the State of Louisiana has improved seat belt usage since 2010. Comparing 2010 to 2019, the Lafayette region had the largest increase of 18.1 percentage points, followed by Lake Charles region with an increase of 15.6 percentage points. The Shreveport and Alexandria regions had the smallest increases with 5.9 and 8.5 percentage points, respectively. For the fifth consecutive year, all regions of Louisiana had a seatbelt use rate above 80.0%. In 2019, all but two regions were above 85.0% (Figure 5).

Figure 5.
Louisiana Seat Belt Weighted Use Rates by Region, 2010-2019
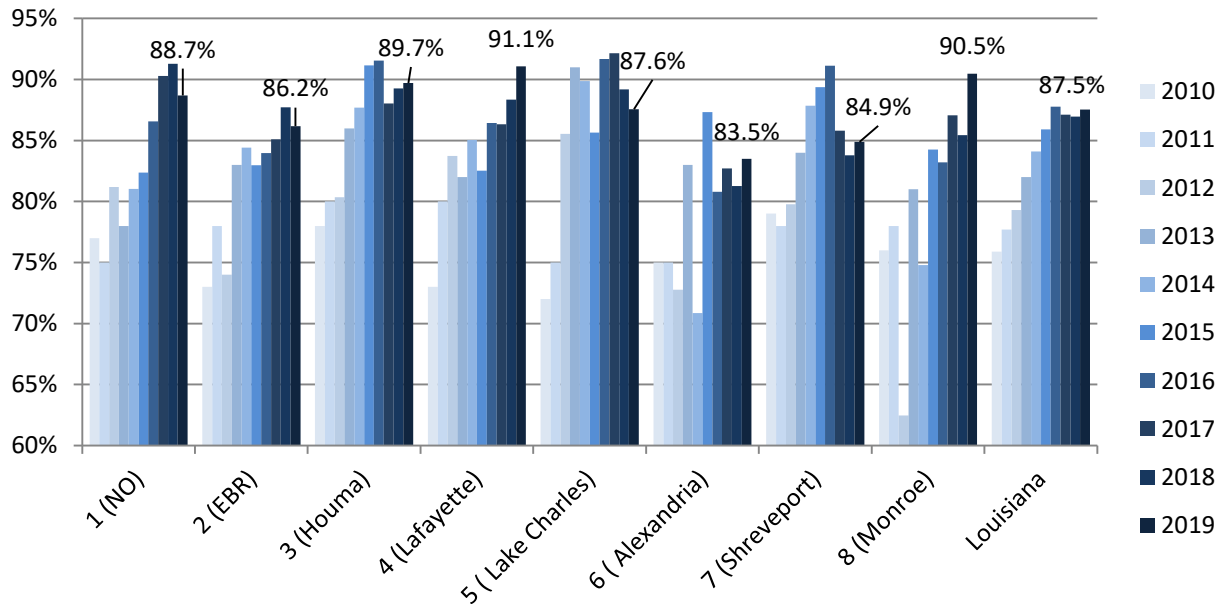
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Appendix A

Copy of:

Seat Belt Use Observation Data Form

Seat Belt Use Observation Data Form

SITE NUMBER:_____   SITE:_____   OBSERVER INITIALS:_____

DIRECTION OF TRAFFIC FLOW: N   S   E   W

CHECK ONE: _____DAYTIME   _____NIGHTTME

DATE: _____-_____-_____   DAY OF WEEK:_____

WEATHER CONDITIONS
1. Clear/Sunny   4. Fog
2. Light Rain   5. Wet (Not Raining)
3. Cloudy

START TIME:_____AM / PM   (Observation period will last exactly 60 minutes)

	VEHICLE	DRIVER			PASSENGER			REAR SEAT
Veh. #	Veh. Type C=Car T=Truck S=SUV V=Van	Sex M=Male F=Female U=Unsure	Race W=White B=Black H=Hispanic O=Other U=Unsure	Belt/ Helmet Use + = Yes - = No U = Unsure	Sex M=Male F=Female U=Unsure	Race W=White B=Black H=Hispanic O=Other U=Unsure	Belt/ Helmet Use + = Yes - = No U = Unsure	Sex/Race/Use (13+ years old) Example: M W +
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

Pg:_____ of _____

A-2

Location:_____
                                  (Street)   **(Cross Street or other landmark)**

Site #: _____

Notes: _____

_____

_____

Diagram:

A-3