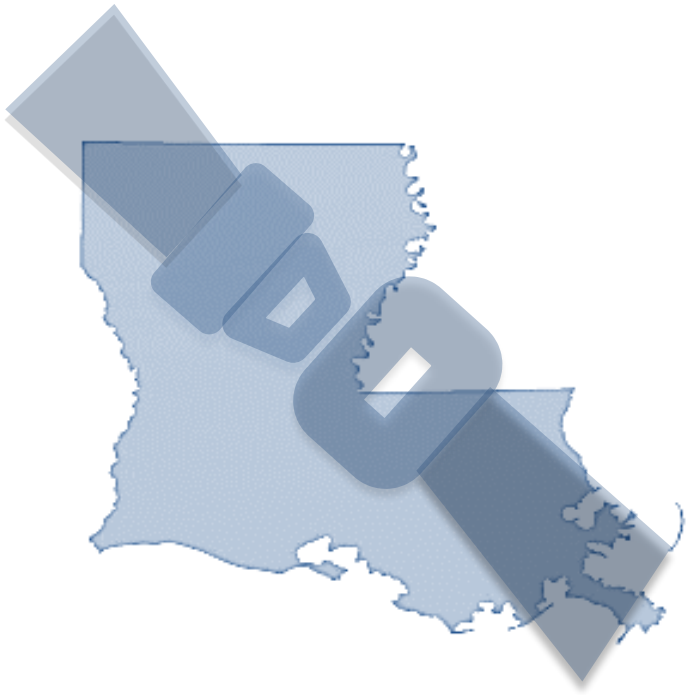
2022 LOUISIANA SEAT BELT OBSERVATION SURVEY RESULTS
LHSC Project No. 2022-20-10



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EXECUTIVE SUMMARY

Background

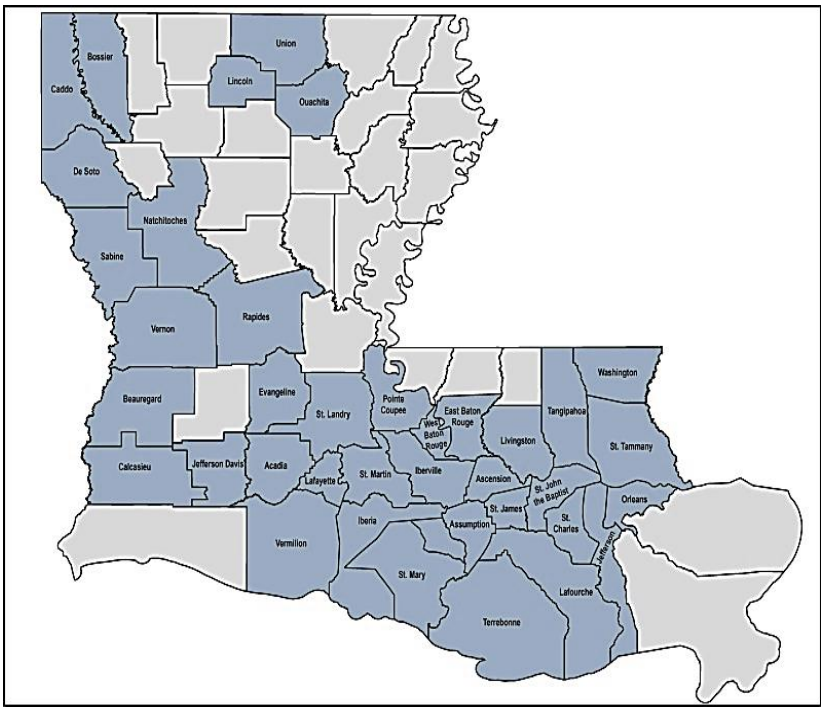
This report documents Louisiana's annual Statewide Seat Belt Use Survey. The Louisiana Highway Safety Commission (LHSC) is responsible for the State of Louisiana's Highway Safety Program. Occupant protection is among several significant program areas for which LHSC is responsible. A portion of LHSC's 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 2022 statewide observational survey. The survey 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 and, in 2022, selected 285 sites across 39 parishes. These sites were first used for the 2022 statewide survey and will remain functional in all statewide surveys up to, and including, the 2026 survey. 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 throughout June of 2022.

Results

Louisiana's statewide belt usage rate for 2022 is 86.1%. The 2022 statewide use rate is 0.4 percentage points above the most recent rate of 87.7% measured in December of 2021, and 1.7 percentage points below the historic high measured in December 2016 (87.8%). The increase from 2021 to 2022 is not statistically significant (at $p = 0.05$).

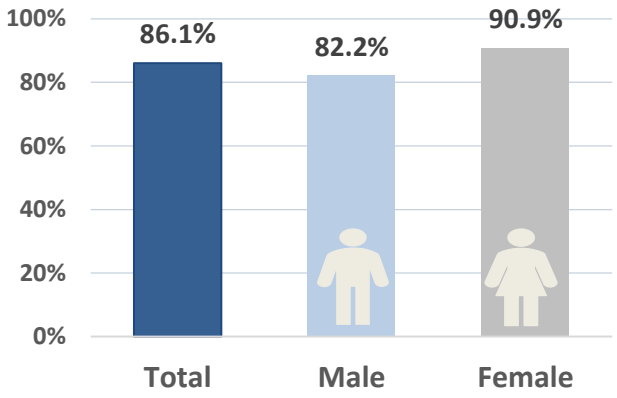
The 2022 survey included additional information such as: occupant sex, race/ethnicity, and vehicle type. The figure to the right shows that belt use among male occupants was 8.7 percentage points lower compared to female usage (82.2% vs. 90.9%), which is about the same as the gap of 8.6 percentage points in 2021.

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.

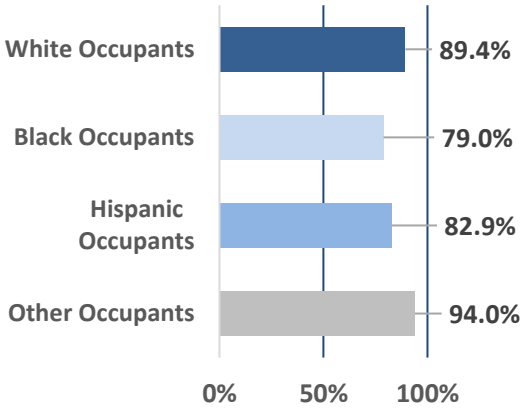
LHSC directed resources in the recent past towards improving minority belt use while working to improve overall belt usage. The gap in usage between Black occupants and the other races/ethnicities has increased in 2022 compared to 2019 and 2021. For instance, belt usage among black front-seat occupants was 7.6 percentage points lower than white front seat occupants in 2021 and this gap increased to 10.4 percentage points in 2022. 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 not changed much in all vehicle types over the past five years and the wide gap in usage between occupants in pickup trucks and other vehicle types remains largely unchanged. There was, however, a drop of -2.3 percentage points in seat belt use among pick-up truck occupants in 2022, although it was not statistically significant at 0.05.

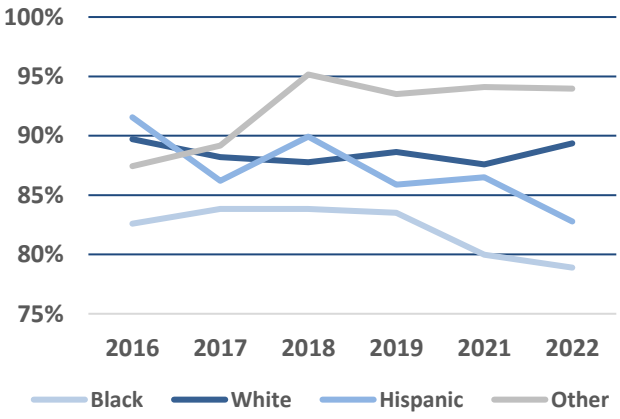
2022 Seat Belt Use Rate by Occupant Sex



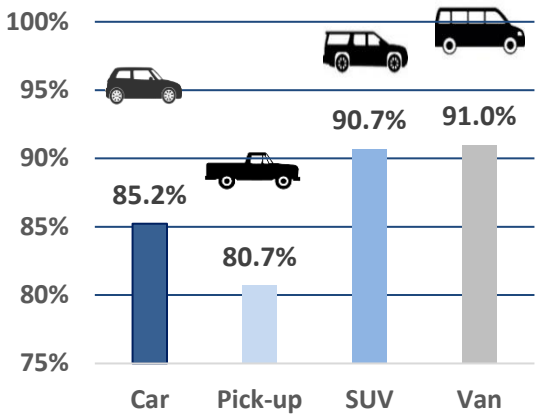
2022 Seat Belt Use Rate by Race/Ethnicity



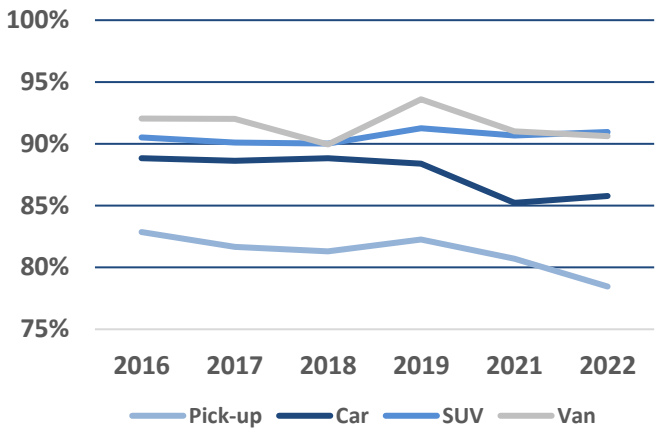
Seat Belt Usage by Race/Ethnicity: 2016-2022



2022 Seat Belt Use Rate by Vehicle Type



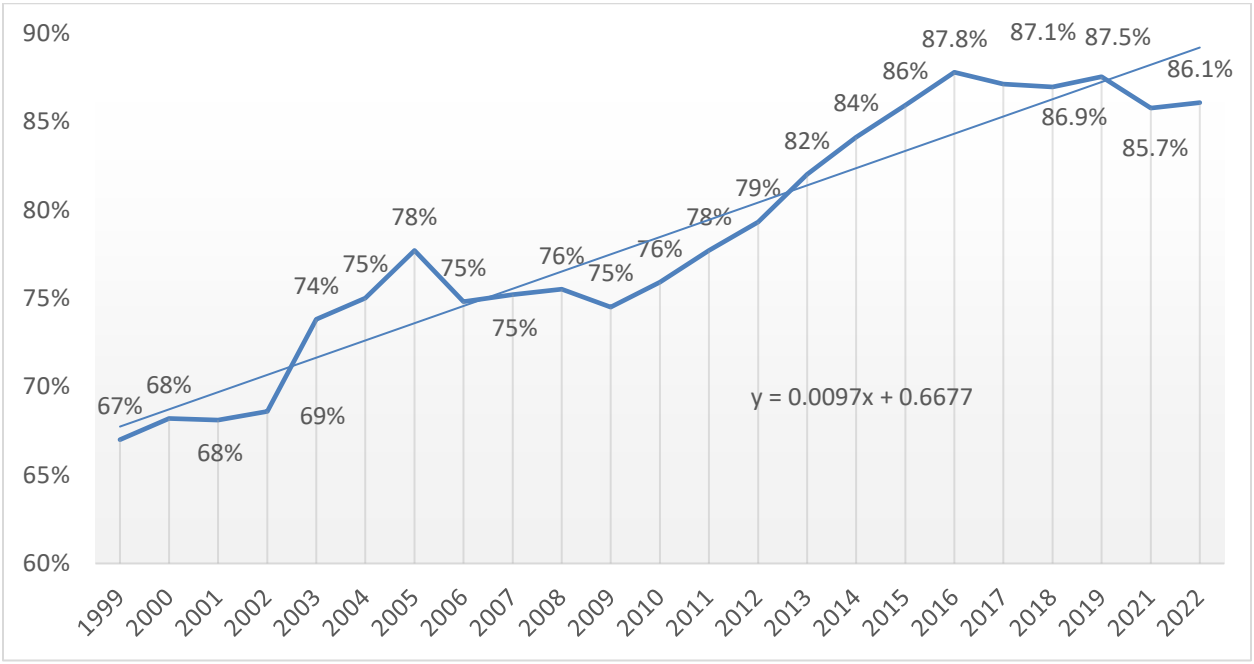
Seat Belt Usage by Vehicle Type: 2016-2022



Conclusion

Louisiana's front-seat belt use rate for 2022 is 86.1%. The difference in rate was statistically significant from the rates determined for the years 2016 to 2019, but not for 2021. Seat belt usage on Louisiana roadways, which had generally shown an upward trend of around one percentage point annually between 2010 and 2016, plateaued between 2016 and 2019, and dropped in 2021 and 2022 to a level not observed since 2015.

Louisiana Seat Belt Weighted Use Rates, 2010-2022



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BACKGROUND

Introduction

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). This report documents Louisiana's 2022 Statewide Seat Belt Use Survey effort.

The statewide seat belt survey covered by this report was conducted by Preusser Research Group, Inc. (PRG), under contract with the LHSC. All the survey work was completed throughout the month of June 2022. The results that follow provide an accurate and reliable estimate of outboard front-seat belt usage in the State of Louisiana in 2022, and results are directly comparable to previous surveys.

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 couple of decades since the primary law was passed. 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, the statewide measurement result decreased 2.9 percentage points to 74.8 percent (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). The annual rate remained in the same statistical range until the December 2021 measure. No survey was conducted in 2020 due to the Covid-19 pandemic.

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 2022 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 survey effort in 2022 are compliant with NHTSA's Uniform Criteria for State Observational Surveys of Seat Belt Use. [1]

[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

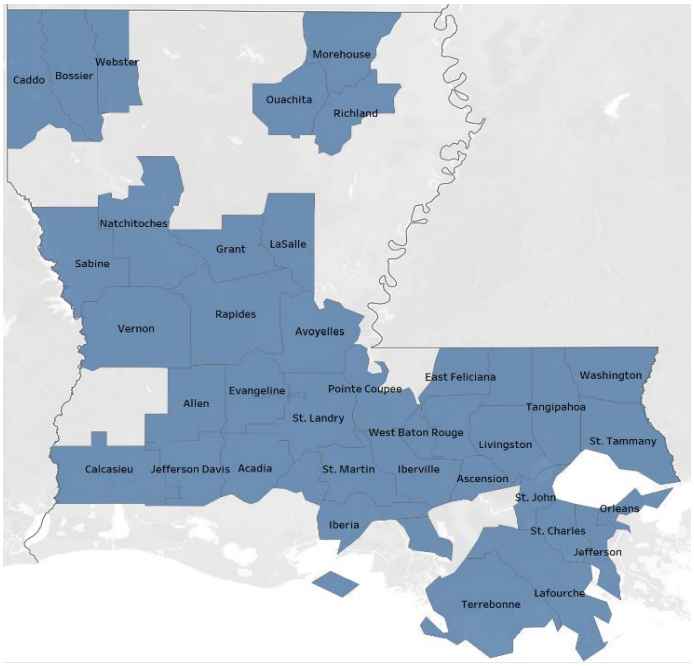
Survey Design and Site Selection

Louisiana's 2022 Statewide Seat Belt Survey was the first survey iteration using observation site locations resampled in 2022. This resample was in response to a NHTSA requirement that new sites be selected every five years. As such, every survey from 2022 through 2026 will use the new set of sites.

The 2022 survey design was developed by Dr. Helmut Schneider. The 2012 design included 390 observation sites and was approved by NHTSA. The number of observation sites 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 2022 design does not use VMT, but rather a stratified sample of 3 road segments from each road class available from the 39 parishes included in the sample. The resample includes 285 sites, 51 fewer than the 2017 sample, but still reliable. The current sample of observation sites was approved for use by NHTSA in the spring of 2022.

Dr. Schneider used crash-related fatality data from 2016-2019 to select the parishes included in the 2022 resample. According to the Fatality Analysis Reporting System (FARS), 38 of 64 parishes account for 85% of crash-related fatalities in Louisiana. However, one parish was added in Region 8 for a total of 39 parishes included in the survey design to have a minimum of three parishes in each region, i.e., Morehouse Parish was added in Region 8.

Figure 1.
Parishes Included in Statewide Seat Belt Survey



The 2022 design divided the sampling frame into eight statewide regions, the parishes within these regions, and highway types. Dr. Schneider used a 2019 TIGER file provided by NHTSA. The selected road segments were classified into three types: Interstates, US and State routes, and 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. A stratified probability sampling in regions, parishes, and road segments was used to determine site locations for Interstates and US and State routes. The stratification consists of 95 different strata, and each stratum is identified by one of the 39 parishes included in the sampling frame and one of 3 road types (Limited Access Highways, Arterials and Local Roads). However, some parishes will not have all road types included (or available for use) because they either may not have limited access highways, or their rural roads are excluded as mentioned above.

PRG used specific road segment information provided by Dr. Schneider to pinpoint observation site locations in 2017, and this was done again in 2022 for the newly selected sites (Schneider, 2022).

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 four 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. Nine observers operated individually, and one quality control monitor was utilized.

Data collectors created new Site Map forms, documenting 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, representing segments with generally equivalent traffic throughout, 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. For more vehicles, additional sheets were used and all sheets for the period were fastened together. If data could not be collected at a site due to a temporary problem such as bad weather, a traffic impediment, or sudden illness, observers were instructed to reschedule data collection at the same site for the same time of day and day of week, when possible. 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

PRG has extensive experience in training seat belt use observers. All observers received training that included both classroom instruction and field (roadside) 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 this survey iteration.

Building a Data Set

Observation data were keypunched by PRG staff into Excel spreadsheets. PRG applied 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 only 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 285 sites across 39 parishes, divided into eight regions across the State. Table 1 allocates 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, 2022

Region	Sites per the Design	Sites Completed
1-New Orleans	27	27
2-Baton Rouge	75	74*
3-Houma	36	36
4-Lafayette	48	48
5-Lake Charles	18	17*
6-Alexandria	27	27
7-Shreveport	33	33
8-Monroe	21	21
State Total	**285**	**283**

**Two Sites had zero vehicles observed.*

Seat belt use information was recorded for 28,982 front-seat occupants over the eight regions. Two of the sites in the 2022 survey resulted in zero belt use observations, and the percentage of unknown belt use was 0.4%. The distribution of those occupants by region, including occupant type (driver or passenger), is shown on the next page (Table 2). The observed number of vehicles decreased by 58% from 2021 to 2022. This decrease is mainly due to the 51 fewer locations in the updated design. Part of it could be due to seasonal changes or heightened traffic post-pandemic. Table 3 presents the distribution of observed passenger vehicle types by region.

The relative distribution of vehicle type changed slightly from 2021 to 2022. While there was a lower percentage of cars (-3.1 percentage points) there was a higher percentage of pickup trucks (+2.2 percentage points) and a slightly higher percentage of SUVs in the 2022 sample compared to 2021. It should be noted that the distribution of vehicle types in 2022 differs somewhat from the previous years PRG conducted surveys (2012-2019), most of which were conducted in the late May – mid June time frame. Though the 2016 survey took place at the end of the year, like the 2021 survey, the vehicle distribution this year differs from that survey as well. The percentage of pickup trucks in the 2022 observed sample was the highest of all surveys over the past nine years.

TABLE 2.
Number of Louisiana Front-Seat Occupants Recorded by Region, 2022

Region	Drivers	Passengers	Total
1-New Orleans	3,989	862	4,851
2-Baton Rouge	5,318	1,178	6,496
3-Houma	4,877	1,119	5,996
4-Lafayette	3,713	944	4,657
5-Lake Charles	826	178	1,004
6-Alexandria	1,220	284	1,504
7-Shreveport	1,943	521	2,464
8-Monroe	1,688	322	2,010
LA Total	**23,574**	**5,408**	**28,982**

Does not include 114 cases with unknown belt usage information.

TABLE 3.
Distribution of Vehicle Type* by Region, 2022

Region	% Car	% Pickup	% SUV	% Van
1-New Orleans	32.4%	41.1%	20.8%	5.7%
2-Baton Rouge	35.0%	31.8%	28.7%	4.5%
3-Houma	29.9%	30.4%	35.2%	4.5%
4-Lafayette	33.0%	31.8%	31.6%	3.7%
5-Lake Charles	26.0%	31.6%	38.3%	4.1%
6-Alexandria	28.2%	30.0%	38.1%	3.7%
7-Shreveport	32.3%	32.5%	31.9%	3.3%
8-Monroe	28.2%	36.2%	31.2%	4.4%
LA Total	31.8%	33.4%	30.4%	4.4%

**Unknown vehicle type not included*

Observers recorded occupant sex and race/ethnicity. Tables 4 and 5 display these characteristics by region for all front-seat occupants. If a characteristic was unclear to the observer, "unknown" was recorded on the data form. There were a higher percentage of males in the 2022 sample compared to the 2021 sample.

TABLE 4.
Distribution of Occupant Sex by Region, 2022

Region	% Males	% Females	% Unknown
1-New Orleans	57.5%	42.5%	0.02%
2-Baton Rouge	53.9%	46.0%	0.03%
3-Houma	60.9%	39.1%	0.02%
4-Lafayette	54.0%	46.0%	0.00%
5-Lake Charles	57.2%	42.8%	0.00%
6-Alexandria	57.3%	42.3%	0.40%
7-Shreveport	55.0%	44.9%	0.12%
8-Monroe	55.6%	44.1%	0.30%
LA Total	56.5%	43.5%	0.07%

Regarding race/ethnicity, the 2022 sample included a higher proportion of Black occupants (+1.6 percentage points) while it had about the same proportion of White occupants and slightly lower proportion of Hispanic occupants (-0.9 percentage points) compared to 2021.

TABLE 5.
Distribution of Occupant Race/Ethnicity by Region, 2022

Region	% White Occupants	% Black Occupants	% Hispanic Occupants	% Other Occupants	% Unknown
1-New Orleans	56.1%	34.9%	7.2%	1.8%	0.00%
2-Baton Rouge	62.6%	33.6%	2.5%	1.3%	0.02%
3-Houma	65.1%	27.6%	6.0%	1.2%	0.02%
4-Lafayette	74.0%	23.6%	1.8%	0.6%	0.00%
5-Lake Charles	78.8%	16.9%	2.7%	1.4%	0.20%
6-Alexandria	78.4%	18.9%	2.0%	0.5%	0.13%
7-Shreveport	72.1%	24.1%	3.0%	0.7%	0.04%
8-Monroe	73.6%	24.1%	1.1%	0.9%	0.15%
LA Total	66.8%	28.2%	3.8%	1.1%	0.03%

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

The 2022 Louisiana seat belt use rate, for drivers and front-seat passengers combined, is 86.1% with a standard error of 0.5%. The 2022 weighted estimate is 0.4 percentage points higher than the 2021 estimate of 85.7%. The observed increase is not statistically significant ($p = 0.05$). Table 6 shows use rate estimates by region with respective standard sampling error. Usage varied from a low of 73.7% in the Alexandria region to a high of 88.3% in the Monroe and Orleans regions. These estimates and the descriptive rates for front-seat occupants that follow are based on weighted results. No region had a statistically significant change (at $p = 0.05$) in seat belt use from 2021 to 2022.

TABLE 6.
Front-Seat Occupant Seat Belt Use Estimates by Region, 2022

Region	Estimate	STD Error	Diff 2019-2022
1-New Orleans	88.3%	1.0%	0.2%
2-Baton Rouge	82.4%	1.0%	-0.8%
3-Houma	86.1%	0.8%	-1.0%
4-Lafayette	84.5%	1.1%	-2.1%
5-Lake Charles	85.7%	4.1%	-1.4%
6-Alexandria	73.7%	1.9%	-5.2%
7-Shreveport	87.8%	1.4%	3.2%
8-Monroe	88.3%	1.3%	-0.9%
LA total	86.1%	0.5%	0.4%

Table 7 examines overall occupant belt use weighted by roadway type and shows that belt use continues to be highest on Interstates (88.9%). This was about the same as in 2021. US and state routes had a belt use rate of 84.4, -1.4 percentage points lower than in 2021. This difference is statistically significant (at $p = 0.05$). This was on top of a -1.2 percentage point statistically significant decline in 2021.Belt usage on Local roadways, usually found within neighborhoods in city limits, was 86.9% in 2022, a increase of 2.1 percentage points from 2021. However, this increase was not statistically significant (at $p = 0.05$) due to the larger standard error.

TABLE 7.
Louisiana Front-Seat Occupant Belt Use Estimates by Road Type, 2022

Road Type	Estimate	STD Error	Diff 2019-2022
Interstate	88.9%	0.4%	0.1%
US & State	84.4%	0.4%	-1.4%
Local Road	86.9%	0.7%	2.1%

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 75.9% in Troop E to 88.3% in Troop F. Compared to 2021, only Troop A had statistically significant (*p = 0.05*) decreases in belt use of -3.6 percentage points. No other troop had a statistically significant (*p = 0.05*) change from 2021.

TABLE 8.
Louisiana Front-Seat Occupant Belt Use Estimates by Troop Area, 2022

Troop	Estimate	STD Error	Diff 2022-2019
A-Baton Rouge	82.9%	1.1%	-3.6%*
B-New Orleans	87.6%	0.9%	0.9%
C-Houma	87.7%	1.0%	-0.5%
D-Calcasieu	85.7%	4.1%	-1.4%
E-Natchitoches	75.9%	1.6%	-0.4%
F-Monroe	88.3%	1.3%	-1.3%
G-Shreveport	88.1%	1.6%	2.2%
I-Lafayette	84.5%	1.1%	-2.1%
L-Hammond	86.1%	1.7%	4.0%

**Statistically significant at p = 0.05*

Table 9 (on the following page) presents estimates for all front-seat occupants by parish for the 2022 survey and the weighted average of five surveys using the revised 2017 design, namely, 2017, 2018, 2019 and 2021 and the 2022 design for 2022. The rows are grouped by region. While the parish use rates should be interpreted with caution because the overall survey design was not intended to provide single parish belt use rates, but rather one single, statewide use rate and thus there is a larger variance and standard error with respect to occupant usage at the parish levels due to the lower sample sizes, still, the percent seat belt use by Parish with the color schema from green (high seat belt use) to red (low seat belt use) allows some insights. First, comparing the 2022 result with the average allows to identify parishes that have consistently low or high belt use and parishes that had a decline or increase in belt use compared to its 5-year average. For instance, Iberville and Morehouse have consistent low belt use over the past 5 years. Parishes with a "*" are parishes that were added in the 2022 design.

Second, the grouping by region shows that there can be large differences between parishes in the same region as in region 2. Generally, more populated parishes tend to have high belt use. However, there are exceptions such as Region 3 where all parishes in the survey have a relative high belt use.

TABLE 9.
Louisiana Front-Seat Occupant Seat Belt Use Estimates by Parish, 2022 and 5-Year Average

Parish	OCCUPANTS 2022	5-Year Average
Jefferson	89.7%	88.3%
Orleans	87.0%	87.9%
St. Tammany	89.3%	92.2%
Ascension	81.2%	87.3%
East Baton Rouge	83.9%	88.2%
East Feliciana*	84.6%	84.6%
Iberville	70.4%	76.3%
Livingston	82.7%	80.5%
Pointe Coupee*	81.7%	81.7%
St. Helena*	67.9%	67.9%
Tangipahoa	77.5%	79.5%
Washington	71.2%	85.1%
West Baton Rouge	85.6%	87.8%
Lafourche	88.5%	92.9%
St. Charles	86.3%	91.7%
St. John	82.6%	82.1%
Terrebonne	87.2%	90.9%
Acadia	72.0%	91.2%
Evangeline	76.1%	83.1%
Iberia	86.7%	84.0%
Lafayette	90.4%	88.3%
St. Landry	66.1%	86.8%
St. Martin	76.9%	89.6%
Allen*	87.4%	87.4%
Calcasieu	84.7%	88.1%
Jefferson Davis	93.2%	90.4%
Avoyelles*	68.3%	68.3%
Grant*	75.3%	75.3%
LaSalle*	68.9%	68.9%
Rapides	73.0%	80.7%
Vernon	87.5%	83.1%
Bossier	85.0%	86.1%
Caddo	88.6%	85.6%
Natchitoches	81.3%	82.6%
Sabine	90.8%	73.6%
Webster*	86.3%	86.3%
Morehouse	68.8%	68.8%
Ouachita	89.0%	87.8%
Richland*	88.8%	88.8%

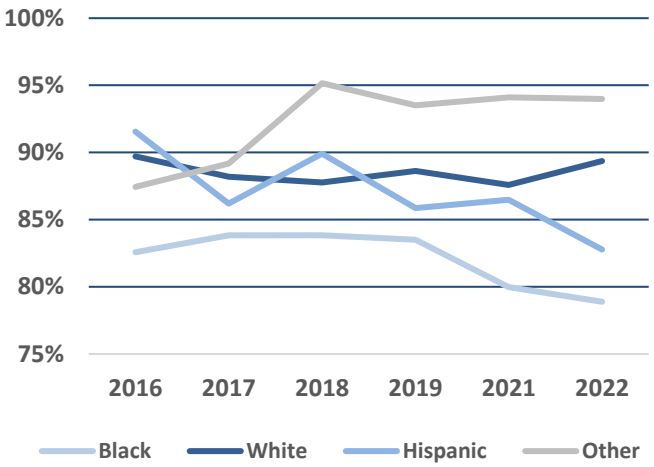
The 2022 survey also captured occupant gender and race/ethnicity characteristics along with vehicle type. Table 10 provides both driver and passenger use rate estimates for these occupant types. The table shows that male occupant belt usage continues to lag behind female occupant usage (82.2% vs. 90.9%) and male passengers were less likely to be belted compared to male drivers (81.2% vs. 91.6%). The percentage point range in Table 10 indicates the wide range of belt use due to gender, race, and vehicle type. The gap in belt use between male and female, as well as between White and Black, occupants widened in 2022 compared to 2021.

TABLE 10.
Louisiana Front-Seat Belt Use Estimates by Sex, Race, and Vehicle Type, 2022

	% Use Rate					
	Driver		Passenger		All Front Seat	
	Estimate	STD Error	Estimate	STD Error	Estimate	STD Error
Occupant Sex						
Male	82.3%	0.7%	81.2%	1.8%	82.2%	0.7%
Female	90.7%	0.6%	91.6%	1.0%	90.9%	0.5%
Range	8.4%		10.4%		8.7%	
Occupant Race						
White	89.2%	0.5%	90.4%	0.9%	89.4%	0.5%
Black	78.8%	1.0%	79.2%	2.5%	78.9%	1.1%
Hispanic	82.7%	3.2%	82.9%	5.2%	82.8%	3.1%
Other	93.3%	3.7%	97.3%	2.1%	94.0%	3.1%
Range(W/B/H)	10.3%		11.1%		10.5%	
Vehicle Type						
Car	85.6%	0.8%	87.0%	1.8%	85.8%	0.8%
Pick-up	78.6%	2.4%	82.2%	1.7%	78.5%	1.0%
SUV	90.7%	0.7%	92.0%	1.3%	91.0%	0.7%
Van	89.8%	3.3%	90.3%	2.3%	90.6%	1.8%
Range	12.2%		9.7%		12.5%	

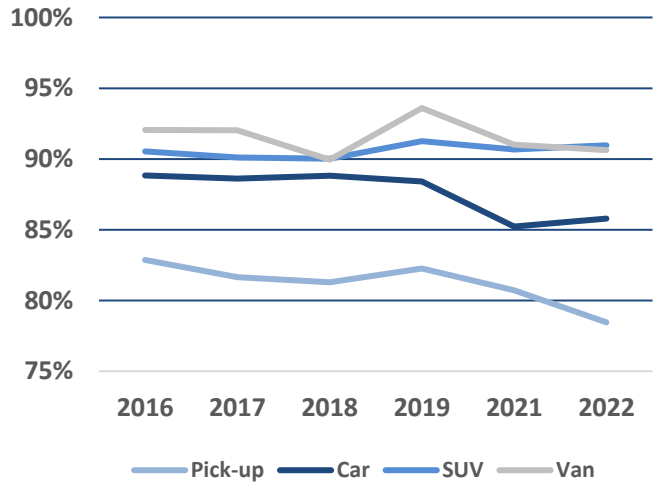
Trends in Usage by Race and Vehicle Type

FIGURE 2.
Seat Belt Usage by Race/Ethnicity: 2016-2022



Usage among Black occupants measured lower compared to other races/ethnicities (79.0% for Black occupants vs. 89.4% for White occupants vs. 82.8% for Hispanic occupants). The group of "Other" occupants is too small a sample size to include in a comparison. The range of 10.4 percentage points is between the maximum and minimum of the three race groups, White, Black, and Hispanic. Figure 2 shows the trend of belt use by race between 2016 and 2022. While there was a slight increase in usage among Black occupants from 2016 to 2017 (1.2 percentage points), there was a decline of 1.1 percentage points from 2021 to 2022. The change from 2019 to 2022 was not statistically significant (*p = 0.05*). However, there was a 4.5 percentage point decline from 2019 to 2022 which was statistically significant at p=0.05. Note that Hispanic and Other occupant usage rates have some large year-to-year swings due to small sample sizes.

FIGURE 3.
Seat Belt Usage by Vehicle Type: 2016-2022



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, thus dragging the overall statewide average downward. That has been the case every year of this survey (Figure 3). Belt use rates by vehicle type in 2022 were not statistically different from rates in 2021.

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 with respect to region. Differences in usage rates between pickup trucks and the average of other vehicles range from +7.8 percentage points in the Lake Charles Region (the only region to show higher usage among pickup occupants) to -13.9 percentage points in the Orleans Region. The average gap in belt use between pickup truck occupants and other vehicle occupants for Louisiana was 10.7 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. As such, data breakdowns presented here should be carefully interpreted.

TABLE 11.
Louisiana Front-Seat Belt Use Estimates by Region and Vehicle Type, 2022

Region	CAR	STD Error	PICKUP	STD Error	SUV	STD Error	VAN	STD Error	AVG* Diff PKUP
1-New Orleans	88.2%	1.7%	77.7%	2.9%	91.7%	1.3%	94.9%	1.9%	88.2%
2-Baton Rouge	82.0%	1.8%	74.7%	2.2%	89.1%	1.5%	86.6%	4.3%	82.0%
3-Houma	87.1%	1.4%	81.6%	1.4%	90.9%	1.1%	88.4%	3.4%	87.1%
4-Lafayette	82.8%	2.2%	80.9%	2.3%	89.4%	1.6%	88.3%	5.7%	82.8%
5-Lake Charles	87.6%	3.1%	87.7%	4.5%	91.9%	4.3%	60.4%	20.7%	87.6%
6-Alexandria	75.9%	3.4%	61.5%	3.5%	83.6%	2.9%	84.2%	6.4%	75.9%
7-Shreveport	88.4%	2.4%	79.8%	3.4%	93.1%	1.8%	98.5%	1.0%	88.4%
8-Monroe	86.5%	2.5%	83.7%	2.8%	92.1%	1.7%	94.9%	3.8%	86.5%
LA total	85.8%	0.8%	78.5%	1.0%	91.0%	0.7%	90.6%	1.8%	85.8%

**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 699 rear-seat occupants were observed in the 2022 survey. Table 12 presents the distribution of rear-seat observations by vehicle type.

TABLE 12.
Number of Rear-Seat Observations by Vehicle Type, 2022

CAR	PICKUP	SUV	VAN	TOTAL
109	63	55	16	243

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 2022 is estimated to be 56.8%, which is a statistically significant decrease of 4.2 percentage points from 2021 ($p = 0.05$).

[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.

TABLE 13.
Louisiana Rear Passenger Seat Belt Use Rate, 2008-2011, 2013-2019 & 2021-2022

	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%
2021	56.5%	51.0%	70.6%	71.6%	60.9%
2022	53.2%	52.4%	70.9%	50.0%	56.8%

CONCLUSION

The State of Louisiana's statewide seat belt use rate for 2022 is 86.1%. The 2022 survey was conducted in June like most statewide surveys in years past, and compared to the 2021 survey conducted in December, the 2022 rate represents a 0.4 percentage increase from the 2021 survey. This increase is not statistically significant, indicating that seat belt usage in Louisiana, which had been about 87% for the past five surveys 2016-2019, has dropped over the past three years by a percentage point.

The proportion of pickup truck occupants in the 2022 survey was 2.2 percentage points higher than in the 2021 survey, and higher than in any of the past surveys PRG has conducted (since 2012). 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 in the sample, the stronger the downward pull on the overall use rate. Conversely, fewer pickup trucks have less of a pull, as evidenced by the highest rate measured to date (87.8%) in the December 2016 survey.

It is also worth noting that usage rates among Black occupants went down in 2022 for the second year, reversing the upward trend seen since 2015. Also, the long-standing gap between Black and White occupant belt use, which had decreased from previous surveys to 5.1 percentage points in 2019, increased to 10.4 percent in 2022. Additionally, the percentage of Black occupants in the 2022 sample was 1.6 percentage points higher than in 2021; higher than in any other year since before 2012. Lower usage among Black occupants has a downward pull on the statewide rate, and the higher proportion of Black occupants in the sample leads to a greater overall usage rate decline. That said, overall seat belt use in Louisiana has generally showed an upward trend over time with about one percentage point increase per year on average (Figure 4), increasing almost 10 percentage points since 2010, but it seems now to have leveled off at about 86 percent over the past two years.

Figure 4.
Louisiana Seat Belt Weighted Use Rates, 2010-2022

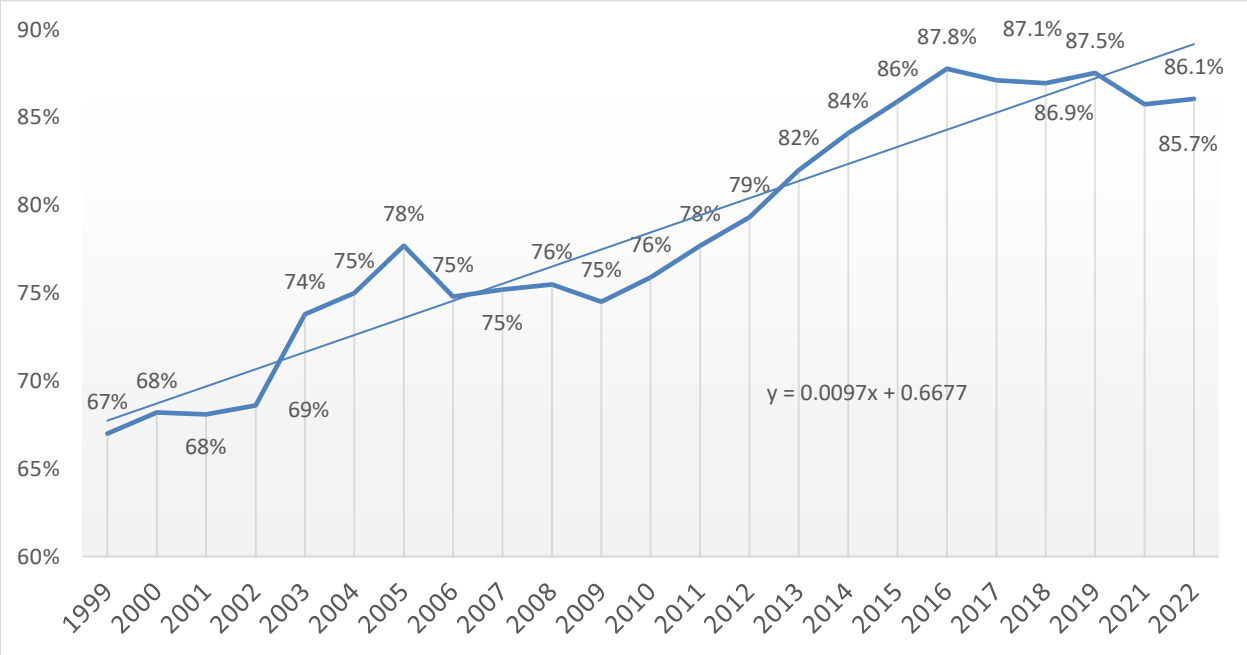
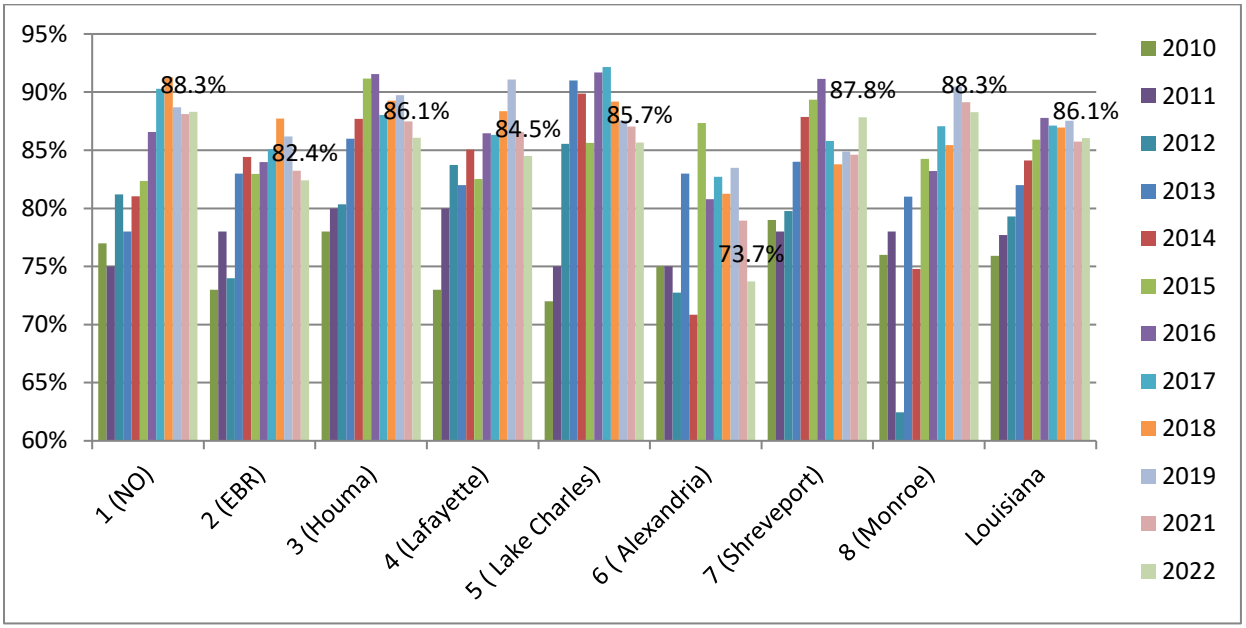


Figure 5, below, shows the trend in usage by region over the past 11 measures. Numbers displayed are 2022 regional averages. While every region in the State of Louisiana has seen usage improve since 2010, many regions have seen a decline in seat belt use over the past couple of years. The Lafayette and Monroe regions have had the most consistent upward trend over the past five years, while all other regions have had a decline from their peaks over the past few surveys.

Figure 5.
Louisiana Seat Belt Weighted Use Rates by Region, 2010-2022



REFERENCES

Preusser Research Group, Inc. (2022). *2021 Louisiana Seat Belt Observation Survey Results.*

Preusser Research Group, Inc. (2019). *2019 Louisiana Seat Belt Observation Survey Results.*

Preusser Research Group, Inc. (2018). *2018 Louisiana Seat Belt Observation Survey Results.*

Preusser Research Group, Inc. (2017). *2017 Louisiana Seat Belt Observation Survey Results.*

Preusser Research Group, Inc. (2016). *2016 Louisiana Seat Belt and Motorcycle Helmet Use Observation Survey Results.*

Preusser Research Group, Inc. (2015). *2015 Louisiana Seat Belt and Motorcycle Helmet Use Observation Survey Results.*

Preusser Research Group, Inc. (2014). *2014 Louisiana Seat Belt and Motorcycle Helmet Use Observation Survey Results.*

Preusser Research Group, Inc. (2013). *2013 Louisiana Seat Belt and Motorcycle Helmet Use Observation Survey Results.*

Preusser Research Group, Inc. (2012). *2012 Louisiana Seat Belt and Motorcycle Helmet Use Observation Survey Results.*

Schneider, H. (2012). *Seat Belt Use Survey Design For Louisiana - Sampling, Data Collection and Estimation Plan 2012.*

Schneider, H. (2022). *Seat Belt Use Survey Design for Louisiana - Sampling, Data Collection and Estimation Plan 2022.*

McKenzie, III, L. S. (2011). *Louisiana Safety Restraint (Front and Rear Seat Safety Belt) Use Observation Survey 2011 Results.* Baton Rouge, LA: Applied Technology Research Corporation.

U.S. Department of Transportation, National Highway Traffic Safety Administration. (July 2011). *Traffic Safety Facts - Seat Belt Use in 2010 - Use Rates in the States and Territories.* Washington, DC: NHTSA's National Center for Statistics and Analysis.

U.S. Department of Transportation, National highway Traffic Safety Administration. (April 2009). *Traffic Safety Facts - Seat Belt Use in 2008 - Use Rates in the States and Territories.* Washington, DC: NHTSA's National Center for Statistics and Analysis.

Schneider, H. (2004). *2004 Occupant Protection Evaluation Report.* Louisiana State University, Baton Rouge, LA.

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:**_____

START TIME:_____**AM / PM (Observation period will last exactly 60 minutes)**

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

	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 Use** + = Yes - = No U = Unsure	**Sex** M=Male F=Female U=Unsure	**Race** W=White B=Black H=Hispanic O=Other U=Unsure	**Belt Use** + = Yes - = No U = Unsure	**Sex/Race/Use** (13+ years old) Example: M W +
1								
2								
3								
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Seat Belt Observation Data Form (back)

Location:_____

(Street) **(Cross Street or other landmark)**

Site #: _____

Notes:

Diagram: