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The 2020 North Carolina Observational Survey of Seat Belt Use

Final Report

Prepared for

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EXECUTIVE SUMMARY

2020 North Carolina Seat Belt Study Results



87.1%

Combined Rate

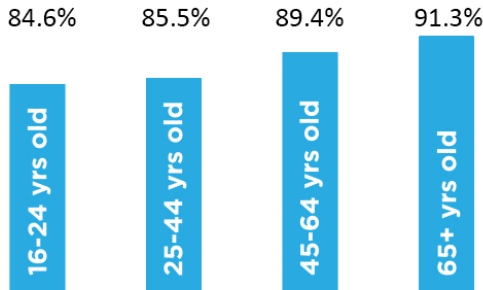
86.8%

Driver Rate

88.3%

Front Right Seat Passenger Rate

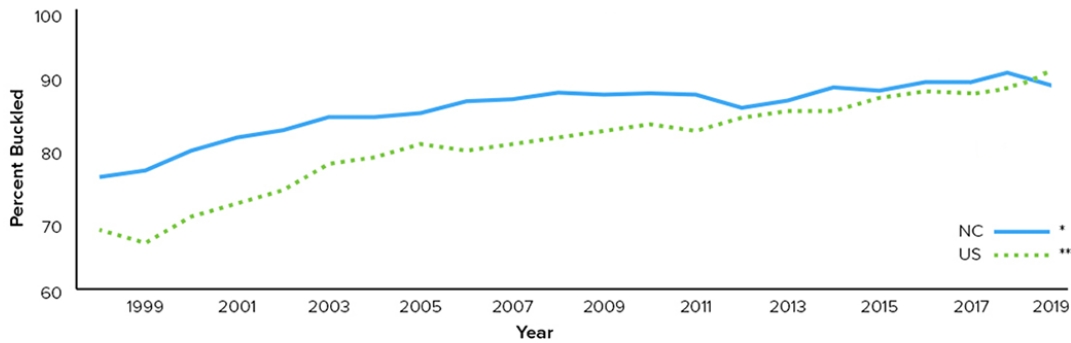
Driver Usage Rate by Age



Driver Usage Rate by Sex



Seat Belt Use Trends in North Carolina Compared to United States Overall



*Source: North Carolina Observational Study of Seat Belt Use.
 **Source: National Occupant Protection Use Survey (NOPUS).

Study Details

31,542 observations were collected across 120 observation sites which includes driver and front right seat passenger seat belt use. Please note that historic NC rates are based on data collected in the month of June. Data for 2020 were collected in the month of September due to the COVID-19 pandemic.

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INTRODUCTION

Annual seat belt use surveys are conducted in the State of North Carolina to fulfill the requirements of the National Highway Traffic Safety Administration (NHTSA). The survey is conducted in June immediately following the Governor's Highway Safety Program (GHSP)'s *Click It or Ticket* event. The *Click It or Ticket* program is an enforcement and education campaign to increase seat belt use, thus reducing injuries and deaths in motor vehicle crashes. *Click It or Ticket* began as a pilot project in North Carolina in October 1993, and has since become a national model for similar programs across the country.

According to the Uniform Criteria for State Observational Surveys of Seat Belt Use ("Uniform Criteria") Federal Final Rule,¹ States are required to reselect their road segments and observation sites at least once every five years. North Carolina was required to reselect its road segments and observation sites for 2017 according to the current survey design that was approved by NHTSA in April 2012.

This report summarizes the 2020 Seat Belt Survey results. Observations were collected in 15 counties in North Carolina stratified by three regions (Mountains, Piedmont, and Coastal). Eight observation sites were visited in each county for a total of 120 sites.

Due to unprecedented impacts from the COVID-19 pandemic, including restrictions related to travel and work across the state and the need to ensure the safety of personnel and the public, observational data collection was conducted in September rather than June 2020.

Field observers collected seat belt use data on 25,261 drivers and 6,281 front right seat passengers for a total of 31,542 observations. Seat belt use data were unknown for 667 drivers and 434 front right seat passengers resulting in a statewide combined nonresponse rate of 3.4%, well below the 10% threshold established by the Uniform Criteria.

The 2020 weighted statewide seat belt use rate is estimated at 87.1% with a standard error of 1.0%. This standard error is within the 2.5% requirement mandated by the Uniform Criteria.

ITRE will submit the required documentation to GHSP that confirms that the 2020 North Carolina Seat Belt Survey was compliant with the Uniform Criteria. This submission will describe the data collection dates, quality check information, weights, and data used to generate estimates of statewide seat belt use.

¹ <https://www.federalregister.gov/documents/2011/04/01/2011-7632/uniform-criteria-for-state-observational-surveys-of-seat-belt-use>

ORGANIZATION OF REPORT

This report provides the 2020 Seat Belt Use Survey results, including statewide seat belt use rates and a discussion of longitudinal trends. Characteristics of drivers, including by vehicle type and geographic location (e.g. region, county, and urban/rural), are also provided. Additional detailed summary tables are provided in Appendix A with results for further subgroups of interest.

2020 120-SITE RESULTS

The 2020 dataset consists of observations collected at 120 sites that were selected in accordance with the 2012 NHTSA-approved survey design. The 120 sites are located on a sample of roadways located in fifteen counties across North Carolina.

Table 1-1 presents the overall results of the 120-site sample of the September 2020 North Carolina Seat Belt Survey. Within the 120-site sample, the September 2020 weighted statewide seat belt use rate for drivers (D) is 86.8%, compared with 88.8% of drivers who were observed using seat belts in the June 2019 survey. This is a statistically significant difference. The September 2020 weighted statewide use rate for right front seat passengers (RF) is 88.3%, which is statistically significantly different from the June 2019 weighted statewide use rate for RF of 86.3%. The September 2020 weighted statewide use rate for drivers and front right seat passengers combined (D+RF) is 87.1% (95% CI=84.9%, 89.3%), which is statistically significantly different from the June 2019 weighted statewide combined use rate of 88.4% (95% CI=86.5%, 90.3%).

Table 1-1. North Carolina Seat Belt Use Rates, Unweighted and Weighted: 120-Site September 2020 Survey

Category	Unweighted	Weighted		Sample Size
	Use %	Use %	SE %	
Overall Use Rates				
Driver	87.6	86.8	1.2	25,261
Passenger	88.4	88.3	0.6	6,281
Combined	87.7	87.1	1.0	31,542
Driver Use Rates				
Urban/Rural				
Urban	88.5	87.3	1.3	21,590
Rural	82.1	82.3	2.3	3,671
Region				
Mountain	88.5	85.9	2.3	9,463
Piedmont	89.1	88.6	0.9	9,748
Coast	83.6	82.0	2.2	6,050
Vehicle Type				
Car	88.0	86.3	1.8	10,130
Van	83.7	82.0	1.2	620
Minivan	94.7	93.9	0.9	1,053
Pickup Truck	83.2	83.2	1.3	4,499
Sport-Utility Vehicle	90.9	90.1	0.9	7,686
Other	75.9	77.4	1.9	1,269
Sex of Driver				
Male	85.3	85.2	1.2	6,053
Female	90.7	89.6	1.5	4,076
Race/Ethnicity of Driver				
White	88.6	88.0	1.2	7,069
Black	82.7	82.6	1.4	2,152
Hispanic	90.5	90.2	3.0	641
Native American	100.0	100.0	-	6
Asian	89.1	87.8	2.1	184
Age of Driver				
16-24	86.1	84.6	4.0	1,168
25-44	85.3	85.5	1.3	4,918
45-64	90.2	89.4	1.1	3,043
65+	92.2	91.3	0.9	807
Cell Use				
Talk	2.4	2.2	0.1	246
Text	5.0	5.4	0.6	507

Additional results from the September 2020 120-site survey include:

- higher combined seat belt use rates among drivers and passengers of sport utility vehicles (90.8%) and minivans (93.2%), but generally lower use rates for drivers and passengers of pickup trucks (82.8%), vans (82.7%), and cars (86.7%);
- higher combined seat belt use rates for women (90.1%) than for men (84.8%); and
- lower seat belt use rate for drivers under 25 (84.6%).

The following tables further describe seat belt use trends across North Carolina. Table 1-2 shows driver (D), right front seat passenger (RF), and driver and right front seat passenger combined (D+RF) belt-use rates by county for this survey year. The observed combined (D+RF) seat belt use rates in September exceeded 90% in 4 of the 15 counties surveyed in the study. The county with the lowest combined seat belt use rate was Columbus (74.7%) county.

Table 1-2. North Carolina Seat Belt Use Rates by County, Weighted: 120-Site September 2020 Survey, 15 Counties Total

County	Driver (D)	Passenger (RF)	Combined (D+RF)	Sample Size
Alamance	88.1	88.6	88.2	2,369
Buncombe	90.2	90.5	90.2	3,197
Catawba	92.8	92.2	92.7	2,054
Cleveland	84.9	86.8	85.2	2,316
Columbus	74.7	74.7	74.7	1,479
Durham	87.3	89.3	87.6	2,323
Forsyth	90.9	86.5	90.1	2,118
Guilford	86.5	89.6	87.1	2,517
Mecklenburg	82.6	87.3	83.4	2,438
Nash	84.9	84.0	84.7	1,655
Pender	84.9	87.4	85.4	2,347
Robeson	75.9	85.2	78.3	871
Sampson	85.5	88.3	86.1	1,389
Wake	89.8	89.8	89.8	2,616
Wilkes	94.1	95.6	94.4	1,853

Table 1-3 provides weighted D, RF, and D+RF seat belt use estimates for each year since 2010. Seat belt use rates have mildly fluctuated around 90% over the 10-year period. For the first time in 2016, there was an observed seat belt use of over 90% for both drivers and right front seat passengers resulting in a combined statewide seat belt use rate of 91.7% for the 120-site sample and 91.4% for the 200 total sites included in the study. The rate for the 200-site sample is the same combined statewide seat belt use rate observed for 2017. Slight and not statistically significant decreases in the driver, right front seat passenger, and combined rates were observed in 2017 and 2018. In 2019, the driver (88.8%), right front seat passenger (86.3%), and combined rates (88.4%) decreased to below 90% for the first time since 2015. The 2020 driver (86.8%), right front seat passenger (88.3%), and combined rates (87.1%) are also below 90%. It is important to note the unique conditions posed in 2020, including impacts from the COVID-19 pandemic and the change in month from June to September for observational data collection.

Table 1-4 provides longitudinal data on observed seat belt use overall (D+RF) in North Carolina compared to the United States for the period 2002-2020. This table shows the upward trend of the combined seat belt use rate in North Carolina from 84% in 2002 to over 90% in 2014 before plateauing and mildly fluctuating around and below 90% to date. This table also shows that the seat belt use rate in North Carolina has been consistently between five and ten percentage points higher (until 2012 when the difference is typically one or two percentage points) than the national rate, with the national rate increasing from 75% in 2002 to 91% in 2018.

Table 1-5 presents longitudinal data on observed seat belt use overall (D+RF) and driver seat belt use by region, vehicle type, and sex, age, and race/ethnicity of drivers. A general consistency of several trends can be seen across the surveys from 2010 through September 2020. It appears that overall seat belt use has plateaued and started to decline over the past several years. The small variation in some estimates may be attributable to the natural variance that occurs when selecting and observing a sample.

Table 1-3. Observed Seat Belt Use in North Carolina (%) for June and September, Weighted

Survey Periods	Driver (D)	Passenger (RF)	Combined (D+RF)
2010 ^a	90.4	86.7	89.7
2011 ^b	90.8	84.8	89.5
2012 ^b	88.0	85.7	87.5
2013 ^b	89.6	84.9	88.6
2014 ^b	90.9	89.7	90.6
2015 ^b	89.8	90.3	89.9
2016 ^b	92.1	90.4	91.7
2017 ^b	91.6	91.0	91.4
2018 ^b	91.5	90.3	91.3
2019 ^b	88.8	86.3	88.4
2020 ^c	86.8	88.3	87.1

^a This survey was conducted at 121 sites in the month of June.

^b This survey was conducted at 120 sites in the month of June.

^c This survey was conducted at 120 sites in the month of September.

Table 1-4. Seat Belt Use Trends in North Carolina (%), Weighted, Compared to United States Overall

Overall (D+RF) Use Rates	2002¹	2003¹	2004¹	2005¹	2006¹	2007¹	2008¹	2009¹	2010¹	2011²	2012²	2013²	2014²	2015²	2016²	2017²	2018²	2019²	2020³
North Carolina	84.1	86.1	86.1	86.7	88.5	88.8	89.8	89.5	89.7	89.5	87.5	88.6	90.6	89.9	91.7	91.4	91.3	88.4	87.1
United States*	75	79	80	82	81	82	83	84	85	84	86	87	87	89	90	90	90	91	**

¹ This survey was conducted at 121 sites for North Carolina in the month of June.

² This survey was conducted at 120 sites for North Carolina in the month of June.

³ This survey was conducted at 120 sites for North Carolina in the month of September.

* Nationwide rates provided by NHTSA's National Occupant Protection Use Survey (NOPUS).

** Data not yet available.

Note: Rounded estimates are available for North Carolina for the years 1998 (77%), 1999 (78%), 2000 (81%), and 2001 (83%). Comparable national data are also available for 1998 (69%), 1999 (67%), 2000 (71%), and 2001 (73%).

Table 1-5. Seat Belt Use Trends in North Carolina (%), Weighted

	2010 ¹	2011 ²	2012 ²	2013 ²	2014 ²	2015 ²	2016 ²	2017 ²	2018 ²	2019 ²	2020 ³
Overall (D+RF) Use Rates	89.7	89.5	87.5	88.6	90.6	89.9	91.7	91.4	91.3	88.4	87.1
Region											
Mountain	89.5	91.6	90.3	90.3	93.1	90.0	93.4	92.4*	91.7*	87.7*	85.9*
Piedmont	91.1	91.5	87.4	88.2	89.8	91.9	92.2	91.9*	91.7*	92.5*	88.6*
Coast	88.8	87.1	84.6	87.5	90.0	88.0	90.5	89.5*	91.0*	85.8*	82.0*
Vehicle Type											
Car	91.4	92.2	90.6	90.3	91.6	90.2	92.3	92.9*	91.9*	89.8*	86.3*
Van	79.9	80.9	77.3	83.8	86.8	85.7	90.3	86.4*	89.4*	80.5*	82.0*
Minivan	94.5	94.4	92.7	93.9	94.4	94.7	95.9	96.4*	92.6*	94.2*	93.9*
Pickup Truck	84.1	86.1	82.0	84.5	86.7	86.3	88.8	86.6*	87.5*	85.8*	83.2*
Sport-Utility Vehicle	91.6	91.8	91.0	92.8	94.1	92.0	93.8	93.5*	94.6*	91.2*	90.1*
Sex											
Male	87.8	89.5	85.5	87.9	89.2	87.8	91.1	88.8*	89.4*	88.4*	85.2*
Female	93.5	93.2	92.3	92.4	93.1	93.0	95.1	94.1*	93.6*	89.7*	89.6*
Age											
16-24	86.6	88.0	89.4	85.5	89.1	80.9	88.1	89.9*	88.8*	85.6*	84.6*
25-64	90.1	90.9	88.3	90.2	90.6	90.8	93.1	91.2*	91.3*	89.2*	86.9*
65+	96.8	93.6	88.2	95.2	95.2	89.7	93.7	90.7*	91.7*	89.7*	91.3*
Race/Ethnicity											
White	90.3	91.3	89.2	91.0	91.8	90.3	93.1	91.4*	91.8*	89.7*	88.0*
Black	89.6	89.1	85.8	85.7	88.0	89.2	91.7	89.5*	88.3*	85.4*	82.6*
Hispanic	95.4	93.5	89.6	86.5	91.2	90.4	93.6	91.2*	94.4*	89.0*	90.2*

¹ This survey was conducted at 121 sites in the month of June.

² This survey was conducted at 120 sites in the month of June.

³ This survey was conducted at 120 sites in the month of September.

* Rates represent driver seat belt use.

DISCUSSION AND CONCLUSIONS

The September 2020 Seat Belt Use Study provides updated estimates of statewide seatbelt use for drivers and front right seat passengers in North Carolina. The study also provides seat belt use rates for the counties included in the sample, for subgroups defined by driver and passenger characteristics, and by vehicle type. Tables and trends in this report are based on weighted seat belt use rates. The weighted rates are the best estimators of seat belt use for the entire state and for the reported subgroups. Additional summary tables are provided in Appendix A with further results for subgroups of interest.

In addition to gathering data on seat belt use, the 2020 Seat Belt Use Survey continued to assess statewide use of cell phones while driving. The 2020 Seat Belt Use Survey was the seventh statewide survey in North Carolina to assess the use of cell phones to talk and text while driving. The weighted rate of talking on a cell phone while driving decreased from 2.7% in June 2019 to 2.2% in September 2020, and the rate of texting in North Carolina decreased from 6.0% in June 2019 to 5.4% in September 2020.

It should be noted that it is difficult to accurately assess cell phone use while driving since a driver can use a cell phone at different times during a trip. Recent data suggests that cell phone use rates for talking while driving are higher than those observed in this study (3.8% for 2015; 3.3% for 2016; 2.9% for 2017; 3.2% for 2018), while cell phone use rates for texting while driving are lower than those observed in this study (2.2% for 2015; 2.1% for 2016; 2.0% for 2017; 2.1% for 2018).^{2,3,4,5}

Caution should be used when interpreting the results from the 2020 Seat Belt Use Survey in comparison to studies from prior years due to impacts from the COVID-19 pandemic. Seat belt use data collection in North Carolina has historically taken place in June each year immediately following GHSP's *Click It or Ticket* event. 2020 is the first year in decades where statewide seat belt use data collection occurred in a different month. Additionally, due to the pandemic, NHTSA rescheduled the May 2020 National *Click It or Ticket* mobilization to November 9-29, 2020, which occurred after North Carolina's seat belt use data collection for the year.⁶

² https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/driver_electronic_device_use_in_2015_0.pdf

³ <https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812426>

⁴ <https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812665>

⁵ <https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812818>

⁶ <https://www.nhtsa.gov/highway-safety-grants-program/coronavirus-impacts-faq>

APPENDIX A: DETAILED TABLES FROM THE 2020 NC SEAT BELT SURVEY 120-SITE RESULTS

Table A-1. 2020 Seat Belt Use by Time Period, Weighted

Time Period	Percent Seat Belt Use (Standard Error)		
	Driver (D)	Passenger (RF)	Combined (D + RF)
Weekday Rush	86.3 (1.2)	86.8 (1.8)	86.4 (1.2)
Weekday Non-Rush	85.8 (1.1)	85.0 (1.0)	85.6 (0.8)
Weekend	88.7 (2.2)	91.8 (1.2)	89.5 (2.0)

Table A-2. 2020 Driver Seat Belt Use for Race by Sex, Weighted

Race	Percent Seat Belt Use (Standard Error)	
	Male	Female
White	86.1 (1.1)	91.0 (1.6)
Black	81.2 (1.9)	84.9 (0.7)

Table A-3. 2020 Driver Seat Belt Use for Vehicle Type by Sex, Weighted

Vehicle Type	Percent Seat Belt Use (Standard Error)	
	Male	Female
Car	85.8 (2.6)	87.8 (2.1)
Minivan	93.0 (2.3)	94.6 (2.6)
Pickup Truck	82.4 (1.4)	89.3 (2.6)
Sport-Utility Vehicle	89.0 (1.3)	91.7 (1.2)

Table A-4. 2020 Driver Seat Belt Use for Vehicle Type by Area Type, Weighted

Vehicle Type	Percent Seat Belt Use (Standard Error)	
	Urban	Rural
Car	86.4 (2.0)	85.2 (2.6)
Minivan	94.1 (0.8)	92.4 (4.5)
Pickup Truck	84.5 (1.5)	76.7 (2.7)
Sport-Utility Vehicle	90.4 (1.1)	87.2 (2.0)

Table A-5. 2020 Driver Seat Belt Use for Vehicle Type by Region, Weighted

Vehicle Type	Percent Seat Belt Use (Standard Error)		
	Mountain	Piedmont	Coast
Car	85.4 (3.9)	87.1 (1.4)	85.5 (2.5)
Minivan	93.9 (0.5)	94.3 (1.3)	92.0 (3.9)
Pickup Truck	81.2 (1.6)	87.6 (1.6)	75.7 (2.1)
Sport-Utility Vehicle	89.5 (1.9)	91.6 (0.8)	85.1 (1.9)

Table A-6. 2020 Driver Cell Use by Driver Age, Weighted

Age of Driver	Number of Observations	Percent Cell Phone Use (Standard Error)	
		Talk	Text
16-24	1,165	2.4 (0.9)	11.5 (1.3)
25-44	4,910	2.4 (0.2)	6.2 (0.8)
45-64	3,048	2.1 (0.4)	3.0 (0.6)
65+	808	0.6 (0.3)	1.0 (0.4)