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North Dakota Statewide Traffic Safety Survey, 2020:

Traffic Safety Performance Measures for State and Federal Agencies

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Disclaimer

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ABSTRACT

The statewide driver traffic safety survey provides baseline metrics for the Safety Division and others to use in understanding perceptions and self-reported behaviors related to focus issues. A core set of questions addresses nationally agreed upon priorities, including seat belts, impaired driving, and speeding. In addition to the core issues, questions were included to better understand views on specific programs and attitudes pertinent to North Dakota drivers. Results show that more North Dakota drivers have adopted safe driving practices, but additional efforts are needed to improve safety on the state's roads.

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1. INTRODUCTION

The United States lags behind other developed countries in several transportation safety metrics. One metric, road traffic death rate, is higher than in other developed countries (World Health Organization 2018) (Figure 1.1). Progress has been made to reduce the number of traffic-related fatalities, but crashes resulting in death, injury, and property damage continue to take place due to preventable factors. These factors include driving under the influence of drugs or alcohol, distracted driving, speeding, and operating a vehicle without a seat belt, among others. The metric highlighted in Figure 1.1, which presents the most recently-available data from the World Health Organization, suggests that more work is needed to improve driver behavior and overall safety on roadways in the United States. One critical asset in monitoring and communicating traffic safety priorities is a reliable and comprehensive means to set and measure goals (Government Accounting Office 2010). In a nationwide effort to improve transparency and quantify metrics for behavior-based investments designed to reduce motor vehicle crashes, the Governor's Highway Safety Association (GHSA) and the National Highway Traffic Safety Administration (NHTSA) established a set of performance measures to support traffic safety priorities and demonstrate progress related to behavioral safety plans and programs (Hedlund 2008).

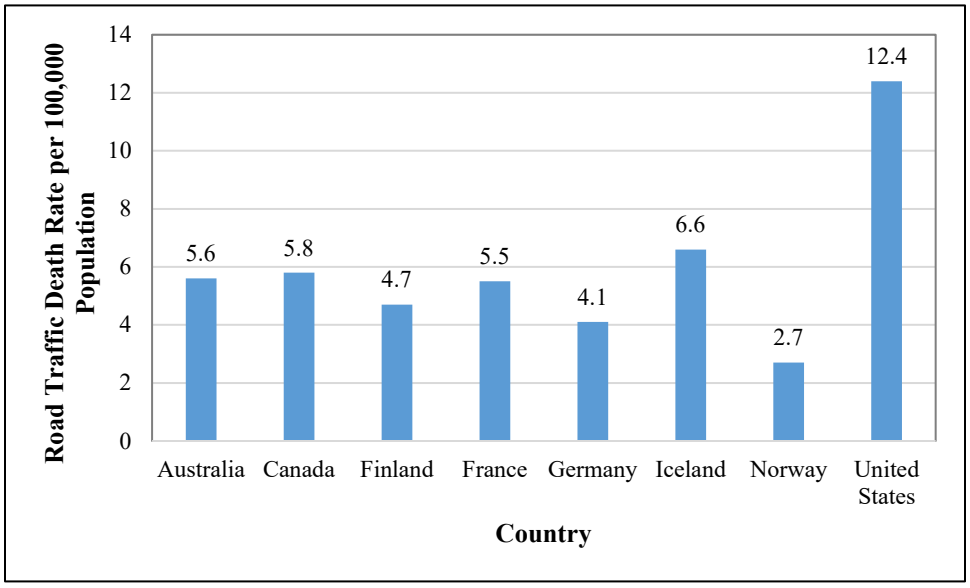


Figure 1.1 Road Traffic Death Rate of Selected Countries, 2016

Within the GHSA-NHTSA safety effort, 14 measures were agreed upon as Minimum Performance Measures. These include 10 outcome measure-types, one behavior measure-type, and three activity measure-types. The Minimum Performance Measures are designed to create a quantitative core for the development and implementation of highway safety plans and programs. Several uses include goal setting, goal-action linkages, resource allocation, program evaluation, and communication. Other benefits stem from improvements to organizational focus, feedback processes, and accountability (Herbel et al. 2009). The measures were defined to monitor overall traffic safety performance and progress related to the prioritized behavioral issues. These issues include occupant protection, alcohol use, and speeding. Additionally, the measures target high-risk population groups. The 10 outcome measures focus on:

- overall traffic safety performance
- seat belt use
- child occupants
- alcohol-impaired driving
- speeding and aggressive driving

- motorcyclists
- young drivers
- older drivers
- pedestrians
- bicyclists

These 10 core outcome measures combine current exposure data, such as population and vehicle miles traveled (VMT), with existing national Fatality Analysis Reporting System (FARS) data to generate performance measures in areas common to state safety strategies and data systems. Activity measures emphasize actions such as citations or arrests under grant-funded enforcement initiatives. Seat belt observation was chosen as the single initial core behavior measure (Hedlund 2008). The measures utilized in the outcome highlights are typically calculated as:

- Core outcome measures
    - C-1) Number of traffic fatalities (FARS). States are encouraged to report three-year or five-year moving averages when appropriate. (One example is when annual counts are small enough that random fluctuations may inaccurately reflect true trends. This applies to all fatality measures.)
    - C-2) Number of serious injuries in traffic crashes (state crash data files).
    - C-3) Fatalities per VMT (FARS, FHWA). States should set a goal for total fatalities per VMT. States should report both urban and rural fatalities per VMT in addition to total fatalities per VMT.
    - C-4) Number of unrestrained passenger vehicle occupant fatalities, all seat positions (FARS).
    - C-5) Number of fatalities in crashes involving a driver or motorcycle operator with a blood alcohol content (BAC) of at least 0.08 grams/deciliter (FARS).
    - C-6) Number of speeding-related fatalities (FARS).
    - C-7) Number of motorcyclist fatalities (FARS).
    - C-8) Number of motorcyclist fatalities not wearing a helmet (FARS).
    - C-9) Number of drivers aged 20 or younger involved in fatal crashes (FARS).
    - C-10) Number of pedestrian fatalities (FARS).
- Core behavior measure
    - B-1) Observed seat belt use for passenger vehicles, front seat outboard occupants (observational survey).
- Activity measures
    - A-1) Number of seat belt citations issued during grant-funded enforcement activities (grant activity reporting).
    - A-2) Number of impaired driving arrests made during grant-funded enforcement activities (grant activity reporting).
    - A-3) Number of speeding citations issued during grant-funded enforcement activities (grant activity reporting).

The Minimum Performance Measure publication also referenced four additional areas for measuring improvement and implementation: traffic injury outcome; driver attitudes, awareness, and behavior; traffic speed; and law enforcement activity. The following report fulfills the need for improved measurement of driver knowledge, attitudes, behaviors, and beliefs. A core question set was developed by a GHSA-NHTSA working group and presented to state departments of transportation following the preliminary recommendations in the Minimum Performance Measures (Hedlund, Casanova, and Chaudhary 2009).

A set of 10 core questions was created to quantify attitudes, awareness, and self-reported behavioral patterns through periodic statewide traffic safety surveys/questionnaires. This recommended list of core questions was intended to provide a standard for states to track performance as they pursue program goals and objectives to reduce crashes, injuries, and fatalities related to high-risk driver behaviors. Core questions remain consistent across all entities. Beyond the core questions, an option to supplement the survey with other additional questions provides latitude to address local interests and to obtain other useful information related to topics such as demographics and driving activity.

Commonly, federal initiatives relating to driving behavior focus on impaired driving, seat belt use, and speeding. Thus, the core questions emphasize these issues (Hedlund, Casanova, and Chaudhary 2009). The core questions of the focus areas are as follows:

- Impaired driving
    - ID-1: In the past 60 days, how many times have you driven a motor vehicle within two hours after drinking alcoholic beverages?
    - ID-2: In the past 30 days, have you read, seen or heard anything about alcohol impaired driving (or drunk driving) enforcement by police?
    - ID-3: What do you think the chances are of someone getting arrested if they drive after drinking?
- Safety belts
    - SB-1: How often do you use safety belts when you drive or ride in a car, van, sport utility vehicle or pickup?
    - SB-2: In the past 60 days, have you read, seen, or heard anything about seat belt law enforcement by police?
    - SB-3: What do you think the chances are of getting a ticket if you don't wear your safety belt?
- Speeding
    - SP-1a: On a local road with a speed limit of 30 miles per hour, how often do you drive faster than 35 miles per hour?
    - SP-1b: On a road with a speed limit of 65 miles per hour, how often do you drive faster than 70 miles per hour?
    - SP-2: In the past 30 days, have you read, seen or heard anything about speed enforcement by police?
    - SP-3: What do you think the chances are of getting a ticket if you drive over the speed limit?

These questions have been incorporated into the 2020 North Dakota Driver Survey developed in conjunction with the North Dakota Department of Transportation's Safety Division (see Appendix A for the complete survey). The Safety Division expanded the survey to gain additional information relevant to its goals and responsibilities. Ultimately, the core questions were slightly modified to better fit driving conditions in North Dakota. These core questions read as follows:

- Impaired driving
    - ID-1a) In the past 60 days, how many times have you driven a motor vehicle within two hours after drinking 1-2 alcoholic drinks?
    - ID-1b) In the past 60 days, how many times have you driven a motor vehicle within two hours after drinking 3 or more alcoholic drinks?
    - ID-2) Within the last six months have you read, seen, or heard traffic safety messages relating to drunk driving enforcement?
    - ID-3) What do you think the chances are of someone getting arrested if they drive buzzed/drunk?

- Safety belts
    - SB-1) How often do you use a seat belt when you drive or ride in a motor vehicle?
    - SB-2) Within the last six months have you read, seen, or heard traffic safety messages relating to seat belt enforcement?
    - SB-3) What do you think the chances are of getting a ticket if you do not wear your seat belt?
- Speeding
    - SP-1) On a road with a speed limit of 75 miles per hour, how often do you drive faster than 80 miles per hour?
    - SP-2) Within the last six months have you read, seen, or heard traffic safety messages relating to speed enforcement?
    - SP-3) What do you think the chance is of getting a ticket if you drive over the speed limit?

The 2018 North Dakota Vision Zero Plan provides insight for current priorities and activities (NDDOT 2018). The most recent Strategic Highway Safety Plan outlines goals related to the overall traffic safety mission of the NDDOT, in addition to specific issues to address in the next five years. The following traffic safety issues are prioritized as emphasis areas:

- Lane departure
- Intersections
- Impaired driving
- Unbelted vehicle occupants
- Speeding/aggressive drivers
- Young drivers
- Heavy vehicles
- Older drivers
- Pedestrians/bicyclists
- Local system roadways
- Oil impact counties

Metrics are included to indicate progress of the overall safety mission in light of traffic fatalities and serious injuries. The single core behavior measure shows 2019 observed seat belt use at 83.7% (Vachal and Benson 2019). Results presented here will enhance the understanding of behavior by providing additional coverage, expanded insights into issues, and an increased number of measures.

2. METHOD

A mail survey was selected as the method for the driver traffic safety survey. A questionnaire was created by blending the core questions with other NDDOT-designated questions pertaining to education, policy, and enforcement. The questions were developed based on a literature review, which included previous surveys of this type, and guidance offered by the GHSA-NHTSA working group. The mailings to drivers included a Safety Division cover letter, which invited participation and explained the purpose of the survey. The questionnaire was mailed to North Dakota drivers on March 2, 2020, and was open to response until April 30, 2020.

NDDOT adult driver records formed the population used for sampling. Originally, the NDDOT mail list consisted of 11,400 driver addresses. From this preliminary list of addresses, it was discovered that 476 addresses were invalid and unable to be mailed. From the remaining 10,924 drivers, NDDOT did not receive any as undeliverable because "or current resident" was used on each address label. Therefore, a total of 10,924 surveys were mailed to valid addresses. The sample had regional, geographic, age, and gender distributions that were a reasonable representation of the general North Dakota driver population. Ultimately, 1,664 surveys were completed and returned to the research team. However, not all of the surveys were from valid North Dakota counties. A total of 54 respondents did not provide an answer to the "In which North Dakota county do you live?" question and were removed from the sample. None of the responses were from individuals living in counties outside of North Dakota. Therefore, of the usable survey responses provided, 1,610 were confirmed as valid and formed the driver response sample used in the analysis.

The sample size was based on a 95% confidence interval with a 5% confidence level. Although mail survey response is usually low, with 10% typical, a slightly better response rate was expected due to the parameters used in the survey design and administration. These parameters included keeping the survey to a single page, including the state agency cover letter, using state agency mail envelopes, and providing postage-paid return envelopes.

A disproportionate stratified random sample was used to select drivers. North Dakota drivers were stratified by region (east/west) and geography (urban/rural). County jurisdictional boundaries were used to define both region and geography (Figure 2.1). Additionally, oversampling was necessary for two target driver groups: 18-to-34-year-old male and female drivers. The disproportionate stratified sampling structure was used to elicit sufficient driver participation to allow robust analysis of responses by region, geography, and the target driver groups. However, using these simple average responses would provide skewed results in representing the statewide driver population. For example, drivers age 35 to 44 were 6.2% of the survey sample and account for 7.9% of the survey responses. However, this age cohort actually accounts for 16.6% of the licensed driver population in the state (FHWA 2020). Therefore, a post-stratification weighting process is used to give an appropriate weight to responses for statewide estimates. Results from post-stratification consider the age, gender, and location of North Dakota registered drivers when weighting to reflect the views, perceptions, and behaviors of the statewide driving population. Note that answers with fewer than 30 responses are not considered large enough to extrapolate to fit the entire North Dakota driver population. These instances are indicated with asterisks throughout the analysis.

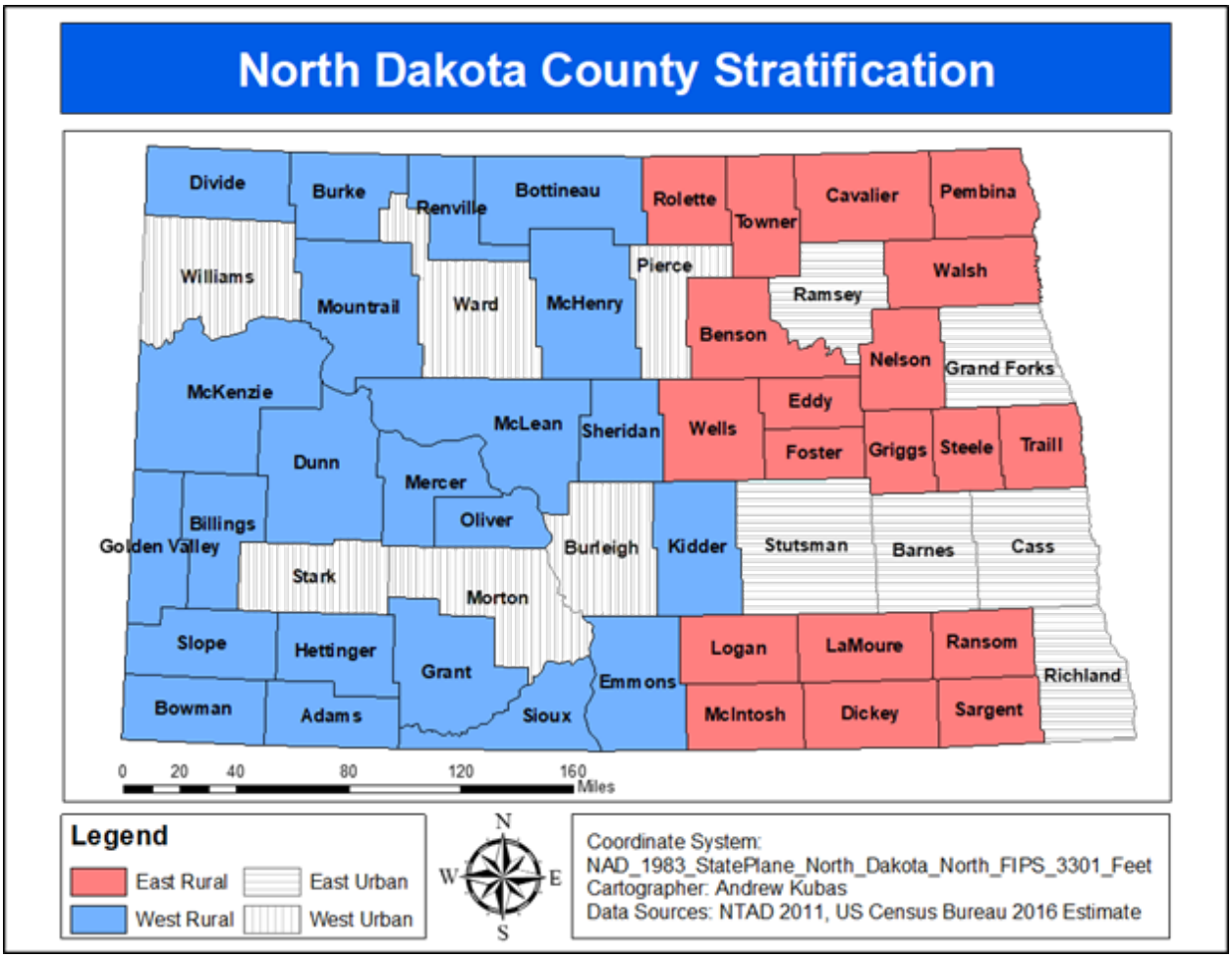


Figure 2.1 County Stratification

The regional definition was created by aggregating North Dakota health regions into two areas closely representing an east/west division of the state. The geography definition includes an urban/rural dichotomy. Urban drivers are those from counties with the largest urban population according to the most recently published data estimates from the US Census Bureau. Six urban counties are located in the east and another six are located in the west as indicated by the population density geographic definitions used in the study. These counties represent the clear majority of the urban population in the state. The sampling probabilities for the survey are displayed in Table 2.1.

Table 2.1 Sampling Probabilities

Region	Geography	Driver Age	Sampling Probability
East	Urban	18-34	0.034
East	Urban	35+	0.006
East	Rural	18-34	0.072
East	Rural	35+	0.012
West	Urban	18-34	0.039
West	Urban	35+	0.007
West	Rural	18-34	0.104
West	Rural	35+	0.018

3. RESPONSE

The survey response rate was 14.7% with 1,610 valid responses obtained from a mailing to 10,924 drivers. The response rate was comparable to prior surveys (Vachal, Benson, and Kubas 2010–2019) but was 3.0% lower than the 2019 mailing (Vachal, Benson, and Kubas 2019). As expected, oversampling of the 18–34-year-old male and female driver target groups was needed to achieve a sample sufficient for statistical analysis. The target group response rate was 7.3% compared with 31.4% for other drivers. Sampling to elicit response by region and geography was successful as shown in Table 3.1. The responses include an acceptable level of participation with comparable response rates from east, west, urban, and rural demographics.

Table 3.1 Survey Response by Region and Geography

		GEOGRAPHY		
		Urban	Rural	**Total**
REGION	East	420 (26.1%)	415 (25.8%)	**835 (51.9%)**
	West	410 (25.5%)	365 (22.7%)	**775 (48.1%)**
	Total	**830 (51.6%)**	**780 (48.4%)**	**1,610**

The sample design did not account for age or gender beyond the target male and female groups. Responses have an acceptable distribution among age cohorts, though the 35-to-44-year-old age group is underrepresented compared with its actual proportion of the driver population in the state (Table 3.2). The highest share of responses is among drivers age 25–34. This age cohort makes up 26.8% of the survey responses and continues the trend from prior iterations of this survey in which this group has the largest number of responses. The 18-to-24-year-old age cohort makes up the lowest proportion of survey responses. This is the first time in the history of this survey that this age group has been the least represented. Nonetheless, there were well over 30 responses from each age group making statistical extrapolation possible and allowing for inferences to be drawn with regard to the entire North Dakota driver population. Response rates were slightly skewed by gender; 56.2% of the sample identified as female. This deviates from the North Dakota driver population in which there is an approximately equal distribution of males and females. The number of responses based on gender also provides sufficient data to expand the responses to represent the entire statewide driver population. The comparison to the state population supports the post-weighting for improved driver population representation with the sample.

Table 3.2 Response by Age Group

	Survey		Driver Population	
Age Group	Responses	Share	Drivers	Share[1]
18-24	122	7.6%	62,133	11.4%
25-34	430	26.8%	114,815	21.0%
35-44	127	7.9%	90,885	16.6%
45-54	148	9.2%	80,545	14.7%
55-64	320	19.9%	94,515	17.3%
65-74	287	17.9%	62,835	11.5%
75 and Older	171	10.7%	40,911	7.5%

[1]Represents share of drivers above age 18; percentages do not account for novice (under 18) drivers
Frequency Missing: 5
Source: FHWA 2020

4. RESULTS

Responses to the survey questions provide valuable insight into driver perceptions, attitudes, and behaviors regarding traffic safety. A simple frequency analysis of ordinal and dichotomous survey responses provides a general characterization of driver views and behaviors. The strong response rate resulted in increased confidence. The 95% confidence interval is coupled with smaller margins of error at +/-1% when discussing statewide results, and a +/-2% error margin when addressing the population in regional, geographic, or target driver strata.

4.1 All Drivers

The core questions emphasize three specific issues: impaired driving, seat belt use, and speeding. Response frequencies for these questions are included in Table 4.1. The table includes 2010−2020 responses to establish metrics that may be used to identify driving trends in North Dakota. In addition, five-year averages shed further light into patterns during this time frame. Responses show drivers believe law enforcement is more likely to ticket for impaired driving violations than for speeding or seat belt violations. Frequencies indicate that 63.8% of drivers think the chances are higher than average that impaired drivers will be arrested (Figure 4.1). This is higher than the 53.9% and 33.2% of respondents who believe there is a greater-than-average likelihood that drivers will be ticketed for speeding or seat belt violations, respectively.

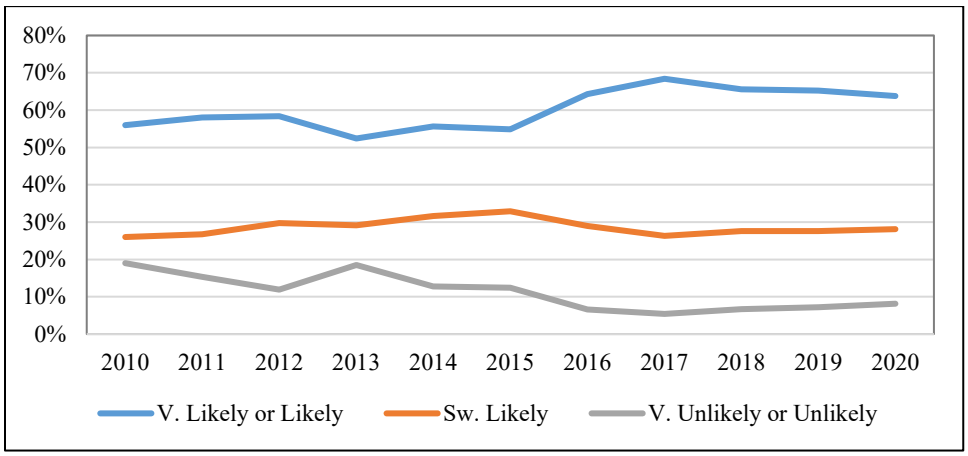


Figure 4.1 Perceived DUI Arrest Likelihood

Responses reveal that perceptions of getting a ticket for illegal driving behavior is related to whether one has driven within two hours of consuming alcohol in the last 60 days. For example, compared with drivers who never drove within two hours of consuming alcohol, those that operated a vehicle at least once within two hours of consuming one or two alcoholic beverages were less likely to think that they would be ticketed for not wearing a seat belt ($F=25.176$, $df=1$, $p<0.001$) and were also less likely to believe they would be ticketed for speeding ($F=21.843$, $df=1$, $p<0.001$). A similar pattern occurred among those who operated a vehicle within two hours of consuming three or more alcoholic drinks. In this survey, operating a vehicle after consuming three or more alcoholic beverages is associated with a lower perceived chance of getting a ticket for not wearing a seat belt ($F=6.271$, $df=1$, $p=0.012$) and for speeding ($F=4.268$, $df=1$, $p=0.039$). This suggests that a driver engaging in one dangerous activity (driving after consuming alcohol) may also take part in another (driving unbelted, speeding), and therefore may exponentially increase danger on the roadway.

Responses from this questionnaire show 32.6% of respondents reported that they had driven a vehicle within two hours of drinking one or two drinks at least once during the past two months (Figure 4.2). This is an improvement compared with 2019 when 35.2% of respondents reported this behavior. In contrast, just 6.5% noted that they had operated a vehicle within two hours of drinking three or more drinks at least once during the past two months. This once again represented an improvement compared with 2019 when 7.0% of drivers admitted to driving a vehicle within two hours of consuming three or more alcoholic beverages.

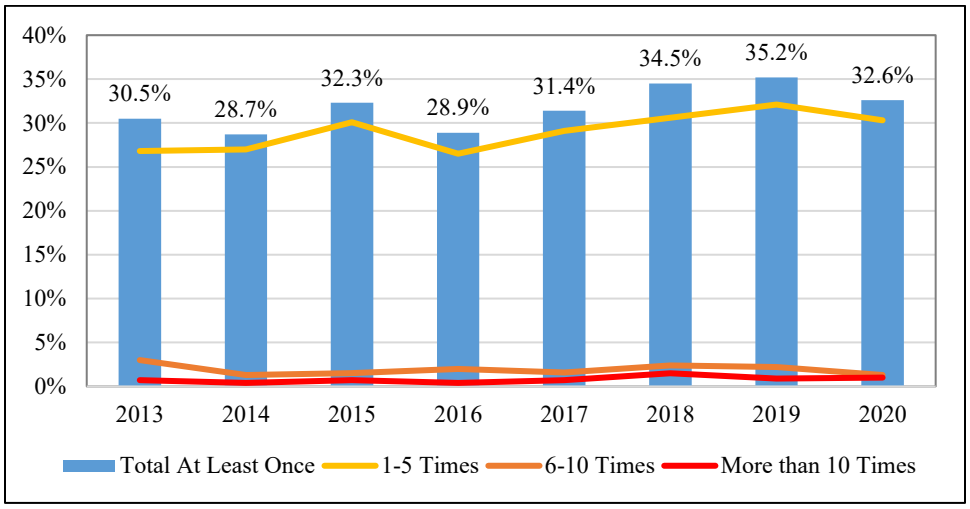


Figure 4.2 Self-Reported Driving-After-Drinking Activity within Two Hours of Consuming 1–2 Drinks

With regard to speeding, 10.2% of drivers report high levels of speeding activity based on those who answered always or nearly always to the question about the 75-mile-per-hour speed zone. This is slightly higher than the 2019 iteration of the questionnaire in which 10.0% of respondents reported these levels of speeding on 75-mile-per-hour roads.

Table 4.1 Core Question Responses

Core	Survey Question	Responses			
ID-1a	In the past 60 days, how many times have you driven a vehicle within two hours after drinking 1−2 drinks?				
		None	1–5 Times	6–10 Times	More than 10 Times
	2020#	67.4%	30.3%	1.3%	1.0%*
	2019#	64.8%	32.1%	2.2%	0.9%
	2018#	65.5%	30.6%	2.4%	1.6%
	2017#	68.5%	29.1%	1.6%	0.7%*
	2016#	71.0%	26.5%	2.0%	0.4%*
	2015#	66.7%	30.1%	1.5%	0.7%*
	2014#	71.3%	27.0%	1.3%	0.4%*
	2013#	69.5%	26.8%	3.0%	0.7%*
2016–2020 Five-Year Avg.		**67.4%**	**29.7%**	**1.9%**	**0.9%**
2015–2019 Five-Year Avg.		**67.3%**	**29.7%**	**1.9%**	**0.9%**
2014–2018 Five-Year Avg.		**68.6%**	**28.7%**	**1.8%**	**0.8%**
2013–2017 Five-Year Avg.		**69.4%**	**27.9%**	**1.9%**	**0.6%**
ID-1b	In the past 60 days, how many times have you driven a vehicle within two hours after drinking 3+ drinks?				
		None	1–5 Times	6–10 Times	More than 10 Times
	2020#	93.5%	6.1%	0.3%*	0.1%*
	2019#	93.0%	6.4%	0.4%*	0.1%*
	2018#	92.6%	6.5%	0.7%*	0.2%*
	2017#	93.0%	6.7%	0.3%*	0.1%*
	2016#	95.3%	4.4%	0.1%*	0.2%*
	2015#	93.4%	6.1%	0.5%*	0.1%*
	2014#	94.5%	5.1%	0.2%*	0.2%*
	2013#	92.4%	6.6%	0.8%*	0.2%*
2016–2020 Five-Year Avg.		**93.5%**	**6.0%**	**0.4%**	**0.1%**
2015–Five-Year Avg.		**93.5%**	**6.0%**	**0.4%**	**0.1%**
2014–2018 Five-Year Avg.		**93.8%**	**5.8%**	**0.4%**	**0.2%**
2013–2017 Five-Year Avg.		**93.7%**	**5.8%**	**0.4%**	**0.2%**
ID-2	Have you recently read, seen, or heard anything about drunk driving enforcement?				
		Yes	No		
	2020	89.2%	10.8%		
	2019	87.0%	13.0%		
	2018	88.4%	11.6%		
	2017	86.4%	13.6%		
	2016	89.2%	10.8%		
	2015	89.5%	10.5%		
	2014	85.2%	14.8%		
	2013	88.9%	11.1%		
	2012	89.5%	10.5%		
	2011	87.0%	13.0%		
	2010	85.0%	15.0%		
2016–2020 Five-Year Avg.		**88.0%**	**12.0%**		
2015–2019 Five-Year Avg.		**88.1%**	**11.9%**		
2014–2018 Five-Year Avg.		**87.7%**	**12.3%**		
2013–2017 Five-Year Avg.		**87.8%**	**12.2%**		
2012–2016 Five-Year Avg.		**88.5%**	**11.5%**		
2011–2015 Five-Year Avg.		**88.0%**	**12.0%**		
2010–2014 Five-Year Avg.		**87.1%**	**12.9%**		

Table 4.1 Core Question Responses (Continued)

Core	Survey Question	Responses				
ID-3	What are the chances of someone getting arrested if they drive after drinking alcohol?					
		Very Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	2020	32.6%	31.2%	28.1%	6.7%	1.4%
	2019	32.0%	33.2%	27.6%	5.6%	1.6%
	2018	31.9%	33.7%	27.6%	5.2%	1.5%*
	2017	32.5%	35.9%	26.3%	4.4%	1.0%
	2016	32.9%	31.4%	29.0%	5.4%	1.2%
	2015	33.6%	21.3%	32.9%	10.3%	2.1%
	2014	29.7%	25.9%	31.6%	11.1%	1.7%
	2013	25.9%	26.5%	29.1%	16.7%	1.8%
	2012	32.5%	25.9%	29.7%	10.3%	1.6%
	2011	31.3%	26.7%	26.7%	12.6%	2.7%
	2010	25.0%	31.0%	26.0%	15.0%	4.0%
2016–2020 Five-Year Avg.		**32.4%**	**33.1%**	**27.7%**	**5.5%**	**1.3%**
2015–2019 Five-Year Avg.		**32.6%**	**31.1%**	**28.7%**	**6.2%**	**1.5%**
2014–2018 Five-Year Avg.		**32.1%**	**29.6%**	**29.5%**	**7.3%**	**1.5%**
2013–2017 Five-Year Avg.		**30.9%**	**26.3%**	**31.7%**	**9.6%**	**1.6%**
2012–2016 Five-Year Avg.		**30.9%**	**26.2%**	**30.5%**	**10.8%**	**1.7%**
2011–2015 Five-Year Avg.		**30.6%**	**25.3%**	**30.0%**	**12.2%**	**2.0%**
2010–2014 Five-Year Avg.		**28.9%**	**27.2%**	**22.7%**	**13.1%**	**2.4%**
SB-1	How often do you use seat belts when you drive or ride in a vehicle?					
		Always	N. Always	Sometimes	Rarely	Never
	2020	77.1%	17.1%	4.1%	1.4%	0.3%*
	2019	76.6%	17.4%	4.5%	0.8%*	0.6%*
	2018	77.8%	17.3%	3.9%	0.5%*	0.4%*
	2017	74.4%	19.5%	4.6%	1.2%*	0.3%*
	2016	74.2%	19.7%	4.1%	1.6%	0.4%*
	2015	71.9%	20.4%	5.6%	1.6%	0.6%*
	2014	72.2%	19.7%	5.6%	2.1%	0.5%*
	2013	70.5%	21.3%	6.0%	1.8%	0.4%*
	2012	62.8%	26.9%	6.5%	2.9%	0.9%
	2011	67.9%	23.5%	5.3%	2.7%	0.6%*
	2010	58.0%	27.0%	10.0%	3.0%	1.0%
2016–2020 Five-Year Avg.		**76.0%**	**18.2%**	**4.2%**	**1.1%**	**0.4%**
2015–2019 Five-Year Avg.		**75.0%**	**18.9%**	**4.5%**	**1.1%**	**0.5%**
2014–2018 Five-Year Avg.		**74.1%**	**19.3%**	**4.8%**	**1.4%**	**0.4%**
2013–2017 Five-Year Avg.		**72.6%**	**20.1%**	**5.2%**	**1.7%**	**0.4%**
2012–2016 Five-Year Avg.		**70.3%**	**21.6%**	**5.6%**	**2.0%**	**0.6%**
2011–2015 Five-Year Avg.		**69.1%**	**22.4%**	**5.8%**	**2.2%**	**0.6%**
2010–2014 Five-Year Avg.		**66.3%**	**23.7%**	**6.7%**	**2.5%**	**0.7%**

Table 4.1 Core Question Responses (Continued)

Core	Survey Question	Responses				
SB-2	Have you recently read, seen, or heard anything about seat belt law enforcement?					
		Yes	No			
	2020	79.0%	21.0%			
	2019	75.2%	24.8%			
	2018	72.4%	27.6%			
	2017	70.7%	29.3%			
	2016	77.1%	22.9%			
	2015	78.2%	21.8%			
	2014	74.5%	25.5%			
	2013	80.6%	19.4%			
	2012	84.7%	15.3%			
	2011	82.8%	17.2%			
	2010	77.0%	23.0%			
2016–2020 Five-Year Avg.		**74.9%**	**25.1%**			
2015–2019 Five-Year Avg.		**74.7%**	**25.3%**			
2014–2018 Five-Year Avg.		**74.6%**	**25.4%**			
2013–2017 Five-Year Avg.		**76.2%**	**23.8%**			
2012–2016 Five-Year Avg.		**79.0%**	**21.0%**			
2011–2015 Five-Year Avg.		**80.2%**	**19.8%**			
2010–2014 Five-Year Avg.		**79.9%**	**20.1%**			
SB-3	What do you think the chances are of getting a ticket if you don't wear your seat belt?					
		Very Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	2020	10.2%	23.0%	39.0%	21.0%	6.7%
	2019	11.9%	22.7%	38.0%	23.0%	4.5%
	2018	13.9%	22.0%	36.7%	22.4%	5.1%
	2017	11.4%	23.6%	39.5%	19.2%	6.3%
	2016	15.1%	24.5%	39.2%	16.7%	4.5%
	2015	16.9%	21.6%	30.6%	26.5%	4.4%
	2014	16.5%	26.8%	24.9%	26.3%	5.6%
	2013	15.5%	21.8%	28.8%	31.3%	2.7%
	2012	17.1%	26.6%	28.1%	23.7%	4.5%
	2011	16.0%	25.3%	22.6%	25.0%	11.2%
	2010	14.0%	23.0%	26.0%	26.0%	10.0%
2016–2020 Five-Year Avg.		**12.5%**	**23.2%**	**38.5%**	**20.5%**	**5.4%**
2015–2019 Five-Year Avg.		**13.8%**	**22.9%**	**36.8%**	**21.6%**	**5.0%**
2014–2018 Five-Year Avg.		**14.8%**	**34.2%**	**23.7%**	**22.2%**	**5.2%**
2013–2017 Five-Year Avg.		**15.1%**	**29.4%**	**26.8%**	**24.0%**	**4.7%**
2012–2016 Five-Year Avg.		**16.2%**	**30.3%**	**24.3%**	**24.9%**	**4.3%**
2011–2015 Five-Year Avg.		**16.4%**	**27.0%**	**24.4%**	**26.6%**	**5.7%**
2010–2014 Five-Year Avg.		**15.8%**	**26.1%**	**24.7%**	**26.5%**	**6.8%**
SP-1	On a road with a 75 mph speed limit, how often do you drive faster than 80 mph?					
		Always	N. Always	Sometimes	Rarely	Never
	2020[##]	2.5%	7.7%	24.0%	37.5%	28.3%
	2019[##]	2.0%	8.0%	19.0%	40.8%	30.2%
	2018[##]	2.5%	6.9%	22.0%	38.8%	29.8%
	2017[##]	3.2%	7.3%	20.9%	40.6%	28.0%

Table 4.1 Core Question Responses (Continued)

Core	Survey Question	Responses				
SP-2	What do you think the chances are of getting a ticket if you drive over the speed limit?					
		Very Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	2020	14.0%	39.9%	40.1%	4.7%	1.2%*
	2019	19.1%	42.8%	32.6%	4.7%	0.8%*
	2018	17.8%	40.7%	35.8%	4.5%	1.2%*
	2017	15.4%	45.3%	33.5%	4.4%	1.3%
	2016	20.5%	42.4%	32.8%	3.8%	0.5%*
	2015	24.0%	25.7%	43.3%	6.5%	0.5%*
	2014	23.9%	32.7%	34.3%	8.1%	1.0%*
	2013	24.0%	29.3%	37.5%	8.4%	0.9%*
	2012	28.7%	28.8%	33.6%	7.4%	1.5%*
	2011	28.0%	29.1%	31.3%	9.5%	2.1%
	2010	26.0%	28.0%	30.0%	12.0%	4.0%
2016–2020 Five-Year Avg.		**17.4%**	**42.2%**	**35.0%**	**4.4%**	**1.0%**
2015–2019 Five-Year Avg.		**19.3%**	**39.4%**	**35.6%**	**4.8%**	**0.9%**
2014–2018 Five-Year Avg.		**20.3%**	**35.9%**	**37.4%**	**5.5%**	**0.9%**
2013–2017 Five-Year Avg.		**21.6%**	**38.6%**	**32.7%**	**6.2%**	**0.8%**
2012–2016 Five-Year Avg.		**24.2%**	**36.3%**	**31.8%**	**6.8%**	**0.9%**
2011–2015 Five-Year Avg.		**25.7%**	**36.0%**	**29.1%**	**8.0%**	**1.2%**
2010–2014 Five-Year Avg.		**26.1%**	**33.3%**	**29.6%**	**9.1%**	**1.9%**
SP-3	Have you recently read, seen, or heard anything about speed enforcement?					
		Yes	No			
	2020	38.4%	61.6%			
	2019	39.5%	60.5%			
	2018	36.9%	63.1%			
	2017	34.9%	65.1%			
	2016	37.3%	62.7%			
	2015	41.7%	58.3%			
	2014	38.1%	61.9%			
	2013	36.3%	63.7%			
	2012	34.2%	65.8%			
	2011	35.8%	64.2%			
	2010	57.0%	43.0%			
2016–2020 Five-Year Avg.		**37.4%**	**62.6%**			
2015–2019 Five-Year Avg.		**38.1%**	**61.9%**			
2014–2018 Five-Year Avg.		**37.8%**	**62.2%**			
2013–2017 Five-Year Avg.		**37.7%**	**62.3%**			
2012–2016 Five-Year Avg.		**37.5%**	**62.5%**			
2011–2015 Five-Year Avg.		**37.2%**	**62.8%**			
2010–2014 Five-Year Avg.		**40.3%**	**59.7%**			

Note: Please see Appendix A for exact question and response wording
*Estimate uncertain due to limited sample size
#Due to wording changes in ID-1a and ID-1b, trends from 2010–2012 could not be studied
##Due to wording changes in SP-1, trends from previous years could not be studied

The share of drivers reporting that they always use their seat belts when driving or riding in a vehicle is lower than the information presented by the core behavior metric of 83.7%. Driver self-reported use collected here shows that 77.1% always wear a seat belt with another 17.1% reporting usage as nearly always (Figure 4.3). The 77.1% of drivers always wearing a seat belt represents an increase from 76.6% in 2019 and is the second-highest usage rate ever reported in the history of this survey. Only 1.7% report that they rarely or never use a seat belt, which is a slight increase from the 1.4% who reported such use last year. Overall, these metrics indicate that drivers in North Dakota are generally safe with regard to seat belt use.

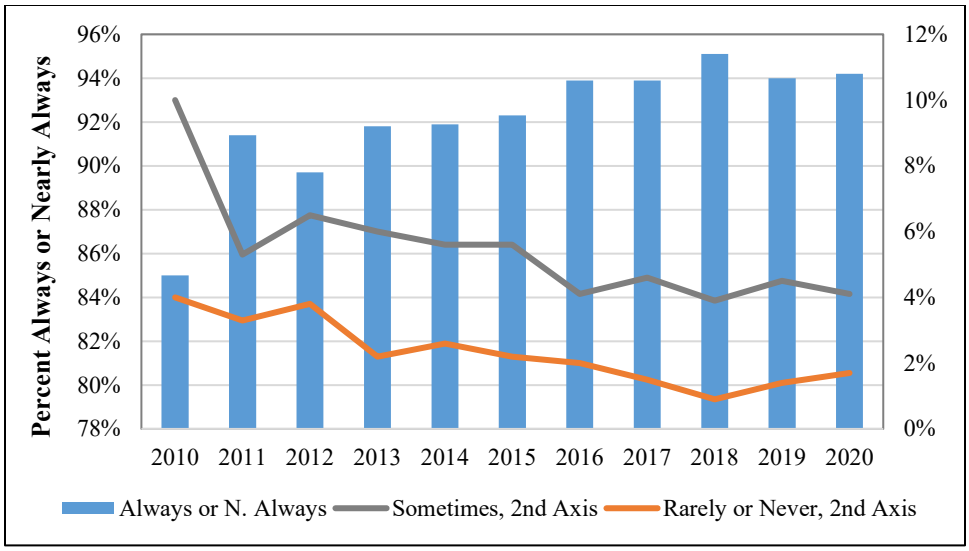


Figure 4.3 Self-Reported Seat Belt Use

Responses to awareness of public media or other educational messages about traffic safety related to drinking, speeding, and seat belt issues reveal speed enforcement is least often read, seen, or heard (RSH) as a traffic safety topic. Just 38.4% of survey participants responded that they had exposure to this safety message. This is expected as the NDDOT Safety Division does not disseminate safety messages for speeding. This low exposure rate represents a stark contrast to messages about impaired driving and seat belt use. Exposure rates to these topics were 89.2% and 79.0%, respectively. The exposure rate for both metrics increased compared with 2019.

An examination of the relationships between behavior and enforcement along with behavior and education awareness yields expected results. One would presume an inverse relationship between a negative behavior, such as speeding, and a related education or enforcement influence, as measured by RSH exposure levels and perceived likelihood for ticketing, respectively. As illustrated in Figure 4.4, driver responses are consistent with this expectation. The ticket North Dakota drivers most expect to receive—an impaired violation—is associated with the lowest reported level of negative behavior.

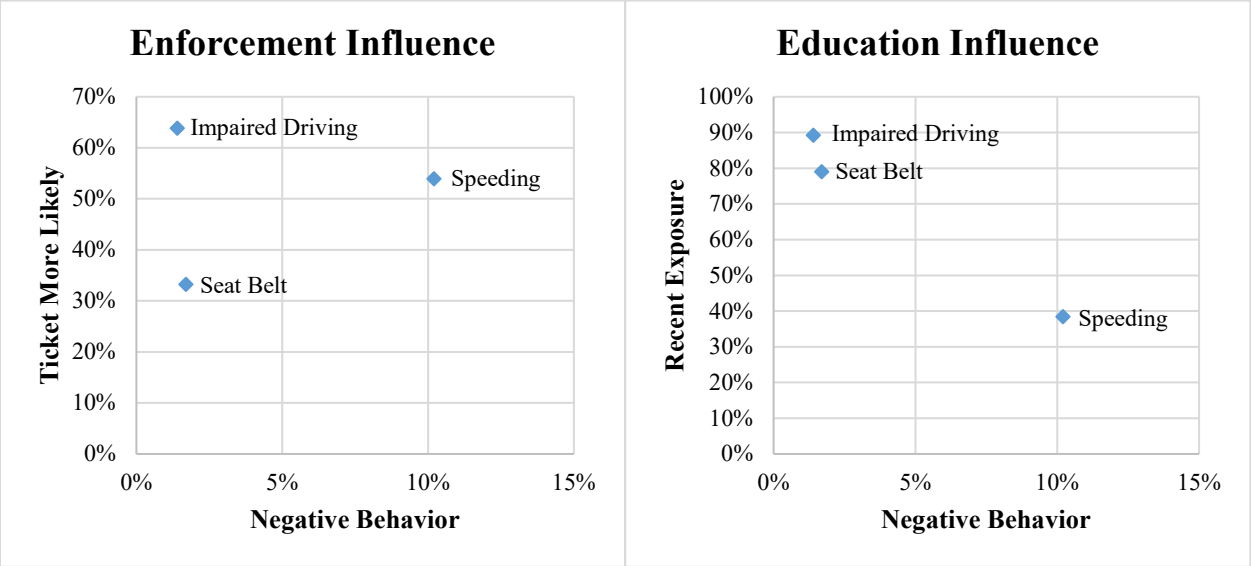


Figure 4.4 Driver Action Related to Enforcement and Education

The education influence also follows an expected pattern factoring for responses to RSH questions. One would expect that as drivers have more exposure to traffic safety issues via educational messages, they will subsequently have lower levels of negative behavior. This is precisely what was reported by drivers. Respondents in this iteration of the survey were most often exposed to traffic safety messages about impaired driving (89.2%) and seat belt use (79.0%), and these have the lowest levels of self-reported negative behavior at 1.4% and 1.7%, respectively. Similarly, drivers reported that educational exposure to messages about speeding occurred least often. As a result, speeding had the highest rate of self-reported negative behavior among survey participants. This is a logical relationship: one would expect drivers to be more likely to behave negatively if they have not had educational exposure to the safety topic. It appears as though, in this sample of North Dakota drivers, both enforcement and education have positive impacts on drivers.

To further examine relationships among the core questions and issues that may be related, measures of association are calculated for responses. The Pearson coefficient measures the strength of association between two variables—in this case driver responses. Correlation coefficients ranges from -1 to +1, and values closer to these extremes, are considered stronger relationships. Relationships between -0.5 and +0.5 are generally considered weak and inconsequential. For example, the “arrest for impaired driving” and “ticket for speeding” variables do have an expected positive relationship at Pearson Corr.=0.468, but the correlation measure shows that less than 22% of their variability is shared. The Pearson Correlation values suggest there is only one strong relationship between survey items (Table 4.2).

Table 4.2 Correlations in Core Question Responses

	ID1a	ID1b	ID2	ID3	SB1	SB2	SB3	SP1	SP2	SP3
ID1a: Drive After Drinking 1-2 Drinks	1	**.516**** **.000**	.045 .079	-.047 .065	-.109** .000	.029 .254	-.116** .000	.252** .000	-.001 .974	-.100** .000
ID1b: Drive After Drinking 3+ Drinks		1	.007 .779	-.038 .148	-.133** .000	-.002 .928	-.076** .004	.108** .000	-.028 .301	-.056* .035
ID2: Read, Seen, or Heard Drunk Driving			1	.068** .007	-.015 .558	.424** .000	.043 .089	.017 .504	.223** .000	.010 .679
ID3: Arrest for Drunk Driving				1	.018 .473	.035 .159	.409** .000	.054* .029	.088** .001	.468** .000
SB1: How Often Use Seat Belts					1	-.034 .176	.037 .142	-.040 .108	-.071** .005	-.003 .915
SB2: Read, Seen, or Heard Seat Belt						1	.054* .032	-.017 .512	.345** .000	-.001 .960
SB3: Ticket for No Seat Belt							1	-.061* .015	.124** .000	.470** .000
SP1: Speed on 75 MPH Road								1	-.058* .023	-.105** .000
SP2: Read, Seen, or Heard Speed									1	.117** .000
SP3: Ticket for Speeding										1

**Correlation is significant at the 1% level
*Correlation is significant at the 5% level
Bold: Correlation and p-value indicate a substantive relationship
Note: Correlations between -0.5 and +0.5 indicate a weak relationship and are not addressed in this study

The one substantive relationship within the core correlations studied was relatively weak. The relationship occurred for the questions concerning driving after having one or two alcoholic beverages and driving within two hours of consuming three or more alcoholic drinks (Pearson Corr.=0.516, $p<0.001$, n=1,430). These two variables share roughly 26% of their variability. This relationship demonstrates that as one chooses to drive after consuming one or two alcoholic beverages, one is more likely to also drive after drinking three or more alcoholic drinks. Although several other relationships between variables are found to be statistically significant at the 1% and 5% levels, the relationship measures are between the -0.5 and +0.5 thresholds and are not considered substantive.

Driver responses to other questions are presented in Table 4.3. These responses offer additional insight for practitioners and policymakers with queries related to traffic safety enforcement and education programs, policy, and investments. One aspect of traffic safety is deterrence through enforcement. The enforcement aspect combines patrol efforts and penalties to discourage drivers from taking part in dangerous or risky behaviors. The critical driver risk behaviors here are traffic safety knowledge, driver preferences, distracted driving, driver perceptions, sober/designated drivers, and drugged driving.

Table 4.3 Other Question Responses

Survey Question	Responses				
Traffic Safety Knowledge/Tools					
				Yes	No
Recently read, seen, or heard ads for *Vision Zero. Zero Fatalities, Zero Excuses.*				47.8%	52.2%
Recently read, seen, or heard ads for distracted driving				65.7%	34.3%
Driver Preferences					
Do you favor or oppose…	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
Higher fines for speeding?	15.7%	22.3%	29.9%	17.6%	14.5%
A primary seat belt law?	39.3%	21.6%	18.4%	11.7%	9.0%
Banning handheld cell phone while driving?	28.7%	23.2%	20.3%	18.1%	9.7%
Increased highway/interstate speeds limits?	13.6%	25.9%	25.0%	16.5%	19.0%
Driver Distraction					
		<1/Month	Few/Month	Few/Week	Daily
Cell phone talk while driving, frequency[1]		16.1%	36.8%	27.3%	19.8%
Cell phone text while driving, frequency[2]		33.2%	31.1%	21.1%	14.6%
Perceptions of Ticketing					
Chances of Distracted Driving Ticket	V. Unlikely	Unlikely	Sw. Likely	Likely	V. Likely
	5.2%	24.7%	38.2%	23.1%	8.8%
Designated Driver					
	Never	Rarely	Sometimes	N. Always	Always
Designate a sober driver[3]	2.4%	4.6%	9.8%	20.5%	62.8%
Drugged Driving					
				Yes	No
Driving abilities compromised by drugs				1.5%	98.5%

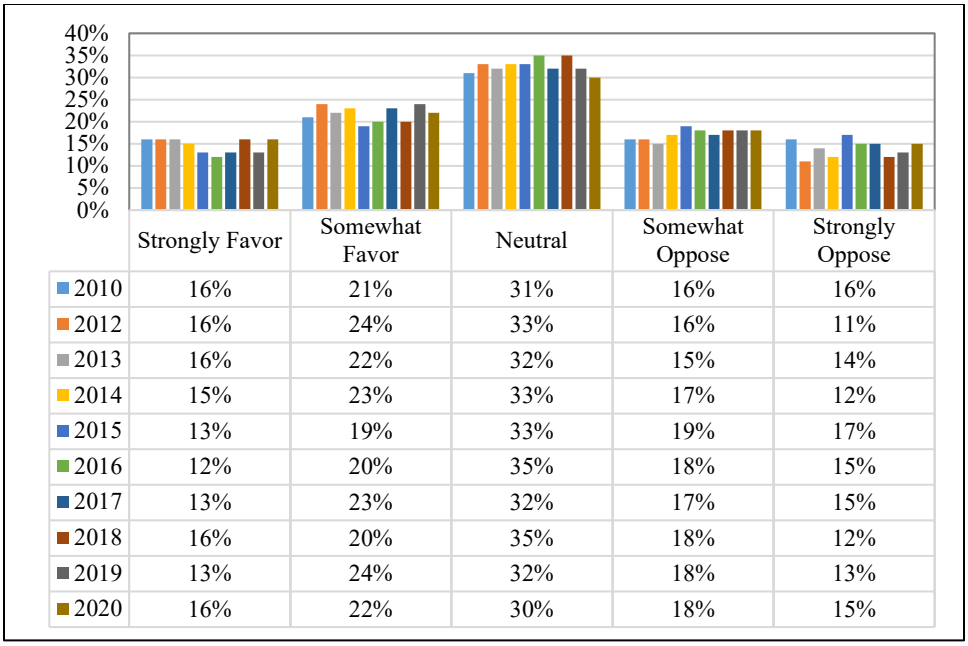
[1]Frequency calculated based on those who do talk while driving
[2]Frequency calculated based on those who do text while driving
[3]Frequency calculated based on those who do drink alcohol

4.1.1 Traffic Safety Knowledge

Nearly one-half (47.8%) of respondents had recent exposure to *Vision Zero. Zero Fatalities. Zero Excuses.* traffic safety messages, a statewide safety campaign rolled out by partner agencies the North Dakota Highway Patrol, the North Dakota Department of Transportation, and the North Dakota Department of Health. The safety effort is designed to create a culture of responsibility for drivers where traffic deaths and injuries are recognized as preventable (North Dakota Vision Zero). Exposure to this safety initiative among respondents who recognized such messages consistently increased from 23.4% in 2018 to 37.8% in 2019. Approximately two-thirds (65.7%) of respondents positively responded to having recent exposure to traffic safety messages about distracted driving. This is on par with exposure levels from 2014–2019 for this safety issue.

4.1.2 Driver Preferences

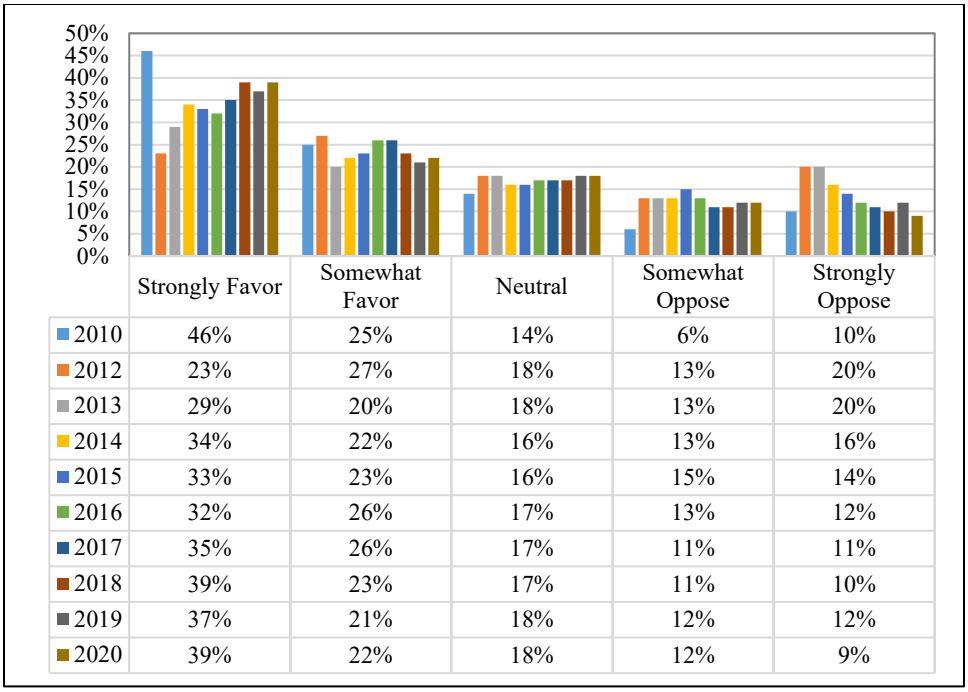
Opinions have remained fairly stable over time regarding higher fines for speeding (Figure 4.5) and support for a primary seat belt law (Figure 4.6). With regard to higher fines for speeding, support remained virtually unchanged between 2019 and 2020 as none of the response choices differed by more than three percentage points. Responses to this prompt remained close to 2010 baseline levels and the overall distribution of responses somewhat resembles a bell curve.



	Strongly Favor	Somewhat Favor	Neutral	Somewhat Oppose	Strongly Oppose
2010	16%	21%	31%	16%	16%
2012	16%	24%	33%	16%	11%
2013	16%	22%	32%	15%	14%
2014	15%	23%	33%	17%	12%
2015	13%	19%	33%	19%	17%
2016	12%	20%	35%	18%	15%
2017	13%	23%	32%	17%	15%
2018	16%	20%	35%	18%	12%
2019	13%	24%	32%	18%	13%
2020	16%	22%	30%	18%	15%

Figure 4.5 Driver Preferences for Higher Speeding Fines

The question concerning driver preferences toward having a primary seat belt law has had more variability in the dispersion of responses between 2010 and 2020. In 2010, nearly half (46%) of the North Dakota driver population strongly favored a primary seat belt law, but only about two-fifths (39%) hold the same viewpoint in 2020. One notable improvement between the 2012 and 2020 iterations of the survey concerns opposition to such a law. Whereas approximately 20% of respondents in 2012 strongly opposed such legislation, 9% held this view in 2020. This was the lowest percentage recorded in the history of this survey. Overall, all of the response choices either improved or worsened by no more than three percentage points between the 2019 and 2020 questionnaires.



	Strongly Favor	Somewhat Favor	Neutral	Somewhat Oppose	Strongly Oppose
2010	46%	25%	14%	6%	10%
2012	23%	27%	18%	13%	20%
2013	29%	20%	18%	13%	20%
2014	34%	22%	16%	13%	16%
2015	33%	23%	16%	15%	14%
2016	32%	26%	17%	13%	12%
2017	35%	26%	17%	11%	11%
2018	39%	23%	17%	11%	10%
2019	37%	21%	18%	12%	12%
2020	39%	22%	18%	12%	9%

Figure 4.6 Driver Preferences for a Primary Seat Belt Law

For the second consecutive year, North Dakota drivers were asked to rate their support for banning hand-held cell phone use while driving. The majority (51.9%) indicated that they favored such a ban based on those who chose the strongly favor or somewhat favor options. This level of support represents a 4% decline from the 2019 iteration of the survey (Figure 4.7).

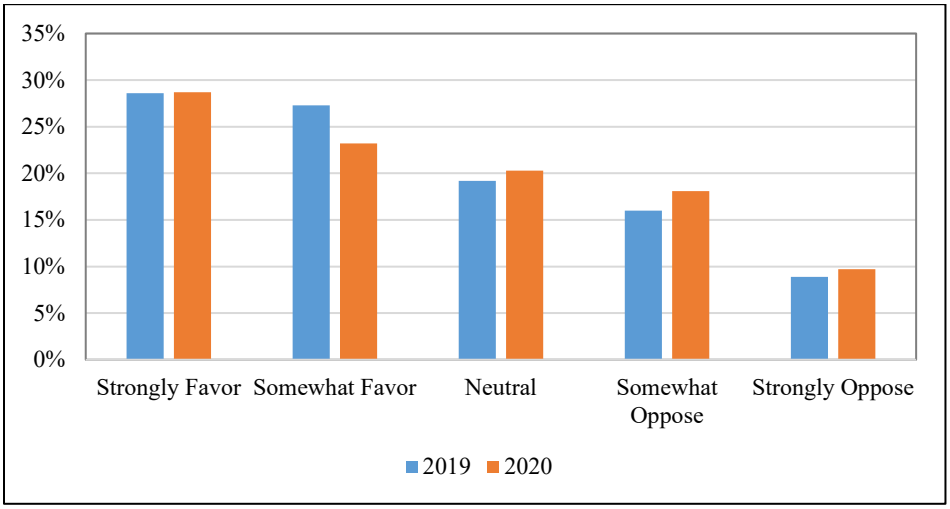


Figure 4.7 Driver Preferences for Banning Hand-Held Cell Phone Use while Driving

One new question was introduced in the 2020 iteration of the survey. Drivers were asked to rate their levels of support for increasing highway/interstate speed limits. Responses were fairly uniform; whereas 39.5% of respondents expressed support for this change and 35.5% reported opposition to increasing highway/interstate speed limits (Figure 4.8).

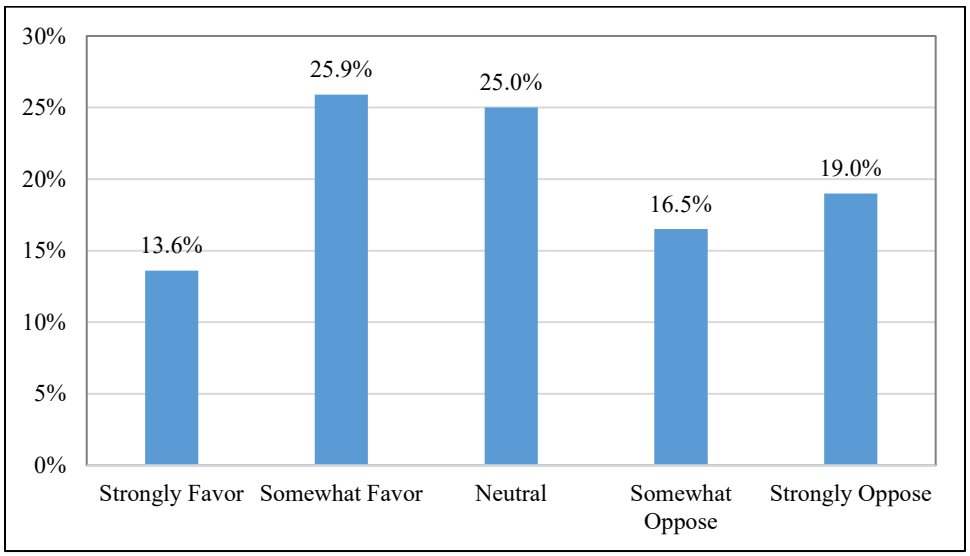


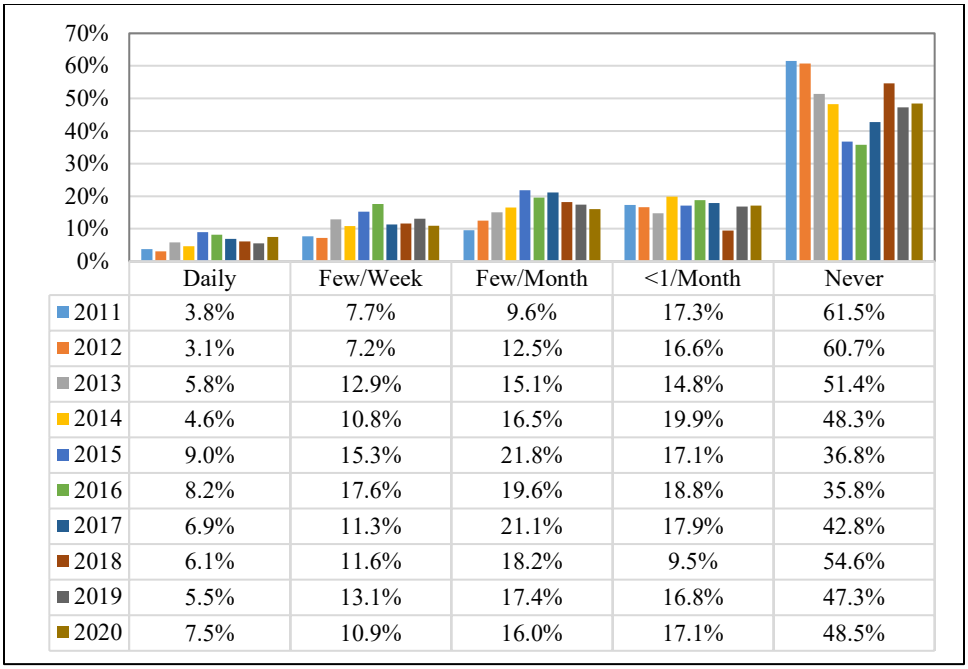
Figure 4.8 Driver Preferences for Increasing Highway/Interstate Speed Limits

4.1.3 Distracted Driving

Questions specific to distracted driving were once again included in the survey. Although the term distracted driving can refer to a broad range of issues, the focus here is on cell phone use via texting or talking while driving.

In terms of texting while driving, some noticeable trends have emerged over the last 10 years (Figure 4.9). For example, between 2011 and 2016 the proportion of respondents who report never texting on the phone while driving consistently decreased. Over the last four years the trend has been positive as more drivers are reporting never texting while driving. As of 2020, 48.5% of drivers self-reported never texting while driving. This is a modest improvement from 2019, but is still well below the 61.5% of respondents who reported this behavior in 2011.

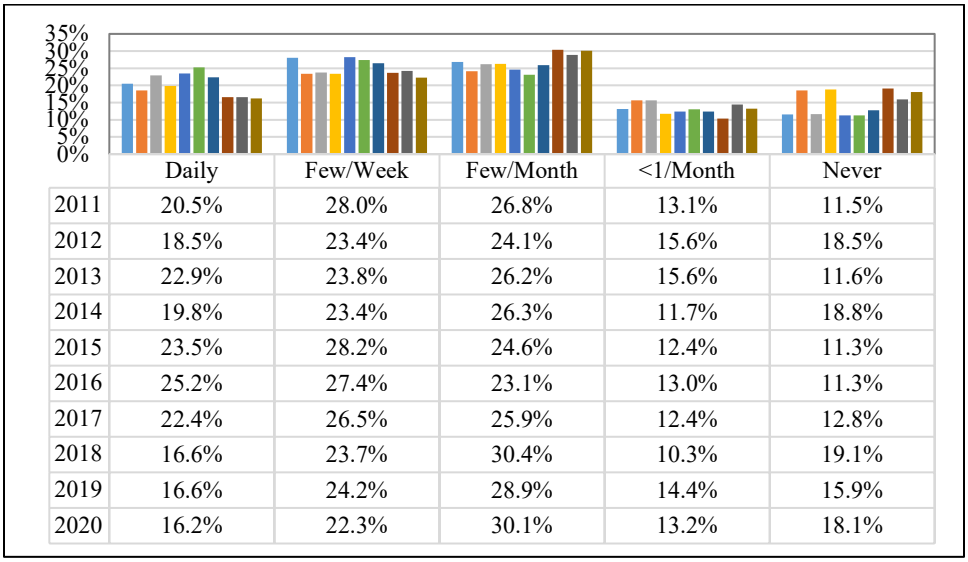
For the first time since the 2015 iteration of this survey, the percentage of drivers reporting that they text while driving on a daily basis increased; 7.5% of drivers reported this dangerous behavior in 2020. Overall, the number of drivers who reported texting a few times per week or a few times per month has generally grown as well over the last 10 years. It is clear that cell phone use for texting while driving is still occurring at dangerous levels within the state.



	Daily	Few/Week	Few/Month	<1/Month	Never
2011	3.8%	7.7%	9.6%	17.3%	61.5%
2012	3.1%	7.2%	12.5%	16.6%	60.7%
2013	5.8%	12.9%	15.1%	14.8%	51.4%
2014	4.6%	10.8%	16.5%	19.9%	48.3%
2015	9.0%	15.3%	21.8%	17.1%	36.8%
2016	8.2%	17.6%	19.6%	18.8%	35.8%
2017	6.9%	11.3%	21.1%	17.9%	42.8%
2018	6.1%	11.6%	18.2%	9.5%	54.6%
2019	5.5%	13.1%	17.4%	16.8%	47.3%
2020	7.5%	10.9%	16.0%	17.1%	48.5%

Figure 4.9 Cell Phone Texting Distractions, by Year

Drivers are more likely to use their cell phone for talking while driving (Figure 4.10). Roughly one-sixth (16.2%) of drivers in North Dakota use their cell phone for talking while driving on a daily basis. This is the lowest self-reported behavior in all 10 years in which this question has been asked and continues a positive trend; in 2016 approximately one-quarter (25.2%) reported using their cell phone for talking daily. Another improvement is that the proportion of respondents never using their cell phone for talking while driving increased from 15.9% to 18.1% between 2019 and 2020.



	Daily	Few/Week	Few/Month	<1/Month	Never
2011	20.5%	28.0%	26.8%	13.1%	11.5%
2012	18.5%	23.4%	24.1%	15.6%	18.5%
2013	22.9%	23.8%	26.2%	15.6%	11.6%
2014	19.8%	23.4%	26.3%	11.7%	18.8%
2015	23.5%	28.2%	24.6%	12.4%	11.3%
2016	25.2%	27.4%	23.1%	13.0%	11.3%
2017	22.4%	26.5%	25.9%	12.4%	12.8%
2018	16.6%	23.7%	30.4%	10.3%	19.1%
2019	16.6%	24.2%	28.9%	14.4%	15.9%
2020	16.2%	22.3%	30.1%	13.2%	18.1%

Figure 4.10 Cell Phone Talking Distractions, by Year

4.1.4 Sober/Designated Drivers

Among those respondents who do drink alcohol, over half (62.8%) reported that they always designate a sober driver when drinking or planning to drink. This is an improvement from the 58.3% of drivers who reported doing so last year. Only 2.4% of respondents reported never doing so, which is once again an improvement compared with the 2.9% who reported this behavior last year.

4.1.5 Drugged Driving

In this sample, just 1.5% of respondents admitted that they had driven in the past year even though they felt their ability to drive was likely compromised by the effects of drug use. This was slightly worse than last year when 1.0% of respondents admitted to driving under such an impairment. A detailed explanation of drug type(s) is presented in Figure 4.11. There was a direct link between one's decision to drive under the influence of drugs and whether or not one had driven within two hours of consuming alcoholic beverages. Those who had driven under the influence of drugs drove more often within two hours of consuming one or two alcoholic beverages ($F=11.102$, $df=1$, $p=0.001$) and within two hours of consuming three or more alcoholic beverages ($F=9.547$, $df=1$, $p=0.002$). This pattern follows other findings of drug and alcohol abuse in North Dakota. A 2012 study in the state determined that repeat DUI offenders were more likely to have used illicit drugs on the same day of their arrest (Huseth and Kubas 2012). Resources should be targeted to drivers who have issues with self-control as drugged driving and alcohol-impaired driving are sometimes linked with one another in North Dakota.

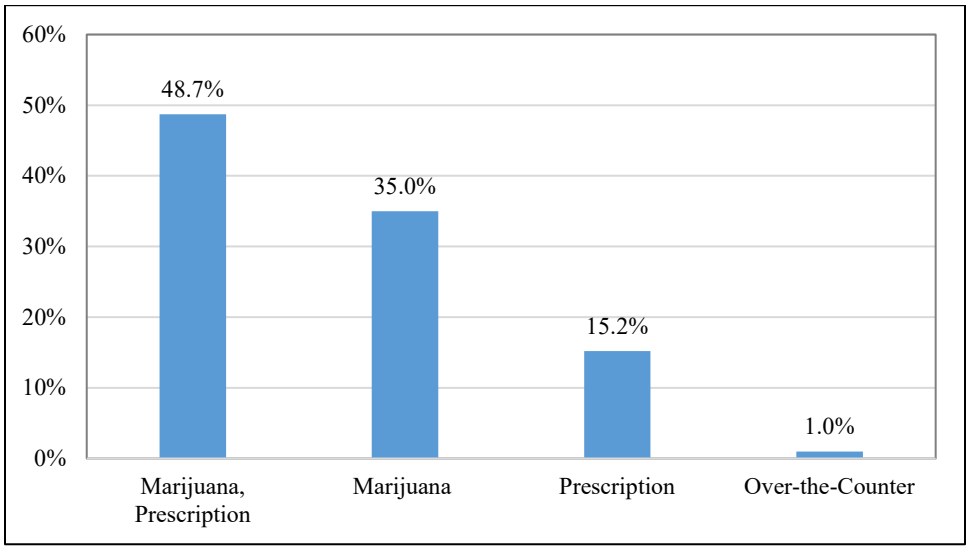


Figure 4.11 Self-Reported Drugged Driving, by Drug Type

4.2 Driver Group Evaluations

It is reasonable to assume that driver perceptions and behaviors are influenced by local norms and the driving environment. Therefore, it is prudent to investigate differences within the driver population to determine if perceptions can be substantiated. This information may be valuable in more effectively allocating traffic safety resources, conducting program assessments, and focusing programs and strategies beyond typical statewide treatment. To more easily quantify and manage the discussion of driver responses in the strata, numeric values are assigned to the descriptive answers to create ordinal scales. These transformations also allow for expanded statistical analysis of responses. The quantitative scale definitions are provided in Table 4.4.

Stratification in sampling the driver population provides an opportunity to look at the drivers based on region and geography as defined in the methods section. In addition, the young male and female driver groups can be distinguished as high-risk populations. Insights regarding impaired driving, seat belts, and speed across these strata may benefit traffic safety advocates by enhancing their ability to focus efforts. The information may also be useful in assessing the value of including these types of stratification in future surveys.

Table 4.4 Quantitative Scale Definitions for Responses

Q#	Question	Scale	Conversion Values
1	Seat Belt Use	1-5	1=Never to 5=Always
2	Ticket Likely Seat Belt	1-5	1=Very Unlikely to 5=Very Likely
3	Primary Seat Belt Law	1-5	1=Strongly Oppose to 5=Strongly Favor
4	Ticket Likely Speeding	1-5	1=Very Unlikely to 5=Very Likely
5	75 MPH Speed Zone	1-5	1=Never to 5=Always
6	Higher Speeding Fines	1-5	1=Strongly Oppose to 5=Strongly Favor
7	Increase Highway Speed Limit	1-5	1=Strongly Oppose to 5=Strongly Favor
8	Chances of DUI Arrest	1-5	1=Very Unlikely to 5=Very Likely
9	Drugged Driving	0-1	0=No, 1=Yes
10	Sober Driver	1-5	1=Never to 5=Always
12	Cell Phone Talk	0-1	0=Never, 1=At Least Once/Month
13	Cell Phone Text	0-1	0=Never, 1=At Least Once/Month
14	Hand-Held Cell Phone Ban	1-5	1=Strongly Oppose to 5=Strongly Favor
15	Distracted Driving, Ticket	1-5	1=Very Unlikely to 5=Very Likely
16a	RSH Seat Belt	0-1	0=No, 1=Yes
16b	RSH Speeding	0-1	0=No, 1=Yes
16c	RSH Impaired Driving	0-1	0=No, 1=Yes
16d	RSH Distracted Driving	0-1	0=No, 1=Yes
16e	RSH *Vision Zero*	0-1	0=No, 1=Yes

4.2.1 Regional and Geographic Observations

Table 4.5 shows the mean values for drivers surveyed statewide, along with regional and geographic comparisons. Statewide survey averages indicate that drivers' views and behaviors associated with traffic safety goals have potential for improvement as discussed in the descriptive statistics. For example, seat belt use is at a mean of 4.69. This number is below the goal of 5.00, which is equivalent to always in the driver survey response. Table 4.6 shows the changes in mean values from 2010 to 2020. The primary reason to include the values here is to establish a statewide baseline for the discussion of respondent groups. The figures may also be useful measures in monitoring statewide progress over time.

The regional and geographic strata were tested for significant differences. In all, eight issues were statistically significant by region and eight issues were statistically significant in geographic comparisons.

With regard to regional designations, there were three statistically significant differences related to support for traffic safety initiatives. Residents from the eastern half of the state were more likely to support a primary seat belt law ($F=6.893$, $df=1$, $p=0.009$) and a ban on hand-held cell phone use while driving ($F=5.449$, $df=1$, $p=0.020$). Residents from the western half of the state were more likely to support increasing speed limits on highways/interstates ($F=4.067$, $df=1$, $p=0.044$). This may stem from their belief that they are more likely to be ticketed for speeding ($F=7.940$, $df=1$, $p=0.005$).

With regard to impaired driving behavior, eastern residents were more dangerous. Drivers from the eastern half of the state were more likely to have operated a vehicle while under the influence of drugs (Chi-Sq.=10.874, df=1, p=0.001) and were less likely to use a sober driver after consuming alcohol (F=5.920, df=1, p=0.015).

There were discrepancies in exposure to two traffic safety messages. Residents from the eastern half of the state had greater exposure rates to messages about distracted driving (Chi-Sq.=3.970, df=1, p=0.046), while residents from the western half of the state had higher exposure rates to messages about the *Vision Zero* safety initiative (Chi-Sq.=8.831, df=1, p=0.003). This suggests there is an opportunity to be more intentional about targeting this safety campaign toward North Dakota's drivers living in the eastern half of the state.

One ongoing trend is the substantial discrepancy in seat belt use between urban and rural drivers. North Dakota drivers living in the 12 urban counties are more likely to use a seat belt (F=58.504, df=1, p<0.001). Compared with rural drivers, the higher seat belt use among urban residents continues a trend that has been in place each year since 2010. Although both subcategories are well under the goal of a mean value of 5.00, rural residents are much farther away from this target number.

Table 4.5 Differences in Mean Driver Views and Behaviors, by Region and Geography

		Statewide	Region			Geography		
Question	Scale[1]	All	East	West	Sig.	Urban	Rural	Sig.
Seat Belt Use	1-5	4.69	4.74	4.62		4.77	4.48	##
Ticket Likely Seat Belt	1-5	3.09	3.12	3.04		3.09	3.08	##
Primary Seat Belt Law	1-5	3.71	3.86	3.48	##	3.79	3.46	##
Ticket Likely Speeding	1-5	3.61	3.56	3.68	##	3.59	3.65	##
75 MPH Speed Zone	1-5	2.19	2.13	2.27		2.20	2.16	##
Higher Speeding Fines	1-5	3.07	3.19	2.90		3.13	2.91	
Increase Highway Speed Limit	1-5	2.99	2.81	3.24	#	2.97	3.04	##
Chances of DUI Arrest	1-5	3.87	3.84	3.91		3.87	3.87	
Drugged Driving	0-1	0.02	0.02	0.01	**	0.02	0.02	
Sober Driver	1-5	4.37	4.32	4.42	#	4.40	4.29	
Cell Phone Talk	0-1	0.82	0.79	0.86		0.80	0.88	
Cell Phone Text	0-1	0.52	0.46	0.59		0.48	0.62	
Hand-Held Cell Phone Ban	1-5	3.43	3.55	3.27	#	3.56	3.06	##
Distracted Driving, Ticket	1-5	3.06	3.04	3.09		3.07	3.03	
RSH Seat Belt	0-1	0.79	0.80	0.78		0.79	0.78	
RSH Speeding	0-1	0.38	0.41	0.34		0.3837	0.3844	*
RSH Impaired Driving	0-1	0.89	0.89	0.90		0.89	0.91	
RSH Distracted Driving	0-1	0.66	0.68	0.63	*	0.65	0.67	
RSH *Vision Zero*	0-1	0.48	0.45	0.52	**	0.47	0.51	

[1]Note: Nominal/Ordinal scales require different tests of significance
*Significant difference at the 5% level for Pearson Chi-Square test
**Significant difference at the 1% level for Pearson Chi-Square test
#Significant difference at 5% level for 1-way ANOVA
##Significant difference at 1% level for 1-way ANOVA

Rural drivers were less likely to support initiatives such as a primary seat belt law ($F=11.943$, $df=1$, $p=0.001$) and a ban on using hand-held cellular devices while driving ($F=21.173$, $df=1$, $p<0.001$). These drivers were more likely to support increasing speed limits on highways and interstates ($F=6.773$, $df=1$, $p=0.009$).

Perceptions about ticketing likelihood were mixed. Whereas urban residents thought it was more likely to be ticketed for not wearing a seat belt ($F=9.926$, $df=1$, $p=0.002$), rural residents thought it was more likely to be ticketed for speeding ($F=9.227$, $df=1$, $p=0.002$). This viewpoint may be due to rural residents having higher exposure levels to traffic safety messages about speeding while driving (Chi-Sq.=4.433, $df=1$, $p=0.035$).

The five-year trends presented in Table 4.6 provide insight about patterns emerging from North Dakota drivers. With 11 years of data available, some conclusions can be made. For instance, the five-year averages of seat belt use (4.68) and perceived likelihood of being arrested for driving while impaired (3.89) are at all-time highs.

A negative trend becomes apparent when analyzing results from the previous 11 years. The five-year average for exposure to safety messages about using a seat belt is at an all-time low for rural residents. This means that, compared with other five-year intervals, rural North Dakota drivers are not being exposed to seat belt safety message interventions as often as they had been in prior years.

Table 4.6 Differences in Driver Views and Behaviors from 2010–2020, by Region and Geography

			Statewide	Region			Geography			Core
Question	Year	Scale	All	East	West	Sig.	Urban	Rural	Sig.	Y/N
Seat Belt Use	2020	1-5	4.69	4.74	4.62		4.77	4.48	**	Y
1=Never to 5=Always	2019		4.69	4.69	4.68		4.77	4.43	**	Y
	2018		4.72	4.72	4.71		4.78	4.52	**	Y
	2017		4.66	4.69	4.63		4.73	4.46	**	Y
	2016		4.66	4.70	4.61		4.73	4.44	**	Y
	2015		4.61	4.64	4.59		4.68	4.44	**	Y
	2014		4.61	4.63	4.58		4.67	4.40	**	Y
	2013		4.47	4.44	4.50	*	4.54	4.36	**	Y
	2012		4.31	4.37	4.24	*	4.40	4.23	**	Y
	2011		4.42	4.44	4.36	**	4.52	4.21	**	Y
	2010		4.36	4.38	4.36		4.49	4.08	**	Y
2016–2020 Five-Year Average			**4.68**	**4.71**	**4.65**		**4.76**	**4.47**		
2015–2019 Five-Year Average			**4.67**	**4.69**	**4.64**		**4.74**	**4.46**		
2014–2018 Five-Year Average			**4.65**	**4.68**	**4.62**		**4.72**	**4.45**		
2013–2017 Five-Year Average			**4.60**	**4.62**	**4.58**		**4.67**	**4.42**		
2012–2016 Five-Year Average			**4.53**	**4.56**	**4.50**		**4.60**	**4.37**		
2011–2015 Five-Year Average			**4.48**	**4.50**	**4.45**		**4.56**	**4.33**		
2010–2014 Five-Year Average			**4.43**	**4.45**	**4.41**		**4.52**	**4.26**		
Ticket Likely Seat Belt	2020	1-5	3.09	3.12	3.04		3.09	3.08	**	Y
1=Very Unlikely to 5=Very Likely	2019		3.15	3.18	3.09	*	3.13	3.19		Y
	2018		3.17	3.14	3.21		3.16	3.21	*	Y
	2017		3.15	3.17	3.12		3.14	3.15	*	Y
	2016		3.29	3.27	3.31		3.26	3.37	**	Y
	2015		3.29	3.38	3.19		3.27	3.35	**	Y
	2014		3.20	3.26	3.14		3.19	3.25	*	Y
	2013		3.17	3.18	3.15		3.10	3.17	**	Y
	2012		3.16	3.24	3.06	*	3.10	3.22		Y
	2011		2.98	2.93	3.10		2.94	3.06		Y
	2010		3.06	3.07	3.04		3.03	3.13		Y
2016–2020 Five-Year Average			**3.17**	**3.18**	**3.15**		**3.16**	**3.20**		
2015–2019 Five-Year Average			**3.21**	**3.23**	**3.18**		**3.19**	**3.25**		
2014–2018 Five-Year Average			**3.22**	**3.24**	**3.19**		**3.20**	**3.27**		
2013–2017 Five-Year Average			**3.22**	**3.25**	**3.18**		**3.19**	**3.26**		
2012–2016 Five-Year Average			**3.22**	**3.27**	**3.17**		**3.18**	**3.27**		
2011–2015 Five-Year Average			**3.16**	**3.20**	**3.13**		**3.12**	**3.21**		
2010–2014 Five-Year Average			**3.11**	**3.14**	**3.10**		**3.07**	**3.17**		
Ticket Likely Speed	2020	1-5	3.61	3.56	3.68	**	3.59	3.65	**	Y
1=Very Unlikely to 5=Very Likely	2019		3.75	3.75	3.74		3.72	3.83	**	Y
	2018		3.69	3.64	3.76		3.76	3.67	**	Y
	2017		3.69	3.67	3.72	*	3.67	3.75	**	Y
	2016		3.79	3.76	3.81		3.76	3.87	**	Y
	2015		3.84	3.82	3.87	*	3.84	3.84		Y
	2014		3.72	3.71	3.73		3.71	3.77	**	Y
	2013		3.67	3.66	3.68	*	3.63	3.67		Y
	2012		3.69	3.71	3.66		3.62	3.76	*	Y
	2011		3.62	3.61	3.66		3.76	3.62	*	Y
	2010		3.59	3.61	3.58		3.60	3.58		Y
2016–2020 Five-Year Average			**3.71**	**3.68**	**3.74**		**3.70**	**3.75**		
2015–2019 Five-Year Average			**3.75**	**3.73**	**3.78**		**3.75**	**3.79**		
2014–2018 Five-Year Average			**3.75**	**3.72**	**3.78**		**3.75**	**3.78**		
2013–2017 Five-Year Average			**3.74**	**3.72**	**3.76**		**3.72**	**3.78**		
2012–2016 Five-Year Average			**3.74**	**3.73**	**3.75**		**3.71**	**3.78**		
2011–2015 Five-Year Average			**3.71**	**3.70**	**3.72**		**3.71**	**3.73**		
2010–2014 Five-Year Average			**3.66**	**3.66**	**3.66**		**3.66**	**3.68**		

Speed 75 MPH Zone	2020	1-5	2.19	2.13	2.27	2.20	2.16	**	Y
1=Never to 5=Always	2019		2.11	2.05	2.19	2.12	2.07	**	
	2018		2.14	2.04	2.26	2.15	2.09	**	Y
	2017		2.17	2.08	2.28	2.22	2.02	**	Y

			Statewide	Region			Geography			Core
Question	Year	Scale	All	East	West	Sig.	Urban	Rural	Sig.	Y/N
Arrest for DUI	2020	1-5	3.87	3.84	3.91		3.87	3.87		Y
1=Very Unlikely to 5=Very Likely	2019		3.88	3.90	3.86		3.90	3.85		Y
	2018		3.89	3.83	3.97		3.90	3.87		Y
	2017		3.94	3.90	4.00		3.92	4.02		Y
	2016		3.89	3.86	3.93		3.89	3.90		Y
	2015		3.86	3.90	3.80		3.84	3.89		Y
	2014		3.76	3.71	3.83		3.79	3.69		Y
	2013		3.53	3.54	3.52		3.51	3.53		Y
	2012		3.64	3.67	3.60		3.68	3.61		Y
	2011		3.62	3.61	3.69		3.63	3.65		Y
	2010		3.53	3.59	3.47		3.55	3.49		Y
2016–2020 Five-Year Average			**3.89**	**3.87**	**3.93**		**3.90**	**3.90**		
2015–2019 Five-Year Average			**3.89**	**3.88**	**3.91**		**3.89**	**3.91**		
2014–2018 Five-Year Average			**3.87**	**3.84**	**3.91**		**3.87**	**3.87**		
2013–2017 Five-Year Average			**3.80**	**3.78**	**3.82**		**3.79**	**3.81**		
2012–2016 Five-Year Average			**3.74**	**3.74**	**3.74**		**3.74**	**3.72**		
2011–2015 Five-Year Average			**3.68**	**3.69**	**3.69**		**3.69**	**3.67**		
2010–2014 Five-Year Average			**3.62**	**3.62**	**3.62**		**3.63**	**3.59**		
RSH Seat Belt	2020	0-1	0.79	0.80	0.78		0.79	0.78		Y
0=No, 1=Yes	2019		0.75	0.74	0.76		0.75	0.75		Y
	2018		0.72	0.71	0.75		0.72	0.73	**	Y
	2017		0.71	0.70	0.71		0.69	0.75		Y
	2015		0.78	0.79	0.77		0.78	0.79	**	Y
	2014		0.74	0.78	0.70		0.74	0.77	**	Y
	2013		0.83	0.83	0.82		0.80	0.83	**	Y
	2012		0.88	0.89	0.86		0.85	0.90	*	Y
	2011		0.84	0.84	0.84		0.83	0.87		Y
	2010		0.77	0.76	0.77		0.75	0.80		Y
2016–2020 Five-Year Average			**0.75**	**0.75**	**0.75**		**0.75**	**0.76**		
2015–2019 Five-Year Average			**0.74**	**0.74**	**0.74**		**0.74**	**0.76**		
2014–2018 Five-Year Average			**0.76**	**0.76**	**0.75**		**0.75**	**0.77**		
2013–2017 Five-Year Average			**0.79**	**0.80**	**0.77**		**0.77**	**0.81**		
2012–2016 Five-Year Average			**0.80**	**0.81**	**0.78**		**0.79**	**0.81**		
2011–2015 Five-Year Average			**0.81**	**0.83**	**0.80**		**0.80**	**0.83**		
2010–2014 Five-Year Average			**0.81**	**0.82**	**0.80**		**0.79**	**0.83**		
RSH Speeding	2020	0-1	0.47	0.41	0.34		0.3837	0.3844	*	Y
0=No, 1=Yes	2019		0.40	0.41	0.37		0.40	0.37	*	Y
	2018		0.37	0.39	0.35		0.38	0.35	**	Y
	2017		0.35	0.38	0.31		0.35	0.34		Y
	2016		0.37	0.41	0.34		0.36	0.40	**	Y
	2015		0.42	0.46	0.37		0.41	0.44	**	Y
	2014		0.38	0.41	0.34		0.37	0.43	**	Y
	2013		0.39	0.40	0.38		0.36	0.39	**	Y
	2012		0.38	0.39	0.36		0.36	0.39		Y
	2011		0.38	0.39	0.36		0.39	0.36		Y
	2010		0.57	0.57	0.56		0.57	0.56		Y
2016–2020 Five-Year Average			**0.39**	**0.40**	**0.34**		**0.37**	**0.37**		
2015–2019 Five-Year Average			**0.38**	**0.41**	**0.35**		**0.38**	**0.40**		
2014–2018 Five-Year Average			**0.38**	**0.41**	**0.34**		**0.37**	**0.39**		
2013–2017 Five-Year Average			**0.38**	**0.41**	**0.35**		**0.37**	**0.40**		

2012–2016 Five-Year Average			**0.39**	**0.41**	**0.36**		**0.37**	**0.41**		
2011–2015 Five-Year Average			**0.39**	**0.41**	**0.36**		**0.38**	**0.40**		
2010–2014 Five-Year Average			**0.42**	**0.43**	**0.40**		**0.41**	**0.43**		

Question	Year	Scale	Statewide All	Region East	Region West	Sig.	Geography Urban	Geography Rural	Sig.	Core Y/N
RSH DUI	2020	0-1	0.89	0.89	0.90		0.89	0.91		Y
0=No, 1=Yes	2019		0.87	0.85	0.89		0.87	0.86	*	Y
	2018		0.88	0.88	0.89		0.88	0.89		Y
	2017		0.86	0.87	0.85		0.86	0.88		Y
	2016		0.89	0.90	0.88		0.89	0.89		Y
	2015		0.90	0.90	0.89		0.89	0.90		Y
	2014		0.85	0.86	0.84	*	0.85	0.85		Y
	2013		0.90	0.91	0.89		0.88	0.90	**	Y
	2012		0.90	0.90	0.90		0.90	0.90		Y
	2011		0.88	0.88	0.88		0.87	0.90		Y
	2010		0.85	0.86	0.84		0.86	0.83		Y
2016–2020 Five-Year Average			**0.88**	**0.88**	**0.88**		**0.88**	**0.89**		
2015–2019 Five-Year Average			**0.88**	**0.88**	**0.88**		**0.88**	**0.88**		
2014–2018 Five-Year Average			**0.88**	**0.88**	**0.87**		**0.87**	**0.88**		
2013–2017 Five-Year Average			**0.88**	**0.89**	**0.87**		**0.87**	**0.88**		
2012–2016 Five-Year Average			**0.89**	**0.89**	**0.88**		**0.88**	**0.89**		
2011–2015 Five-Year Average			**0.89**	**0.89**	**0.88**		**0.88**	**0.89**		
2010–2014 Five-Year Average			**0.88**	**0.88**	**0.87**		**0.87**	**0.88**		

*Statistically significant difference at the 5% level
**Statistically significant difference at the 1% level

4.2.2 Young Male Driver Group

As with the previous 10 surveys, the selected target group of 18-to-34-year-old high-risk males ("HRM") shows significantly different behaviors, exposure levels, and views when compared when other drivers (Table 4.7). (Note that high-risk females were not included in the "other" group. See Section 4.2.3 for results for high-risk females.) In terms of behavior, HRM drivers in this survey are more likely to exhibit behaviors at odds with traffic safety goals such as speeding in a 75-mile-per-hour zone ($F=72.729$, $df=1$, $p<0.001$), talking on the phone while driving (Chi-Sq.=39.788, $df=1$, $p<0.001$), and texting while driving (Chi-Sq.=115.888, $df=1$, $p<0.001$).

In addition to having higher levels of risky behavior than the rest of the North Dakota driver population, young males are also less likely to engage in safe driving behaviors. The high-risk young male drivers surveyed are less likely to wear seat belts than other drivers ($F=19.666$, $df=1$, $p<0.001$). Only 60.7% of young male drivers always wear a seat belt while driving or riding in a vehicle, a number much smaller than the 80.7% of other drivers who always do so. The share of young males who report that they rarely or never use seat belts (4.7%) is more than three times the rate of other drivers (1.5%). Lower levels of seat belt use likely go hand in hand with the fact that young male drivers have a lower expectancy for law enforcement to ticket drivers for seat belt violations when compared with the balance of the population ($F=7.430$, $df=1$, $p=0.007$).

The NDDOT Safety Division continues to explore opportunities to increase safe driving behavior overall in this driver group. Young male driver responses to RSH education and exposure questions offer insight into this key demographic. Exposure to traffic safety messages that can be read, seen, or heard had mixed results depending on the topic at hand. These drivers were less likely to have had exposure to messages

about speeding (Chi-Sq.=7.133, df=1, p=0.008). However, this same group of drivers reported reading, seeing, or hearing messages about the *Vision Zero* campaign at rates that were higher than their 35-plus-year-old counterparts (Chi-Sq.=18.108, df=1, p<0.001). Given the dangerous attitudes, behaviors, and beliefs from this high-risk group, it appears as though there is an opportunity to revisit the messaging; these high-risk males are being exposed to this safety campaign at higher rates than their counterparts, but still do not appear to be having the positive desired outcome in improving this group's behaviors.

Table 4.7 Differences in Driver Views and Behaviors, Young Male Target Group

Question	HRM (n=222)	Other Drivers (n=1,039)	Sig./1
Seat Belt Use	4.41	4.73	##
Ticket Seat Belt	2.85	3.18	##
Primary Seat Belt Law	2.87	3.78	##
Ticket Likely Speeding	3.41	3.58	
Speed in 75 MPH Zone	2.42	1.75	##
Higher Fines for Speeding	2.46	3.41	##
Increase Speed Limit on Highways	3.62	2.44	##
Chance Arrest for DUI	3.80	3.74	#
Drugged Driving	0.01	0.01	
Use Sober Driver	4.12	4.18	
Cell Phone Talk	0.91	0.68	**
Cell Phone Text	0.67	0.28	**
Ban Hand-Held Cell Use	3.07	3.61	##
Ticket Distracted Driving	2.86	3.01	
RSH Seat Belt	0.80	0.76	
RSH Speeding	0.38	0.47	**
RSH Drunk Driving	0.92	0.86	
RSH Distracted Driving	0.66	0.71	
RSH *Vision Zero*	0.61	0.42	**

/Note: Nominal/Ordinal scales require different tests of significance
**Significant difference at the 1% level for Pearson Chi-Square test
##Significant difference at the 1% level for 1-way ANOVA
#Significant difference at the 5% level for 1-way ANOVA

With regard to safe driving initiatives, the target group of drivers indicated that they have less support for a primary seat belt law (F=24.263, df=1, p<0.001), less support for increasing fines for speeding (F=66.487, df=1, p<0.001), less support for banning hand-held cell phone use while driving (F=24.324, df=1, p<0.001), and higher support for increasing the speed limit on highways or interstates (F=129.935, df=1, p<0.001).

Table 4.8 compares the responses of high-risk young males to all other driver groups. It is clear that there are differences in views, behaviors, and attitudes toward various transportation safety topics. The complete list of survey questions is provided in Appendix A.

Table 4.8 Responses for High-Risk Male Drivers

Question		Responses, by Driver Group				
Seat Belt Use	n=1,261	Always	N. Always	Sometimes	Rarely	Never
	Other	80.7%	13.6%	4.1%	1.0%**	0.5%**
	HRM	60.7%	25.6%	9.0%**	3.6%**	1.1%**
Seat Belt Ticket	n=1,254	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	13.3%	21.6%	41.3%	17.3%	6.6%
	HRM	5.4%**	17.6%	41.3%	27.7%	8.0%**
Primary Seat Belt Law	n=1,258	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	43.0%	22.8%	14.1%	9.1%	11.0%
	HRM	21.2%	13.8%**	23.1%	14.8%	27.1%
Chance Speed Ticket	n=1,256	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	15.8%	36.7%	39.0%	6.8%	1.8%**
	HRM	8.4%**	38.0%	40.4%	12.9%**	0.3%**
Speed in 75 mph	n=1,261	Always	N. Always	Sometimes	Rarely	Never
	Other	1.6%**	1.9%**	12.7%	37.6%	46.2%
	HRM	3.2%**	12.8%**	23.0%	44.3%	16.7%
Speed Fines	n=1,255	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	22.0%	27.2%	29.3%	12.8%	8.6%
	HRM	9.1%**	14.8%	20.6%	24.4%	31.1%
Higher Hwy. Speed Limit	n=1,255	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	6.6%	15.7%	24.8%	21.0%	31.9%
	HRM	29.8%	30.6%	18.4%	14.4%	6.7%**
Chance DUI Arrest	n=1,259	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	25.4%	33.8%	32.4%	6.6%	1.8%**
	HRM	27.8%	36.5%	25.6%	7.3%**	2.6%**
Drive 1-2 Drinks	n=1,225	None	1-5 Times	6-10 Times	10+ Times	
	Other	76.1%	22.3%	1.3%**	0.3%**	
	HRM	52.3%	40.5%	5.3%**	1.9%**	
Drive 3+ Drinks	n=1,120	None	1-5 Times	6-10 Times	10+ Times	
	Other	96.1%	3.6%	0.3%**	0.0%**	
	HRM	85.0%	12.2%**	1.2%**	1.6%**	
Sober Driver/	n=777	Always	N. Always	Sometimes	Rarely	Never
	Other	55.7%	21.3%	12.9%	5.6%	4.5%
	HRM	47.1%	29.3%	16.0%	3.5%**	4.1%**
Cell Phone Talk	n=1,253	Never	1+/Month			
	Other	31.9%	68.1%			
	HRM	8.7%**	91.3%			
Cell Phone Text	n=1,259	Never	1+/Month			
	Other	72.3%	27.7%			
	HRM	33.1%	66.9%			

Note: Please see Appendix A for exact question and response wording
/Note: Percentages based only on those North Dakota drivers who report that they consume alcohol
**Estimate uncertain due to limited sample size

4.2.3 Young Female Driver Group

Another driver group with noticeable differences in behaviors and attitudes is that of 18-to-34-year-old high-risk female (HRF) drivers. Like their HRM counterparts, young female drivers tend to exhibit behaviors that are more dangerous than all other drivers. Similarly, their attitudes toward safe driving habits and exposure to messages promoting safe driving lag behind the balance of the driver population (Table 4.9). When this female driver group was compared with all other drivers, there were statistically significant differences for almost all variables studied in this report.

Table 4.9 Differences in Driver Views and Behaviors, Young Female Target Group

Question	HRF (n=325)	Other Drivers (n=1,039)	Sig.[1]
Seat Belt Use	4.69	4.73	#
Ticket Seat Belt	3.03	3.18	
Primary Seat Belt Law	3.71	3.78	##
Ticket Likely Speeding	3.65	3.58	#
Speed in 75 MPH Zone	2.55	1.75	##
Higher Fines for Speeding	2.82	3.41	##
Increase Speed Limit on Highways	3.42	2.44	##
Chance Arrest for DUI	3.99	3.74	##
Drugged Driving	0.02	0.01	*
Use Sober Driver	4.51	4.18	##
Cell Phone Talk	0.93	0.68	**
Cell Phone Text	0.71	0.28	**
Ban Hand-Held Cell Use	3.30	3.61	##
Ticket Distracted Driving	3.12	3.01	##
RSH Seat Belt	0.81	0.76	
RSH Speeding	0.31	0.47	**
RSH Drunk Driving	0.92	0.86	*
RSH Distracted Driving	0.61	0.71	**
RSH *Vision Zero*	0.51	0.42	*

[1]Note: Nominal/Ordinal scales require different tests of significance
**Significant difference at the 1% level for Pearson Chi-Square test
*Significant difference at the 5% level for Pearson Chi-Square test
##Significant difference at the 1% level for 1-way ANOVA
#Significant difference at the 5% level for 1-way ANOVA

The 18-to-34-year-old female cohort is more likely to engage in dangerous driving behaviors. This target group has a lower likelihood of using a seat belt ($F=4.423$, $df=1$, $p=0.036$), a higher likelihood of speeding on a 75-mile-per-hour road ($F=150.164$, $df=1$, $p<0.001$), a higher likelihood of talking on the phone while driving (Chi-Sq.=65.760, $df=1$, $p<0.001$), and a higher likelihood of texting while driving (Chi-Sq.=186.255, $df=1$, $p<0.001$). These cell phone behaviors were also evident in each of the last five iterations of this survey.

Like their high-risk male counterparts, 18-to-34-year-old females have mixed results for exposure to safety messages. High-risk females had lower exposure rates to messages about speeding (Chi-Sq.=26.703, $df=1$, $p<0.001$) and distracted driving (Chi-Sq.=7.601, $df=1$, $p=0.006$). However, this group had higher exposure rates to messages about impaired driving (Chi-Sq.=5.106, $df=1$, $p=0.024$) and the *Vision Zero* initiative (Chi-Sq.=5.380, $df=1$, $p=0.020$).

For the sixth year in a row, this group was less likely to support higher fines for speeding ($F=27.530$, $df=1$, $p<0.001$). It is plausible that this stems from the group's propensity to speed, especially on roads with a posted limit of 75 miles per hour.

With regard to impaired driving, this target group of 18-to-34-year-old females thought the chance of being arrested for driving under the influence of alcohol was more likely than did other North Dakota drivers ($F=25.641$, $df=1$, $p<0.001$). Perhaps this is why this group was more likely to use a designated

sober driver than other North Dakotans (F=19.349, df=1, p<0.001). This perception of being ticketed may be deterring this driver group. Table 4.10 provides a complete explanation of how this group compared with the balance of the North Dakota driving population.

Table 4.10 Responses for High-Risk Female Drivers

Question		Responses, by Driver Group				
Seat Belt Use	n=1,363	Always	N. Always	Sometimes	Rarely	Never
	Other	80.7%	13.6%	4.1%	1.0%**	0.5%**
	HRF	75.4%	19.4%	3.7%**	1.5%**	0.0%**
Seat Belt Ticket	n=1,357	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	13.3%	21.6%	41.3%	17.3%	6.6%
	HRF	7.9%**	24.7%	36.9%	23.7%	6.8%**
Primary Seat Belt Law	n=1,362	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	43.0%	22.8%	14.1%	9.1%	11.0%
	HRF	37.6%	21.3%	21.8%	13.7%	5.7%**
Chance Speed Ticket	n=1,360	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	15.8%	36.7%	39.0%	6.8%	1.8%**
	HRF	13.0%	43.0%	41.0%	2.3%**	0.7%**
Speed in 75 mph	n=1,363	Always	N. Always	Sometimes	Rarely	Never
	Other	1.6%**	1.9%**	12.7%	37.6%	46.2%
	HRF	3.1%**	12.5%	34.2%	36.8%	13.4%
Speed Fines	n=1,355	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	22.0%	27.2%	29.3%	12.8%	8.6%
	HRF	10.7%	18.5%	31.2%	21.2%	18.3%
Higher Hwy. Speed Limit	n=1,358	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	6.6%	15.7%	24.8%	21.0%	31.9%
	HRF	18.5%	34.4%	25.8%	12.7%	8.5%**
Chance DUI Arrest	n=1,363	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	25.4%	33.8%	32.4%	6.6%	1.8%**
	HRF	39.5%	28.4%	24.5%	6.6%**	1.0%**
Drive 1-2 Drinks	n=1,329	None	1-5 Times	6-10 Times	10+ Times	
	Other	76.1%	22.3%	1.3%**	0.3%**	
	HRF	61.0%	36.5%	1.0%**	1.6%**	
Drive 3+ Drinks	n=1,207	None	1-5 Times	6-10 Times	10+ Times	
	Other	96.1%	3.6%	0.3%**	0.0%**	
	HRF	92.2%	7.7%**	0.2%**	0.0%**	
Sober Driver/	n=871	Always	N. Always	Sometimes	Rarely	Never
	Other	55.7%	21.3%	12.9%	5.6%	4.5%
	HRF	68.6%	19.2%	7.3%**	4.0%**	0.9%**
Cell Phone Talk	n=1,355	Never	1+/Month			
	Other	31.9%	68.1%			
	HRF	6.7%**	93.3%			
Cell Phone Text	n=1,361	Never	1+/Month			
	Other	72.3%	27.7%			
	HRF	28.6%	71.4%			

Note: Please see Appendix A for exact question and response wording
/Note: Percentages based only on those North Dakota drivers who report that they consume alcohol
**Estimate uncertain due to limited sample size

4.2.4 High-Risk Driver Comparisons

A detailed explanation of how high-risk 18-to-34-year-old drivers compare with all other North Dakota drivers—including longitudinal trends—is presented in Appendix B. In general, high-risk drivers exhibit more dangerous behaviors than do drivers over the age of 35.

5. CONCLUSIONS

The annual statewide driver traffic safety survey provides baseline metrics for the Safety Division and others in understanding perceptions and behaviors related to focus issues. A core set of questions was selected to address nationally agreed upon priorities. These include emphases on seat belt use, impaired driving, and speeding. In addition to the core issues, questions were included to better understand views on specific programs and activities. Results show that many North Dakota drivers have adopted safe driving practices, but it is apparent that additional efforts are needed to improve safety on the state's roads.

Two specific recommendations can be made when examining trends that have taken place over the last 11 years of administering this survey. First, there is a continued dichotomy between how urban and rural residents approach the use of a seat belt while operating a vehicle. Results clearly show that rural residents are less likely to use seat belts than their urban counterparts. Improvement in this area must be made to reduce rates of fatalities and serious injuries during crash events by rural North Dakotans. Second, there is a bifurcation in safe driving attitudes, behaviors, and beliefs factoring for whether one is a high-risk 18-to-34-year-old driver. Younger drivers generally engage in more dangerous behavior behind the wheel and engage in safe practices less often than those over age 35. These dangerous practices happen despite the fact that this group has higher exposure rates to *Vision Zero* as a safety campaign. It is evident that the safety campaign is reaching these dangerous drivers, but the messaging may need to be revisited with an aim to more effectively resonate with these driver groups.

Further research involving North Dakota driving tendencies can be improved. For instance, future studies involving North Dakota driving habits will be more robust when the response sample more accurately reflects the North Dakota driver population. This particular study would have been improved by having a higher percentage of 35-to-44 year-old drivers included in the response sample. Nonetheless, the response rate for this survey was satisfactory and most of the desired performance metrics were able to be extrapolated to represent the entire North Dakota driver population.

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APPENDIX A. SURVEY INSTRUMENT

2020 North Dakota Driver Survey

All Responses Are Confidential

1. How often do you use a seat belt when you drive or ride in a motor vehicle?
   □ Never □ Rarely □ Sometimes □ Nearly Always □ Always

2. What do you think the chance is of getting a ticket if you do not wear your seat belt?
   □ Very Unlikely □ Unlikely □ Somewhat Likely □ Likely □ Very Likely

3. Do you favor or oppose a primary seat belt law where law enforcement can stop a vehicle and issue a citation for failure to wear a seat belt?
   □ Strongly Oppose □ Somewhat Oppose □ Do Not Favor or Oppose □ Somewhat Favor □ Strongly Favor

4. What do you think the chance is of getting a ticket if you drive over the speed limit?
   □ Very Unlikely □ Unlikely □ Somewhat Likely □ Likely □ Very Likely

5. On a road with a speed limit of 75 mph, how often do you drive faster than 80 mph?
   □ Never □ Rarely □ Sometimes □ Nearly Always □ Always

6. Do you favor or oppose higher fees/fines for speeding violations?
   □ Strongly Oppose □ Somewhat Oppose □ Do Not Favor or Oppose □ Somewhat Favor □ Strongly Favor

7. Do you favor or oppose increased highway/interstate speed?
   □ Strongly Oppose □ Somewhat Oppose □ Do Not Favor or Oppose □ Somewhat Favor □ Strongly Favor

8. What do you think the chances are of someone getting arrested if they drive buzzed/drunk?
   □ Very Unlikely □ Unlikely □ Somewhat Likely □ Likely □ Very Likely

9. In the past year, have you driven even though you felt your ability to drive may have been compromised by drugs?
   □ Yes □ No If yes, select all that apply: □ Marijuana □ Prescription Drugs □ Over-the Counter □ Other_____

10. If drinking or planning to drink alcohol, how often do you designate a sober driver?
    □ Never □ Rarely □ Sometimes □ Nearly Always □ Always □ Do Not Drink

11. In the past 60 days, how many times have you driven a motor vehicle within 2 hours after drinking
    1 – 2 Alcoholic Drinks? □ none □ 1 – 5 times □ 6 – 10 times □ more than 10 times
    3 or More Alcoholic Drinks? □ none □ 1 – 5 times □ 6 – 10 times □ more than 10 times

12. How often do you talk on your cell phone while driving?
    □ Never □ Less than Once per Month □ Few Times per Month □ Few Times per Week □ Daily

13. How often do you text message while driving?
    □ Never □ Less than Once per Month □ Few Times per Month □ Few Times per Week □ Daily

14. Do you favor or oppose a ban on hand-held cell phone use while driving?
    □ Strongly Oppose □ Somewhat Oppose □ Do Not Favor or Oppose □ Somewhat Favor □ Strongly Favor

15. What do you think the chance is of getting a ticket for distracted driving?
    □ Very Unlikely □ Unlikely □ Somewhat Likely □ Likely □ Very Likely

16. Within the last 6 months have you read, seen, or heard traffic safety messages relating to:

Seat Belt Enforcement	□ Yes	□ No	**If yes, where?**	□ TV	□ Radio	□ Online Ad	□ Social Media	□ Hwy Message Boards
Speed Enforcement	□ Yes	□ No	**If yes, where?**	□ TV	□ Radio	□ Online Ad	□ Social Media	□ Hwy Message Boards
Drunk Driving Enforcement	□ Yes	□ No	**If yes, where?**	□ TV	□ Radio	□ Online Ad	□ Social Media	□ Hwy Message Boards
Distracted Driving Enforcement	□ Yes	□ No	**If yes, where?**	□ TV	□ Radio	□ Online Ad	□ Social Media	□ Hwy Message Boards
Vision Zero. Zero Fatalities. Zero Excuses.	□ Yes	□ No	**If yes, where?**	□ TV	□ Radio	□ Online Ad	□ Social Media	□ Hwy Message Boards

17. Type of Vehicle You Most Often Drive: (select only one)
    □ Car □ Pickup □ SUV □ Van □ Motorcycle □ Semi/Large Truck □ Other_____

18. Your age: □ 18 – 24 □ 25 – 34 □ 35 – 44 □ 45 – 54 □ 55 – 64 □ 65 – 74 □ 75 or Older

19. Your gender: □ Male □ Female

20. In which North Dakota county do you live? _____

Thank you for your time and participation.

APPENDIX B. HIGH-RISK 18-TO-34-YEAR-OLD DRIVER BEHAVIORS/PERCEPTIONS

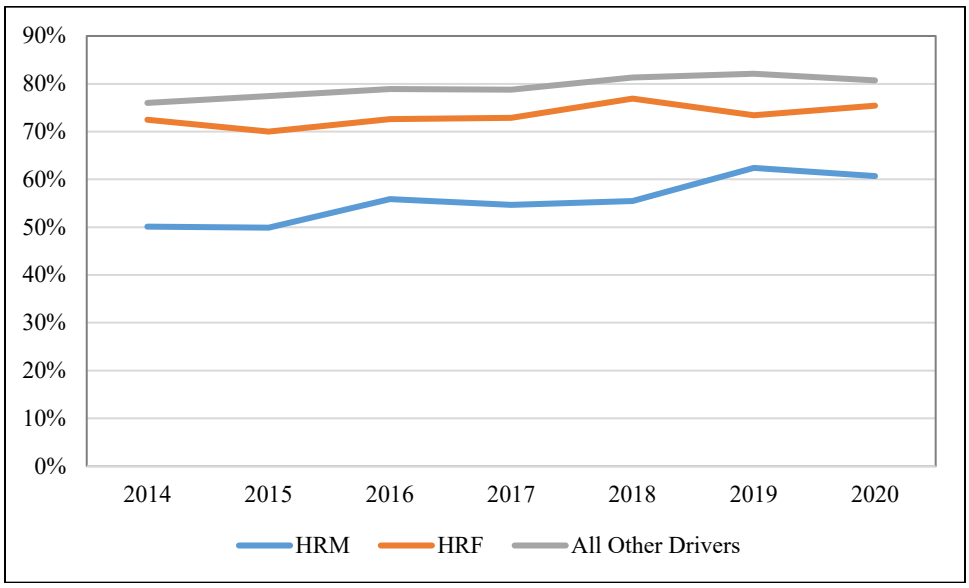

Figure B.1 Drivers Self-Reporting Seat Belt Use as Always

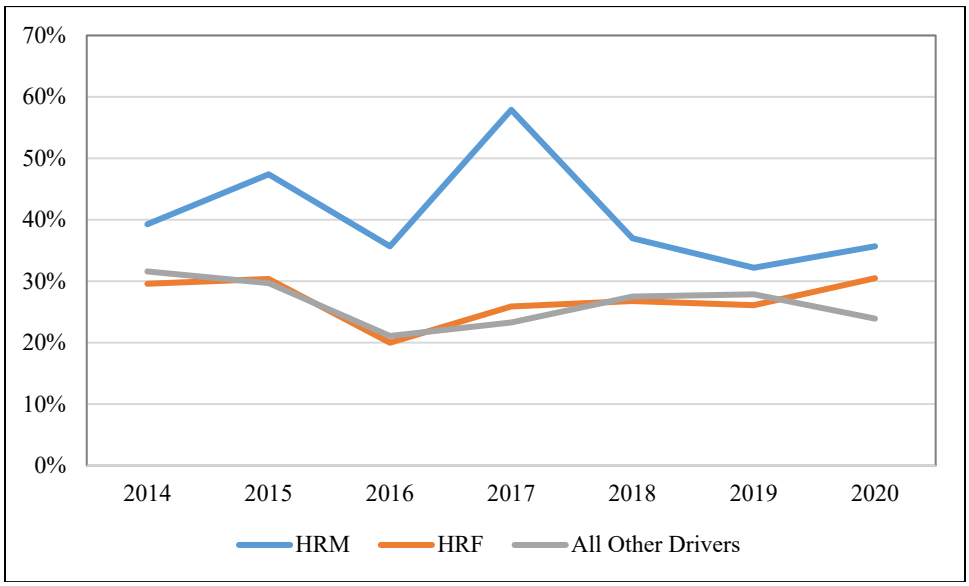

Figure B.2 Drivers Reporting the Perceived Likelihood of Receiving a Ticket for Not Wearing a Seat Belt as Very Unlikely or Unlikely

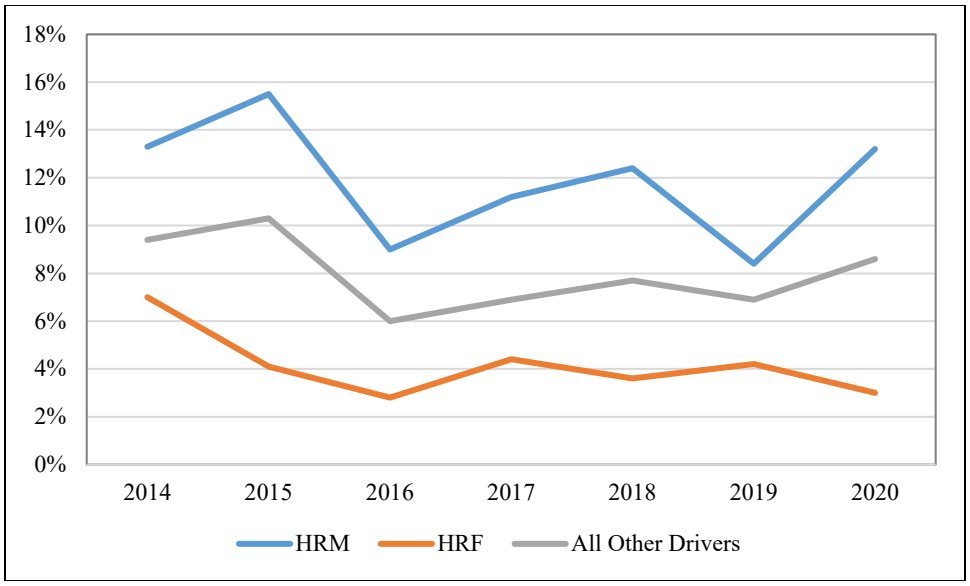

Figure B.3 Drivers Reporting the Perceived Likelihood of Receiving a Ticket for Speeding as Very Unlikely or Unlikely

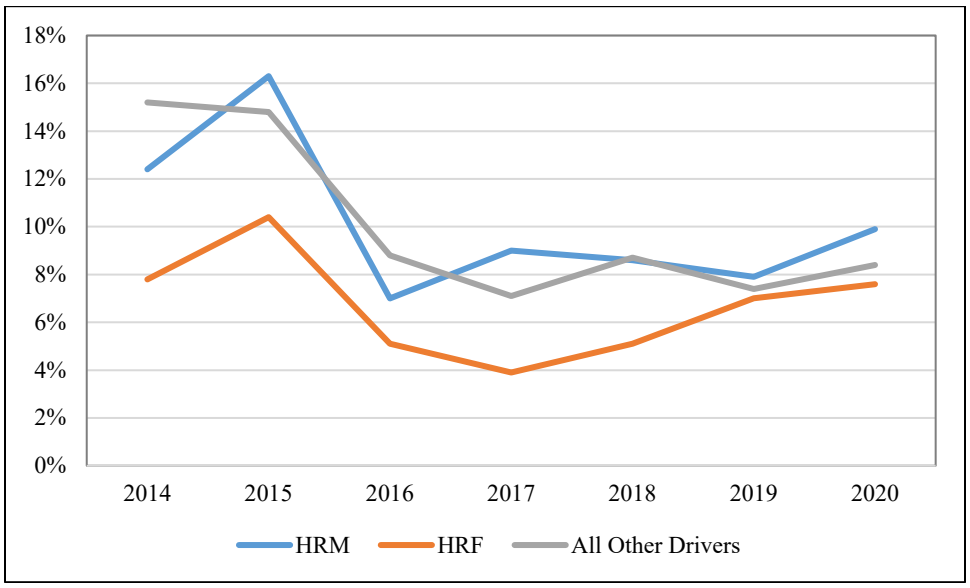

Figure B.4 Drivers Reporting the Perceived Likelihood of Being Arrested for Impaired Driving as Very Unlikely or Unlikely

Table B.1 Longitudinal Response Averages from High-Risk Male Drivers

Question	Year	Scale	HRM	Other	Sig.
Seat Belt Use	2020	1-5	4.41	4.73	**
1=Never to 5=Always	2019		4.45	4.75	**
	2018		4.31	4.75	**
	2017		4.36	4.73	**
	2016		4.33	4.71	**
	2015		4.24	4.68	**
	2014		4.26	4.65	**
	2013		4.18	4.52	**
	2012		3.98	4.41	**
	2011		4.18	4.47	**
	2010		4.04	4.43	**
2016–2020 Five-Year Average			**4.37**	**4.73**	
2015–2019 Five-Year Average			**4.34**	**4.72**	
2014–2018 Five-Year Average			**4.30**	**4.70**	
2013–2017 Five-Year Average			**4.27**	**4.66**	
2012–2016 Five-Year Average			**4.20**	**4.59**	
2011–2015 Five-Year Average			**4.17**	**4.55**	
2010–2014 Five-Year Average			**4.13**	**4.50**	

Question	Year	Scale	HRM	Other	Sig.
Ticket Likely Seat Belt	2020	1-5	2.85	3.18	**
1=Very Unlikely to 5=Very Likely	2019		2.82	3.13	**
	2018		2.94	3.17	**
	2017		2.85	3.19	**
	2016		2.99	3.26	*
	2015		2.83	3.33	**
	2014		2.98	3.23	**
	2013		2.97	3.23	**
	2012		3.06	3.20	**
	2011		2.77	3.03	**
	2010		2.74	3.12	**
2016–2020 Five-Year Average			**2.89**	**3.19**	
2015–2019 Five-Year Average			**2.89**	**3.22**	
2014–2018 Five-Year Average			**2.92**	**3.24**	
2013–2017 Five-Year Average			**2.92**	**3.25**	
2012–2016 Five-Year Average			**2.97**	**3.25**	
2011–2015 Five-Year Average			**2.92**	**3.20**	
2010–2014 Five-Year Average			**2.90**	**3.16**	

Question	Year	Scale	HRM	Other	Sig.
Ticket Likely Speed	2020	1-5	3.41	3.58	
1=Very Unlikely to 5=Very Likely	2019		3.57	3.68	
	2018		3.48	3.61	
	2017		3.53	3.66	
	2016		3.59	3.68	
	2015		3.54	3.79	*
	2014		3.47	3.75	**
	2013		3.52	3.71	**
	2012		3.64	3.71	
	2011		3.50	3.65	
	2010		3.47	3.62	**
2016–2020 Five-Year Average			**3.52**	**3.64**	
2015–2019 Five-Year Average			**3.54**	**3.68**	
2014–2018 Five-Year Average			**3.52**	**3.70**	
2013–2017 Five-Year Average			**3.53**	**3.72**	
2012–2016 Five-Year Average			**3.55**	**3.73**	
2011–2015 Five-Year Average			**3.53**	**3.72**	
2010–2014 Five-Year Average			**3.52**	**3.69**	

Question	Year	Scale	HRM	Other	Sig.
Arrest for DUI	2020	1-5	3.80	3.74	*
1=Very Unlikely to 5=Very Likely	2019		3.79	3.76	*
	2018		3.91	3.69	**
	2017		3.89	3.75	**
	2016		3.80	3.66	**
	2015		3.76	3.67	*
	2014		3.89	3.75	**
	2013		3.67	3.49	*
	2012		3.72	3.61	**
	2011		3.65	3.62	
	2010		3.61	3.52	
2016–2020 Five-Year Average			**3.84**	**3.72**	
2015–2019 Five-Year Average			**3.83**	**3.71**	
2014–2018 Five-Year Average			**3.85**	**3.70**	
2013–2017 Five-Year Average			**3.80**	**3.66**	
2012–2016 Five-Year Average			**3.77**	**3.64**	
2011–2015 Five-Year Average			**3.74**	**3.63**	
2010–2014 Five-Year Average			**3.71**	**3.60**	

Question	Year	Scale	HRM	Other	Sig.
RSH Seat Belt 0=No, 1=Yes	2020	1-5	0.80	0.76	
	2019		0.80	0.77	
	2018		0.79	0.74	
	2017		0.77	0.73	
	2016		0.74	0.81	**
	2015		0.82	0.82	
	2014		0.69	0.75	**
	2013		0.82	0.83	
	2012		0.87	0.88	
	2011		0.85	0.83	
	2010		0.77	0.77	
2016–2020 Five-Year Average			**0.78**	**0.76**	
2015–2019 Five-Year Average			**0.78**	**0.77**	
2014–2018 Five-Year Average			**0.76**	**0.77**	
2013–2017 Five-Year Average			**0.77**	**0.79**	
2012–2016 Five-Year Average			**0.79**	**0.82**	
2011–2015 Five-Year Average			**0.81**	**0.82**	
2010–2014 Five-Year Average			**0.80**	**0.81**	

Question	Year	Scale	HRM	Other	Sig.
RSH Speeding 0=No, 1=Yes	2020	1-5	0.38	0.47	**
	2019		0.40	0.48	*
	2018		0.35	0.44	**
	2017		0.32	0.45	**
	2016		0.35	0.50	**
	2015		0.36	0.53	**
	2014		0.29	0.39	**
	2013		0.33	0.42	**
	2012		0.31	0.40	**
	2011		0.32	0.39	*
	2010		0.50	0.58	
2016–2020 Five-Year Average			**0.36**	**0.47**	
2015–2019 Five-Year Average			**0.36**	**0.48**	
2014–2018 Five-Year Average			**0.33**	**0.46**	
2013–2017 Five-Year Average			**0.33**	**0.46**	
2012–2016 Five-Year Average			**0.33**	**0.45**	
2011–2015 Five-Year Average			**0.32**	**0.43**	
2010–2014 Five-Year Average			**0.35**	**0.44**	

Question	Year	Scale	HRM	Other	Sig.
RSH DUI	2020	1-5	0.92	0.86	
0=No, 1=Yes	2019		0.92	0.84	*
	2018		0.92	0.84	
	2017		0.91	0.88	
	2016		0.92	0.90	
	2015		0.90	0.91	
	2014		0.86	0.85	
	2013		0.91	0.89	
	2012		0.91	0.89	
	2011		0.94	0.87	**
	2010		0.88	0.84	
2016–2020 Five-Year Average			**0.92**	**0.86**	
2015–2019 Five-Year Average			**0.91**	**0.87**	
2014–2018 Five-Year Average			**0.90**	**0.88**	
2013–2017 Five-Year Average			**0.90**	**0.89**	
2012–2016 Five-Year Average			**0.90**	**0.89**	
2011–2015 Five-Year Average			**0.90**	**0.88**	
2010–2014 Five-Year Average			**0.90**	**0.87**	

*Statistically significant difference at the 5% level
**Statistically significant difference at the 1% level

Table B.2 Longitudinal Response Averages from High-Risk Female Drivers

Question	Year	Scale	HRF	Other	Sig.
Seat Belt Use	2020	1-5	4.69	4.73	*
1=Never to 5=Always	2019		4.66	4.75	
	2018		4.72	4.75	**
	2017		4.65	4.73	
	2016		4.65	4.71	
	2015		4.60	4.68	
	2014		4.67	4.65	
	2013		4.58	4.51	
2016–2020 Five-Year Average			**4.67**	**4.73**	
2015–2019 Five-Year Average			**4.66**	**4.72**	
2014–2018 Five-Year Average			**4.66**	**4.70**	
2013–2017 Five-Year Average			**4.63**	**4.66**	
Question	Year	Scale	HRF	Other	Sig.
Ticket Likely Seat Belt	2020	1-5	3.03	3.18	
1=Very Unlikely to 5=Very Likely	2019		3.18	3.13	*
	2018		3.19	3.17	
	2017		3.14	3.19	
	2016		3.33	3.26	*
	2015		3.30	3.33	
	2014		3.19	3.25	
	2013		3.15	3.25	*
2016–2020 Five-Year Average			**3.17**	**3.19**	
2015–2019 Five-Year Average			**3.23**	**3.22**	
2014–2018 Five-Year Average			**3.23**	**3.24**	
2013–2017 Five-Year Average			**3.22**	**3.26**	
Question	Year	Scale	HRF	Other	Sig.
Ticket Likely Speed	2020	1-5	3.65	3.58	*
1=Very Unlikely to 5=Very Likely	2019		3.81	3.68	**
	2018		3.78	3.61	**
	2017		3.73	3.66	*
	2016		3.87	3.68	**
	2015		3.89	3.79	**
	2014		3.82	3.72	
	2013		3.76	3.70	
2016–2020 Five-Year Average			**3.77**	**3.64**	
2015–2019 Five-Year Average			**3.82**	**3.68**	
2014–2018 Five-Year Average			**3.82**	**3.69**	
2013–2017 Five-Year Average			**3.81**	**3.71**	

Question	Year	Scale	HRF	Other	Sig.
Arrest for DUI	2020	1-5	3.99	3.74	**
1=Very Unlikely to 5=Very Likely	2019		3.99	3.76	**
	2018		4.04	3.69	**
	2017		4.09	3.75	**
	2016		4.06	3.66	**
	2015		3.98	3.67	**
	2014		3.95	3.65	**
	2013		3.67	3.44	*
2016–2020 Five-Year Average			**4.03**	**3.72**	
2015–2019 Five-Year Average			**4.03**	**3.71**	
2014–2018 Five-Year Average			**4.02**	**3.68**	
2013–2017 Five-Year Average			**3.95**	**3.63**	
Question	Year	Scale	HRF	Other	Sig.
RSH Seat Belt	2020	1-5	0.81	0.76	
0=No, 1=Yes	2019		0.73	0.77	**
	2018		0.71	0.74	**
	2017		0.69	0.73	*
	2016		0.75	0.81	**
	2015		0.76	0.82	**
	2014		0.65	0.80	**
	2013		0.78	0.84	**
2016–2020 Five-Year Average			**0.74**	**0.76**	
2015–2019 Five-Year Average			**0.73**	**0.77**	
2014–2018 Five-Year Average			**0.71**	**0.78**	
2013–2017 Five-Year Average			**0.73**	**0.80**	
Question	Year	Scale	HRF	Other	Sig.
RSH Speeding	2020	1-5	0.31	0.47	**
0=No, 1=Yes	2019		0.33	0.48	**
	2018		0.32	0.44	**
	2017		0.28	0.45	**
	2016		0.29	0.50	**
	2015		0.35	0.53	**
	2014		0.27	0.45	**
	2013		0.22	0.47	**
2016–2020 Five-Year Average			**0.31**	**0.47**	
2015–2019 Five-Year Average			**0.31**	**0.48**	
2014–2018 Five-Year Average			**0.30**	**0.47**	
2013–2017 Five-Year Average			**0.28**	**0.48**	

Question	Year	Scale	HRF	Other	Sig.
RSH DUI	2020	1-5	0.92	0.86	*
0=No, 1=Yes	2019		0.89	0.84	
	2018		0.92	0.84	
	2017		0.85	0.88	
	2016		0.88	0.90	
	2015		0.89	0.91	
	2014		0.83	0.86	
	2013		0.88	0.90	
2016–2020 Five-Year Average			**0.89**	**0.86**	
2015–2019 Five-Year Average			**0.89**	**0.87**	
2014–2018 Five-Year Average			**0.87**	**0.88**	
2013–2017 Five-Year Average			**0.87**	**0.89**	

*Statistically significant difference at the 5% level
**Statistically significant difference at the 1% level

APPENDIX C. MISSING/REFUSE TO ANSWER RESPONSES

Q#	Question	Total Responses	Missing Responses
	Seat Belt		
Q1	Seat Belt Use	1,608	2
Q2	Chance Ticket Seat Belt	1,601	9
Q3	Primary Seat Belt Law	1,607	3
	Speeding		
Q4	Chance Ticket Speeding	1,604	6
Q5	Speed, 75 MPH Zone	1,608	2
Q6	Higher Speeding Fines	1,601	9
Q7	Higher Speed Limits on Hwy.	1,603	7
	Alcohol/Impairment		
Q8	Chance Arrest Drinking	1,608	2
Q9	Drugged Driving	1,605	5
Q10	Sober Driver	1,596	14
Q11a	Drive 1-2 Drinks	1,568	42
Q11b	Drive 3+ Drinks	1,441	169
	Distracted Driving		
Q12	Cell Phone Talk	1,600	10
Q13	Cell Phone Text	1,606	4
Q14	Ban Hand-Held Cell Use	1,602	8
Q15	Ticket, Distracted Driving	1,596	14
	Awareness/Exposure		
Q16a	RSH Seat Belt	1,575	35
Q16b	RSH Speeding	1,546	64
Q16c	RSH Drunk Driving	1,576	34
Q16d	RSH Distracted Driving	1,565	45
Q16e	RSH *Vision Zero*	1,546	64
Total n=1,610			

APPENDIX D. DRIVER RESPONSES BY REGION AND GEOGRAPHY

Question	Region or Geography, Response					
What are the chances of getting a ticket if you…	Don't wear your seat belt		Drive over the speed limit		Drive after drinking alcohol	
	EAST	WEST	EAST	WEST	EAST	WEST
V. Likely	12.7%	6.7%	13.5%	14.8%	30.7%	35.4%
Likely	20.5%	26.6%	37.0%	44.0%	32.6%	29.1%
Sw. Likely	39.7%	38.1%	42.4%	36.8%	28.3%	27.9%
Unlikely	20.4%	21.8%	5.9%	3.2%	6.7%	6.5%
V. Unlikely	6.7%	6.8%	1.2%**	1.3%**	1.6%**	1.2%**
What are the chances of getting a ticket if you…	Don't wear your seat belt		Drive over the speed limit		Drive after drinking alcohol	
	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL
V. Likely	10.3%	9.9%	13.8%	14.6%	32.1%	34.1%
Sw. Likely	23.2%	22.5%	39.2%	42.1%	31.9%	29.1%
Likely	39.1%	38.9%	40.8%	38.2%	27.9%	28.7%
Unlikely	20.5%	22.5%	5.0%	4.0%	6.7%	6.4%
V. Unlikely	6.9%	6.1%	1.2%**	1.1%**	1.3%**	1.8%**
Times driving after drinking 1-2 drinks in the past 60 days…			None	1-5 Times	6-10 Times	10+ Times
East			69.7%	28.0%	1.2%**	1.1%**
West			64.2%	33.7%	1.4%**	0.8%**
Urban			66.5%	30.9%	1.4%**	1.2%**
Rural			69.9%	28.7%	1.0%**	0.4%**
Times driving after drinking 3+ drinks in the past 60 days…			None	1-5 Times	6-10 Times	10+ Times
East			93.4%	6.3%	0.2%**	0.1%**
West			93.8%	5.8%	0.4%**	0.0%**
Urban			93.7%	6.1%	0.2%**	0.1%**
Rural			93.2%	6.3%	0.4%**	0.2%**
Seat Belt Use	Always		N. Always	Sometimes	Rarely	Never
East	80.1%		15.2%	3.5%	1.1%**	0.1%**
West	72.8%		19.8%	4.9%	1.8%**	0.6%**
Urban	83.1%		12.3%	3.1%	1.3%**	0.2%**
Rural	60.1%		30.8%	6.9%	1.7%**	0.5%**

**Fewer than 30 responses in this group

APPENDIX E. EXPOSURE TO TRAFFIC SAFETY MESSAGES

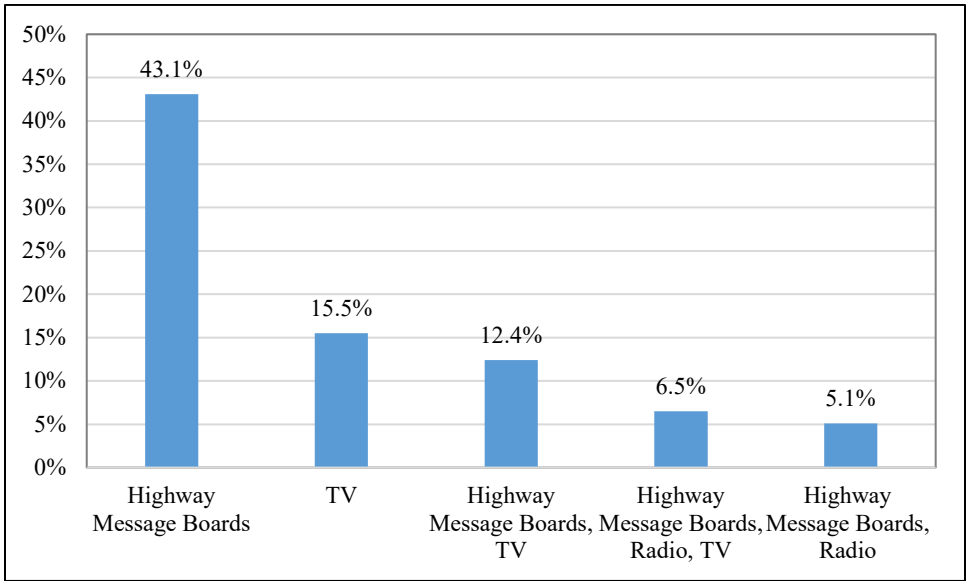

Figure E.1 Exposure to Messages about Seat Belt Use, by Source

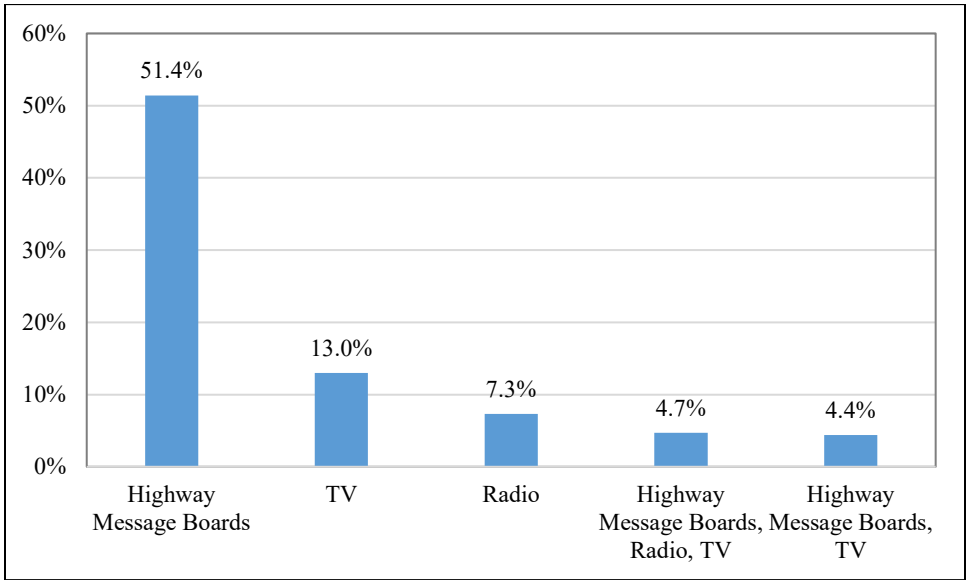

Figure E.2 Exposure to Messages about Speeding, by Source

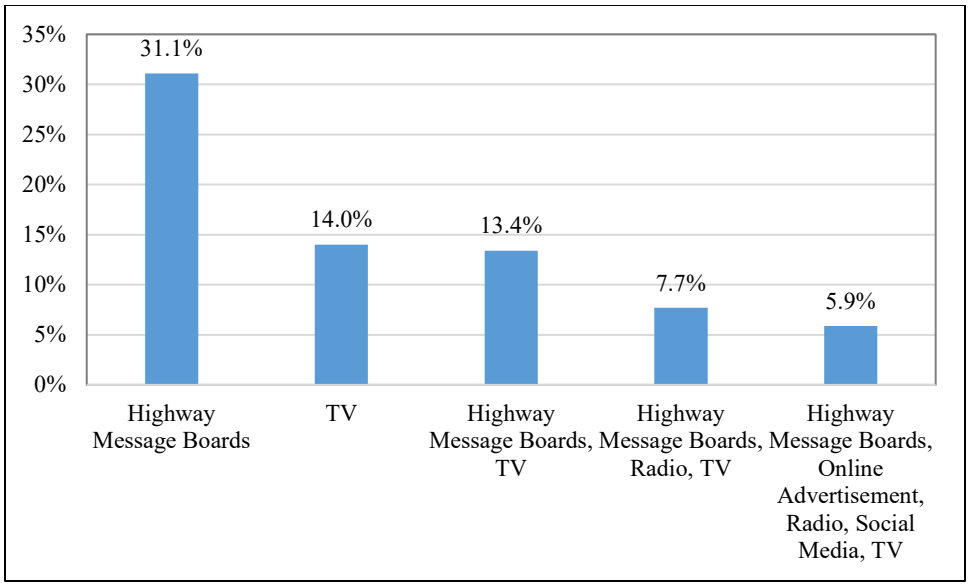

Figure E.3 Exposure to Messages about Impaired Driving, by Source

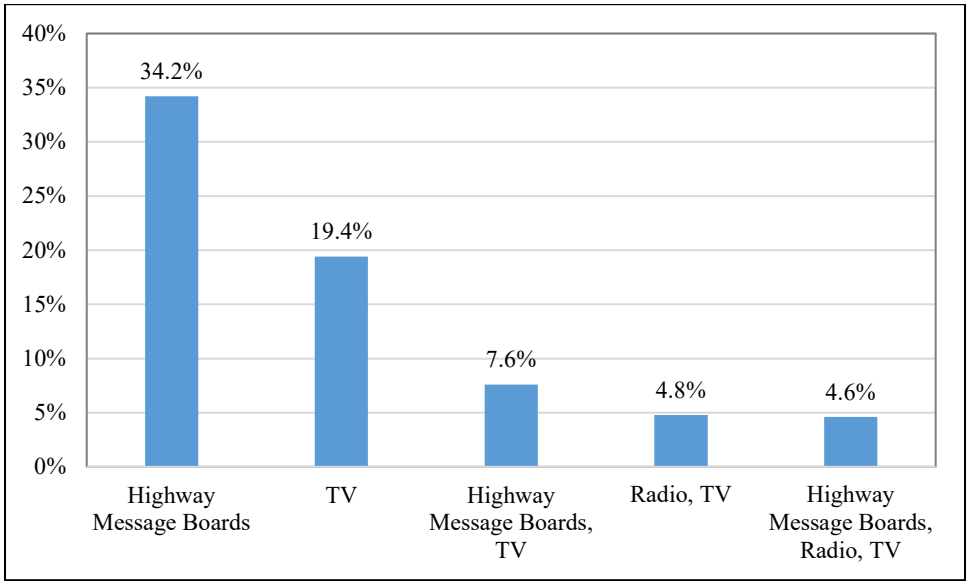

Figure E.4 Exposure to Messages about Distracted Driving, by Source

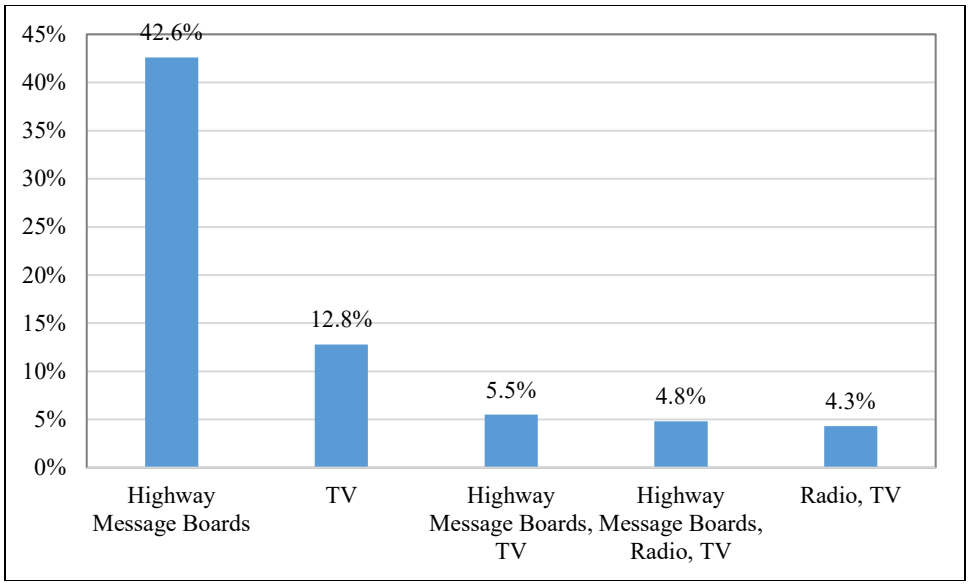

Figure E.5 Exposure to Messages about *Vision Zero*, by Source

APPENDIX F. DRIVER RESPONSES BY VEHICLE TYPE

Table F.1 Seat Belt Use, by Vehicle Type

Vehicle Type	Never or Rarely	Sometimes	Nearly Always or Always
Car	1.2%**	3.9%**	94.9%
Pickup	3.7%**	8.5%	87.8%
SUV	1.5%**	3.2%**	95.2%
Van	0.7%**	1.6%**	97.7%
Semi/Large Truck	0.0%**	2.5%**	97.5%**

**Fewer than 30 responses in this group

Table F.2 Speeding in 75-mile-per-hour Zone, by Vehicle Type

Vehicle Type	Never or Rarely	Sometimes	Nearly Always or Always
Car	66.1%	24.4%	9.4%
Pickup	68.5%	23.3%	8.3%
SUV	64.3%	23.8%	12.0%
Van	67.1%	27.7%**	5.2%**
Semi/Large Truck	87.9%**	12.1%**	0.0%**

**Fewer than 30 responses in this group

Table F.3 Times Driving After Consuming 1 to 2 Alcoholic Beverages, by Vehicle Type

Vehicle Type	None	1-5 Times	6-10 Times	10+ Times
Car	70.9%	26.8%	1.4%**	1.0%**
Pickup	54.6%	41.7%	3.5%**	0.2%**
SUV	68.2%	29.9%	0.5%**	1.4%**
Van	81.0%	17.2%	1.9%**	0.0%**
Semi/Large Truck	80.8%**	19.2%**	0.0%**	0.0%**

**Fewer than 30 responses in this group

Table F.4 Times Driving After Consuming 3-plus Alcoholic Beverages, by Vehicle Type

Vehicle Type	None	1-5 Times	6-10 Times	10+ Times
Car	93.2%	6.4%**	0.3%**	0.1%**
Pickup	84.3%	14.7%	0.5%**	0.4%**
SUV	95.9%	3.9%**	0.1%**	0.0%**
Van	96.6%	3.4%**	0.0%**	0.0%**
Semi/Large Truck	97.1%**	2.9%**	0.0%**	0.0%**

**Fewer than 30 responses in this group

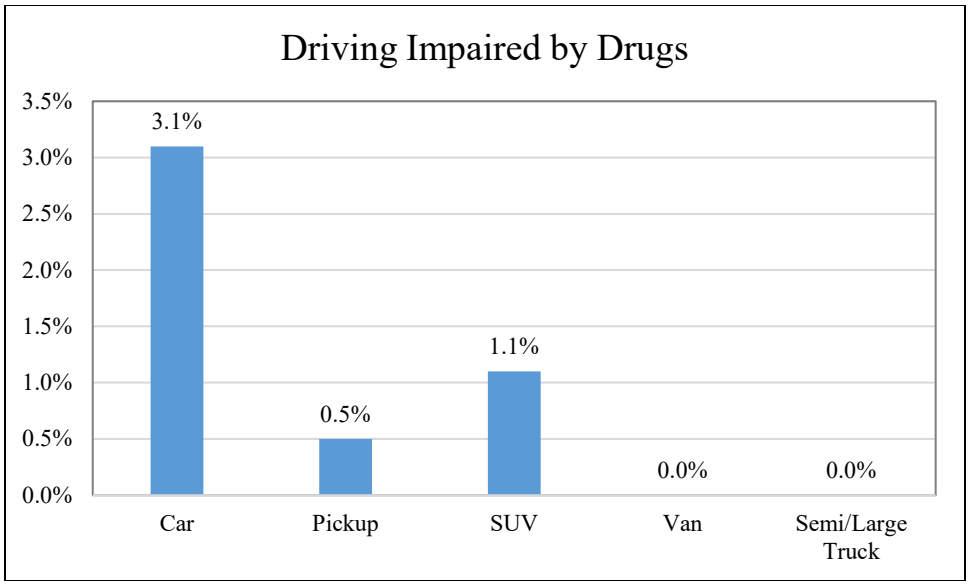

Figure F.1 Driving Impaired by Drugs, by Vehicle Type

APPENDIX G. COUNTY-LEVEL RESPONSES

Table G.1 Seat Belt Use

County*	Never	Rarely	Sometimes	Nearly Always	Always
Burleigh	0.6%	2.3%	4.7%	13.5%	78.9%
Cass	0.0%	0.9%	1.5%	4.8%	92.9%
Dickey	0.0%	1.0%	3.3%	51.0%	44.7%
Grand Forks	0.0%	0.0%	1.6%	8.1%	90.3%
McKenzie	0.0%	0.0%	5.8%	31.9%	62.2%
McLean	0.0%	0.7%	4.1%	23.4%	71.8%
Mercer	1.6%	0.0%	1.8%	41.9%	54.7%
Morton	0.0%	0.0%	8.8%	19.8%	71.3%
Pembina	0.0%	0.0%	28.8%	22.8%	48.5%
Stark	0.0%	1.1%	1.3%	12.3%	85.3%
Stutsman	0.0%	1.6%	1.9%	32.4%	64.0%
Traill	0.0%	0.0%	1.6%	15.6%	82.8%
Walsh	0.6%	0.0%	4.7%	38.2%	56.5%
Ward	0.9%	3.9%	4.9%	22.0%	68.3%
Williams	0.0%	0.0%	5.0%	16.8%	78.2%

*Only counties with 30 or more responses are included

Table G.2 Chances Ticket No Seat Belt

County*	Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
Burleigh	6.6%	25.2%	41.3%	22.2%	4.8%
Cass	8.6%	20.6%	41.2%	17.2%	12.4%
Dickey	10.6%	30.4%	36.4%	16.7%	6.0%
Grand Forks	4.8%	19.3%	33.0%	32.2%	10.7%
McKenzie	1.0%	34.3%	35.8%	22.1%	6.7%
McLean	1.8%	14.6%	47.4%	24.2%	12.1%
Mercer	9.3%	29.4%	42.0%	13.5%	5.9%
Morton	10.5%	15.7%	56.4%	15.8%	1.5%
Pembina	14.1%	19.0%	40.6%	9.0%	17.3%
Stark	5.4%	21.1%	40.9%	31.3%	1.3%
Stutsman	10.1%	13.7%	33.1%	36.7%	6.4%
Traill	3.4%	13.7%	45.3%	27.6%	10.0%
Walsh	1.7%	28.9%	43.5%	18.0%	7.9%
Ward	8.9%	22.5%	23.3%	33.3%	11.9%
Williams	1.7%	20.6%	28.6%	38.0%	11.1%

*Only counties with 30 or more responses are included

Table G.3 Support/Opposition for Primary Seat Belt Law

County*	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
Burleigh	7.2%	16.8%	18.1%	16.2%	41.7%
Cass	3.9%	4.2%	15.8%	23.5%	52.6%
Dickey	4.1%	6.6%	28.7%	45.8%	14.9%
Grand Forks	1.7%	9.1%	13.6%	31.5%	44.1%
McKenzie	16.9%	3.6%	23.7%	25.2%	30.7%
McLean	15.1%	11.8%	5.7%	26.8%	40.6%
Mercer	14.0%	24.1%	6.6%	9.7%	45.5%
Morton	4.3%	28.7%	24.4%	12.8%	29.9%
Pembina	6.6%	7.2%	20.4%	17.8%	48.0%
Stark	9.6%	10.3%	14.7%	28.4%	37.1%
Stutsman	29.6%	14.1%	15.6%	13.9%	26.8%
Traill	11.5%	3.2%	19.0%	19.8%	46.5%
Walsh	8.1%	26.1%	18.4%	29.2%	18.2%
Ward	14.2%	19.8%	15.0%	18.3%	32.7%
Williams	10.8%	13.3%	28.6%	19.0%	28.2%

*Only counties with 30 or more responses are included

Table G.4 Ticket Likelihood for Speeding

County*	Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
Burleigh	3.0%	2.3%	37.1%	46.9%	10.7%
Cass	1.2%	7.8%	48.2%	30.8%	12.0%
Dickey	0.0%	0.0%	37.4%	44.6%	18.1%
Grand Forks	1.6%	3.1%	43.0%	43.1%	9.4%
McKenzie	1.0%	4.4%	35.3%	39.1%	20.1%
McLean	0.0%	3.2%	40.3%	44.9%	11.6%
Mercer	0.0%	0.0%	42.5%	50.7%	6.7%
Morton	0.0%	1.6%	50.2%	46.5%	1.7%
Pembina	0.0%	2.6%	40.6%	36.1%	20.6%
Stark	0.7%	3.3%	42.2%	41.6%	12.2%
Stutsman	0.0%	10.9%	23.0%	46.0%	20.1%
Traill	1.0%	4.1%	44.9%	34.0%	16.0%
Walsh	1.7%	3.2%	39.4%	33.6%	22.1%
Ward	0.4%	5.7%	35.6%	36.9%	21.5%
Williams	0.0%	2.8%	29.5%	39.4%	28.4%

*Only counties with 30 or more responses are included

Table G.5 Support/Opposition for Higher Fines for Speeding Violations

County*	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
Burleigh	14.1%	21.1%	20.6%	26.4%	17.8%
Cass	10.0%	16.5%	27.7%	28.3%	17.5%
Dickey	15.8%	14.8%	48.7%	16.7%	4.1%
Grand Forks	9.9%	12.9%	36.5%	21.4%	19.3%
McKenzie	20.0%	10.8%	29.5%	10.7%	28.9%
McLean	20.5%	11.4%	33.6%	17.3%	17.2%
Mercer	24.1%	17.1%	38.8%	14.4%	5.6%
Morton	11.9%	24.7%	33.5%	21.9%	8.0%
Pembina	16.3%	18.7%	35.4%	9.1%	20.5%
Stark	27.8%	22.8%	27.9%	10.6%	10.9%
Stutsman	6.4%	11.1%	30.7%	22.3%	29.5%
Traill	9.9%	19.3%	33.3%	21.7%	15.8%
Walsh	13.7%	42.9%	19.5%	19.7%	4.2%
Ward	27.5%	17.2%	25.4%	19.0%	10.8%
Williams	19.2%	3.1%	46.1%	16.8%	14.7%

*Only counties with 30 or more responses are included

Table G.6 Chances of Arrest for Driving Buzzed/Drunk

County*	Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
Burleigh	0.7%	10.5%	33.8%	24.0%	31.0%
Cass	0.9%	7.4%	29.5%	35.4%	26.8%
Dickey	0.0%	9.8%	20.4%	40.1%	29.8%
Grand Forks	3.1%	4.0%	27.2%	30.6%	35.0%
McKenzie	1.0%	10.6%	37.7%	13.7%	37.0%
McLean	0.0%	9.6%	43.8%	22.2%	24.4%
Mercer	0.0%	3.4%	18.8%	46.3%	31.5%
Morton	0.0%	0.9%	40.3%	41.4%	17.4%
Pembina	1.5%	2.3%	34.5%	22.9%	38.9%
Stark	6.9%	4.7%	19.8%	21.8%	46.8%
Stutsman	0.0%	6.3%	13.9%	38.5%	41.3%
Traill	10.1%	4.2%	12.5%	45.8%	27.4%
Walsh	7.2%	9.1%	17.7%	45.7%	20.3%
Ward	0.0%	6.7%	15.6%	43.0%	34.8%
Williams	1.0%	0.0%	27.8%	19.4%	51.8%

*Only counties with 30 or more responses are included

Table G.7 Cell Phone Talking Frequency

County*	Never	<1/Month	Few/Month	Few/Week	Daily
Burleigh	10.3%	11.8%	24.7%	33.2%	20.0%
Cass	26.9%	13.9%	28.5%	19.5%	11.1%
Dickey	7.1%	13.5%	30.7%	34.5%	14.1%
Grand Forks	16.5%	13.4%	32.4%	15.7%	21.9%
McKenzie	4.3%	10.7%	46.5%	27.5%	11.0%
McLean	11.8%	30.1%	28.9%	18.8%	10.5%
Mercer	7.6%	31.4%	34.8%	22.1%	4.2%
Morton	20.2%	8.4%	11.7%	19.9%	39.9%
Pembina	21.6%	20.2%	21.6%	20.4%	16.2%
Stark	14.5%	7.2%	31.8%	25.8%	20.7%
Stutsman	17.0%	9.9%	55.2%	15.7%	2.2%
Traill	11.3%	21.8%	29.2%	19.1%	18.5%
Walsh	13.9%	12.2%	34.3%	28.0%	11.7%
Ward	15.6%	15.0%	32.1%	25.3%	12.0%
Williams	26.8%	7.0%	41.8%	9.8%	14.6%

*Only counties with 30 or more responses are included

Table G.8 Cell Phone Texting Frequency

County*	Never	<1/Month	Few/Month	Few/Week	Daily
Burleigh	41.8%	20.9%	13.7%	8.1%	15.5%
Cass	61.3%	18.7%	11.2%	5.5%	3.3%
Dickey	43.4%	14.0%	17.9%	24.7%	0.0%
Grand Forks	49.2%	12.4%	16.8%	12.0%	9.5%
McKenzie	26.9%	11.6%	21.1%	22.7%	17.8%
McLean	52.0%	2.0%	20.3%	17.3%	8.4%
Mercer	56.3%	11.0%	24.3%	7.3%	1.0%
Morton	46.3%	9.3%	12.7%	23.8%	7.9%
Pembina	24.7%	15.4%	19.8%	27.6%	12.6%
Stark	41.3%	17.7%	20.1%	14.5%	6.3%
Stutsman	73.0%	1.0%	20.2%	1.2%	4.6%
Traill	46.6%	29.4%	7.5%	16.4%	0.0%
Walsh	30.9%	22.6%	27.9%	11.6%	7.0%
Ward	42.9%	17.1%	17.3%	11.1%	11.7%
Williams	32.0%	23.0%	23.3%	20.6%	1.0%

*Only counties with 30 or more responses are included