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North Dakota Statewide Traffic Safety Survey, 2019: Traffic Safety Performance Measures for State and Federal Agencies

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North Dakota Department of Transportation Safety Division

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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 2019) (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, 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 U.S. roadways. 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).

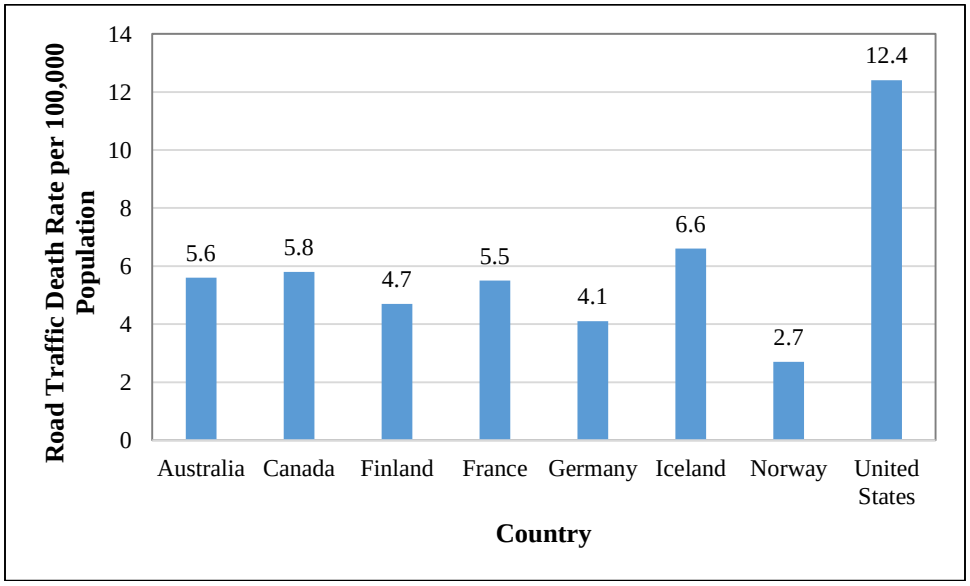


Figure 1.1 Road Traffic Death Rate of Selected Countries, 2016

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 occur 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 the following:

- 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 age 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:

- 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 driver 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 "2019 North Dakota Driver Survey" developed in conjunction with the North Dakota Department of Transportation's Safety Division (see Appendix A for 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-1) In the past 60 days, how many times have you driven a motor vehicle within two hours after drinking alcoholic beverages?
    - 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 seat belts 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 chance is 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 2018a). The most recent Strategic Highway Safety Plan outlines goals related to NDDOT's overall traffic safety mission, 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 the 2017 observed seat belt use rate at 79.3% (NDDOT 2018b). Results 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 survey objectives. The questionnaire was mailed to North Dakota drivers on March 1, 2019, and was open to response until April 20, 2019.

NDDOT adult driver records formed the population used for sampling. Originally, the NDDOT mail list consisted of 10,921 driver addresses. From this preliminary list of addresses, it was discovered that 206 addresses were invalid and unable to be mailed. From the remaining 10,715 drivers, NDDOT received three as undeliverable. Therefore, a total of 10,712 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, 1,944 surveys were completed and returned to the research team. However, not all of the surveys were from valid North Dakota counties. A total of 46 respondents did not provide an answer to the "In which county do you live?" question and were removed from the sample. Moreover, three responses were from individuals living in counties outside of North Dakota. Therefore, of the usable survey responses provided, 1,895 were confirmed as valid and form 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% being typical, a slightly better response rate was expected due to the parameters used in the survey design and administration. These parameters include 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 males and 18-to-34-year-old females. 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. Using these simple average responses, however, would provide skewed results in representing the statewide driver population. For example, drivers age 18 to 34 were 69.2% of the survey sample and accounted for 37.1% of the survey responses. However, this age cohort only accounts for 32.4% of the licensed driver population in the state (Levi et al. 2016). 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.

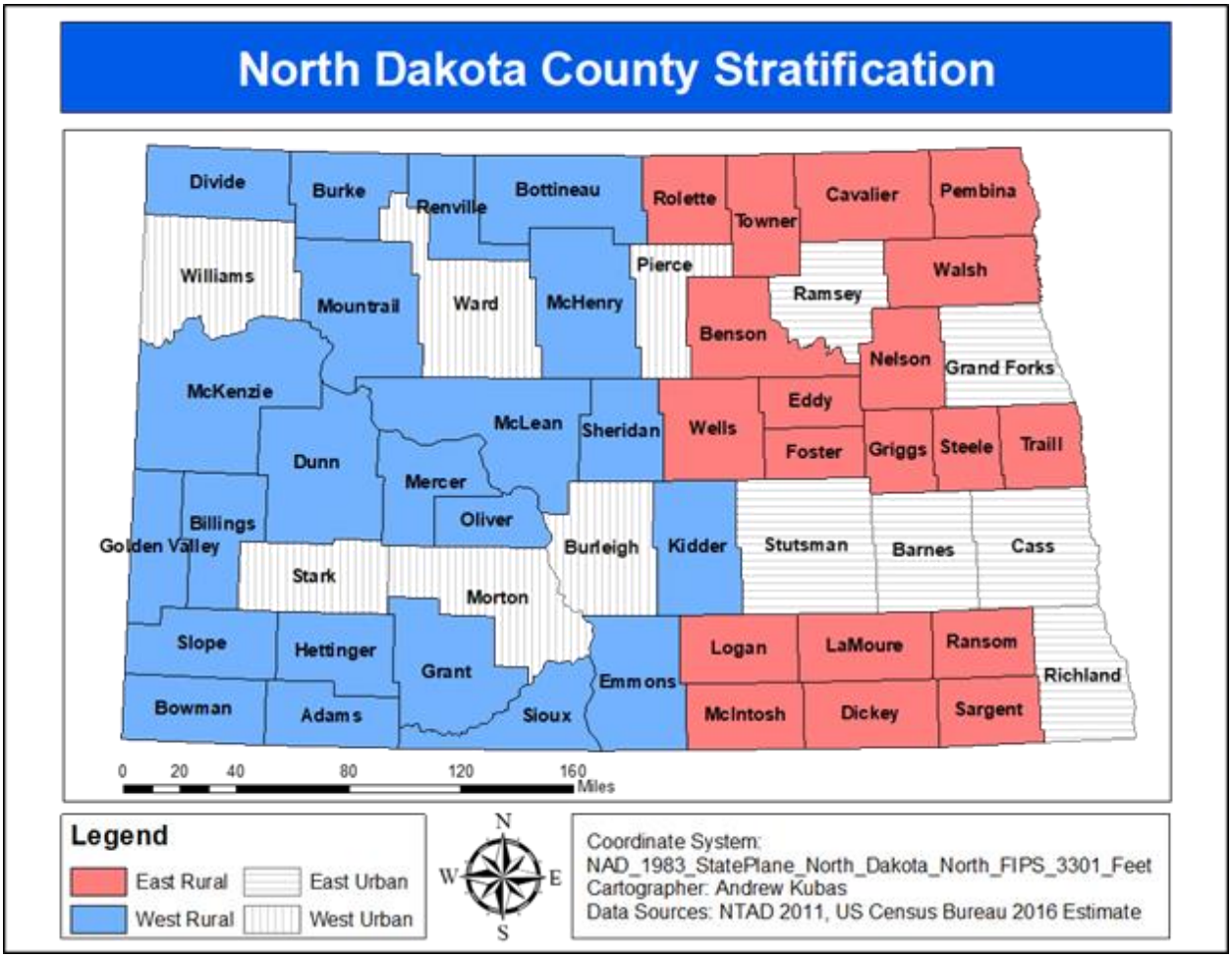


Figure 2.1 County Stratification

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 U.S. 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 17.7% with 1,895 valid responses obtained from a mailing to 10,712 drivers. The response rate was comparable to prior surveys (Vachal, Benson, and Kubas 2010-2018) and was 0.2% higher than the 2018 mailing (Vachal, Benson, and Kubas 2018). 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 9.3% compared with 35.4% 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	515 (27.2%)	459 (24.2%)	**974 (51.4%)**
	West	502 (26.5%)	419 (22.1%)	**921 (48.6%)**
	Total	**1,017 (53.7%)**	**878 (46.3%)**	**1,895**

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 to 34; this age cohort makes up 28.7% 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 35-to-44-year-old age cohort makes up the lowest proportion of survey responses. 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 N.D. driver population. Response rates were slightly skewed by gender: 58.8% of the sample identified as female. This deviates from the N.D. driver population, which has 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 number of responses from each age group is sufficient for analysis. 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	160	8.5%	65,669	12.3%
25-34	543	28.7%	112,025	20.9%
35-44	125	6.6%	83,582	15.6%
45-54	181	9.6%	85,705	16.0%
55-64	378	20.0%	93,293	17.4%
65-74	299	15.8%	55,520	10.4%
75 and Older	207	10.9%	39,130	7.3%

[1]Represents share of drivers above age 18; percentages do not account for novice (under 18) drivers
Frequency Missing: 2
Source: Levi et al. 2016

4. RESULTS

Responses to the survey questions provide valuable insight into driver perceptions, attitudes, and behaviors regarding traffic safety. 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 2010-2019 response 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 65.2% of drivers think the chances are higher than average that impaired drivers will be arrested (Figure 4.1). This is higher than the 61.9% and 34.6% of respondents who believe there is a greater than average likelihood that drivers will be ticketed for speeding or seat belt violations, respectively.

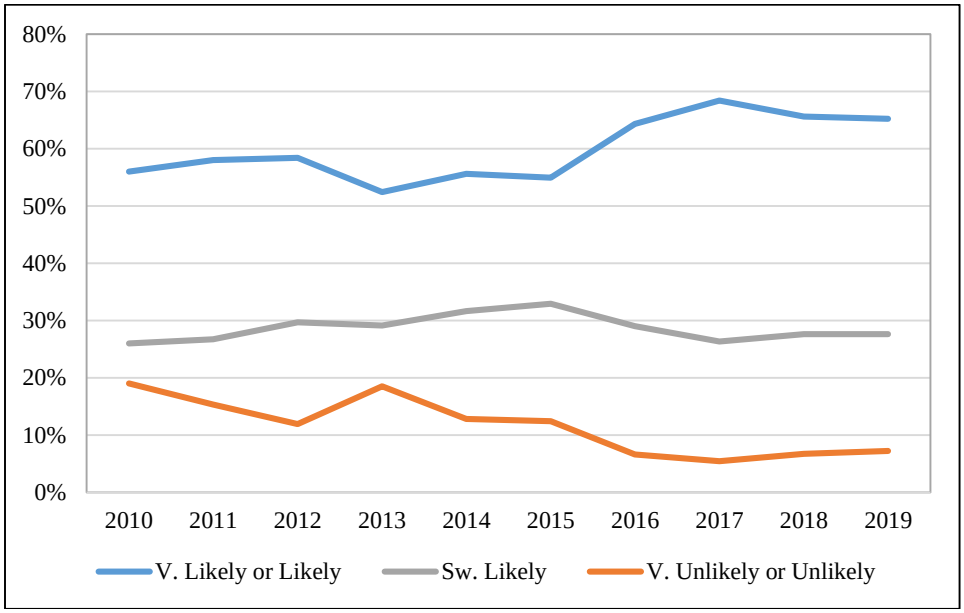


Figure 4.1 Perceived DUI Arrest Likelihood

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 who operated a vehicle at least once within two hours of consuming one or two alcoholic beverages were less likely to think they would be ticketed for not wearing a seat belt ($F=22.903$, $df=1$, $p<0.001$), and were also less likely to believe they would be ticketed for speeding ($F=9.598$, $df=1$, $p=0.002$). 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.

A different pattern occurred among those who chose to operate 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=7.405, df=1, p=0.007) but has no effect on the perceived chance of getting a ticket for speeding (F=0.293, df=1, p=0.588).

Responses from this questionnaire show 35.2% of respondents reported 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 a worsening trend compared with 2018, in which 34.5% of respondents reported this behavior. In contrast, just 7.0% noted they had operated a vehicle within two hours of drinking three or more drinks at least once during the past two months. This represented an improvement compared with 2018, in which 7.4% of drivers admitted to driving a vehicle within two hours of consuming three or more alcoholic beverages.

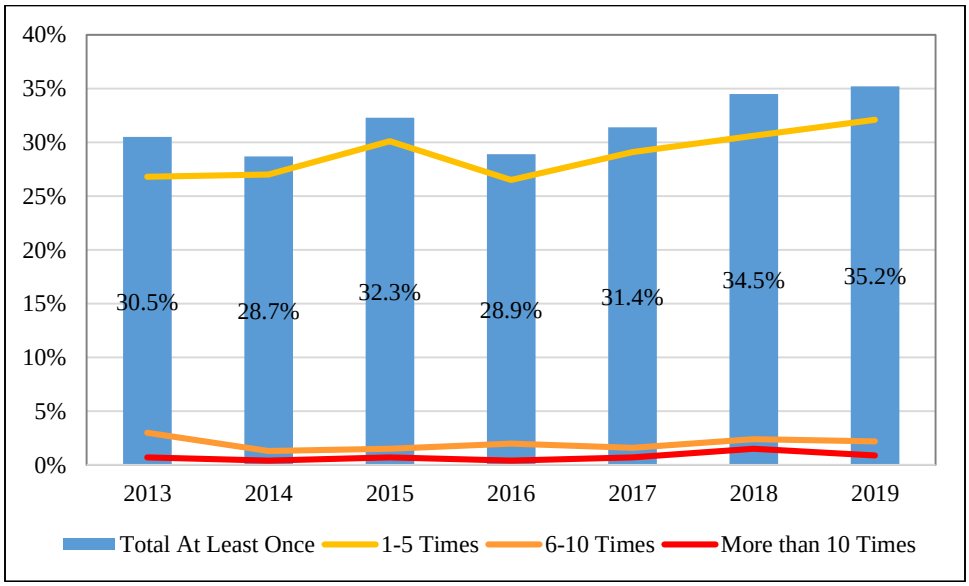


Figure 4.2 Self-Reported Driving-After-Drinking Activity within Two Hours of Consuming 1-2 Drinks

With regard to speeding, 10.0% 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 2018 iteration of the questionnaire, in which 9.4% of respondents reported these levels of speeding on 75-mile-per-hour roads.

Table 4.1 Core Question Responses

Core	Survey Question	Responses			
ID-1	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
	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%*
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%**
	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
	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%*
2015-2019 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		
	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%		
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
	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%
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
	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%
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%**
SB-2	Have you recently read, seen, or heard anything about seat belt law enforcement?					
		Yes	No			
	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%			
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%**			

Table 4.1 Core Question Responses (Continued)

Core	Survey Question	Responses				
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
	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%
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
	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%
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
	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%
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%**

Table 4.1 Core Question Responses (Continued)

Core	Survey Question	Responses	
SP-3	Have you recently read, seen, or heard anything about speed enforcement?		
		Yes	No
	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%
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-1, 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 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 79.3%. Driver self-reported use collected here shows that 76.6% "always" wear a seat belt, with another 17.4% reporting usage as "nearly always" (Figure 4.3). The 76.6% of drivers "always" wearing a seat belt represents a decrease from 77.8% in 2018 but is nonetheless the second-highest usage rate ever reported in the history of this survey. Only 1.4% reported they "rarely" or "never" use a seat belt, which is a slight increase from the 0.9% who reported such use last year. Overall, these metrics indicate that drivers in North Dakota are generally safe with regard to seat belt use.

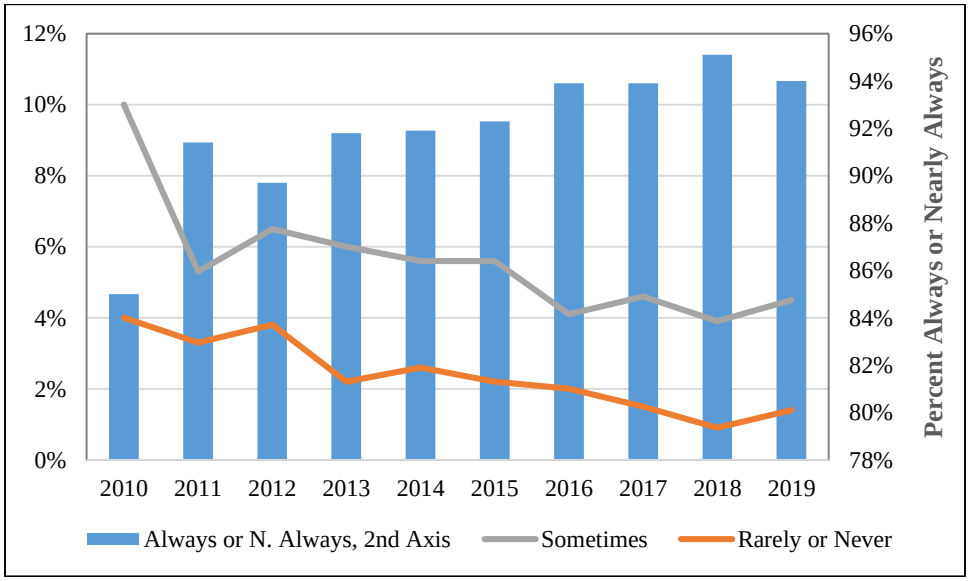


Figure 4.3 Self-Reported Seat Belt Use

Responses to awareness of public media or other educational messages about traffic safety related to drinking, speeding, and seat belt issues revealed speed enforcement is least often read, seen, or heard ("RSH") as a traffic safety topic; just 39.5% of survey participants responded 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 87.0% and 75.2%, respectively. The exposure rate for seat belt use increased compared with 2018.

An examination of the relationships between behavior and enforcement, along with behavior and education awareness, yielded mixed results. One would presume an inverse relationship between a negative behavior – such as speeding – and a related education or enforcement influence, as measured by read, seen, or heard exposure levels and perceived likelihood for ticketing, respectively. As illustrated in Figure 4.4, driver responses are inconsistent with this expectation. The ticket North Dakota drivers least expect to receive – a seat belt violation – is associated with the lowest reported levels of negative behavior.

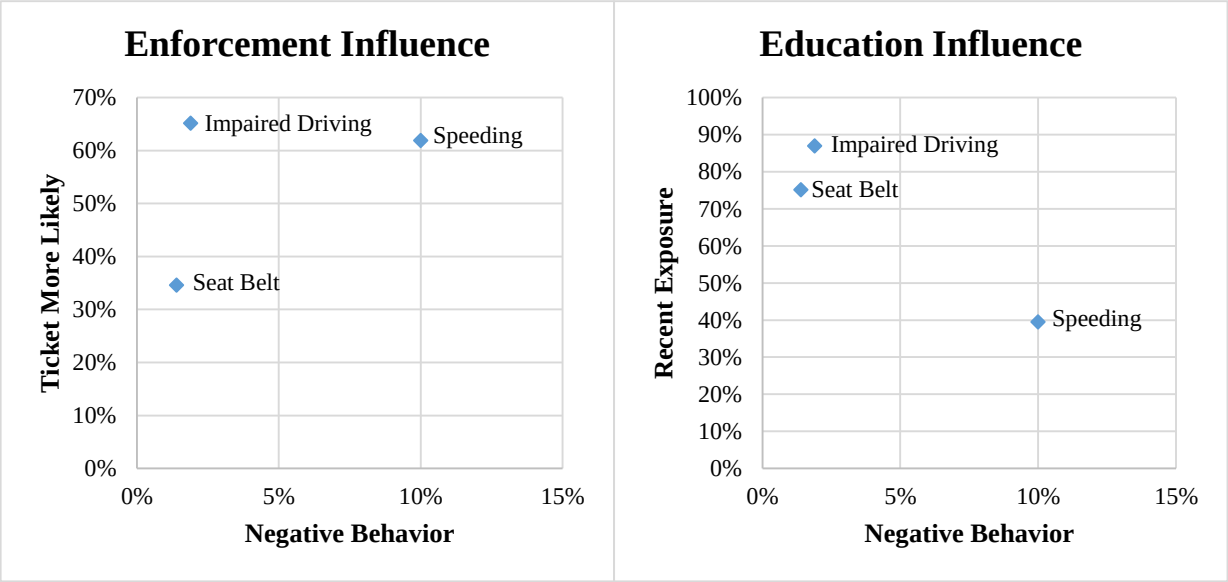


Figure 4.4 Driver Action Related to Enforcement and Education

The education influence, however, follows an expected pattern factoring for responses to read, seen, or heard 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 (87.0%) and seat belt use (75.2%), and these have the lowest levels of self-reported negative behavior at 1.9% and 1.4%, 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 N.D. drivers, education has positive impacts on drivers. Speeding, however, continues to be an area in which North Dakotans behave dangerously. This negative behavior exists when controlling for both enforcement and education separately.

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 coefficient 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.=0.462, but the correlation measure shows that less than 22% of their variability is shared. The Pearson Correlation values suggest there are no strong relationships 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	**.546** **.000**	.089** .000	-.030 .194	-.097** .000	.034 .153	-.095** .000	.194** .000	-.048* .042	-.053* .023
ID1b: Drive After Drinking 3+ Drinks		1	.036 .147	-.042 .093	-.133** .000	.028 .270	-.076** .002	.168** .000	-.020 .422	-.013 .590
ID2: Read, Seen, or Heard Drunk Driving			1	.049* .034	-.005 .844	.476** .000	.021 .364	-.007 .759	.247** .000	-.037 .111
ID3: Arrest for Drunk Driving				1	.012 .610	-.004 .853	.425** .000	.049* .035	.087** .000	.462** .000
SB1: How Often Use Seat Belts					1	-.045 .054	.066** .004	-.021 .373	-.009 .690	.013 .577
SB2: Read, Seen, or Heard Seat Belt						1	.049* .034	-.063** .006	.355** .000	.011 .620
SB3: Ticket for No Seat Belt							1	-.084** .000	.161** .000	**.501**** .000
SP1: Speed on 75 MPH Road								1	-.107** .000	-.021 .366
SP2: Read, Seen, or Heard Speed									1	.114** .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

There were two substantive relationships within the core correlations studied, though these relationships were relatively weak. The first 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.=0.546, $p<0.001$, n=1,613). These two variables share roughly 30% 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. The second relationship pertained to one's perceived likelihood of receiving a ticket for not wearing a seat belt and one's perceived likelihood of receiving a speeding ticket (Pearson Corr.=0.501, $p<0.001$, n=1,879). These variables share roughly 25% of their variability. Once again, this was a positive relationship: if someone thought there was a greater likelihood of receiving a ticket for not wearing a seat belt, the same individual also thought there was a greater likelihood of receiving a speeding ticket. 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.*				37.8%	62.2%
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?	13.1%	23.6%	32.4%	18.0%	12.9%
A primary seat belt law?	37.4%	20.8%	18.1%	11.5%	12.2%
Banning handheld cell phone while driving?	28.6%	27.3%	19.2%	16.0%	8.9%
Driver Distraction					
		<1/Month	Few/Month	Few/Week	Daily
Cell phone talk while driving, frequency[1]		17.1%	34.4%	28.8%	19.7%
Cell phone text while driving, frequency[2]		31.8%	33.0%	24.8%	10.5%
Perceptions of Others					
	Never	Rarely	Sometimes	N. Always	Always
Seat Belt Use, Others	0.1%	1.1%	35.0%	55.7%	8.1%
	Never	<1/Month	Few/Month	Few/Week	Daily
Cell Phone Talk, Others	0.7%	0.3%	4.4%	23.6%	71.0%
Perceptions of Ticketing					
Chances of Distracted Driving Ticket	V. Unlikely	Unlikely	Sw. Likely	Likely	V. Likely
	6.8%	22.8%	38.5%	21.0%	10.9%
Designated Driver					
	Never	Rarely	Sometimes	N. Always	Always
Designate a sober driver[3]	2.9%	4.2%	11.9%	22.6%	58.3%
Drugged Driving					
				Yes	No
Driving abilities compromised by drugs				1.0%	99.0%

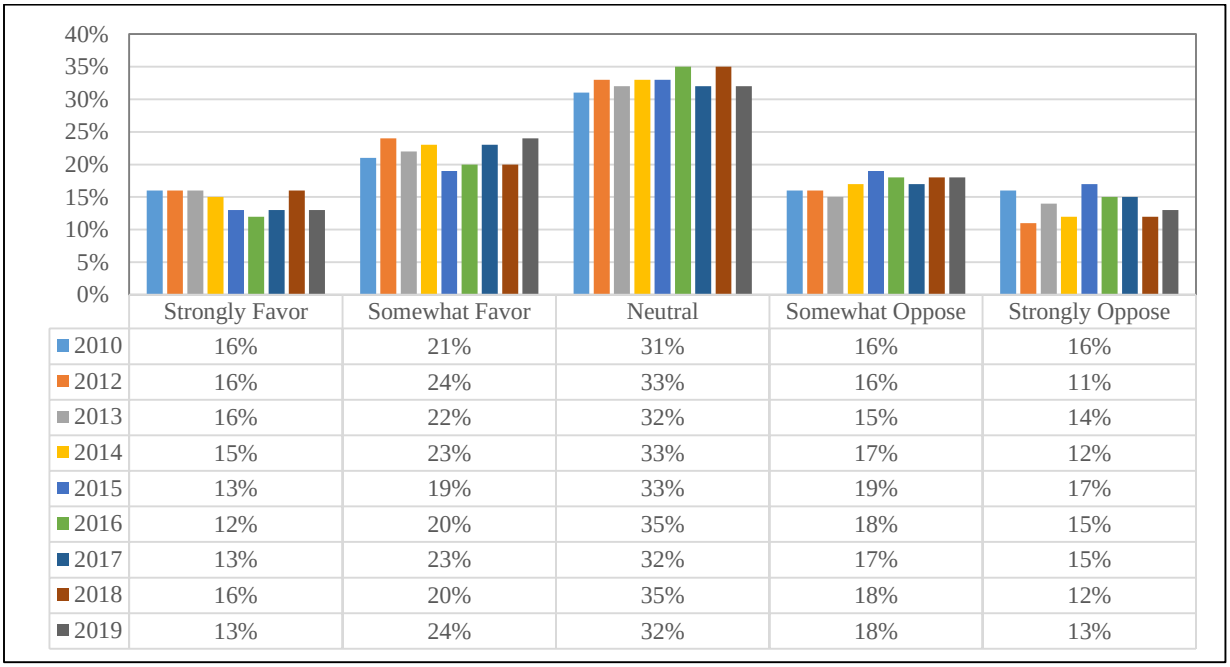
[1]Frequency calculated based on those who do talk while driving
[2]Frequency calculated based on those who do text while driving
[3]Frequency calculated based on those who do drink alcohol

4.1.1 Traffic Safety Knowledge

Over one-third (37.8%) of respondents had recent exposure to *Vision Zero. Zero Fatalities, Zero Excuses* traffic safety messages, a statewide safety campaign rolled out by partner agencies, including the North Dakota State 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). This is a considerable increase from the 23.4% of respondents who recognized such messages in 2018. Approximately two-thirds (65.7%) of respondents positively responded to having recent exposure to traffic safety messages about distracted driving.

4.1.2 Driver Preferences

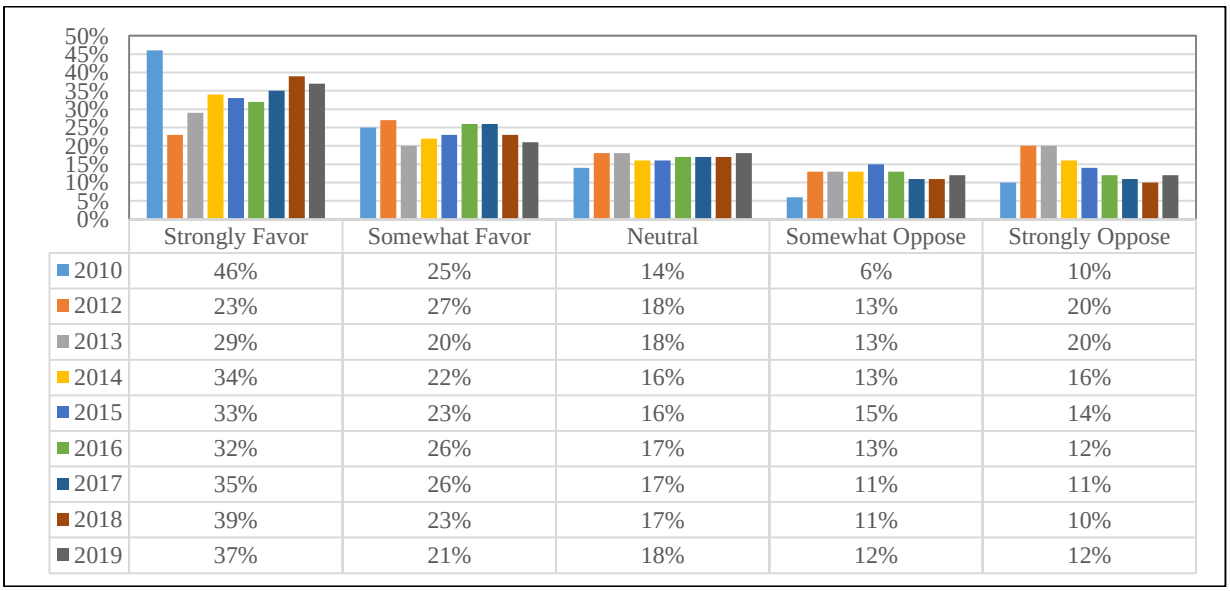
Opinions have remained fairly stable over time regarding higher fines for speeding (Figure 4.5) and support for a primary seat belt law (Figure 4.6). With regard to higher fines for speeding, support remained virtually unchanged between 2018 and 2019, as none of the response choices differed by more than four percentage points. Responses to this prompt remained close to 2010 baseline levels. 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%

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 2019. In 2010, nearly half (46%) of the North Dakota driver population "strongly favored" a primary seat belt law, but only about one-third (37%) hold the same viewpoint in 2019. Although perceptions have changed noticeably since 2010, attitudes have remained relatively stable since 2012. One notable improvement between the 2012 and 2019 iterations of the survey concerns opposition to such a law. Whereas approximately 20% of respondents in 2012 "strongly opposed" such legislation, 12% held this view in 2019. Overall, all of the response choices either improved or worsened by no more than two percentage points between the 2018 and 2019 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%

Figure 4.6 Driver Preferences for a Primary Seat Belt Law

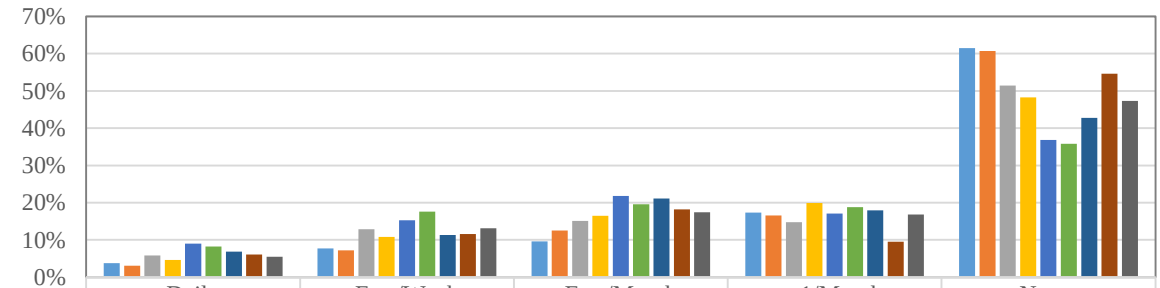
4.1.3 Distracted Driving

Questions specific to distracted driving were 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, talking, and hand-held cell phone use while driving.

The questions about talking on a cell phone while driving and texting while driving were slightly changed from prior versions of the survey. In the 2018 survey, drivers were asked how often they use their cell phones only if they answered "Yes, hand held" or "Yes, hands free" to the questions about cell phone use while driving. These frequencies were then pooled with the drivers who reported "Never" using a cell phone to talk or text while driving. In the 2019 iteration of the survey, the questions reverted to a five-point Likert scale.

In terms of texting while driving, some noticeable trends have emerged over the last nine years (Figure 4.7). For example, the proportion of respondents who report "never" texting on the phone while driving consistently decreased between 2011 and 2016 but grew significantly in 2017 and 2018. Unfortunately, as of 2019, the rate of drivers who never text while driving is comparable to what was experienced statewide in 2014. This represents a marked decline between 2018 and 2019.

The percentage of drivers texting daily while driving declined by 3.5% between 2015 and 2019. These improvements may be attributed to the stricter distracted driving law that went into effect on August 1, 2017 (Grueskin 2017). The general trend, however, has shown an increase in daily texting over the last nine years. Overall, the number of drivers who reported texting a few times per week or a few times per month has generally grown as well. It is clear that cell phone use for texting while driving is still occurring at dangerous levels within the state.

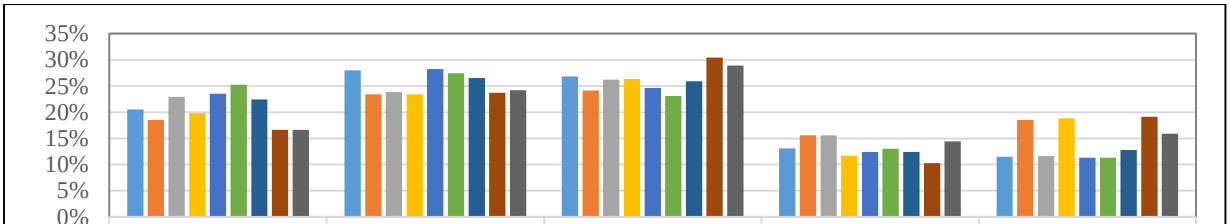


	Daily	Few/Week	Few/Month	<1/Month	Never
2011	3.8%	7.7%	9.6%	17.3%	61.5%
2012	3.1%	7.2%	12.5%	16.6%	60.7%
2013	5.8%	12.9%	15.1%	14.8%	51.4%
2014	4.6%	10.8%	16.5%	19.9%	48.3%
2015	9.0%	15.3%	21.8%	17.1%	36.8%
2016	8.2%	17.6%	19.6%	18.8%	35.8%
2017	6.9%	11.3%	21.1%	17.9%	42.8%
2018	6.1%	11.6%	18.2%	9.5%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

Figure 4.7 Cell Phone Texting Distractions, by Year

Drivers are more likely to use their cell phone for talking while driving (Figure 4.8). One-sixth (16.6%) of drivers in North Dakota use their cell phone for talking while driving on a daily basis. This is the exact same rate as 2018 and continues an improving trend; in 2016, one-quarter (25.2%) reported using their

cell phone for talking daily. The proportion of respondents that "never" use their cell phone for talking while driving decreased, however, from 19.1% to 15.9% between 2018 and 2019.



	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%

Figure 4.8 Cell Phone Talking Distractions, by Year

4.1.4 Sober/Designated Drivers

Among those respondents who do drink alcohol, over half (58.3%) reported they "always" designate a sober driver when drinking or planning to drink. This is an improvement from the 55.2% of drivers who reported doing so last year. Only 2.9% of respondents reported "never" doing so, which is once again an improvement compared with the 3.5% who held this viewpoint last year.

4.1.5 Drugged Driving

In this sample, just 1.0% of respondents admitted 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 an improvement as 1.8% of respondents in the previous iteration of the survey admitted to driving under such an impairment. A detailed explanation of drug type(s) is presented in Figure 4.9. 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 ($F=10.859$, $df=1$, $p=0.001$) and within two hours of consuming three or more alcoholic beverages ($F=18.918$, $df=1$, $p<0.001$). 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.

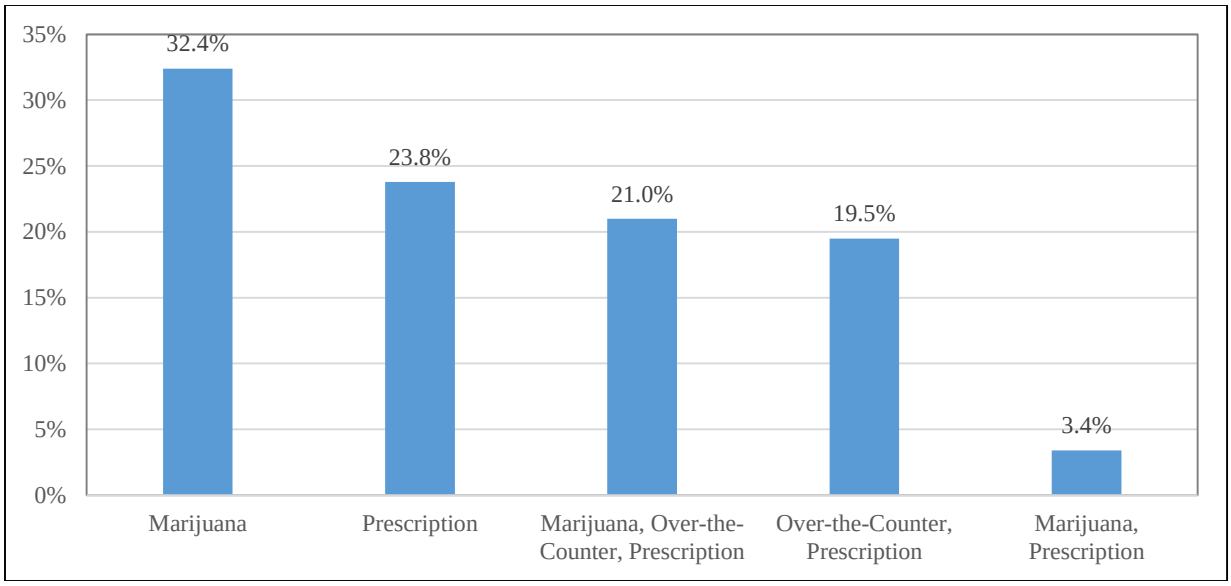


Figure 4.9 Self-Reported Drugged-Driving, by Drug Type

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	Seat Belt Use, Others	1-5	1=Never to 5=Always
3	Ticket Likely Seat Belt	1-5	1=Very Unlikely to 5=Very Likely
4	Primary Seat Belt Law	1-5	1=Strongly Oppose to 5=Strongly Favor
5	Ticket Likely Speeding	1-5	1=Very Unlikely to 5=Very Likely
6	75 MPH Speed Zone	1-5	1=Never to 5=Always
7	Higher Speeding Fines	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 Talk, Others	0-1	0=Never, 1=At Least Once/Month
14	Cell Phone Text	0-1	0=Never, 1=At Least Once/Month
15	Hand-Held Cell Phone Ban	1-5	1=Strongly Oppose to 5=Strongly Favor
16	Distracted Driving, Ticket	1-5	1=Very Unlikely to 5=Very Likely
17a	RSH Seat Belt	0-1	0=No, 1=Yes
17b	RSH Speeding	0-1	0=No, 1=Yes
17c	RSH Impaired Driving	0-1	0=No, 1=Yes
17d	RSH Distracted Driving	0-1	0=No, 1=Yes
17e	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 show 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 – equivalent to "always" in the driver survey response. Table 4.6 shows the changes in mean values from 2010 to 2019. 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. Driver views and self-reported behaviors showed little regional variation in comparing drivers from the east and west. Similar responses for exposure to policy opinions were found when comparing drivers from opposite sides of the state. In all, five issues were statistically significant by region and nine issues were statistically significant in geographic comparisons.

With regard to regional designations, statistically significant differences occurred based on support for three different initiatives. Residents from the eastern half of the state were more likely to support a primary seat belt law ($F=7.142$, $df=1$, $p=0.008$), higher fines for speeding ($F=11.075$, $df=1$, $p=0.001$), and banning hand-held cell phone use while driving ($F=18.268$, $df=1$, $p<0.001$).

The other two statistically significant topics pertained to one's perceived likelihood of being ticketed for dangerous behavior. Once again, eastern residents outpaced their western counterparts. Drivers from the east were more likely to think they would be ticketed for not wearing a seat belt ($F=5.747$, $df=1$, $p=0.017$) and for distracted driving ($F=7.576$, $df=1$, $p=0.006$).

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 ($F=89.507$, $df=1$,

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 further 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	4.69	4.68		4.77	4.43	##
Seat Belt Use, Others	1-5	4.01	4.11	3.86		4.09	3.77	##
Ticket Likely Seat Belt	1-5	3.15	3.18	3.09	#	3.13	3.19	
Primary Seat Belt Law	1-5	3.60	3.68	3.49	##	3.71	3.29	##
Ticket Likely Speeding	1-5	3.75	3.75	3.74		3.72	3.83	##
75 MPH Speed Zone	1-5	2.11	2.05	2.19		2.12	2.07	##
Higher Speeding Fines	1-5	3.06	3.17	2.92	##	3.08	3.01	
Chances of DUI Arrest	1-5	3.88	3.90	3.86		3.90	3.85	
Drugged Driving	0-1	0.01	0.01	0.01		0.01	0.01	
Sober Driver	1-5	4.29	4.23	4.37		4.30	4.28	
Cell Phone Talk	0-1	0.84	0.79	0.90		0.81	0.92	
Cell Phone Talk, Others	0-1	0.99	0.99	1.00		0.99	1.00	
Cell Phone Text	0-1	0.53	0.49	0.58		0.49	0.63	
Hand-Held Cell Phone Ban	1-5	3.51	3.65	3.31	##	3.60	3.24	##
Distracted Driving, Ticket	1-5	3.06	3.11	3.00	##	3.03	3.16	##
RSH Seat Belt	0-1	0.75	0.74	0.76		0.75	0.75	
RSH Speeding	0-1	0.40	0.41	0.37		0.40	0.37	*
RSH Impaired Driving	0-1	0.87	0.85	0.89		0.87	0.86	*
RSH Distracted Driving	0-1	0.66	0.69	0.62		0.67	0.62	
RSH *Vision Zero*	0-1	0.38	0.35	0.41		0.39	0.35	

[1]Note: Nominal/Ordinal scales require different tests of significance
*Significant difference at the 5% 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 residents were less likely to speed in a 75-mile-per-hour zone (F=22.834, df=1, p<0.001). This may be because these same residents thought there was a much higher likelihood of being ticketed for speeding (F=8.689, df=1, p=0.003).

These same North Dakota drivers were less likely to support initiatives such as a primary seat belt law (F=37.071, df=1, p<0.001) and a ban on hand-held cellular devices while driving (F=20.386, df=1, p<0.001). These viewpoints occurred despite the fact that these drivers saw messages about seat belt use (Chi-Sq.=0.700, df=1, p=0.403) and distracted driving (Chi-Sq.=0.843, df=1, p=0.359) at rates that were on par with their urban counterparts.

The five-year trends presented in Table 4.6 provide insight about patterns emerging from North Dakota drivers. With 10 years of data available, some conclusions can be made. For instance, the five-year averages of seat belt use (4.67) and perceived likelihood of being arrested for impaired driving (3.89) are at all-time highs.

A negative trend becomes apparent when analyzing results from the previous 10 years. The five-year average for exposure to safety messages about using a seat belt is at an all-time low. This means that, compared with other five-year intervals, 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 2010-2018, by Region and Geography

Question	Year	Scale	Statewide All	Region East	West	Sig.	Geography Urban	Rural	Sig.	Core Y/N
Seat Belt Use	2019	1-5	4.69	4.69	4.68		4.77	4.43	**	Y
1=Never to 5=Always	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
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	2019	1-5	3.15	3.18	3.09	*	3.13	3.19		Y
1=Very Unlikely to 5=Very Likely	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
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**	**1.10**		**3.07**	**3.17**		
Ticket Likely Speed	2019	1-5	3.75	3.75	3.74		3.72	3.83	**	Y
1=Very Unlikely to 5=Very Likely	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
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	2019	1-5	2.11	2.05	2.19		2.12	2.07	**	
1=Never to 5=Always	2018		2.14	2.04	2.26		2.15	2.09	**	Y
	2017		2.17	2.08	2.28		2.22	2.02	**	Y

Question	Year	Scale	Statewide All	Region East	West	Sig.	Geography Urban	Rural	Sig.	Core Y/N
Arrest for DUI	2019	1-5	3.88	3.90	3.86		3.90	3.85		Y
1=Very Unlikely to 5=Very Likely	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
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	2019	0-1	0.75	0.74	0.76		0.75	0.75		Y
0=No, 1=Yes	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
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	2019	0-1	0.40	0.41	0.37		0.40	0.37	*	Y
0=No, 1=Yes	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
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	West	Sig.	Geography Urban	Rural	Sig.	Core Y/N
RSH DUI	2019	0-1	0.87	0.85	0.89		0.87	0.86	*	Y
0=No, 1=Yes	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
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 nine 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 with 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, high-risk male 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 ($F=117.670$, $df=1$, $p<0.001$), talking on the phone while driving (Chi-Sq.=41.115, $df=1$, $p<0.001$), and texting while driving (Chi-Sq.=157.093, $df=1$, $p<0.001$).

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 ($F=11.663$, $df=1$, $p=0.001$). Only 62.4% of young male drivers "always" wear a seat belt while driving or riding in a vehicle, a number much smaller than the 82.1% of other drivers who "always" do so. The share of young males who report they "rarely" or "never" use seat belts (2.3%) is over one-and-a-half 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 ($F=8.193$, $df=1$, $p=0.004$).

The NDDOT Safety Division continues to explore opportunities to increase safe driving behavior overall in this driver group. Young male driver responses to read, seen, or heard 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.=5.264, $df=1$, $p=0.022$).

However, this same group of drivers reported reading, seeing, or hearing messages about impaired driving at rates higher than their 35-and-older counterparts (Chi-Sq.=5.046, $df=1$, $p=0.025$). This represents a change from prior iterations of the survey in which respondents reported exposure to this safety theme at rates that were on par with one another. This shift likely explains why 18-to-34-year-old drivers thought there was a greater likelihood of being arrested for driving under the influence of alcohol ($F=5.371$, $df=1$, $p=0.021$).

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

Question	HRM (n=257)	Other Drivers (n=1,178)	Sig.[1]
Seat Belt Use	4.45	4.75	##
Seat Belt Use, Others	3.82	4.37	##
Ticket Seat Belt	2.82	3.13	##
Primary Seat Belt Law	2.92	3.61	##
Ticket Likely Speeding	3.57	3.68	
Speed in 75 MPH Zone	2.44	1.71	##
Higher Fines for Speeding	2.58	3.39	##
Chance Arrest for DUI	3.79	3.76	#
Drugged Driving	0.03	0.01	
Use Sober Driver	4.18	4.05	
Cell Phone Talk	0.93	0.67	**
Cell Phone Talk, Others	1.00	0.98	
Cell Phone Text	0.67	0.25	**
Ban Hand-Held Cell Use	2.99	3.78	##
Ticket Distracted Driving	2.84	2.94	
RSH Seat Belt	0.80	0.77	
RSH Speeding	0.40	0.48	*
RSH Drunk Driving	0.92	0.84	*
RSH Distracted Driving	0.67	0.71	
RSH *Vision Zero*	0.51	0.32	**

[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

With regard to safe driving initiatives, the target group of drivers indicated they have less support for a primary seat belt law ($F=14.231$, $df=1$, $p<0.001$), less support for increasing fines for speeding ($F=55.557$, $df=1$, $p<0.001$), and less support for banning hand-held cell phone use while driving ($F=42.494$, $df=1$, $p<0.001$).

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=1,426	Always	N. Always	Sometimes	Rarely	Never
	Other	82.1%	12.6%	3.8%	0.8%**	0.7%**
	HRM	62.4%	23.3%	12.0%	1.7%**	0.6%**
Seat Belt Ticket	n=1,429	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	13.0%	20.4%	38.8%	22.2%	5.7%
	HRM	7.1%**	20.3%	30.5%	32.1%	10.1%**
Primary Seat Belt Law	n=1,428	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	38.1%	21.8%	15.8%	11.1%	13.2%
	HRM	24.8%	15.2%	16.2%	15.1%	28.8%
Chance Speed Ticket	n=1,427	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	18.3%	39.4%	35.4%	5.3%	1.6%**
	HRM	12.5%	41.2%	37.9%	7.2%**	1.2%**
Speed in 75 mph	n=1,427	Always	N. Always	Sometimes	Rarely	Never
	Other	0.3%**	1.9%**	12.0%	40.3%	45.5%
	HRM	4.9%**	12.5%**	23.9%	38.9%	19.8%
Speed Fines	n=1,427	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	20.7%	29.4%	27.7%	12.3%	9.9%
	HRM	11.4%	16.5%	23.9%	14.7%	33.5%
Chance DUI Arrest	n=1,426	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	25.2%	34.4%	33.0%	5.8%	1.6%**
	HRM	24.2%	40.0%	27.9%	6.3%**	1.6%**
Drive 1-2 Drinks	n=1,383	None	1-5 Times	6-10 Times	10+ Times	
	Other	75.1%	22.0%	1.7%**	1.2%**	
	HRM	45.4%	43.0%	6.4%**	5.1%**	
Drive 3+ Drinks	n=1,201	None	1-5 Times	6-10 Times	10+ Times	
	Other	94.4%	5.0%	0.3%**	0.3%**	
	HRM	82.6%	14.3%	2.0%**	1.1%**	
Sober Driver[1]	n=891	Always	N. Always	Sometimes	Rarely	Never
	Other	52.9%	20.5%	11.9%	7.8%	7.0%
	HRM	50.7%	28.3%	12.8%**	4.8%**	3.3%**
Cell Phone Talk	n=1,415	Never	1+/Month			
	Other	33.0%	67.0%			
	HRM	7.5%**	92.5%			
Cell Phone Text	n=1,428	Never	1+/Month			
	Other	75.4%	24.6%			
	HRM	32.8%	67.2%			

Note: Please see Appendix A for exact question and response wording
[1]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 behavior and attitudes is that of 18-to-34-year-old high-risk female ("HRF") drivers. Like their high-risk male counterparts, young female drivers tend to exhibit behaviors 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=443)	Other Drivers (n=1,178)	Sig.[1]
Seat Belt Use	4.66	4.75	
Seat Belt Use, Others	3.74	4.37	##
Ticket Seat Belt	3.18	3.13	#
Primary Seat Belt Law	3.64	3.61	##
Ticket Likely Speeding	3.81	3.68	##
Speed in 75 MPH Zone	2.39	1.71	##
Higher Fines for Speeding	2.84	3.39	##
Chance Arrest for DUI	3.99	3.76	##
Drugged Driving	0.01	0.01	
Use Sober Driver	4.42	4.05	##
Cell Phone Talk	0.96	0.67	**
Cell Phone Talk, Others	1.00	0.98	*
Cell Phone Text	0.73	0.25	**
Ban Hand-Held Cell Use	3.33	3.78	##
Ticket Distracted Driving	3.18	2.94	##
RSH Seat Belt	0.73	0.77	**
RSH Speeding	0.33	0.48	**
RSH Drunk Driving	0.89	0.84	
RSH Distracted Driving	0.62	0.71	*
RSH *Vision Zero*	0.41	0.32	*

[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 higher likelihood of speeding on a 75-mile-per-hour road ($F=147.302$, $df=1$, $p<0.001$), talking on the phone while driving (Chi-Sq.=91.796, $df=1$, $p<0.001$), and texting while driving (Chi-Sq.=279.546, $df=1$, $p<0.001$). These cell phone behaviors were also evident in the 2015, 2016, 2017, and 2018 iterations of this survey.

Like their high-risk male counterparts, 18-to-34-year-old females also have a lower likelihood of being exposed to safety messages about speeding (Chi-Sq.=32.212, $df=1$, $p<0.001$) and distracted driving (Chi-Sq.=5.775, $df=1$, $p=0.016$). Unlike their high-risk male counterparts – who view messages about seat belt use on par with other drivers – high-risk female drivers have a lower chance of exposure to messages about seat belt use (Chi-Sq.=8.728, $df=1$, $p=0.003$).

For the fifth consecutive year, this group was less likely to support higher fines for speeding ($F=35.058$, $df=1$, $p<0.001$). 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 ($F=42.428$, $df=1$, $p<0.001$). Perhaps that is why this group was more likely to use a designated

sober driver than other North Dakotans (F=29.439, 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=1,612	Always	N. Always	Sometimes	Rarely	Never
	Other	82.1%	12.6%	3.8%	0.8%**	0.7%**
	HRF	73.4%	20.7%	4.5%**	0.8%**	0.6%**
Seat Belt Ticket	n=1,614	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	13.0%	20.4%	38.8%	22.2%	5.7%
	HRF	11.4%	24.6%	37.9%	22.9%	3.2%**
Primary Seat Belt Law	n=1,613	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	38.1%	21.8%	15.8%	11.1%	13.2%
	HRF	37.8%	20.5%	20.0%	11.5%	10.1%
Chance Speed Ticket	n=1,614	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	18.3%	39.4%	35.4%	5.3%	1.6%**
	HRF	20.1%	45.5%	30.1%	4.1%**	0.1%**
Speed in 75 mph	n=1,609	Always	N. Always	Sometimes	Rarely	Never
	Other	0.3%**	1.9%**	12.0%	40.3%	45.5%
	HRF	3.1%**	12.5%	23.9%	41.4%	19.2%
Speed Fines	n=1,613	St. Favor	Sw. Favor	Neutral	Sw. Oppose	St. Oppose
	Other	20.7%	29.4%	27.7%	12.3%	9.9%
	HRF	7.3%	19.8%	36.7%	22.5%	13.7%
Chance DUI Arrest	n=1,611	V. Likely	Likely	Sw. Likely	Unlikely	V. Unlikely
	Other	25.2%	34.4%	33.0%	5.8%	1.6%**
	HRF	37.8%	31.7%	23.5%	5.5%**	1.5%**
Drive 1-2 Drinks	n=1,568	None	1-5 Times	6-10 Times	10+ Times	
	Other	75.1%	22.0%	1.7%**	1.2%**	
	HRF	58.6%	38.8%	2.1%**	0.5%**	
Drive 3+ Drinks	n=1,385	None	1-5 Times	6-10 Times	10+ Times	
	Other	94.4%	5.0%	0.3%**	0.3%**	
	HRF	92.9%	6.7%**	0.4%**	0.0%**	
Sober Driver[1]	n=1,038	Always	N. Always	Sometimes	Rarely	Never
	Other	52.9%	20.5%	11.9%	7.8%	7.0%
	HRF	61.6%	23.3%	11.9%	2.4%**	0.8%**
Cell Phone Talk	n=1,602	Never	1+/Month			
	Other	33.0%	67.0%			
	HRF	3.6%**	96.4%			
Cell Phone Text	n=1,612	Never	1+/Month			
	Other	75.4%	24.6%			
	HRF	26.7%	73.3%			

Note: Please see Appendix A for exact question and response wording
[1]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 is presented in Appendix B. In general, high-risk drivers exhibit more dangerous behaviors than do drivers over age 35. However, with regard to perceived likelihood of ticketing – whether it be for not wearing a seat belt, speeding, or driving while impaired – 18-to-34-year-old females have the lowest perceived likelihood of receiving a ticket. The deterrent effect of ticketing is not as strong for this group of North Dakota drivers.

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 10 years of administering this survey. First, there is a continuous dichotomy between how urban and rural residents approach seat belt use 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 experienced by rural North Dakotans. Second, high-risk 18-to-34-year-old drivers have much lower exposure rates to safety messages. Younger drivers generally have less exposure to key safety campaigns and traffic messages than all other driver groups. They also hold viewpoints that are drastically different than their 35-and-older counterparts, and regularly engage in dangerous behind-the-wheel practices. It may be worthwhile to make the 18-to-34-year-old target group more aware of traffic safety tools via focused safety campaigns and optimized advertisement placement. The *Vision Zero* campaign is one such program that could fill this exposure gap.

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 more robust 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.

6. REFERENCES

Government Accounting Office. 2010. "Traffic Safety Data: State Data System Quality Varies and Limited Resources and Coordination Can Inhibit Further Progress." Washington, DC: Government Printing Office, Technical Report to Congressional Committee No. GAO-10-454.

Grueskin, C. 2017. "New Distracted Driving Law to Take Effect Aug. 1." *The Bismarck Tribune*, July 17, 2017. Retrieved August 9, 2018, (https://bismarcktribune.com/news/state-and-regional/new-distracted-driving-law-to-take-effect-aug/article_65cd357f-e44d-5eb4-9455-9ac5c7fe7015.html).

Hedlund, J. 2008. "Traffic Safety Performance Measures for States and Federal Agencies." Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration, Technical Report No. DOT-HS-811-025.

Hedlund, J., T. Casanova, and N. Chaudhary. 2009. "Survey Recommendations for the NHTSA-GHSA Working Group." Trumbull, CT: Preusser Research Group, Inc., on behalf of the Governor's Highway Safety Association. Retrieved August 18, 2011, (http://www.ghsa.org/html/resources/files/pdf/planning/survey_recs.pdf).

Heidle, E., C. Horton, and J. Lerman. 2014. "Behind the Scenes: The Production of North Dakota's Code for the Road Campaign and the Code for the Road Statewide Marketing Plan." Bismarck: ND: Presentation at the 2014 North Dakota Strategic Highway Safety Plan Conference, June 12.

Herbel, S., M.D. Meyer, B. Kleiner, and D. Gaines. 2009. "A Primer on Safety Performance Measures for the Transportation Planning Process." Washington, DC: U.S. Department of Transportation, Federal Highway Administration, Technical Report No. FHWA-HEP-09-043.

Huseth, A., and A. Kubas. 2012. "Alcohol Consumption Patterns in North Dakota: Survey of DUI Offenders." Fargo, ND: Upper Great Plains Transportation Institute, North Dakota State University, DP-254: 1-47.

Levi, G., M. Nelson, K. Mongeon, A. Doan, L. Harsche, C. Thurn, S. Wilson, R. Hair, and L. Heinert. 2016. "2015 North Dakota Crash Summary." Bismarck, ND: North Dakota Department of Transportation. Retrieved April 25, 2017, (https://www.dot.nd.gov/divisions/safety/docs/crash-summary.pdf).

North Dakota Department of Transportation. 2018a. "2018 North Dakota *Vision Zero Plan*: Strategic Highway Safety Plan Update 2018-2023." Bismarck, ND: NDDOT Safety Division. Retrieved August 6, 2019, (https://www.dot.nd.gov/divisions/safety/docs/FINAL_NDDOT_SHSP.pdf).

North Dakota Department of Transportation. 2018b. "2017 North Dakota Crash Summary." Bismarck, ND: NDDOT Safety Division. Retrieved June 17, 2019, (https://www.dot.nd.gov/divisions/safety/docs/crash-summary.pdf).

State of North Dakota. 2018. "Vision Zero: Zero Fatalities. Zero Excuses." Bismarck, ND: North Dakota State Government. Retrieved June 9, 2018, (https://visionzero.nd.gov/).

United States Census Bureau. 2016. "Annual Estimates of the Resident Population: April 1, 2010, to July 1, 2016: 2016 Population Estimates" [data set]. Retrieved July 5, 2017, (https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk).

United State Census Bureau. 2018. “Quick Facts North Dakota: Population Estimates, July 1, 2017, (V2017).” Retrieved June 10, 2018, (https://www.census.gov/quickfacts/ND).

United States Department of Transportation. 2011. National Transportation Atlas Databases 2011: A Collection of Spatial Data for use in GIS-based Applications [computer software]. Washington, DC: Bureau of Transportation Statistics: Research and Innovative Technology Administration.

Vachal, K., L. Benson, and A. Kubas. 2010-2018. “North Dakota Statewide Traffic Safety Survey – Traffic Safety Performance Measures for State and Federal Agencies.” Fargo, ND: Upper Great Plains Transportation Institute, North Dakota State University, document compendium.

Vachal, K., L. Benson, and A. Kubas. 2018. “North Dakota Statewide Traffic Safety Survey, 2018: Traffic Safety Performance Measures for State and Federal Agencies.” Fargo, ND: Upper Great Plains Transportation Institute, North Dakota State University, DP-299: 1-44.

World Health Organization. 2019. “Global Health Observatory Data Repository: Road Traffic Deaths, Data by Country.” Retrieved June 17, 2019, (http://apps.who.int/gho/data/node.main.A997).

APPENDIX A. SURVEY INSTRUMENT

2019 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. How often do you think others use a seat belt when driving or riding in a motor vehicle?
   □ Never □ Rarely □ Sometimes □ Nearly Always □ Always □ Do Not Know

3. 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

4. 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

5. 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

6. 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

7. Do you favor or oppose higher fees/fines for speeding violations?
   □ 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 think others talk on their cell phone while driving?
    □ Never □ Less than Once per Month □ Few Times per Month □ Few Times per Week □ Daily □ Do Not Know

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

15. 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

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

17. 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

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

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

20. Your gender: □ Male □ Female

21. 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

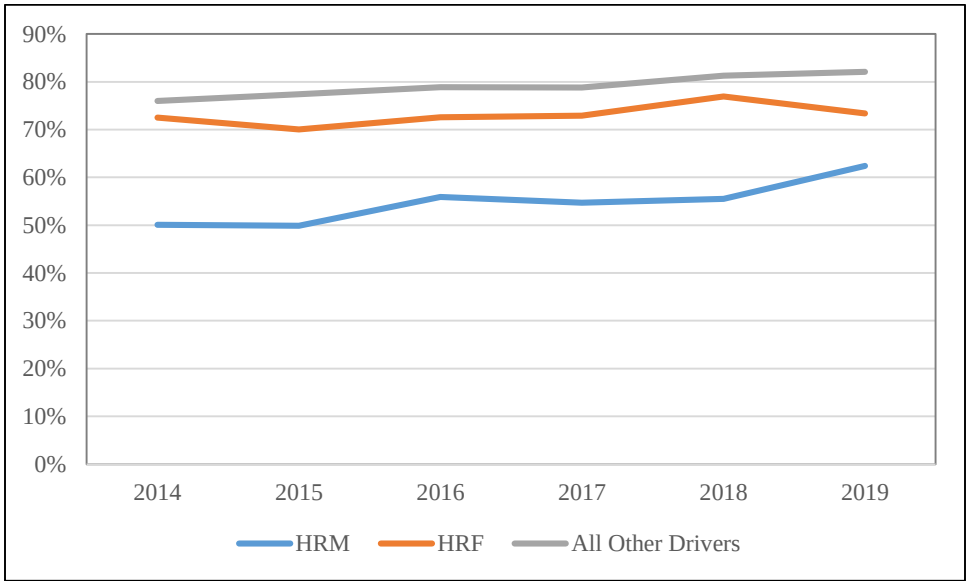


Figure B.1 Drivers Self-Reporting Seat Belt Use as "Always"

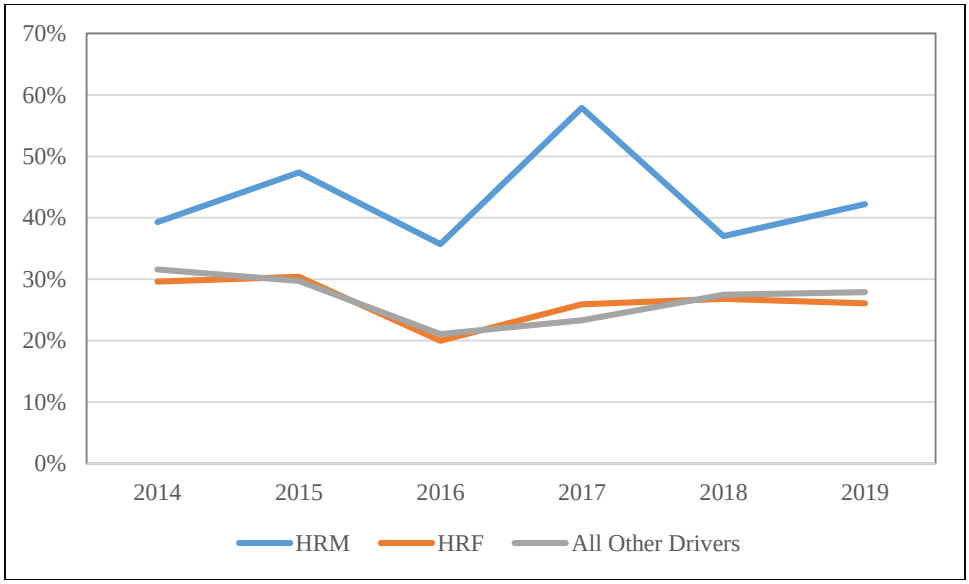


Figure B.2 Drivers Reporting the Perceived Likelihood of Receiving a Ticket for Not Wearing a Seat Belt as "Very Unlikely" or "Unlikely"

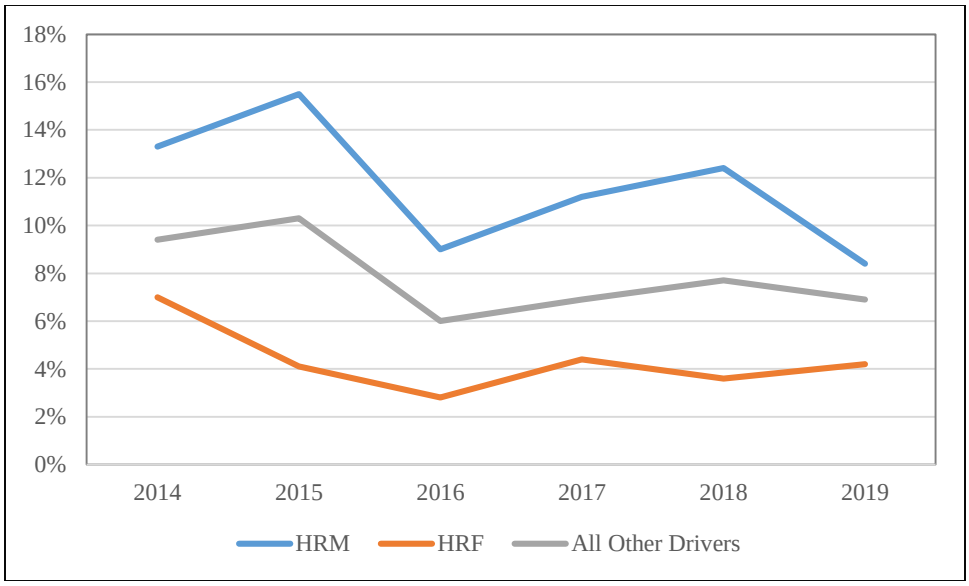


Figure B.3 Drivers Reporting the Perceived Likelihood of Receiving a Ticket for Speeding as "Very Unlikely" or "Unlikely"

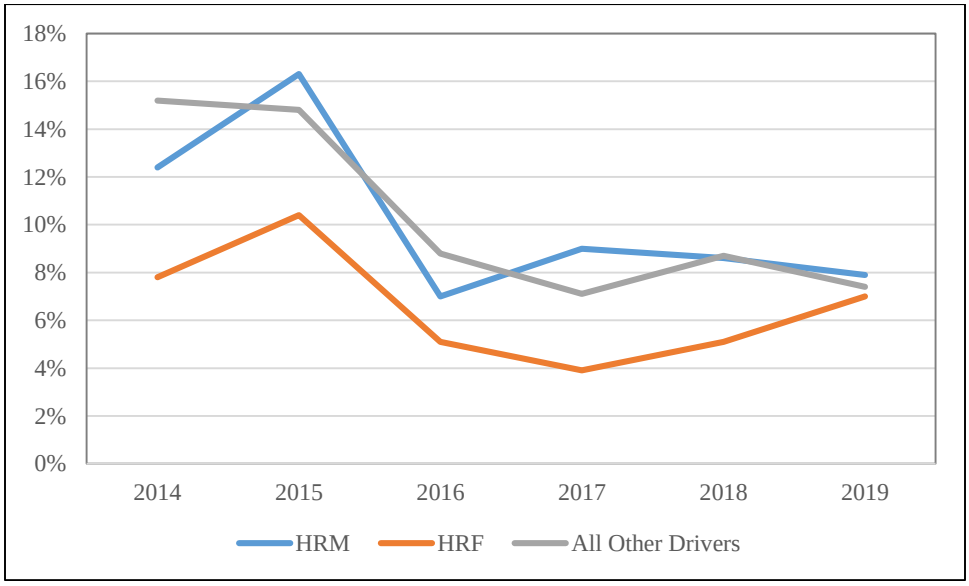


Figure B.4 Drivers Reporting the Perceived Likelihood of Being Arrested for Impaired Driving as "Very Unlikely" or "Unlikely"

APPENDIX C. MISSING/REFUSE TO ANSWER RESPONSES

Q#	Question	Total Responses	Missing Responses
	Seat Belt		
Q1	Seat Belt Use	1,886	9
Q2	Seat Belt Use, Others	1,884	11
Q3	Chance Ticket Seat Belt	1,888	7
Q4	Primary Seat Belt Law	1,886	9
	Speeding		
Q5	Chance Ticket Speeding	1,886	9
Q6	Speed, 75 MPH Zone	1,883	12
Q7	Higher Speeding Fines	1,887	8
	Alcohol/Impairment		
Q8	Chance Arrest Drinking	1,884	11
Q9	Drugged Driving	1,891	4
Q10	Sober Driver	1,872	23
Q11a	Drive 1-2 Drinks	1,838	57
Q11b	Drive 3+ Drinks	1,632	263
	Distracted Driving		
Q12	Cell Phone Talk	1,875	20
Q13	Cell Phone Talk, Others	1,883	12
Q14	Cell Phone Text	1,886	9
Q15	Ban Hand-Held Cell Use	1,882	13
Q16	Ticket, Distracted Driving	1,882	13
	Awareness/Exposure		
Q17a	RSH Seat Belt	1,873	22
Q17b	RSH Speeding	1,843	52
Q17c	RSH Drunk Driving	1,877	18
Q17d	RSH Distracted Driving	1,868	27
Q17e	RSH *Vision Zero*	1,805	90
Total n=1,895			

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	12.1%	11.7%	19.3%	18.7%	31.5%	32.6%
Likely	23.4%	21.7%	43.1%	42.4%	34.9%	30.9%
Sw. Likely	39.9%	35.4%	31.7%	33.9%	26.9%	28.6%
Unlikely	20.2%	26.7%	5.1%	4.3%	5.6%	5.8%
V. Unlikely	4.4%	4.6%	0.8%**	0.6%**	1.1%**	2.1%**
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	12.2%	11.1%	18.1%	22.0%	31.9%	32.3%
Sw. Likely	22.0%	24.5%	42.4%	44.0%	34.2%	30.1%
Likely	37.1%	40.3%	33.6%	29.8%	26.8%	29.9%
Unlikely	24.0%	19.9%	5.2%	3.5%	5.6%	5.9%
V. Unlikely	4.6%	4.1%	0.8%**	0.7%**	1.5%**	1.8%**
Times driving after drinking 1-2 drinks in the past 60 days…			None	1-5 Times	6-10 Times	10+ Times
East			68.3%	28.7%	1.9%**	1.2%**
West			60.2%	36.6%	2.5%**	0.7%**
Urban			63.4%	33.1%	2.4%	1.0%**
Rural			68.8%	29.2%	1.3%**	0.7%**
Times driving after drinking 3+ drinks in the past 60 days…			None	1-5 Times	6-10 Times	10+ Times
East			92.7%	6.8%	0.3%**	0.2%**
West			93.5%	5.9%	0.5%**	0.1%**
Urban			93.9%	5.5%	0.5%**	0.1%**
Rural			90.7%	8.8%	0.3%**	0.2%**
Seat Belt Use	Always		N. Always	Sometimes	Rarely	Never
East	76.2%		18.4%	4.3%	0.5%**	0.6%**
West	77.2%		16.2%	4.7%	1.2%**	0.7%**
Urban	83.5%		11.6%	3.9%	0.7%**	0.2%**
Rural	56.6%		34.4%	6.1%	1.1%**	1.8%**

**Fewer than 30 responses in this group

APPENDIX E. EXPOSURE TO TRAFFIC SAFETY MESSAGES

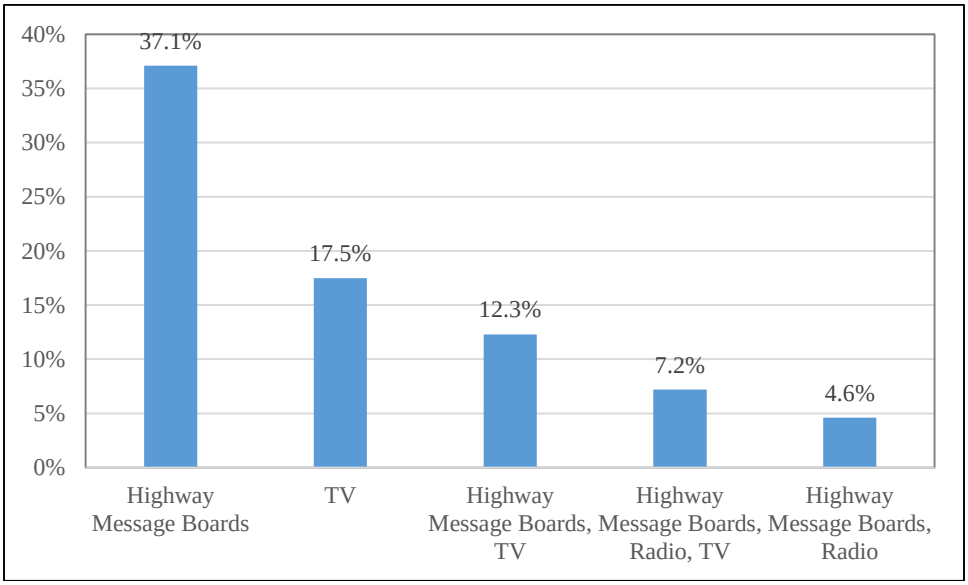


Figure E.1 Exposure to Messages about Seat Belt Use, by Source

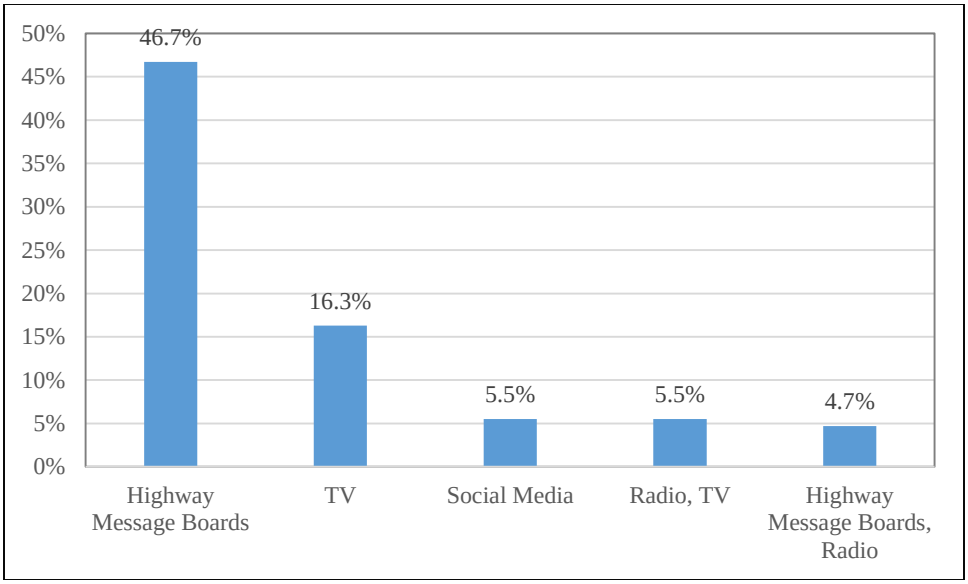


Figure E.2 Exposure to Messages about Speeding, by Source

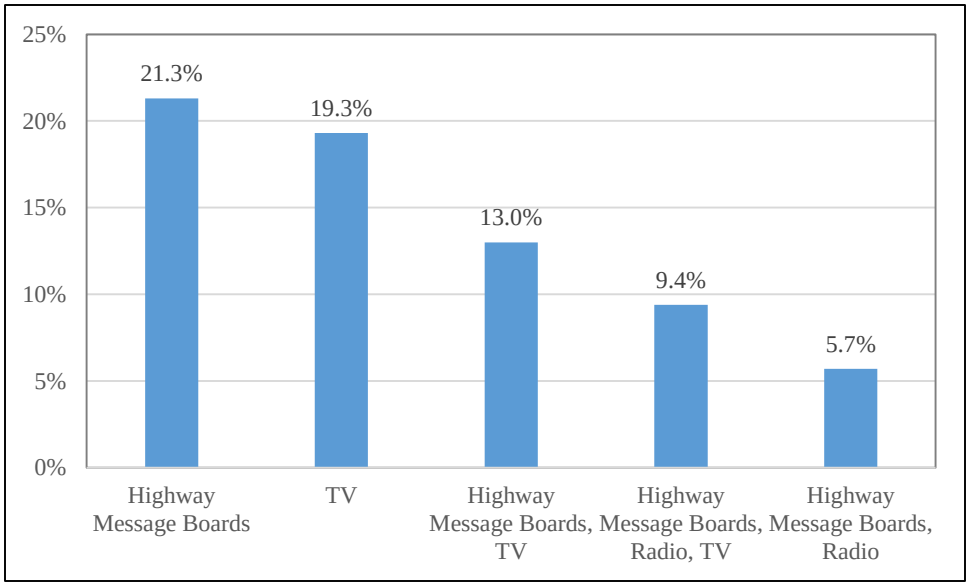


Figure E.3 Exposure to Messages about Impaired Driving, by Source

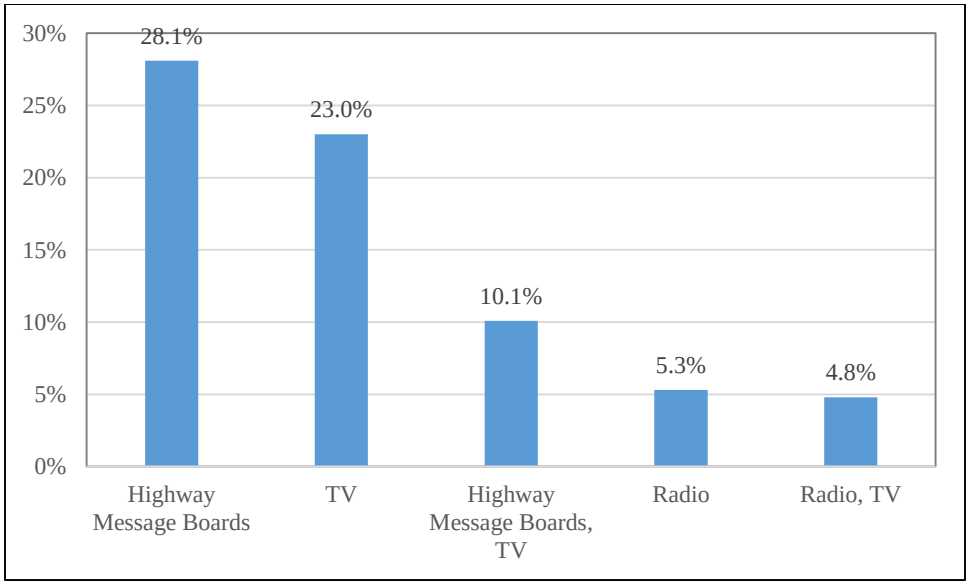


Figure E.4 Exposure to Messages about Distracted Driving, by Source

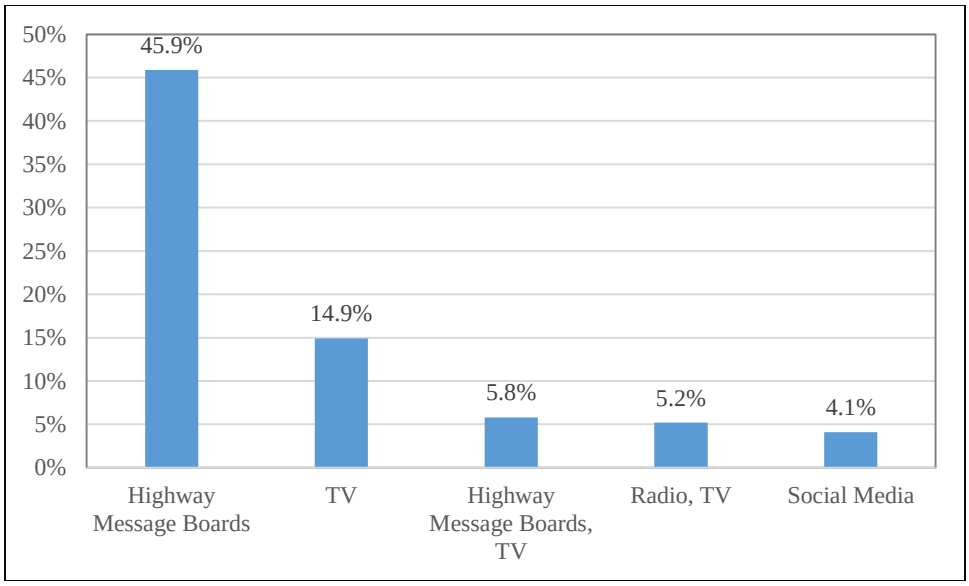


Figure E.5 Exposure to Messages about *Vision Zero*, by Source

APPENDIX F. DRIVER RESPONES BY VEHICLE TYPE

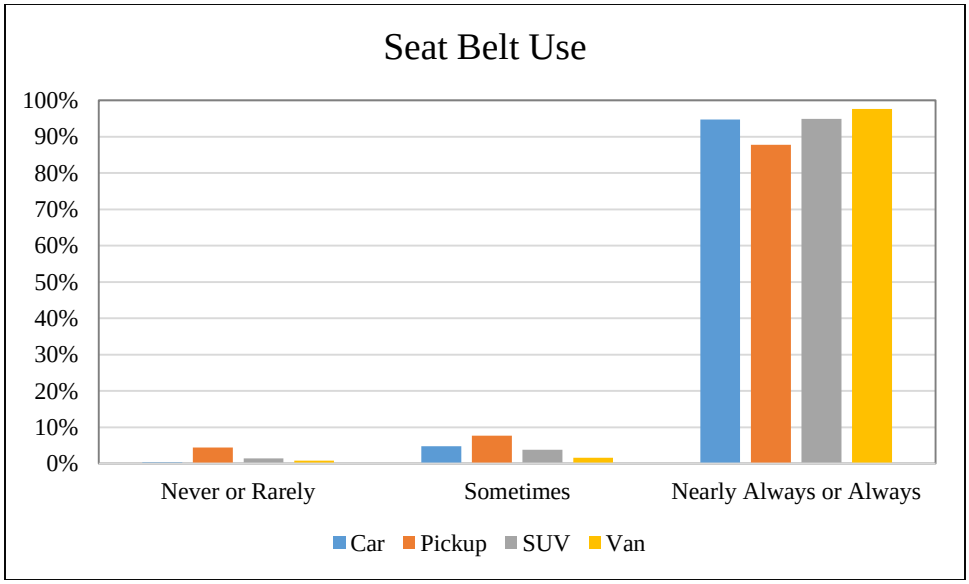


Figure F.1 Seat Belt Use, by Vehicle Type

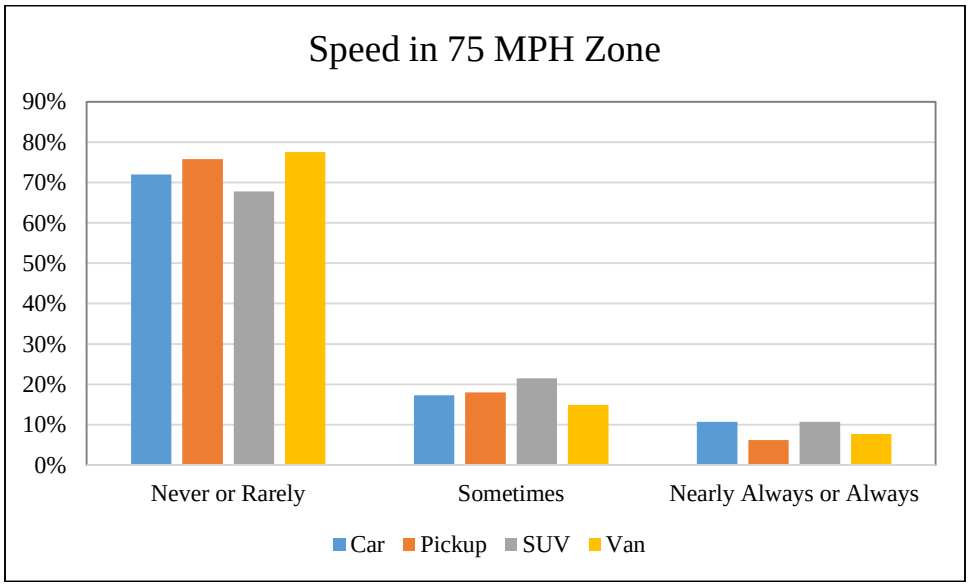


Figure F.2 Speeding in 75 Mile-per-Hour Zone, by Vehicle Type

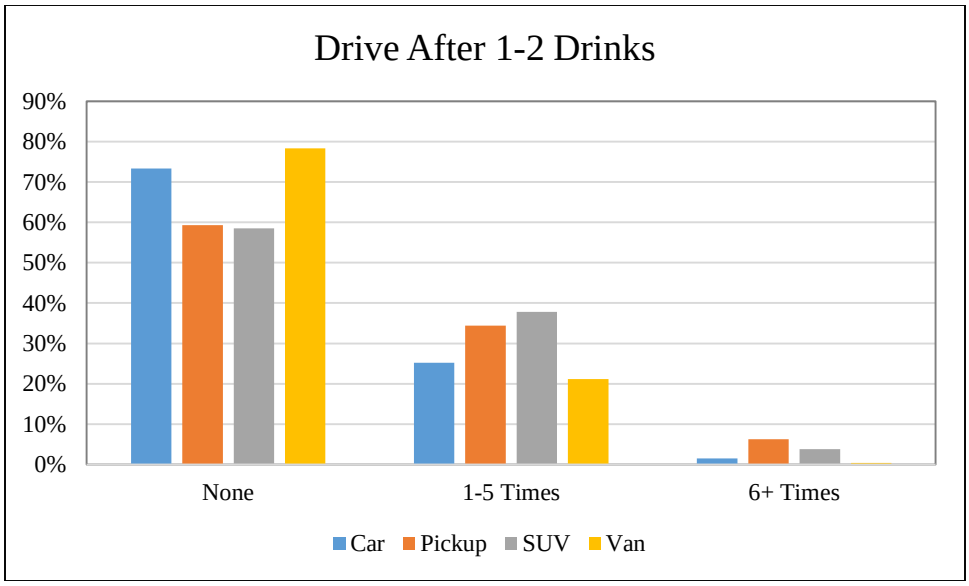


Figure F.3 Driving After Consuming 1-to-2 Alcoholic Beverages, by Vehicle Type

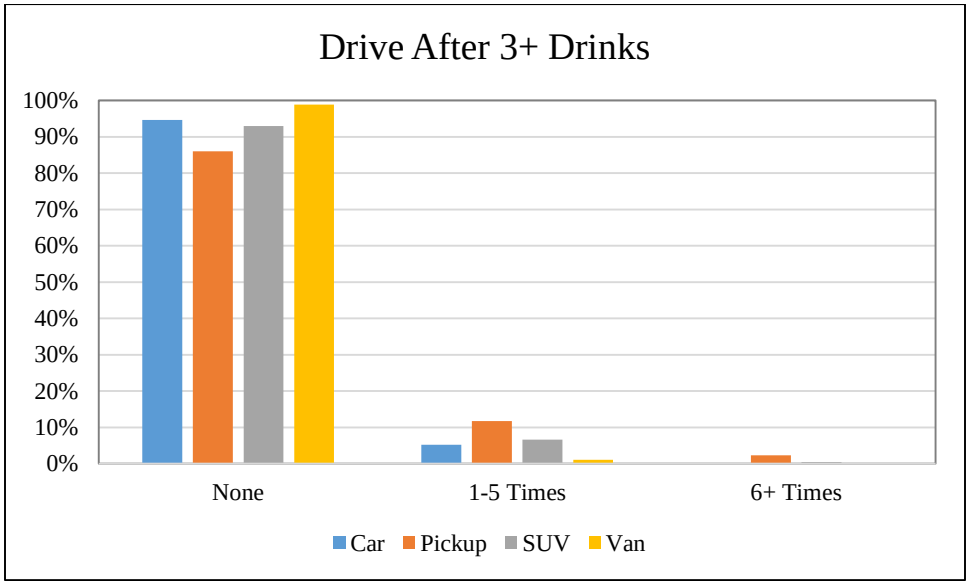


Figure F.4 Driving After Consuming 3-Plus Alcoholic Beverages, by Vehicle Type

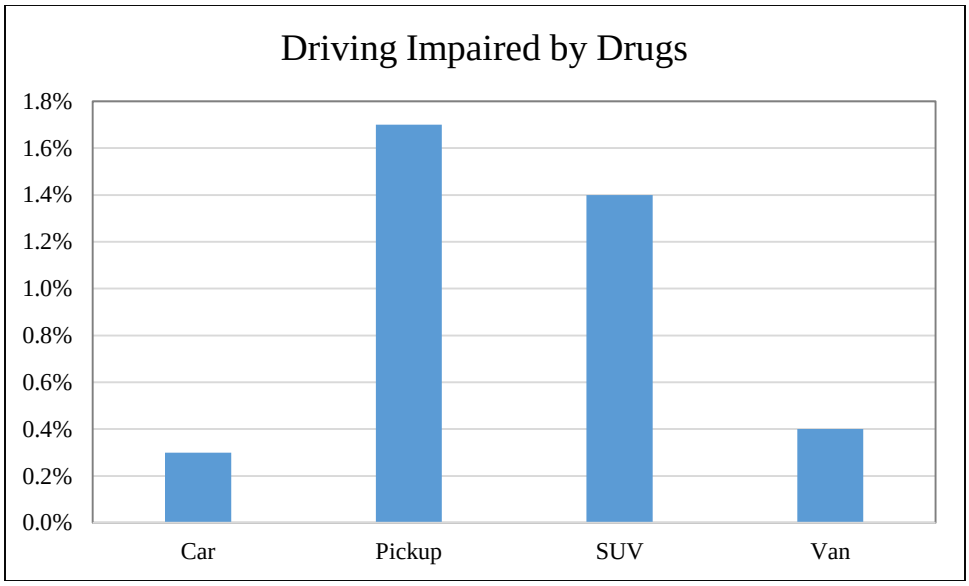


Figure F.5 Driving Impaired by Drugs, by Vehicle Type

APPENDIX G. COUNTY-LEVEL RESPONSES

Seat Belt Use

County*	Never	Rarely	Sometimes	Nearly Always	Always
Bottineau	0.0%	8.5%	9.0%	11.4%	71.2%
Burleigh	0.2%	0.4%	5.2%	11.7%	82.5%
Cass	0.2%	0.1%	3.5%	6.8%	89.4%
Grand Forks	0.0%	1.2%	4.5%	12.0%	82.3%
McHenry	8.2%	0.0%	3.4%	45.5%	42.8%
McLean	1.9%	1.9%	1.1%	27.9%	67.1%
Mercer	0.0%	0.8%	0.0%	26.2%	73.0%
Morton	0.0%	0.8%	2.6%	9.3%	87.3%
Pembina	5.2%	0.6%	9.1%	32.0%	53.1%
Ransom	7.2%	0.0%	0.0%	35.4%	57.4%
Richland	0.0%	0.7%	0.0%	26.5%	72.9%
Stark	0.0%	0.5%	5.5%	21.7%	72.2%
Stutsman	0.0%	0.0%	1.9%	13.9%	84.1%
Traill	0.0%	0.0%	1.5%	8.9%	89.6%
Walsh	0.0%	0.5%	2.5%	14.3%	82.8%
Ward	1.3%	0.3%	5.4%	6.5%	86.6%
Williams	0.0%	5.4%	2.4%	18.1%	74.1%

*Only counties with 30 or more responses are included

Seat Belt Use, Others

County*	Never	Rarely	Sometimes	Nearly Always	Always
Bottineau	0.0%	10.1%	36.7%	53.2%	0.0%
Burleigh	0.0%	1.7%	35.3%	57.3%	5.8%
Cass	0.0%	0.3%	16.9%	72.9%	9.9%
Grand Forks	0.0%	0.0%	31.5%	55.8%	12.7%
McHenry	0.0%	10.5%	57.8%	26.1%	5.5%
McLean	0.0%	0.8%	30.7%	60.5%	7.9%
Mercer	0.0%	0.0%	48.6%	48.8%	2.6%
Morton	0.0%	0.0%	44.9%	42.5%	12.6%
Pembina	0.0%	5.4%	46.8%	40.7%	7.1%
Ransom	0.0%	0.0%	42.4%	47.8%	9.8%
Richland	0.0%	0.0%	23.2%	75.5%	1.4%
Stark	0.0%	0.6%	56.8%	37.2%	5.4%
Stutsman	0.0%	0.0%	4.3%	94.5%	1.1%
Traill	0.0%	0.0%	28.4%	67.5%	4.1%
Walsh	0.0%	1.0%	48.7%	46.5%	3.7%
Ward	0.3%	0.3%	32.9%	55.6%	10.8%
Williams	0.0%	0.6%	46.0%	51.2%	2.1%

*Only counties with 30 or more responses are included

Chances Ticket No Seat Belt

County*	Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
Bottineau	5.1%	24.7%	40.8%	17.1%	12.4%
Burleigh	5.9%	31.1%	36.7%	17.2%	9.1%
Cass	5.6%	22.1%	37.7%	20.5%	14.1%
Grand Forks	5.0%	21.7%	46.1%	18.7%	8.4%
McHenry	1.3%	18.2%	52.9%	16.8%	10.8%
McLean	1.7%	29.6%	43.7%	15.4%	9.6%
Mercer	5.1%	30.0%	36.1%	18.8%	10.0%
Morton	4.7%	22.2%	34.3%	21.9%	17.0%
Pembina	1.3%	5.5%	30.3%	51.3%	11.5%
Ransom	9.6%	5.4%	49.3%	32.8%	3.0%
Richland	1.2%	36.1%	26.7%	18.0%	17.9%
Stark	1.8%	12.4%	35.6%	37.5%	12.6%
Stutsman	1.0%	11.0%	51.6%	23.1%	13.3%
Traill	1.7%	31.4%	39.1%	15.2%	12.7%
Walsh	1.6%	16.7%	46.2%	10.9%	24.6%
Ward	5.6%	30.6%	32.6%	17.1%	14.2%
Williams	1.8%	20.7%	34.1%	31.0%	12.5%

*Only counties with 30 or more responses are included

Support/Opposition for Primary Seat Belt Law

County*	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
Bottineau	11.3%	13.8%	24.4%	17.2%	33.3%
Burleigh	13.9%	11.6%	17.0%	16.3%	41.2%
Cass	8.3%	7.3%	19.3%	22.9%	42.2%
Grand Forks	6.2%	12.7%	9.6%	27.3%	44.2%
McHenry	26.3%	5.8%	28.6%	21.5%	17.8%
McLean	22.8%	13.0%	21.2%	14.4%	28.6%
Mercer	18.4%	21.7%	15.4%	13.0%	31.6%
Morton	7.9%	16.0%	21.8%	14.2%	40.0%
Pembina	11.0%	8.3%	29.7%	19.7%	31.3%
Ransom	18.9%	17.5%	23.4%	23.5%	16.6%
Richland	4.0%	23.6%	11.7%	24.6%	36.1%
Stark	7.9%	15.6%	10.7%	33.4%	32.5%
Stutsman	5.4%	9.6%	20.3%	37.2%	27.6%
Traill	5.3%	9.9%	19.9%	21.6%	43.3%
Walsh	15.3%	8.6%	22.7%	6.6%	46.8%
Ward	13.6%	17.3%	16.1%	16.5%	36.5%
Williams	22.2%	3.3%	13.9%	18.8%	41.8%

*Only counties with 30 or more responses are included

Ticket Likelihood for Speeding

County*	Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
Bottineau	1.1%	11.2%	25.0%	49.6%	13.0%
Burleigh	1.1%	5.6%	32.5%	43.1%	17.8%
Cass	1.3%	7.5%	30.4%	39.8%	20.9%
Grand Forks	0.7%	1.0%	39.5%	45.2%	13.6%
McHenry	0.0%	5.0%	34.1%	33.6%	27.3%
McLean	1.0%	1.7%	41.6%	48.6%	7.1%
Mercer	0.7%	7.1%	26.0%	46.3%	19.9%
Morton	0.0%	6.2%	31.3%	41.7%	20.7%
Pembina	0.4%	2.0%	22.5%	51.7%	23.4%
Ransom	0.0%	0.0%	35.8%	31.6%	32.6%
Richland	0.0%	6.3%	47.9%	45.8%	0.0%
Stark	0.0%	2.0%	36.9%	41.7%	19.4%
Stutsman	1.6%	16.2%	8.8%	49.6%	23.8%
Traill	0.9%	9.7%	50.3%	21.5%	17.5%
Walsh	1.1%	1.7%	19.3%	43.6%	34.3%
Ward	0.3%	3.6%	41.3%	36.5%	18.3%
Williams	0.0%	1.8%	27.1%	51.0%	20.1%

*Only counties with 30 or more responses are included

Support/Opposition for Higher Fines for Speeding Violations

County*	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
Bottineau	31.2%	6.4%	53.1%	2.4%	6.9%
Burleigh	12.2%	22.6%	38.2%	17.4%	9.6%
Cass	11.9%	15.6%	32.1%	25.6%	14.8%
Grand Forks	14.1%	22.2%	19.8%	20.3%	23.6%
McHenry	16.7%	2.4%	29.7%	40.2%	11.1%
McLean	11.0%	11.4%	38.2%	25.2%	14.2%
Mercer	25.8%	5.1%	42.7%	13.7%	12.7%
Morton	11.5%	28.4%	25.9%	29.1%	5.2%
Pembina	1.9%	13.2%	54.7%	11.2%	19.1%
Ransom	12.6%	25.6%	31.4%	13.0%	17.4%
Richland	12.9%	9.4%	24.2%	42.4%	11.1%
Stark	8.2%	17.2%	28.1%	36.6%	10.0%
Stutsman	1.8%	1.8%	31.8%	50.1%	14.6%
Traill	3.7%	14.6%	21.4%	37.1%	23.2%
Walsh	8.6%	2.2%	51.2%	25.3%	12.7%
Ward	16.0%	20.9%	36.5%	17.8%	8.7%
Williams	23.3%	10.6%	30.4%	31.3%	4.4%

*Only counties with 30 or more responses are included

Chances of Arrest for Driving Buzzed/Drunk

County*	Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
Bottineau	9.5%	2.7%	39.8%	20.0%	27.9%
Burleigh	2.2%	7.8%	32.1%	28.3%	29.7%
Cass	0.4%	5.7%	22.4%	36.3%	35.2%
Grand Forks	1.3%	5.4%	25.6%	37.3%	30.5%
McHenry	0.0%	3.8%	33.2%	25.6%	37.4%
McLean	0.8%	3.5%	42.9%	25.0%	27.8%
Mercer	0.0%	3.4%	36.9%	25.6%	34.1%
Morton	4.2%	9.1%	12.3%	47.5%	26.9%
Pembina	1.3%	0.5%	33.5%	38.6%	26.0%
Ransom	2.4%	9.3%	15.1%	26.5%	46.7%
Richland	0.0%	3.8%	43.2%	33.3%	19.7%
Stark	2.5%	3.5%	20.5%	38.7%	34.9%
Stutsman	1.6%	2.9%	33.4%	36.0%	26.1%
Traill	1.4%	9.0%	39.5%	15.8%	34.3%
Walsh	0.0%	2.9%	19.0%	48.4%	29.6%
Ward	3.2%	2.7%	35.6%	29.1%	29.4%
Williams	0.0%	8.0%	18.3%	24.3%	49.5%

*Only counties with 30 or more responses are included

Cell Phone Talking Frequency

County*	Never	<1/Month	Few/Month	Few/Week	Daily
Bottineau	16.3%	8.2%	34.9%	29.6%	11.0%
Burleigh	9.0%	11.8%	33.4%	25.5%	20.4%
Cass	24.2%	15.7%	23.4%	24.7%	11.9%
Grand Forks	28.5%	11.6%	20.2%	23.7%	16.0%
McHenry	9.5%	9.6%	27.0%	36.3%	17.6%
McLean	5.0%	32.3%	20.7%	33.1%	9.0%
Mercer	10.5%	10.5%	25.2%	44.2%	9.6%
Morton	11.5%	18.0%	20.1%	27.0%	23.3%
Pembina	9.2%	8.4%	49.0%	21.1%	12.3%
Ransom	5.8%	26.9%	40.3%	15.2%	11.8%
Richland	30.9%	22.4%	31.2%	12.3%	3.1%
Stark	7.0%	8.1%	38.1%	22.6%	24.2%
Stutsman	37.9%	30.0%	16.4%	15.6%	0.0%
Traill	4.5%	15.2%	37.2%	32.1%	11.0%
Walsh	6.9%	8.8%	35.7%	29.7%	18.8%
Ward	10.6%	20.9%	27.9%	15.7%	24.9%
Williams	9.0%	3.2%	52.0%	15.9%	19.9%

*Only counties with 30 or more responses are included

Cell Phone Texting Frequency

County*	Never	<1/Month	Few/Month	Few/Week	Daily
Bottineau	43.9%	20.3%	13.9%	19.6%	2.3%
Burleigh	38.0%	22.0%	19.0%	14.7%	6.3%
Cass	53.2%	18.4%	11.4%	13.1%	3.8%
Grand Forks	53.0%	13.9%	13.8%	11.2%	8.0%
McHenry	44.9%	23.2%	5.0%	17.6%	9.4%
McLean	40.7%	17.8%	13.1%	26.8%	1.7%
Mercer	22.6%	27.0%	37.4%	6.8%	6.1%
Morton	51.4%	23.9%	9.8%	5.8%	9.1%
Pembina	31.2%	18.9%	26.4%	12.7%	10.9%
Ransom	14.3%	32.2%	30.6%	22.9%	0.0%
Richland	85.0%	5.8%	3.0%	5.6%	0.6%
Stark	46.4%	22.0%	11.9%	18.5%	1.1%
Stutsman	79.4%	2.4%	4.4%	1.7%	12.1%
Traill	38.8%	8.9%	32.2%	12.8%	7.4%
Walsh	41.5%	14.6%	16.6%	16.2%	11.2%
Ward	46.1%	13.0%	20.9%	12.4%	7.5%
Williams	33.0%	9.9%	29.7%	20.8%	6.6%

*Only counties with 30 or more responses are included