

Community Leader and Law Enforcement DUI Survey, 2013



Prepared for

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Disclaimer

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ABSTRACT

Driving under the influence is a dangerous activity and is especially problematic in North Dakota. To curtail rates of impaired driving, it is important to examine the actions of those that have firsthand involvement with DUI prevention: prosecutors, community leaders, and law enforcement personnel. A survey was administered to leaders across the state. It included ranking, ordering, and fill-in-the-blank response questions. Statistical analyses were performed to study differences across respondent groups, administrative regions, and with regard to traffic-related work loads. Results show that DUI citation and conviction rates differ and are contingent upon one's job title, geographic location, and time spent on traffic related calls for service. Imprisonment is viewed as the most effective deterrent to impaired driving, and two funding resources – North Dakota Department of Transportation High-Visibility Enforcement Grants and North Dakota Highway Patrol Roving Patrols – were rated as most important in stopping driving after drinking. Changes can be made to ensure higher conviction rates, and new strategies can be used to discourage impaired driving. North Dakota DUI penalties lag considerably behind other states, and modifications to the state's legislation could reduce future instances of this hazardous behavior.

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1. INTRODUCTION

In North Dakota, approximately 60% of drivers consume alcohol (Vachal, Benson, and Kubas 2010 – 2012). Therefore, it is logical that impaired driving has the potential to be a problem within the state. Historical data affirms this: North Dakota consistently has one of the highest rates of traffic fatalities involving alcohol in the nation (NHTSA 2004 – 2013). Since 2003, the state has led the nation twice, been in the top five on five occasions, and has been in the top quarter for all but one year for the proportion of traffic fatalities that involve any alcohol. The North Dakota Highway Patrol (NDHP) (2013a) has tracked alcohol-related fatalities since 2007. Over the six years studied, anywhere from 40 to 58 percent of all fatal crashes involved alcohol impairment (Figure 1.1). Clearly, there is a need to deter impaired driving and promote safer roadways in North Dakota.

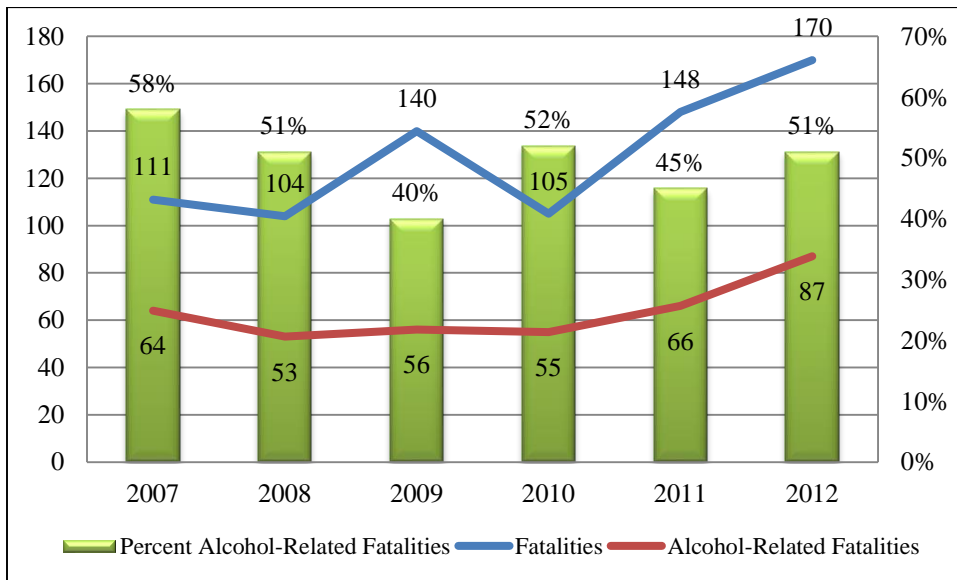


Figure 1.1 Alcohol-Related Fatalities in North Dakota, 2007 – 2012

Alcohol-related crashes have occurred in the United States for more than 100 years (Voas and Fell 2011). Between 1982 and 1997, the enactment of basic impaired driving laws decreased alcohol-related crash fatalities (Voas and Fell 2011). These laws include a 0.08 g/dL blood alcohol content (BAC) legal limit, license revocation or suspension for BAC above the legal limit, legal drinking age of 21, and the zero-tolerance law for drivers under 21 with alcohol in their system. Currently all 50 states and Washington, D.C. have a 0.08 g/dL BAC limit and vehicle sanctions for repeat offenders, such as license suspension, impoundment, and ignition interlocks. In 2010, approximately 1.41 million drivers were arrested while driving under the influence (U.S. Department of Justice 2010) and more than 10,000 deaths were caused by impaired drivers, accounting for roughly one-third of traffic related fatalities (NHTSA 2010).

Studies show that changes made in the 1980s to educational, legislative, and enforcement activity have been beneficial. Impaired driving fatalities declined (Hingson 1993) and overall instances of impaired driving diminished (Shults et al. 2001). Nonetheless, impaired driving enforcement in the United States lags behind other developed countries: American enforcement generally does not occur until after an accident, moving violation, or erratic driving behavior happens (Voas and Lacey 1989). National campaigns such as the *Checkpoint Strikeforce* program (Lacey et al. 2008) and the annual *Drunk Driving. Over the Limit. Under Arrest.* Labor Day weekend crackdown (Solomon et al. 2008) promote enforcement and public awareness. State-level campaigns such as the *Saving Lives* program in

Massachusetts (Hingson et al. 1996) and the *Strategic Evaluation States* initiative in Georgia (Syner et al. 2008) yielded an overall decrease in alcohol-related fatal crashes.

There is an abundance of literature dedicated to strategies aimed at reducing rates of impaired driving, but little literature exists about the perceptions of community leaders and law enforcement personnel. Silverstein and Barton (2010) conducted a similar study, but categorized impaired drivers as “medically at-risk” and included many stakeholders beyond law enforcement personnel and community leaders. Schrock et al. (2002) surveyed state law enforcement agencies from 20 states, but focused on work zone enforcement rather than impairment. Eger (2006) examined how injury crashes in Kentucky related to both the presence of law enforcement personnel and county-level “dry” or “wet” alcohol laws, but did not elicit information from law enforcement personnel or community leaders. There is a gap in information garnered from law enforcement personnel and their perceptions of impaired driving. It is important that this study gathers such information in order to help decision-makers and practitioners in the state curtail high rates of impaired driving.

2. METHODS

A survey questionnaire was chosen for gathering data from community leaders and law enforcement personnel. The survey was designed with input from the North Dakota Department of Transportation (NDDOT), the North Dakota Association of Counties, judicial experts, law enforcement experts and the Upper Great Plains Transportation Institute (UGPTI). It was distributed to local leaders and stakeholders and included a cover letter inviting participation and explaining the goals of the project. Stakeholders were asked to share the survey with commission members, councilmembers, attorneys, and law enforcement personnel. It was open for completion via online submission and mail. It was distributed on February 14, 2013, and was open to response until April 2, 2013.

The survey included questions about emergency calls, traffic laws, traffic safety issues, impaired driving, deterrent strategies, funding, and demographic information. Nominal level data were coded for descriptive considerations. Numerical fill-in-the-blank questions were transformed into ordinal values to quantify responses between extremes. A four-point Likert scale ranging from “very important” to “unimportant” was used to measure the importance of traffic safety issues. A five-point Likert scale was used to measure the frequency of various impaired driving initiatives. This scale ranged from “always” to “never.” A separate five-point Likert scale ranging from “very sufficient” to “very insufficient” was used to study staffing levels. Survey participants also used ranking and ordering to identify preferences among five impaired driving deterrents and five resources aimed at preventing driving after drinking. These testing techniques allow for statistical testing of relationships, means, and tests of significance.

Electronic responses were automatically entered into a database created by the web communications manager at UGPTI. Mail responses were manually entered into the same database. This database was exported to an Excel spreadsheet and subsequently uploaded to SPSS for statistical analysis. Kruskal-Wallis tests (1-way ANOVA) were performed to identify statistically significant differences between respondent groups and administrative regions. T-tests were examined to compare differences in ratings of traffic safety issues, impaired driving deterrents, and resources to stop driving after drinking. This allowed testing to distinguish if respondents preferred certain strategies over others.

One fill-in-the-blank question – which addressed one’s share of calls for service that are traffic related – was transformed into a dummy variable. The dummy variable, hereafter referred to as “Majtraff,” was created to study how one’s job responsibilities influence perceptions of DUI enforcement. The “Majtraff” variable separates the sample into two groups – those that spend a majority of their calls for service on traffic-related activity and those that do not. The variable excludes commissioners and prosecutors. It explains differences between majority/minority shares of traffic-related calls for service.

3. RESPONSE

The survey response rate among all community leaders and law enforcement personnel in North Dakota is unknown. Key stakeholders were directed to share the survey questionnaire with local leaders and law enforcement agencies. It is impossible to know how many entities and agencies received the survey from key stakeholders. Thus, the researchers in this project were unable to quantify how many individuals had exposure to the survey.

When one considers the volume of police officers, sheriffs, highway patrol officers, city commissioners, county commissioners, and prosecutors in the state of North Dakota, it becomes apparent that the response rate for this survey was likely low. This is not unexpected; other surveys performed by the Upper Great Plains Transportation Institute commonly have response rates of 20% to 30%.

What is known is that 464 surveys had valid responses and form the sample in this study. Considering the six-week timeframe in which the survey was open for response, this was an acceptable number. Responses were distributed unevenly by profession with a higher proportion of police officers being represented than any other group (municipal police: n=252, sheriff: n=91, NDHP: n=24, city/county commissioner: n=80, prosecutor: n=17). Responses from prosecutors and the NDHP are not large enough to be extrapolated and any conclusions made for these groups cannot be considered indicative of the entire North Dakota prosecutor and NDHP populations.

Responses were tracked factoring for the region in which the respondent is employed. Four administrative regions are used by the NDHP – the northeast, northwest, southeast, and southwest – and serve as a variable in this study (Figure 3.1). Responses by region are distributed fairly evenly (northeast: n=113, northwest: n=112, southeast: n=148, southwest: n=68, missing: n=23) and somewhat align with actual proportions of the populations of each region in the state. In this sample, individuals from the Southwest region are slightly underrepresented: whereas this survey consists of just 15.4% of individuals from the southwest, this region represents about one-quarter (25.3%) of all North Dakotans. Nonetheless, the sample has a satisfactory amount of respondents from all four regions; the numbers are sufficient enough to extrapolate responses to fit the entire population of community leaders and law enforcement personnel in the four administrative sectors.

Approximately 77% of eligible respondents were successfully categorized using the “Majtraff” variable. Those with minority shares of traffic related calls for service (n=179) outnumber those that spend a majority of their calls for service on traffic related events (n=106). Of those meeting “Majtraff” parameters, a majority (66.3%) were municipal police officers. About one-quarter (25.6%) were sheriffs. Only 23 NDHP officers were categorized using the “Majtraff” parameters. Once again, responses from this group are not large enough to be extrapolated to fit the entire North Dakota Highway Patrol population regarding their perceptions toward DUI enforcement.

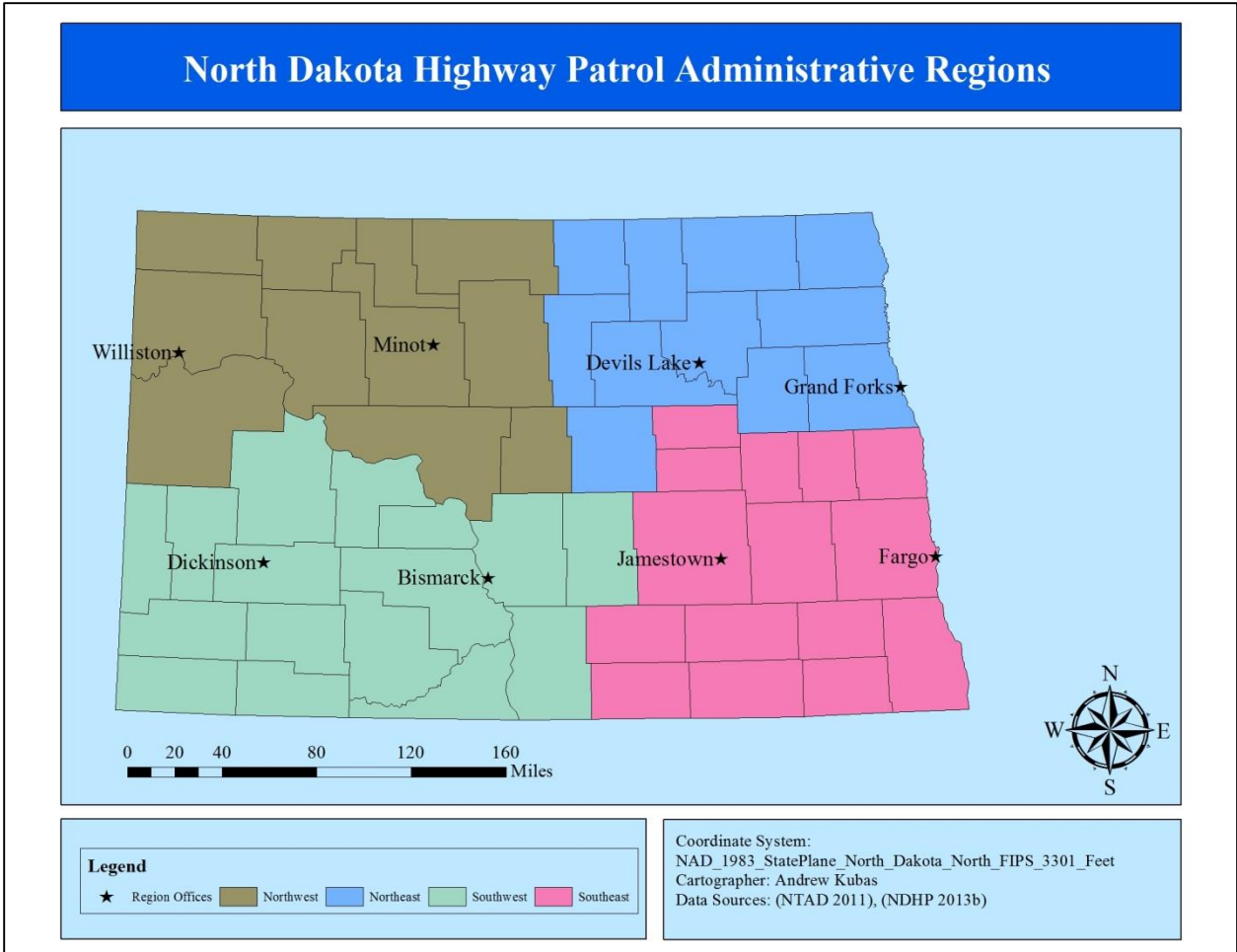


Figure 3.1 North Dakota Administrative Regions

4. RESULTS

Survey responses offer insight into perceptions of community leaders and law enforcement personnel regarding impaired driving. Simple frequency analysis of nominal and ordinal responses provides a baseline of respondent views and behaviors. Scale responses were converted to ordinal values to quantify responses between extremes, allowing for testing of relationships, means, and tests of significance.

4.1 Traffic Related Calls for Service

Respondents estimated the share of calls for service they receive that are traffic related. In this survey respondents spent 38.8% of their calls for service on traffic-related activity. However, the share of calls for service differs between groups. Police officers averaged 32.9% of their calls for service on traffic related activity, sheriffs reported an average of 38.2%, and NDHP officers had a share of 92.0%. The difference in these distributions was statistically significant ($F=62.375$, $df=2$, $p<0.001$). Other differences emerged when controlling for administrative region. Participants from the northwest had an average share of 56.5%, a larger proportion than the southwest (35.5%), southeast (32.8%), and northeast (30.0%) ($F=15.192$, $df=3$, $p<0.001$). Due to the broad range of values, a dichotomous (“dummy”) variable was created to distinguish between those respondents that dedicate a majority of their calls for service to traffic related safety needs and those that do not. Any respondent reporting a share of at least 50% was categorized as a “1” and any respondent with less than 50% was identified as a “0” for statistical testing. The dummy variable is referred to as “Majtraff” throughout the remainder of the analysis.

4.2 Traffic Safety Issues

Respondents were asked to indicate the level of importance of various traffic safety issues within their agency. This provides a baseline for comparison of impaired driving with other traffic safety needs. Community leaders and law enforcement personnel were presented with an ordinal-level scale ranging from “unimportant” to “very important.” Six topics were covered – aggressive/careless drivers, distracted drivers, impaired drivers, unbelted drivers, older drivers, and younger drivers – all of which relate directly to the type of individual operating a motor vehicle. Responses show that different vehicle operators are given different levels of importance by survey participants. More than four-fifths of all respondents (84.1%) ranked impaired drivers as a “very important” traffic safety issue within their agency. Nearly all respondents (98.2%) rated impaired drivers as being either “important” or “very important,” the largest proportion of the six topics. As such, there were statistically significant differences between how this topic was distributed compared to all other topics (Table 4.1). Collectively, a majority of survey participants perceived five of the six traffic safety issues as having high importance based on those identifying the issues as being either “important” or “very important.”

Table 4.1 Paired Samples t-test: Impaired Drivers and All Other Traffic Safety Issues

Pair	Mean	Std. Deviation	Std. Error Mean	t-value	df	Sig.
Impaired Drivers/Careless Drivers	0.221	0.568	0.027	8.269	452	0.000
Impaired Drivers/Distracted Drivers	0.427	0.619	0.029	14.675	451	0.000
Impaired Drivers/Unbelted Drivers	0.721	0.790	0.037	19.373	450	0.000
Impaired Drivers/Older Drivers	1.384	0.890	0.042	33.006	450	0.000
Impaired Drivers/Younger Drivers	1.031	0.856	0.040	25.586	450	0.000

Bold: Significant at the 1% level

The six types of vehicle operators were not all viewed favorably, however. One traffic safety issue that was considerably different in terms of its distribution was that of older drivers operating vehicles. In this survey, a majority of respondents (59.2%) ranked elderly drivers as being either an “unimportant” or “less important” traffic safety issue. A paired samples t-test of these ordinal-level responses indicates that this was one of the most polarizing questions (Table 4.2).

Table 4.2 Paired Samples t-test: Older Drivers and All Other Traffic Safety Issues

Pair	Mean	Std. Deviation	Std. Error Mean	t-value	df	Sig.
Older Drivers/Careless Drivers	-1.163	0.880	0.041	-28.142	452	0.000
Older Drivers/Distracted Drivers	-0.960	0.820	0.039	-24.893	451	0.000
Older Drivers/Impaired Drivers	-1.384	0.890	0.042	-33.006	450	0.000
Older Drivers/Unbelted Drivers	-0.656	0.914	0.043	-15.254	450	0.000
Older Drivers/Younger Drivers	-0.355	0.610	0.029	-12.359	450	0.000

Bold: Significant at the 1% level

The mean values of traffic safety issues also show that community leaders and law enforcement personnel perceive the importance of vehicle operators differently. All six traffic safety issues have statistically significant differences when factoring for respondent group (Table 4.3). Differences for the six issues were statistically significant at the 1% level. For example, unbelted drivers had the largest disparity among respondents. Whereas prosecutors, on average, rated unbelted drivers as having lesser importance with a mean of 2.4, NDHP officers viewed these types of drivers as being more important with a mean value of 3.9. These values also deviated substantially from the other three respondent groups ($F=9.878$, $df=4$, $p<0.001$).

Table 4.3 Mean Values of Traffic Safety Issues, by Respondent Group

Q#	Question	Scale	Resp. All	Respondent Group					Sig.
				Police	Sheriff	NDHP	Commissioners	Prosecutor	
4A	Aggressive Drivers	1-4	3.6	3.5	3.6	3.9 [#]	3.8	3.8 [#]	**
4B	Distracted Drivers	1-4	3.4	3.3	3.4	3.7 [#]	3.6	3.6 [#]	**
4C	Impaired Drivers	1-4	3.8	3.9	3.7	4.0 [#]	3.7	4.0 [#]	**
4D	Unbelted Drivers	1-4	3.1	3.1	3.2	3.9 [#]	3.0	2.4 [#]	**
4E	Older Drivers	1-4	2.4	2.3	2.5	2.3 [#]	2.9	2.1 [#]	**
4F	Younger Drivers	1-4	2.8	2.8	2.7	2.8 [#]	2.1	2.2 [#]	**

**Significant at the 1% level for 1-way ANOVA

[#]Less than 30 responses from this group; estimate uncertain due to limited sample size

Responses are different when factoring for administrative region (Table 4.4). Just one traffic safety issue – unbelted drivers – was statistically significant among respondents when controlling for region ($F=2.968$, $df=3$, $p=0.032$). All other traffic safety issues were rated comparably.

Table 4.4 Mean Values of Traffic Safety Issues, by Administrative Region

Q#	Question	Scale	Resp. All	Administrative Region				Sig.
				Northwest	Northeast	Southwest	Southeast	
4A	Aggressive Drivers	1-4	3.6	3.7	3.6	3.7	3.5	
4B	Distracted Drivers	1-4	3.4	3.5	3.3	3.5	3.4	
4C	Impaired Drivers	1-4	3.8	3.9	3.8	3.7	3.8	
4D	Unbelted Drivers	1-4	3.1	3.1	3.0	2.9	3.2	*
4E	Older Drivers	1-4	2.4	2.5	2.4	2.4	2.4	
4F	Younger Drivers	1-4	2.8	2.9	2.7	2.9	2.7	

*Significant at the 5% level for 1-way ANOVA

Those that spend a majority of their time on traffic-related calls for service rated the importance of all six traffic safety issues higher than their counterparts. This is likely due to the fact that the six issues presented are all encountered on the road. This may explain why those spending more time in traffic would view these issues as being more important. For three of the six issues, there were statistically significant differences when factoring for the “Majtraff” variable (Table 4.5). Those spending a majority of their time on traffic related calls for service were more likely to view distracted drivers as an important safety issue ($F=9.832$, $df=1$, $p=0.002$), were more likely to rate impaired drivers as an important traffic safety issue ($F=4.691$, $df=1$, $p=0.031$), and were more likely to view unbelted drivers as an important issue on roadways ($F=34.105$, $df=1$, $p<0.001$).

Table 4.5 Mean Values of Traffic Safety Issues, by "Majtraff" Variable

Q#	Question	Scale	Resp. All	Traffic Related Calls for Service		Sig.
				Less than 50%	More than 50%	
4A	Aggressive Drivers	1-4	3.6	3.5	3.7	
4B	Distracted Drivers	1-4	3.3	3.2	3.5	**
4C	Impaired Drivers	1-4	3.8	3.8	3.9	*
4D	Unbelted Drivers	1-4	3.2	3.0	3.5	**
4E	Older Drivers	1-4	2.4	2.3	2.4	
4F	Younger Drivers	1-4	2.7	2.7	2.8	

**Significant at the 1% level for 1-way ANOVA

*Significant at the 5% level for 1-way ANOVA

4.3 Impaired Driving Perceptions

Respondents rated perceptions of impaired driving issues in North Dakota. Five issues were highlighted: citation issuing, DUI conviction, normal patrol effectiveness, high-visibility enforcement effectiveness, and staffing levels. For each area, respondents rated their own agency, other agencies, and how the public perceives such issues. The first four topics had a five-point Likert scale ranging from “never” to “always” and the fifth topic had a five-point Likert scale ranging from “very insufficient” to “very sufficient.”

Results show there are significant differences when rating impaired driving issues (Table 4.6, Table 4.7, and Table 4.8). Specifically, citations and staffing levels had significant differences when factoring for job type, administrative region, and the “Majtraff” variable. Respondents believe that citations are issued to a driver with BAC over 0.08 g/dL more frequently at one’s own agency than at other agencies based on reported mean values. Citations are issued most often at one’s own agency by NDHP Officers ($F=13.610$, $df=4$, $p<0.001$). Those with a majority of calls for service on traffic issues thought citations were issued more often at their own agency ($F=5.784$, $df=1$, $p=0.017$).

Table 4.6 Impaired Driving Perceptions, by Respondent Group

Question	Scale	Resp. Respondent Group						Sig.
		All	Police	Sheriff	NDHP	Commissioners	Prosecutor	
Citation Own Agency	1-5	4.5	4.5	4.7	4.9 [#]	3.8	4.8 [#]	**
Citation Other Agencies	1-5	4.2	4.1	4.4	3.9 [#]	4.3	4.9 [#]	**
Citation Public Perception	1-5	4.3	4.3	4.4	4.4 [#]	4.1	4.4 [#]	
Conviction Own Agency	1-5	3.6	3.7	3.6	3.0 [#]	3.7	3.7 [#]	**
Conviction Other Agencies	1-5	3.7	3.7	3.7	2.9 [#]	4.1	3.4 [#]	**
Conviction Public Perception	1-5	3.8	3.9	3.7	3.7 [#]	3.9	3.7 [#]	
Patrols Own Agency	1-5	3.6	3.6	3.7	3.6 [#]	3.3	3.8 [#]	
Patrols Other Agencies	1-5	3.6	3.6	3.7	3.3 [#]	3.6	3.8 [#]	
Patrols Public Perception	1-5	3.5	3.4	3.5	3.5 [#]	3.4	3.5 [#]	
HVE Own Agency	1-5	3.5	3.5	3.7	3.5 [#]	3.5	3.3 [#]	
HVE Other Agencies	1-5	3.6	3.6	3.8	3.3 [#]	3.6	3.1 [#]	
HVE Public Perception	1-5	3.6	3.6	3.7	3.7 [#]	3.5	3.4 [#]	
Staffing Own Agency	1-5	3.2	3.3	3.5	2.7 [#]	2.9	3.3 [#]	**
Staffing Other Agencies	1-5	3.1	3.2	3.4	2.3 [#]	2.9	2.9 [#]	**

**Significant at the 1% level for 1-way ANOVA

[#]Less than 30 responses from this group; estimate uncertain due to limited sample size

The perceived sufficiency of staffing levels for administering and enforcing impaired driving initiatives had significant differences. At both one's own agency and at other agencies, Sheriffs rated sufficiency levels the highest and NDHP officers rated levels the lowest. Responses across groups were significantly different for both questions ($F=4.604$, $df=4$, $p=0.001$; $F=4.918$, $df=4$, $p=0.001$).

Table 4.7 Impaired Driving Perceptions, by Administrative Region

Question	Scale	Resp. Administrative Region					Sig.
		All	Northwest	Northeast	Southwest	Southeast	
Citation Own Agency	1-5	4.5	4.6	4.4	4.5	4.5	
Citation Other Agencies	1-5	4.2	4.2	4.2	4.2	4.2	
Citation Public Perception	1-5	4.3	4.2	4.1	4.4	4.5	**
Conviction Own Agency	1-5	3.6	3.5	3.7	3.5	3.8	
Conviction Other Agencies	1-5	3.7	3.7	3.8	3.7	3.7	
Conviction Public Perception	1-5	3.8	3.6	3.9	3.8	3.9	
Patrols Own Agency	1-5	3.6	3.5	3.5	3.4	3.7	
Patrols Other Agencies	1-5	3.6	3.6	3.6	3.5	3.6	
Patrols Public Perception	1-5	3.5	3.4	3.4	3.4	3.6	
HVE Own Agency	1-5	3.5	3.6	3.4	3.5	3.6	
HVE Other Agencies	1-5	3.6	3.6	3.5	3.5	3.6	
HVE Public Perception	1-5	3.6	3.6	3.3	3.8	3.6	
Staffing Own Agency	1-5	3.3	2.8	3.5	3.2	3.6	**
Staffing Other Agencies	1-5	3.1	2.7	3.4	3.2	3.3	**

**Significant at the 1% level for 1-way ANOVA

In the northwest region, 17.4% believed that staffing levels at their own agency were “very insufficient.” This was a larger proportion than in the other regions: the northeast (7.5%), southwest (6.2%), and southeast (1.4%) had fewer respondents with this viewpoint. Northwest participants may hold this belief because their region is being actively transformed by a growing energy sector and a mounting demand for law enforcement personnel and resources. This region was least likely to perceive staffing levels as “very sufficient,” just 6.4% held this viewpoint. Roughly one-quarter of those in the northeast and southeast ranked their staffing levels as “very sufficient.” These differences were statistically significant at the 1% level ($F=10.386$, $df=3$, $p<0.001$), and the same pattern emerged when rating other agencies ($F=9.652$, $df=3$, $p<0.001$). The “Majtraff” variable also showed differences: those with a majority of calls for service on traffic-related events viewed other agencies as being less sufficient ($F=6.962$, $df=1$, $p=0.009$).

Table 4.8 Impaired Driving Perceptions, by Traffic Related Calls for Service

Question	Scale	Resp. Traffic Related Calls for Service			Sig.
		All	Less than 50%	More than 50%	
Citation Own Agency	1-5	4.5	4.5	4.6	*
Citation Other Agencies	1-5	4.1	4.1	4.1	
Citation Public Perception	1-5	4.4	4.5	4.1	**
Conviction Own Agency	1-5	3.6	3.6	3.6	
Conviction Other Agencies	1-5	3.6	3.6	3.6	
Conviction Public Perception	1-5	3.8	3.9	3.8	
Patrols Own Agency	1-5	3.6	3.6	3.7	
Patrols Other Agencies	1-5	3.6	3.6	3.6	
Patrols Public Perception	1-5	3.5	3.4	3.5	
HVE Own Agency	1-5	3.6	3.5	3.7	
HVE Other Agencies	1-5	3.6	3.6	3.6	
HVE Public Perception	1-5	3.6	3.6	3.6	
Staffing Own Agency	1-5	3.3	3.4	3.2	
Staffing Other Agencies	1-5	3.2	3.4	3.0	**

**Significant at the 1% level for 1-way ANOVA

*Significant at the 5% level for 1-way ANOVA

4.4 Effectiveness of Deterrents

Respondents ranked the effectiveness of deterrents at stopping driving after drinking. Five deterrents were presented and respondents rated the deterrents from one to five with a score of one referring to “not effective” and a score of five correlating to “very effective.” A majority (55.4%) placed the effectiveness of imprisonment as a four or five; participants consider this strategy effective. It was the only strategy with a majority of respondents rating it positively. A paired samples t-test shows that the distributions are significantly different for three of four deterrents when compared to imprisonment (Table 4.9). Respondents rated imprisonment as more effective than fines ($t=8.919$, $df=454$, $p<0.001$), sobriety checkpoints ($t=5.679$, $df=454$, $p<0.001$), and roving patrols ($t=4.177$, $df=453$, $p<0.001$).

Table 4.9 Paired Samples t-test: Imprisonment and All Other Deterrents

Pair	Mean	Std. Deviation	Std. Error Mean	t-value	df	Sig.
Imprisonment/Fines	0.815	1.950	0.091	8.919	454	0.000
Imprisonment/License Suspension	0.157	1.777	0.084	1.880	451	0.061
Imprisonment/Sobriety Checkpoints	0.574	2.154	0.101	5.679	454	0.000
Imprisonment/Roving Patrols	0.441	2.247	0.105	4.177	453	0.000

Bold: Significant at the 1% level

4.5 Funding Priorities

Respondents ranked how funding should be allocated to five programs dedicated to preventing impaired driving. Rating importance was again based on a five-point scale of one (“unimportant”) to five (“very important”). Distributions for the five resources were comparable except for NDDOT high-visibility enforcement (HVE) grants. A majority (55.6%) rated NDDOT HVE grants as more effective with a score of four or five. Nearly half (49.2%) rated NDHP roving patrols with the same scores. High-visibility enforcement is an evidence-based strategy identified by the NHTSA (Goodwin et al. 2013). High-visibility enforcement consists of short, intense, and highly publicized periods of enforcement via checkpoints, saturation patrols, and enforcement zones (Goodwin et al. 2013). In North Dakota, law enforcement personnel utilize high-visibility enforcement grants during specific time periods to work heavily in primary counties while maintaining presence in secondary counties (Levi et al. 2013). With

regard to impaired driving, officers in North Dakota utilize HVE grants within corridors and times where the occurrence of injury and death from impaired driving is greatest (Levi et al. 2013). A roving patrol is a strategy in which individual officers concentrate on detecting and arresting impaired drivers in an area in where impaired driving is common or where alcohol-involved crashes have occurred (Goodwin et al. 2013). Funds are allocated specifically to provide resources for officers to focus on impaired driving.

A paired samples t-test shows that respondents rated NDDOT HVE grants higher than all others (Table 4.10). Similarly, roving patrols were rated higher than two other resources (Table 4.11). The importance of allocating funds to NDDOT HVE grants is much greater than any other resource.

Table 4.10 Paired Samples t-test: NDDOT HVE Grants and All Others

Pair	Mean	Std. Deviation	Std. Error Mean	t-value	df	Sig.
NDDOT HVE Grants/Community and County Comm.	0.443	2.005	0.096	4.637	439	0.000
NDDOT HVE Grants/Citation and Testimony Training	0.474	1.980	0.095	5.013	438	0.000
NDDOT HVE Grants/NDHP Crash Investigation	0.584	2.204	0.105	5.534	436	0.000
NDDOT HVE Grants/NDHP Roving Patrols	0.292	1.920	0.092	3.182	438	0.002

Bold: Significant at the 1% level

Table 4.11 Paired Samples t-test: Roving Patrols and All Others

Pair	Mean	Std. Deviation	Std. Error Mean	t-value	df	Sig.
Roving Patrols/Community and County Comm.	0.157	2.150	0.103	1.532	438	0.126
Roving Patrols/NDDOT HVE Grants	-0.292	1.920	0.092	-3.182	438	0.002
Roving Patrols/Citation and Testimony Training	0.182	1.915	0.092	1.994	438	<i>0.047</i>
Roving Patrols/NDHP Crash Investigation	0.295	1.741	0.083	3.545	436	0.000

Bold: Significant at the 1% level
Bold Italic: Significant at the 5% level

5. DISCUSSION

A driving under the influence conviction in North Dakota involves a multifaceted relationship between law enforcement, prosecutors, judges, and other criminal justice and motor vehicle professionals. For the state of North Dakota to address its impaired driving pandemic, it will require an integrated approach among legislators, law enforcement, and an accepting general public. Changing policies for DUI conviction does not take place via a sudden, rapid transformation. First, the North Dakota Legislature can reevaluate punishment for impaired driving. The legislature should be lauded for its recent decision to raise the fines and penalties associated with driving under the influence. The new legislation includes a maximum \$500 fine for first-time offenders with a BAC between 0.08 and 0.20, a \$750 fine for first time offenders with a BAC over 0.21 or those refusing to submit to chemical testing with up to 10 days in jail, a maximum of \$1,000 in fines and at least 60 days in jail for a second offense, a maximum of \$2,000 in fines and 180 days in jail for a third offense, and \$3,000 in fines and at least one year and one day in jail for each offense thereafter (Smith 2013). However, a scan of the literature indicates that fines and penalties could be increased even further to deter rates of driving after drinking. For example, in North Carolina one may pay upwards of \$4,000 in fees for impaired driving (North Carolina Department of Public Safety 2009). In Ohio, first-time DUI convictions can result in license suspension for up to three years (Papp and Merkel 2009). In states such as New York, first-time DWI offenders can face up to one year in prison for driving under the influence (New York State Code, Vehicle and Traffic, Article 31 Section 1193). Fines, suspensions, and prison terms associated with DUI in North Dakota are much less stringent than in these states. These fines and penalties represent some of the highest extremes in the United States, but are meant to show how much farther North Dakota could go in punishing its DUI offenders.

One of the major findings from the analysis is the perception among respondents living in the western half of the state that there is a need for additional law enforcement personnel due to low staffing sufficiency. This parallels recent efforts from North Dakota's Attorney General to allocate \$16.6 million to hire law enforcement personnel in the oil region and provide housing for these potential employees (Williams 2013). The need for additional law enforcement personnel has been recognized both by respondents in this survey and by state leaders. If funding is provided, it could solve some of the personnel issues currently occurring within the state.

Among all respondents surveyed, there was no distinguishable sense of "otherness" separating one's own agency from other agencies within the state. In general, respondents viewed their own agencies as being slightly more likely to issue a citation and conviction for DUI and being marginally more effective at catching impaired drivers during normal patrols or high-visibility enforcement efforts. However, these differences were not statistically significant. This implies cohesion between agencies and indicates that all law enforcement entities within North Dakota desire to protect residents and that law enforcement workers believe that other agencies hold standards that are comparable to their own.

Individuals spending more time on traffic offenses tend to believe said offenses are more important. This sheds light into the biases that may exist depending upon one's job responsibilities and duties in law enforcement. Future research must continue to address this variable as it relates to staff sufficiency and impaired driving enforcement priorities. Doing so will establish a baseline to better understand the needs of law enforcement personnel. Strategies can then be implemented to efficiently combat driving under the influence based upon one's role in law enforcement.

Responses from community leaders and law enforcement personnel were overwhelmingly positive to two resources used in stopping driving after drinking. Participants were very supportive of NDDOT HVE grants and NDHP roving patrols. Future funding should continue to be allocated to these resources. They

were viewed across the state as important tools necessary to stop impaired driving. Utilizing these tools more often would promote safety within the state and improve one of North Dakota's largest public safety hazards.

Although many relationships in this study were found to be statistically significant, it is important to link statistical findings to practical significance. For example, high-visibility enforcement grants and roving patrols are only viable so long as there are resources to fund them and officers available for enforcement. Given the current strain placed on staffing levels in some parts of the state, impaired driving will not improve until funding and employment issues are addressed first. Similarly, although impaired drivers are prioritized over all others, this does not mean that other traffic safety issues should be considered secondary to driving after drinking. Likewise, although elderly drivers are emphasized less than all others, it would not be prudent to ignore this group altogether. Traffic safety enforcement is multidimensional and complex. As such it should be emphasized that some recommendations made in this report will only be obtained via initial, practical improvements.

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