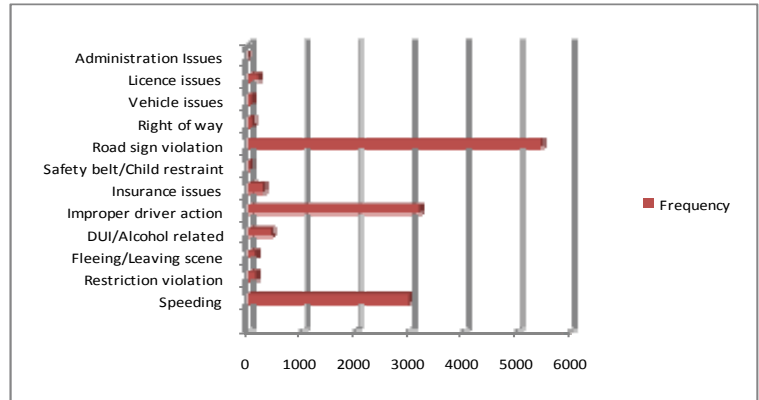


Speed-Related Crashes in North Dakota: Areas of Concern

Speeding is a serious concern on North Dakota's roads, playing a significant role in fatal, injury, and property damage only (PDO) crashes. As illustrated in the graph to the right, speeding was cited in 3,027 crashes from 2005-2007, representing 23.16% of all crashes. Additionally, more than 30% of all fatal crashes from 2005-2007 were speed-related.

Crash data from the North Dakota Department of Transportation aids in understanding of speeding, not only in terms of its serious consequences, but in terms of understanding specific speeding trends. Notably, statistics reveal speeding trends in terms of driver age, gender, county, and time. Examining these characteristics may aid in preventing future crashes.*

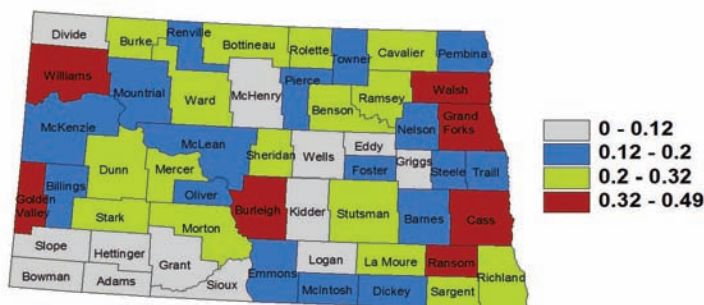
ND Crash Citations, 2005-2007



Demographic and Geographic Trends

Speed-related crash rates among ND counties vary. The graph below represents the 2006 county rate of speed-related crashes based on Vehicle Miles Traveled (VMT). Ransom (0.49), Walsh (0.42), and Grand Forks (0.40) had the highest rates, while Adams (0.00), Grant (0.06), and Wells (0.07) had the lowest rates.

Speed-Related Crashes per Vehicle Mile Traveled, 2006



*All reported statistics in this brief were measured and determined significant using chi square probability tests (p<.0001).

The Economics of Speeding: Chicago to Seattle

What is speeding worth to you? Consider the following: On a road trip from Chicago to Seattle, one would drive through seven states, where speed limits and fines vary. Based on these numbers, it is possible to calculate whether or not it is "worth it" for one to speed over the course of this trip. To illustrate, assume the driver decides to drive 10 mph over the speed limit in each state (using interstate roadways only); the table below expresses calculations for each state in terms of time value per hour: \$18 (average U.S. hourly salary) and \$100 (what one may view their time to be worth). The table assumes one speeding ticket is issued per state, and calculates the cost of the trip taking Value of Time into account. In some states, it actually pays to speed when valuing time at \$100/hr (ND & MT), but the trip costs between \$305 and \$575, depending on one's value of time. For the trip to yield a positive net value, one would have to value his or her time at \$181 per hour. So the next time you make the decision to speed, you may ask yourself, "what is my time worth?"

Traveling 10mph over posted speed limits from Chicago to Seattle

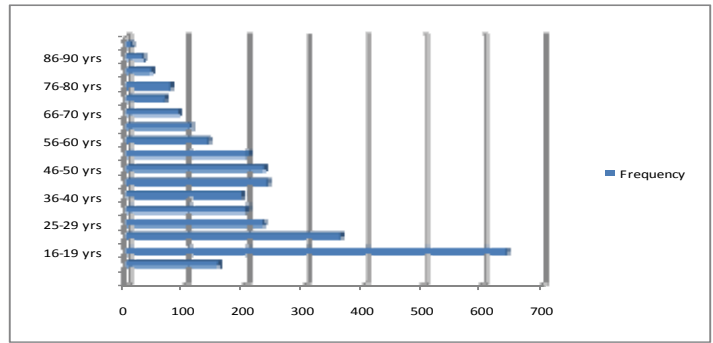
	IL	WI	MN	ND	MT	WA	ID	Trip
Speed Traveled	65	75	80	85	85	80	85	78
Time Gain	0.27	0.60	0.46	0.56	1.09	0.54	0.15	3.74
Value at \$18/hr.	\$5	\$11	\$8	\$10	\$20	\$10	\$3	\$104
Value at \$100/hr.	\$27	\$60	\$46	\$56	\$109	\$54	\$15	\$374
Penalty	\$75	\$160	\$122	\$50	\$20	\$177	\$75	\$679
Net at \$18/hr.	-\$70	-\$149	-\$114	-\$40	\$0	-\$167	-\$65	-\$575
Net at \$100/hr.	-\$48	-\$100	-\$76	\$6	\$89	-\$123	-\$60	-\$305

Demographic and Geographic Trends, cont.

Driver age is a significant factor in speed-related crashes. From 2005-2007, 16- to 19-year-old drivers were involved in 639 speed-related crashes, as shown in the graph. This age group accounted for 21.9% of all crashes. 32% of all speed-related crashes involved drivers 16- to 24-years-old.

Additionally, statistics indicate male drivers are up to 17.8% more likely to be involved in speed-related crashes than female drivers. Male drivers were involved in 1,631 speed-related crashes while female drivers were involved in 1,384 during 2005-2007.

Speed-Related Crashes by Age, 2005-2007



Speed Incidence in Crashes, 2005-2007

The North Dakota Department of Transportation reported speed-related crash trends from 2005-2007 (Figure 1), noting December, January, and February as the months with highest crash occurrences. May, November, and July were reported as months with the fewest speed-related crashes. While the data does not represent total speeding behavior, it is valuable in determining when risk is highest for ND drivers and passengers. It is pertinent to note that “speed-related” data includes not only exceeding the posted limit, but also driving too fast for conditions.

Data indicates that speed-related crashes peak at 3:00 PM (356 total crashes). In fact, 31.4% of all speed-related crashes occurred between 3:00 PM and 5:00 PM (Figure 2). The time between 6:00 AM and 7:00 AM showed the sharpest increase of speed-related crashes, increasing from 30 crashes to 137 — an increase of more than 400%.

Summary

While the reported statistics are not descriptive in terms of explicit causes, further studies may be able to ascertain these details. Speeding continues to be a concern of drivers in our state, as it has often been shown as the leading factor in fatal crashes (22% in 2006). Improving a complex problem such as speeding will likely require much research and specialized education programs. These efforts may begin with concentration on the preceding statistics and “trouble areas,” assessing causes and applying specific solutions.

Fig. 1: Speed-Related Crashes, by Month

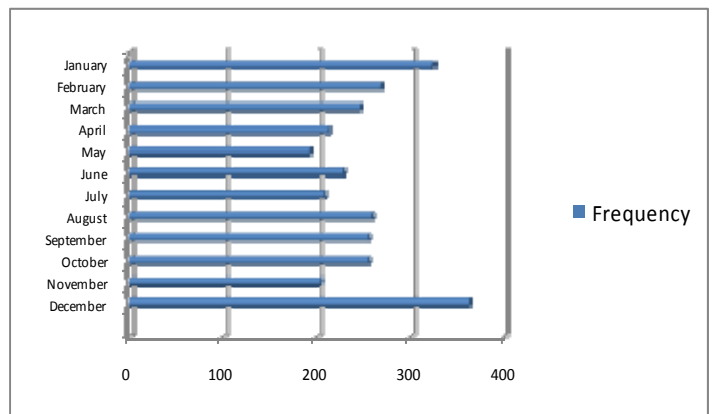
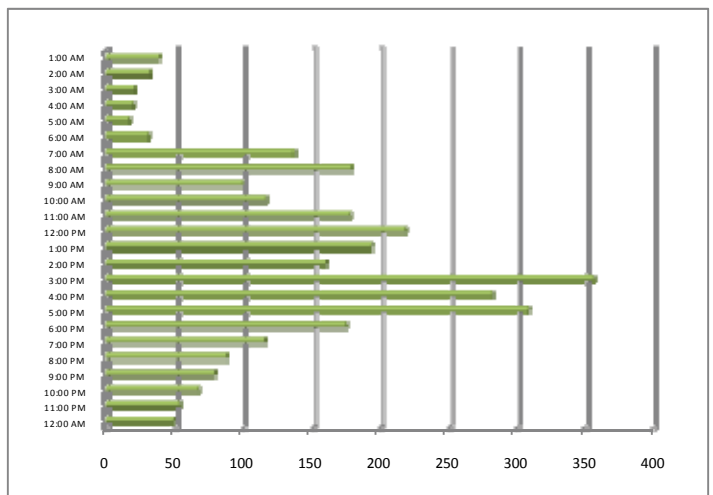


Fig. 2: Speed-Related Crashes, by Hour



The Rural Transportation Safety and Security Center is a program of the Upper Great Plains Transportation Institute at NDSU.

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