MINNESOTA DEPARTMENT OF PUBLIC SAFETY

Office of the Commissioner

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Office of Traffic Safety

State Fire Marshal

June 30, 2020

Hundreds of families mourned the loss of loved ones killed in violent traffic crashes on Minnesota roads in 2019. Those families are forever changed because of a preventable event.

The stories of sorrow include an impaired driver who killed a 2-year-old boy riding in a stroller. A 13-year-old bicyclist who died on his birthday. The driver of a pickup truck looking at a GPS who rear-ended a car, forcing that car into oncoming traffic where it hit a motorcyclist.

The 364 deaths on Minnesota roadways is a 4 percent decrease in traffic deaths from 2018 and an 11 percent decrease over the last 10 years. Minnesota continues to see a downward trend in traffic fatalities due to continued enforcement and education efforts. And while that is encouraging news, it doesn't change the painful reality for 364 families.

The top four contributing factors in Minnesota 2019 traffic fatalities continue to be:

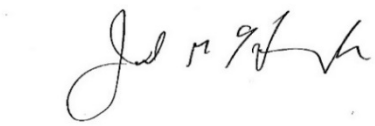
- Drunk Driving: 89 deaths
- Speed: 75 deaths
- Unbuckled motorists: 73 deaths
- Distractions: 34 deaths

Minnesota Motor Vehicle Crash Facts 2019 contains statistics and information that will be used by our traffic safety partners, legislators, media and the motoring public. It is derived from law enforcement reports and describes how and why crashes happened, where they occurred in our state and who was involved.

As you will see, the 2019 edition of Crash Facts has taken on a new and dynamic look and format. The Office of Traffic Safety research staff have worked hard to make this valuable document more user friendly, engaging, and useful to all of our stakeholders.

Driving smart is essential to coming home at the end of the day. Together we can save lives by paying attention to the road, buckling up, driving the speed limit and always lining up a sober ride.

Sincerely,



Commissioner John Harrington
Department of Public Safety

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INTRODUCTION

At the end of the 2019 calendar year, 4,741,730 people held Minnesota driver licenses and 5,122,729 motor vehicles were registered in the state. Vehicles traveled over 60.7 billion miles on public roadways. There were 80,636 traffic crashes; 364 people died and 27,260 people were injured in those crashes. This report provides a statistical summary of those crashes.

The purpose of Crash Facts is to provide summary statistical information about the crashes reported to the state each year. The term "crash" is used in preference to "accident." The latter term suggests there is a random, unavoidable quality about the events in question. In fact, the experience of the last three decades strongly demonstrates that advances in engineering and technology, coupled with changes in public policy and individual human behavior, can dramatically reduce the number and severity of traffic crashes.

Cost of traffic crashes

The use of motor vehicles for getting from one place to another results in significant costs to society. The National Safety Council reports that crashes (from all causes) are the leading cause of death among persons aged 1 to 24, the second leading cause of unintentional injury-related death for all ages combined and the fifth leading cause of death among all persons (Injury Facts, 2016 Edition, p. 14-15,18).

It is possible to estimate economic costs of traffic crashes, although the results can vary depending on definitions and estimating procedures. Many states use cost figures released by the National Safety Council, the most recent of which use 2018 data. Based upon those, the total economic loss from 2019 traffic crashes in Minnesota was $1,872,177,000, a figure that is calculated as follows:

Count	Severity	@ Cost	= Economic Loss
364	Deaths	@ $1,659,000	= $603,387,000
1,520	Serious Injuries	@ $96,200	= $146,224,000
9,346	Minor Injuries	@ $27,800	= $259,818,800
16,394	Possible Injuries	@ $22,300	= $373,783,200
108,550	PDO Crashes	@ $4,500	= $488,475,000
Total:			**$1,872,177,000**

Legislative requirement

Minnesota Motor Vehicle Crash Facts is produced annually by the Minnesota Department of Public Safety, Office of Traffic Safety, in accordance with state law. Minnesota Statutes, Section 169.10, requires that traffic crashes be reported to the Department. Section 169.10 then requires the Department to "… tabulate all crash reports and publish annually statistical information based thereon as to the number and circumstances of traffic crashes…"

Factors affecting traffic crashes

Any single crash may have many contributing factors associated with the crash event. There are several factors that affect the majority of traffic crashes and these factors can be categorized into these areas:

- **Behavioral Factors**
- **Vehicle Factors**
- **Roadway Characteristics**
- **Environmental Factors**

The Contributing Factors section of this report will delve into the frequency of these circumstances affecting crashes.

Historical perspective

In 1966, there were 53,041 traffic fatalities in the country, or 5.7 for every hundred million miles of travel. In Minnesota in 1968, there were 1,060 traffic fatalities, or 5.3 per hundred million miles of travel.

Since the 1960s, both the rate and the number of fatalities have declined in a fairly steady pattern. In 2019, there were 36,120 traffic fatalities throughout the country (according to preliminary data from Federal Highway Administration) and 364 in Minnesota. The respective fatality rates per hundred million miles of travel were 1.21 and 0.59.

These declines are the result of conscious decision-making on traffic safety issues. The National Highway Traffic Safety Administration (originally called the National Highway Safety Bureau) was established in the US Department of Transportation in 1967. Since then, it has promoted and Congress has passed legislation mandating the manufacture of safer cars. At the same time, the federal interstate highway system has expanded, contributing to a safer roadway environment.

Simultaneously there has been an effort to change human behavior factors. Minnesota was a leader among the states in the development of innovative drunk driving countermeasures. The Legislature made significant amendments to the DWI law in 1971, 1976, 1978, and in almost every year of the 1980s. It also passed the child passenger protection law in 1981 and the secondary seat belt law in 1986. In 2009 the law was updated to 'Primary.' It subsequently amended those laws, closing loopholes, broadening their scope and strengthening penalties.

The benefits of action in these areas are clear and shown in the graphs below. Figure 1 shows a steady increase in the number of drivers and vehicles, but a steady decrease in the fatality rate per hundred million miles of travel. Figure 2 shows Minnesota traffic fatalities are trending downward.

Figure 1, Vehicles, Drivers, and Fatality Rate

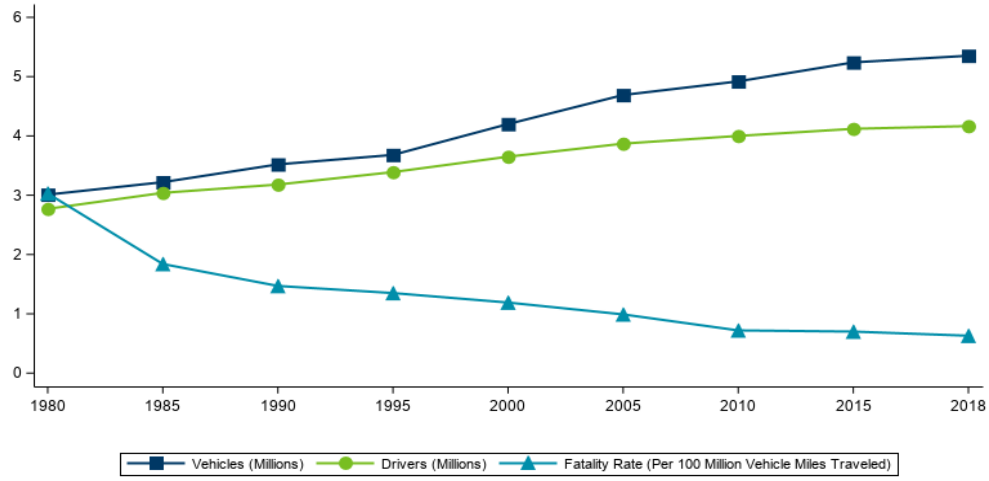
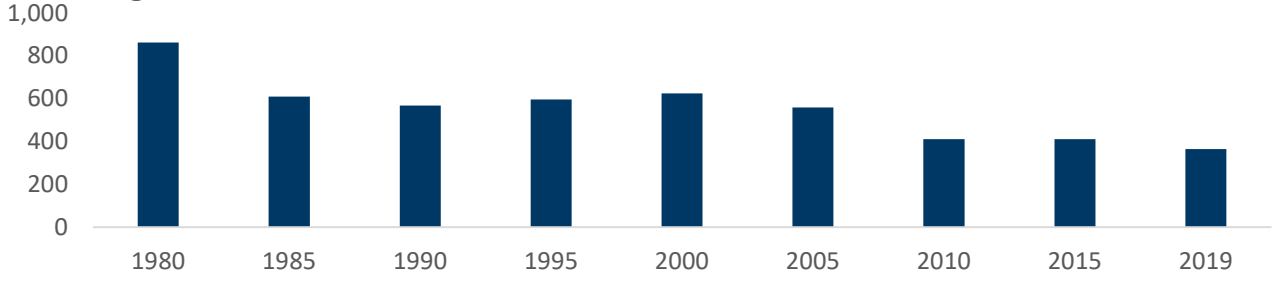


Figure 2, Minnesota Traffic Fatalities



ALL CRASHES

Overview of Traffic Crashes
In 2019, 80,636 traffic crashes were reported. Reducing the number of traffic crashes remains a challenge each year for public safety officials. With a population of 5.64 million, Minnesota has:

4.7 million licensed drivers	**5.1 million registered vehicles**	**60.7 billion miles driven**

As these numbers steadily increase, the citizens of Minnesota face an extreme challenge in reducing the number and severity of traffic crashes.

Crashes and fatalities increase in 2019
The 80,636 traffic crashes reported to the Department of Public Safety represent an increase of 2% from 2018. There were 364 deaths on Minnesota roads, a 4% decrease from the previous year. However, our roads are relatively safe. Traffic deaths in Minnesota have decreased dramatically in the past decades. There are many factors for the continued improvement in traffic safety, but much can be credited to strengthened traffic safety laws, enhanced enforcement, education and outreach, engineering and emergency trauma care. These elements are all part of the state's *Toward Zero Deaths* (*TZD*) initiative — a multidisciplinary program addressing traffic issues at the local level.

Traffic Crashes in 2019
The following facts give an overall picture of 2019 traffic crashes.

174,422
people involved in crashes

148,774
motor vehicles involved in crashes

Minnesota crash rates for 2019 were:

1,429 crashes per 100K population	**1,574 crashes per 100K vehicles**	**132 crashes per 100M VMT**

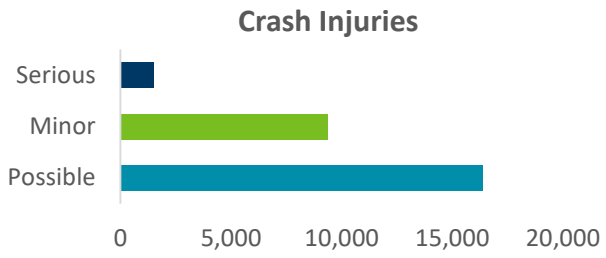
Minnesota fatality rates for 2019 were:

6.4 fatalities per 100K population	**7.1 fatalities per 100K vehicles**	**0.59 fatalities per 100M VMT**

$1.8 billion
economic loss to Minnesota

364
people died

27,260
people were injured



8,824
crashes classified as "hit-and-run"

1/3 of all
crashes involved only one vehicle

Crash severity vs injury severity
When crashes occur, vehicles and property get damaged, and people get injured. Frequently, the number of crashes differs from the number of injuries. The highest level of injury suffered by a person involved in a crash is what defines the crash severity.

Can traffic crashes be prevented?
On average over the past decade, about 400 people have been killed and 30,500 injured every year on our roadways. Minnesota's traffic crashes are cause for concern. In a public health sense, epidemics that kill and injure fewer people are often attacked vigorously until they are no longer a threat to public safety.

The Department of Public Safety (DPS) uses the term "crash" instead of "accident." This is because a traffic crash can be predicted and prevented. Coupled with enforcement, education, engineering and emergency trauma solutions, changes in the behavior of all drivers will help attack the public threat of tragic roadway fatalities and injuries.

The message is simple:
Driving is a privilege;
aggressive driving is not.
Buckle up.
Drive at safe speeds.
Pay attention.
Never drive impaired.

Table 1.01, Traffic Crash Trends

	2015	2016	2017	2018	2019	Record High	
Fatal Crashes	375	357	341	349	333	878	1973
Injury Crashes	21,516	21,734	21,272	20,244	19,902	33,686	1978
Serious	932	1,702	1,561	1,341	1,297	5,109	1984
Minor	5,721	8,642	8,199	7,327	7,260	12,326	1985
Possible	14,863	11,390	11,512	11,576	11,345	18,578	1996
PDO Crashes	52,881	56,978	56,852	58,622	60,401	94,810	1975
Total Crashes	74,772	79,069	78,465	79,215	80,636	123,106	1975
Total Injuries	29,981	29,825	29,412	27,877	27,260	50,332	1978
Serious	1,127	1,992	1,849	1,660	1,520	6,573	1984
Minor	7,251	11,097	10,539	9,429	9,346	17,670	1985
Possible	21,603	16,736	17,024	16,788	16,394	28,631	1996
Total Fatalities	411	392	358	381	364	1,060	1968
MN Fatality Rate	0.7	0.67	0.63	0.63	0.59	23.6	1934
U.S. Fatality Rate	1.15	1.18	1.25	1.25	1.1	18	1925
MN Economic Loss (billions)	$1.77	$1.87	$1.80	$1.79	$1.87	$1.87	2016

Who, what, when, where?
This chapter will look at the specifics of crashes in Minnesota in the past year. The contributing circumstances, or '*why*' the crash occurred, will be examined in the Contributing Factors chapter.

Who was involved in crashes?
Among drivers, young people and males are over-represented in traffic crashes in Minnesota. Generally, younger people represent higher portions of crash-involved drivers than their portion of licensed drivers. Drivers aged 25-29 are the worst from this perspective. In 2019, they represented just 9% of the licensed drivers, but 20% of all crash-involved drivers. By contrast, drivers over 65 made up 20% of the driving population, but accounted for just 17% of the crash-involved drivers. Figure 1.01 graph compares the portions of licensed and crash-involved drivers within age groups.

Crash-involved drivers are also more likely to be males: 72% of drivers in fatal crashes were male; 58% of drivers in all crashes were male.

Traffic crashes are a leading cause of death in young people. In the state last year, 89 people under age 30 died in crashes, representing 24% of all traffic deaths. As noted, the National Safety Council reports that crashes are the leading cause of death among persons aged 1 to 24.

Among people injured, young people especially pay the price. There were 9,892 people under age 30 who were injured, representing 36% of the total number of people injured.

Figure 1.01, Licensed vs Crash-Involved Drivers by Age

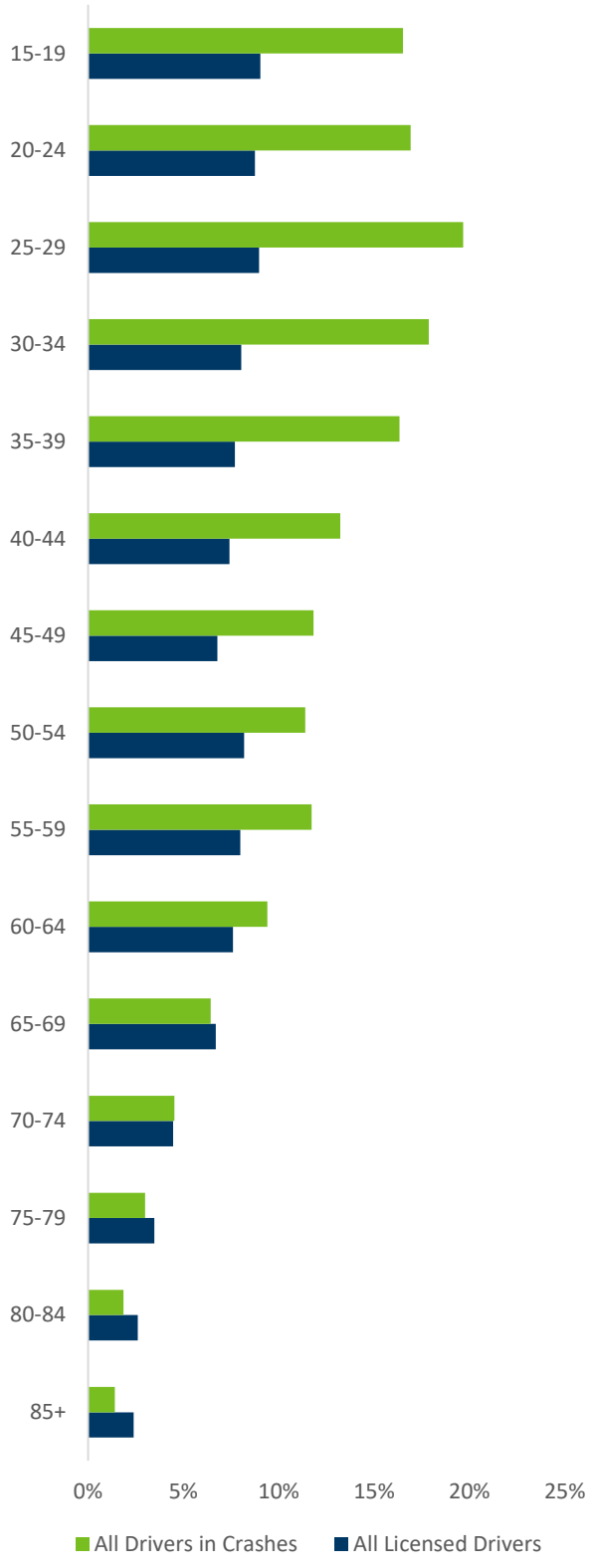


Table 1.02, Age and Gender of Drivers in Crashes

Age Group	Male Drivers in Fatal Crashes	Female Drivers in Fatal Crashes	Unk Gender Drivers in Fatal Crashes	Total in Fatal Crashes	Male Drivers in All Crashes	Female Drivers in All Crashes	Unk Gender Drivers in All Crashes	Total in All Crashes
<15	1	0	0	1	35	10	2	47
15-19	20	10	0	30	7,118	6,114	85	13,317
20-24	29	19	0	48	9,290	7,657	89	17,036
25-29	43	10	0	53	8,884	6,872	100	15,856
30-34	29	11	0	40	8,412	5,912	78	14,402
35-39	32	10	0	42	7,634	5,454	79	13,167
40-44	38	16	0	54	6,316	4,292	47	10,655
45-49	25	11	0	36	5,671	3,829	30	9,530
50-54	34	8	0	42	5,571	3,586	19	9,176
55-59	33	17	0	50	5,873	3,562	13	9,448
60-64	35	10	0	45	4,748	2,828	8	7,584
65-69	21	3	0	24	3,160	2,010	12	5,182
70-74	12	7	0	19	2,231	1,419	2	3,652
75-79	13	6	0	19	1,383	1,021	2	2,406
80-84	6	6	0	12	835	652	3	1,490
85+	9	3	0	12	615	429	6	1,050
Unk	0	0	0	0	23	7	46	76
Total	**380**	**147**	**0**	**527**	**77,799**	**55,654**	**621**	**134,074**

Table 1.02 above details driver counts in fatal and all crashes. As previously mentioned, young persons and males are involved in crashes more frequently but the disparity between male and female crash-involvement actually increases with age. The Figure 1.02 graph below examines the percentage of gap between male and female crash–involvement at different age groups.

Figure 1.02, Crash-Involvement Gender Gap

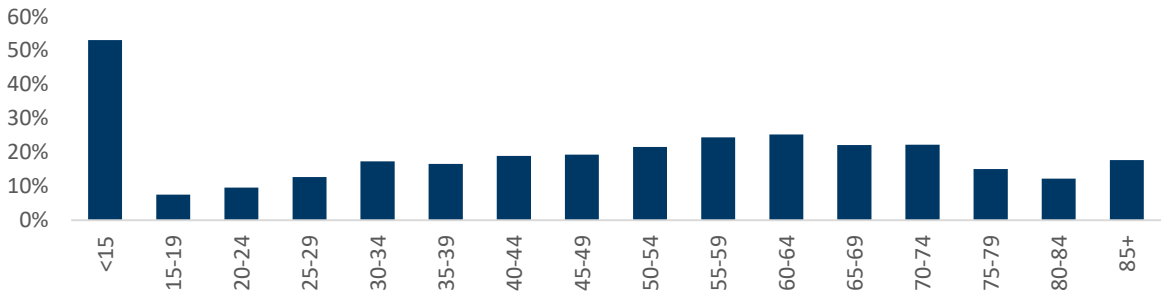


Table 1.03, Driver Physical Condition* in Crashes

Driver Physical Condition	Fatal Crashes	Injury Crashes	PDO Crashes	All Crashes
Apparently Normal	307	32,217	92,457	124,981
Physical Disability	1	44	62	107
Medical Issue	3	370	208	581
Emotional	0	78	92	170
Asleep or Fatigued	5	390	713	1,108
Had Been Drinking Alcohol	52	1,244	1,907	3,203
Had Been Taking Illicit Drugs	12	185	262	459
Had Been Taking Medications	2	65	77	144
Other	9	91	100	200
Unknown	663	36,298	100,234	137,195
Total	**1,054**	**70,982**	**196,112**	**268,148**

*As noted by police officer on crash report. Officers are allowed to enter up to two physical conditions for each driver. Due to this, totals will not match the total number of drivers.

Figure 1.03, Age and Gender of Persons Killed or Injured

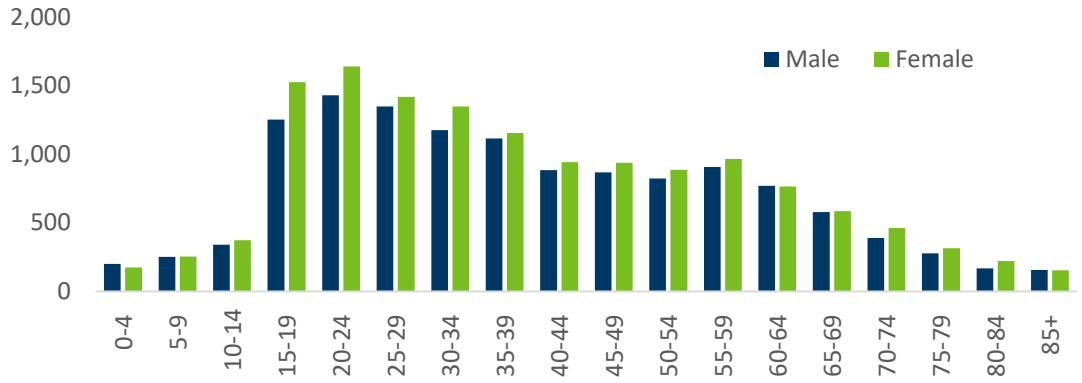


Figure 1.04, Fatalities by Gender

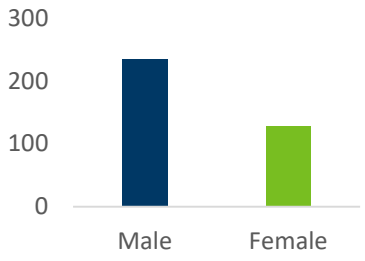
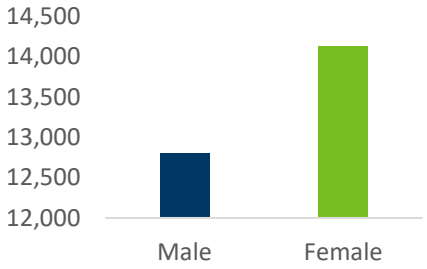


Figure 1.05, Injuries by Gender



65%

male fatalities

58%

female injuries

Table 1.04, Persons Involved by Type of Vehicle Occupied and Injury Severity

Vehicle Type	Killed	Serious Injuries	Minor Injuries	Possible Injuries	Total Injuries	No Injuries	Total Persons
Car	140	560	4,372	8,514	13,446	71,337	84,923
Pickup Truck	43	150	843	1,346	2,339	17,583	19,965
Sport Utility Vehicle	44	267	2,055	4,428	6,750	39,100	45,894
Van	10	41	453	889	1,383	7,335	8,728
Motor Home/Camper	0	0	17	42	59	212	271
Limousine	0	0	0	2	2	11	13
Taxi Cab	0	0	2	0	2	11	13
Police Vehicle	0	0	4	1	5	26	31
Fire Department Vehicle	0	0	1	3	4	67	71
School Bus	0	0	16	57	73	1,874	1,947
Other Bus	0	1	33	59	93	685	778
Ambulance	0	0	2	9	11	152	163
Military Vehicle	0	0	0	1	1	7	8
Snowmobile	5	6	4	2	12	6	23
All-Terrain Vehicle	4	23	18	12	53	32	89
Farm Tractor or Equipment	0	4	6	6	16	133	149
Motorcycle	44	221	455	164	840	150	1,034
Moped/Motor Scooter	2	9	28	15	52	13	67
Single Truck (2-axle, 6 tire)	1	3	12	28	43	548	592
Single Truck (3+ axles)	1	4	11	19	34	458	493
Single Truck with Trailer	0	3	18	25	46	844	890
Truck Tractor No Trailer	0	0	5	1	6	59	65
Truck Tractor Semi Trailer	5	9	61	65	135	2,227	2,367
Truck Tractor Double Trailer	0	0	0	0	0	62	62
Truck Tractor Triple Trailer	0	0	0	1	1	4	5
Other/Unknown Truck Type	2	4	29	32	65	1,213	1,280
Bicycle	10	60	337	232	629	58	697
Pedestrian	50	142	498	344	984	147	1,181
Unknown Vehicle Type	3	13	66	97	176	2,444	2,623
Total	**364**	**1,520**	**9,346**	**16,394**	**27,260**	**146,798**	**174,422**

What were the conditions?
Three categories of crashes exist.

- **Collisions with non-fixed objects** – these crashes occur when a motor vehicle collides with another movable object (another motor vehicle, a non-motorist, or an animal).
- **Collisions with fixed objects** – these crashes occur when a motor vehicle collides with a permanent object (usually a traffic sign or barrier, or something in the physical environment such as a ditch, embankment, or tree).
- **Non-Collisions** – these occur when vehicles are hit by objects or cargo falling off another vehicle, overturns and rollovers, jack-knifed semi-trucks, car fires and explosions.

The vast majority of crashes are collisions with non-fixed objects.

Figure 1.06, Crash Types

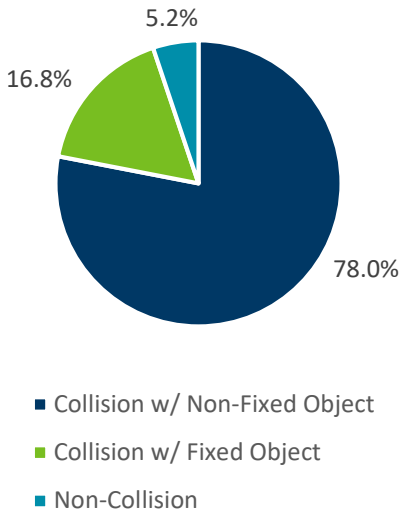


Table 1.06, Crash Type Counts

Collision w/ Non-Fixed Objects	
Motor Vehicle in Transport	54,942
Parked Motor Vehicle	4,726
Bicycle	612
Pedestrian	858
Deer/Animal	1,632
Train	54
Collision w/ Fixed Objects	
Pole/Sign/Parking Meter	3,901
Construction Equipment	25
Bridge	250
Culvert/Curb	265
Ditch/Embankment	1,074
Snowbank	322
Barrier	4,594
Mailbox/Hydrant	461
Tree/Shrubbery	1,238
Fence	443
Other/Unknown	982
Non-Collisions	
Object Set in Motion By MV	106
Overturn/Rollover	2,933
Submersion	47
Fire/Explosion	33
Other Non-Collision	1,138

Table 1.05, Crash Type and Crash Severity

Crash Type	Fatal Crash	Injury Crash	PDO Crash	Total Crash
Non-Fixed Object	224	15,744	46,962	62,930
Fixed Object	55	2,548	10,952	13,555
Non-Collision	54	1,610	2,487	4,151
Total	**333**	**19,902**	**60,401**	**80,636**

According to crash reports, the majority of crashes occur in good driving conditions – daylight hours, clear weather, good roads.

Table 1.07, Crashes by Weather Condition

Weather Condition	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Clear	230	12,643	35,313	48,186	254	17,371
Cloudy	66	4,080	12,023	16,169	73	5,629
Rain	11	1,127	3,094	4,232	11	1,561
Snow	10	1,354	6,616	7,980	10	1,802
Sleet/Hail	4	243	1,047	1,294	4	317
Fog/Smog/Smoke	4	82	209	295	4	113
Blowing Sand/Soil/Dirt	1	222	1,029	1,252	1	294
Severe Crosswinds	0	8	49	57	0	14
Other Weather	3	21	88	112	3	22
Unknown	4	122	933	1,059	4	137
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

69%

fatal crashes occurred during clear weather

Most

crashes happen where no traffic control device is located

Table 1.08, Crashes by Traffic Control Device

Traffic Control Device	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Traffic Signal	31	5,058	11,730	16,819	24	6,628
Flashing Overhead Signal	0	39	76	115	0	47
Stop Sign	50	2,575	6,026	8,651	40	2,721
Yield Sign	6	298	1,195	1,499	11	346
Warning Sign	0	40	131	171	0	53
RR Crossing Device	0	17	72	89	0	18
Flagger, Police, Crossing Guard	0	20	52	72	0	21
School Zone Sign	0	9	14	23	0	11
Other	1	66	221	288	1	73
Not Applicable	36	1,168	4,316	5,520	33	1,430
None	204	10,272	35,804	46,280	194	14,170
Unknown	5	340	764	1,109	61	1,742
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

Table 1.09, Crashes by Road Surface Condition

Road Surface Condition	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Dry	246	13,087	33,905	47,238	273	18,186
Wet	43	2,570	7,028	9,641	45	3,548
Snow	18	2,010	10,018	12,046	18	2,622
Ice/Frost	16	1,881	8,253	10,150	18	2,456
Sand	0	4	11	15	0	0
Ruts, Holes, Bumps	0	4	7	11	0	0
Other	6	228	414	648	6	320
Unknown	4	118	765	887	4	128
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

Table 1.10, Crashes by Road Design

Road Design	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
One Way Trafficway	6	979	3,938	4,923	5	1,133
Two-Way, Not Divided	218	10,002	27,495	37,715	205	12,873
Two-Way, Not Divided, Left Turn Lane	5	402	1,042	1,449	3	515
Two-Way, Divided, Unprotected Median	42	1,958	4,934	6,934	41	2,719
Two-Way, Divided, Median Barrier	54	5,756	20,575	26,385	44	7,776
Other	3	493	1,797	2,293	5	527
Unknown	5	312	620	937	61	1,717
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

Only 23%

of fatal crashes occurred on wet, snowy, or icy roads

Over half

of fatalities occurred on two-way, not divided roads

Hit-and-Run Crashes

In 2019, there were 8,824 crashes classified as Hit-and-Run. This represents 11% of all crashes in the state. Figure 1.07 examines the increases in Hit-and-Run crashes in the past decade.

Table 1.11, Hit-and-Run Crashes

Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
9	1,000	7,815	8,824	10	1,217

Figure 1.07, Hit-and-Run Crash Trends

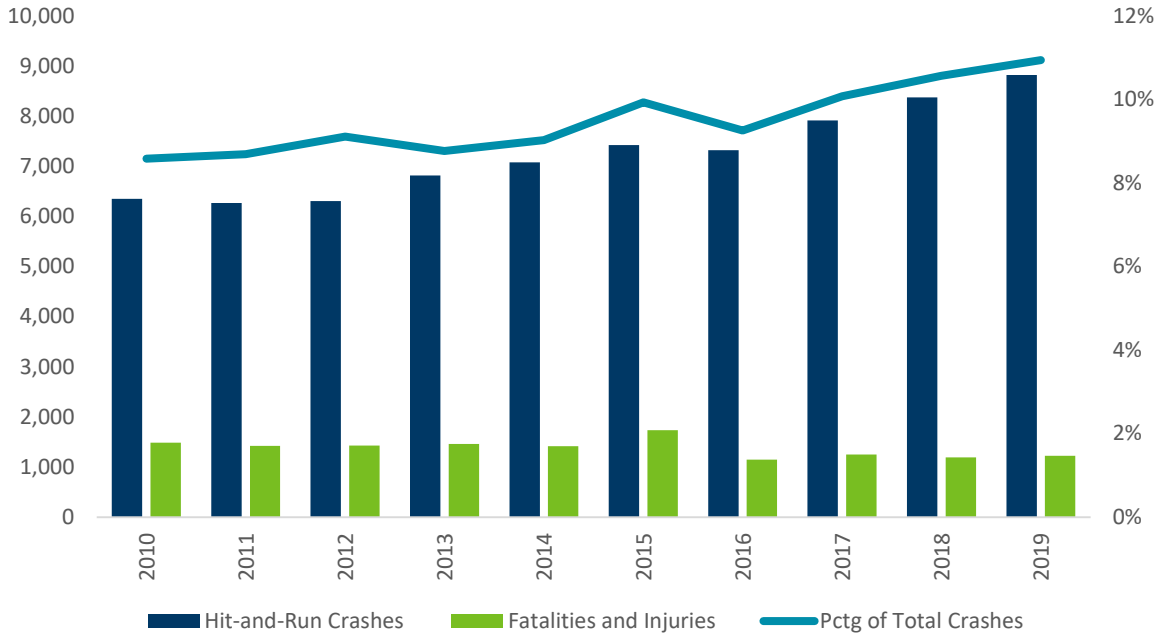
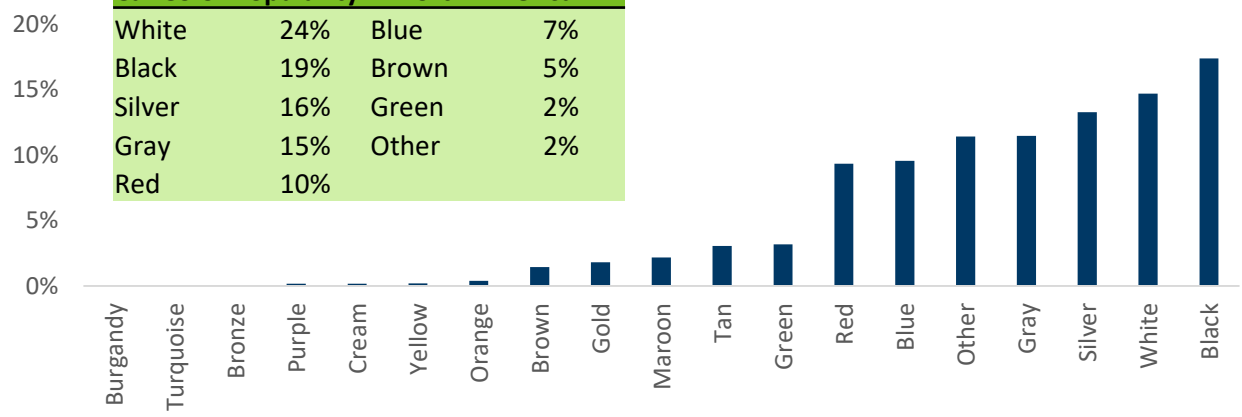


Figure 1.08, Vehicle Color (Passenger Cars, Trucks, or Vans) of Cars in Minnesota Crashes

Car Color Popularity in North America*			
White	24%	Blue	7%
Black	19%	Brown	5%
Silver	16%	Green	2%
Gray	15%	Other	2%
Red	10%		



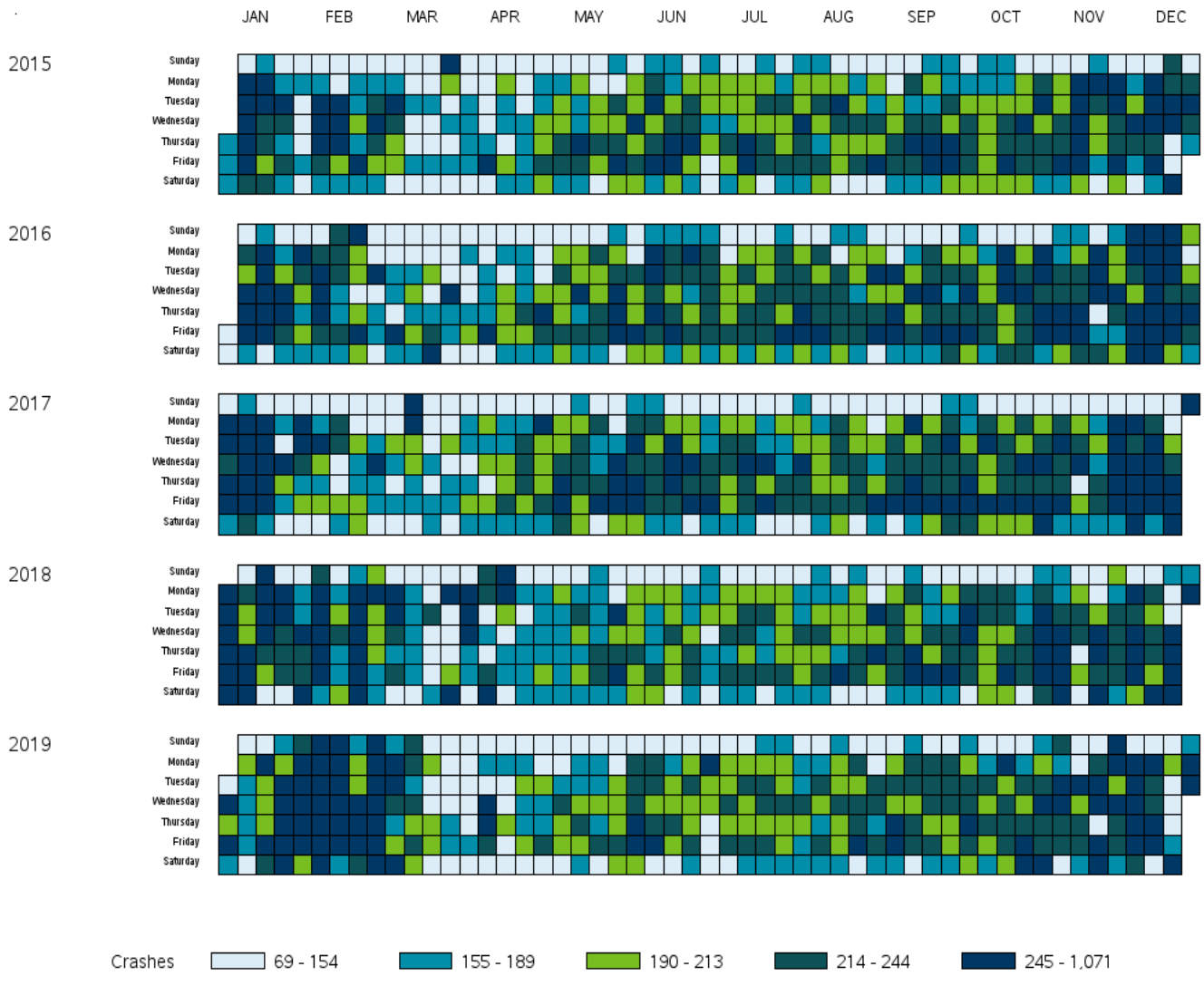
*According to Wikipedia and DuPont Paint – Car Color Popularity in North America

Table 1.12, Types of Motor Vehicles in Crashes

Vehicle Type	Vehicles in Fatal Crashes	Vehicles in Injury Crashes	Vehicles in PDO Crashes	Vehicles in All Crashes
Car	200	18,539	55,332	74,071
Pickup Truck	91	4,156	12,986	17,233
Sport Utility Vehicle	104	9,581	27,644	37,329
Van	24	1,653	4,320	5,997
Motor Home/Camper	2	16	85	103
Limousine	0	3	9	12
Taxi Cab	0	2	5	7
Police Vehicle	0	5	22	27
Fire Department Vehicle	0	5	43	48
School Bus	1	109	605	715
Other Bus	2	110	437	549
Ambulance	0	14	76	90
Military Vehicle	0	1	4	5
Snowmobile	5	11	6	22
All-Terrain Vehicle	4	37	16	57
Farm Tractor or Equipment	3	42	104	149
Motorcycle	47	783	131	961
Moped/Motor Scooter	2	53	10	65
Single Truck (2-axle, 6 tire)	7	103	426	536
Single Truck (3+ axles)	9	111	367	487
Single Truck with Trailer	12	175	679	866
Truck Tractor No Trailer	0	23	40	63
Truck Tractor Semi Trailer	17	487	1,792	2,296
Truck Tractor Double Trailer	1	4	55	60
Truck Tractor Triple Trailer	0	3	2	5
Other/Unknown Truck Type	6	202	1,015	1,223
Unknown Vehicle Type	7	770	5,022	5,799
Total	**544**	**36,998**	**111,233**	**148,775**

When did crashes occur?
As a general rule, harsh winter weather results in more traffic crashes. In other words, there are more “fender-benders” during icy and snowy conditions. Due to our Minnesota weather, December, January, and February see more crashes. As a general rule, warmer weather produces fewer crashes, but more fatalities and serious injuries. Examining the days of the week, the fewest crashes occur on Sundays.

Figure 1.09, Heat Map of Traffic Crashes in Minnesota, 2015-2019



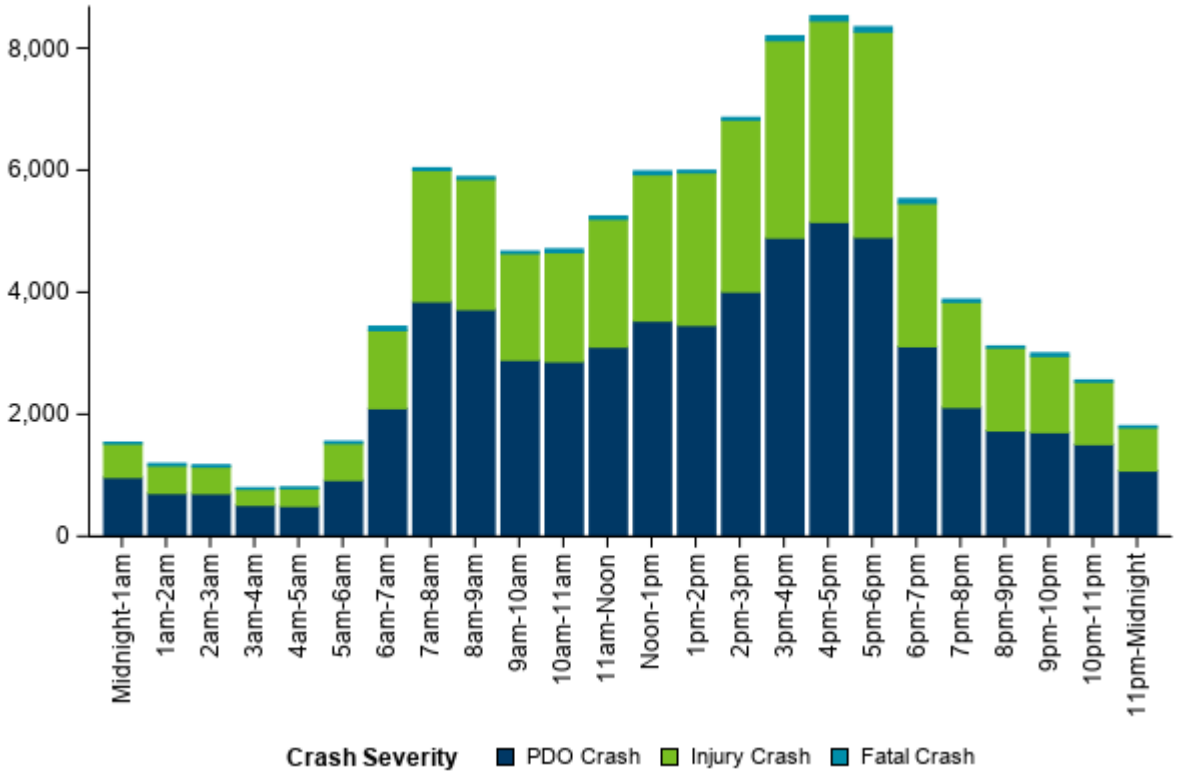
Most crashes occur on Fridays

Winter means lots of crashes

Table 1.13, Crashes, Fatalities, and Injuries by Month

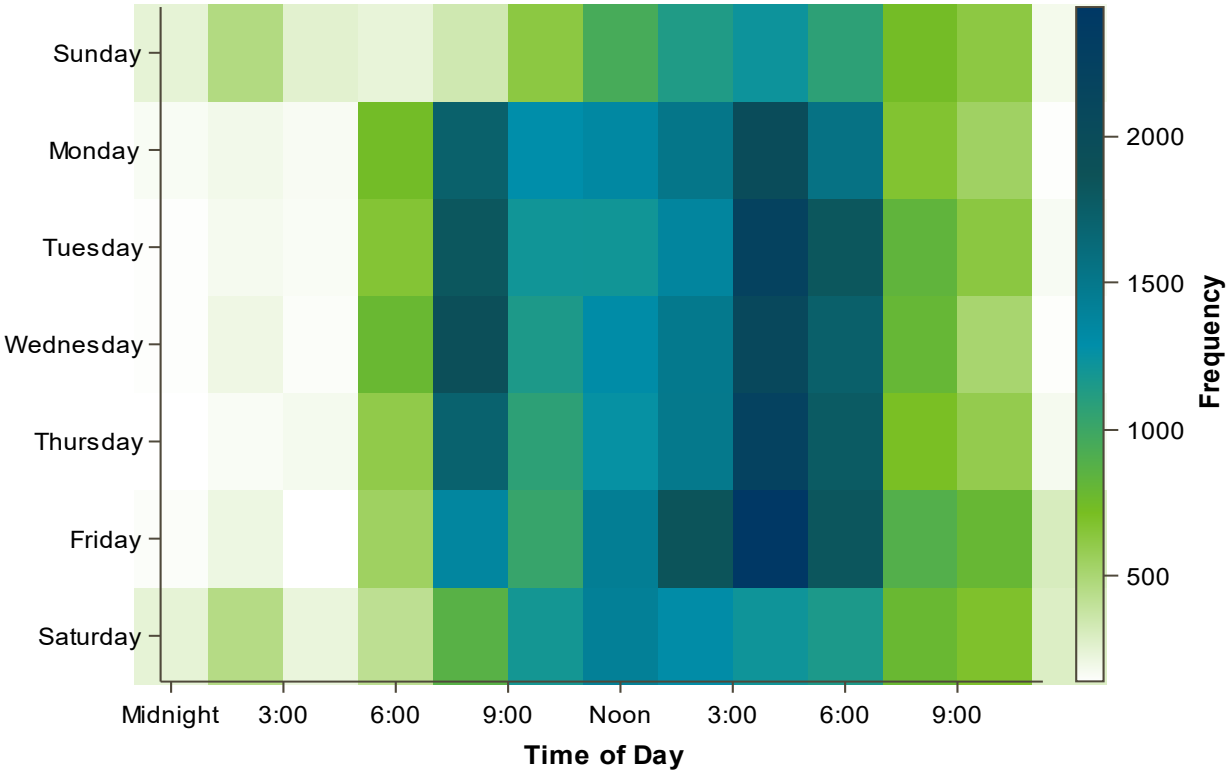
Month	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
January	24	1,659	6,187	7,870	26	2,177
February	16	1,786	8,111	9,913	18	2,443
March	21	1,425	5,042	6,488	22	1,922
April	17	1,254	3,788	5,059	18	1,716
May	24	1,556	3,944	5,524	25	2,197
June	39	1,780	4,173	5,992	43	2,553
July	35	1,787	4,118	5,940	36	2,499
August	38	1,801	4,048	5,887	48	2,505
September	28	1,783	4,172	5,983	30	2,432
October	40	1,709	4,723	6,472	42	2,328
November	27	1,684	5,597	7,308	31	2,266
December	24	1,678	6,498	8,200	25	2,222
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

Figure 1.10, Crashes by Time and Crash Severity



When do most crashes occur?
It's not surprising that most crashes occur at peak driving times. Weekdays see higher traffic volume as people are out and about more commuting to and from work and school, particularly during the morning and afternoon rush hour periods (6am-9am and 3pm-6pm). The frequency of crashes during these times is evidenced by the dark blue in the heat map. Minnesota roads see less traffic on Saturdays and Sundays, and therefore fewer crashes; this is shown by the lighter blues and greens in the heat map.

Figure 1.11, Heat Map of Crashes



Lots of crashes on

Friday afternoons

Early mornings

see the fewest crashes

Figure 1.12, Daily Crashes by Time and Crash Severity

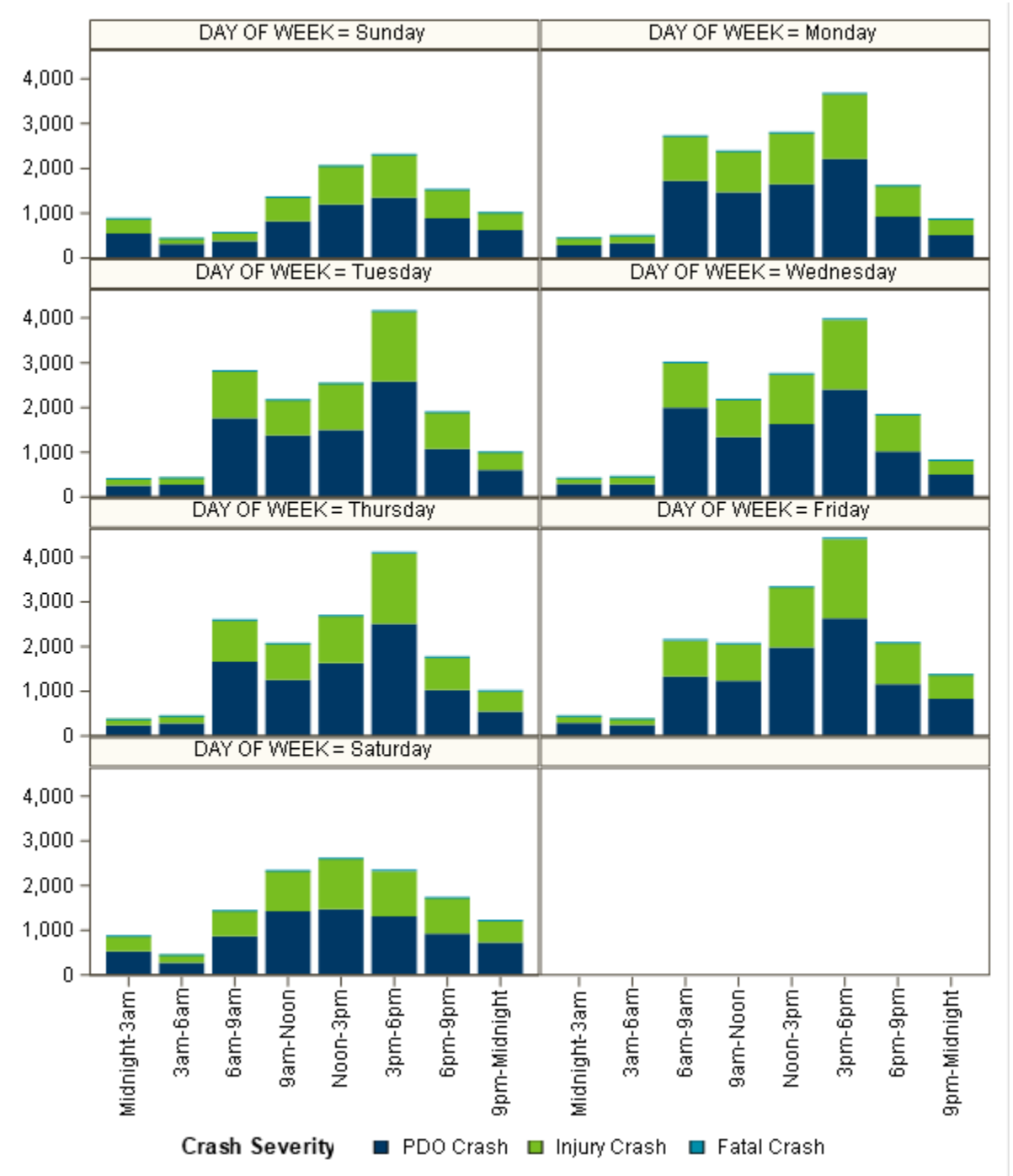


Table 1.14, Crashes by Light Condition

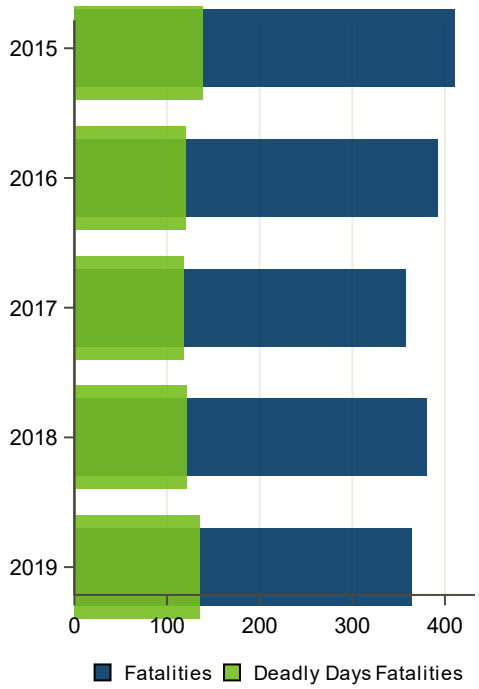
Light Condition	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Daylight	197	13,998	41,318	55,513	212	19,365
Sunrise	4	452	1,501	1,957	4	583
Sunset	11	513	1,464	1,988	15	705
Dark/Street Lights On	50	3,421	11,178	14,649	52	4,634
Dark/No Street Lights	69	1,455	4,154	5,678	79	1,902
Other	2	63	786	851	2	71
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

Holidays are problematic for traffic safety

While most crashes do occur during winter months or in good driving conditions, holidays generally have higher crash rates than non-holiday time periods. Celebrations, additional travel and alcohol consumption during holidays create a dangerous traffic safety environment. NHTSA defines reporting guidelines for six holidays during the calendar year with varying durations to accommodate additional travel. Those holidays are displayed in Figure 1.14.

Aside from the six NHTSA holidays, other days and events, such as the Super Bowl, St. Patrick's Day, Cinco de Mayo, Halloween, hunting and fishing opening weekends, and the time period between Memorial Day and Labor Day (called the 100 Deadly Days of Summer) can have spikes in DWIs and traffic crashes.

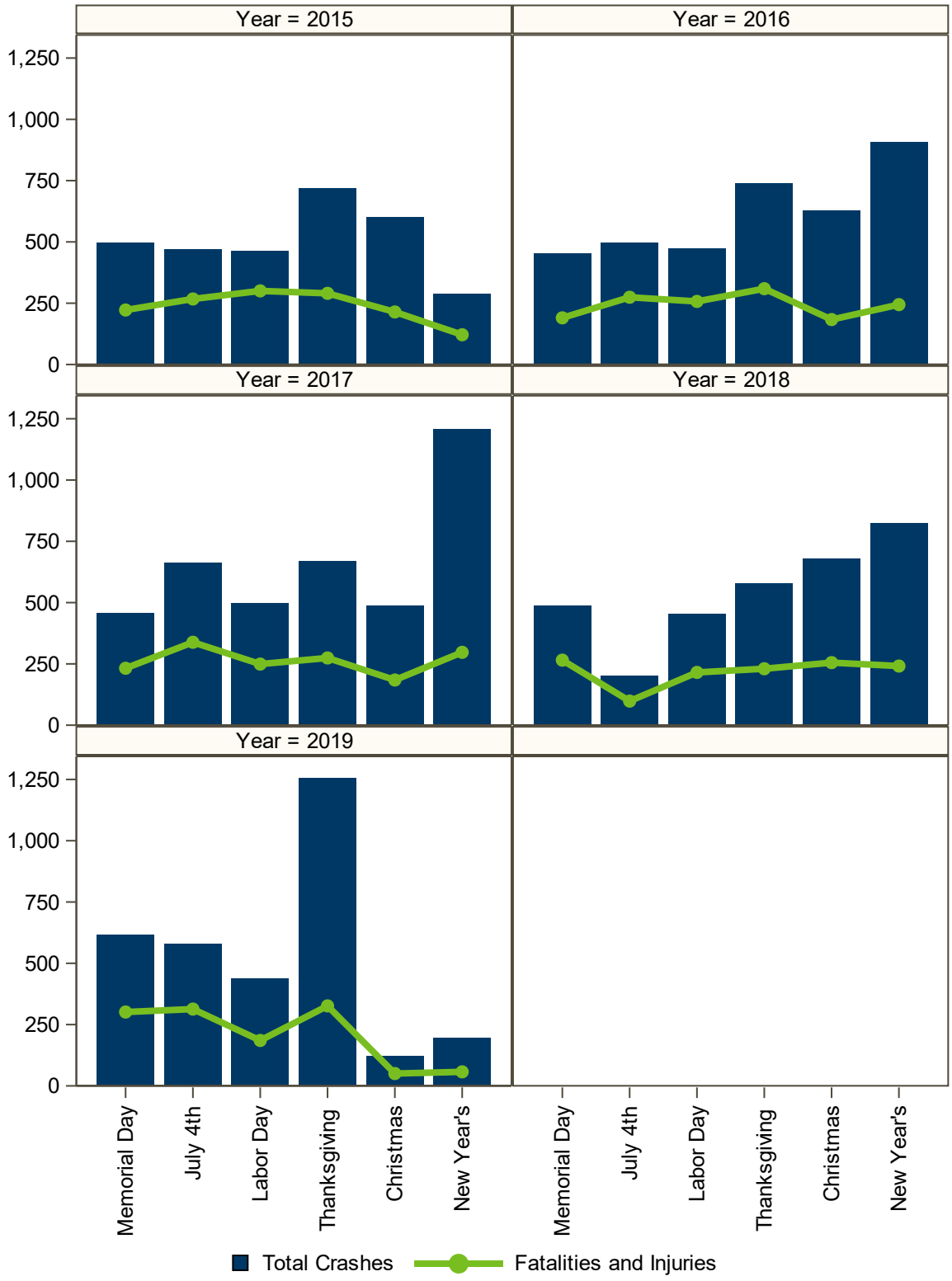
Figure 1.13, 100 Deadly Days of Summer



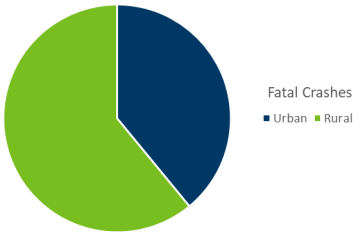
37%

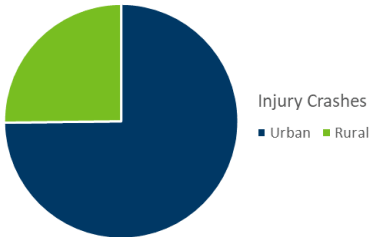
of fatalities occurred during the 100 deadly days in 2019

Figure 1.14, Holiday Crashes



Where did crashes happen?
The seven county metro area is home to over half of the state's population, and the majority of traffic crashes occur there. Over three-fourths of all crashes happened inside cities of 5,000 or more population; these areas are defined as urban cities. Fatal crashes, however, tend to occur on roads in rural areas that permit high speeds and do not have interstate-type safety designs.





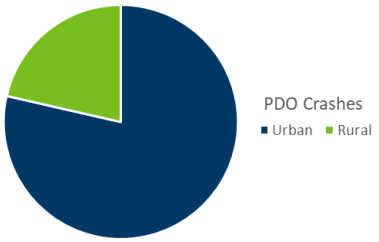
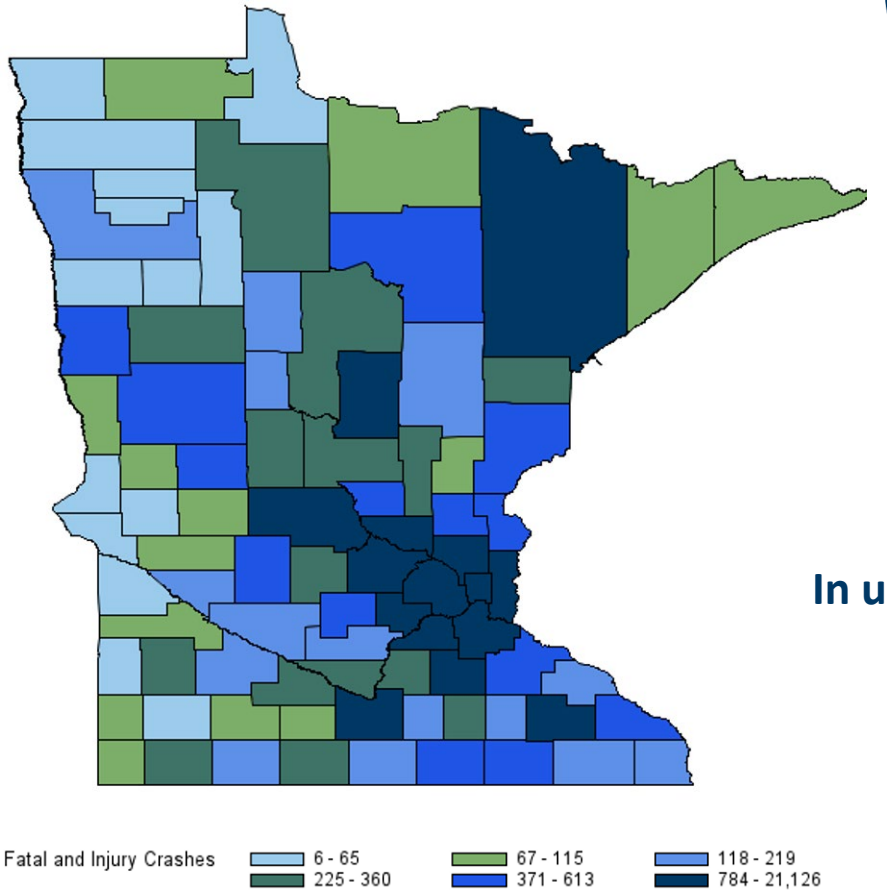


Figure 1.15, Fatal and Injury Crashes Plotted By County



61%

fatal crashes occur in rural areas

In urban and rural areas,

Speed

is frequently a factor in fatal crashes

Table 1.15, County Crash Report

County	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Aitkin	3	40	93	136	3	59
Anoka	16	1,113	2,965	4,094	18	1,523
Becker	1	100	231	332	1	147
Beltrami	5	78	224	307	6	115
Benton	2	159	533	694	2	222
Big Stone	1	10	19	30	1	11
Blue Earth	4	261	872	1,137	4	351
Brown	2	77	195	274	3	95
Carlton	0	106	326	432	0	155
Carver	6	278	852	1,136	6	396
Cass	3	86	171	260	3	126
Chippewa	3	35	85	123	3	66
Chisago	6	164	434	604	6	236
Clay	2	153	463	618	2	209
Clearwater	2	14	27	43	2	24
Cook	0	21	39	60	0	36
Cottonwood	2	31	91	124	2	38
Crow Wing	6	256	551	813	7	343
Dakota	17	1,582	5,169	6,768	20	2,168
Dodge	2	52	143	197	3	76
Douglas	3	151	322	476	3	215
Faribault	4	45	76	125	4	68
Fillmore	3	46	93	142	3	62
Freeborn	2	137	477	616	3	186
Goodhue	4	187	692	883	4	268
Grant	1	20	56	77	1	26
Hennepin	38	5,895	18,007	23,940	38	7,964
Houston	3	44	85	132	3	60
Hubbard	5	67	101	173	5	103
Isanti	7	127	252	386	7	200
Itasca	4	126	305	435	5	176
Jackson	2	37	102	141	2	51
Kanabec	5	33	68	106	5	60
Kandiyohi	1	133	500	634	1	186
Kittson	0	8	5	13	0	11

Table 1.15, County Crash Report, Continued

County	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Koochiching	1	21	43	65	1	29
Lac Qui Parle	2	13	17	32	2	24
Lake	0	20	79	99	0	25
Lake of Woods	1	3	7	11	1	6
Le Sueur	2	66	199	267	2	97
Lincoln	1	17	28	46	1	20
Lyon	3	75	209	287	3	94
Mcleod	1	117	336	454	1	155
Mahnomen	2	13	16	31	3	27
Marshall	2	16	25	43	2	22
Martin	0	69	155	224	0	97
Meeker	2	72	156	230	2	112
Mille Lacs	4	89	163	256	4	140
Morrison	4	76	161	241	4	102
Mower	1	107	381	489	1	145
Murray	0	19	52	71	0	26
Nicollet	1	100	375	476	1	129
Nobles	2	73	254	329	2	116
Norman	1	16	23	40	1	34
Olmsted	10	620	1,813	2,443	16	832
Otter Tail	3	180	445	628	3	249
Pennington	1	16	55	72	1	21
Pine	5	120	295	420	5	168
Pipestone	1	25	36	62	1	37
Polk	3	63	196	262	5	92
Pope	0	21	58	79	0	24
Ramsey	19	2,154	7,190	9,363	20	2,862
Red Lake	0	2	7	9	0	2
Redwood	1	37	89	127	2	45
Renville	4	46	123	173	5	76
Rice	2	226	666	894	2	314
Rock	3	23	83	109	4	32
Roseau	0	20	28	48	0	24
St. Louis	9	602	2,516	3,127	9	811
Scott	8	422	1,109	1,539	8	608

Table 1.15, County Crash Report, continued

County	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Sherburne	11	281	996	1,288	14	379
Sibley	3	35	123	161	4	41
Stearns	8	622	2,256	2,886	8	829
Steele	3	99	559	661	4	137
Stevens	3	15	62	80	3	17
Swift	2	21	46	69	2	25
Todd	3	68	160	231	3	94
Traverse	0	12	21	33	0	22
Wabasha	3	58	145	206	4	80
Wadena	2	40	58	100	2	53
Waseca	3	40	129	172	3	68
Washington	16	738	2,026	2,780	16	1,010
Watonwan	0	36	71	107	0	47
Wilkin	2	24	106	132	3	34
Winona	6	128	267	401	6	178
Wright	4	433	1,325	1,762	4	589
Yellow Medicine	0	21	39	60	0	28
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

Table 1.16, Crashes By Population of Area

Population of Area	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
250,000+	22	3,744	12,340	16,106	22	4,996
100,000-249,999	3	456	1,418	1,877	4	612
50,000-99,999	34	3,907	12,406	16,347	35	5,308
25,000-49,999	23	2,337	7,118	9,478	27	3,180
10,000-24,999	35	3,458	10,757	14,250	37	4,632
5,000-9,999	13	986	3,420	4,419	14	1,349
2,500-4,999	18	707	2,132	2,857	19	974
1,000-2,499	19	701	1,814	2,534	20	1,035
Townships/Rural	166	3,606	8,996	12,768	186	5,174
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

Table 1.17, Crashes by Type of Roadway

Type of Roadway	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Urban						
Interstate	10	1,737	7,648	9,395	10	2,336
US Trunk Hwy	15	1,032	3,468	4,515	16	1,374
MN Trunk Hwy	23	1,668	5,015	6,706	24	2,277
County State Aid Highway	45	3,453	8,307	11,805	50	4,841
County Road	3	147	364	514	3	204
Township Road	0	8	16	24	0	10
Municipal State Aid Highway	18	3,490	10,108	13,616	18	4,632
Municipal Street	12	2,469	9,083	11,564	13	3,264
Other Road	4	884	3,450	4,338	5	1,139
Urban Total	**130**	**14,888**	**47,459**	**62,477**	**139**	**20,077**
Rural						
Interstate	9	478	2,126	2,613	15	657
US Trunk Hwy	37	846	2,263	3,146	42	1,300
MN Trunk Hwy	60	1,196	2,518	3,774	65	1,844
County State Aid Highway	70	1,533	3,136	4,739	75	2,098
County Road	12	196	431	639	13	272
Township Road	9	357	770	1,136	9	492
Municipal State Aid Highway	0	12	24	36	0	18
Municipal Street	3	264	1,213	1,480	3	335
Other Road	3	132	461	596	3	167
Rural Total	**203**	**5,014**	**12,942**	**18,159**	**225**	**7,183**
All Roadways						
Interstate	19	2,215	9,774	12,008	25	2,993
US Trunk Hwy	52	1,878	5,731	7,661	58	2,674
MN Trunk Hwy	83	2,864	7,533	10,480	89	4,121
County State Aid Highway	115	4,986	11,443	16,544	125	6,939
County Road	15	343	795	1,153	16	476
Township Road	9	365	786	1,160	9	502
Municipal State Aid Highway	18	3,502	10,132	13,652	18	4,650
Municipal Street	15	2,733	10,296	13,044	16	3,599
Other Road	7	1,016	3,911	4,934	8	1,306
Total	**333**	**19,902**	**60,401**	**80,636**	**364**	**27,260**

ALCOHOL-RELATED CRASHES

Impaired driving incidents
As used here, an "impaired driving incident" is one where there was an arrest for driving while under the influence of alcohol or drugs and a violation from that incident was subsequently entered on the person's driving record. "DWI" is an older term that usually connotes intoxication by alcohol. "Impaired driving" is a broader and thus more descriptive term and it conforms better to current Minnesota law. Law enforcement agencies and courts report violations to Driver Licensing Services, making driver license records the most complete centralized source of data for statistics on impaired driving. Additionally, since it is almost impossible for a person, once arrested, to evade all of the criminal charges and administrative actions the laws call for, the number of impaired driving incidents on record is almost the same as the number of arrests.

Alcohol-related crashes
While the term "impaired driving" covers many possible types of impairment, the term "alcohol-related" is restrictive: *only* alcohol-related crashes are counted. For example, if a driver tests positive for cocaine, but negative for alcohol, the crash will not be counted in this section. A crash is classified as "alcohol-related" if any driver, pedestrian, or bicyclist is shown by a chemical test to be positive for alcohol. Thus, alcohol at the *.01-or-higher* level makes the crash alcohol-related.

In the absence of test data, if the officer reports that he or she believes the person had been drinking, or was under the influence, the crash is also classified as alcohol-related. Once a crash is so classified, no matter whether it was a driver, pedestrian, or bicyclist that was drinking, then every fatality and injury in the crash is classified as alcohol-related.

Drunk driving-related crashes
The term "drunk driving-related" is a more restrictive term than "alcohol-related." A crash is classified as "drunk driving-related" if a motor vehicle driver in a fatal crash tested positive for alcohol at the .08% level or above. Pedestrians, bicyclists and officer perception are not included. Once a crash is so classified, every fatality in the crash is classified as drunk-driving related.

27,378 DWI arrests	4,113 alcohol-related crashes	114 alcohol-related deaths

Reported perceptions are conservative
Officers are conservative in reporting drinking and driving. Officer cautiousness is less a factor in fatal crashes because every effort is made to obtain alcohol test results. For less severe crashes, the officer's judgment is often all that is available. Therefore, alcohol-related non-fatal crashes are considerably underestimated.

Important caveats to the definition
Not all alcohol-related traffic fatalities are involve a drinking driver. If a drinking pedestrian or bicyclist is in a crash and then he or she (or anyone in the crash) dies, the death is an alcohol-related traffic death. For example, one year, ten drinking pedestrians in separate incidents died after colliding with a vehicle driven by a non-drinking driver. Additionally, the definition given above makes an assumption that the person drinking caused, or contributed significantly to the crash. Experts who study fatal traffic crashes in detail confirm that this is almost always true, but it is important to recognize that the assumption is not invariably true. There will be exceptions to the rule. Sometimes a crash is alcohol-related, but is not classified as such due to inadequate data. For example, a drunk driver may die in a crash wherein the circumstance render it impossible to test the remains for intoxicants.

"Known" versus "estimated" alcohol-related deaths
Testing drivers for alcohol is the key to accurately classifying crashes. Minnesota is much better at testing than most states. Because many drivers are still not tested, the National Highway Traffic Safety Administration (NHTSA) developed a sophisticated statistical procedure that estimates how many fatalities really were alcohol-related. The idea that a computerized statistical procedure can accurately make such estimates initially invites skepticism. However, NHTSA developed the procedure with the greatest care over many years. Tests of the procedure, performed by having it make estimates for datasets from which critical data was removed and then comparing the estimates against the true parameters (putting back in the data that has been removed), show that the procedure is accurate to within about plus or minus one percentage point. Table 2.06 shows alcohol-related fatalities for Minnesota using the two procedures (NHTSA's estimating procedure and the state's procedure based on known data). NHTSA's estimate of the true percentage of alcohol-related fatalities is always higher than, but very close to, the state's numbers. The reason the two numbers are so close is that Minnesota does a good job of collecting test results on drivers, pedestrians and bicyclists in fatal crashes.

Alcohol-related crashes in Minnesota
Drinking and driving remains a serious problem in Minnesota and across the nation. For 2019, the National Safety Council has made a conservative estimate of $279 million as the cost of alcohol-related crashes in Minnesota. Predictably, there is a strong positive relationship between alcohol use and crash severity. That is, as crash severity increases, alcohol is more likely to have been a factor in the crash. This connection can be seen in the Figure 2.01 graph.

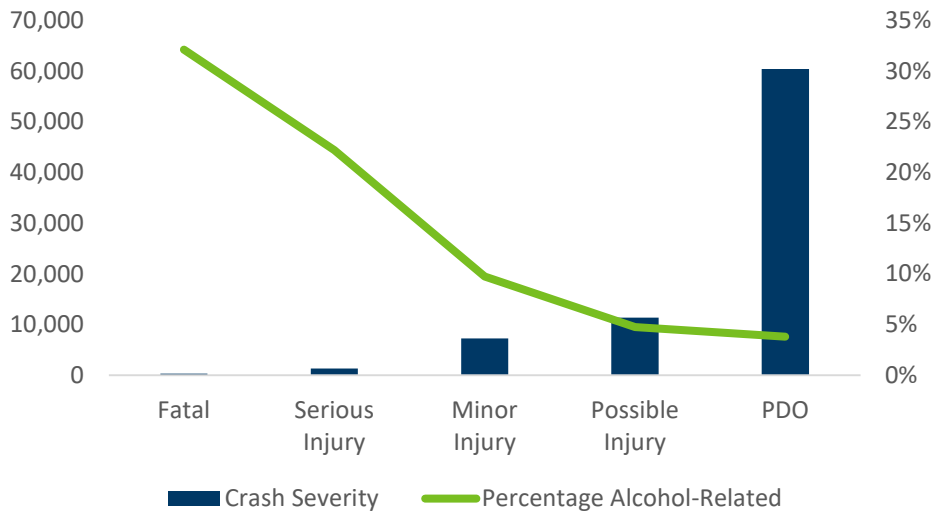
1 in 7

Minnesota drivers has a DWI on record

Half

of those drivers will re-offend

Figure 2.01, Percentage of Alcohol-Related Crashes by Crash Severity



Drinking drivers themselves pay the price

Young people may have better reflexes than their elders, but as drivers they take more risks and have less experience than older people. They pay a clear price for this. Drivers aged 15-34 accounted for 30% of all traffic deaths and for 12% of the alcohol-related deaths. It is also the drinkers themselves who are more likely to pay the price for their dangerous behavior. In 2019, 88 (77%) of the 114 people who died in alcohol-related crashes were themselves the people whose drinking behavior was a main factor which lead to the crash to be classified as alcohol-related. In short, drinking drivers, pedestrians and bicyclists mostly kill and injure themselves.

Majority

of alcohol-related fatalities test above the legal limit

.21 BAC

is the average BAC in fatal alcohol-related crashes

Success story in Minnesota

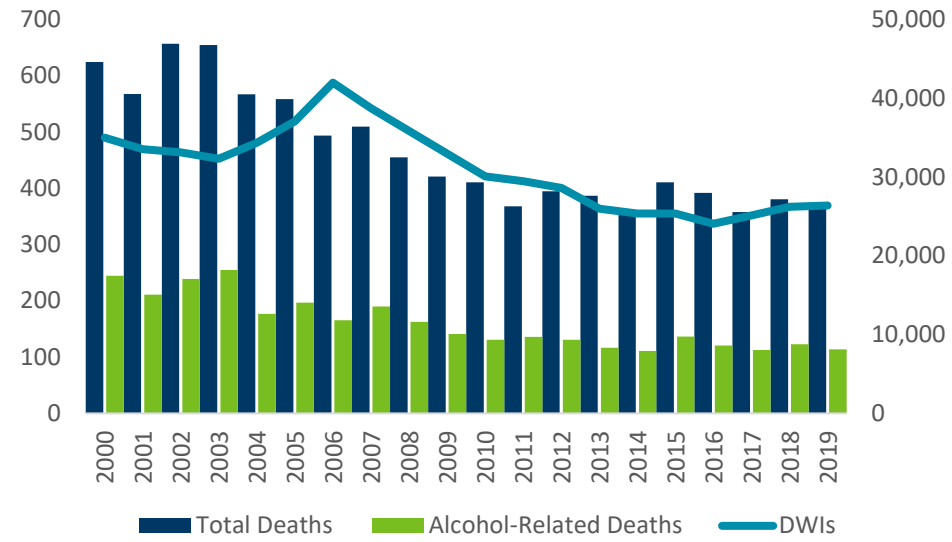
In reality, the percentage of alcohol-related traffic fatalities in Minnesota has steadily decreased in the past half-century. In the 1960s, around 60% of all traffic deaths per year were alcohol-related. Today, this percentage hovers around 31%. This is a great success story for Minnesota and the nation as a whole. As drivers change their behavior less tragedy occurs on our roadways.

Changes in drinking and driving behaviors are evidenced by reductions in alcohol-related crashes and the percentage of total deaths that are alcohol-related. In 1998, 42% of all traffic fatalities were alcohol-related; this number has decreased 10% in the past decade.

Table 2.01, Overview of Traffic Safety and Alcohol Statistics

Year	Total Deaths	DWI Arrests	Deaths (Any) Alcohol	% of Total Deaths	Deaths .08%+ Alcohol	% of Total Deaths	Deaths Drunk Driving (.08%+ Alcohol)	% of Total Deaths
2010	411	30,080	131	32%	121	29%	112	27%
2011	368	29,476	136	37%	111	30%	103	28%
2012	395	28,642	131	33%	104	26%	95	24%
2013	387	26,012	117	30%	95	25%	81	21%
2014	361	25,389	111	31%	91	25%	88	24%
2015	411	25,371	137	33%	107	26%	95	23%
2016	392	24,103	121	31%	90	23%	73	19%
2017	358	25,128	113	32%	84	23%	72	20%
2018	381	26,414	123	32%	96	25%	84	22%
2019	364	27,378	114	31%	107	29%	89	24%

Figure 2.02, Portion of Total Deaths and Alcohol-Related Deaths to DWIs



Minnesota's legal limit was lowered from .10 to .08 in 2005.

A look at age and gender

In Minnesota, a person can legally buy alcohol at age 21 and drinking and driving too often follows that. Impaired driving is essentially a problem among young adults and males. When gender was stated, males made up 72% of the DWI offenders in 2019. Those age 20 to 34 years old incurred 49% of the DWI incidents in 2019. Regarding alcohol-related crashes, those age 20 to 34 years old suffered 34% of the fatalities and 43% of the serious injuries.

Figure 2.03, Impaired Driving Incidents ("DWIs") by Age Group

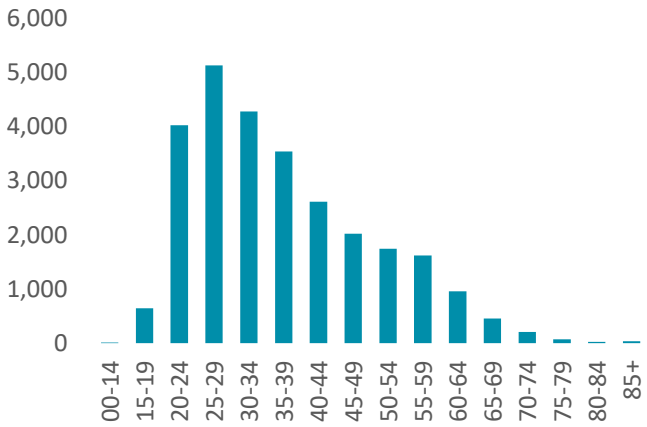


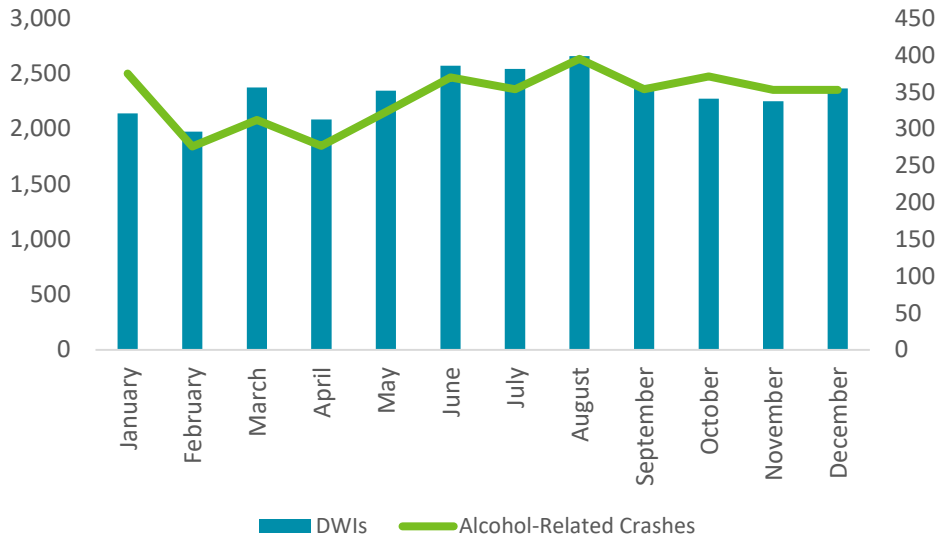
Table 2.02, Age of Persons Killed and Injured in All Crashes and Alcohol-Related Crashes

Age Group	Killed	Alcohol Related	Serious Injuries	Alcohol Related	Minor Injuries	Alcohol Related	Possible Injuries	Alcohol Related	Total Injuries	Alcohol Related
00-04	2	1	15	2	71	7	307	8	393	17
05-09	1	0	16	2	159	11	341	9	516	22
10-14	5	0	24	6	253	7	464	12	741	25
15	3	0	15	0	87	3	125	5	227	8
16	3	0	25	3	199	14	319	6	543	23
17	3	0	31	5	218	11	377	22	626	38
18	9	2	38	6	265	14	400	19	703	39
19	5	1	31	6	274	23	385	19	690	48
20	6	4	31	12	229	18	356	10	616	40
<21	**37**	**8**	**226**	**42**	**1,755**	**108**	**3,074**	**110**	**5,055**	**260**
00-14	8	1	55	10	483	25	1,112	29	1,650	64
15-19	23	3	140	20	1,043	65	1,606	71	2,789	156
20-24	32	16	173	58	1,073	154	1,823	109	3,069	321
25-29	26	9	150	43	995	155	1,632	120	2,777	318
30-34	27	14	135	42	871	137	1,509	108	2,515	287
35-39	26	12	128	30	722	85	1,424	101	2,274	216
40-44	26	5	107	29	613	70	1,092	59	1,812	158
45-49	25	9	117	21	600	61	1,075	49	1,792	131
50-54	30	16	79	19	568	56	1,039	49	1,686	124
55-59	25	7	120	28	622	74	1,115	42	1,857	144
60-64	31	11	93	14	515	42	903	43	1,511	99
65-69	23	6	74	11	413	30	662	30	1,149	71
70-74	12	1	57	6	310	19	478	16	845	41
75-79	16	2	38	0	214	5	327	11	579	16
80-84	17	1	29	2	129	3	215	6	373	11
85+	17	1	19	2	121	0	154	1	294	3
Unk	0	0	6	1	54	4	228	11	288	16
Total	**364**	**114**	**1,520**	**336**	**9,346**	**985**	**16,394**	**855**	**27,260**	**2,176**

Table 2.03, Alcohol-Related Crashes by Month

Month	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
January	5	128	242	375	6	157
February	3	77	196	276	3	120
March	6	103	203	312	6	129
April	7	107	163	277	8	134
May	8	140	175	323	8	200
June	11	155	204	370	12	221
July	13	159	182	354	13	211
August	15	184	196	395	17	249
September	10	162	182	354	11	216
October	10	154	207	371	10	194
November	11	122	220	353	12	173
December	8	115	230	353	8	172
Total	**107**	**1,606**	**2,400**	**4,113**	**114**	**2,176**

Figure 2.04, Impaired Driving Incidents ("DWIs") with Alcohol-Related Crashes by Month



28%

DWIs in summertime

August

had the most DWIs

When the alcohol-related crashes occur: weekends, late night

Most alcohol-related crashes occur on Fridays, Saturdays and Sundays. Combined, these three days accounted for 39% of all traffic crashes, but 57% of the alcohol-related crashes.

The late night hours 9 p.m. to 3 a.m. accounted for 12% of all crashes, but 41% of the alcohol-related crashes.

Figure 2.05, Alcohol-Related Crashes by Day of Week

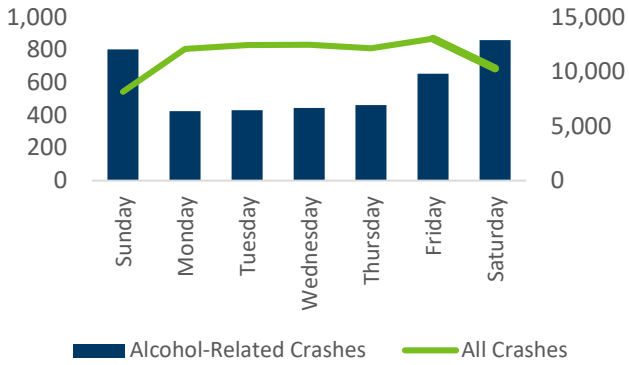


Figure 2.06, Alcohol-Related Crashes by Time of Day

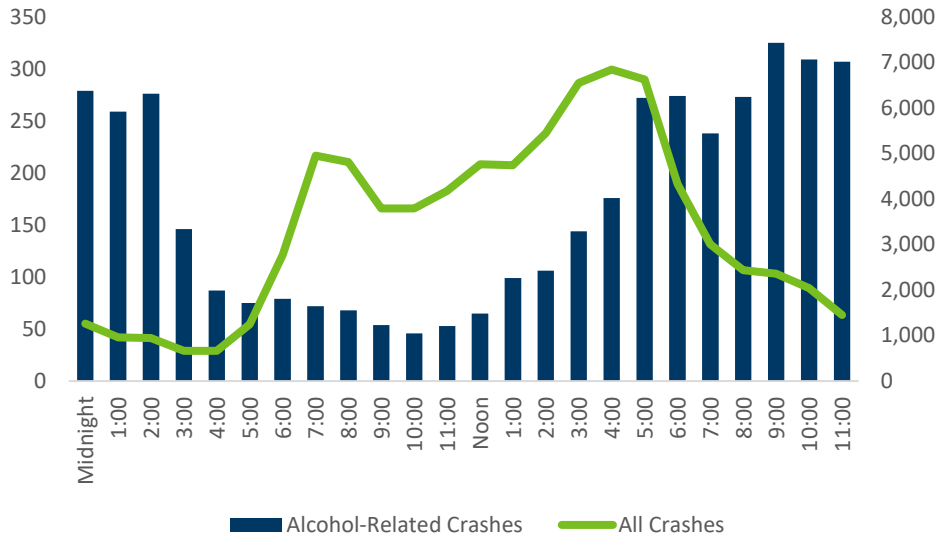


Figure 2.07, Heat Map of Alcohol-Related Crashes

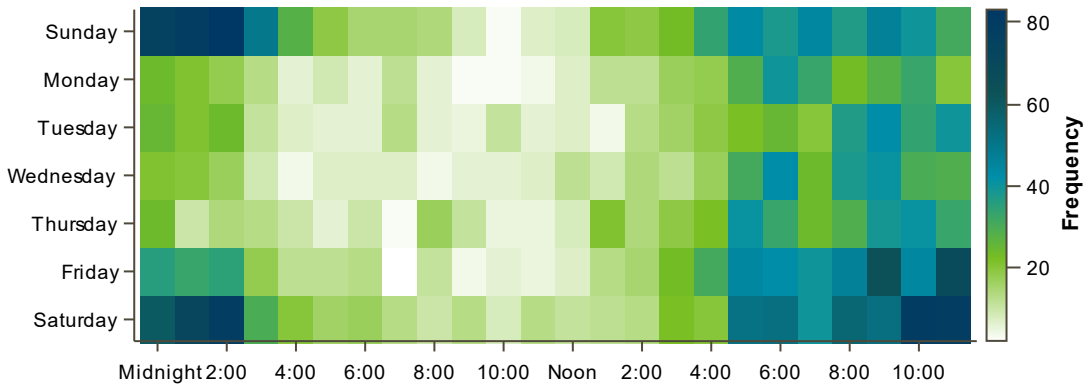


Table 2.04, Alcohol-Related Crashes by Roadway Type

Roadway Type	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Interstate	6	138	319	463	6	182
US Trunk Hwy	14	121	186	321	16	181
MN Trunk Hwy	17	225	332	574	18	319
County State Aid Highway	46	459	479	984	49	633
County Road	7	39	50	96	7	53
Township Road	3	70	72	145	3	98
Municipal State Aid Highway	8	236	346	590	8	309
Municipal Street	5	234	449	688	5	294
Other Road	1	84	167	252	2	107
Total	**107**	**1,606**	**2,400**	**4,113**	**114**	**2,176**

Table 2.05, First Harmful Event in Fatal Alcohol-Related Crashes and All Fatal Crashes

First Harmful Event	Number of Fatal Crashes	% of Fatal Crashes	Number of Alcohol-Related Fatal Crashes	% of Alcohol-Related Fatal Crashes
Collision with:				
Another Motor Vehicle	157	47.1%	27	25.2%
Fixed Object	54	16.2%	26	24.2%
Pedestrian	44	13.2%	22	20.5%
Bicycle	10	3.0%	3	2.8%
Parked Motor Vehicle	6	1.8%	1	0.9%
Deer/Other Animal	4	1.2%	1	0.9%
Anything Set in Motion by Motor Vehicle	2	0.6%	0	0.0%
Railroad Train	1	0.3%	0	0.0%
Unknown Collision with Fixed Object	1	0.3%	1	0.9%
Non-Collision:				
Overturn/Rollover	49	14.7%	26	24.2%
Other Non-Collision	5	1.5%	0	0.0%
Total	**333**	**100.0%**	**107**	**100.0%**

Test results for killed drivers

Minnesota is consistently at or near the top among the states in the proportion of drivers in fatal crashes who are tested for alcohol. Also, NHTSA developed a procedure (explained on page 27) that compensates for missing data. In 2019, there were 237 motor vehicle drivers who were killed. Of the 237 killed drivers, the Department of Public Safety was able to obtain alcohol test results for 202 (85%). Of the 202 tested, 137 (68%) tested negative, 3 (1%) tested between .01 and .07, 4 (2%) tested between .08 and .09 and 58 (29%) tested .10 or greater.

Figure 2.08, Percent of Drivers Killed Who Had Been Drinking, by Age

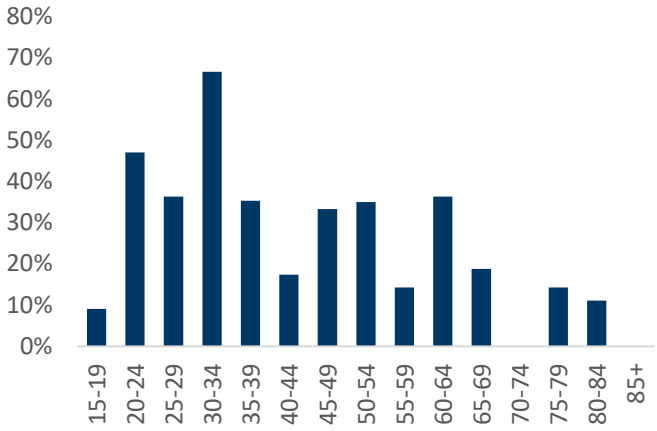


Table 2.06, Alcohol-Related Fatal Crash Summary, 2015-2019

	Alcohol Test Results on Killed Drivers										All Traffic Fatalities				
	Drivers Killed			Results on Drivers Tested							Drunk Driving-Related Fatalities**				
		Tested for Alcohol		Negative for Alcohol		.01 to .07 Alcohol		.08 to .09 Alcohol		.10 or Higher Alcohol		Known*		Estimated**	
Year	Total	N	% of Tested	N	% of Tested	N	% of Tested	N	% of Tested	N	% of Tested	Total Killed	N#	% of Total	N#	% of Total
2015	289	239	83%	139	58%	22	9%	6	3%	72	30%	411	95	23%	115	28%
2016	263	209	79%	139	67%	12	6%	2	1%	56	27%	392	73	19%	94	24%
2017	252	207	82%	144	70%	11	5%	2	1%	50	24%	358	72	20%	104	29%
2018	265	222	84%	139	63%	13	6%	11	5%	59	27%	381	84	22%	110	29%
2019	237	202	85%	137	68%	3	1%	4	2%	58	29%	364	89	24%	***	***

* For explanation of the difference between “known” and “estimated” alcohol-related fatalities, see page 38.

** NHTSA recently improved its method of estimating the true percentage of alcohol-related fatalities for each year. The above table reflects these changes back to the year 1990. Starting in 2013, NHTSA began estimating the true percentage based on impaired-related fatalities and excluding pedestrians and bicyclists.

*** Data not available at time of printing.

Table 2.07, Driver Fatalities' Level of Alcohol Concentration by Age

			Alcohol Concentration														
			.00		.01 - .07		.08 - .09		.10+		Alcohol Concentration						
Age	Killed	Tested	#	%	#	%	#	%	#	%	.00	.01-.04	.05-.09	.10-.14	.15-.19	.20-.24	.25+
0 – 14	0	0	0		0		0		0		0	0	0	0	0	0	0
15	0	0	0		0		0		0		0	0	0	0	0	0	0
16	1	1	1		0		0		0		1	0	0	0	0	0	0
17	1	1	1		0		0		0		1	0	0	0	0	0	0
18	6	4	3		0		0		1		3	0	0	0	0	1	0
19	3	3	3		0		0		0		3	0	0	0	0	0	0
20	2	2	0		0		0		2		0	0	0	1	0	0	1
< 21	**13**	**11**	**8**		**0**		**0**		**3**		**8**	**0**	**0**	**1**	**0**	**1**	**1**
0 - 14	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0	0	0	0	0
15 - 19	11	9	8	88.9%	0	0.0%	0	0.0%	1	11.1%	8	0	0	0	0	1	0
20 - 24	17	15	7	46.7%	0	0.0%	3	20.0%	5	33.3%	7	0	3	2	0	2	1
25 - 29	22	20	12	60.0%	1	5.0%	0	0.0%	7	35.0%	12	0	1	1	0	3	3
30 - 34	15	15	5	33.3%	0	0.0%	0	0.0%	10	66.7%	5	0	0	1	1	3	5
35 - 39	17	16	10	62.5%	0	0.0%	0	0.0%	6	37.5%	10	0	0	1	1	3	1
40 - 44	23	21	17	81.0%	0	0.0%	0	0.0%	4	19.0%	17	0	0	1	2	1	0
45 - 49	12	11	7	63.6%	1	9.1%	0	0.0%	3	27.3%	7	0	1	1	1	0	1
50 - 54	20	20	13	65.0%	1	5.0%	0	0.0%	6	30.0%	13	0	1	1	3	0	2
55 - 59	21	18	15	83.3%	0	0.0%	0	0.0%	3	16.7%	15	0	0	0	2	1	0
60 - 64	22	21	13	61.9%	0	0.0%	0	0.0%	8	38.1%	13	0	0	1	2	4	1
65 - 69	16	13	10	76.9%	0	0.0%	0	0.0%	3	23.1%	10	0	0	1	1	0	1
70 - 74	7	3	3	100%	0	0.0%	0	0.0%	0	0.0%	3	0	0	0	0	0	0
75 - 79	14	9	7	77.8%	0	0.0%	1	11.1%	1	11.1%	7	0	1	0	0	0	1
80 - 84	9	5	4	80.0%	0	0.0%	0	0.0%	1	20.0%	4	0	0	0	1	0	0
85+	11	6	6	100%	0	0.0%	0	0.0%	0	0.0%	6	0	0	0	0	0	0
Total	**237**	**202**	**137**	**67.8%**	**3**	**1.5%**	**4**	**2.0%**	**58**	**28.7%**	**137**	**0**	**7**	**10**	**14**	**18**	**16**

Table 2.08, Drunk Driving-Related Fatalities and Alcohol-Related Injuries by Sex and Traffic Role

	Male Killed	Female Killed	Total Killed	Male Serious Injuries	Female Serious Injuries	Male Minor Injuries	Female Minor Injuries	Male Possible Injuries	Female Possible Injuries	Total Injuries
Driver	58	9	67	176	50	470	221	350	238	1,528
Passenger	6	8	14	32	35	96	118	82	117	489
Pedestrian	4	4	8	26	6	43	15	26	16	134
Bicyclist	0	0	0	7	0	9	3	5	0	25
Total	**68**	**21**	**89**	**241**	**91**	**618**	**357**	**463**	**371**	**2,176**

Note: Sometimes gender is not reported on the crash report. This causes the total to be greater than the sum of serious, minor and possible injury columns. The term drunk driving-related pertains to fatal motor vehicle crashes in which a driver tests positive for alcohol at the .08% level or above.

OCCUPANT PROTECTION

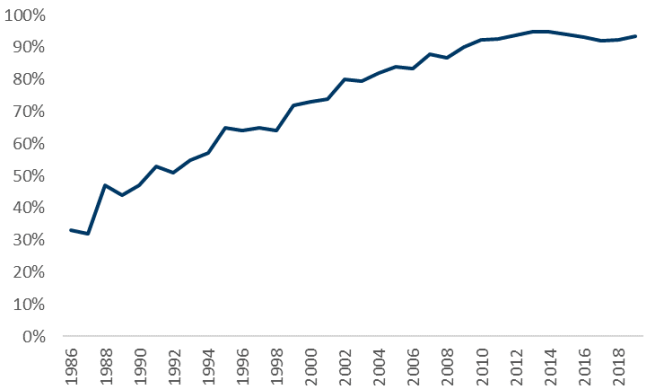
A brief history of restraint legislation
Over the years, the Minnesota Legislature enacted laws mandating safety equipment use. The Child Passenger Protection Act took effect in 1982 requiring children under age four to be properly restrained in a federally approved child car seat. The state's safety belt law went into effect in 1986 requiring all front seat occupants (and children ages four through ten, regardless of seating position) to be restrained. The 1986 belt law was 'Secondary' in nature. Thus, an officer could not issue a citation for non-belt use unless there was another moving violation. In 2009 the law was updated to 'Primary'. In addition, passengers in all seating positions must wear a seat belt or be in the correct child restraint (including children aged four through seven, who must be in a 'booster seat').

Restraint use studies
Observational surveys of safety belt use conducted annually at random sites show that legislation affects safety belt wearing behavior, thus, saving lives and preventing injuries. In June 1986, just 20% of front seat occupants used seat belts. Since then, the usage rate has increased, as seen in Figure 3.01.

Minnesota usage rates for 2019 were:

93.4% overall use rate	92% male use rate	95% female use rate

Figure 3.01, Seat Belt Usage Trends



Seatbelts save over

15,000

lives every year

Figure 3.02, Seat Belt Usage by Vehicle Type

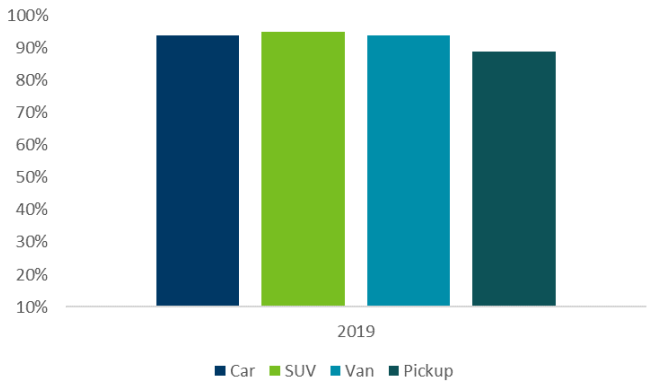


Table 3.01, Motor Vehicle Occupants Killed or Injured by Ejection Status

Ejection Status	Killed	Serious Injuries	Minor Injuries	Possible Injuries	Total Killed or Injured
Not Ejected	198	962	7,779	15,206	24,145
Partially Ejected	14	14	15	23	66
Ejected	34	44	20	7	105
Not Stated	2	32	103	192	329
Total	248	1,052	7,916	15,426	24,642

Figure 3.03, Motor Vehicle Occupants Killed or Injured by Ejection Status

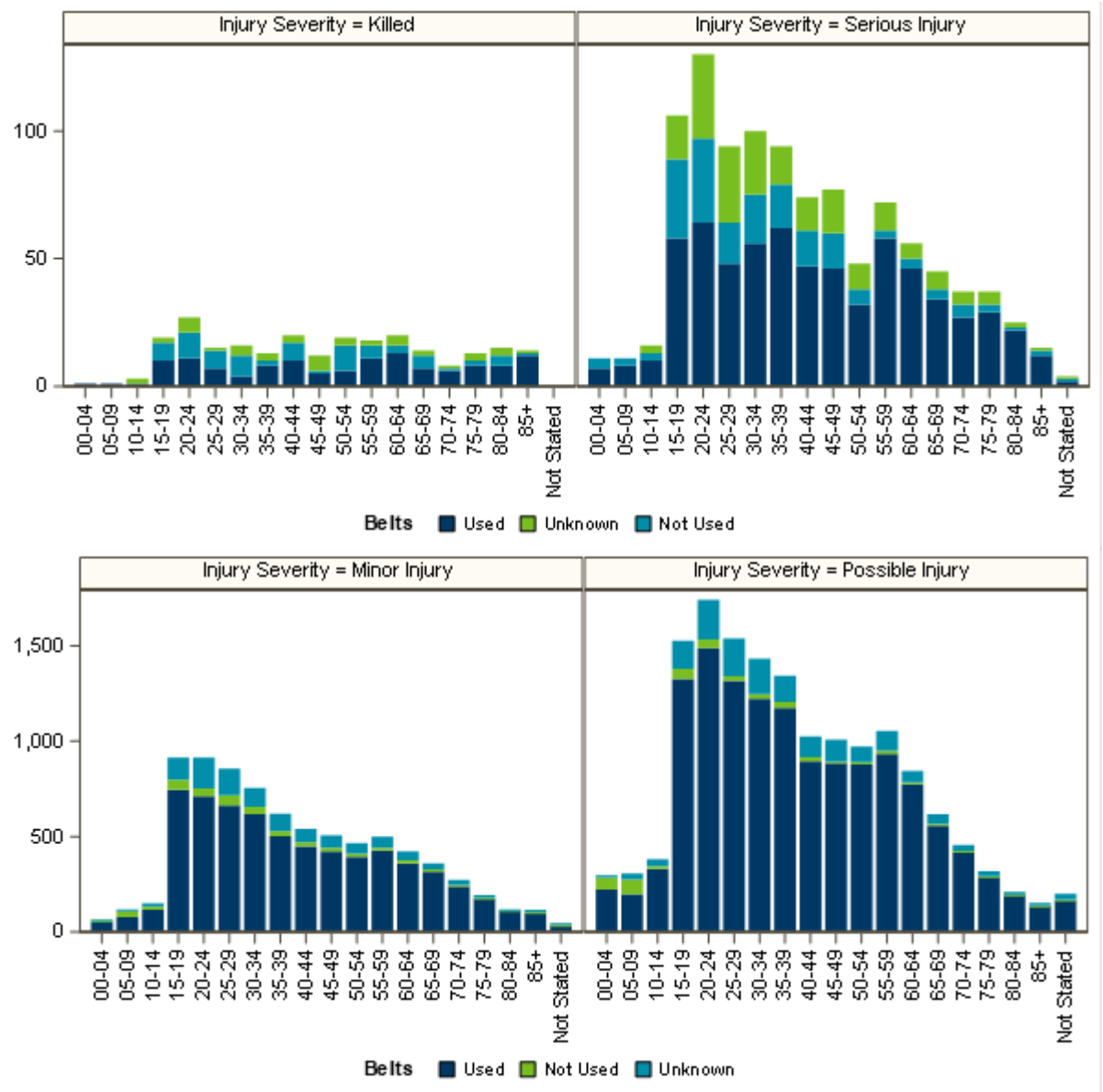


Figure 3.04, Safety Equipment Use Counts by Vehicle Occupants Where Gender and Injury Severity is Known

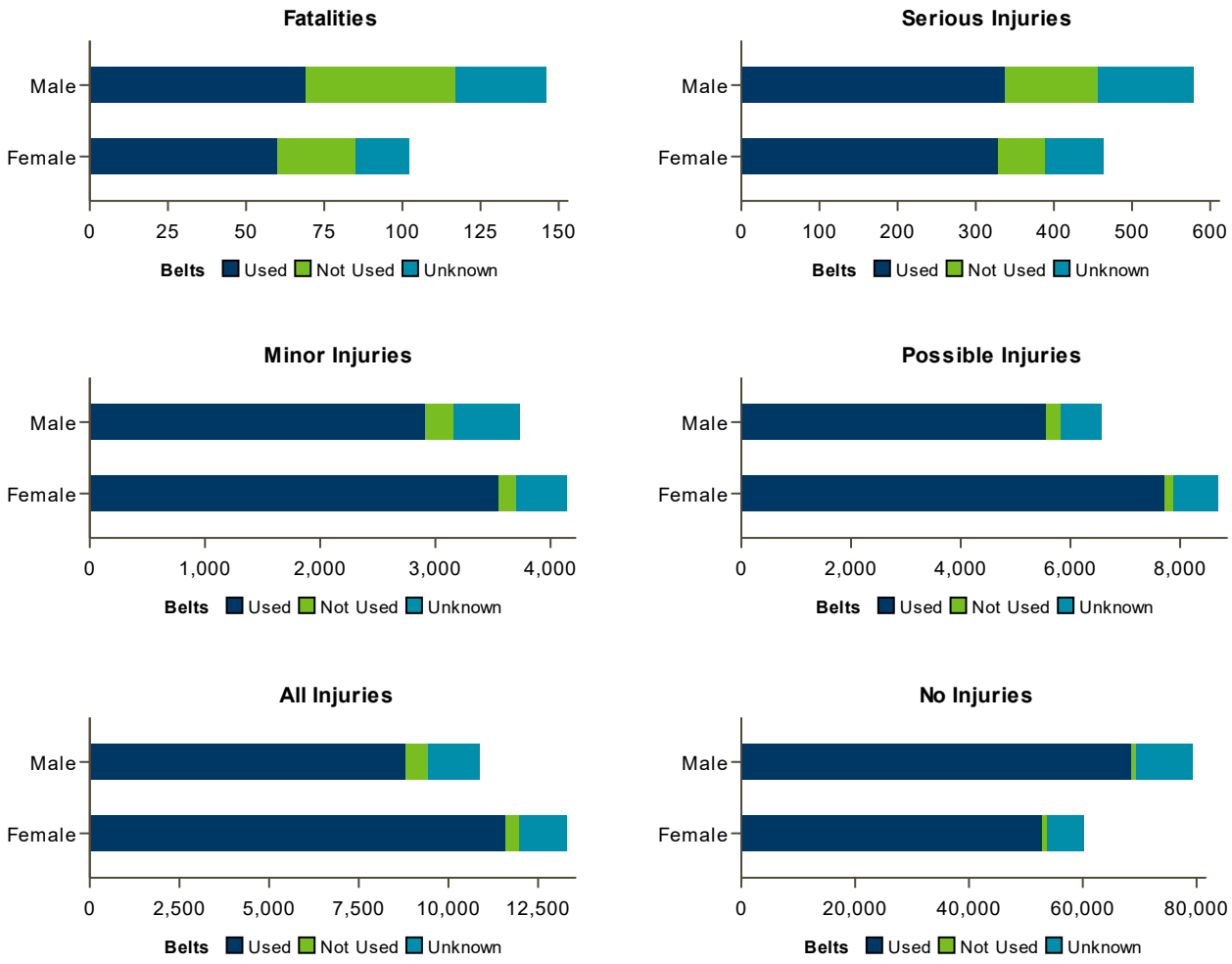


Table 3.02, Motor Vehicle Occupants Killed or Injured by Ejection Status

Seat Belt Usage	Fatalities	%	Serious Injuries	%	Total Injuries	%
Used	129	52.0%	668	63.5%	20,556	84.3%
Not Used	73	29.4%	183	17.4%	1,021	4.2%
Unknown	46	18.5%	201	19.1%	2,820	11.6%

Regional differences in seat belt usage rates
While it is true that Minnesota has a high seat belt compliance rate, a marked difference exists in different regions across the state. The annual statewide seat belt observational study and localized observational studies conducted by TZD experts, attitudinal surveys and crash reports have all documented these regional differences. Notably, the Northwest region of the state has the lowest seat belt usage rate.

Table 3.03, Safety Equipment Use by Motor Vehicle Occupants Killed or Injured by Region of the State

Region	Used	Not Used	Unknown	Killed or Injured
Metropolitan	83.0%	3.2%	13.8%	14,762
Central	87.6%	5.1%	7.3%	3,258
Northeast	85.0%	4.5%	10.4%	1,168
Northwest	77.1%	12.0%	10.9%	467
South Central	82.6%	6.7%	10.7%	915
Southeast	88.0%	4.5%	7.5%	2,142
Southwest	82.0%	9.0%	9.0%	1,043
West Central	81.6%	10.7%	7.8%	890
Statewide	**83.9%**	**4.44%**	**4.4%**	**24,645**

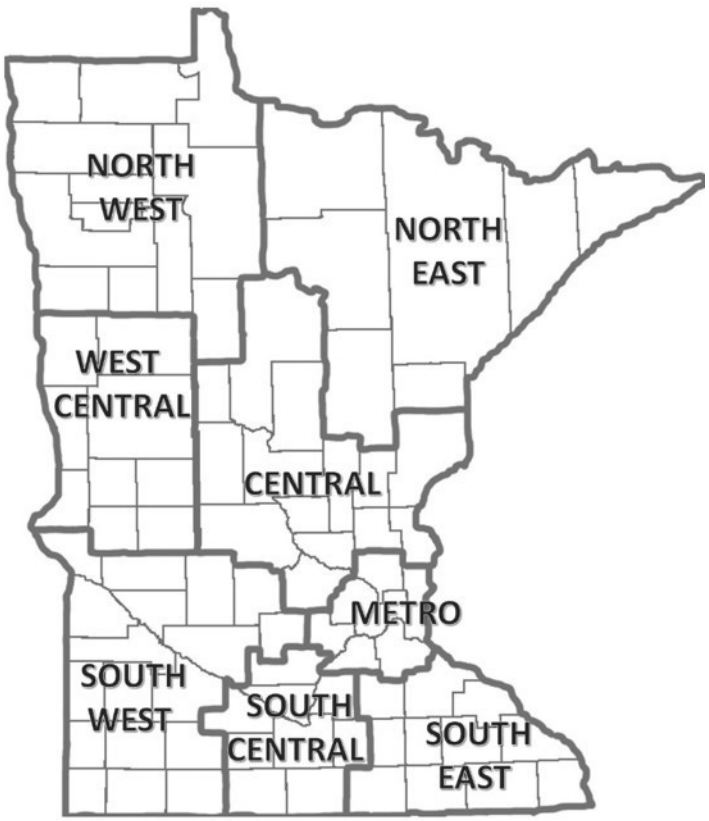


Table 3.04, Safety Equipment Use by Vehicle Occupants Killed or Injured, by Age and Injury Severity

Age Group	Restraint Use	Killed	Serious Injuries	Minor Injuries	Possible Injuries	Total Injured
00-03 Years	Used	1	5	32	177	214
	Not Used	0	2	12	46	60
	Unknown	0	0	1	11	12
	Subtotal	1	7	45	234	286
04-07 Years	Used	1	5	50	141	196
	Not Used	0	4	28	90	122
	Unknown	0	0	6	18	24
	Subtotal	1	9	84	249	342
Total 00-07 Years	Used	2	10	82	318	410
	Not Used	0	6	40	136	182
	Unknown	0	0	7	29	36
	Subtotal	2	16	129	483	628
00-04 Years	Used	1	7	47	222	276
	Not Used	0	4	14	61	79
	Unknown	0	0	1	14	15
	Subtotal	1	11	62	297	370
05-09 Years	Used	1	8	77	197	282
	Not Used	0	3	32	77	112
	Unknown	0	0	8	33	41
	Subtotal	1	11	117	307	435
10-14 Years	Used	1	10	116	331	457
	Not Used	0	3	16	14	33
	Unknown	2	3	18	35	56
	Subtotal	3	16	150	380	546
15-19 Years	Used	10	58	744	1,326	2,128
	Not Used	7	31	55	55	141
	Unknown	2	17	116	147	280
	Subtotal	19	106	915	1,528	2,549
20-24 Years	Used	11	64	711	1,488	2,263
	Not Used	10	33	41	47	121
	Unknown	6	33	163	207	403
	Subtotal	27	130	915	1,742	2,787
25-29 Years	Used	7	48	664	1,316	2,028
	Not Used	7	16	52	26	94
	Unknown	1	30	139	198	367
	Subtotal	15	94	855	1,540	2,489
30-34 Years	Used	4	56	617	1,223	1,896
	Not Used	8	19	39	25	83
	Unknown	4	25	99	186	310
	Subtotal	16	100	755	1,434	2,289
35-39 Years	Used	8	62	502	1,174	1,738
	Not Used	2	17	27	33	77
	Unknown	3	15	91	136	242
	Subtotal	13	94	620	1,343	2,057

Table 3.04, Safety Equipment Use by Vehicle Occupants Killed or Injured, by Age and Injury Severity, Continued

Age Group	Restraint Use	Killed	Serious Injuries	Minor Injuries	Possible Injuries	Total Injured
40-44 Years	Used	10	47	449	894	1,390
	Not Used	7	14	20	23	57
	Unknown	3	13	70	109	192
	Subtotal	20	74	539	1,026	1,639
45-49 Years	Used	5	46	422	885	1,353
	Not Used	1	14	20	8	42
	Unknown	6	17	63	116	196
	Subtotal	12	77	505	1,009	1,591
50-54 Years	Used	6	32	393	877	1,302
	Not Used	10	6	17	14	37
	Unknown	3	10	54	82	146
	Subtotal	19	48	464	973	1,485
55-59 Years	Used	11	58	427	933	1,418
	Not Used	5	3	15	17	35
	Unknown	2	11	57	105	173
	Subtotal	18	72	499	1,055	1,626
60-64 Years	Used	13	46	360	773	1,179
	Not Used	3	4	15	10	29
	Unknown	4	6	46	61	113
	Subtotal	20	56	421	844	1,321
65-69 Years	Used	7	34	315	557	906
	Not Used	5	4	12	10	26
	Unknown	2	7	31	51	89
	Subtotal	14	45	358	618	1,021
70-74 Years	Used	6	27	239	416	682
	Not Used	1	5	7	9	21
	Unknown	1	5	26	30	61
	Subtotal	8	37	272	455	764
75+	Used	28	63	380	619	1,062
	Not Used	7	6	13	5	24
	Unknown	7	8	33	53	94
	Subtotal	42	77	426	677	1,180
Age Not Stated	Used	0	2	31	163	196
	Not Used	0	1	4	5	10
	Unknown	0	1	9	32	42
	Subtotal	0	4	44	200	248
All Ages	Used	129	668	6,494	13,394	20,556
	Not Used	73	183	399	439	1,021
	Unknown	46	201	1,024	1,595	2,820
	Total	248	1,052	7,917	15,428	24,397

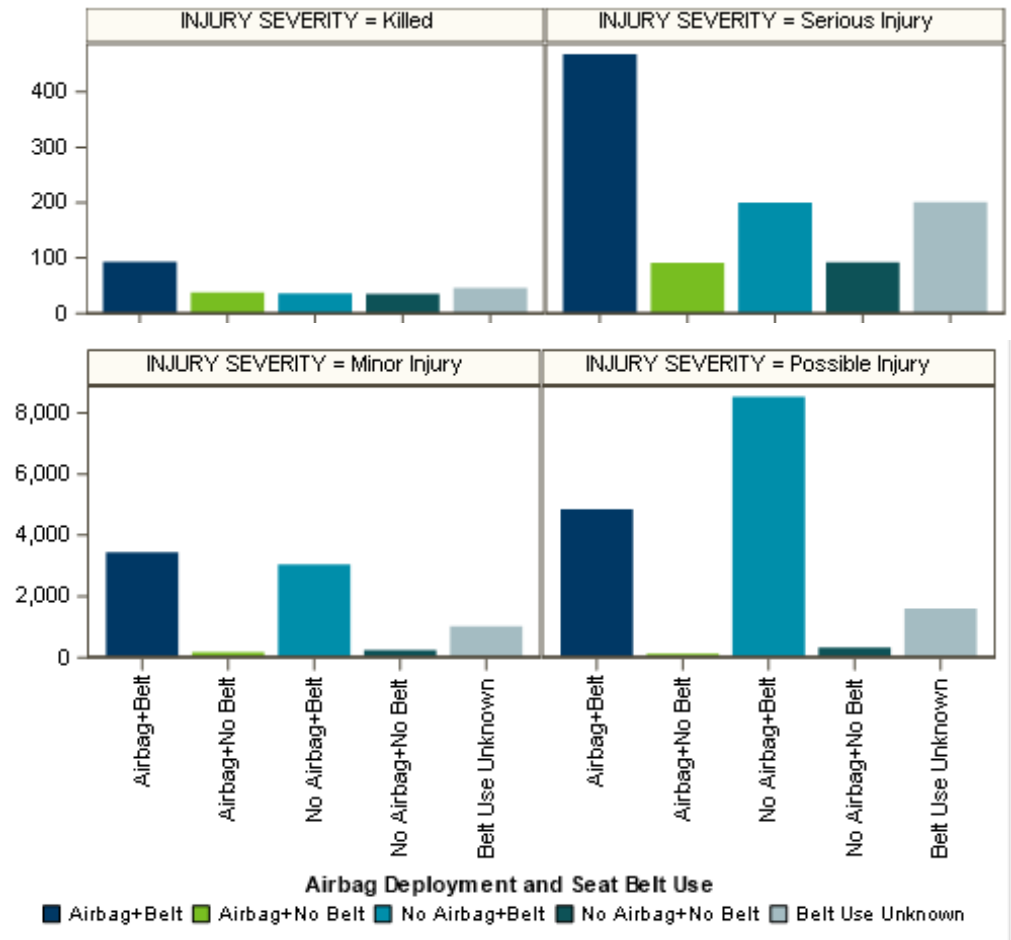
Persons age 0 through 3 and 4 through 7 are categorized separately because Minnesota law makes special provisions for these age groups.

Table 3.05, Safety Equipment Use by Motor Vehicle Occupants Killed or Injured by Roadway Type

	Unused		Not Used		Unknown		Total	
Roadway Type	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Interstate	2,692	92.0%	119	4.1%	115	3.9%	2,926	100.0%
US Trunk Hwy	2,314	89.3%	143	5.5%	134	5.2%	2,591	100.0%
MN Trunk Hwy	3,447	89.7%	161	4.2%	236	6.1%	3,844	100.0%
CSAH	5,085	81.1%	292	4.7%	891	14.2%	6,268	100.0%
County Road	360	82.0%	33	7.5%	46	10.5%	439	100.0%
Township Road	320	73.1%	58	13.2%	60	13.7%	438	100.0%
MSAH	3,253	81.6%	111	2.8%	623	15.6%	3,987	100.0%
Municipal Street	2,199	74.3%	141	4.8%	618	20.9%	2,958	100.0%
Other Road	1,015	85.0%	36	3.0%	143	12.0%	1,194	100.0%
Total	**20,685**	**83.9%**	**1,094**	**4.4%**	**2,866**	**11.6%**	**24,645**	**100.0%**

CSAH = County State Aid Highway MSAH = Municipal State Aid Highway

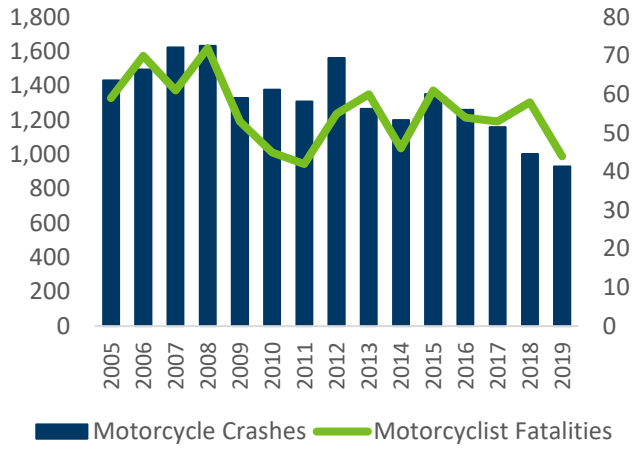
Figure 3.04, Airbag Deployment by Injury Severity



Motorcycle Crashes

Motorcycle crash summary
After decades of increasing motorcycle registrations and licenses, Minnesota started seeing declining registrations in 2015 and operator licenses in 2016. Motorcycle crashes have decreased over the decades as well, but counts do fluctuate due to Minnesota weather determining the length of the riding season each year. Nevertheless, motorcyclist crash involvement remains very worrisome to traffic safety officials. When a motorcycle is involved in a crash, the chances for a fatality are greatly increased.

Figure 4.01, Motorcycle Crash Trends



2019 Motorcycle Stats:

44 motor-cyclists killed	840 motor-cyclists injured	4.6 fatal crash rate (per 100)

Helmet use
Minnesota does not have a mandatory helmet use law for motorcyclists 18 or older. Laws may be debated, but the benefits helmets offer are clear; they protect the head in the event of a crash. In 2019, only fourteen (32%) of the 44 motorcycle riders killed were known to be wearing a helmet. Of the 840 motorcyclists injured, only 367 (44%) were known to be wearing a helmet.

Operator training is essential
In addition to the newly endorsed younger drivers each year, a large number of middle-aged people are returning to motorcycling. The crash data indicates the importance of proper operator training. In 2019, 21% of motorcycle operators that were involved in a fatal crash did not have a valid endorsement to drive a motorcycle. Further training is needed for a large segment of the motorcycle driver population.

85%

motorcyclist fatalities and injuries are males

Table 4.01, Motorcycle Crash Summary

	Motorcycle Crashes				Killed		Injured					Fatal Crash Rate Per 100 Crashes	
Year	Fatal	Injury	PDO	Total	Mcy	Other	Mcy	Other	Licensed Operators	Registered Motorcycles	Mcy Deaths per 10K Reg. Mcy	Mcy Crashes	All Crashes
2010	44	1,168	165	1,377	45	2	1,296	58	394,083	229,912	2	3.2	0.5
2011	43	1,130	136	1,309	42	2	1,248	45	398,092	232,274	1.8	3.3	0.5
2012	51	1,320	192	1,563	55	0	1,454	68	404,967	237,278	2.3	3.3	0.5
2013	59	1,047	160	1,266	60	2	1,143	52	409,943	235,909	2.5	4.7	0.5
2014	44	1,005	152	1,201	46	1	1,117	44	414,346	236,040	1.9	3.7	0.4
2015	58	1,103	191	1,352	61	1	1,232	81	414,782	238,243	2.6	4.3	0.5
2016	54	1,042	164	1,260	54	6	1,153	78	416,967	227,746	2.4	4.3	0.5
2017	52	944	163	1,159	53	1	1,046	63	416,693	223,443	2.4	4.5	0.4
2018	57	819	128	1,004	58	1	913	39	414,580	223,849	2.6	5.7	0.4
2019	43	8762	125	930	44	0	840	49	412,104	216,773	2.6	4.6	0.4
Record High* (year)	112 (1980)	2,728 (1980)	537 (1976)	3,308 (1980)	121 (1980)	9 (1975)	3,359 (1980)	207 (1984)	416,967 (2016)	238,243 (2015)	7.7 (1980)	5.7 (2018)	0.8 (1970)

PDO stands for "property damage only" – a crash in which no one is killed or injured. MCY stands for "motorcyclist" or "motorcycle". The record high shown is for the period of time back to year 1970.

Figure 4.02, Motorcyclists Killed or Injured by Age and Gender

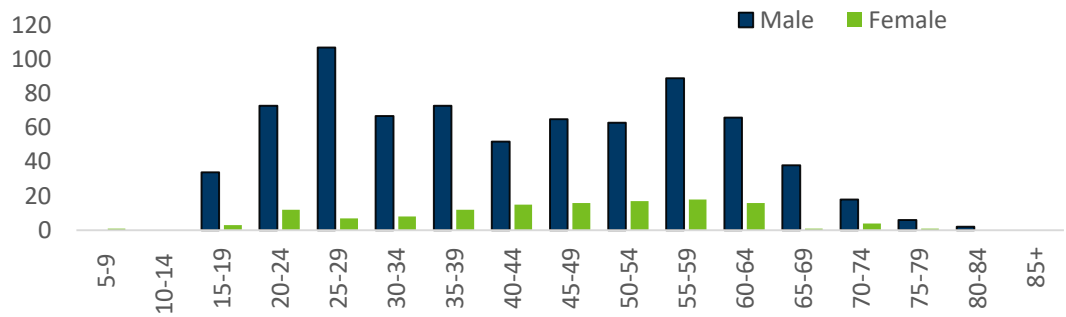


Figure 4.03, Heat Map of Motorcycle Crashes

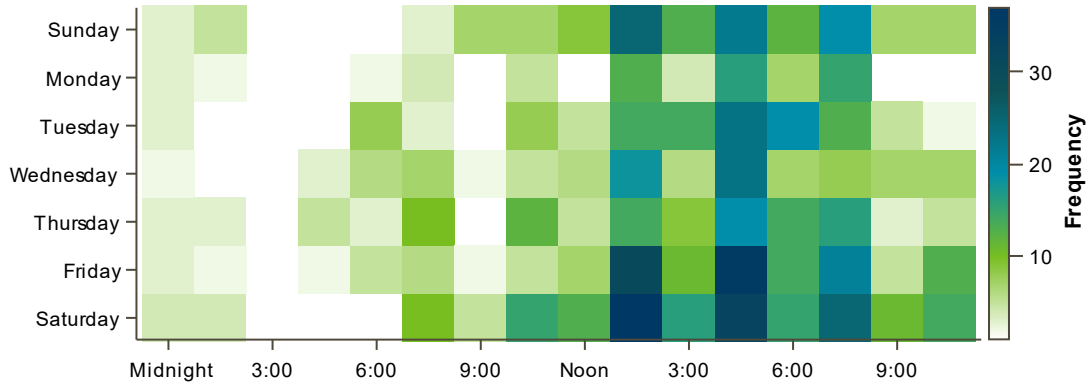


Table 4.02, Motorcycle Crashes by First Harmful Event

First Harmful Event	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	13	313	81	407	13	344
Parked Motor Vehicle	2	5	5	12	2	1
Bicyclist	0	0	0	0	0	0
Pedestrian	0	2	0	2	0	0
Deer	2	49	5	56	2	59
Other Animal	1	26	0	27	1	33
Anything Set in Motion by MV	2	2	0	4	3	2
Fixed Object	12	112	9	133	12	124
Non-Collision:						
Overturn/Rollover	9	113	8	130	9	127
Submersion	0	1	0	1	0	1
Fire/Explosion	0	0	0	0	0	0
Unknown Collision with Fixed Object	1	0	0	1	1	0
Other Non-Collision	1	139	17	157	1	149
Total	**43**	**762**	**125**	**930**	**44**	**840**

Table 4.03, Motorcycle Crashes by Roadway Type

Road Type	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Interstate	3	54	7	64	3	58
US Trunk Hwy	2	74	10	86	2	81
MN Trunk Hwy	10	135	22	167	11	154
County State Aid Highway	21	240	44	305	21	274
County Road	0	30	1	31	0	34
Township Road	1	22	3	26	1	23
Municipal State Aid Highway	4	105	20	129	4	106
Municipal Street	1	72	14	87	1	76
Other Road	1	30	4	35	1	34
Total	**43**	**762**	**125**	**930**	**44**	**840**

Table 4.04, Motorcycle Crashes by Population of Area

Population of Area	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
250,000+	2	73	22	97	2	72
100,000-249,999	1	6	2	9	1	7
50,000-99,999	5	116	26	147	5	125
25,000-49,999	3	59	7	69	3	63
10,000-24,999	5	123	20	148	5	132
5,000-9,999	2	44	9	55	2	48
2,500-4,999	3	40	6	49	3	44
1,000-2,499	1	53	4	58	1	61
Townships/Rural	21	248	29	298	22	288
Total	**43**	**762**	**125**	**930**	**44**	**840**

Table 4.05, Motorcycle Crashes by Month

Month	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
January	0	1	0	1	0	1
February	0	0	0	0	0	0
March	1	11	2	14	1	10
April	1	37	5	43	1	42
May	3	111	18	132	3	119
June	9	148	24	181	10	167
July	10	145	17	172	10	157
August	12	143	24	179	12	160
September	3	104	20	127	3	115
October	4	54	15	73	4	60
November	0	7	0	7	0	7
December	0	1	0	1	0	2
Total	**43**	**762**	**125**	**930**	**44**	**840**

Table 4.06, Helmet Use by Motorcyclists Killed or Injured

Injury Severity	Helmet Used #	Helmet Used %	Helmet Not Used #	Helmet Not Used %	Unknown Helmet Use #	Unknown Helmet Use %	Total #	Total %
Killed	14	31.8%	30	68.2%	0	0.0%	44	100.0%
Injured	367	43.7%	435	51.8%	38	4.5%	840	100.0%

Table 4.07, Endorsement Status of Motorcycle Drivers Involved in Fatal Crashes

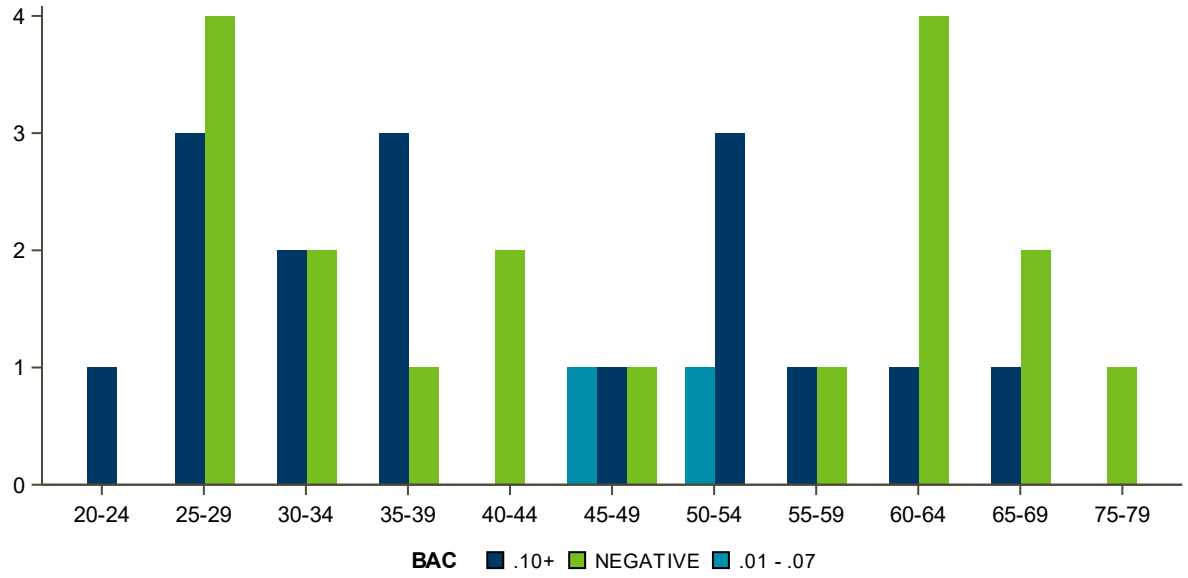
Valid Endorse-ment*	%	Permit Only	%	Canceled, Suspended, Revoked	%	No Endorse-ment	%	Total** for Year	%
30	76.9%	1	2.6%	4	10.3%	8	20.5%	39	100.0%

- A valid endorsement means that the driver's license has been "endorsed" to permit operation of a motorcycle.
- ** Row may not add up to total due to the unknown status of some motorcycle operators.

Table 4.08, Alcohol Use by Killed Motorcycle Drivers

Killed	Tested	.00	.01 - .07	.08 - .09	.10 +
39	36	18	2	0	16

Figure 4.04, Motorcycle Driver Fatalities' Level of Alcohol Concentration by Age



Truck Crashes

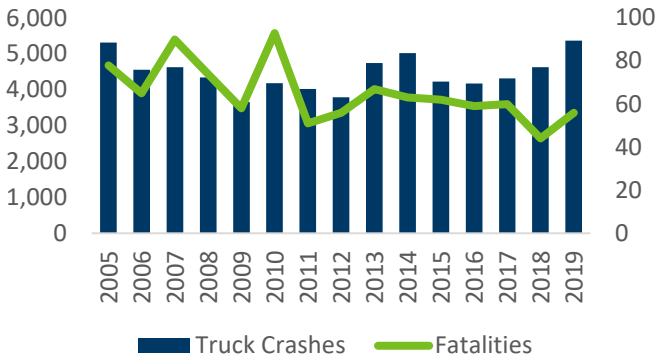
Truck crash summary
This section summarizes data on crashes involving trucks, also known as commercial motor vehicles (CMVs). On the crash report form, commercial motor vehicles are identified as any of the following eight types of trucks: (1) two-axle, six-tire single unit truck or step van, (2) three-or-more-axle single unit truck, (3) single-unit truck with trailer, (4) truck tractor with no trailer, (5) truck tractor with semi-trailer, (6) truck tractor with double trailers, (7) truck tractor with triple trailers, (8) heavy truck of other or unknown type, (9) or other single-unit truck. A crash involving a vehicle classified as a CMV on the police crash report with any of these vehicle configurations is classified as a truck crash. Pickup trucks, buses, and vans are not counted as trucks in this section.

2019 Truck Crash Stats:

5,369 truck crashes	56 fatalities resulted	1,431 people injured

Fatalities and injuries are mostly in other vehicles
In two-vehicle collisions, heavier vehicles have the clear safety advantage. Only 5 of the 50 people killed in truck-involved multiple vehicle crashes were in trucks. Of the 1,197 people injured in multi-vehicle collisions, only 151 (13%) were truck occupants.

Figure 5.01, Truck Crash Trends



Driving conditions considered
Driving conditions can vary from day to day in Minnesota, but most truck crashes occur on dry roads in clear weather. However, operating large trucks on surfaces reported to be wet, covered with snow, slush, ice or packed snow provide additional challenges for truck drivers.

Rural areas see more truck crashes

Figure 5.02, Truck Crashes by Day of Week

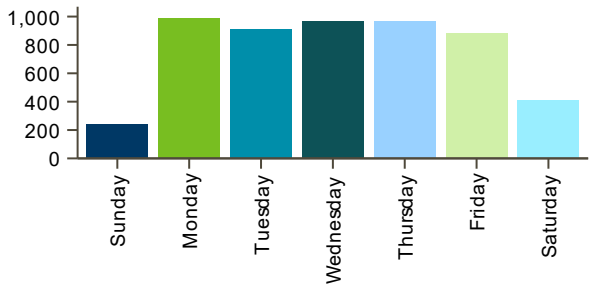


Table 5.01, Truck Crashes by First Harmful Event

First Harmful Event	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	43	867	3,056	3,966	50	1,197
Parked Motor Vehicle	0	17	235	252	0	27
Bicycle	1	6	0	7	1	6
Pedestrian	1	8	0	9	1	8
Deer	0	0	4	4	0	0
Other Animal	0	1	8	9	0	2
Railroad Train	1	3	8	12	1	3
Set in Motion by MV	0	1	17	18	0	1
Fixed Object	0	57	559	616	0	64
Non-Collision:						
Overturn/Rollover	2	95	137	234	2	106
Submersion	0	0	1	1	0	0
Fire/Explosion	0	0	2	2	0	0
Other Non-Collision	1	16	222	239	1	17
Total	**49**	**1,071**	**4,249**	**5,369**	**56**	**1,431**

Table 5.02, Truck Crashes by Month

Month	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
January	2	98	306	406	2	123
February	5	138	715	858	6	185
March	4	71	289	364	4	99
April	2	59	295	356	2	86
May	3	62	266	331	3	78
June	8	92	282	382	9	129
July	3	93	296	392	3	121
August	3	91	307	401	4	121
September	5	87	285	377	5	115
October	7	100	360	467	9	139
November	4	72	357	433	6	92
December	3	108	491	602	3	143
Total	**49**	**1,071**	**4,249**	**5,369**	**56**	**1,431**

Figure 5.03, Heat Map of Truck Crashes

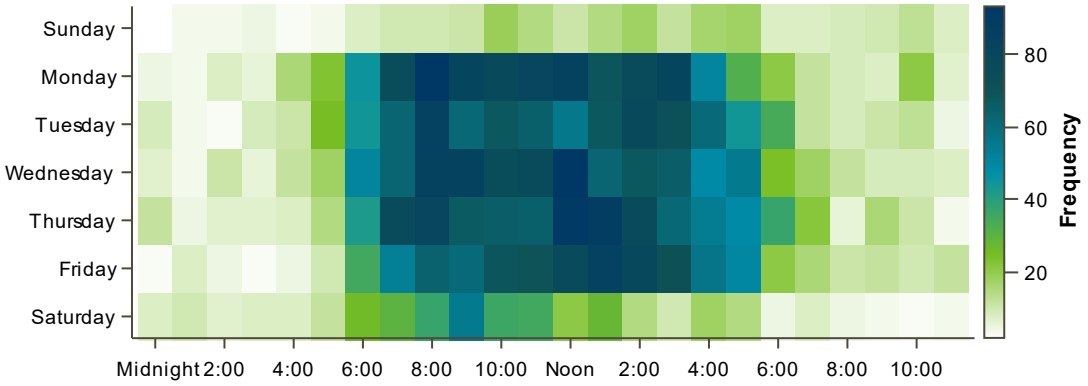


Table 5.03, Truck Crashes by Population of Area

Population of Area	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
250,000+	1	85	558	644	1	105
100,000-249,999	0	11	59	70	0	15
50,000-99,999	5	179	751	935	6	234
25,000-49,999	4	110	484	598	4	155
10,000-24,999	6	146	687	839	7	192
5,000-9,999	0	49	254	303	0	60
2,500-4,999	5	40	192	237	6	57
1,000-2,499	1	52	174	227	1	74
Townships/Rural	27	399	1,090	1,516	31	539
Total	**49**	**1,071**	**4,249**	**5,369**	**56**	**1,431**

Table 5.04, Truck Crashes by Type of Roadway

Type of Roadway	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Interstate	3	278	1,194	1,475	3	379
US Trunk Hwy	17	195	617	829	19	282
MN Trunk Hwy	15	193	617	825	18	251
County State Aid Highway	9	200	569	778	11	271
County Road	1	17	52	70	1	18
Township Road	2	31	64	97	2	38
Municipal State Aid Highway	2	58	413	473	2	68
Municipal Street	0	53	446	499	0	64
Other Road	0	46	277	323	0	60
Total	**49**	**1,071**	**4,249**	**5,369**	**56**	**1,431**

Table 5.05, Truck Crashes by Road Surface Condition

Road Surface Condition	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Dry	33	650	2,336	3,019	38	867
Wet	9	116	408	533	10	156
Snow	5	133	742	880	5	178
Slush	0	18	65	83	0	21
Ice/Frost	2	138	655	795	3	188
Water - Standing/Moving	0	1	2	3	0	3
Mud, Dirt, Gravel	0	13	19	32	0	15
Ruts, Holes, Bumps	0	0	1	1	0	0
Other	0	1	5	6	0	2
Unknown	0	1	16	17	0	1
Total	**49**	**1,071**	**4,249**	**5,369**	**56**	**1,431**

Table 5.06, Truck Crashes by Weather Condition Cited*

Weather Condition	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Clear	31	592	2,289	2,912	36	771
Cloudy	11	275	970	1,256	13	373
Rain	2	82	255	339	2	115
Snow	3	126	652	781	3	170
Sleet/Hail	0	35	139	174	0	46
Fog/Smog/Smoke	2	8	16	26	2	14
Blowing Sand/Soil/Dirt	0	53	287	340	0	81
Severe Crosswinds	1	13	50	64	1	22
Other Weather	2	4	18	24	2	4
Unknown	0	3	29	32	0	3
Total	**52**	**1,191**	**4,705**	**5,948**	**59**	**1,599**

* Officers may report up to two weather conditions so the totals listed may differ than the number of crashes, injuries and fatalities.

Most truck crashes occur on

dry roads

Usually

clear weather

for truck crashes

Table 5.07, Drivers in Truck Crashes by Physical Condition*

Physical Condition	Truck Drivers	%	Other Drivers	%
Normal	5,480	97.7%	4,088	94.7%
Disability	0	0.0%	3	0.1%
Medical	16	0.3%	5	0.1%
Emotional	0	0.0%	5	0.1%
Asleep	30	0.5%	41	1.0%
Drinking	12	0.2%	49	1.1%
Drugs	4	0.1%	17	0.4%
Medications	2	0.0%	8	0.2%
Other	6	0.1%	9	0.2%
Unknown	61	1.1%	90	2.1%
Total**	**5,611**	**100.0%**	**4,315**	**100.0%**

*As noted by police officer on crash report.
**This table tabulates the apparent physical condition of drivers where it was possible to identify a driver. Officers may document up to two physical condition factors for drivers, so total counts may differ than the number of drivers.

Table 5.08, Persons Killed or Injured in Truck Crashes by Vehicle Occupied

Vehicle Type	Fatalities	Serious Injuries	Minor Injuries	Possible Injuries	Total Fatalities & Injuries
Passenger Car	24	36	189	281	530
Pickup	9	10	66	89	174
Sport Utility Vehicle	7	23	118	168	316
Passenger Van	2	1	19	44	66
Cargo Van	1	0	4	4	9
School Bus	0	0	0	3	3
Motor Coach	0	0	1	0	1
Snowmobile	1	0	0	0	1
ATV	0	1	0	0	1
Motorcycle	1	3	4	2	10
Moped or Motor Scooter	0	0	0	1	1
Light Trucks <10,000 lbs.	0	2	1	7	10
Medium/Heavy Trucks >10,000 lbs.	9	22	134	162	327
Farm Vehicle (Tractor, Combine)	0	1	2	2	5
Other Bus	0	0	0	3	3
Pedestrian	1	3	4	2	10
Bike	1	1	3	4	9
Other	0	0	3	8	11
Total	**56**	**103**	**548**	**780**	**1,487**

Pedestrian Crashes

This section deals with motor vehicle crashes that injure or kill pedestrians. Crashes involving pedestrians and trains or pedestrians and bicycles are not included in this section. A motor vehicle must be involved in the crash.

An historical look at pedestrian crashes reveals an increasing trend of crashes, fatalities, and injuries for pedestrians. This is cause for alarm for traffic safety professionals as pedestrians represent the most vulnerable of road users.

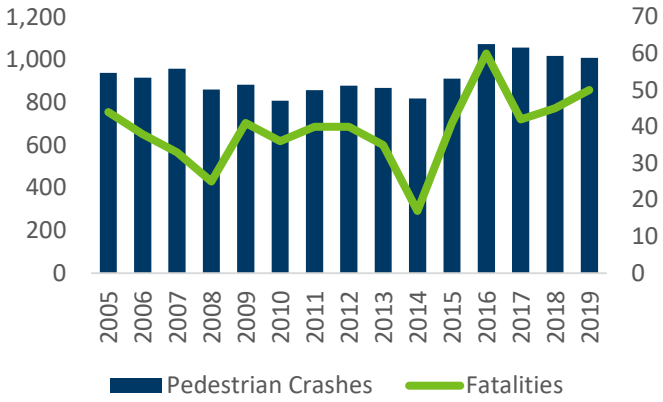
Recent years have had about one thousand pedestrian crashes per year, (most of which include fatalities or injuries to the pedestrian), with the vast majority occurring in urban areas. In 2019, 90% of pedestrian crashes occurred in urban areas with populations of over 5,000.

2019 Pedestrian Crash Stats:

1,008 crashes	50 fatalities	984 injuries

When pedestrian crashes occur
In 2019, 29% of pedestrian crashes occurred during the weekday rush hour time period (defined as Monday-Friday 6am-9am and 3pm-6pm). This makes sense as 34% of all traffic crashes and 32% of all fatal and injury crashes occurred during this same driving time frame.

Figure 6.01, Pedestrian Crash Trends



Pedestrian and vehicle behavior
Sixty percent (60%) of pedestrians killed and 64% of pedestrians injured were walking across traffic in the roadway. Vehicles involved in pedestrian crashes usually were moving forwards prior to the crash. Minnesota law states pedestrians have the right-of-way at crosswalks. Motorists are expected to treat every corner and intersection as a crosswalk (whether marked or not), but pedestrian safety is a two-way street. Motorists need to see pedestrians, and pedestrians need to be seen. High visibility garments help drivers see pedestrians.

Figure 6.02, Pedestrian Crashes by Day of Week

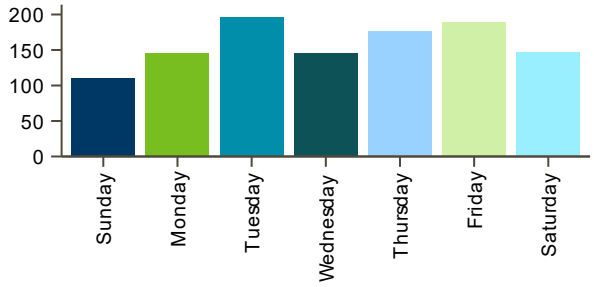
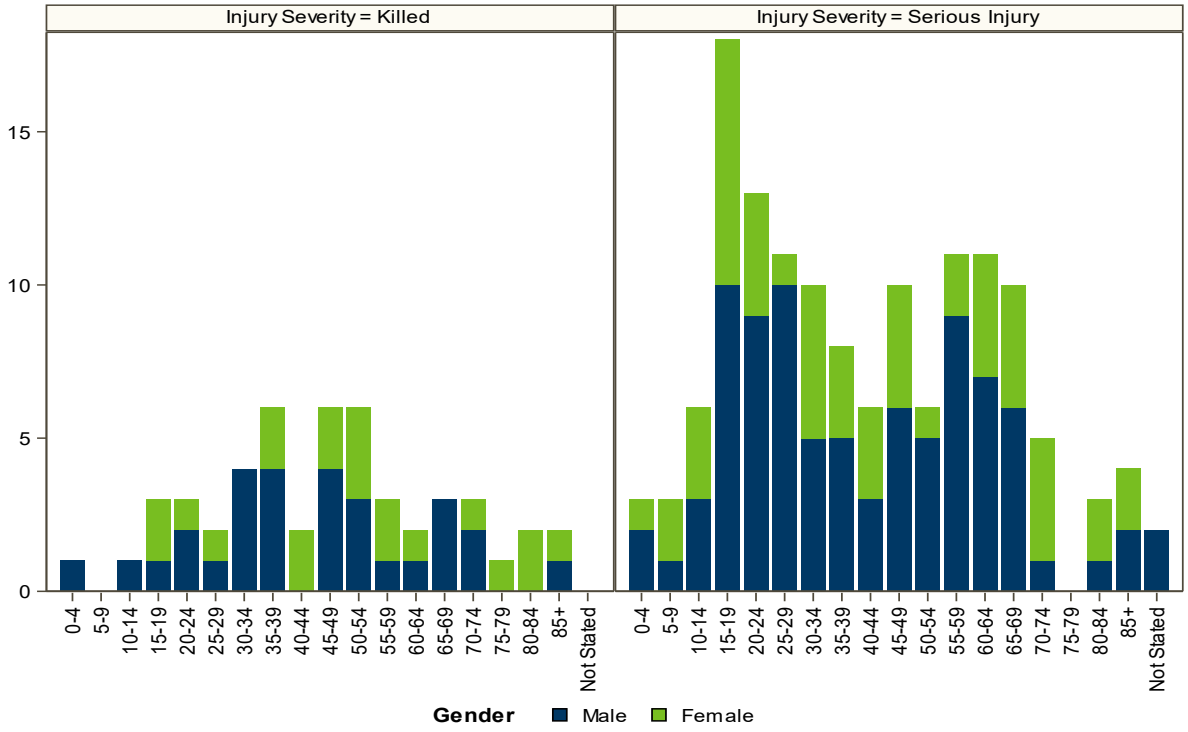


Figure 6.03, Pedestrian Injuries by Age and Gender



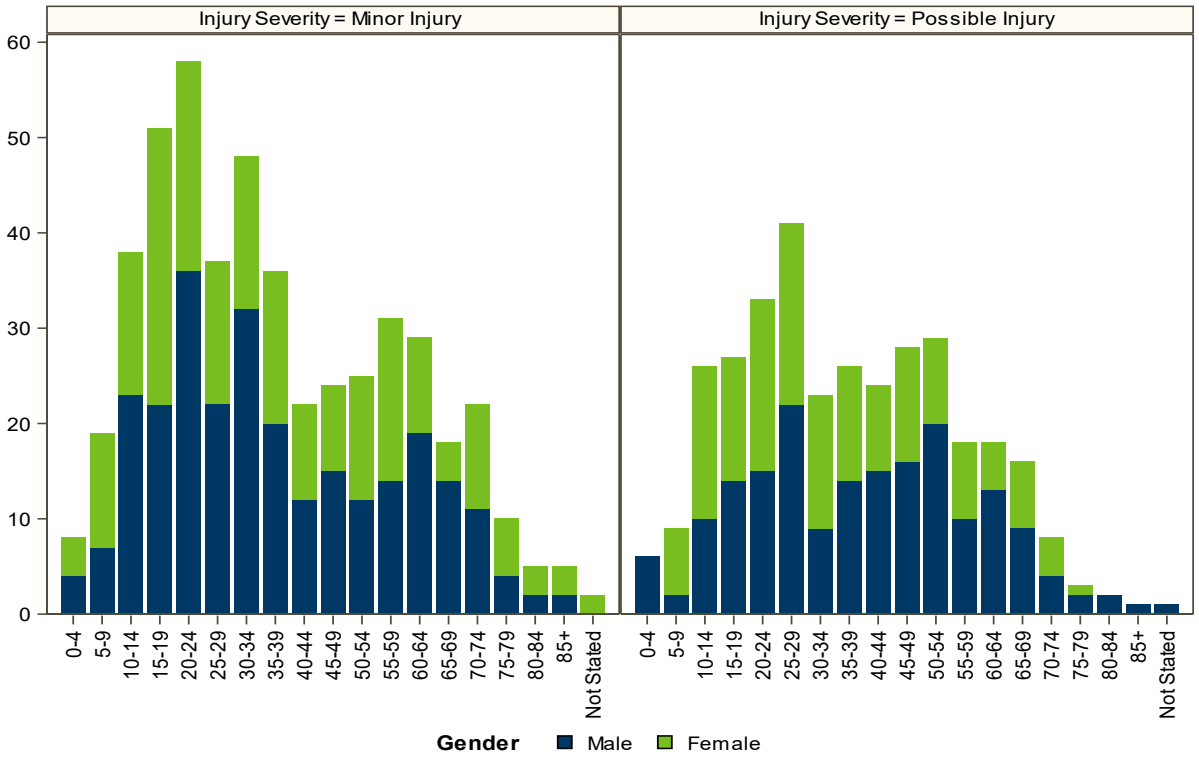


Table 6.01, Prior Action of Vehicles in Pedestrian Crashes

Action	Vehicles in Fatal Crashes	Vehicles in Injury Crashes	Vehicles in All Crashes
Entering/Leaving Parked Position	1	39	40
Moving Forward	42	538	580
Wrong Way into Opposing Traffic	1	1	2
Turning Right	0	104	104
Turning Left	1	200	201
Making a U Turn	0	3	3
Slowing	1	13	14
Swerved/Attempted to Avoid Object	1	11	12
Chaning Lanes	1	1	2
Overtaking/Passing	0	2	2
Leaving Traffic Lane	0	0	0
Entering Traffic Lane	0	3	3
Negotiating a Curve	2	0	2
Backing	1	40	41
Vehicle Stopped/Stalled in Roadway	1	28	29
Other	1	6	7
Unknown	2	30	32
Total	**55**	**1,019**	**1,074**

Table 6.02, Prior Action of Pedestrians Killed or Injured in Pedestrian Crashes

Action	Number Pedestrians Killed	Percent Pedestrians Killed	Number Pedestrians Injured	Percent Pedestrians Injured
Walking Across Traffic/Roadway	30	60.0%	625	63.5%
Standing/Stopped	1	2.0%	73	7.4%
Walking With Traffic	5	10.0%	60	6.1%
Walking Against Traffic	0	0.0%	25	2.5%
Walking on Sidewalk	0	0.0%	38	3.9%
In Roadway (Working, Playing)	3	6.0%	44	4.5%
Adjacent to Roadway (Shoulder, Median)	3	6.0%	19	1.9%
Going to or From School	0	0.0%	4	0.4%
Going to or From School Bus	0	0.0%	2	0.2%
Working in Traffic/Roadway	0	0.0%	5	0.5%
Going to or From Public Transit	0	0.0%	2	0.2%
Other Pedestrian Action	2	4.0%	61	6.2%
Unknown	6	12.0%	26	2.6%
Total	**50**	**100.0%**	**984**	**100.0%**

Table 6.03, Pedestrian Crashes by Month

Month	Fatal Crashes	Injury Crashes	Total Crashes	Killed	Injured
January	7	71	78	8	73
February	2	50	52	2	53
March	4	58	62	4	60
April	1	49	50	1	51
May	2	79	81	2	83
June	2	77	79	2	80
July	3	89	92	3	86
August	2	81	83	2	81
September	3	95	98	3	98
October	10	124	134	10	129
November	6	97	103	6	98
December	7	89	96	7	92
Total	**49**	**959**	**1,008**	**50**	**984**

October

(early sunsets and shorter daylight hours) sees most pedestrian crashes

Pedestrian crashes frequently occur in the

afternoon

Figure 6.04, Heat Map of Pedestrian Crashes

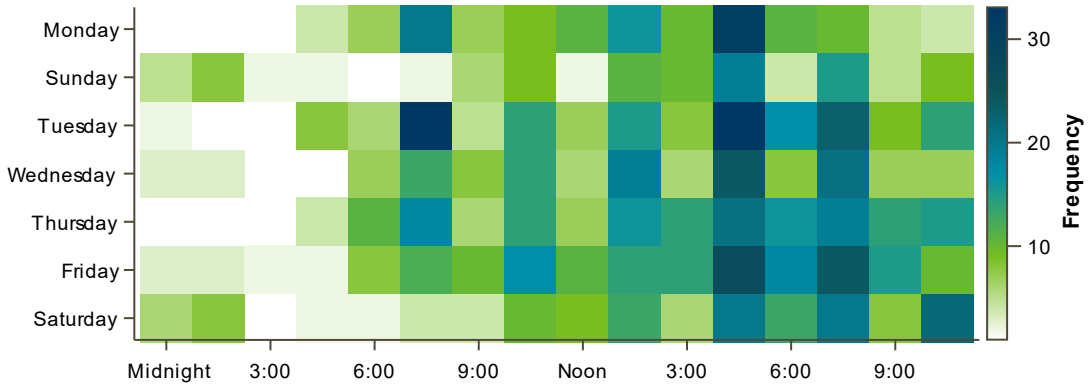


Table 6.04, Pedestrian Crashes by Population of Area

Population of Area	Fatal Crashes	Injury Crashes	Total Crashes	Killed	Injured
250,000+	8	502	510	8	516
100,000-249,999	0	20	20	0	21
50,000-99,999	11	128	139	11	137
25,000-49,999	7	79	86	8	81
10,000-24,999	6	125	131	6	128
5,000-9,999	3	21	24	3	24
2,500-4,999	2	22	24	2	22
1,000-2,499	2	17	19	2	16
Townships/Rural	10	45	55	10	39
Total	**49**	**959**	**1,008**	**50**	**984**

Table 6.05, Pedestrian Crashes by Type of Roadway

Type of Roadway	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Interstate	3	7	1	10	3	8
US Trunk Hwy	6	23	6	29	6	22
MN Trunk Hwy	13	64	13	77	13	66
County State Aid Hwy	16	248	27	264	17	248
County Road	1	5	2	6	1	5
Township Road	0	7	6	7	0	5
Municipal State Aid Hwy	7	294	17	301	7	308
Municipal Street	3	266	28	269	3	274
Other Road	0	45	4	45	0	48
Total	**49**	**959**	**104**	**1,008**	**50**	**984**

90%

pedestrian crashes occur in urban areas

Rural areas had 10% of pedestrian crashes, but

28%

of the fatalities

Figure 6.05, Pedestrian Fatalities and Injuries by Crash Location on the Road

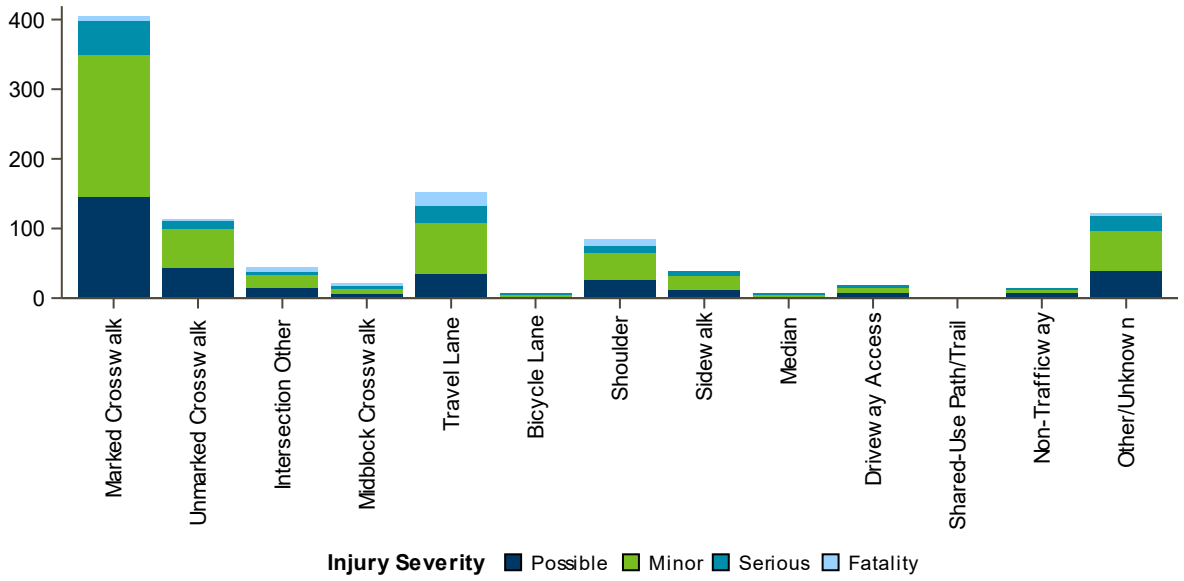
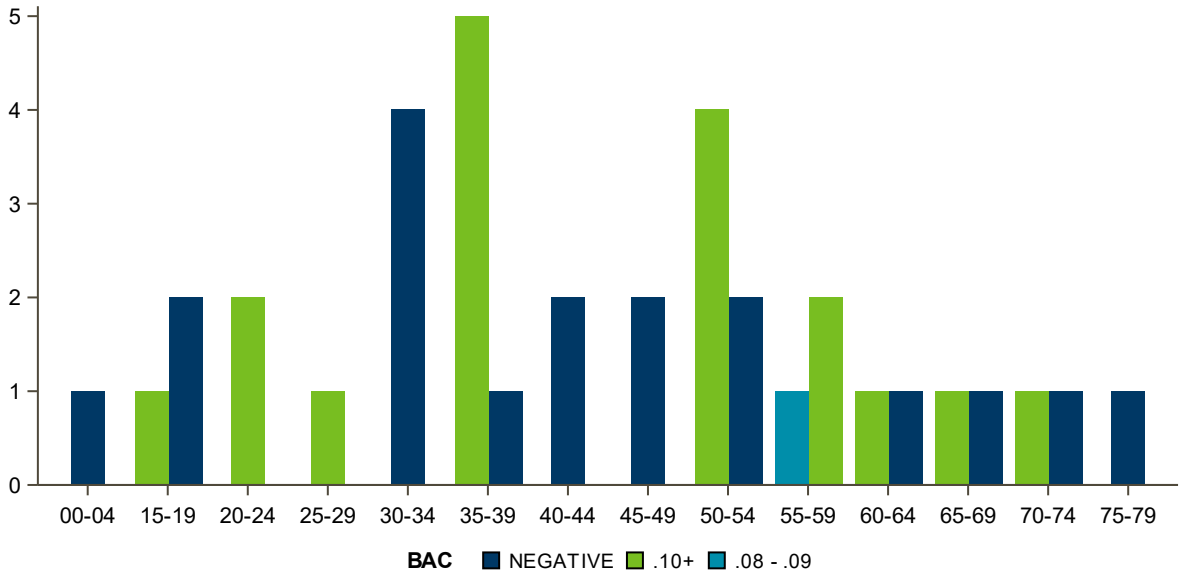


Table 6.06, Pedestrian Fatalities' Level of Alcohol Concentration

Killed	Tested	.00	0.01-0.07	0.08-0.09	.10+
50	37	18	0	1	18

Figure 6.06, Pedestrian Fatalities' Level of Alcohol Concentration by Age



Bicycle Crashes

Bicycles are subject to the same traffic laws as motor vehicles, but bicycle crashes are reported to the Minnesota Department of Public Safety only if they involve collision with a motor vehicle. Therefore, this section represents only a portion of the total number of bicycle crashes.

2019 Bicycle Crash Stats:

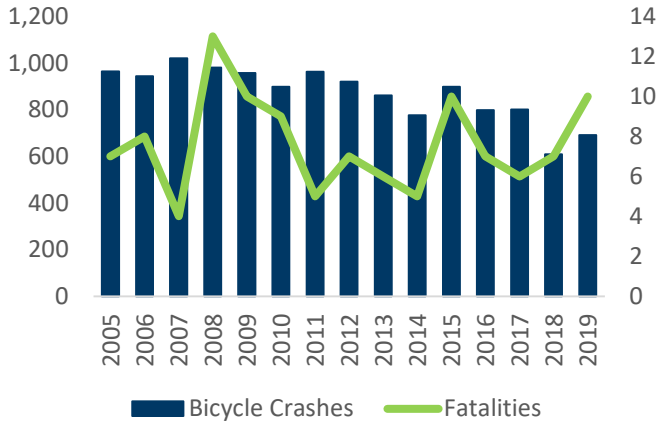
691 crashes	10 fatalities	629 injuries

When bicycle crashes occur
Bicycle crashes are mostly a warm weather occurrence. However, in 2019, there were bicycle crashes during each month of the year. The bulk of bicycle crashes occur during the timeframe of 3pm-6pm during the week, Monday-Friday and on weekends. In 2019, 35% of all bicycle crashes happened at that time.

Where bicycle crashes occur
Traffic crashes involving a bicycle and a motor vehicle tend to occur in areas with larger populations where the bicycle is used frequently for transportation instead of recreation. Over nine out of ten (93%) bicycle crashes occurred in cities where the population was over 5,000 people.

Bicyclist age and gender
Males were three times more likely than females to be injured in a bicycle crash. Sixty percent (60%) of injured bicyclists were over the age of 25. See Table 7.01.

Figure 7.01, Bicycle Crash Trends



48%

bicyclists were cycling across traffic prior to crash

Figure 7.02, Bicycle Crashes by Day of Week

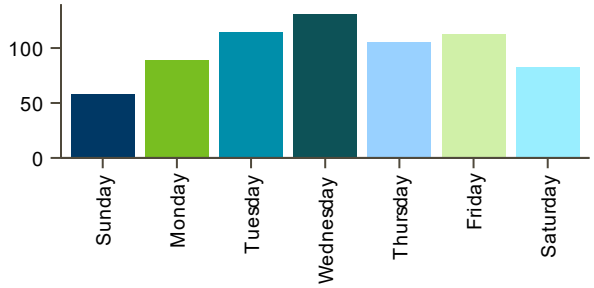


Table 7.01, Bicyclists Killed or Injured by Age and Gender

	Fatalities			Serious Injuries			Minor Injuries			Possible Injuries			Total Injuries		
Age Group	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total*
00-04	0	0	0	1	0	1	1	0	1	1	0	2	3	0	4
05-09	0	0	0	1	0	1	9	4	13	8	1	9	18	5	23
10-14	1	0	1	2	0	2	37	15	54	23	3	26	62	18	82
15-19	1	0	1	3	1	5	22	12	38	21	10	31	46	23	74
20-24	0	0	0	4	0	4	27	11	41	12	10	23	43	21	68
25-29	0	0	0	8	0	9	24	12	40	14	3	18	46	15	67
30-34	3	0	3	4	2	6	12	8	22	15	4	20	31	14	48
35-39	0	0	0	2	0	2	9	3	13	16	5	24	27	8	39
40-44	0	0	0	3	0	3	15	1	17	13	2	16	31	3	36
45-49	2	0	2	5	1	6	12	1	14	9	1	12	26	3	32
50-54	1	0	1	2	0	2	21	3	24	6	2	9	29	5	35
55-59	0	0	0	4	1	6	18	1	20	11	2	14	33	4	40
60-64	1	0	1	5	0	5	11	2	16	5	3	8	21	5	29
65-69	1	0	1	4	1	5	5	0	8	4	0	5	13	1	18
70-74	0	0	0	2	0	2	4	0	4	2	1	4	8	1	10
75+	0	0	0	1	0	1	5	1	6	2	0	2	8	1	9
Not Stated	0	0	0	0	0	0	1	0	6	4	1	9	5	1	15
Total	**10**	**0**	**10**	**51**	**6**	**60**	**233**	**74**	**337**	**166**	**48**	**232**	**450**	**128**	**629**

* Gender is not always stated on the crash report. This may cause rows to not add up to the total.

Table 7.02, Prior Action of Bicyclists Involved in Crashes

Prior Action	Bicyclists in Fatal Crashes	Bicyclists in Injury Crashes	Bicyclists in PDO Crashes	Bicyclists in All Crashes*
Cycling Across Traffic	4	312	16	332
Cycling with Traffic	4	158	18	180
Cycling Against Traffic	0	26	6	32
Cycling on Sidewalk	0	74	6	80
Standing/Stopped	0	4	1	5
In Roadway - Other	1	27	1	29
Adjacent to Roadway	0	5	2	7
Other/Unknown	1	23	8	32
Total	**10**	**629**	**58**	**697**

* The total number of bicyclist actions may exceed the number of bicycle crashes because some crashes may involve more than one bicycle.

Table 7.03, Bicycle Crashes by Month

Month	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
January	0	9	1	10	0	9
February	0	1	0	1	0	1
March	0	10	2	12	0	10
April	0	29	0	29	0	30
May	1	53	6	60	1	52
June	1	90	7	98	1	91
July	2	118	11	131	2	118
August	2	122	9	133	2	122
September	0	115	6	121	0	114
October	1	57	6	64	1	57
November	3	19	3	25	3	19
December	0	6	1	7	0	6
Total	**10**	**629**	**52**	**691**	**10**	**629**

Summertime

sees most bicycle crashes

Weekdays had

80%

of bicycle crashes

Figure 7.03, Heat Map of Bicycle Crashes

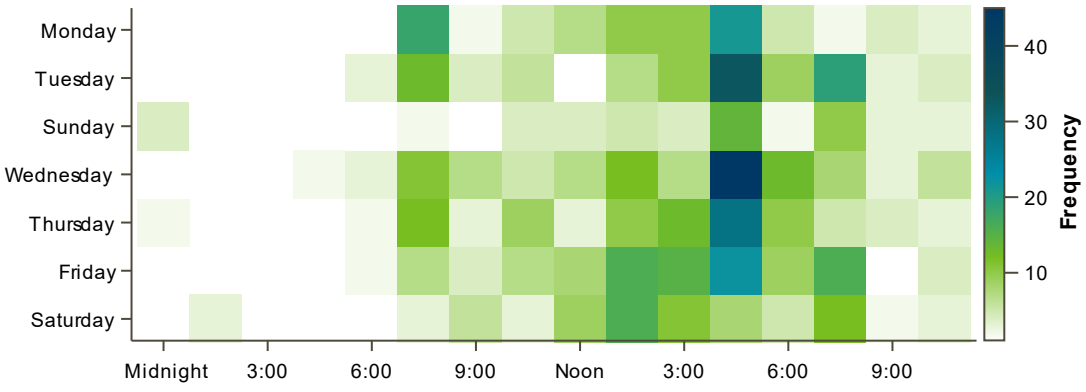


Figure 7.04, Bicycle Crashes by Time of Day, Compared to Pedestrian Crashes

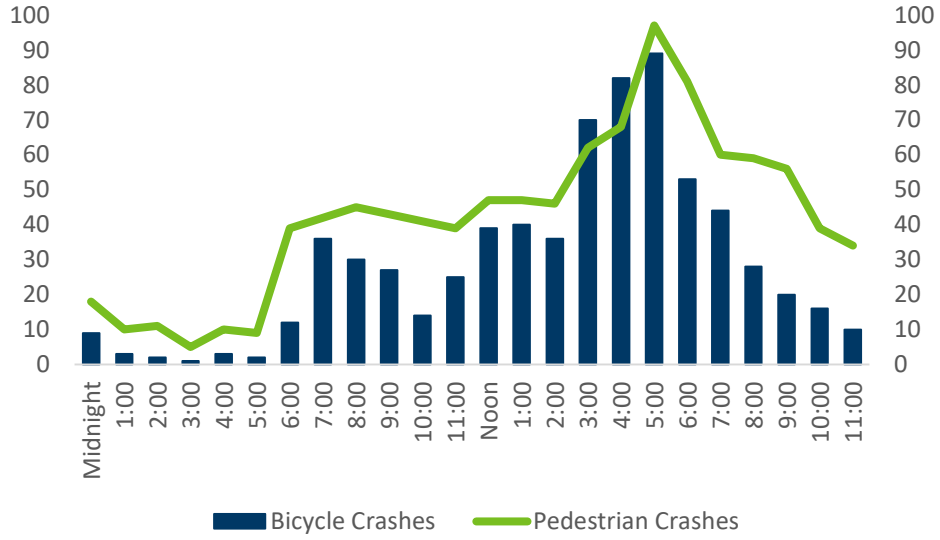


Table 7.04, Bicycle Crashes by Population of Area

Population of Area	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
250,000+	2	269	38	309	2	267
100,000-249,999	0	9	0	9	0	9
50,000-99,999	2	98	4	104	2	99
25,000-49,999	1	69	0	70	1	69
10,000-24,999	2	127	4	133	2	128
5,000-9,999	1	16	1	18	1	16
2,500-4,999	0	18	0	18	0	18
1,000-2,499	0	7	1	8	0	8
Townships/Rural	2	16	4	22	2	15
Total	**10**	**629**	**52**	**691**	**10**	**629**

School Bus Crashes

Crashes included in this section are those in which at least one school bus was physically involved. In some cases, a crash could be seen as involving a school bus (albeit indirectly), yet not be counted as a school bus crash. One such case would be a crash in which a person gets off the bus, crosses a street and is struck by another vehicle. Such a case could be called an indirect school bus crash; indirect school bus crashes are tracked in the crash reporting system. In 2019, there were 82 crashes resulting in 35 injuries in which a school bus was indirectly involved.

School bus travel is a very safe method of travel. The school bus is a large and heavy vehicle that provides good protection for its occupants. Frequently, injuries resulting from school bus crashes are pedestrians or occupants of other vehicles instead of school bus passengers.

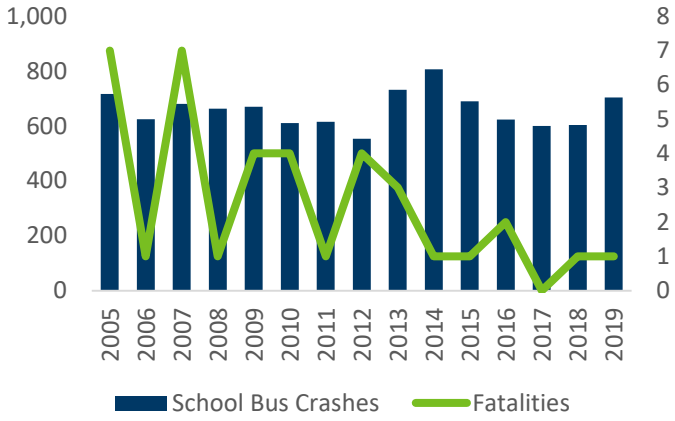
2019 School Bus Crash Stats:

704 crashes	1 fatality	180 injuries

When school bus crashes occur

Not surprising, but school bus crashes occur when school buses are in use. The morning and afternoon time periods of 6am-9am and 3pm-6pm see the majority of school bus crashes. Almost all school bus crashes occur Monday-Friday and during the months of September-June. Daylight hours and clear weather conditions exist during most school bus crashes.

Figure 8.01, School Bus Crash Trends



Road conditions contribute to many school bus crashes

Figure 8.02, School Bus Crashes by Day of Week

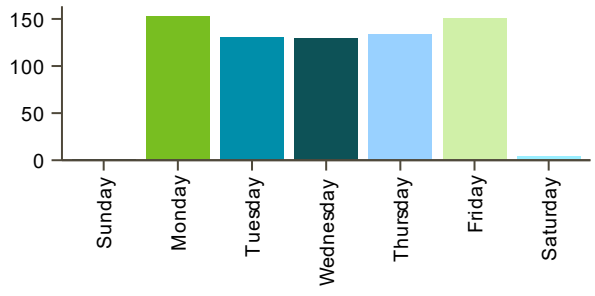


Figure 8.03, Age of Persons Injured in School Bus Crashes, by Their Location

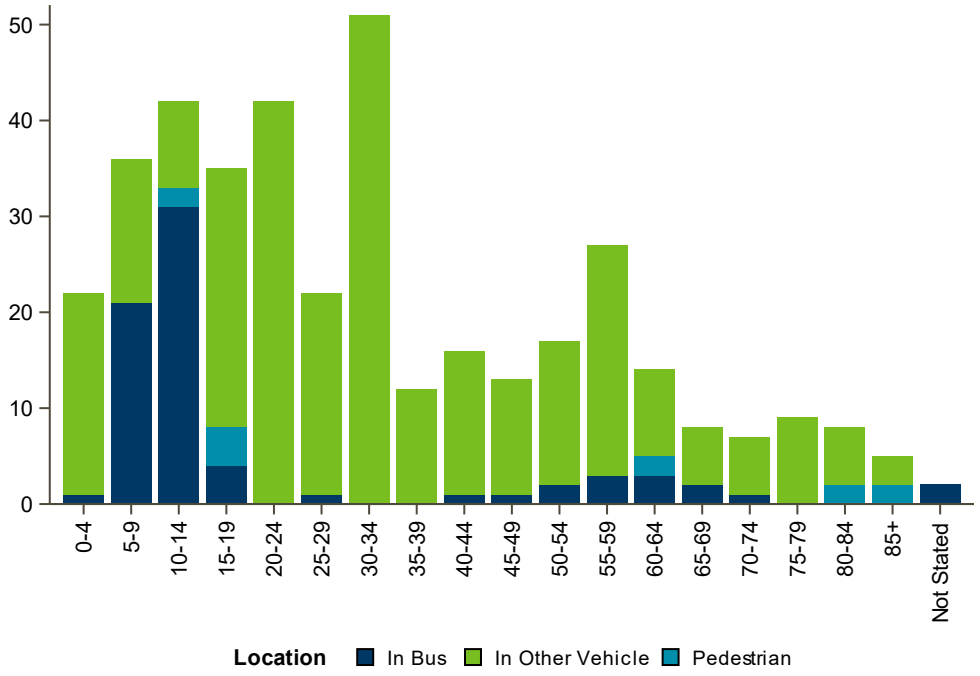


Table 8.01, School Bus Crashes by First Harmful Event

First Harmful Event	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	0	93	484	577	0	161
Parked Motor Vehicle	0	3	88	91	0	5
Bicycle	1	1	0	2	1	1
Pedestrian	0	4	0	4	0	5
Object Set in Motion	0	0	2	2	0	0
Fixed Object	0	5	18	23	0	7
Non-Collision:						
Overturn/Rollover	0	0	1	1	0	0
Other Non-Collision	0	1	3	4	0	1
Total	**1**	**107**	**596**	**704**	**1**	**180**

Table 8.02, School Bus Crashes by Weather Condition

Weather Condition	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
Clear	1	56	333	390	1	105
Cloudy	0	29	152	181	0	49
Rain	0	6	29	35	0	6
Snow	0	10	55	65	0	11
Sleet/Hail	0	1	13	14	0	1
Fog/Smog/Smoke	0	1	4	5	0	2
Blowing Sand/Soil/Dirt	0	4	3	7	0	6
Other Weather	0	0	1	1	0	0
Unknown	0	0	6	6	0	0
Total	**1**	**107**	**596**	**704**	**1**	**180**

School bus crashes happen when skies are clear, but roads are not

Wet, snowy, icy roads contribute to over half of school bus crashes

Figure 8.04, School Bus Crashes by Road Surface Conditions

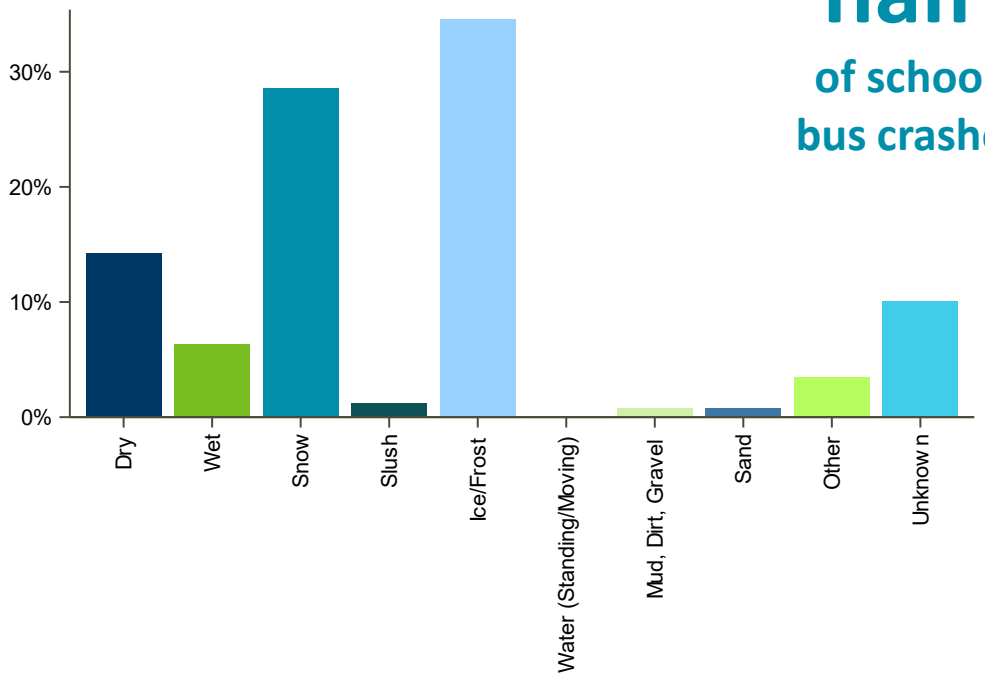


Figure 8.05, School Bus Crashes by Month and Time of Day

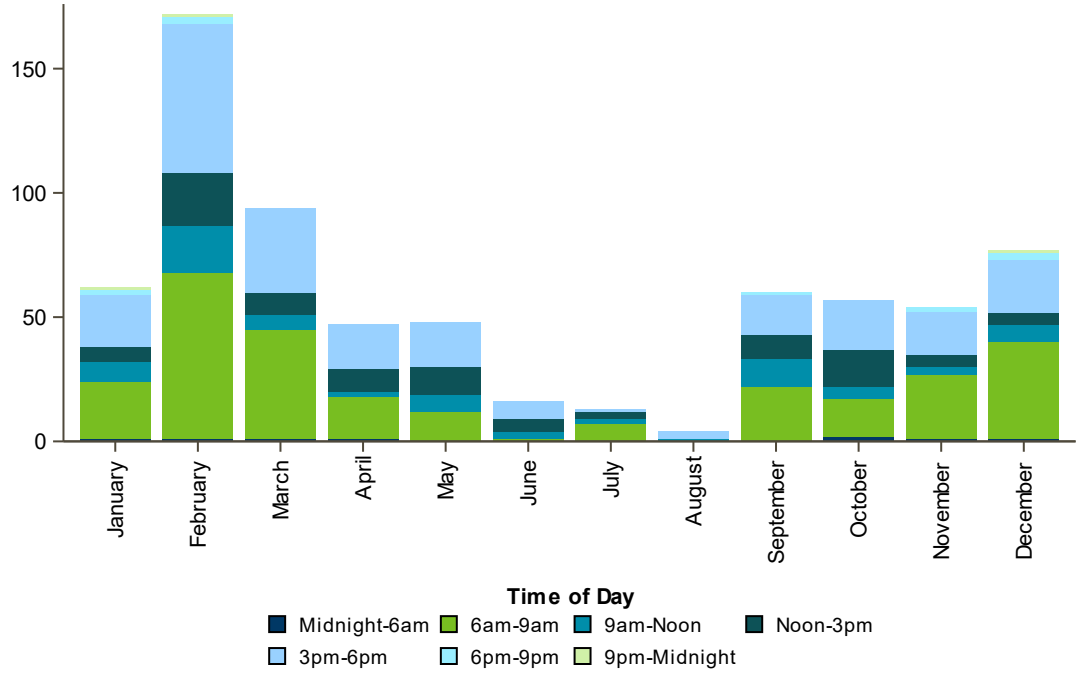


Table 8.03, School Bus Crashes by Population of Area

Population of Area	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
250,000+	0	28	191	219	0	41
100,000-249,999	0	4	17	21	0	9
50,000-99,999	1	19	88	108	1	20
25,000-49,999	0	10	69	79	0	11
10,000-24,999	0	21	109	130	0	31
5,000-9,999	0	4	33	37	0	6
2,500-4,999	0	2	28	30	0	3
1,000-2,499	0	4	17	21	0	18
Townships/Rural	0	15	44	59	0	41
Total	**1**	**107**	**596**	**704**	**1**	**180**

Vehicle/Train Crashes

Crashes reported in this section involve motor vehicles and trains. Collisions with trains and pedestrians or trains and bicyclists are not counted as traffic crashes in this publication.

In the past decade or so, Minnesota has made progress related to train crashes. In the 1990s, there were around one hundred motor vehicle/train crashes per year with about ten fatalities each year. These numbers have dropped and the state currently hovers around fifty motor vehicle/train crashes with one or two fatalities a year. That success can be attributed to improvements in traffic control signals, including flashing lights and gates, which make railroad crossings more visible.

2019 Vehicle/Train Crash Stats:

54 crashes	1 fatality	20 injuries

48%

motor vehicle/train crashes occurred in rural areas in 2019

Figure 9.01, Vehicle/Train Crash Trends

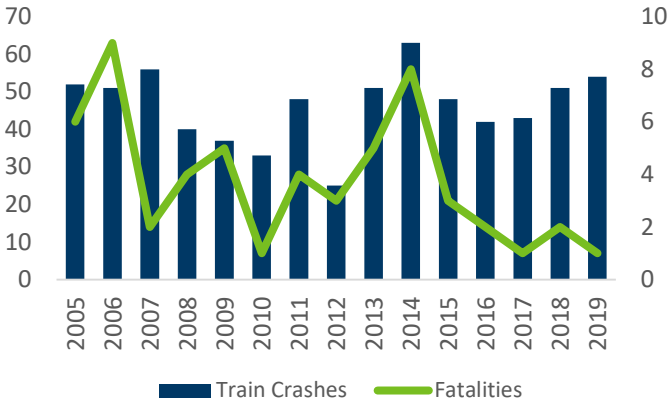


Figure 9.02, Motor Vehicle/Train Crashes by Traffic Control Device

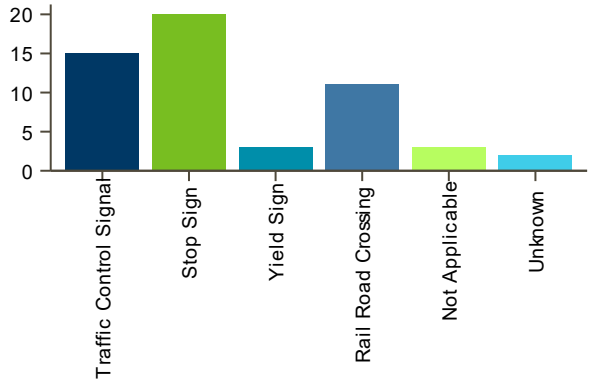


Figure 9.03, Motor Vehicle/Train Crashes by Day of Week

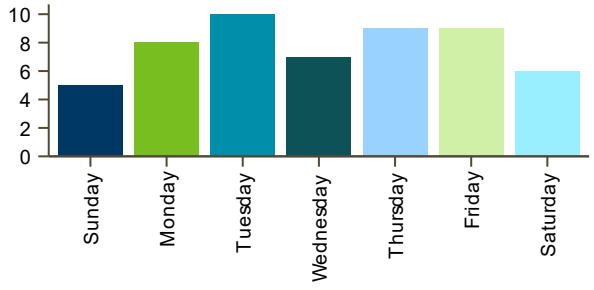


Figure 9.04, Motor Vehicle/Train Crashes by Day of Week and Time of Day

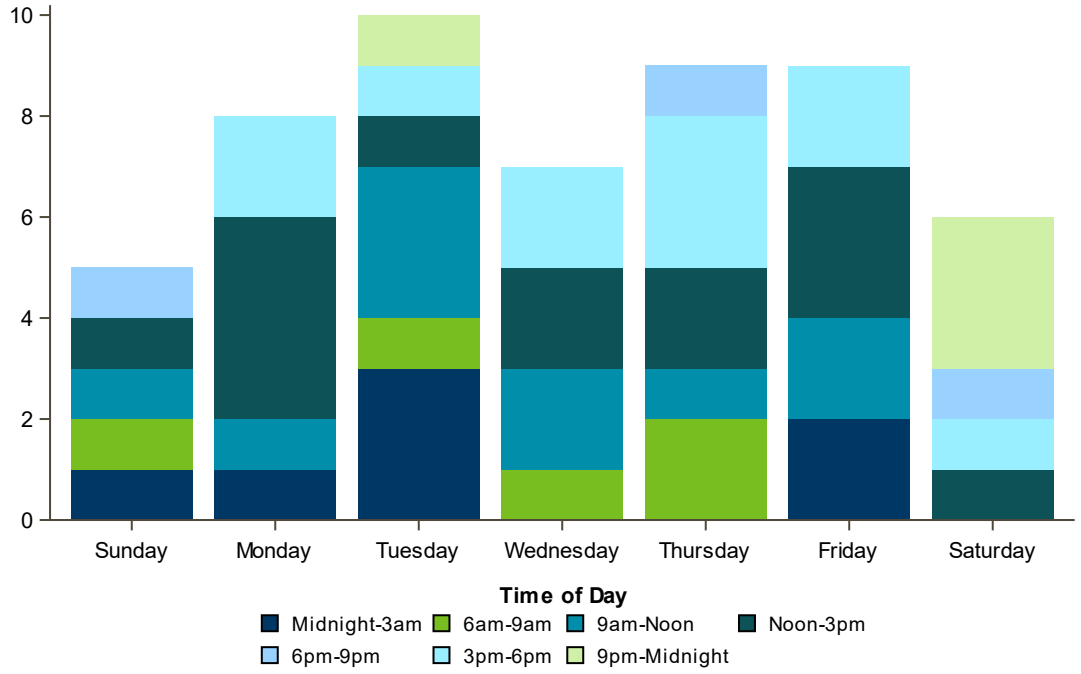


Figure 9.05, Motor Vehicle/Train Crashes by Month and Crash Severity

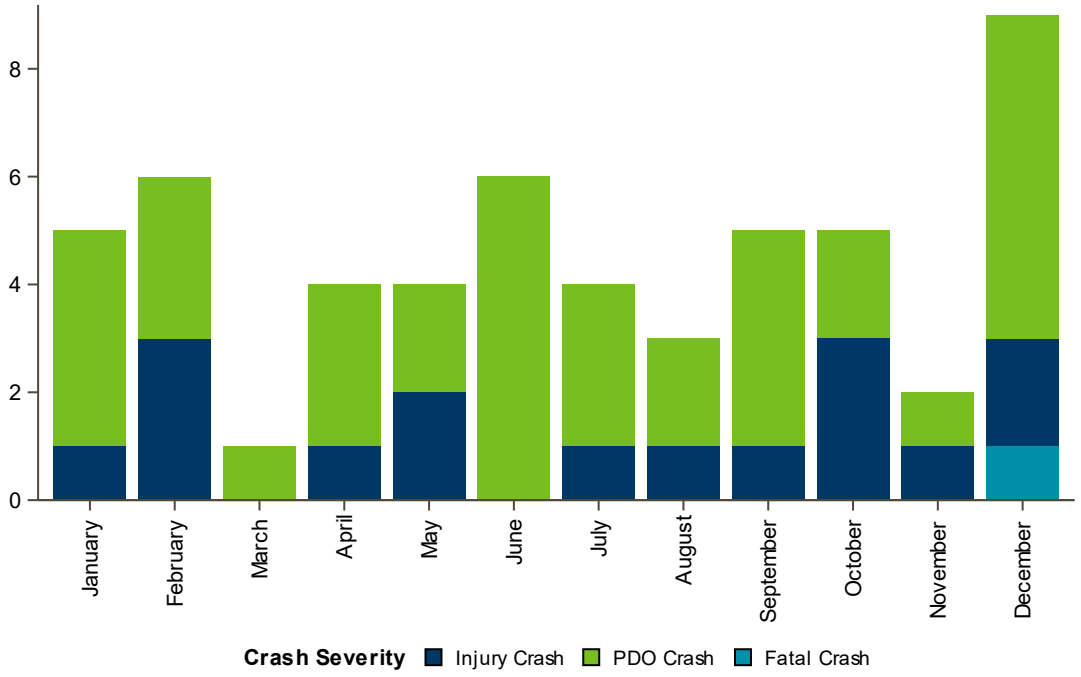


Table 9.01, Motor Vehicle/Train Crashes by Population of Area

Population of Area	Fatal Crashes	Injury Crashes	PDO Crashes	Total Crashes	Killed	Injured
250,000+	0	5	12	17	0	8
100,000-249,000	0	0	0	0	0	0
50,000-99,999	0	0	2	2	0	0
25,000-49,999	0	0	2	2	0	0
10,000-24,999	0	0	4	4	0	0
5,000-9,999	0	1	2	3	0	1
2,500-4,999	0	0	0	0	0	0
1,000-2,499	0	0	1	1	0	0
Townships/Rural	1	10	14	25	1	11
Total	**1**	**16**	**37**	**54**	**1**	**20**

Teen Driver Crashes

Teen drivers in Minnesota continue to be overrepresented in traffic crashes due to driver inexperience, distractions, speeding/risk-taking and seat belt non-use. The greatest crash risk occurs during the first months of independent driving. To combat this problem, laws such as no cell phone use, no texting, primary seat belt and nighttime and passenger limitations have helped reduce teen traffic deaths and injuries.

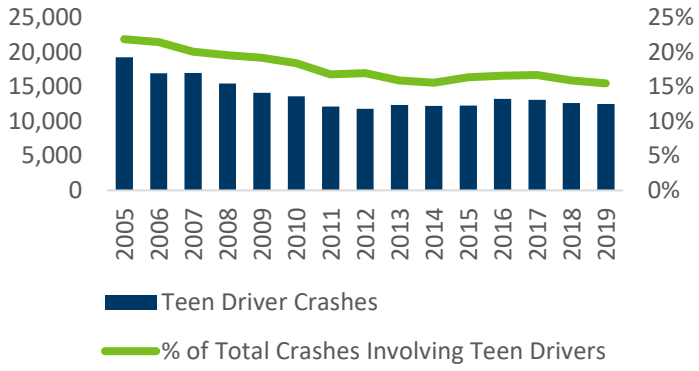
Parents play a vital role in developing safe teen drivers. Teens need to gain experience in a variety of road types and environments — day, night, city, rural, rain, snow — while supervised by an experienced licensed driver. Even after a teen is licensed, they continue to need training and monitoring. Programming is available through driver educators to assist parents in learning more about graduated driver licensing, as well as tips for helping their teens become safer drivers.

2019 Teen Driver Crash Stats:

12,511 crashes with teen drivers	31 fatalities in teen driver crashes	4,704 injuries in teen driver crashes

Teen driver crashes defined
The definition of a teen-involved crash used here is any crash with at least one teen driver (ages 15-19) of any motor vehicle involved. Teen pedestrians or bicyclists are not included.

Figure 10.01, Teen Driver Crash Trends



Teens represent

6% of drivers,

but account for

16% of crashes

Figure 10.02, Teen Driver Crashes by Day of Week

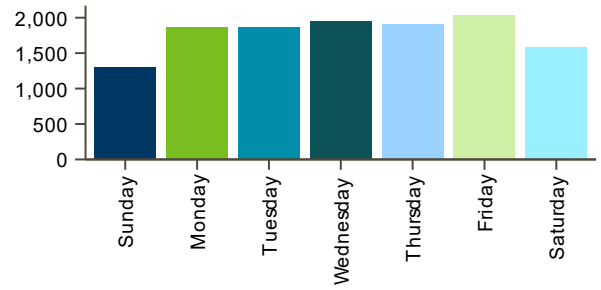


Figure 10.03, Teen Driver Crashes by Age and Gender

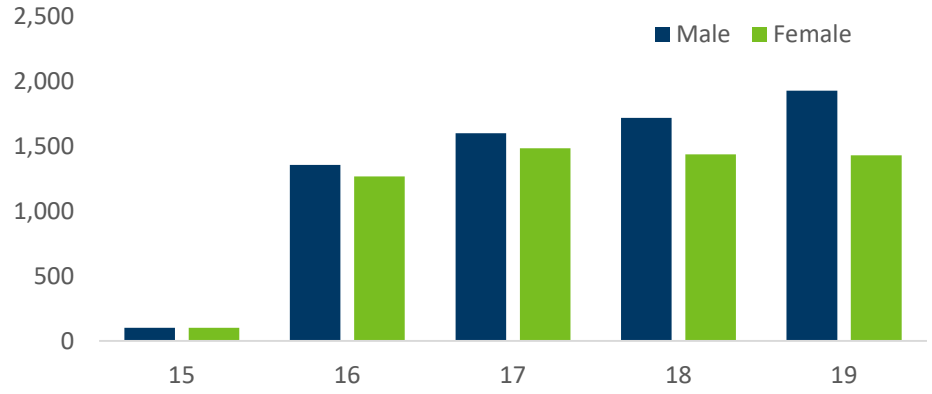


Table 10.01, Teen Driver Crashes by Month

Month	Fatal Crashes	Serious Injury Crashes	Minor Injury Crashes	Possible Injury Crashes	PDO Crashes	Total Crashes
January	2	7	85	159	947	1,200
February	1	15	90	172	1,161	1,439
March	3	9	63	151	797	1,023
April	3	5	70	126	565	769
May	2	17	84	141	622	866
June	6	13	112	157	697	985
July	3	25	116	149	662	955
August	3	27	115	166	623	934
September	1	16	113	163	638	931
October	4	12	94	155	745	1,010
November	1	11	95	174	849	1,130
December	0	9	95	169	996	1,269
Total	**29**	**166**	**1,132**	**1,882**	**9,302**	**12,511**

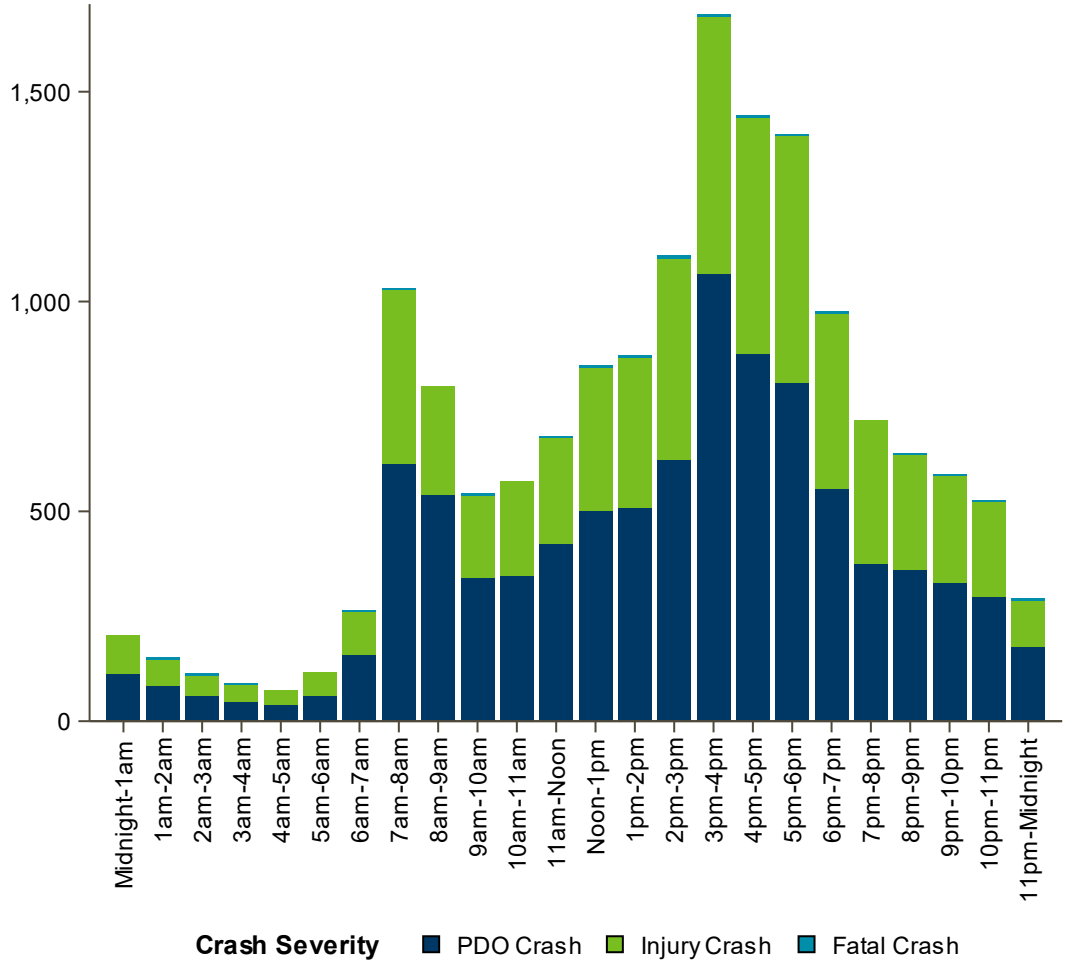
Teen driver crashes follow the same crash severity proportions as all other crashes

Mornings and afternoons have most teen driver crashes

Table 10.02, Teen Driver Crashes by Day of Week

Day of Week	Fatal Crashes	Serious Injury Crashes	Minor Injury Crashes	Possible Injury Crashes	PDO Crashes	Total Crashes
Sunday	1	21	131	201	944	1,298
Monday	3	25	163	268	1,402	1,861
Tuesday	1	21	175	281	1,394	1,872
Wednesday	6	19	171	296	1,458	1,950
Thursday	4	29	164	292	1,424	1,913
Friday	7	24	181	308	1,511	2,031
Saturday	7	27	147	236	1,169	1,586
Total	**29**	**166**	**1,132**	**1,882**	**9,302**	**12,511**

Figure 10.04, Teen Driver Crashes by Crash Severity and Time of Day



Senior Driver Crashes

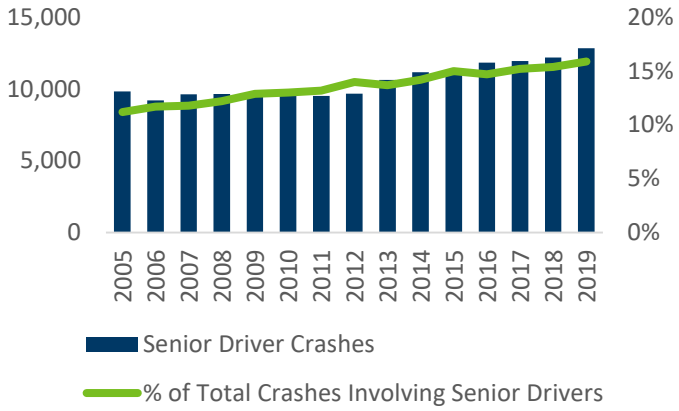
Age alone does not determine a person's ability to drive safely; each of us ages differently. There are safe and unsafe drivers at every age. National research suggests that crash rates for older drivers are actually decreasing due to better health, vehicles with helpful technologies, more driving experience and safer roadways. As people get older, their driving schedules change due to retirement, different activities and fewer required trips. Older drivers generally drive fewer miles than younger ones. In addition, many older drivers self-regulate by avoiding driving at night or on particularly challenging roadways. While the average driver is older than in the past, this has not caused the large increase in crashes and deaths on our roadways that was initially predicted.

2019 Senior Driver Crash Stats:

12,855 crashes with senior drivers	93 fatalities in senior driver crashes	5,568 injuries in senior driver crashes

Senior driver crashes defined
The definition of a senior-involved crash used here is any crash with at least one senior driver (ages 65 and above) of any motor vehicle. Senior pedestrians or bicyclists are not included.

Figure 11.01, Senior Driver Crash Trends



Seniors represent

20% of drivers,

but account for

16% of crashes

Figure 11.02, Senior Driver Crashes by Day of Week

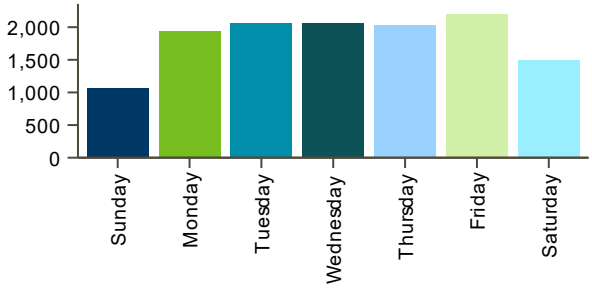


Figure 11.03, Senior Driver Crashes by Age and Gender

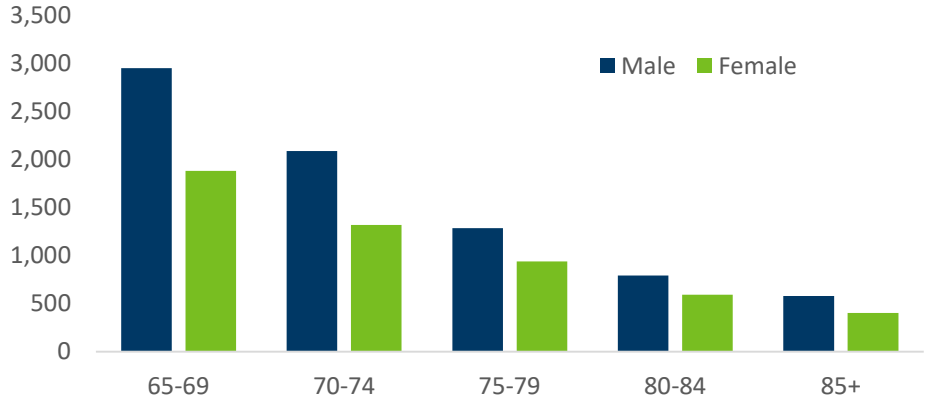


Table 11.01, Senior Driver Crashes by Month

Month	Fatal Crashes	Serious Injury Crashes	Minor Injury Crashes	Possible Injury Crashes	PDO Crashes	Total Crashes
January	9	19	100	161	782	1,071
February	5	11	96	181	1,004	1,297
March	5	10	92	166	668	941
April	3	13	81	106	557	760
May	9	27	114	177	687	1,014
June	8	30	151	169	714	1,072
July	10	35	161	186	691	1,083
August	7	26	162	226	698	1,119
September	8	24	139	184	671	1,026
October	10	18	152	186	765	1,131
November	4	19	102	169	760	1,054
December	5	17	105	202	958	1,287
Total	**83**	**249**	**1,455**	**2,113**	**8,955**	**12,855**

Senior drivers are disproportionately involved in fatal and injury crashes compared to the total driving population

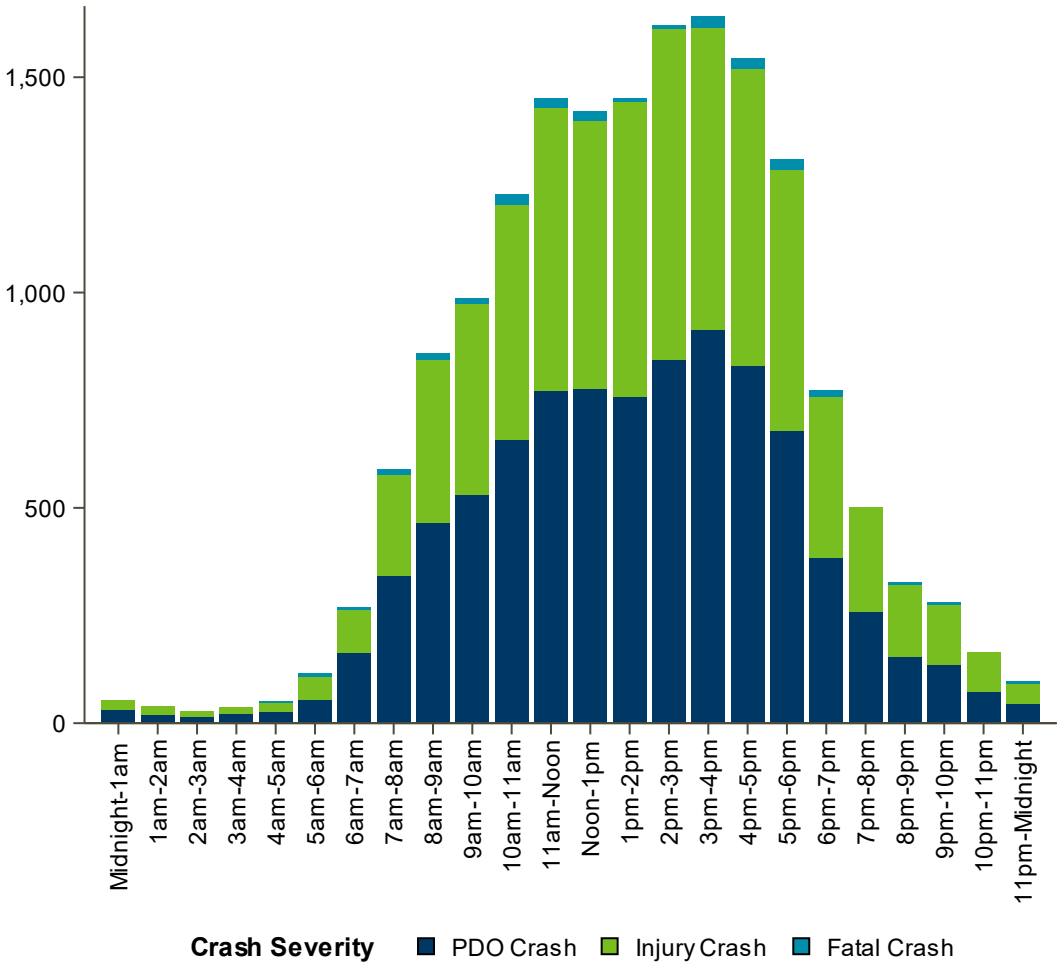
No spike in morning

crashes for senior drivers

Table 11.02, Senior Driver Crashes by Day of Week

Day	Fatal Crashes	Serious Injury Crashes	Minor Injury Crashes	Possible Injury Crashes	PDO Crashes	Total Crashes
Sunday	8	34	141	156	719	1,058
Monday	9	42	220	309	1,365	1,945
Tuesday	13	25	221	344	1,460	2,063
Wednesday	15	38	206	335	1,467	2,061
Thursday	17	31	232	355	1,397	2,032
Friday	13	41	254	368	1,530	2,206
Saturday	8	38	181	246	1,017	1,490
Total	**83**	**249**	**1,455**	**2,113**	**8,955**	**12,855**

Figure 11.04, Senior Driver Crashes by Crash Severity and Time of Day



Contributing Factors

Why do crashes occur?
There are many factors which may contribute to traffic crashes. Any one crash could have multiple factors which led to the crash occurring. Circumstances relating to the working condition of the vehicle could contribute to a crash. Circumstances relating to the driving environment could also contribute to a crash. Sometimes roadway characteristics contribute to a crash. However, the vast majority of factors contributing to crashes are the human factors. In short, people cause most crashes.

This chapter will examine the 'why' crashes occur by looking into the factors that contribute to crashes.

Reporting of contributing factors
Contributing factors for crashes, vehicles, and drivers are documented on the crash report. Law enforcement officers are able to associate up to eight contributing factors for each driver involved in a single crash.

Aside from contributing factors, other behavioral elements are also documented on the crash report. Use of alcohol and drugs, driver distraction and driver speeding are reported as well. These data provide a picture of why the crash occurred.

Crash Facts historically included tables for contributing factors within the topic chapters. While that seems to be an appropriate place for that data, the bigger picture is missed when looking only at contributing factors for a specific type of crash. In crashes involving multiple vehicles and crashes involving motor vehicles and non-motorists, the data reveals that the same factors contribute to those crashes. It is true in crashes involving specific vehicle types (motorcycles, large trucks, or school buses) that certain factors tend to be more prevalent. For example, road conditions are more important to motorcycle operation and following too closely is common in crashes with large heavy vehicles due to greater distances needed for stopping or reducing speeds.

Failure to Yield Right of Way

is the most frequent contributing factor

The most common contributing factor in single-vehicle crashes is:

Careless/ Negligent/ Erratic Driving

Combining behavioral elements from the crash report with the human factor contributing data revealed the most common behavior leading to crashes was:

Speeding

Table 12.01, Single-Vehicle Crashes: Contributing Factors, by Driver Age Groups

Contributing Factor	15-19	20-24	25-29	30-34	35-64	65-79	80+	All Ages
Human Factors								
Careless/Reckless/Erratic Driving	11.2%	12.7%	14.0%	1.5%	10.7%	7.3%	6.8%	11.6%
Run Off Road	9.1%	9.5%	9.8%	9.5%	10.1%	12.4%	15.5%	9.9%
Overcorrecting/Oversteering	9.1%	7.6%	6.6%	5.9%	6.1%	5.4%	4.5%	6.8%
Improper Lane Usage	5.2%	6.6%	7.1%	6.3%	7.0%	9.2%	12.3%	6.8%
Driver Speeding	8.2%	7.7%	6.8%	6.6%	5.8%	3.7%	2.3%	6.6%
Driver Swerved	5.4%	5.2%	5.3%	6.8%	5.8%	5.1%	3.9%	5.6%
Driver Distracted	3.1%	2.0%	2.0%	2.0%	2.0%	2.4%	2.9%	2.2%
Improper Turn/Merge	0.4%	0.5%	0.6%	0.5%	0.8%	1.5%	2.3%	0.7%
Disregard Traffic/Road Signs	0.6%	0.4%	0.5%	0.5%	0.9%	1.3%	1.3%	0.7%
Ran Stop Sign/Ran Red Light	0.4%	0.4%	0.3%	0.7%	0.5%	0.5%	0.3%	0.5%
Congestion Related	0.4%	0.4%	0.3%	0.3%	0.5%	0.5%	0.0%	0.4%
Following Too Closely	0.3%	0.4%	0.4%	0.6%	0.5%	0.1%	0.3%	0.4%
Improper Backing	0.2%	0.1%	0.3%	0.3%	0.3%	0.5%	0.6%	0.3%
Wrong Side or Wrong Way	0.1%	0.1%	0.1%	0.1%	0.2%	0.4%	1.3%	0.2%
Failure to Yield Right of Way	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.3%	0.1%
Traffic Control Device Issue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Human Factor	7.4%	8.0%	7.8%	8.5%	10.1%	13.4%	16.8%	9.1%
Vehicular Factors								
Defective Steering	0.3%	0.2%	0.3%	0.2%	0.3%	0.3%	0.0%	0.2%
Defective Mechanical System	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%
Defective Brakes	1.3%	1.3%	1.2%	1.5%	1.5%	1.3%	1.0%	1.4%
Miscellaneous Factors								
Road Surface Conditions	32.3%	33.0%	32.0%	31.7%	31.4%	28.3%	21.9%	31.7%
Ruts/Holes/Bumps	0.4%	0.2%	0.1%	0.3%	0.3%	0.3%	0.0%	0.3%
Shoulders (Non, Low, Soft, High)	0.3%	0.2%	0.2%	0.4%	0.3%	0.4%	0.0%	0.3%
Other	3.5%	2.2%	3.6%	3.4%	3.8%	4.5%	5.2%	3.5%
Total Percent	100%	100%	100%	100%	100%	100%	100%	100%
Total Contributing Factors Cited	3,793	4,454	3,568	2,798	9,103	1,355	310	25,434
Drivers for Whom There Was "No Clear Contributing Factor"	199	291	253	249	1,204	219	42	2,459
Total Number of Drivers	2,420	2,912	2,393	1,925	6,804	1,108	256	18,614

Table 12.02, Multiple-Vehicle Crashes: Contributing Factors, by Driver Age Groups

Contributing Factor	15-19	20-24	25-29	30-34	35-64	65-79	80 +	All Ages
Human Factors								
Failure to Yield Right of Way	14.2%	10.4%	9.5%	9.2%	10.5%	19.1%	30.3%	11.7%
Following Too Closely	12.9%	14.6%	13.2%	12.1%	10.6%	7.8%	5.9%	11.6%
Careless/Reckless/Erratic Driving	8.3%	9.5%	9.8%	8.4%	7.3%	6.5%	6.2%	8.1%
Congestion Related	4.1%	5.9%	6.1%	6.3%	6.7%	5.6%	2.1%	6.0%
Driver Distracted	6.6%	5.2%	4.6%	4.5%	3.7%	3.2%	2.5%	4.4%
Improper Lane Usage	2.6%	3.1%	3.4%	3.4%	3.3%	3.6%	4.5%	3.3%
Improper Turn/Merge	2.7%	2.5%	2.4%	2.7%	3.3%	4.6%	5.6%	3.1%
Ran Red Light/Ran Stop Sign	2.7%	2.7%	2.5%	2.5%	2.7%	3.4%	5.0%	2.7%
Driver Swerved	2.0%	2.5%	2.3%	2.4%	2.0%	1.3%	0.7%	2.1%
Driver Speeding	2.3%	2.3%	2.1%	2.1%	1.3%	1.0%	0.6%	1.7%
Vision Obscured	1.9%	1.6%	1.5%	1.5%	1.7%	2.5%	3.2%	1.7%
Overcorrecting/Oversteering	1.0%	1.3%	1.0%	0.9%	0.7%	0.5%	0.2%	0.8%
Improper Backing	0.4%	0.3%	0.5%	0.8%	0.7%	1.0%	1.1%	0.6%
Improper Passing	0.3%	0.5%	0.6%	0.6%	0.7%	0.9%	0.7%	0.6%
Wrong Side or Wrong Way	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.6%	0.3%
Run Off Road	0.2%	0.3%	0.4%	0.3%	0.2%	0.2%	0.1%	0.2%
Other Human Factor	7.9%	7.4%	7.0%	8.0%	7.4%	8.1%	8.7%	7.6%
Vehicular Factors								
Defective Brakes	1.3%	0.9%	0.8%	0.7%	0.6%	0.5%	0.4%	0.8%
Defective Mechanical System	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%
Defective Equipment	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%
Miscellaneous Factors								
Road Surface Conditions	24.0%	24.8%	28.0%	29.5%	32.5%	24.6%	16.2%	28.6%
Obstruction in Roadway/Debris	0.2%	0.4%	0.3%	0.3%	0.3%	0.4%	0.2%	0.3%
Other	2.9%	2.4%	2.4%	2.5%	2.3%	2.8%	2.6%	2.5%
Total Percent	100%	100%	100%	100%	100%	100%	100%	100%
Total Contributing Factors Cited	9,770	11,887	10,286	8,945	34,015	6,519	1,743	83,245
Drivers for Whom There Was "No Clear Contributing Factor"	2,994	4,359	4,738	4,718	21,685	4,077	697	43,273
Total Number of Drivers	10,229	13,345	12,656	11,755	49,609	9,477	2,124	110,170

Table 12.03, Contributing Factors in Crashes, by Crash Severity

Contributing Factors	Factors Cited in Fatal Crashes		Factors Cited in Injury Crashes		Factors Cited in PDO Crashes	
	Number	Percent	Number	Percent	Number	Percent
Human Factors						
Careless/Negligent/Erratic Driving	77	10.5%	3,215	9.0%	7,269	7.5%
Driver Speeding	73	10.4%	989	2.8%	2,174	2.2%
Failure to Yield Right-of-Way	49	6.7%	3,499	9.9%	6,723	6.9%
Improper Lane Usage	43	5.9%	1,069	3.0%	3,630	3.7%
Non-motorist Error	43	5.9%	467	1.3%	25	0.0%
Disregard Traffic Control Device	37	5.0%	1,499	4.2%	2,070	2.1%
Ran Off Road	31	4.2%	818	2.3%	1,966	2.0%
Driver Distracted	27	3.7%	1,426	4.0%	3,063	3.1%
Overcorrecting/Oversteering	19	2.6%	675	1.9%	1,846	1.9%
Wrong Side or Wrong Way	11	1.5%	149	0.4%	160	0.1%
Swerved or Avoided	10	1.3%	707	2.0%	2,611	2.7%
Following Too Closely	4	0.5%	2,154	6.0%	7,671	7.9%
Improper Turn/Merge	3	0.4%	505	1.4%	2,378	2.4%
Improper Passing	2	0.2%	122	0.3%	455	0.4%
Vision Obscured	1	0.1%	467	1.3%	1,289	1.3%
Improper Backing	0	0.0%	49	0.1%	831	0.8%
Passing on Shoulder	0	0.0%	14	0.0%	56	0.0%
Other Human Factor	123	16.9%	5,080	14.3%	11,930	12.3%
Vehicular Factors						
Defective Equipment	4	0.5%	379	1.0%	968	1.0%
Other Vehicular Factor	60	8.2%	2,152	6.0%	5,489	5.6%
Miscellaneous Factors						
Road Surface Condition	76	10.4%	7,176	20.3%	26,218	27.1%
Oversize/Overweight Trucks	0	0.0%	4	0.0%	29	0.0%
Other Roadway Factor	34	4.6%	2,736	7.7%	7,685	7.9%
Total Percent		**100%**		**100%**		**100%**
Total Contributing Factors Cited	**727**		**35,351**		**96,536**	
Instances Where "No Clear Contributing Factor" Was Cited	**1,164**		**79,560**		**209,152**	
Total Number of Persons Involved	**592**		**37,213**		**98,603**	

Table 12.04, Contributing Factors in Motorcycle Crashes

	Single Vehicle Crashes		*Multi-Vehicle Crashes*			
	Attributed to MC Drivers		**Attributed to Other Drivers**		**Attributed to MC Drivers**	
Contributing Factors	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Human Factors:						
Careless/Negligent/Erratic Driving	80	14.6%	38	9.9%	41	9.6%
Driver Speeding	59	11.5%	1	0.4%	12	5.2%
Run Off Road	55	10.7%	0	0.0%	5	2.1%
Driver Swerved	33	6.4%	1	0.4%	9	3.9%
Overcorrecting/Oversteering	30	5.8%	0	0.0%	5	2.1%
Improper Lane Usage	26	5.1%	9	3.4%	10	4.3%
Failure to Yield Right of Way	12	2.3%	85	32.0%	12	5.2%
Following Too Closely	12	2.3%	17	6.4%	34	14.6%
Driver Distracted	11	2.1%	18	6.8%	11	4.7%
Improper Turn/Merge	9	1.8%	17	6.4%	10	4.3%
Congestion Related	11	2.0%	14	3.7%	12	2.8%
Work Zone	4	0.8%	5	1.9%	6	2.6%
Disregard Traffic Signs/Road Markings	6	1.1%	3	0.8%	3	0.7%
Wrong Side/Wrong Way Walk/Ride	3	0.6%	1	0.4%	2	0.9%
Improper Passing	2	0.4%	3	0.8%	9	2.1%
Ran Red Light/Ran Stop Sign	2	0.4%	9	3.4%	1	0.4%
Traffic Control Device Missing	1	0.2%	0	0.0%	0	0.0%
Improper Backing	0	0.0%	4	1.5%	0	0.0%
Non-Motorist, No Improper Action	0	0.0%	2	0.8%	0	0.0%
Non-Motorist, Not Visible	0	0.0%	1	0.4%	0	0.0%
Other Human Factor	54	10.5%	16	6.0%	23	9.9%
Vehicular Factors:						
Defective Brakes	4	0.8%	0	0.0%	2	0.9%
Defective Equipment	3	0.5%	9	2.4%	1	0.2%
Defective Mechanical System	2	0.4%	0	0.0%	0	0.0%
Miscellaneous Factors:						
Road Surface Conditions	35	6.8%	4	1.5%	7	3.0%
Ruts, Holes, Bumps	17	3.3%	0	0.0%	1	0.4%
Obstruction in Roadway/Debris	15	2.7%	1	0.3%	4	0.9%
Shoulders (Non, Low, Soft, High)	2	0.4%	0	0.0%	3	1.3%
Other Factor	25	4.6%	8	2.1%	10	2.3%
Total Contributing Factors Cited	**513**	**100%**	**266**	**100%**	**233**	**100%**
Vehicles - "No Clear Cont. Factor"	**171**		**168**		**223**	
Total Number of Persons Involved	**548**		**382**		**429**	

Table 12.05, Contributing Factors in Truck Crashes

Contributing Factors	Attributed to Truck Vehicles		Attributed to Non-Truck Vehicles	
	Number	Percent	Number	Percent
Human Factors				
Following Too Closely	397	6.9%	274	5.4%
Improper Lane Usage	314	5.5%	366	7.2%
Careless/Negligent/Erratic Driving	299	5.2%	346	6.8%
Failure to Yield Right of Way	290	5.1%	466	9.2%
Congestion Backup-Related	255	4.5%	307	6.0%
Improper Turn/Merge	252	4.4%	258	5.1%
Driver Swerved	198	3.5%	203	4.0%
Run Off Road	187	3.3%	21	0.4%
Improper Backing	131	2.3%	19	0.4%
Driver Distracted or Inattentive	126	2.2%	121	2.4%
Overcorrecting/Oversteering	114	2.0%	84	1.6%
Vision Obscured	109	1.9%	60	1.2%
Driver Speeding	105	1.8%	129	2.5%
Work Zone	100	1.7%	82	1.6%
Ran Red Light/Ran Stop Sign	62	1.1%	85	1.7%
Disregard Traffic Signs/Road Markings	58	1.0%	47	0.9%
Improper Passing	37	0.6%	89	1.7%
Wrong Side/Wrong Way	6	0.1%	34	0.7%
Passing on Shoulder	4	0.1%	9	0.2%
Other Human Factors	472	8.3%	412	8.1%
Vehicular Factors				
Defective Brakes	56	1.0%	21	0.4%
Truck Coupling/Trailer Hitch/Safety Chains	10	0.2%	0	0.0%
Defective Equipment	7	0.1%	3	0.1%
Defective Mechanical System	6	0.1%	4	0.1%
Miscellaneous Factors				
Road Surface Conditions	1,884	32.9%	1,546	30.4%
Shoulders (Non, Low, Soft, High)	20	0.3%	5	0.1%
Over-Sized/Overweight Trucks	20	0.3%	0	0.0%
Ruts, Holes, Bumps	12	0.2%	1	0.0%
Obstruction in Roadway/Debris	15	0.3%	13	0.3%
Other	173	3.0%	87	1.7%
Total Contributing Factors Cited	**5,719**	**100%**	**5,092**	**100%**
Vehicles for Which There Was "No Clear Contributing Factor"	**1,729**		**1,449**	
Total Number Persons Involved	**5,614**		**4,270**	

Table 12.06, Contributing Factors in Pedestrian Crashes

Contributing Factors	Number Attributed to Pedestrians	Percent Attributed to Pedestrians	Number Attributed to MV Drivers	Percent Attributed to MV Drivers
Human Factors				
Dart/Dash	111	17.1%	0	0.0%
In Roadway Improperly	72	11.1%	0	0.0%
Disregard Traffic Signs/Road Markings	68	10.4%	31	3.3%
Failure to Yield Right of Way	59	9.1%	158	16.6%
Not Visible	55	8.4%	0	0.0%
Inattention/Distraction	20	3.1%	49	5.2%
Work Zone	14	2.2%	11	1.2%
Disabled Vehicle Related	11	1.7%	0	0.0%
Entering/Exiting Parked Vehicle	9	1.4%	0	0.0%
Wrong Side or Wrong Way	8	1.2%	7	0.7%
Improper Turn/Merge	7	1.1%	21	2.2%
Improper Passing	3	0.5%	87	9.2%
Congestion Backup Related	6	0.9%	11	1.2%
Following Too Closely	0	0.0%	2	0.2%
Improper Backing	0	0.0%	9	0.9%
Vision Obscured	0	0.0%	53	5.6%
Run Off Road	0	0.0%	7	0.7%
Ran Red Light/Ran Stop Sign	0	0.0%	8	0.8%
Improper Lane Usage	0	0.0%	15	1.6%
Careless/Negligent/Erratic Driving	0	0.0%	99	10.4%
Driver Swerved	0	0.0%	16	1.7%
Overcorrecting/Oversteering	0	0.0%	3	0.3%
Passing on Shoulder	0	0.0%	1	0.1%
Driver Speeding	0	0.0%	14	1.5%
Other Human Factor	59	9.1%	110	11.6%
Vehicular Factors				
Defective Brakes	0	0.0%	7	0.7%
Defective Wheels	0	0.0%	1	0.1%
Miscellaneous Factors				
Road Surface Conditions	133	20.4%	163	17.2%
Obstruction in Roadway	5	0.8%	7	0.7%
Shoulders (Non, Low, Soft, High)	11	1.7%	60	6.3%
Total Contributing Factors Cited	651	**100%**	950	**100%**
Vehicles for Which There Was "No Clear Contributing Factor"	439		363	
Total Number of Persons Involved	1,181		1,363	

Table 12.07, Contributing Factors in Bicycle Crashes

Contributing Factors	Number Attributed to Bicyclists	Percent Attributed to Bicyclists	Number Attributed to MV Drivers	Percent Attributed to MV Drivers
Human Factors				
Failure to Obey Traffic Signs/Signals	83	25.8%	10	3.1%
Failure to Yield Right of Way	73	22.7%	118	36.2%
Dart/Dash	35	10.9%	0	0.0%
Not Visible	22	6.8%	0	0.0%
Wrong Way Riding or Walking	21	6.5%	5	1.5%
In Roadway Improperly	15	4.7%	0	0.0%
Improper Turn/Merge	5	1.6%	8	2.5%
Congestion Backup Related	6	1.9%	8	2.5%
Work Zone	3	0.9%	2	0.6%
Improper Passing	3	0.9%	0	0.0%
Inattention/Distraction	3	0.9%	16	5.0%
Entering/Exiting Parked/Standing Vehicle	1	0.3%	0	0.0%
Improper Backing	0	0.0%	5	1.5%
Vision Obscured	0	0.0%	29	8.9%
Ran Stop Sign	0	0.0%	3	0.9%
Improper Lane Usage	0	0.0%	5	1.5%
Careless/Negligent/Erratic Driving	0	0.0%	29	8.9%
Driver Swerved	0	0.0%	7	2.1%
Other Human Factor	27	8.4%	45	13.8%
Miscellaneous Factors				
Road Surface Condition	19	5.9%	21	6.4%
Obstruction in Roadway	2	0.6%	2	0.6%
Other	4	1.2%	13	4.0%
Total Contributing Factors Cited	**322**	**100%**	**326**	**100%**
Vehicles for Which There Was "No Clear Contributing Factor"	**274**		**297**	
Total Number of Persons Involved	**694**		**735**	

Table 12.08, Contributing Factors in School Bus Crashes

Contributing Factors	Number Attributed to School Bus Drivers	Percent Attributed to School Bus Drivers	Number Attributed to Drivers of Other Vehicles	Percent Attributed to Drivers of Other Vehicles
Human Factors				
Failure to Yield Right of Way	159	9.8%	49	7.0%
Improper Passing	76	4.7%	9	1.3%
Driver Swerved	74	4.5%	28	4.0%
Improper Turn/Merge	65	4.0%	19	2.7%
Driver Distracted	46	2.8%	32	4.6%
Vision Obstructed	42	2.6%	16	2.3%
Congestion Backup Related	49	3.0%	29	4.1%
Work Zone	37	2.3%	4	0.6%
Following Too Closely	29	1.8%	41	5.8%
Careless/Negligent/Erratic Driving	27	1.7%	49	7.0%
Improper Backing	20	1.2%	9	1.3%
Failure to Keep in Proper Lane	17	1.0%	12	1.7%
Ran Red Light/Ran Stop Sign	6	0.4%	21	3.0%
Disregard Other Traffic Signs/Road Markings	6	0.4%	9	1.3%
Run Off Road	4	0.2%	2	0.3%
Wrong Side/Wrong Way	2	0.1%	1	0.1%
Overcorrecting/Oversteering	2	0.1%	6	0.9%
Ran Red Light/Ran Stop Sign	6	0.4%	21	3.0%
Driver Speeding	0	0.0%	21	3.0%
Other Human Factor	140	8.6%	50	7.1%
Vehicular Factors				
Defective Brakes	0	0.0%	5	0.7%
Defective Steering	0	0.0%	1	0.1%
Miscellaneous Factors				
Road Surface Conditions	785	48.2%	264	37.7%
Obstruction in Roadway	2	0.1%	0	0.0%
Shoulders (Non, Low, Soft, High)	1	0.1%	2	0.3%
Other	39	2.4%	22	3.1%
Total Contributing Factors Cited	**1,628**	**100%**	**701**	**100%**
Vehicles for Which There Was "No Clear Contributing Factor"	**442**		**298**	
Total Number of Drivers Involved	**700**		**593**	

Table 12.09, Contributing Factors in Motor Vehicle/Train Crashes

Contributing Factors	Number	Percent
Human Factors		
Failure to Yield Right of Way	15	18.8%
Disregard Traffic Signs/Road Markings	11	13.8%
Ran Red Light/Ran Stop Sign	9	11.3%
Careless/Negligent/Erratic Driving	7	8.8%
Improper Passing	2	2.5%
Driver Swerved	2	2.5%
Improper Turn/Merge	1	1.3%
Vision Obscured	1	1.3%
Driver Distracted	1	1.3%
Other Human Factor	2	2.5%
Vehicle Factors		
Defective Brakes	1	1.3%
Miscellaneous Factors		
Road Surface Conditions	15	18.8%
Debris	1	1.3%
Other	12	15.0%
Total Contributing Factors Cited	**80**	**100%**
Vehicles for Which There Was "No Clear Contributing Factor"	**16**	
Total Number of Drivers Involved	**62**	

Table 12.10, Contributing Factors in Teen-Involved Crashes

	Number Attributed to Teen Drivers*	Percent Attributed to Teen Drivers*	Number Attributed to Other Vehicle Drivers*	Percent Attributed to Other Vehicle Drivers*
Human Factors				
Failure to Yield Right of Way	1,416	14.3%	755	24.1%
Careless/Negligent/Erratic Driving	1,363	13.8%	367	11.7%
Following Too Closely	1,275	12.9%	536	17.1%
Driver Distracted/Inattentive	818	8.3%	173	5.5%
Driver Speeding	553	5.6%	71	2.3%
Improper Lane Usage	487	4.9%	118	3.8%
Overcorrecting/Oversteering	461	4.7%	27	0.9%
Driver Swerved	417	4.2%	131	4.2%
Run Off Road	374	3.8%	8	0.3%
Improper Turn/Merge	299	3.0%	118	3.8%
Ran Red Light/Ran Stop Sign	285	2.9%	111	3.5%
Vision Obscured	225	2.3%	96	3.1%
Disregard Traffic Signs/Road Markings	132	1.3%	64	2.0%
Improper Backing	80	0.8%	37	1.2%
Improper Passing	43	0.4%	28	0.9%
Wrong Side/Wrong Way	36	0.4%	12	0.4%
Dart/Dash	0	0.0%	11	0.4%
In Roadway Improperly	0	0.0%	6	0.2%
Not Visible	0	0.0%	7	0.2%
Other Human Factor	1,063	10.8%	327	10.4%
Vehicular Factors				
Defective Brakes	190	1.9%	26	0.8%
Defective Mechanical System	27	0.3%	2	0.1%
Defective Equipment	13	0.1%	3	0.1%
Miscellaneous Factors				
Other	315	3.2%	100	3.2%
Total Contributing Factors Cited	**9,872**	**100%**	**3,134**	**100%**
Vehicles for Which There Was "No Clear Contributing Factor"	**4,892**		**7,064**	
Total Number of Drivers Involved	**13,317**		**10,139**	

*The term 'Drivers' refers to a driver of any motor vehicle. Contributing factor data for the 'Other Vehicle Drivers' includes pedestrians and bicyclists. Pedestrians and bicyclists are not included in the 'Teen Driver' data.

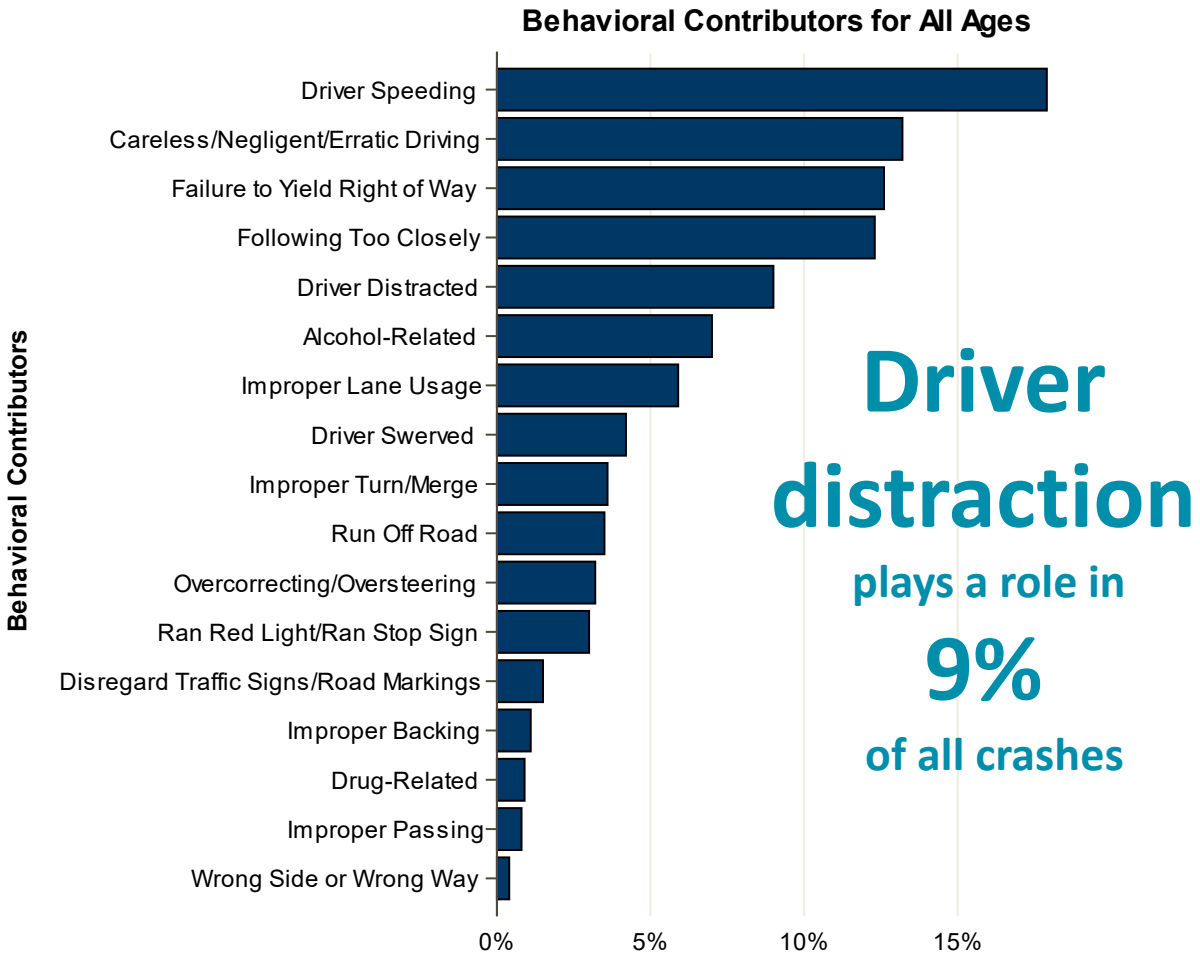
Table 12.11, Contributing Factors in Senior-Involved Crashes

Contributing Factors	Number Attributed to Senior Drivers*	Percent Attributed to Senior Drivers*	Number Attributed to Other Vehicle Drivers*	Percent Attributed to Other Vehicle Drivers*
Human Factors				
Failure to Yield Right of Way	1,840	24.7%	949	18.2%
Careless/Negligent/Erratic Driving	711	9.6%	631	12.1%
Following Too Closely	619	8.3%	887	17.0%
Improper Lane Usage	515	6.9%	230	4.4%
Improper Turn/Merge	444	6.0%	224	4.3%
Ran Red Light/Ran Stop Sign	326	4.4%	272	5.2%
Driver Distracted/Inattention	323	4.3%	400	7.7%
Vision Obscured	270	3.6%	155	3.0%
Run Off Road	241	3.2%	15	0.3%
Driver Swerved	189	2.5%	164	3.1%
Disregard Traffic Signs/Road Markings	182	2.4%	96	1.8%
Improper Backing	150	2.0%	65	1.2%
Driver Speeding	138	1.9%	147	2.8%
Overcorrecting/Oversteering	130	1.7%	59	1.1%
Improper Passing	92	1.2%	56	1.1%
Wrong Side or Wrong Way - Walking/Riding	52	0.7%	27	0.5%
Oversize/Overweight Trucks	6	0.1%	1	0.0%
Dart/Dash	0	0.0%	18	0.3%
In Roadway Improperly	0	0.0%	4	0.1%
Not Visible	0	0.0%	7	0.1%
Entering/Exiting Parked/Standing Vehicle	0	0.0%	3	0.1%
Other Human Factor	901	12.1%	564	10.8%
Vehicular Factors				
Defective Brakes	65	0.9%	63	1.2%
Defective Steering/Power Train/Suspension	13	0.2%	12	0.2%
Defective Hitch/Wheels/Wipers/Mirrors	12	0.2%	12	0.2%
Miscellaneous Factors				
Other	224	3.0%	161	3.1%
Total Contributing Factors Cited	**7,443**	**100%**	**5,222**	**100%**
Vehicles for Which There Was "No Clear Contributing Factor"	**6,924**		**6,616**	
Total Number of Drivers Involved	**13,780**		**11,583**	

*The term 'Drivers' refers to a driver of any motor vehicle. Contributing factor data for the 'Other Vehicle Drivers' includes pedestrians and bicyclists. Pedestrians and bicyclists are not included in the 'Senior Driver' data.

Figure 12.01, Driver Behaviors by Age Groups

The graphs on the following pages combine data from the behavioral elements in the crash report with the human factors data from the contributing factor section of the crash report. The graphs examine which behaviors drivers exhibit most by different age groups. This provides a complete picture of what drivers are doing that is resulting in crashes on Minnesota roads.



In all types of crashes,

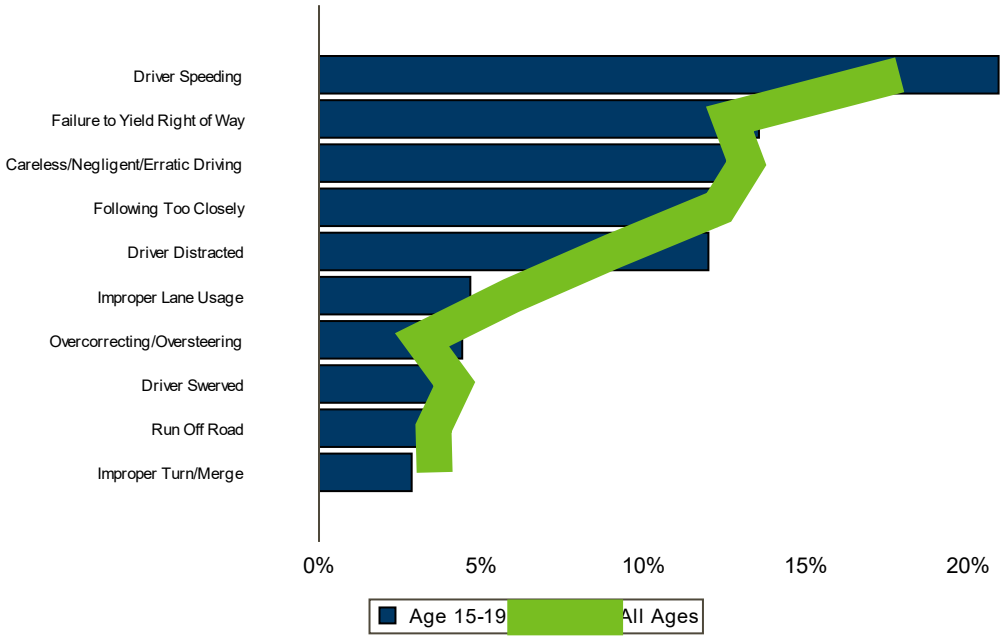
driver speeding

is the most frequent behavior contributing to a crash

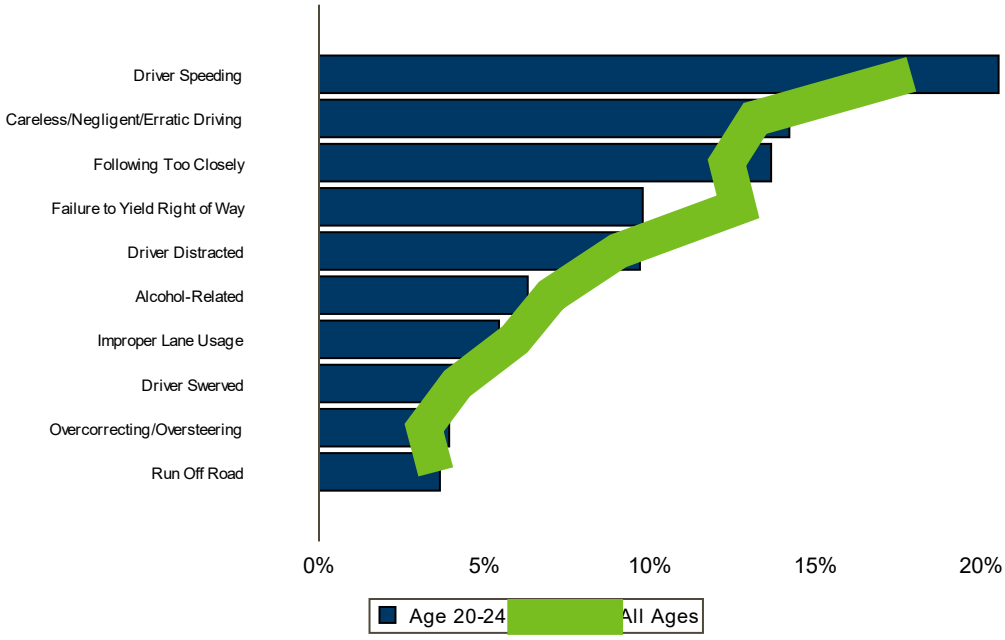
8%

related to alcohol or drug use

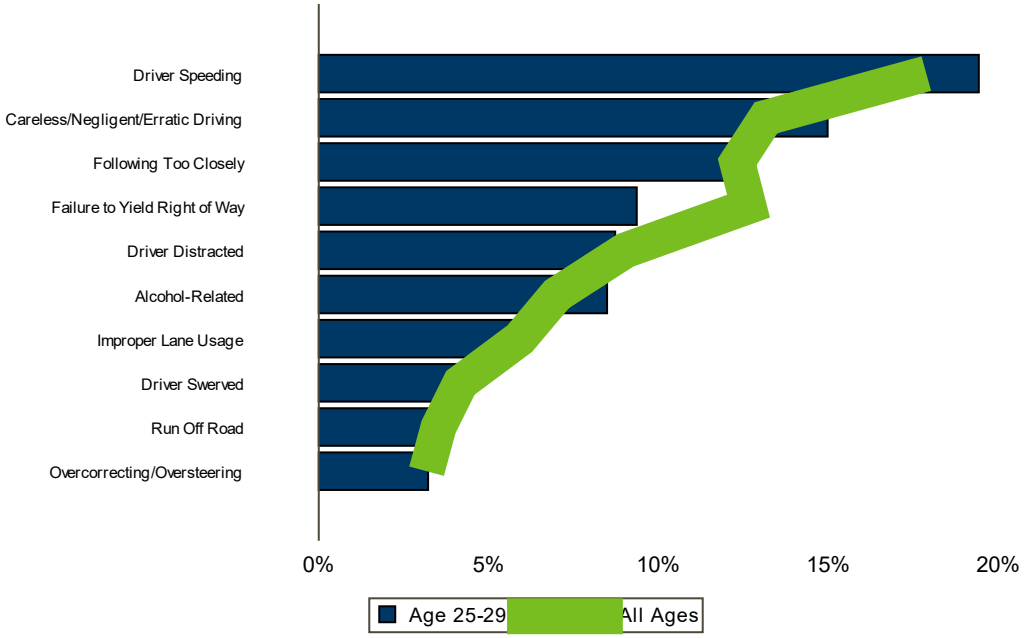
Top 10 Behavioral Contributors for Age 15-19



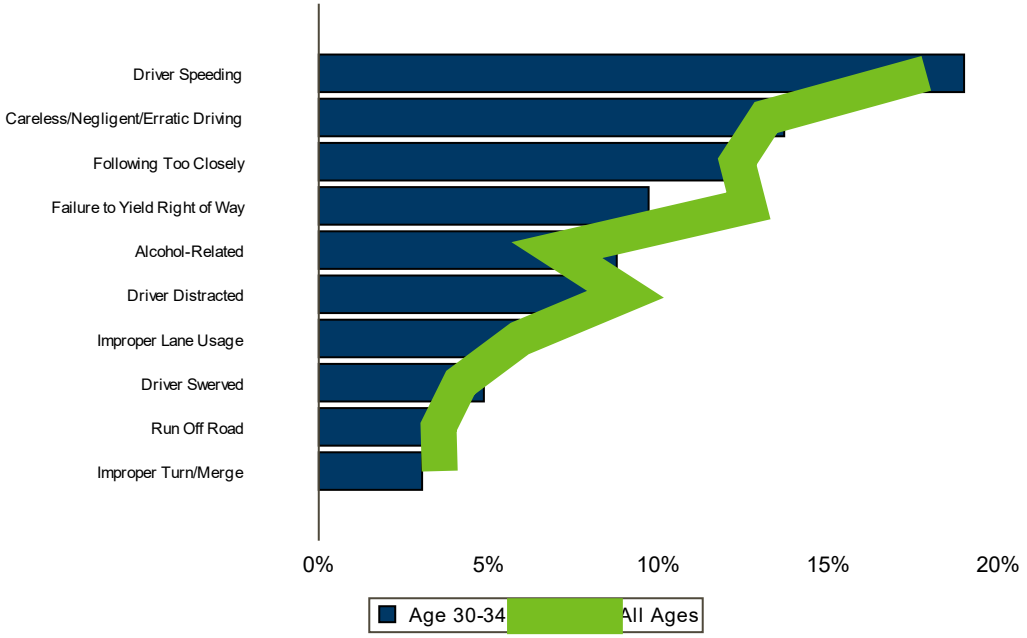
Top 10 Behavioral Contributors for Age 20-24



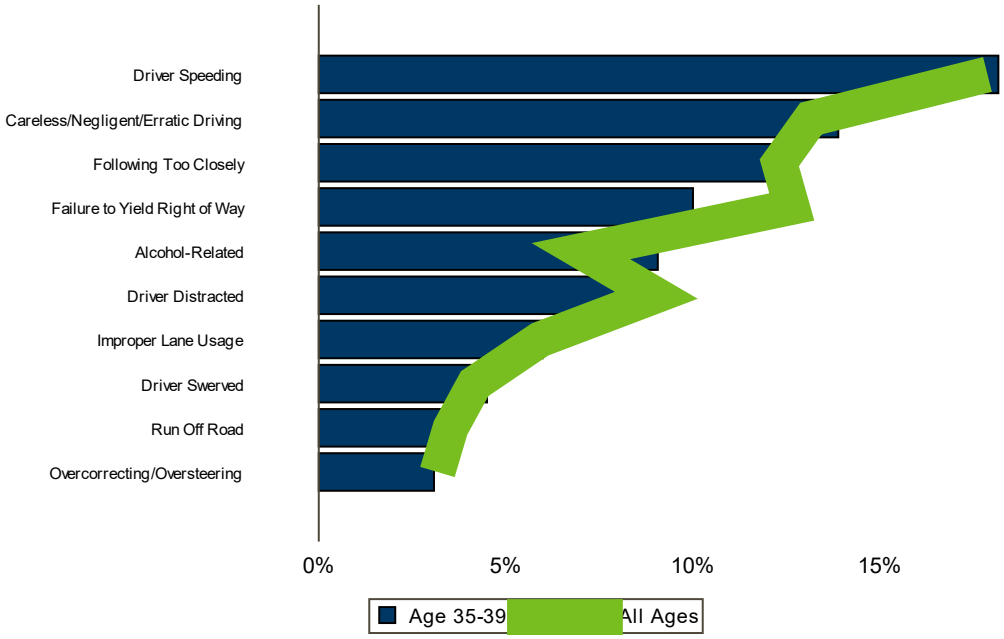
Top 10 Behavioral Contributors for Age 25-29



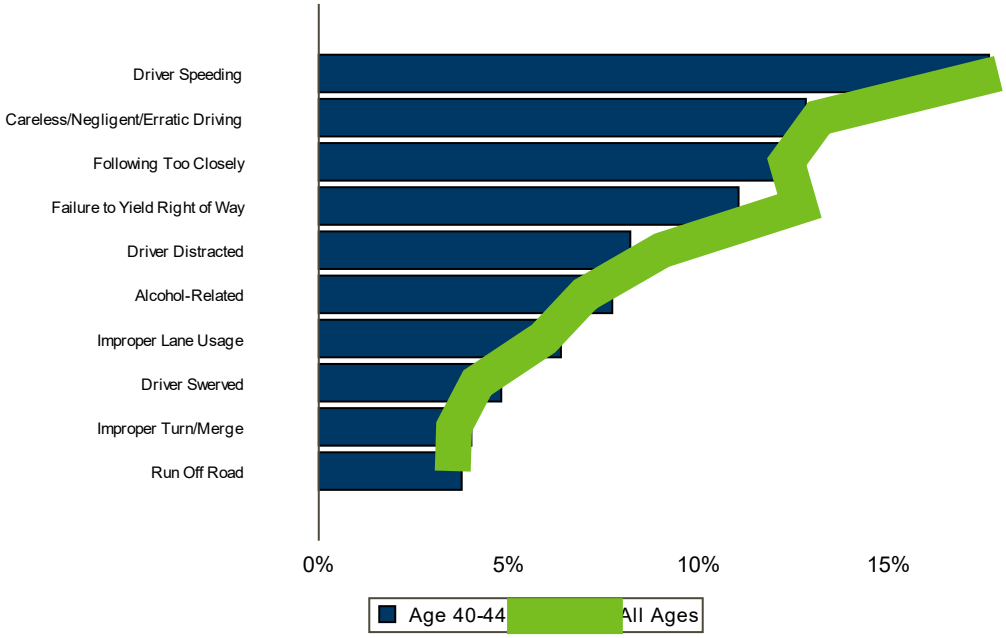
Top 10 Behavioral Contributors for Age 30-34



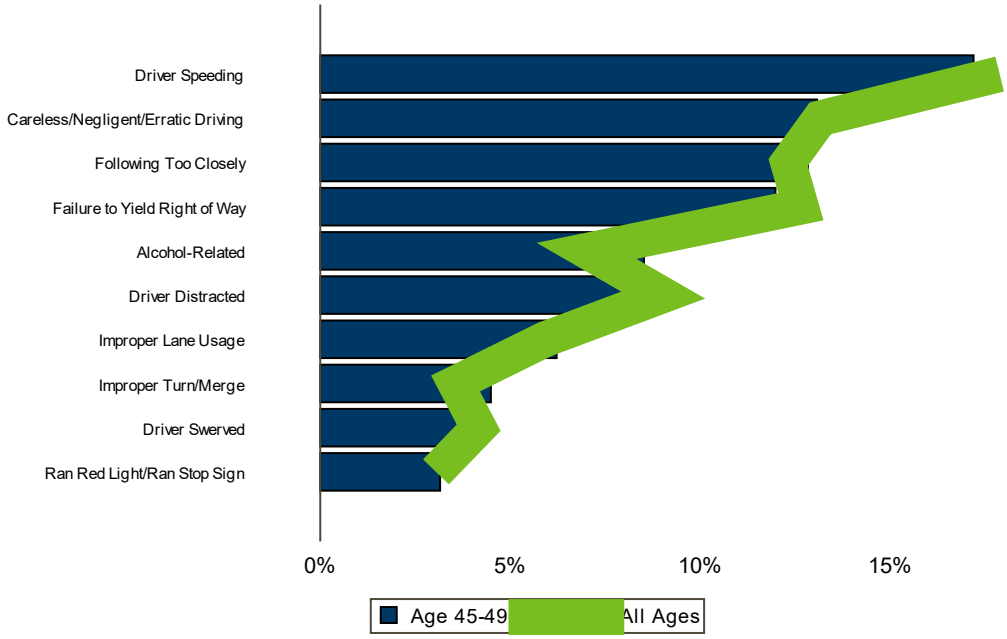
Top 10 Behavioral Contributors for Age 35-39



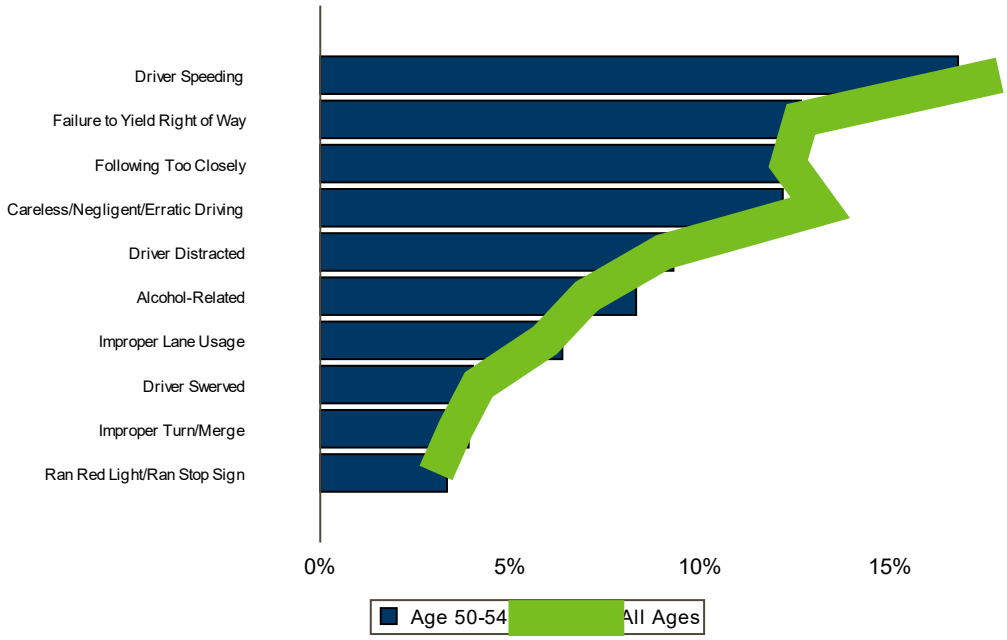
Top 10 Behavioral Contributors for Age 40-44



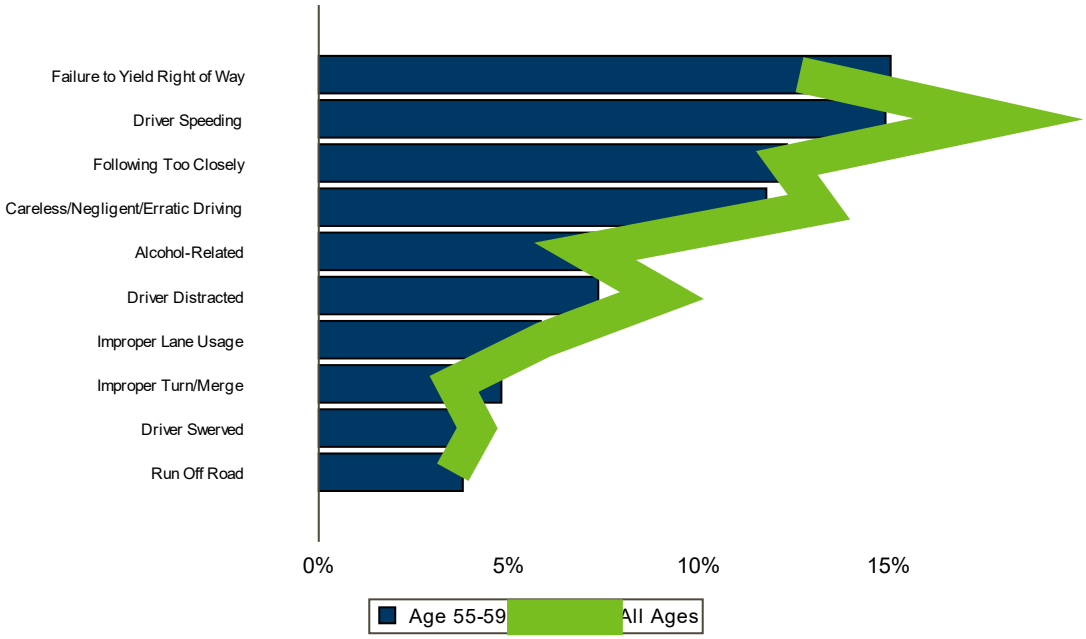
Top 10 Behavioral Contributors for Age 45-49



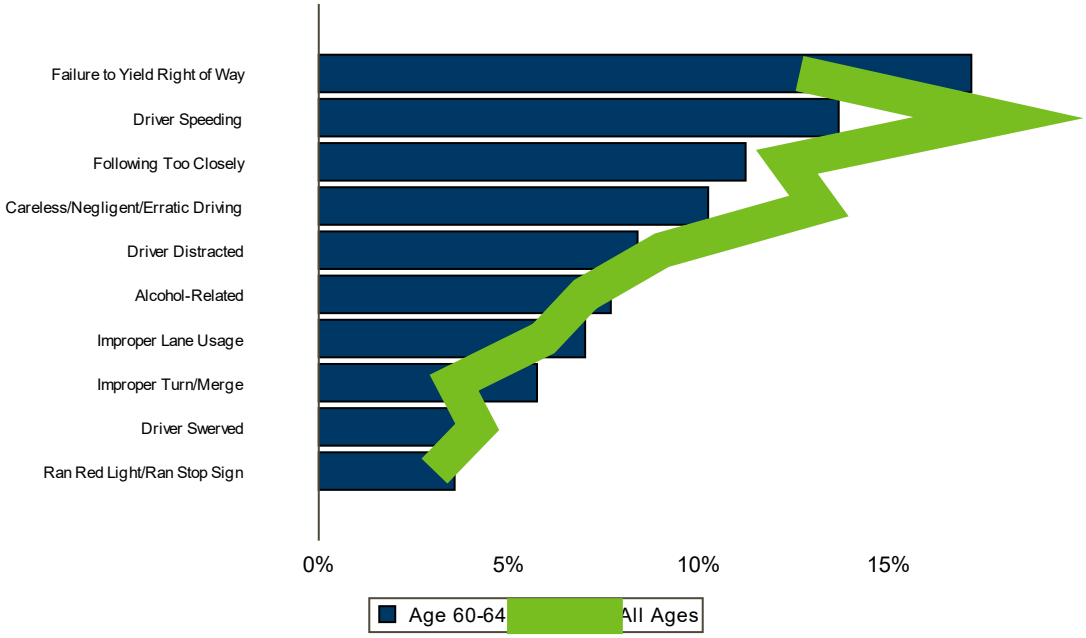
Top 10 Behavioral Contributors for Age 50-54



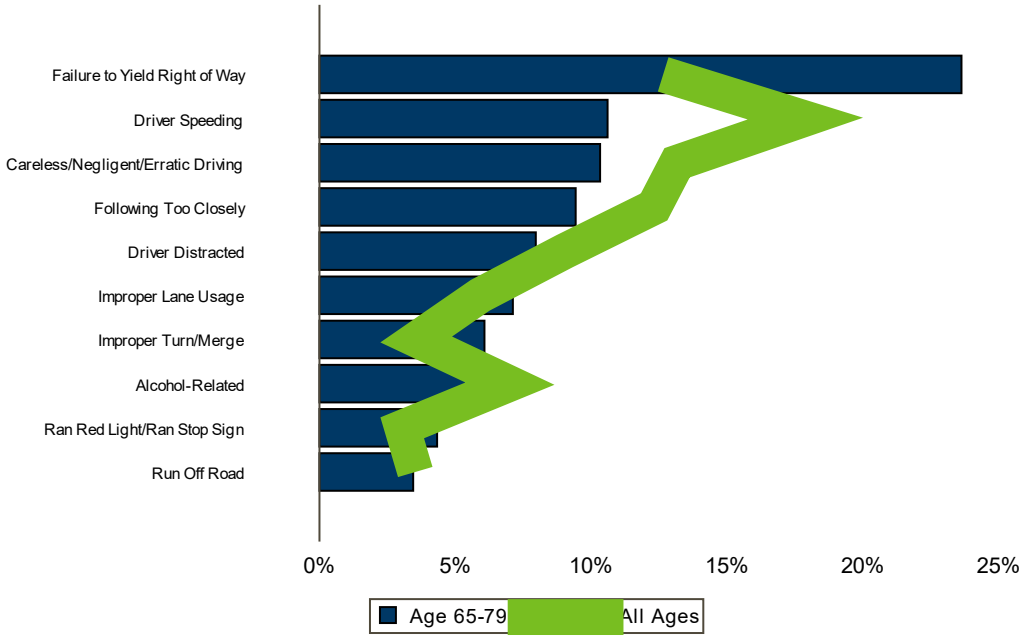
Top 10 Behavioral Contributors for Age 55-59



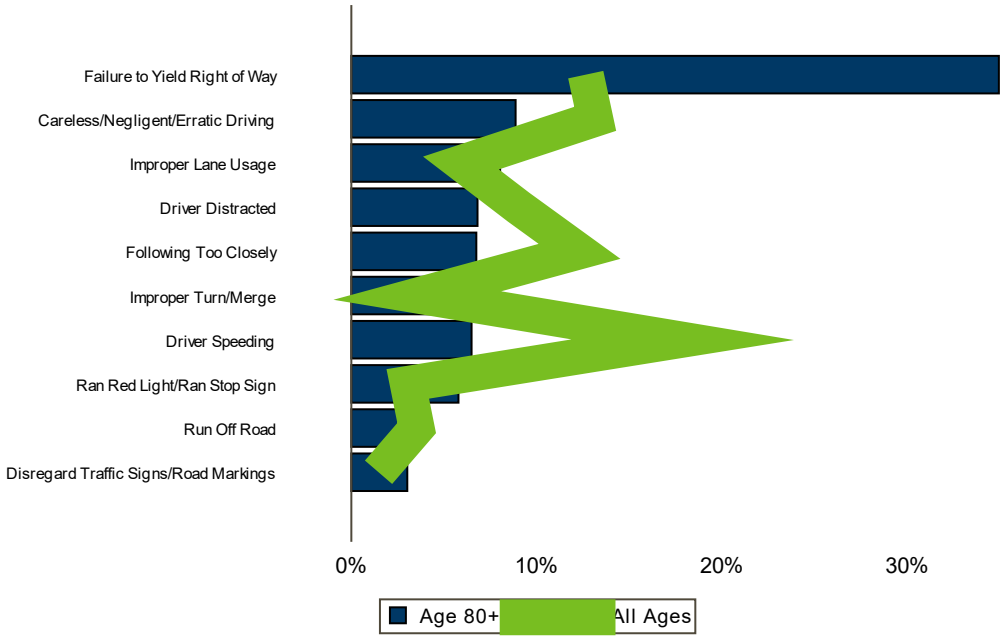
Top 10 Behavioral Contributors for Age 60-64



Top 10 Behavioral Contributors for Age 65-79



Top 10 Behavioral Contributors for Age 80+



DEFINITIONS

Accident - See motor vehicle crash.

Alcohol Concentration - Level of alcohol in a person's body as measured by blood, breath or urine.

Alcohol-Related Fatal Crash - Crash that results in one or more deaths and in which the investigating officer suspected alcohol involvement or in which the results of an alcohol concentration test were positive for any driver, pedestrian or bicyclist involved in the crash.

Alcohol-Related Fatality - Death resulting from an alcohol-related crash.

Alcohol-Related Injury - Non-fatal injury resulting from an alcohol-related crash.

Alcohol-Related Injury Crash - Non-fatal crash in which one or more persons are injured and in which the investigating officer suspected alcohol involvement for any driver, pedestrian or bicyclist involved in the crash.

Alcohol-Related Property Damage Crash - Crash in which no one is killed or injured and the investigating officer suspected alcohol involvement for any driver, pedestrian or bicyclist involved in the crash.

BAC – Blood alcohol content

BCA – Minnesota Bureau of Criminal Apprehension

Bicycle Crash - Motor vehicle crash involving one or more bicycles.

Child Safety Seats - Safety devices designed to fit in motor vehicles that keep children securely in place. The seats are required by law for children less than four years of age.

CMV – Commercial Motor Vehicle. Any vehicle can be used commercially, but for the purposes of this report, a large truck used for transporting goods.

Crash - See motor vehicle crash.

CSAH - County State Aid Highway

DPS - Department of Public Safety

Driver - Occupant of a motor vehicle who is in actual physical control of the vehicle in transit or, for an out-of-control vehicle, the occupant who was in control before control was lost.

Drunk Driving – Considered drunk driving when a motor vehicle driver tests above .08% level or above.

Economic Loss - Approximation of the costs associated with crashes, based upon current National Safety Council estimates of the loss to society for each fatality, injury and property damage crash.

Fatal Crash - Motor vehicle crash on a public trafficway in which at least one person dies unintentionally as a result of the crash. The death must occur within 30 days of the crash.

Fatal Injury - Injury that results in an unintentional death within 30 days of the crash.

First Harmful Event - First event during a crash that caused injury or property damage.

GHSA - Governors Highway Safety Association

MC or MCY – Motorcycle

Metro - The Twin Cities metropolitan area of the state.

Minor Injury - Injury not incapacitating but evident to observers at the scene of the crash in which the injury occurred.

MMUCC - Model Minimum Uniform Crash Criteria. Federal standards and guidelines for crash reporting.

MN - Minnesota

MnDOT - Minnesota Department of Transportation

Motor Vehicle - Self-propelled vehicle, including attached trailers and semi-trailers designed for use with such vehicles.

Motor Vehicle Crash - A crash that involves a motor vehicle in transport on a public traffic-way in Minnesota and results in injury, death or at least $1,000.00 in property damage.

MVO – Motor vehicle occupant

Motorcycle- Two-wheeled or three-wheeled motor vehicle having one or more riding saddles and having an engine of more than 50 cc, more than 2 brake horsepower, or the capability of speeds over 30 mph on a flat surface. Otherwise, it is classified as a motorized bicycle or motor scooter/motorbike.

Motorcycle Crash - Motor vehicle crash involving one or more motorcycles.

MSAH – Municipal State Aid Highway

NHTSA - National Highway Traffic and Safety Administration

Occupant - Person who is in or on a vehicle, including the driver, passenger and persons riding on the outside of the vehicle.

Occupant Restraints - Protective devices used in motor vehicles to keep the driver and passengers in their seats and prevent them from being ejected from the motor vehicle in a crash. Restraint devices include lap belts, lap/shoulder harness combinations, air bags and child safety seats.

Passenger - Occupant of a motor vehicle other than the driver.

PDO Crash – Crash where only property is damaged. No injuries result from the crash.

Pedestrian - Person not in or on a motor vehicle or other vehicle (e.g., a bicycle).

Pedestrian Crash - A motor vehicle crash involving one or more pedestrians.

Possible Injury - Injury reported or claimed that is not a fatal injury, incapacitating injury or non-incapacitating injury.

Restraint Usage - Occupant's use of available vehicle restraints including lap belt, lap/shoulder combination harness or child safety seats.

Rural - An area having a population of fewer than 5,000.

School Bus Crash - Crash involving one or more school buses. The school bus must collide with another vehicle, or pedestrian or object, for the crash to be classified as a school bus crash.

Serious Injury - Any injury, other than a fatal injury, preventing the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred.

Trafficway - Any land way open to the public as a matter of right or custom for moving persons or property from one place to another.

Train/Motor Vehicle Crash - Motor vehicle crash involving a motor vehicle in transport and a railway train. Presently, the only crashes classified as train crashes are those in which the first harmful event is collision with a train.

Truck Crash - A motor vehicle crash involving one or more vehicles of the following types: (1) 2-axle, 6-tire single unit truck or step van, (2) 3-or-more-axle single unit truck, (3) single-unit truck with trailer, (4) truck tractor with no trailer, (5) truck tractor with semi-trailer, (6) truck tractor with double trailers, (7) truck tractor with triple trailers, (8) heavy truck of other or unknown type. Pickup trucks and vans are not counted as trucks. See also CMV.

TZD - Toward Zero Deaths is a statewide traffic safety initiative aimed at reducing the number of traffic fatalities to zero.

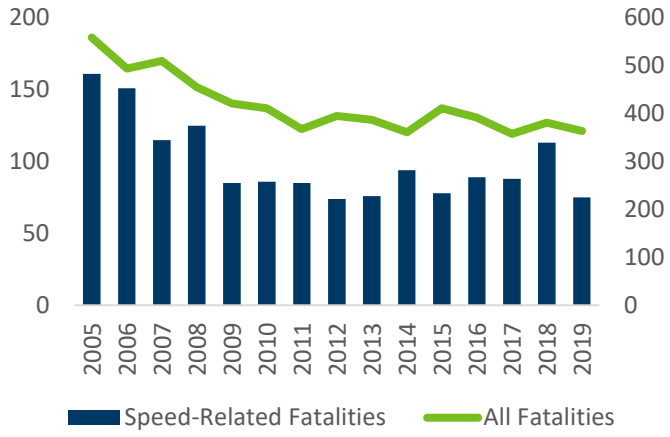
Urban - An area having a population of 5,000 or more.

Big 4 Trends

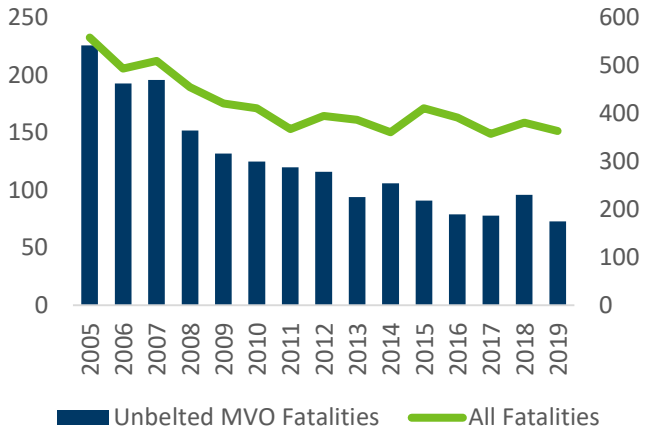
Speed, belts, booze, distraction

Known as 'The Big 4', these behaviors are frequently cited factors in fatal traffic crashes. Traffic safety professionals have long understood the inherent risks of these dangerous driving behaviors, and have therefore emphasized the importance of implementing countermeasure strategies that help reduce their prevalence. Over the past 15 years, Minnesota has made strides in reducing crashes attributable to these 'Big 4' behaviors, but they are still major contributors to traffic fatalities and injuries.

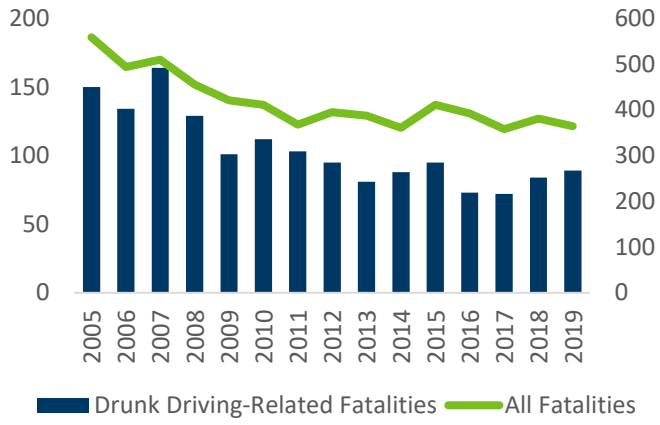
Speed-Related Fatality Trends



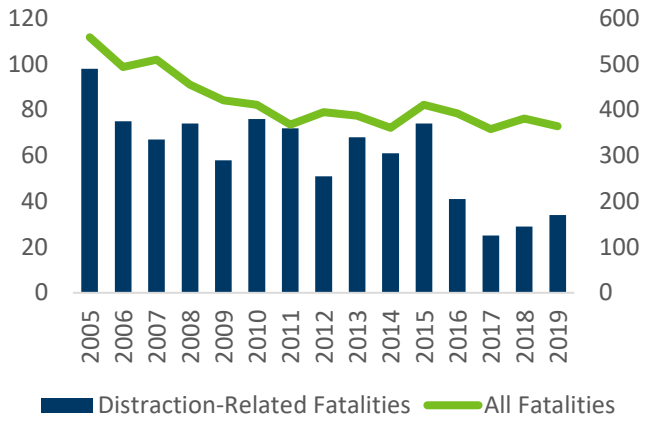
Unbelted Fatality Trends



Drunk Driving-Related Fatality Trends



Distraction-Related Fatality Trends

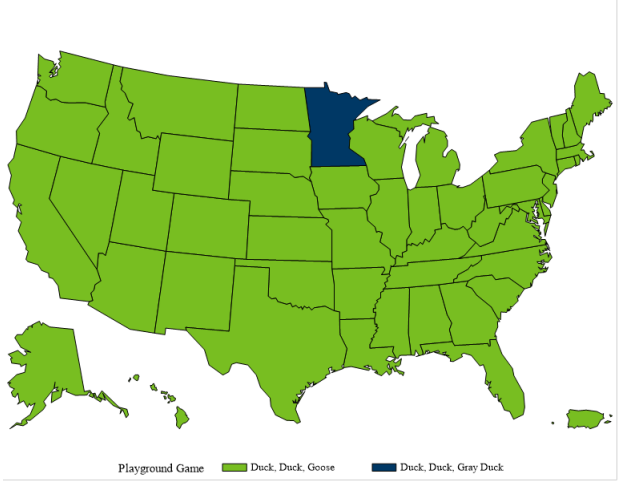


Minnesota Facts

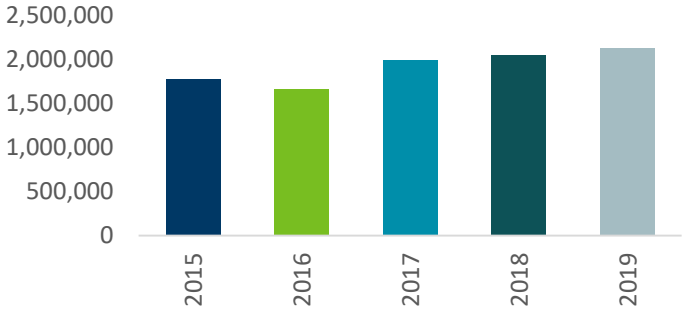
Did you know?
The great state of Minnesota became the 32nd U.S. state on May 11, 1858. The name Minnesota is derived from two Native American Indian words, “minni” (meaning water) and “sotah” (meaning sky-tinted or cloudy). Covering 86,943 square miles it is the 12th largest state in area and the 22nd most populous state. Minnesota is filled with lakes (actually more than 10,000 of them), forests, rivers, wild life, parks, camping grounds, and bike trails. Minnesota is home to the Mall of America in Bloomington, which is the largest shopping center in the United States (9.5 million square feet). The city of Minneapolis has the largest continuous skyway system in the world; it connects 80 downtown blocks.

Nicknames for Minnesota include the Gopher State, the Land of 10,000 Lakes, the North Star State, and the Bread and Butter State.

Minnesotans are known for being kind (Minnesota Nice), nature lovers (outdoor activities are popular), hearty (can withstand extreme cold weather), unable to quickly exit a family gathering (the long Minnesota goodbye), and enjoying an annual get-together where any type of food imaginable is served on a stick (the Minnesota State Fair).



So popular is the Minnesota State Fair, that yearly attendance tops 2 million across its 12-day run.



Prince is the most famous person from Minnesota, and in his honor, purple is the official state color.

MN Inventions:

Masking and Scotch Tape
Wheaties and Cheerios cereals
Bisquick
Honeycrisp and Sweet Tango apples
bundt pans
automatic pop-up toasters
staplers
snowmobiles
in-line roller skates

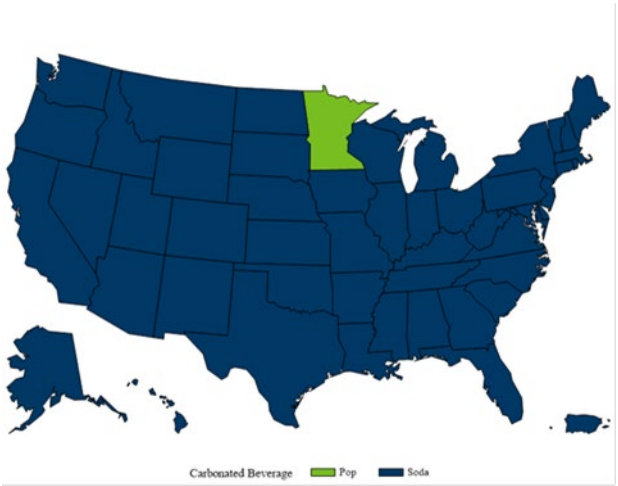
Minnesota is filled with tourist attractions and landmarks that showcase the state's natural and seasonal beauty. Some of the top-rated attractions include: Boundary Waters Canoe Area, Lake Itasca (the humble beginning of the mighty Mississippi River), the Cathedral of St. Paul, the North Shore Scenic Drive of Lake Superior, and Split Rock Lighthouse. Tourism provides $15 billion to Minnesota's economy.

Unlike many states, all major professional sports leagues (MLB, NFL, NBA, WNBA and NHL) are represented with Minnesota teams. Hockey at all levels is appreciated by Minnesotans, and the United States Hockey Hall of Fame is located in Eveleth, Minnesota.
Vikings football fans celebrate with a SKOL chant; the word 'skol' is Icelandic and means 'cheers'.

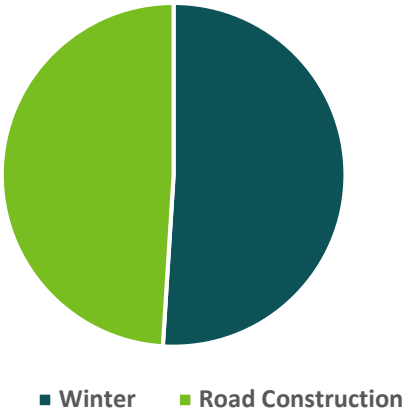
Minnesotans are known across the nation for their "accent" or how they pronounce words by elongating "a" and "o" vowel sounds. Several distinctly "Minnesotan" sayings exist as well. To the right are some translations for these sayings.

Saying	Meaning
"You betcha!"	Agreement
Have a "little lunch"	Lunch - regardless of meal size
"Oh, for cute"	Used when something is adorable
"Up North"	Referring to the cabin, lake, or woods regardless of direction
Eat some "bars"	Any dessert (brownies, cookies, cereal treats) cut into squares or rectangles
"Uff-da"	An exclamation used for a variety of emotions
"and that"	Punctuation
"Hot Dish"	A casserole

In 'sota, we call it "pop"



Winter, spring, summer, and fall provide wildly different weather across the state, but true Minnesotans knows there are really only two seasons.



Minnesota is home to more than

50 different

mosquito species