

Montana Highway Traffic Safety FFY 2021

Problem Identification

2019 Data



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1. Vision Zero

The Montana Department of Transportation and our partners are united in the mission to save lives on Montana roads. The information presented in the *Montana Highway Traffic Safety Problem Identification* document supports efforts toward Montana's Vision Zero Initiative: zero deaths and zero serious injuries on Montana's Highways. This multipronged initiative has the ultimate goal of eliminating death and serious injuries on Montana's highways because one life lost is one to many.

2. Introduction

The *Montana Highway Traffic Safety Problem Identification*, produced by the Montana Department of Transportation's Highway Traffic Safety Section (SHTSS), provides a description of motor vehicle crash characteristics for crashes that have occurred on Montana's public roadways. The crash data is used to identify problem areas and trends related to highway traffic safety in Montana and serves to heighten awareness about traffic safety and assist highway traffic safety specialists and partners in designing targeted counter measures to reduce traffic-related fatalities and injuries.

This document is used in the development of Montana's Highway Safety Plan (HSP) to support the request for funds from the National Highway Transportation Safety Administration (NHTSA) for the upcoming fiscal year. These funds will be used to address problem areas which are identified in the research and analysis of information contained herein. The data may also be used for general information on highway safety.

The report will present data on crash numbers, general exposure and demographics. Included will be Montana geographic and population statistics, driver license information, vehicle miles travelled and breakdowns of driver demographics within crashes. Information is presented in the latter part of this document on specific traffic safety areas and other areas of possible interest. Many of the tables represent ten years of data.

3. Explanation of Data

Much of the data for this problem identification is derived from Montana reportable crash reports which are compiled by the law enforcement officers throughout the state who collect data from crash scenes on Montana roadways. Some crashes such as minor single vehicle run-off-the-road crashes, wild-animal crashes and other minor crashes are not always reported to law enforcement.

Reportable crashes are defined as those with a fatality, an injury, or in the case of property damage only crashes, those with at least \$1,000.00 of damage. Based on the information provided in the crash reports, trends and contributing factors of the resultant injuries and fatalities along with the demographics for the drivers and vehicles involved are presented. Rates are calculated using vehicle miles, licensed drivers or population when possible.

Data will be presented on Montana’s roadway crashes for the year of 2019 as well as for the ten-year period of 2010-2019. The severity of the crash, in particular, the fatalities and serious injuries associated with crashes, is the benchmark by which Montana’s crash data is evaluated.

Various aspects of the crash report are then used to investigate the driver and roadway characteristics associated with Montana roadway crashes. Driver’s age and level of chemical impairment, the time of day, the time of the year, and the type and location of the roadway are used separately and in combination to provide a perspective on roadway crashes in Montana.

Summary tables, graphs, and bulleted highlights will be presented for each of several different crash characteristics investigated in the report.

It is important to note that this information is based on data from crash reports submitted to the Montana Highway Patrol (MHP) from their patrol officers and from local city/county/reservation law enforcement agencies. This crash database is then shared with the Montana Department of Transportation (MDT).

Data Sources

The MDT crash database is the source of crash data in this document and in the Montana 2019 Problem Identification data tables available online. The MDT crash database is a dynamic system. Crash data is periodically updated with new, revised, or additional information. Data values may vary from previous publications. In addition, other information related to highway traffic safety such as observed seat belt use comes from other sources and is included when available.

Fatal Crashes – Additional information is used for fatal crashes from the Fatality Analysis Reporting System (FARS). This data base is maintained by the National Highway Traffic Safety Administration. Due to differences in definitions of “traffic fatalities” between the FARS data base and MDT’s data base, final FARS numbers and MDT’s may vary slightly.

4. Montana Summary of 2019 Crashes

The Montana Department of Transportation, State Highway Traffic Safety Section presents the most recent available data surrounding traffic safety. A summary of findings for 2019 are listed below:

FATALITIES AND INJURIES

- Montana experienced over 22,000 traffic crashes in 2019; 165 of these crashes were fatal accounting for 184 people who died. Additionally, 709 people were seriously injured in crashes in 2019.
- Montana’s roadway fatalities were up by 2 in 2019 compared to 2018 (184/182). The ten year (2010-2019) average number of Montana roadway fatalities is 199.

- Montana's 2019 fatality rate (number of fatalities per 100 million vehicle miles traveled) is 1.43. Montana's fatality rate continues to be higher than the national rate of approximately 1.13 deaths per 100 million miles traveled. ¹

OCCUPANT PROTECTION

- Montana state law allows for secondary enforcement only.
- The 2019 observed use of restraints was 88% on all Montana roads.
- 74 deaths in 2019 are attributed to not wearing a seat belt, which is 56% of fatalities in vehicles with restraints (not counting pedestrians, bicyclists and motorcyclists)..
- 43 of the unrestrained people who died were ejected from the vehicle (38%)
- 72 unrestrained vehicle occupant deaths occurred in rural roadway crashes.
- Nearly eight of ten unrestrained vehicle occupant deaths occurred in impaired driver involved crashes.

ALCOHOL AND/OR DRUG RELATED DRIVING

- 106 deaths and 255 serious injuries in 2019 are attributed to impaired driver involvement, which is 58% of all roadway deaths. The number of driver alcohol BAC greater than 0.079 fatalities and serious injuries increased to 145. This is below the five-year average of 182.
- Impaired drivers in 2019 were involved in 55% of fatal crashes and 34% of serious injury crashes.
- 91% of 2019 impaired driver involved crashes were rural area crashes.
- 40% of 2019 impaired driver involved crashes occurred between Friday noon and Sunday noon.
- 65% of all impaired driver involved roadway crashes occurred in single vehicle crashes.

ROADWAY DEPARTURE CRASHES

- Roadway departure crashes accounted for 51% of all fatal crashes and 53% of all serious injury crashes.
- Over 92% of all roadway departure fatal and serious injury crashes occur in rural environments.
- Dry road conditions were reported in 85% of the road departure fatalities.
- 51% of roadway departure fatalities occurred in the months of June through September.
- 41% of roadway departure fatalities occurred between Friday noon and Sunday noon.
- 36% of roadway departure fatalities occurred at night.
- Single vehicle crashes accounted for 70% of fatalities in roadway departure crashes.

¹ Insurance Institute for Highway Safety Highway Loss Data Institute 2019.

INTERSECTION RELATED CRASHES

- 11% of all fatalities in 2019 occurred in an intersection crash.
- 47% of intersection fatalities and serious injuries occur on rural intersections versus 53% that occur in the urban areas.

OTHER AREAS OF INTEREST

- In 2019, 19% (34) of all roadway fatalities were Native Americans. Native Americans make up approximately 7% of Montana's population, and are overrepresented by comprising 17% of all traffic fatalities in the last 10 years.
- In 2019 there were 22 motorcyclist fatalities. Ten fatalities involved a motorcyclist not wearing a helmet. In 2019 motorcyclists comprised 12% of the total fatalities on Montana roadways. 1 of 5 motorcyclist fatalities were motorcyclists age 55-64.
- Non-Motorized-Pedestrian: In 2019, there were 17 pedestrian fatalities and 28 serious injuries.
- Non-Motorized-Bicyclist: In 2019, there were 3 bicyclist fatalities and 8 serious injuries.
- There were 82 fatalities and serious injuries involving large vehicles in 2019. Large vehicles are those trucks or buses requiring a commercial vehicle license.
- Young drivers 20 years and younger involved fatalities increased to 35 from 29 in 2018. This age group, 6.7% of the population, accounted for 16% of fatalities and serious injuries in 2019.
- Older drivers age 65 and older (23% of registered Montana drivers) accounted for 201, or 23% of fatalities and serious injuries in 2019.
- There were 3176 reported crashes involving animals in 2019. There were 7 fatalities and 24 serious injuries in animal involved crashes in 2019.
- Crashes that occur in summer (June, July, August, and September) accounted for 53% of all fatal crashes and 48% serious injury crashes in 2019.
- 79% of all fatal and serious injury crashes, in 2019, occurred on rural roadways.

5. Montana Demographics

Montana's geographic attributes and population demographics are useful in discussing the impact of fatal and serious injury crashes on Montana's population.

5.1 Montana Border to Border

- Montana's geographic area is larger than the combined area of 10 North Atlantic states, yet it has only 2% of the combined population of those states.
- Montana's public road miles consist of 73,567 miles, while only 12,927 miles are on the state highway system. Billings has the most public road mileage of any incorporated city in Montana with 600 miles; Rexford has the least with 1.5 miles.

- The busiest stretch on Montana’s roadways is Reserve Street in Missoula between River Road and Mullen Road where annual average daily traffic was 42,130 vehicles per day in 2019.
- Of Montana’s 56 counties, Yellowstone County had the most on system daily vehicle miles traveled totaling 2,682,516; Petroleum County had the least with 32,351.
- In 2019, 72.5% of Montana’s highway vehicle miles traveled occurred outside of the state’s 19 urban areas.
- According to the Montana Office of Tourism 12.6 million non-residents visited Montana in 2019 and contributed \$3.6 Billion in spending to Montana’s economy.

5.2 Montana People

- The July 1, 2019 United State Census Annual Estimates of Population; Montana’s population is estimated to be 1,068,778, which is an increase of 8% from the 2010 Census count.
- Montana land area in square miles is 145,545.80, and the population per square mile is 6.8.
- The median household income (2019) is \$52,559, and there are an estimated 423,240 households with 2.39 persons per household.
- The median age for Montanans is 39.8 and 39% of the population is over the age of 18.
- Montana is about evenly split between male (50.3%) and female (49.7%) residents.
- Montana’s licensed drivers are also evenly split: male (51%), female (49%)
- The mean travel time to work (minutes) for Montana workers age 16 years + is 18 minutes.

6. Traffic Crashes and Exposure Statistics

Due to the size and the population density of Montana, very few of Montana’s vehicle miles travelled (VMT) occur in an urban environment. In 2019, 76% of all Montana’s 2019 fatal and serious injury crashes occurred on rural roadways. In 2018, 92% of vehicle miles travelled occurred on rural roadways. Compared to states with greater urban centered populations, a high percentage of the miles travelled in Montana are in rural areas at higher speeds (>55 MPH), thus increasing the likelihood of fatal and serious injury crashes.

On a national level, according to the Insurance Institute for Highway Safety (IIHS)², 2019 had a 2% decrease in deaths compared to 2018. In Montana in 2019, rural road crashes accounted for 93% of all roadway fatalities. Montana continues to rank high in fatality rate compared to other states and it can be concluded that one of the factors contributing to this is the high percentage of rural vehicle miles travelled in Montana in comparison to other states.

IIHS reports that in 2019 There were 33,244 fatal motor vehicle crashes in the United States in which 36,096 deaths occurred. This resulted in 11.0 deaths per 100,000 people and 1.11 deaths per 100 million miles traveled. The fatality rate per 100,000 people ranged from 3.3 in the District of Columbia to 25.4 in Wyoming. The death rate per 100 million miles traveled ranged from 0.51 in Massachusetts to 1.73 in South Carolina. By comparison, Montana experienced 166 fatal crashes with 184 total fatalities. Deaths per 100,000 population fatality rate is 17.2 and the deaths per 100 million miles traveled fatality rate is 1.43.

From 1975 to 2019, the rate of deaths per 100,000 people declined by 80 percent for people 12 and younger (from 7.9 to 1.6), 73 percent for teenagers (from 29.4 to 8.0), 49 percent for people ages 20-34 (from 29.6 to 15.2), 30 percent for people ages 35-69 (from 17.5 to 12.2), and 45 percent for people 70 and older (from 25.9 to 14.2). The month of February had the fewest crashes, and August had the most, and nearly half of crash deaths occur Friday, Saturday or Sunday. In the five years between 2014 and 2018, the 4th of July had the highest number of traffic fatalities with an average of 129.

Exposure Statistics

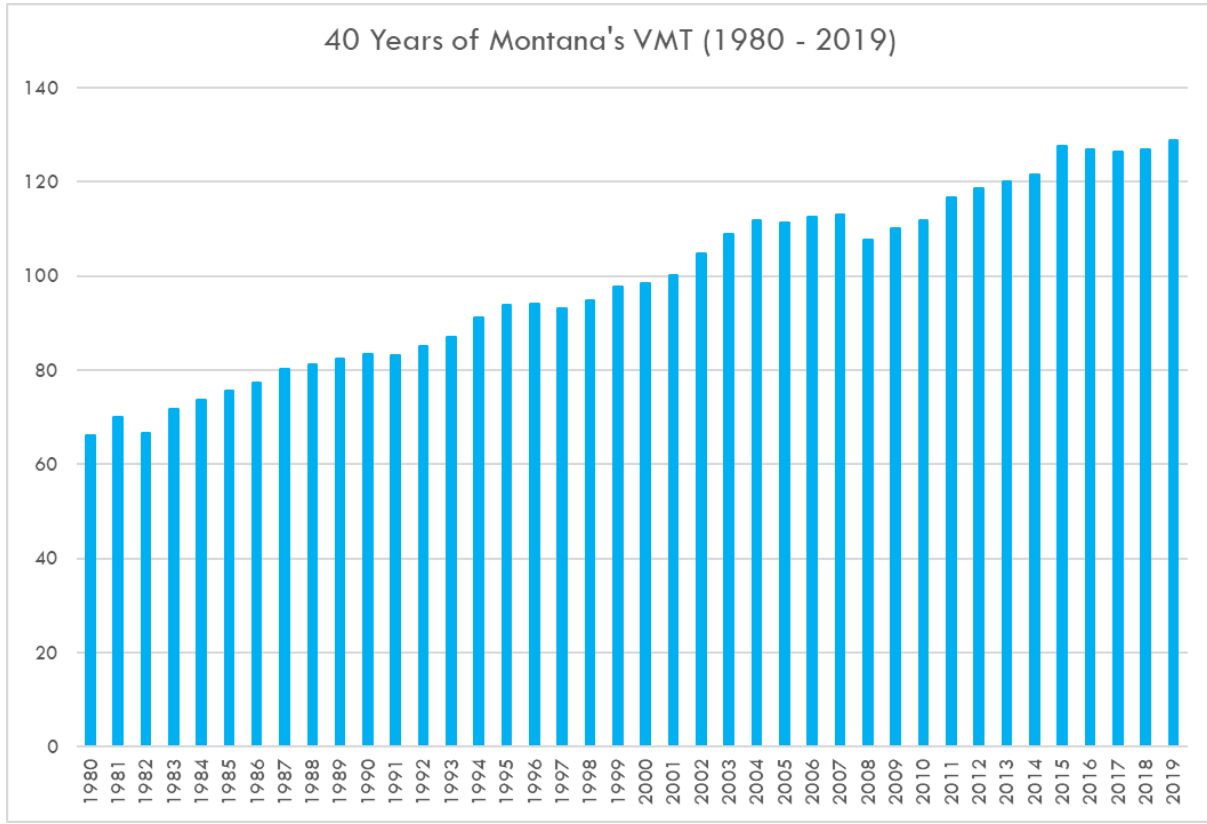
Driving exposure is a frequently used term in the highway safety research community. An agreed upon definition is “driving exposure is the frequency of traffic events which create a risk of accidents.” One of the most commonly used measures of exposure is driving distances expressed in vehicle miles of travel. Other common measures include driving time, traffic volume, number of registered vehicles and number of licensed drivers. Among all of the exposure measures used to evaluate risk, driving distance (vehicle miles) is the one that relates most directly to the processes of highway travel, and hence, to the risk of accident (IIHS). Vehicle Miles Traveled (VMT) is an exposure factor that appears to be a continuing influence on the amount of traffic crashes that occur in Montana.

6.1 Vehicle Miles Traveled

Vehicle Miles Traveled (VMT) is the estimated number of total miles driven by all vehicles on Montana public roads. The total miles per year are expressed as per 100 million miles traveled. The annual VMT's are shown below. Montana has seen a doubling of the VMT in the last 40 years. In 1977 the VMT for Montana was 6.5 million and in 2019 the VMT is 12.9 million with 184 fatalities.

² Insurance Institute for Highway Safety – Highway Loss Data Institute:
<http://www.iihs.org/iihs/topics/t/general-statistics/fatalityfacts/overview-of-fatality-facts>.

Montana Vehicle Miles Traveled



A state's population has an obvious effect on the number of motor vehicle deaths. Fatality rates per capita and per vehicle miles traveled provide a way of examining motor vehicle deaths relative to the population and amount of driving. Many factors influence these rates including types of vehicles driven, travel speeds, rates of licensure, state traffic laws, emergency care capabilities, weather and topography. When compared to the rest of the nation and other states with similar VMT and population bases, Montana continues to be one of the states with a higher death rate per 100 million VMT's traveled per year, coming in at 1.43 in 2019 compared to the national average rate of 1.13.³

6.2 Fatality Rates

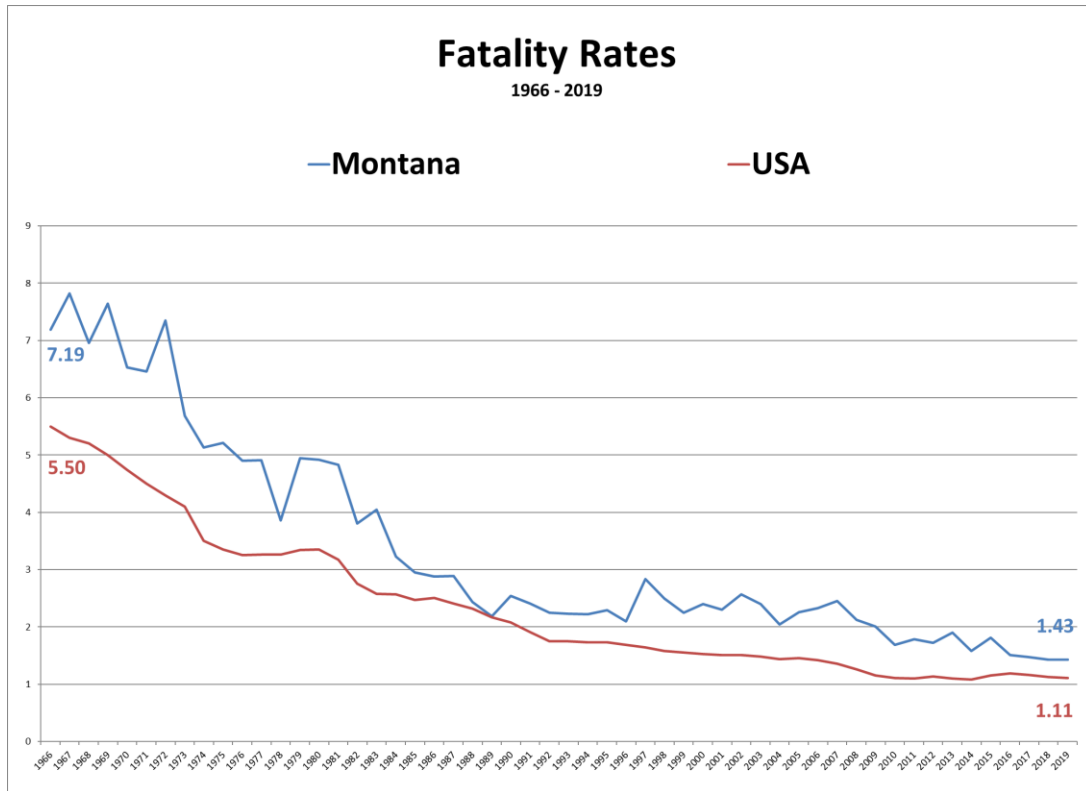
On a national level, NHTSA reports that there were 36,096 fatalities in 2019, which is a decrease of 739 fatalities in 2019 compared to 2018. The fatality rate for 2019 is estimated to have decreased to 1.11 fatalities per 100 million VMT, down from 1.14 fatalities per 100 million VMT in 2018.

The fatality rate for Montana is 1.43 per hundred million vehicle miles travelled during 2019. To compare this to historical data the rate was 4.92 in 1980 and had decreased by almost half to 2.54 by 1990. Between 1990 and 2009 the rate remained relatively

³ Source: Insurance Institute of Highway Safety – 2019 Data
<https://www.iihs.org/topics/fatality-statistics/detail/state-by-state>

consistent between 2.0 and 3.0. The rates have since decreased and for the last three years (2017-2019) the rate has varied between 1.47 to 1.43 (IIHS). Montana shows a downward trend for the last 10 years in fatality rate. The chart below shows the historical fatality trend of Montana and the nation dating from 1966 to 2019.

Montana and USA Fatality Rates

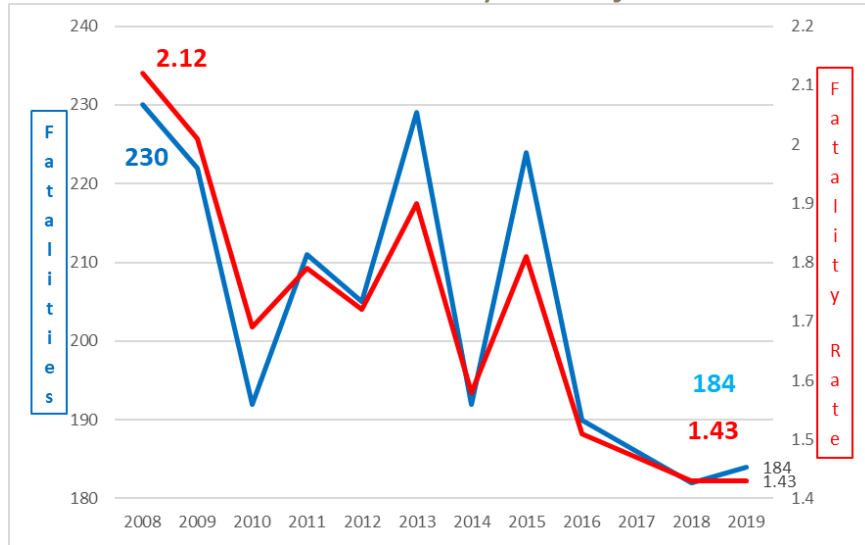


Historically, western rural states have tended to have fatality rates above the national average and when compared to states with more urban based population. One of the reasons is the greater percentage of rural miles travelled which translates to higher average speeds. In 2019, nationally 45% of motor vehicle deaths occurred in rural areas, while in Montana, rural crashes accounted for 87% of fatalities. Two states that share Montana’s rural nature, Wyoming and North Dakota, 2019 fatality rates are 1.44 and 1.02 respectively. (NHTSA, IIHS)

6.3 Fatalities and Injury Crashes

Fatalities in Montana reached an all-time high of 395 during 1972. The lowest number of fatalities since 1950 was 181, which occurred in 1989 and 2018, the second year of Montana’s secondary seat belt law. Montana is currently seeing a downward 10-year (2010-2019) roadway fatality trend of 3 people per year.

Montana Fatalities/Fatality Rate



The number of injuries in Montana crashes has declined on average in the last 10 years. Ten years of reportable crash and injury data appear in the table below. The average number of fatalities is 6% lower in 2015-2019 than in the previous 5 years. Serious injuries in roadway crashes have fallen by 18% in the last five years compared to the previous 5 years.

This downward trend in serious injuries would appear to be a significant change in crash data within Montana. Occupant restraints, airbags and child restraints have accounted for at least part of this decrease, as well other improvements to vehicle safety. Traffic safety engineering to address roadway facility improvements has also contributed to this downward trend. 2019’s total of 709 serious injuries is also well below the 2010-2019 average of 920.

Roadway Crash Summary 2010-2019

Year	All Crashes	Fatal Crashes	Serious Injury Crashes	No Injury Crashes	Fatalities	Serious Injuries
2010	20056	164	781	14607	192	995
2011	20380	187	749	14120	211	967
2012	19754	192	850	13954	205	1129
2013	20379	203	852	14648	229	1102
2014	21681	176	790	15796	192	965
2015	22377	204	786	16283	224	1000
2016	22077	172	678	16225	190	835
2017	23834	169	599	18173	186	731
2018	22949	168	623	17386	182	770
2019	22319	165	598	16450	184	709

Severe injuries are displayed in the table below for several important crash criteria characteristics. Severe Injuries are the sum of the fatalities and serious injuries.

MT Severe Injuries - 2017-2019

Severe Injuries (Fatalities and Serious Injuries)			
	2017	2018	2019
All Crash	917	952	893
Male Driver Involved	687	716	706
Roadway Departure	516	500	471
Female Driver Involved	389	398	333
Impaired Driver Involved	384	384	361
Unrestrained Vehicle Occupant	305	312	270
Intersection	162	234	179
Older Driver Involved (65 and Older)	175	166	201
Young Driver Involved (Age 14-20)	147	166	146
Motorcyclists	122	139	116
Nonmotorists	65	76	56

7. Crash Demographics

7.1 Gender of Drivers

Driver involvement in crashes by known gender is shown in the table below. As can be seen, the split between male drivers and female drivers involved in crashes has remained very consistent for the last 10 years in Montana.

Men have a disproportionate involvement in fatal crashes, and this is true nationwide. Past studies have shown that men have higher involvement in overturns, other non-collision crashes, crashes into fixed objects and the striking of animals. The involvement by men in these types of crashes may be linked to male over-representation in alcohol and or drug related crashes. Lack of restraint use also plays a role in fatalities and serious injuries disproportionately for males.

Over a ten-year period, men account for 58% of Montana’s registered drivers, but their involvement is overrepresented in fatal crashes at 71%. The chart below follows with information on the gender involvement in fatal crashes.

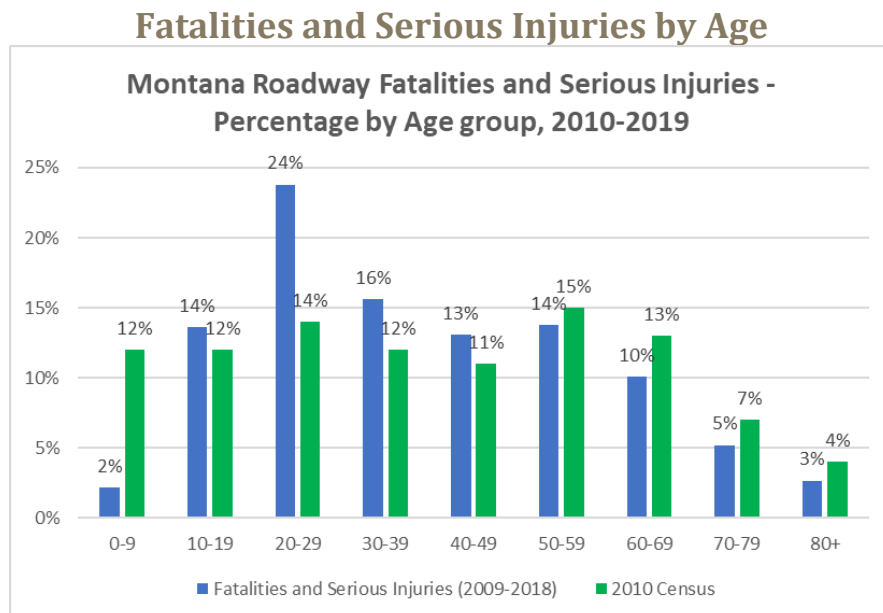
Montana Driver Gender – Fatal Crashes 2010-2019

Montana Drivers in Fatal Crashes by Gender (2010-2019)					
YEAR	Driver Gender			% of Total	
	Male	Female	Total	Male	Female
2010	125	62	187	67%	33%
2011	161	72	233	69%	31%
2012	148	62	210	70%	30%
2013	164	63	227	72%	28%
2014	132	57	189	70%	30%
2015	165	64	229	72%	28%
2016	166	49	215	77%	23%
2017	156	74	230	68%	32%
2018	145	70	215	67%	33%
2019	165	54	219	75%	25%

7.2 Montana - Age in Crashes

The percentage of drivers in Montana age 55-74 has increased from 25% in the last 10 years to 32%. The percentage of drivers in Montana age 35-54 has dropped from 38% in the last ten years to 32%. Drivers 29 years old and younger (22% of registered drivers) are involved in 35% of Montana’s fatal and serious injury roadway crashes.

The chart below reflects the fatalities and serious injuries by age groups and the percentage of the total population that age group represents. It should be noted that the younger age groups <30 years of age, specifically those from 10-29 make up 26% of the population and experience the highest percentage of fatalities and serious injuries at over 40%. Ages 30-49 are over-represented in fatal and serious injuries compared to their percentage of the population, and we can see that the numbers start to decline at age 50.



8. Montana Traffic Safety Emphasis Areas

8.1 Unrestrained Occupant

Montana secondary seat belt law was passed in 1987 with a penalty going into effect beginning January 1, 1988. The secondary seat belt law is for all seating positions in a vehicle. A secondary seat belt law means that law enforcement may not stop the vehicle for seat belt use alone, they must have another reason to stop the vehicle and then may cite for non-seat belt use.

Montana has tracked the seat belt use across Montana through annual observational seat belt counts through methodology approved by NHTSA. The count is of front seat occupants only. As can be seen in the table below, for the last three years (2018-2020) on average, 88.5% of the travelling public is observed to be wearing restraints. By comparison, on a national level the average is 89.7%.

MT Annual Observational Seat Belt Count

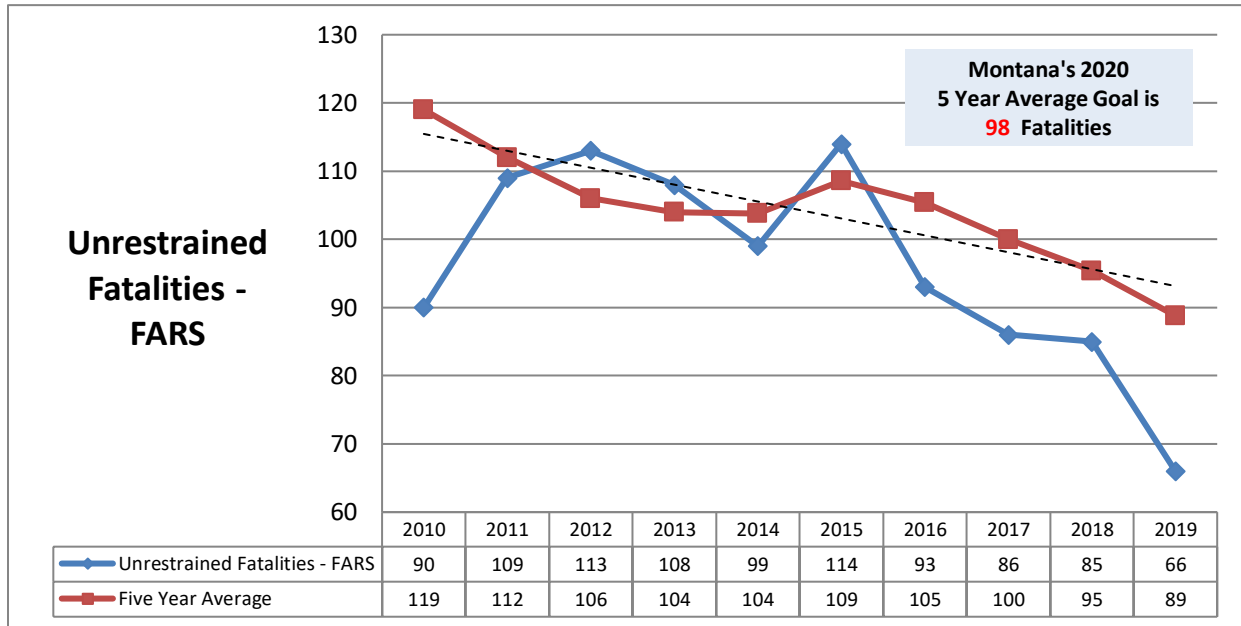
Year	Interstate	Primary	Secondary	Other	Urban	All Roads (NHTSA weighted)
2013	82.0%	67.8%	78.0%	61.3%	67.6%	74.0%
2014	84.0%	62.0%	71.0%	74.0%	68.0%	74.0%
2015	86.5%	65.9%	74.3%	71.1%	70.6%	76.8%
2016	80.0%	67.6%	72.0%	76.8%	82.4%	76.2%
2017	81.6%	73.6%	75.0%	78.9%	75.0%	78.2%
2018*	90.6%	84.9%	85.2%	89.8%	87.0%	86.6%
2019	92.2%	87.7%	87.2%	88.3%	91.2%	88.9%
2020	93.1%	87.5%	81.7%	91.5%	88.4%	89.9%
Chg 1 Yr	0.8%	-0.2%	-5.5%	3.2%	-2.8%	1.1%
Source: Montana Department of Transportation Observational Studies						
* First year of Montana's NHTSA mandated new seatbelt survey sites						

Restraint usage is much lower for people in a fatal crash than for the overall population, historically; only about 30-40% of occupants killed in crashes were properly wearing an occupant restraint. Young people, ages 14-29, accounted for 40% of all unrestrained vehicle occupant fatalities between 2010 and 2019.

Vehicle occupants not using their seat belts or improperly using seat belts are a contributing factor to Montana's crash fatalities. 56% of vehicle occupant fatalities on Montana's roadways in 2018 were not wearing a seat belt.

Montana’s ten-year trend for unrestrained fatalities is going down by 3 people per year. As shown in the chart below, unrestrained fatalities in 2019 decreased from 85 in 2018 to 66 in 2019.

Unrestrained Fatalities - 2010-2019



Over the last three years (2017-2019) other crash factors contributing to the unrestrained occupant fatalities and serious injuries:

- Single vehicle crash (75%)
- Impaired driver involved (64%).
- Rural crash (91%)
- Noon Friday through noon Sunday crashes (36%) and
- crashes occurring at nighttime (44%)

The combination of these factors is contributing to Montana’s fatalities; the vehicle occupants choosing to use proper occupant protection could perhaps mitigate some of the other behavior choices in fatal crashes.

8.2 Impaired Driver Involved

Drivers involved in crashes while impaired by alcohol and/or drugs continue to be a challenge for Montana. Impaired drivers (alcohol and/or drugs) were involved in 55% of all fatal crashes and in 34% of serious injury crashes. There were 362 fatalities and serious injuries involving an impaired driver in 2019. Over the last three years (2017-2019) impaired drivers were involved in 337 fatalities.

Over the last three years (2017-2019) other crash factors contributing to the impaired driver involved crash fatalities and serious injuries:

- roadway departure fatal crashes (71%).
- single vehicle crash (69%)
- unrestrained occupants (51%)
- rural crash (88%)
- Noon Friday through noon Sunday (40%)
- nighttime (47%)
- The summer months, June through September (47%)

Impaired Driver Involved Severe Injuries (Fatalities plus Serious Injuries)			
Crash Description	2017	2018	2019
Impaired Driver Involved	384	376	362
Young (Age 14-20) Impaired Driver Involved	56	54	49
Male Impaired Driver Involved	272	278	259
Roadway Departure	282	278	240
Single Vehicle	257	268	245
Friday Noon to Sunday Noon	148	153	149
June, July, August, and September	163	189	174
Female Impaired Driver Involved	118	107	106
Older (65 and Older) Impaired Driver Involved	27	17	24
Impaired Motorcyclist Involved	31	35	35
Nonmotorist Involved	12	12	15

8.3 Roadway Departure Crash

Roadway departure crashes tend to be severe due to high speeds and rural locations. They account for about 20% of all people involved in crashes in 2019, but 70% of fatalities and half of serious injuries. The vast majority (92%) of roadway departure fatalities and serious injuries occur in rural areas.

Over the last three years (2017-2019) other crash factors contributing to roadway departure fatal crashes involved:

- impaired driving involved (71%)
- unrestrained occupant (63%)
- male drivers are overrepresented (76%).
- 37% of roadway departure fatal crashes occur between noon Friday and noon Sunday,
- 37% are at nighttime.
- the months of June through September account for 47% of roadway departure fatal crashes.
- One factor to note is that 40% of the incidents of road departure fatal crashes are occurring of roadways with shoulder widths less than 4 feet.

8.4 Intersection Related Crash

Intersection crashes are defined as a crash occurring in or related to an intersection. In Montana, in 2019, 27% of all intersection crashes occurred in rural areas, but 65% of fatal intersection crashes. Intersection crashes are one of the most common types of crashes because they occur in locations where two or more roads cross each other and drivers passing through the intersection may make maneuvers that could cause a crash occurrence with other vehicles. According to NHTSA, some of the most common crash occurrences may be attributed to: illegal maneuver; inattention while crossing intersections controlled by traffic signals or stop signs; turning with obstructed view; and misjudgment of gap or other's speed while turning left at intersections controlled by traffic signals or stop signs.⁴

Over the last three years (2017-2019) crash factors contributing to intersection crash fatalities and serious injuries:

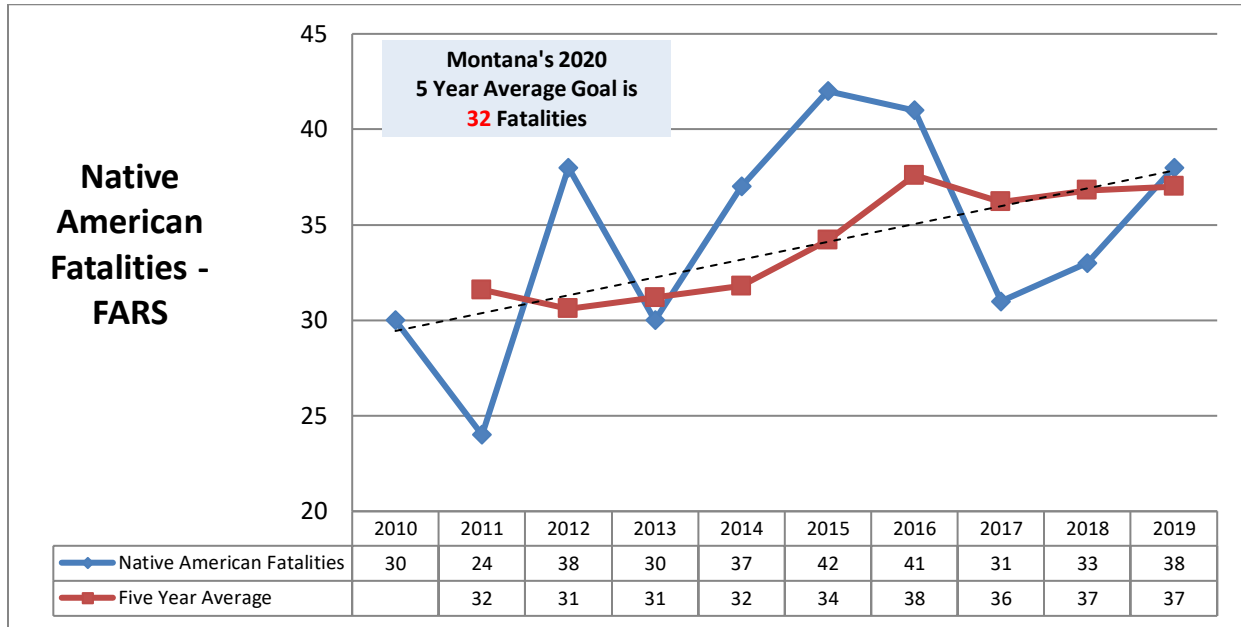
- 26% involved an impaired driver
- 20% involved unrestrained occupants
- 29% involved older drivers 65+ years of age, who are overrepresented as they are 19% of registered drivers
- 23% involved young drivers 20 years of age and younger, who are overrepresented as they are 7% of all drivers.
- 78% involved a male driver

8.4 At-Risk-Groups

Native Americans account for approximately 6.6% of Montana's population, but are overrepresented at 17% of roadway fatalities between 2010-2019. During 2019, there were 34 (FARS) Native American fatalities representing 19% of the state's total fatalities.

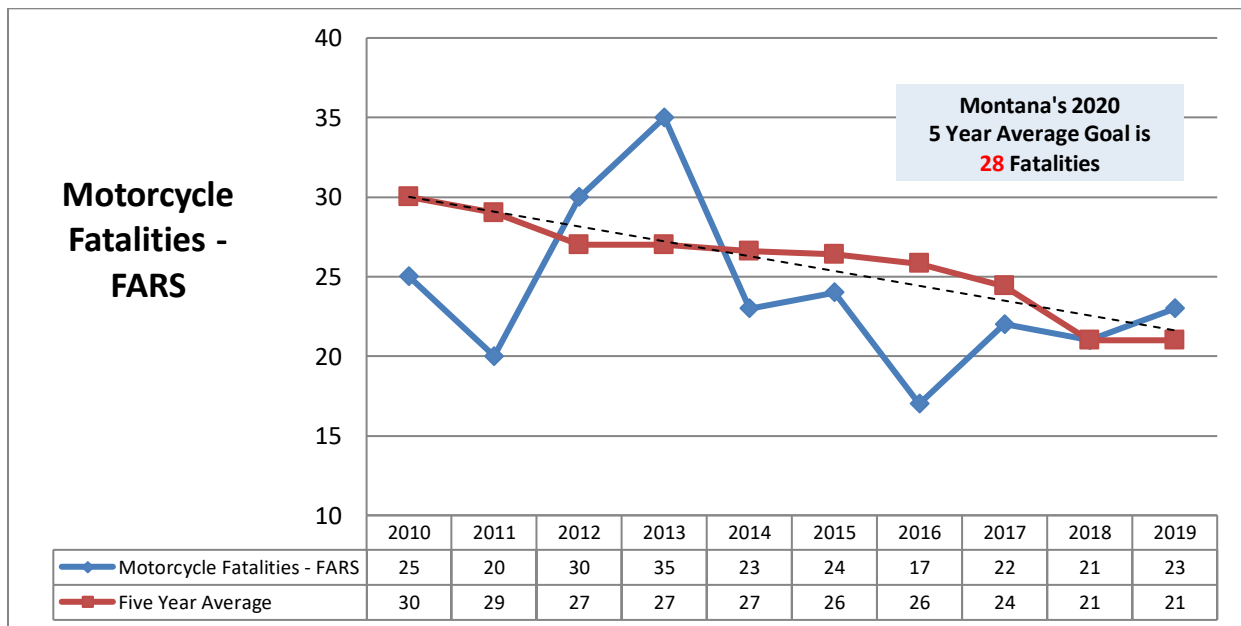
⁴ NHTSA Report DOT HS 811 366

Native American Fatalities - 2010-2019



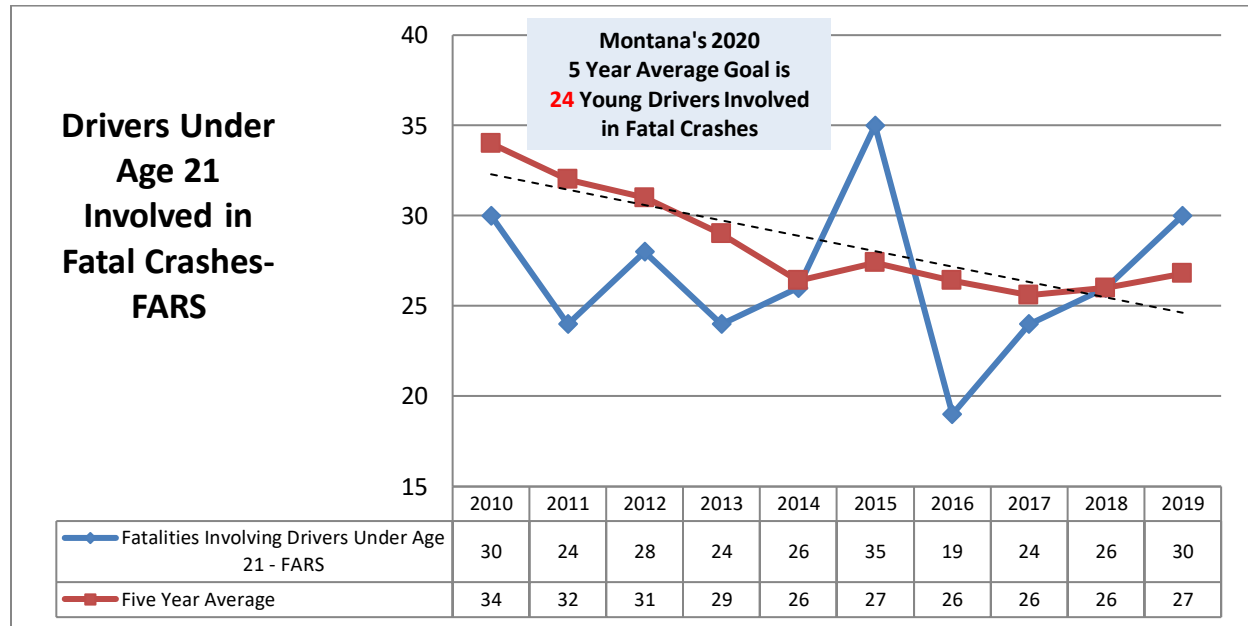
Motorcycle – Motorcycle use tends to be seasonal, and motorcycles represent a minority of roadway users in Montana; however, 12% of all fatal crashes in Montana involved a motorcycle in 2019. This is a high percentage of the over-all fatalities. During 2019, Montana had 23 motorcycle fatalities, or 12% of all roadway fatalities.

Motorcycle Fatalities 2010-2019



Young Driver - Montana has experienced a decrease in young drivers 20 years and younger involved in fatalities and serious injuries over the last ten years; however, in 2019 young drivers were involved in 16% of all fatalities and 18% of serious injuries on Montana's roadways. They account for approximately 6.7% of the population. During 2019, there were 30 fatalities involving drivers age 20 or less. This is an increase from 24 in 2017. The chart below depicts the combined fatalities and serious injuries of this age group.

Young Driver Fatalities & Serious Injuries 2010-2019



9. Roadway Crashes

For a comprehensive look at contributing factors that result in crashes on Montana roadways it is also important to examine all reportable crashes in Montana. The total number of crashes in Montana has stayed fairly consistent over the last five years. 22,319 reported crashes during 2019 bringing the five-year annual average to 22,685. The summary of 2019 crash details include 598 serious injury crashes and 165 fatal crashes or 3% of all crashes reported.

Seat belts were not used or improperly used in 1323 crashes in 2019, or 6% of all crashes. However, in crashes involving a fatality in 2019, not using or improperly using a seat belt played a role in approximately 45% of those crashes. Impaired drivers (alcohol and/or drugs) were involved in 1929 crashes in 2019, or 9% of all crashes. However, in crashes involving a fatality in 2019, 55% involved an impaired driver.

Rural crashes continue to be an area of concern with regard to traffic safety. During 2019 there were 12,874 crashes that occurred in rural areas. This represents over 58% of all

statewide crashes. This percentage increases significantly when only serious injury and fatal crashes are considered. Fatal crashes are more likely to occur in rural areas, with 159 of the 184 fatalities in 2019 happening in rural areas.

Other areas that were over-represented in all crash data in 2019 were:

- Young adult drivers, ages 18-40, were involved in 12,845 crashes or 58%, yet represent only 40% of the licensed drivers in Montana
- Roads with higher speed limits (>35) represented 50% of all crashes
- Male drivers were involved in 15,311 crashes or 69% of all crashes

10. Fatal and Serious Injury Crashes

During 2019, there were 165 fatal and 598 serious injury crashes. These crashes resulted in 184 fatalities and 709 serious injuries. 908 is the 10 year (2010-2019) average number of fatal and serious injury crashes.

Male drivers were involved in 79% of all the fatal and serious injury crashes in Montana during 2019. 79% of fatal crashes and 65% of serious injury crashes occurred on roads with speed limits greater than 35 mph. Roadway departures accounted for 51% of Montana’s fatal and 53% of serious injury crashes.

The following chart presents the types of crashes resulting in a fatality or serious injury. This includes some data with regard to who is involved, and when and where these crashes are occurring.

Montana Crash Data - Multiple Factors

Crash Description	2019 Fatal Crashes	Average number of Fatal Crashes (2010-2019)	2019 Fatal and Serious Injury Crashes	2019 All Crashes
All Crash Type	165	179	763	22319
Rural	141	159	605	12874
Speed as a Factor	38	47	166	4282
Dry Roadway	135	145	580	13445
Single Vehicle	111	124	474	10642
Male Driver	138	141	599	15311
Roadway Departure	84	120	401	6333
Impaired Driver Involved	90	106	294	1929
Summer (Jun, Jul, Aug, Sep)	87	85	375	7120
Low Road Volume (AADT < 750)	60	64	271	7375
Nighttime	66	75	235	6585
Female Driver	48	59	268	10631
Careless/Inattentive/Distracted Driver Involved	57	51	278	7075
Friday Noon to Sunday Noon	61	67	264	5928
Winter (Nov, Dec, Jan, Feb)	36	42	190	8756
Older Driver Involved (65 and Older)	46	34	169	3945
Young Driver Involved (Age 14-20)	28	25	116	4188
Urban	25	21	158	9459
Motorcycle	22	23	105	310
Intersection	20	20	153	6741
Nonmotorist	20	15	54	229

11. Conclusion

The Problem Identification for 2019 crash data explores many traffic safety issues in Montana. It is a compilation of many varied data elements available for review. There are multiple variables that may contribute to crashes including but not limited to driver behavior, vehicles, road characteristics, weather conditions, road conditions, and laws governing driver behavior.

Several behavioral based factors which contribute to fatal and serious injury crashes are highlighted in this report, i.e. choosing to not use or improperly using occupant restraints and the use of alcohol and/or drugs while operating a motor vehicle. The ten-year trend for the level of contribution from these behaviors to fatalities and serious injuries has held consistent and continues to be a concern for those addressing highway traffic safety issues.

This document should be used as a guide when looking at the traffic safety problem or when attempting to find solutions for Montana traffic safety. Often the data is of more value when looking at long-term trends rather than the variations between a year-to-year increase or decrease which may be attributed to a statistical variation and unidentifiable causes.

The SHTSS works collaboratively with other MDT staff and stakeholders to coordinate statewide efforts to reduce fatalities and serious injuries on Montana's roads through the Comprehensive Highway Traffic Safety Plan (CHSP). The CHSP is a data-drive, multi-year plan that takes an in-depth look at Montana's crash data – with 10-year crash data trend analysis to determine emphasis areas with the greatest opportunity to reduce crashes. For more information see the MDT website:

<http://www.mdt.mt.gov/visionzero/plans/chsp.shtml>

Montana crash data at the state, county and city level is available. The MDT Crash Database is a dynamic system. Crash data is periodically updated with new, revised, or additional information. Data values may vary from previous publications. Montana crash data that can be viewed and queried is available on the MDT website:

<http://www.mdt.mt.gov/publications/datastats/crashdata.shtml>

Questions or comments on this study should be directed to the State Highway Traffic Safety Section at the Montana Department of Transportation. For additional information, contact Mark Keeffe at (406) 444-3430 or mkeeffe@mt.gov.

12. Glossary

ALCOHOL-IMPAIRED

Crashes or fatalities that involve at least one driver or motorcycle operator with a BAC of 0.08 grams per deciliter (g/dL) or higher.

ALCOHOL-RELATED

A crash, fatality or injury is alcohol-related if at least one driver or non-occupant (such as a pedestrian or pedalcyclist) involved in the crash is determined to have had a BAC of 0.01 g/dL or higher OR if police indicate on the police accident report that there is evidence of alcohol present. This does not necessarily mean that a driver or non-occupant was tested for alcohol.

The term alcohol-related does not indicate that a crash, fatality or injury was caused by the presence of alcohol.

BLOOD ALCOHOL CONCENTRATION (BAC)

The BAC is measured as a %age by weight of alcohol in the blood (g/dL). A positive BAC level (0.01 g/dL and higher) indicates that alcohol was consumed by the person tested; a BAC level of 0.08 g/dL or more indicates that the person was alcohol-impaired.

CONTRIBUTING CIRCUMSTANCES

The law enforcement investigator's professional judgment as to the apparent reason(s) for the crash. Each vehicle in a crash can have up to five contributing circumstances listed (including none listed), falling under one of the six major headings: driver, environment, other person, passenger, road and vehicle.

CRASH

An event that produces injury and/or property damage, involves a motor vehicle in transport and occurs on a traffic way, or while the vehicle is still in motion after running off the traffic way.

DRIVER

An occupant of a vehicle who is in physical control of a motor vehicle in transport, or for an out-of-control vehicle, an occupant who was in control until control was lost.

FATAL CRASH

A law enforcement-reported crash involving a motor vehicle in transport on a traffic-way in which at least one person dies within 30 days of the crash.

FATAL INJURY

An injury that results in the person dying within 30 days of the crash.

FATALITY ANALYSIS REPORTING SYSTEM (FARS)

A national database that contains data on fatal crashes.

IMPAIRED

Person identified as influenced by alcohol, drugs, or both alcohol and drugs.

INJURY CRASH

A law enforcement-reported crash involving a motor vehicle in transport on a traffic way in which no one died but at least one person was reported to have an injury.

INTERSECTION

Intersection or Intersection related

MOTORCYCLE

A two- or three-wheeled motor vehicle designed to transport one or two people, including motor-scooters, minibikes and mopeds. This excludes ATVs and snowmobiles.

NHTSA

National Highway Traffic Safety Administration

NIGHTTIME

Dark or Dark lighted

OCCUPANT

Any person who is in or upon a motor vehicle in transport. This includes the driver, passengers, and persons riding on the exterior of a motor vehicle.

OLDER DRIVER

A driver over the age of 64 years.

PROPERTY DAMAGE ONLY

A law enforcement-reported crash involving a motor vehicle in transport on a traffic way in which no one in the crash suffered any injuries.

ROADWAY DEPARTURE CRASH

A crash in which a vehicle crosses an edge line, a center line, or leaves the traveled way. Types of crashes fitting the definition include fatal crashes in which the first event for a least one of the involved vehicles ran-off-road (right or left), crossed the centerline or media, went airborne or hit a fixed object. (FHWA)

RURAL

Any crash location not specifically marked as urban by the reporting law enforcement agency.

SERIOUS INJURY (incapacitating)

Any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities the person, was capable of performing.

SEVERE INJURY

Severe Injuries are the sum of the fatalities and serious injuries

SPRING/FALL

March, April/September, October

SUMMER

May, June, July, August

TRUCK

Vehicle with a truck body-type and over 10,000 pounds gross vehicle weight rating, including single unit trucks and truck tractors. Not limited to commercial vehicles, but all trucks.

URBAN

Any location either identified as a city or identified as a urban trafficway by the Department of Transportation.

VEHICLE MILES TRAVELLED (VMT)

The estimated number of total miles driven by all vehicles on public roads.

WINTER

January, February, November, December

YOUNG DRIVER

A driver 20 years of age and younger and not of legal drinking age.