Montana Highway Traffic Safety FFY 2022

Problem Identification

2020 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 2020 as well as for the ten-year period of 2011-2020. 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 2020 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 2020 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 2020 are listed below:

FATALITIES

- Montana experienced over 20,000 traffic crashes in 2020. 189 fatal crashes with 212 fatalities.
- Montana's roadway fatalities were up by 28 in 2020 compared to 2019 (212/184). The ten year (2011-2020) average number of Montana roadway fatalities is 202

- Montana's 2019 fatality rate (number of fatalities per 100 million vehicle miles traveled) is 1.76. Montana's fatality rate continues to be higher than the national rate of approximately 1.34 deaths per 100 million miles traveled. [1]

OCCUPANT PROTECTION

- Montana state law allows for secondary enforcement only.
- The 2020 observed use of restraints was 89.9% on all Montana roads.
- 108 deaths in 2020 are attributed to not wearing a seat belt, which is 67% of fatalities in vehicles with restraints (not counting pedestrians, bicyclists and motorcyclists).
- 67 of the unrestrained people who died were partially or totally ejected from the vehicle (62%)
- 104 unrestrained vehicle occupant deaths occurred in rural roadway crashes.
- 84 unrestrained vehicle occupant deaths occurred in single vehicle crashes (52%), and 89 (55%) on dry roads.
- 59 (36%) were unrestrained male drivers
- 79% of unrestrained vehicle occupant deaths occurred in impaired driver involved crashes.

ALCOHOL AND/OR DRUG RELATED DRIVING

- 140 deaths in 2020 are attributed to impaired driver involvement, which is 66% of all roadway deaths. The number of driver alcohol BAC greater than 0.079 involved fatalities rose to 54 in 2020 compared to 25 in 2019. (10-year average is 43 fatalities)
- Impaired drivers were involved in 65% of fatal crashes.
- 65% of impaired driver involved crashes were rural area crashes.
- 29% of impaired driver involved crashes occurred between Friday noon and Sunday noon.
- 75% of all impaired driver involved roadway crashes occurred in single vehicle crashes.

ROADWAY DEPARTURE CRASHES

- Roadway departure crashes in 2020 accounted for 134 fatalities.
- 63% of all roadway departure fatal crashes occurred on rural roadways.
- Dry road conditions were reported in 82% of the road departure fatalities.
- 54% of roadway departure fatalities occurred in the months of June through September.
- 40% of roadway departure fatalities occurred between Friday noon and Sunday noon.
- 39% of roadway departure fatalities occurred at night.
- Single vehicle crashes accounted for 81% of fatalities in roadway departure crashes.

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

INTERSECTION RELATED CRASHES

- 8% of all fatalities in 2020 occurred in an intersection crash.
- 38% of intersection fatalities occurred at urban intersections.

OTHER AREAS OF INTEREST (2020)

- 21% (44) 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.
- There were 29 motorcyclist fatalities. 15 fatalities involved a motorcyclist not wearing a helmet. Motorcyclists comprised 14% of the total fatalities on Montana roadways. 48% of motorcyclist fatalities were age 55 and older.
- Non-Motorized-Pedestrian: There were 17 pedestrian fatalities.
- Non-Motorized-Bicyclist: There were 0 bicyclist fatalities.
- Young drivers 20 years and younger involved fatalities decreased to 31 from 35 in 2020. This age group, 6.7% of the population, accounted for 17% of fatalities in 2020.
- Older drivers age 65 and older (23% of registered Montana drivers) accounted for 33, or 16% of fatalities in 2020.
- There were 3563 reported crashes involving animals in 2020. There were 10 fatalities in animal involved crashes in 2020.
- Crashes that occur in summer (June, July, August, and September) accounted for 49% of all fatal crashes in 2020.
- 93% of all fatal crashes in 2020 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.

- 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.

- 72.5% of Montana's highway vehicle miles traveled occurred outside of the state's 19 urban areas.

- Montana was no exception to seeing less out-of-state visitors in 2020 due to the impact of the COVID-19 pandemic. According to the Montana Office of Tourism, visitors were down about 12% from 2019. Despite the challenges, 11.1 million out-of-state visitors still contributed roughly $3.15 billion in travel-related spending to Montana's economy during 2020. This spending directly supported nearly $2.6 billion in economic activity and nearly 31,000 state jobs, as well as indirectly supporting an additional $1.8 billion in economic activity and more than 12,400 additional jobs.

5.2 Montana People

- The July 1, 2019 United State Census Annual Estimates of Population; Montana's population is estimated to be 1,085, 407, which is an increase of 10% from the 2011 Census count.

- Montana land area in square miles is 145,545.80, and the population per square mile is 6.8.

- Yellowstone County is the most populated county per square mile with 164,731 people. Petroleum County is the least populated with 496 people per square mile.

- The median household income (2019) is $56,539, and there are an estimated 436,048 households with 2.48 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

NTHSA reports that in 2020, 38,824 lives were lost in traffic crashes nationwide. The number marks the highest number of fatalities since 2007. It also represents a 6.8-percnet

increase from 36,355 fatalities in 2019, or 2,469 more people killed in traffic crashes in 2020. The fatality rate per 100 million vehicle miles traveled (VMT) increased by 21 percent from 1.11 in 2019 to 1.34 in 2020, which is the largest percentage increase on record. The estimated number of people injured on our roadways decreased in 2020 to 2.28 million, falling from 2.74 million in 2019, a statistically significant decrease of 17 percent. The injury rate per 100 million VMT decreased by 6.0 percent from 84 in 2019 to 79 in 2020.[2]

NHTSA acknowledged the impact of the COVID-19 pandemic with nationwide shutdowns, and vehicular travel reduction, with the resulting drop in VMT nationwide from late March through April of 2020. NHTSA reports VMT started increasing as states began phased re-opening through May and June 2020, returning to similar patterns to 2019 VMT. Below is a summary of the Key Findings of the comparison between 2019 and 2020 data NTHSA compiled for 2020:

Key findings from 2019 to 2020:
- Fatalities increased, and injured people decreased in most categories.
- Speeding-related, alcohol-impaired-driving, and seat belt non-use fatalities increased.
- Urban fatalities increased by 8.5 percent; rural fatalities increased by 2.3 percent.
- Older drivers 65 and older involved in fatal crashes decreased by 9.8 percent; drivers under 65 involved increased.
- There were fewer fatalities among people 9 and younger and people 65 and older from 2019 to 2020. Most fatality increases were people 10 to 64, with the 25-34 age group having the largest increase of 1,117 additional fatalities.
- Male fatalities increased by 8.6 percent, and female fatalities increased by 1.9 percent.
- Nighttime (6 p.m. to 5:59 a.m.) fatalities increased by 12 percent; daytime (6 a.m. to 5:59 p.m.) traffic fatalities increased by 1.4 percent.
- Forty-two States and the District of Columbia had increases in the number of fatalities.

Exposure Statistics

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.

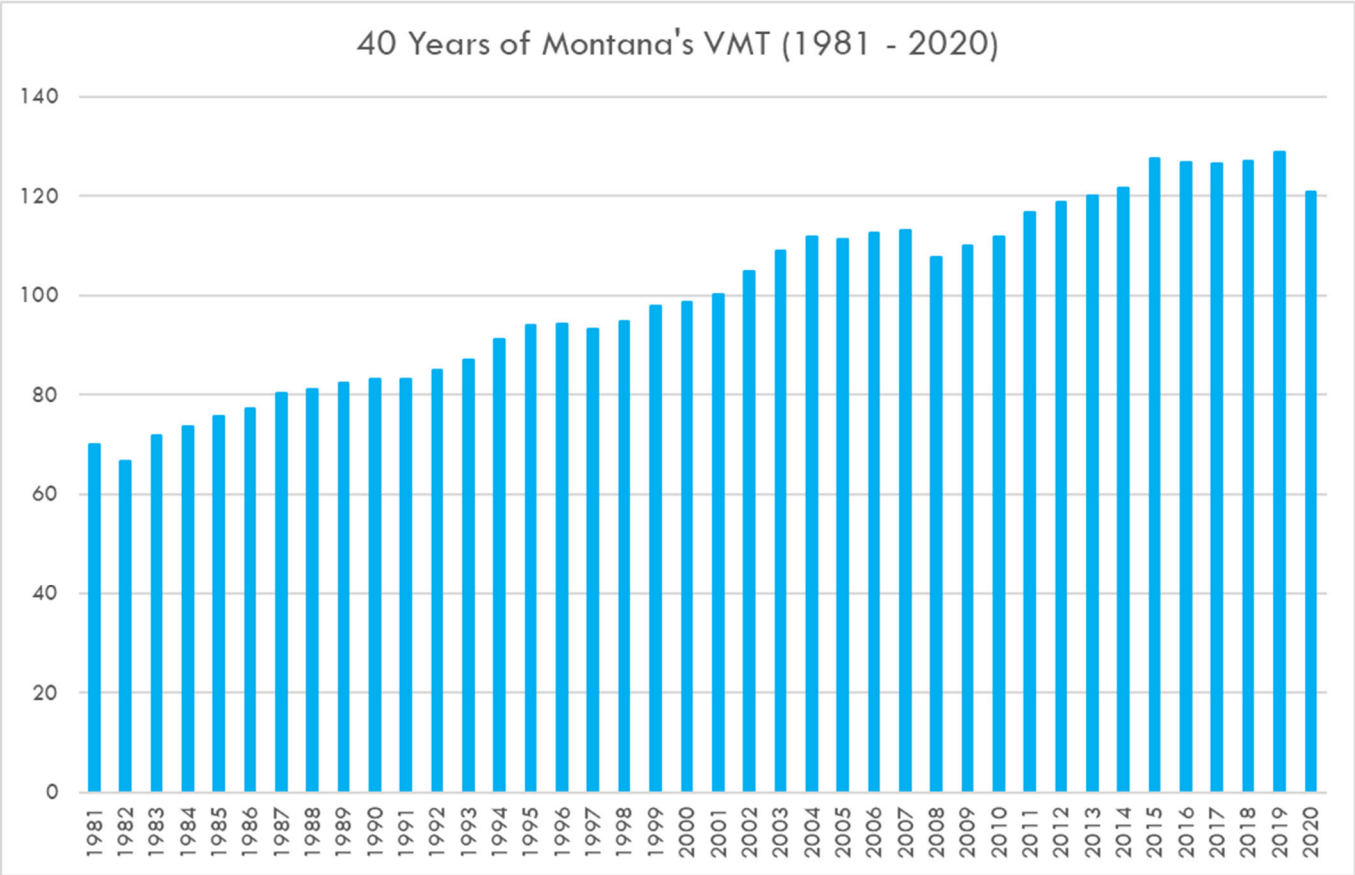
Driving exposure is a frequently used term in the highway safety research community. An agreed upon definition is "driving exposure is the frequency of traffic events which create a risk of accidents." One of the most used measures of exposure is driving distances expressed in vehicle miles of travel. 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.

[2] National Highway Traffic Safety Administration Overview of Motor Vehicle Crashes in 2020 (dot.gov)

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 2020 the VMT was 19.6 million with 212 fatalities. Montana also saw a slight reduction in VMT for 2020, influenced most likely from vehicular travel reduction due to the pandemic.

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

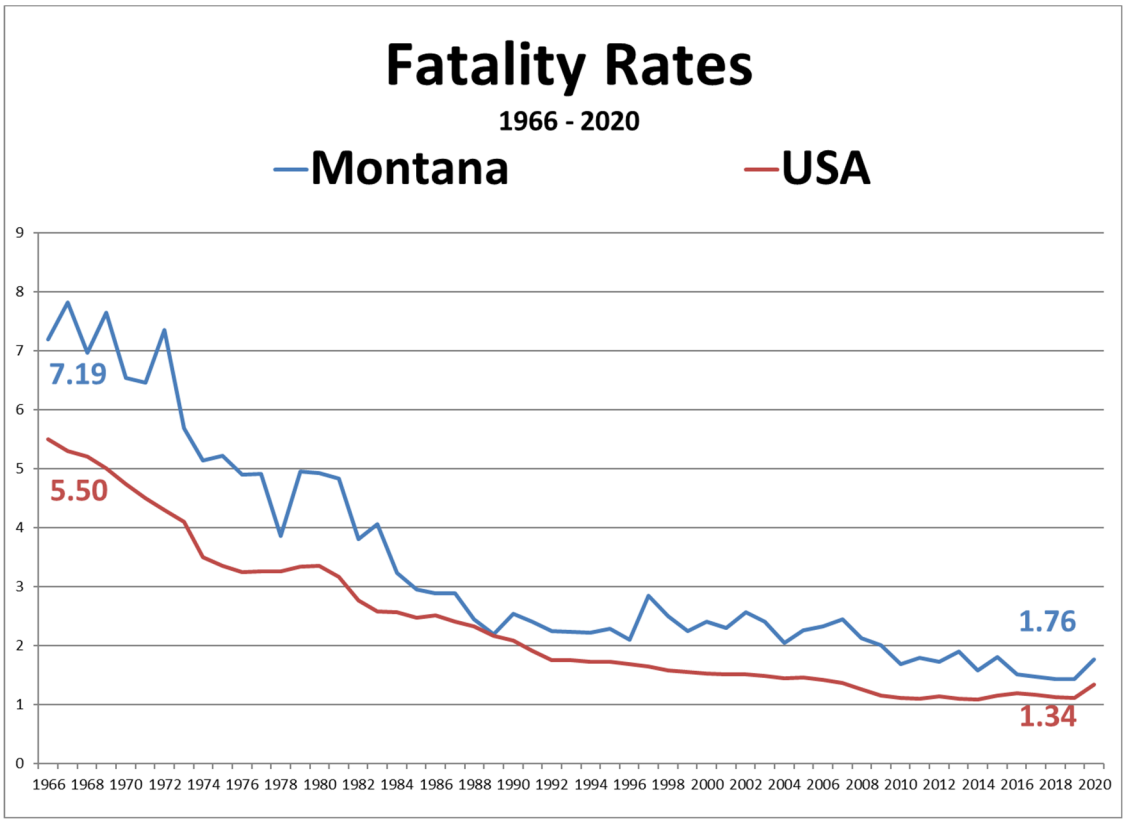
one of the states with a higher death rate per 100 million VMT's traveled per year, coming in at 1.76 in 2020 compared to the national average rate of 1.34. [3]

6.2 Fatality Rates

On a national level, NHTSA reports that there were 38,824 fatalities in 2020, which is an increase of 2469 fatalities in 2020 compared to 2019. The national fatality rate for 2020 is estimated to have increased from 1.11 in 2019 to 1.34.

The fatality rate for Montana is 1.76 per hundred million vehicle miles travelled during 2020. 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 consistent between 2.0 and 3.0. The chart below shows the historical fatality trend of Montana and the nation dating from 1966 to 2020.

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

[3] Source: Insurance Institute of Highway Safety – 2020 Data
https://www.iihs.org/topics/fatality-statistics/detail/state-by-state

reasons is the greater percentage of rural miles travelled which translates to higher average speeds.

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 the second year of Montana's secondary seat belt law and occurred again in 2018. Montana is currently seeing a downward 10-year (2011-2020) roadway fatality trend of 3 people per year.

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 10% lower in 2016-2020 than in the previous 5 years.

Of note is that Montana's 2020 fatalities and serious injuries have shown an increase compared to the preceding several years of data illustrated in this chart. This increase may be attributable to Montana experiencing similar increases in risky driver behavior during the COVID-19 pandemic, as discussed previously in the NHTSA "Key Findings 2019-2020".

Roadway Fatality/Injury Crash Summary 2011-2020

Year	All Crashes	Fatal Crashes	Serious Injury Crashes	No Injury Crashes	Fatalities	Serious Injuries
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
2020	20292	189	590	15008	213	730

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 disproportionally 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 78%. The chart below follows with information on the gender involvement in fatal crashes.

Montana Driver Gender Involvement in Crashes 2011-2020

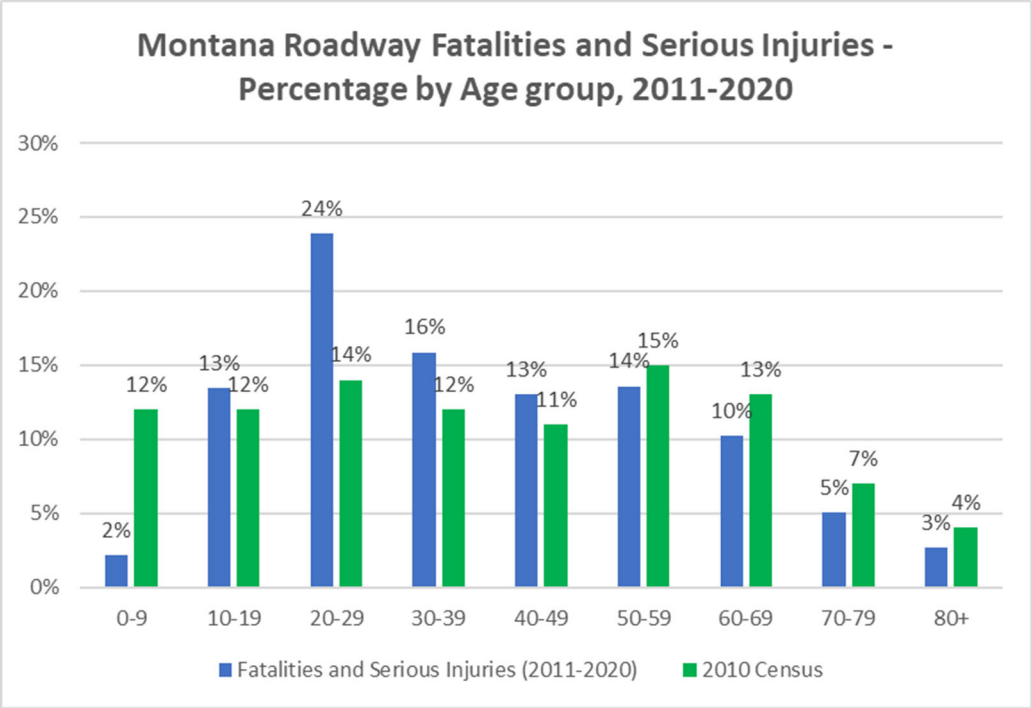
Montana Drivers in Crashes by Gender				
	% in All Crashes		% in Fatal Crashes	
YEAR	Male	Female	Male	Female
2011	58%	42%	71%	29%
2012	58%	42%	74%	26%
2013	59%	41%	75%	25%
2014	59%	41%	72%	28%
2015	59%	41%	76%	24%
2016	59%	41%	77%	23%
2017	58%	42%	68%	32%
2018	59%	41%	67%	33%
2019	59%	41%	75%	25%
2020	61%	39%	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 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 37%. 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.

Fatalities and Serious Injuries by Age



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 (2018-2029) there has been in increase in the travelling public observed to be wearing restraints. The recent 2021 count shows Montana at 92.2%. By comparison, on a national level the average is 90.4%.

MT Annual Observational Seat Belt Count

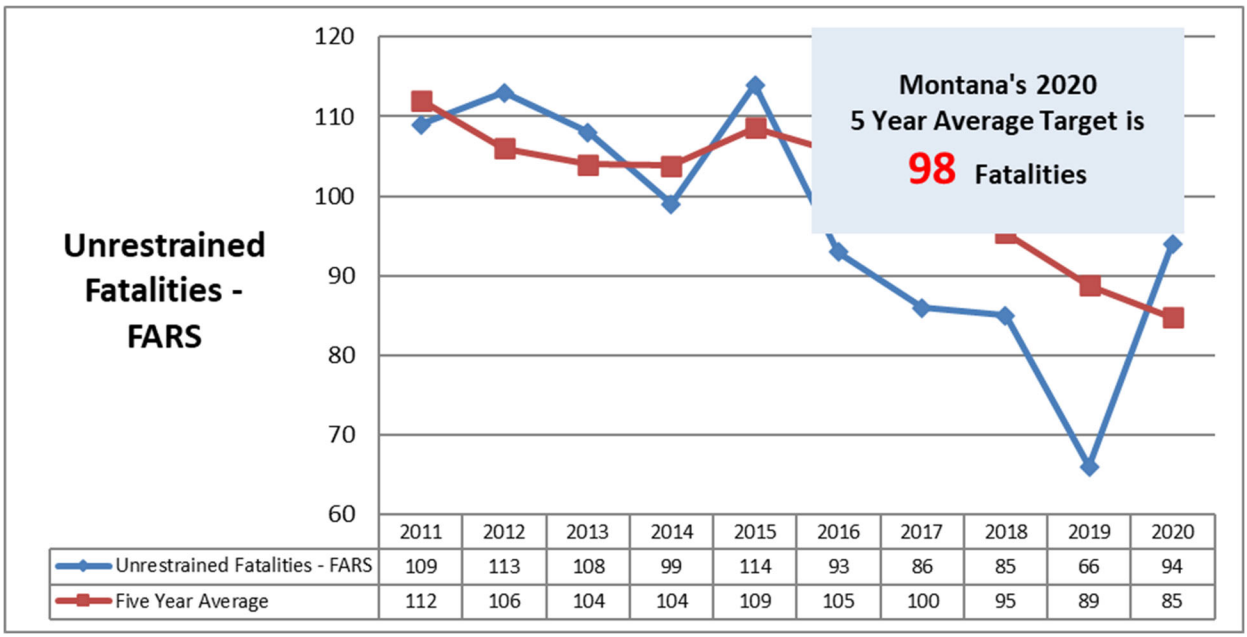
Seat Belt Usage Rates						
Year	Interstate	Primary	City	Other		All Roads
2008	92.10%	81.70%	66.60%	70.70%		79.30%
2009	82.90%	83.80%	64.90%	75.60%		79.20%
2010	87.00%	81.20%	64.70%	74.10%		78.90%
2011	84.40%	80.90%	67.70%	68.80%		76.90%
2012	82.80%	80.10%	65.70%	70.50%		76.30%
Year	**Interstate**	**Primary**	**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%
2021	94.4%	90.5%	91.5%	91.7%	92.7%	92.2%
Chg 1 Yr	1.3%	3.0%	9.8%	0.2%	4.3%	2.3%
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 2011 and 2020.

Vehicle occupants not using their seat belts or improperly using seat belts are a contributing factor to Montana's crash fatalities. 67% of vehicle occupant fatalities on Montana's roadways in 2020 were not wearing a seat belt.

As shown in the chart below, unrestrained fatalities in 2020 increased from 74 in 2019 to 108 in 2020.

Unrestrained Fatalities - 2011-2020



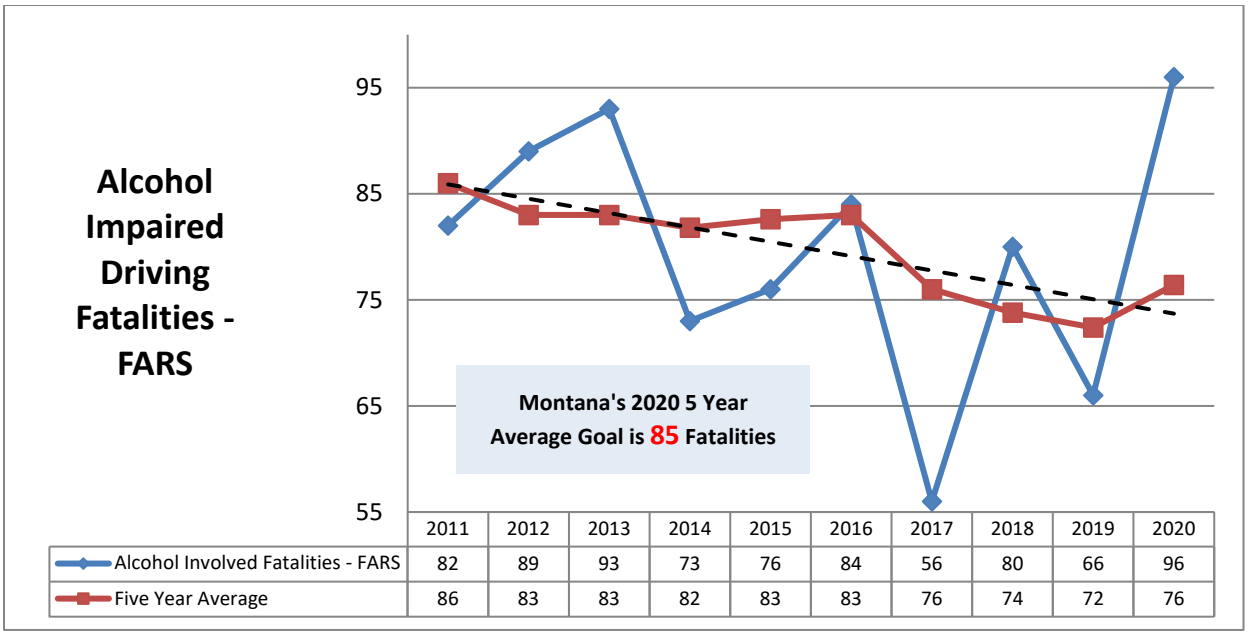
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Unrestrained Fatalities - FARS	109	113	108	99	114	93	86	85	66	94
Five Year Average	112	106	104	104	109	105	100	95	89	85

Montana saw a dramatic increase in unrestrained fatalities in 2020 with a 40% increase over 2019. The total of unrestrained fatalities was 94, which is 27 higher and the highest number in the last five years. Even with the significant increase, Montana reached the 2020 goal of a five-year average of 98, with a five-year average actual of 85. MDT is hopeful this inconsistency is related to an increase due to changes seen in vehicle occupant behavior during the COVID pandemic and will correct itself in future years.

8.2 Impaired Driver Involved - Alcohol

Drivers involved in crashes while impaired by alcohol continue to be a challenge for Montana. Montana appears to have had a significant increase in impaired driving fatalities during 2020. NHTSA reported 96 alcohol impaired driving fatalities in 2020 increasing from 66 in 2019, or an increase of 45%. It is important to note, however, that Montana reported only 77 alcohol impaired (driver BAC 0.080+) driving fatalities for 2020. This is because NHTSA applies a model when calculating estimated impaired driving fatalities, which appears to do a disservice to states that have a rigorous and consistent alcohol testing/reporting program as Montana does.

This chart represents the progress Montana is making on reaching the goals from the previous long-range baseline that ended FFY20:



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alcohol Involved Fatalities - FARS	82	89	93	73	76	84	56	80	66	96
Five Year Average	86	83	83	82	83	83	76	74	72	76

During 2020, Montana's impaired driving fatalities as reported by NHTSA were the highest in the last ten years. Again, the model used by NHTSA consistently over reports Montana's impaired driver fatalities negatively impacting Montana's five-year averages and the ability to meet established goals. Although this goal was met for 2020, this model will adversely impact Montana for future years.

8.3 Roadway Departure Crash

Roadway departure crashes tend to be severe due to high speeds and rural locations. They account for about 23% of all people involved in crashes in 2020. The vast majority (98%) of roadway departure fatalities occurred in rural areas. The following is from the Montana Comprehensive Highway Safety Plan (CHSP) 2021 Annual report on 2020 data. [4]

During the time period of 2011-2020

- 58% of All Fatalities and Serious Injuries involved a Roadway Departure.

Of those

- 93% of All Roadway Departure Fatalities and Serious Injuries occurred in rural areas.
- 84% of All Roadway Departure Fatalities and Serious Injuries involved a single-vehicle crash.
- 76% of All Roadway Departure Fatalities and Serious Injuries occurred on dry roads.

[4] Montana Comprehensive Highway Safety Plan – 2021 Annual Report
https://www.mdt.mt.gov/visionzero/plans/docs/chsp/2021/2021-Annual-Report-Final.pdf

- 46% of All Roadway Departure Fatalities and Serious Injuries occurred during the summer months of June-September.

8.4 Intersection Related Crash

Intersection crashes are defined as a crash occurring in or related to an intersection. In Montana, in 2020, 28% of all intersection crashes occurred in rural areas, but 63% 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 NTHSA, 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.[5]

During the period of 2011-2020 (2021 CHSP Annual Report)

- 20% of All Fatalities and Serious Injuries were Intersection-related.

Of these

- 81% of All Intersection-related Fatalities and Serious Injuries occurred on dry roads.
- 50% of All Intersection-related Fatalities and Serious Injuries occurred in rural areas.
- 42% of All Intersection-related Fatalities and Serious Injuries involved a young driver 14-25 years of age.
- 38 % of All Intersection-related Fatalities and Serious Injuries involved a right-angle crash.

8.4 At-Risk-Groups

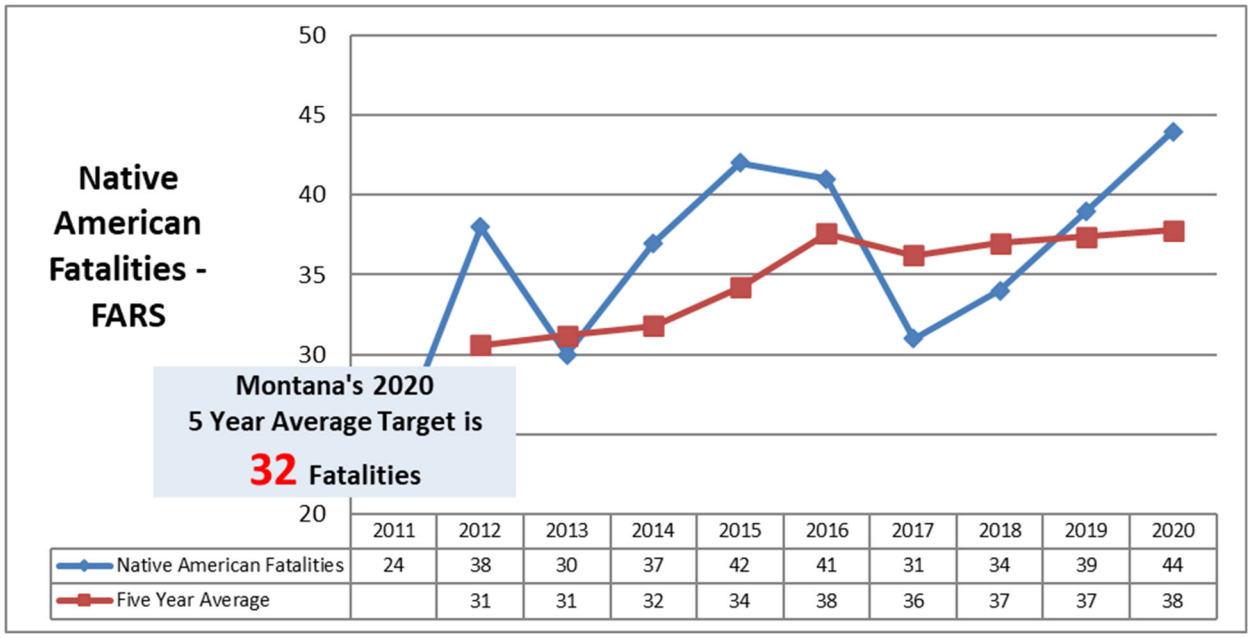
Native American

Native American fatalities continue to be a challenge for Montana. Over the last ten years, these fatalities have represented almost 18% of all crash fatalities, while only comprising approximately 7% of Montana's population.

During 2020, there were 44 fatalities as compared to 39 in 2019. Unfortunately, 2020 represents the year with the highest number of fatalities over the last ten years. The trendline is also increasing.

[5] NHTSA Report DOT HS 811 366

Native American Fatalities - 2011-2020



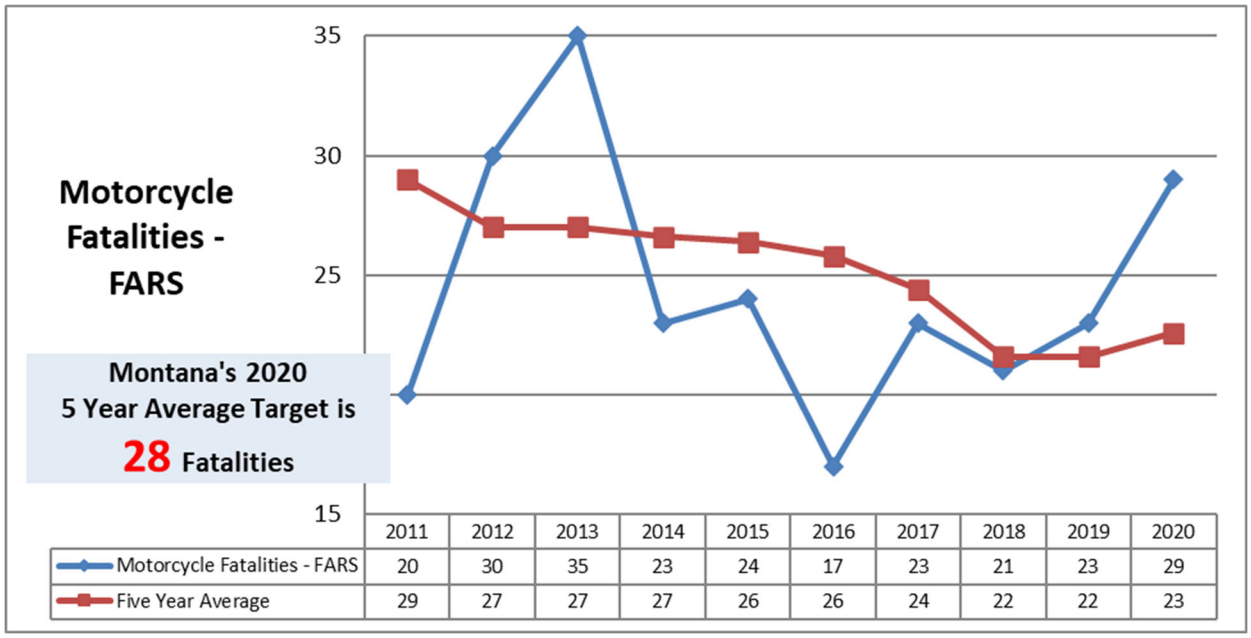
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Native American Fatalities	24	38	30	37	42	41	31	34	39	44
Five Year Average		31	31	32	34	38	36	37	37	38

Motorcycle

Motorcycle use tends to be seasonal, and motorcycles represent a minority of roadway users in Montana; however, 14% of all fatal crashes in Montana involved a motorcycle in 2020. There was a total of 29 fatalities in 2020 compared to 23 during 2019. Almost 65% of all motorcycle fatalities are aged 45 or older, with the 55-64 age range representing 25% of all fatalities in this area, as shown below.

Age	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
14-24	3	3	2	3	1	1	1	1	3	2	20
25-34	3	5	4	4	6	3	5	4	1	3	38
35-44	0	6	3	2	1	1	5	2	3	4	27
45-54	3	6	13	7	7	5	0	5	4	6	56
55-64	8	7	8	4	5	6	6	5	4	7	60
65+	3	3	4	3	5	1	5	4	7	7	42
Total	20	30	34	23	25	17	22	21	22	29	243

Motorcycle Fatalities- 2011-2020

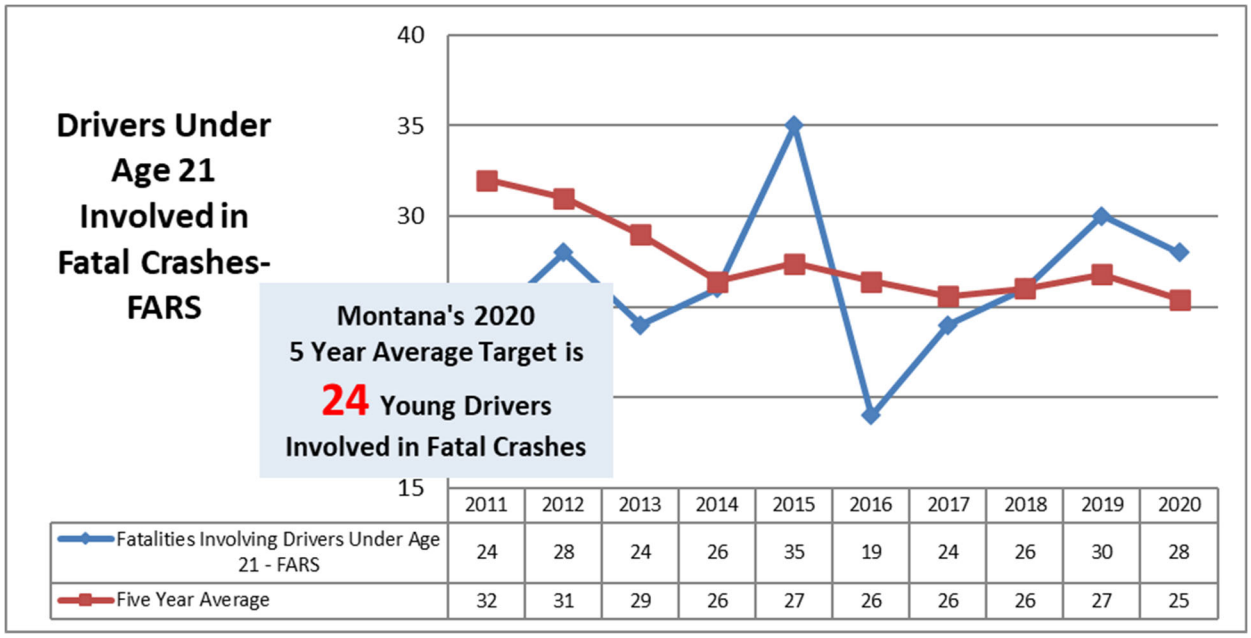


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Motorcycle Fatalities - FARS	20	30	35	23	24	17	23	21	23	29
Five Year Average	29	27	27	27	26	26	24	22	22	23

Young Driver

Young Driver fatalities (Drivers under the Age of 21) decreased during 2020, going from 30 in 2019 to 28 in 2020. This represented 13% of all of Montana's fatalities. Given this driver population only represents approximately 6% of all licensed drivers, this continues to be a challenging traffic safety issue.

Young Driver Fatalities 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fatalities Involving Drivers Under Age 21 - FARS	24	28	24	26	35	19	24	26	30	28
Five Year Average	32	31	29	26	27	26	26	26	27	25

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 2020 bringing the five-year annual average to 22,685. The summary of 2020 crash details include 590 serious injury crashes and 189 fatal crashes or 4% of all crashes reported.

Seat belts were not used or improperly used in 1368 crashes in 2020, or 7% of all crashes. However, in crashes involving a fatality in 2020, not using or improperly using a seat belt played a role in approximately 57% of those crashes. Impaired drivers (alcohol and/or drugs) were involved in 1983 crashes in 2020, or 10% of all crashes. However, in crashes involving a fatality in 2020, 66% involved an impaired driver.

Rural crashes continue to be an area of concern with regard to traffic safety. During 2020 there were 12,655 crashes that occurred in rural areas. This represents over 62% 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 198 of the 212 fatalities in 2020 happening in rural areas.

Other areas that were over-represented in all crash data in 2020 were:

- Single vehicle crashes accounted for 53% of all crashes and 72% of all fatal crashes
- Roads with higher speed limits (>35) represented 54% of all crashes and 80% of fatal crashes
- Male drivers were involved in 13,932 crashes or 69% of all crashes and 81% of fatal crashes

10. Fatal and Serious Injury Crashes

During 2020, there were 189 fatal crashes. These crashes resulted in 212 fatalities. 669 is the 10 year (2011-2020) average number of fatal and serious injury crashes.

Male drivers were involved in 81% of all the fatal crashes in Montana during 2020. 80% of fatal crashes and 67% of serious injury crashes occurred on roads with speed limits greater than 35 mph. Roadway departures accounted for 64% of Montana's fatal and 59% 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	2020 Fatal Crashes	Average number of Fatal Crashes (2011-2020)	2020 Fatal and Serious Injury Crashes	2020 All Crashes
All Crash Type	189	183	779	20292
Rural	175	161	640	12655
Speed Limit >35 MPH	154	148	632	14048
Dry Roadway	153	144	580	13932
Single Vehicle	151	145	548	10993
Male Driver Involved	137	127	542	10842
Roadway Departure	124	109	332	1983
Impaired Driver Involved	121	122	467	6227
Summer (Jun, Jul, Aug, Sep)	93	87	338	6993
Low Road Volume (AADT < 750)	79	76	278	6693
Nighttime	72	68	277	6103
Female Driver Involved	70	66	334	6872
Careless/Inattentive/Distracted Driver Involved	63	56	274	6267
Friday Noon to Sunday Noon	53	59	282	9118
Winter (Nov, Dec, Jan, Feb)	46	43	206	7394
Older Driver Involved (65 and Older)	32	34	114	3198
Young Driver Involved (Age 14-20)	30	24	112	332
Urban	27	25	123	3826
Motorcycle	16	20	143	5600
Intersection	15	15	58	238
Nonmotorist	14	21	139	7637

11. Conclusion

The Problem Identification for 2020 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 Annual Highway Safety Plan submitted to NTHSA, goes into depth on data that is used for the problem identification and may be reviewed here: https://www.mdt.mt.gov/publications/docs/brochures/safety/safety-plan.pdf

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 pedal/cyclist) 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

A 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.