Michigan Fatal Crash Trend Report: 2018 Edition

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Executive Summary

This report analyzes traffic crashes that took place on public roadways in Michigan, involved at least one motor vehicle in transport, and resulted in death, injury, or property damage of $1,000 or more. The primary focus of the report is fatal crashes in 2018. The number of fatal crashes and fatalities in 2018 are compared with counts from previous years to identify trends. Fatal crashes are considered both in the aggregate and according to key factors of interest, including highway class, road conditions, alcohol involvement, and driver age.

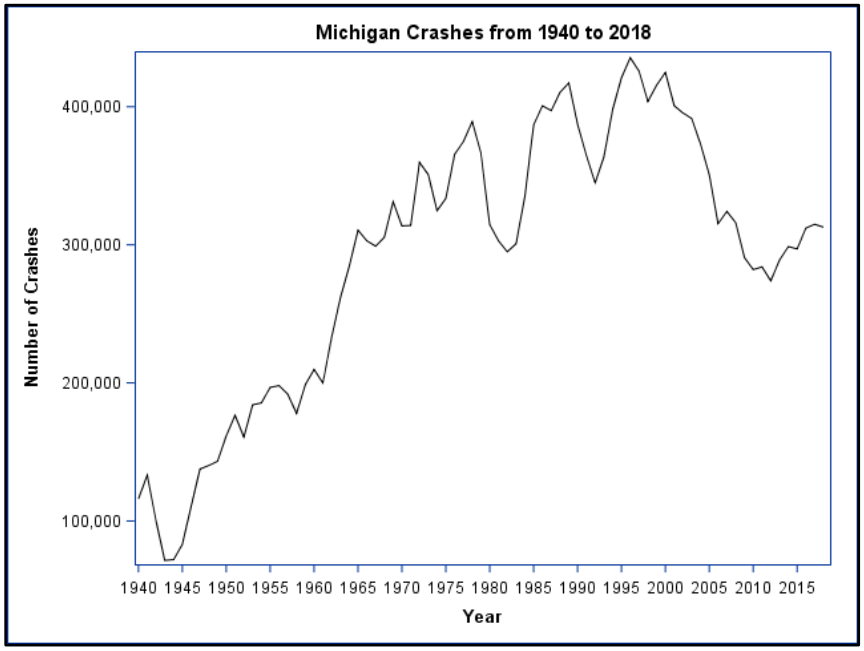
Fatal crash and fatality trends are primarily examined in five- and ten-year blocks in this report, but the report begins with a broader historical context. Of note is how much safer Michigan roads have become over the past fifty years. Traffic fatalities in Michigan peaked in 1969 with 2,487 but declined 60.8% to 974 in 2018.

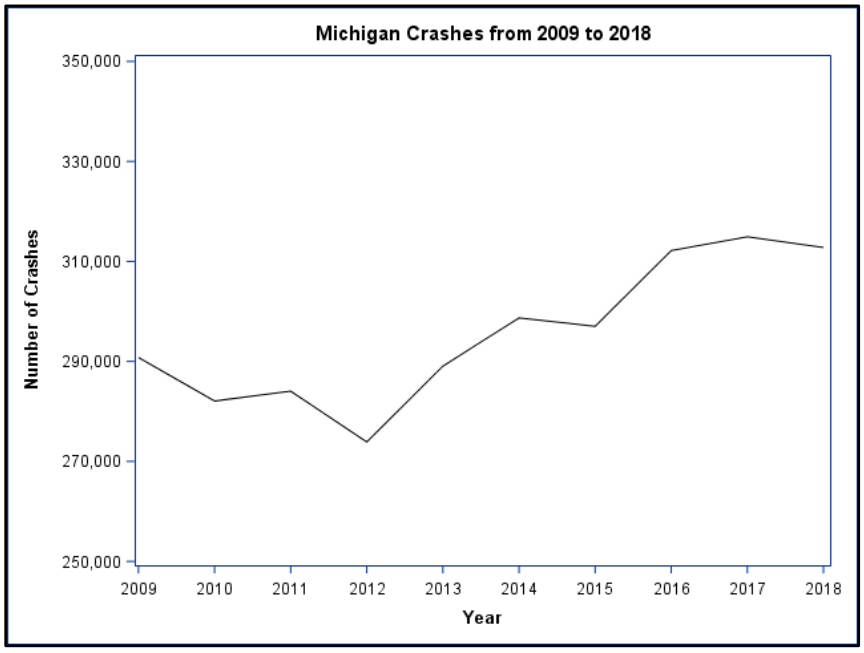
Some findings about the fatal traffic crash experience in Michigan in 2018 include:

- 974 people were killed in 905 fatal crashes.
- 315 people died in alcohol-involved crashes, and 247 died in drug-involved crashes.
- 76 fatal crashes involved a driver age 18 to 20, and 119 fatal crashes involved a driver age 65 to 74.
- 192 of the motor vehicle occupants who were killed were not wearing seat belts.
- 191 people died in crashes where at least one driver was speeding.
- 145 pedestrians were killed, and police reports indicate that 38 of these pedestrians had been drinking at the time of the crash.
- 21 bicyclists were killed, three of whom were reported to have been drinking.
- 134 motorcyclists were killed, 51 of whom were not wearing a helmet.
- 186 fatal crashes occurred on Michigan routes, 101 on US routes, and 94 on Interstates.
- 54 fatal crashes were hit-and-run.
- 102 fatal crashes involved a heavy truck or bus.

Observed Trends

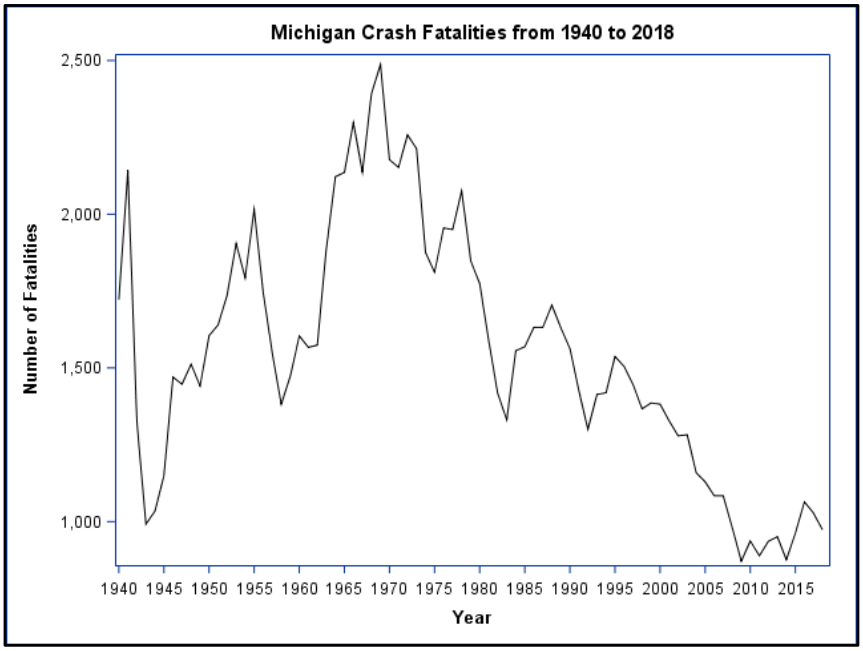
Number of Crashes

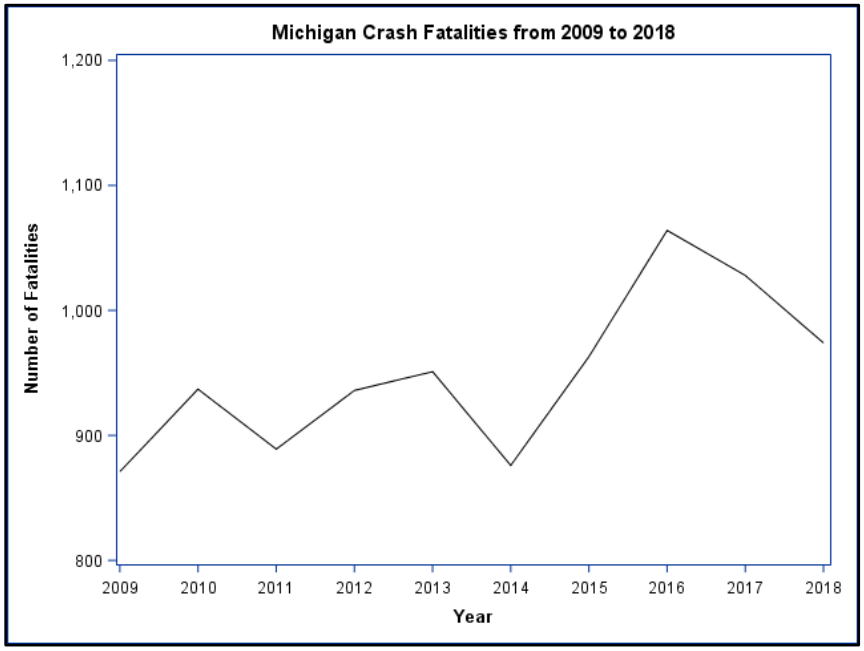




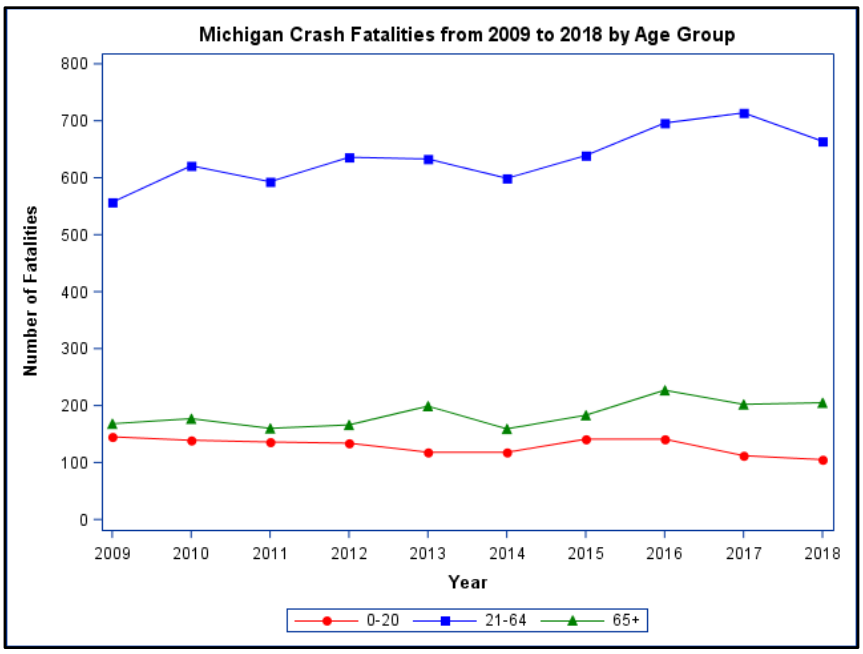
The first graph in this section shows the total number of crashes of all severity levels in Michigan from 1940 to 2018. Crashes peaked in 1996 with 435,477. The second graph considers only the time period from 2009 to 2018. The total number of crashes in Michigan decreased from 314,921 in 2017 to 312,798 in 2018 (-0.7%).

Number of Fatalities





Turning to fatalities in traffic crashes, the first graph above shows the total number of crash fatalities in Michigan from 1940 to 2018. Fatalities reached their highest number in 1969 with 2,487 and have shown a general decrease since then. The second graph shows fatalities from 2009 to 2018 only. The total number of fatalities in Michigan decreased from 1,028 in 2017 to 974 in 2018 (-5.3%), although the ten-year trend showed a slight increase.



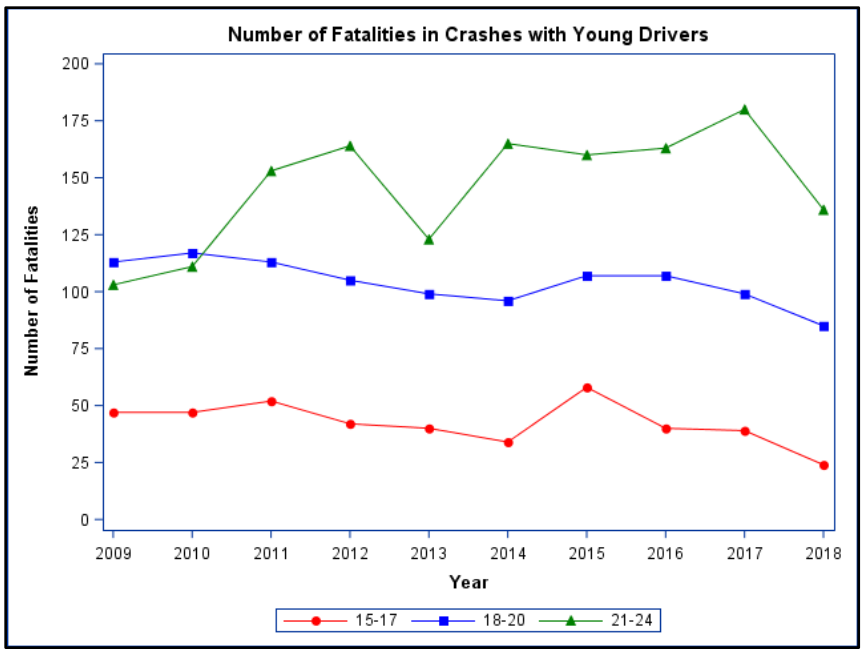
The chart above shows the ten-year fatality trend according to the age of the fatality victim. Fatalities among people under age 21 have trended downward over the past ten years, falling from a high of 145 in 2009 to a low of 105 in 2018, a drop of 27.6%. The number of crash fatalities among people age 21 to 64 has been generally higher in recent years than earlier in the ten-year time period. The peak was 714 in 2017, although the 2018 count was 664, a drop of 7%. The number of fatalities among people 65 and older has also generally increased in recent years. The 2018 count of 205 was second only to 227 in 2016.

Fatal Crashes and Fatalities by Factors of Interest

Driver Age

Fatal Crashes Involving Young Drivers									
Age Group	2014	2015	2016	2017	2018	2014-2015 Percent Change	2015-2016 Percent Change	2016-2017 Percent Change	2017-2018 Percent Change
Driver age 15-17	29	52	37	32	22	79.3%	-28.8%	-13.5%	-31.3%
Driver age 18-20	84	96	98	85	76	14.3%	2.1%	-13.3%	-10.6%
Driver age 21-24	150	147	151	163	126	-2.0%	2.7%	7.9%	-22.7%

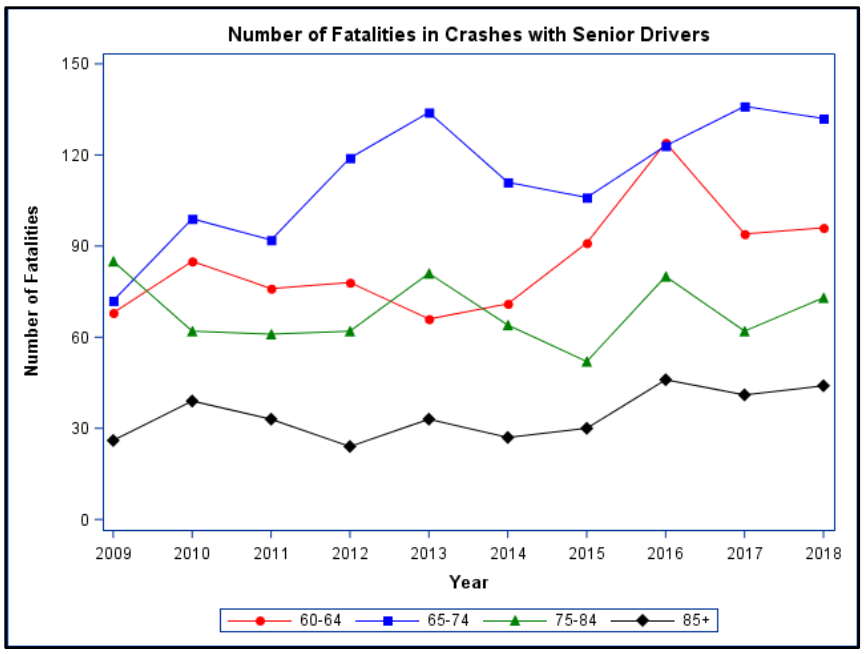
The table above shows the number of fatal crashes for young driver age groups from 2014 to 2018, along with the percent change from one year to the next. The driver age groups are not mutually exclusive—a crash involving one driver age 16 and another age 18 would be counted in both the 15-17 and 18-20 age groups. The number of fatal crashes involving all three young driver age groups decreased from 2017 to 2018. Fatal crashes involving drivers age 15 to 17 dropped 31%, those with drivers age 18 to 20 decreased 11%, and fatal crashes involving drivers age 21 to 24 dropped 23% from 2017 to 2018.



This chart shows the number of fatalities that occurred in crashes involving a driver in each of the young driver age groups defined above. The legend indicates the young driver age group, which is not necessarily the age of the fatality victim. The younger two driver age groups showed a net decrease in the number of fatalities over the ten-year period. Fatalities in crashes with drivers age 15 to 17 declined 48.9% from 2009 to 2018, and fatalities in crashes with drivers age 18 to 20 dropped 24.8%. In contrast, fatalities in crashes with a driver age 21-24 rose from 103 in 2009 to 136 in 2018, an increase of 32.0%. That said, the 2018 count for the 21-24 age group is lower than each of the previous four years, which were all 160 or higher.

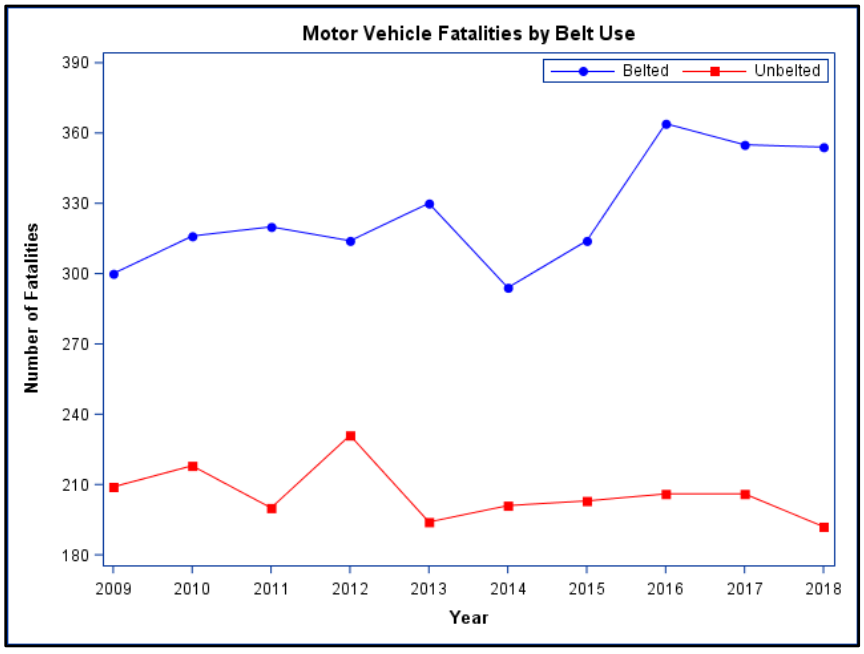
Fatal Crashes Involving Senior Drivers									
Age Group	2014	2015	2016	2017	2018	2014-2015 Percent Change	2015-2016 Percent Change	2016-2017 Percent Change	2017-2018 Percent Change
Driver age 60-64	66	85	115	86	88	28.8%	35.3%	-25.2%	2.3%
Driver age 65-74	103	98	108	123	119	-4.9%	10.2%	13.9%	-3.3%
Driver age 75-84	57	49	69	57	68	-14.0%	40.8%	-17.4%	19.3%
Driver age 85+	26	27	41	38	41	3.8%	51.9%	-7.3%	7.9%

For fatal crashes involving senior drivers, three of the four age groups showed an increase from 2017 to 2018. The greatest rise was among fatal crashes involving drivers age 75 to 84, which increased from 57 in 2017 to 68 in 2018 (19%). In contrast, fatal crashes involving drivers age 65 to 74 decreased 3% between the two years. Because the counts of fatal crashes involving senior drivers are relatively low, the year-to-year changes in the counts for each group have been quite variable. Again, the age groups are not mutually exclusive, and some fatal crashes may be tallied in both the young driver table and the senior driver table.



This chart shows the number of fatalities that occurred in crashes involving a driver in each of the senior driver age groups defined above, as indicated in the legend. Again, the age groups do not necessarily reflect the ages of the fatality victims. The only senior driver age group that showed a decrease in the number of crash fatalities from 2009 to 2018 was the 75-84 group, with a 14.1% drop. Fatalities in crashes involving a driver 60-64 rose 41.2% over the ten-year period, fatalities in crashes with a driver 65-74 increased 83.3%, and fatalities in crashes with a driver 85 or older were up 69.2%. The general upward trend observed for most of the older age groups likely corresponds with the fact that older drivers make up an increasing share of all licensed drivers. In 2009 in Michigan, 16.5% of licensed drivers were age 65 and older, while in 2018 drivers 65 and older made up 21.1% of all licensed drivers.

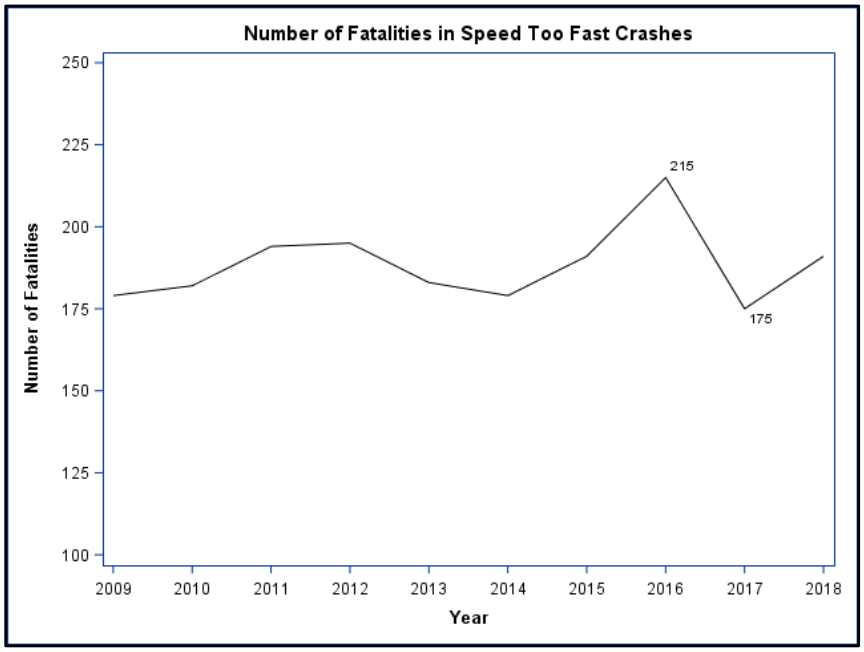
Belt Use



The belt use chart on the previous page shows the number of occupants of motor vehicles who were killed each year according to belt use status. Belted occupants were wearing a lap belt, shoulder belt, both lap and shoulder belts, or were coded “restraint failure” on the restraint use variable. In the case of unbelted occupants, restraints were either unavailable or not used. For the purpose of this comparison, all other possibilities of restraint use (child seats, motorcycle helmets, unknown, etc.) were excluded.

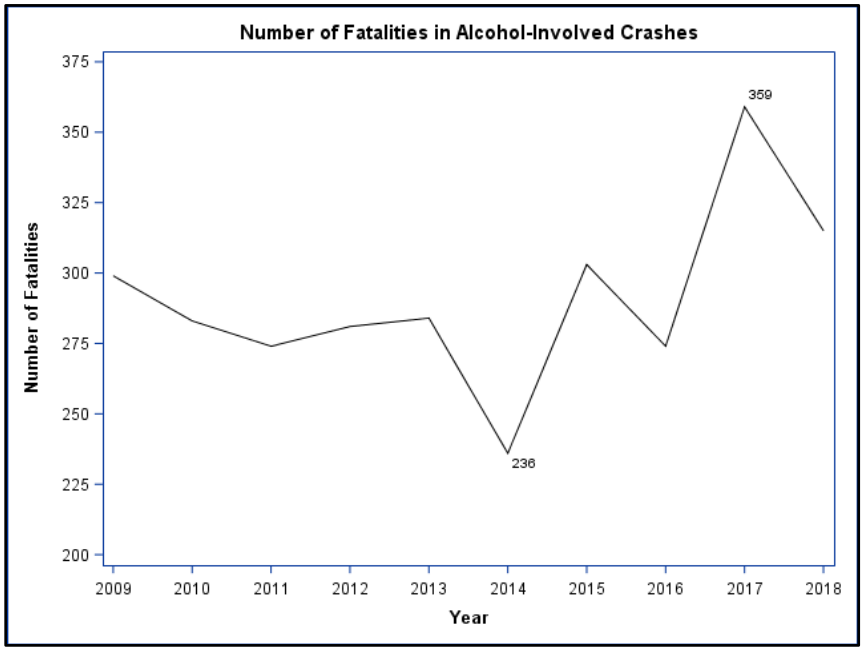
Over the ten-year period, the number of unbelted fatalities generally declined. The peak number was in 2012 with 231, and the lowest number occurred in 2018 with 192. In contrast the number of belted fatalities generally rose over the ten years. The 2018 number of 354 was about the same as the count of 355 in 2017.

Speeding

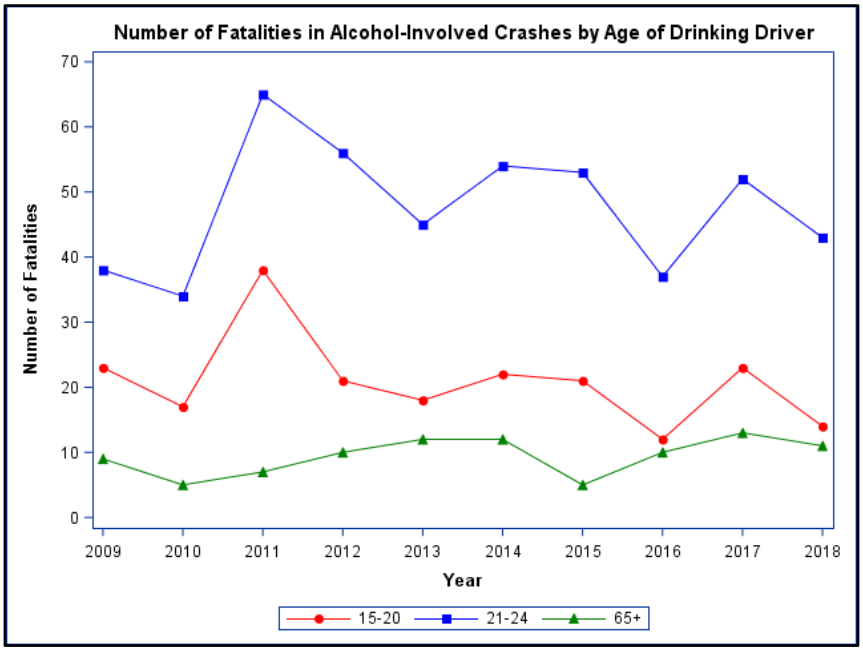


In the last ten years, 13,971 motor vehicles were involved in fatal crashes in Michigan. The most common hazardous action coded for these drivers was speed too fast, representing 1,767 drivers in 1,730 fatal crashes from 2009 to 2018. The chart above shows the number of fatalities resulting from these speeding crashes each year. The greatest number of speed-related fatalities occurred in 2016 with 215, and the lowest number took place in 2017 with 175. The 191 speed-related fatalities that took place in 2018 were an increase of 9.1% from 2017 but were consistent with the average number per year for the flat trend over the past decade.

Alcohol-Involved Crashes



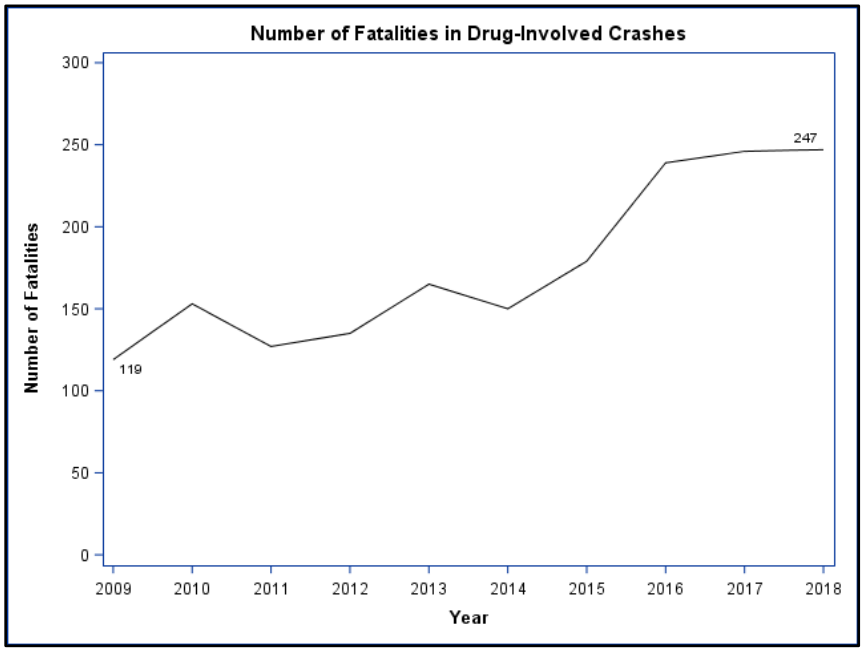
Over the last ten years, the highest number of fatalities in alcohol-involved crashes occurred in 2017 with 359, and the lowest was 236 in 2014. The 2018 total of 315 was a decrease of 12.3% from the number of alcohol-involved crash fatalities in 2017 but was the second-highest count in the ten-year period.



The chart above depicts ten-year trends for number of fatalities in alcohol-involved crashes according to three age groups of the drinking driver. In 2018, there were 14 fatalities in crashes involving drinking drivers age 15 to 20. This was the lowest number in the ten-year period, other than the 12 such fatalities in 2016. In crashes involving at least one young driver age 21 to 24 who had been drinking in 2018, there were 43 fatalities. This was slightly above the 38 fatalities in 2009, but down from the 52 fatalities

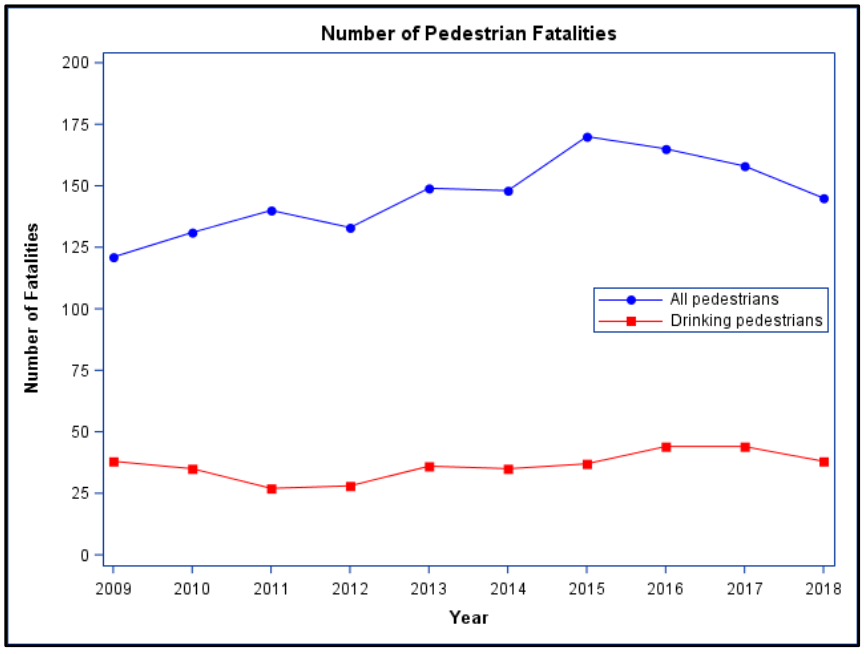
involving drinking drivers age 21 to 24 in 2017. In 2018 there were 11 fatalities in crashes involving drinking drivers age 65 and over, down slightly from 13 in 2017.

Drug-Involved Crashes



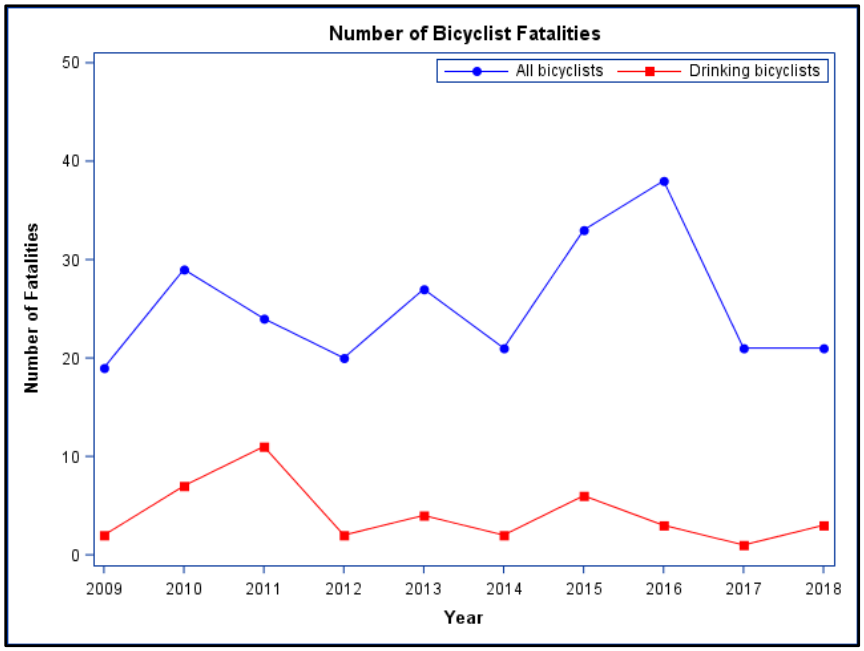
The chart above shows the reported number of fatalities in drug-involved crashes over the ten-year period. This number more than doubled from 119 in 2009 to 247 in 2018, which at least in part reflects better reporting of drug use by crash-involved drivers in recent years.

Pedestrian Fatalities



Over the past ten years, pedestrian fatalities peaked in 2015 with 170 (see chart on previous page). The number has dropped in each of the past three years, reaching 145 in 2018. The trend is favorable, but the 2018 fatality number is still 20% above the 121 pedestrian fatalities in 2009. In 2018, 38 (26.2%) of the pedestrians killed had been drinking. The number of killed pedestrians who had been drinking was relatively stable over the ten-year time period, falling from 38 in 2009 to 27 in 2011, before rising to a peak of 44 in 2016 and 2017.

Bicyclist Fatalities



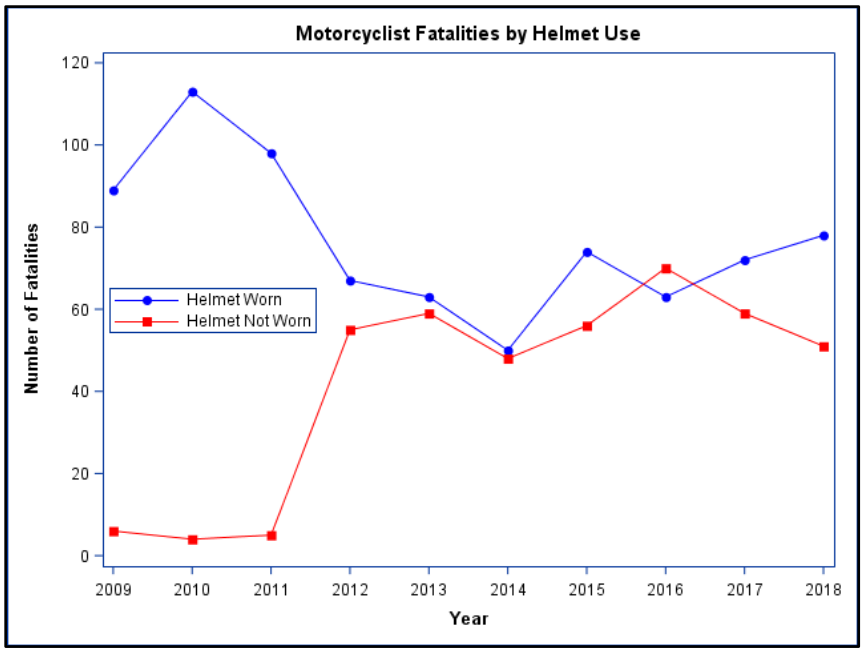
The number of bicyclist fatalities (chart above) has shown considerable variation over the past ten years, at least in part due to the small counts. The lowest number of bicyclist fatalities occurred in 2009 with 19, and the highest number was 38 in 2016. In both 2017 and 2018 the number of bicyclist fatalities was 21. The number of killed bicyclists who had been drinking has been relatively low each year, apart from the 11 fatalities in 2011. Three of the 21 bicyclists who were killed in 2018 had been drinking (14.3%).

Motorcyclists in Crashes

As shown in the table on the following page, a total of 3,012 motorcyclists were involved in crashes in Michigan in 2018, a decrease of 7.0% from 3,237 motorcyclists in 2017. The 134 motorcyclists killed in crashes in 2018 was down slightly from 137 in 2017. Suspected serious injuries dropped from 684 in 2017 to 659 in 2018, a decrease of 3.7%.

Motorcyclists in Crashes by Injury Severity							
Year	Fatal Injury (K)	Suspected Serious Injury (A)	Suspected Minor Injury (B)	Possible Injury (C)	No Injury (O)	Uncoded and Errors	Total
2009	103	739	1,129	857	870	114	3,812
2010	125	629	1,184	851	874	78	3,741
2011	109	573	1,185	798	762	82	3,509
2012	129	655	1,295	920	858	91	3,948
2013	128	558	1,111	828	799	80	3,504
2014	107	510	1,038	761	779	63	3,258
2015	138	517	1,045	785	822	69	3,376
2016	141	659	1,183	780	835	113	3,711
2017	137	684	994	560	787	75	3,237
2018	134	659	1,005	496	638	80	3,012
Total	**1,251**	**6,183**	**11,169**	**7,636**	**8,024**	**845**	**35,108**

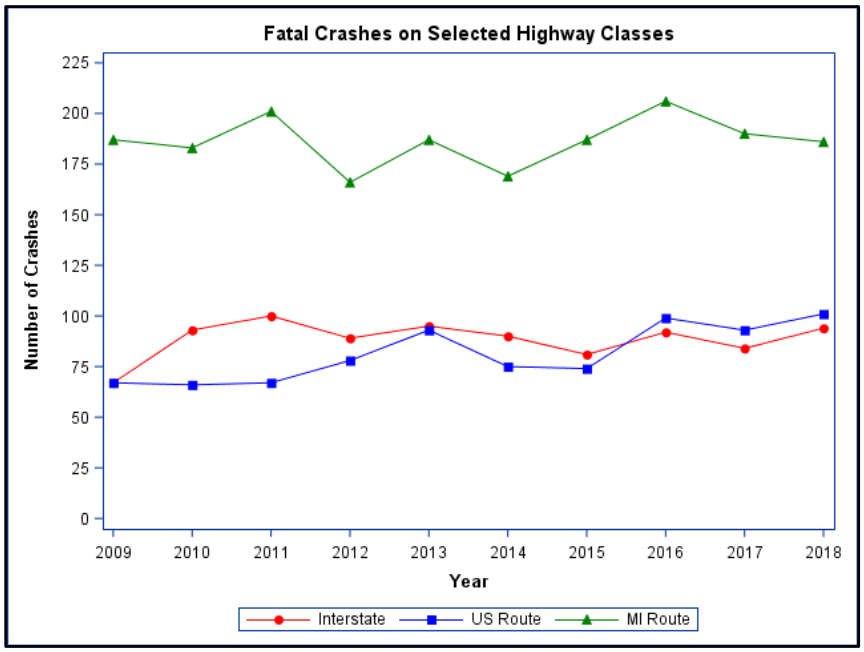
Helmet Use among Motorcyclist Fatalities



The chart above shows the number of fatally injured motorcyclists per year according to whether or not they were wearing a helmet at the time of the crash. The Michigan law mandating helmet use was repealed in April, 2012. From 2009 through 2011, the vast majority of motorcyclists who were killed in crashes were wearing a helmet, which is not surprising since helmets were legally required. Since 2012, the split between helmeted and unhelmeted riders has been much more even, with the number of unhelmeted motorcyclists who were killed actually exceeding those who were helmeted in 2016. In 2018, 78 fatally injured motorcyclists were helmeted and 51 were not. Data used to generate the chart are shown in the table on the next page. Unknown helmet use cases were excluded.

Year	Helmet Use Among Fatally Injured Motorcyclists		
	Helmet Worn	Helmet Not Worn	Total
2009	89	6	95
2010	113	4	117
2011	98	5	103
2012	67	55	122
2013	63	59	122
2014	50	48	98
2015	74	56	130
2016	63	70	133
2017	72	59	131
2018	78	51	129
Total	**767**	**413**	**1,180**

Highway Class



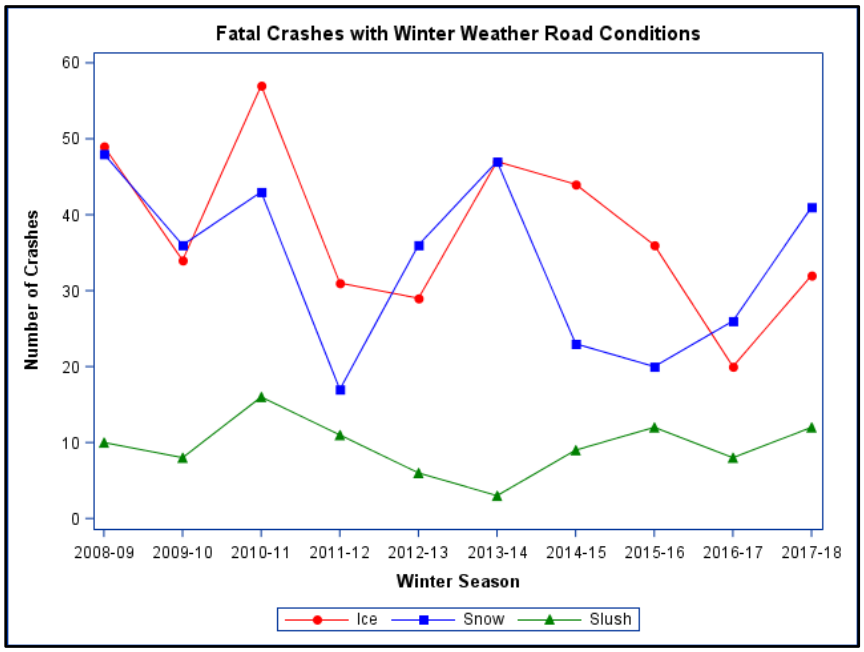
In 2018 in Michigan, 186 fatal crashes took place on Michigan routes, 101 occurred on US routes, and 94 took place on Interstates. The number of fatal crashes on Michigan routes dropped slightly from 190 in 2017 to 186 in 2018. Conversely, the number of fatal crashes rose on both US routes and Interstates from 2017 to 2018. Fatal crashes on US routes went from 93 to 101, and Interstate fatal crashes increased from 84 to 94.

Fatalities by Highway Class

	Fatalities by Highway Class										
Highway Class	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Total Fatalities**
Interstate route	71	100	106	94	104	98	95	104	96	101	969
U.S. route	72	73	77	86	99	84	76	109	111	116	903
Michigan route	203	195	218	185	202	186	199	222	207	205	2,022
Interstate business loop or spur	9	9	13	12	12	8	9	15	16	13	116
U.S. business route	7	8	4	5	7	6	4	3	2	2	48
Michigan business route	0	0	0	1	0	0	0	0	0	0	1
Connector	1	2	1	1	3	0	1	1	0	3	13
Not located	0	2	1	3	1	2	1	0	0	0	10
County road, city street, or unknown	508	548	469	549	523	492	578	610	596	534	5,407
Total Fatalities	**871**	**937**	**889**	**936**	**951**	**876**	**963**	**1,064**	**1,028**	**974**	**9,489**

The table above shows the fatality trends over the past ten years for all classes of highways in Michigan. From 2017 to 2018, fatalities on Interstates increased 5.2%, fatalities on Michigan routes were down 1.0%, and fatalities in the category of county road, city street, or unknown declined 10.4%. In 2018, the majority of fatalities occurred in the county road/city street/unknown category (54.8%), followed by Michigan routes (21.0%), U.S. routes (11.9%), and Interstates (10.4%).

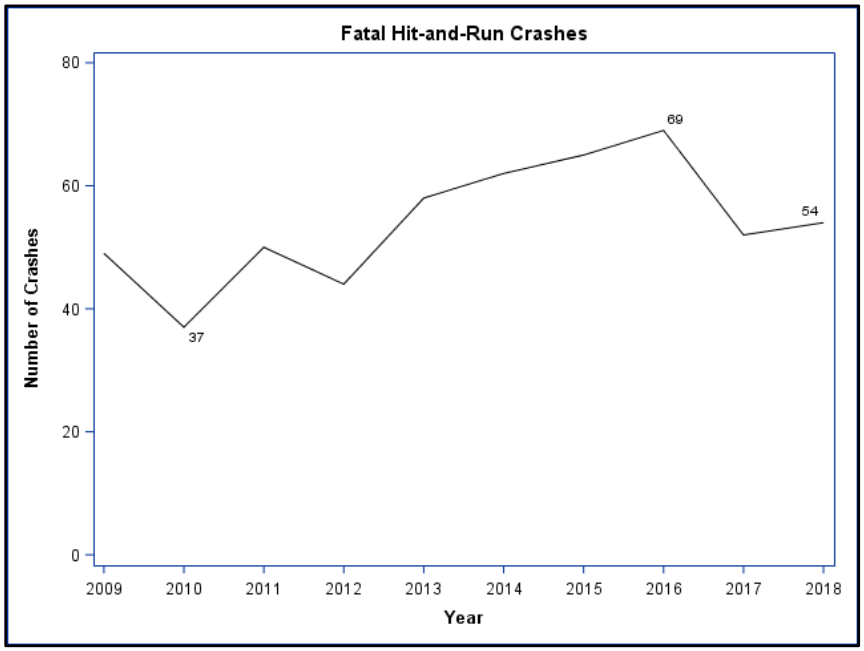
Winter Road Conditions



The chart above depicts fatal crashes that occurred under winter weather road conditions—ice, snow, or slush. The counts are presented according to winter season—October of one calendar year through April of the following calendar year. More fatal crashes occurred under icy or snowy road conditions than slushy conditions. Over the ten-year period, the peak number of fatal winter weather road condition crashes occurred in the winter of 2010-2011 with 116, and the lowest count was during the winter of

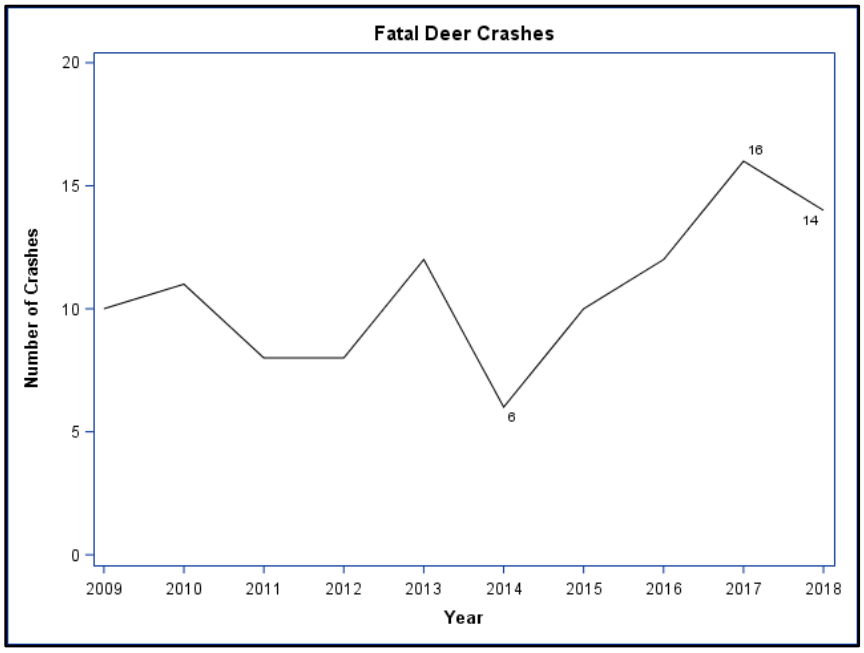
2016-2017 with 54. The winter of 2017-2018 had 85 fatal winter weather road condition crashes, 41 on snowy roads, 32 on icy roads, and 12 on slushy roads.

Hit-and-Run



Over the last ten years, the number of fatal hit-and-run crashes has varied from 37 in 2010 to 69 in 2016. There were 54 fatal hit-and-run crashes in 2018, about on par with the 52 that occurred in 2017.

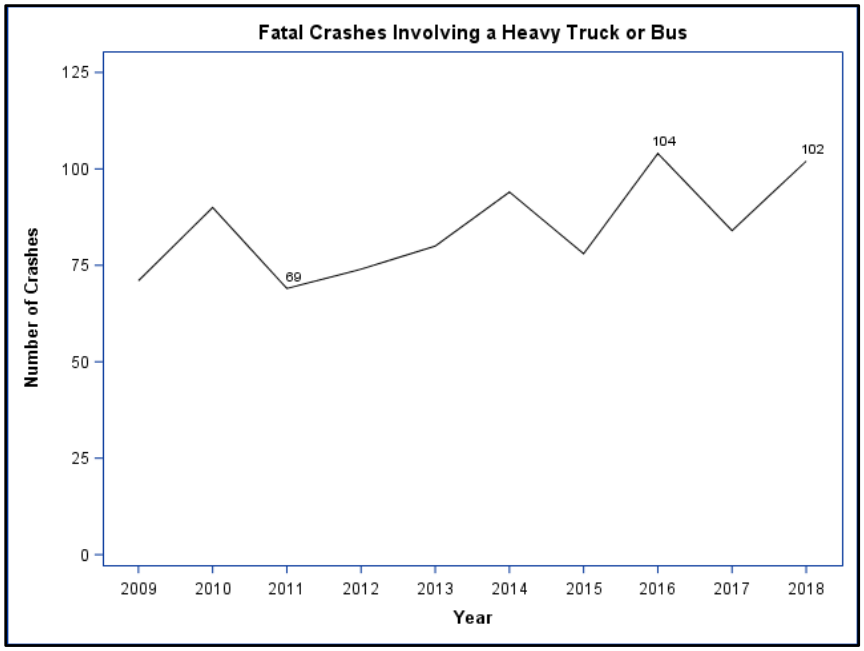
Deer



While traffic crashes involving a deer are relatively common in Michigan—53,464 such crashes occurred in 2018—they are rarely fatal. The number of deer crashes resulting in at least one fatality ranged from six

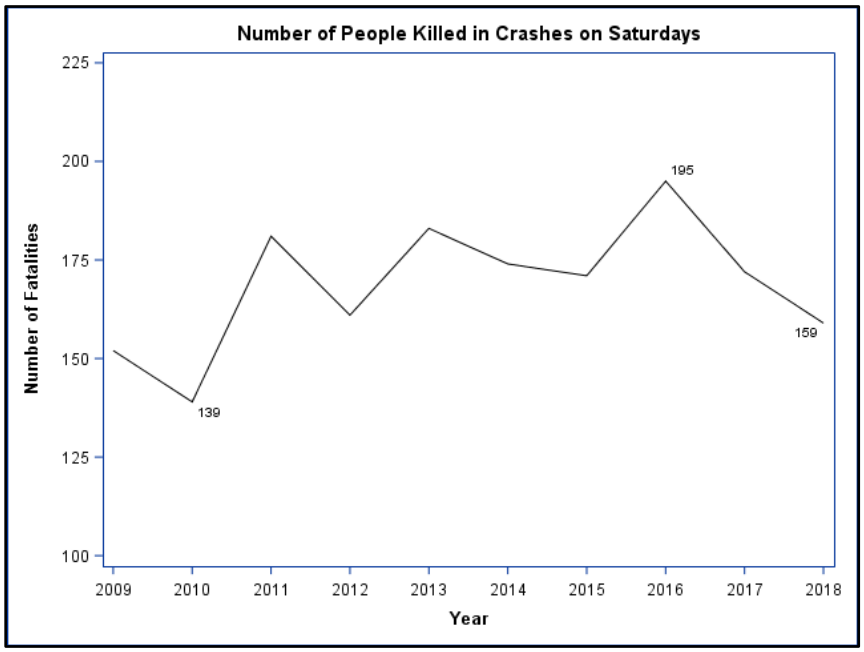
to 16 per year over the ten-year period (chart on the bottom of the previous page). The tally for fatal deer crashes in 2018 was 14. Of all motor vehicles involved in fatal deer crashes over the past ten years, 60% (74 out of 124) were motorcycles.

Heavy Trucks/Buses

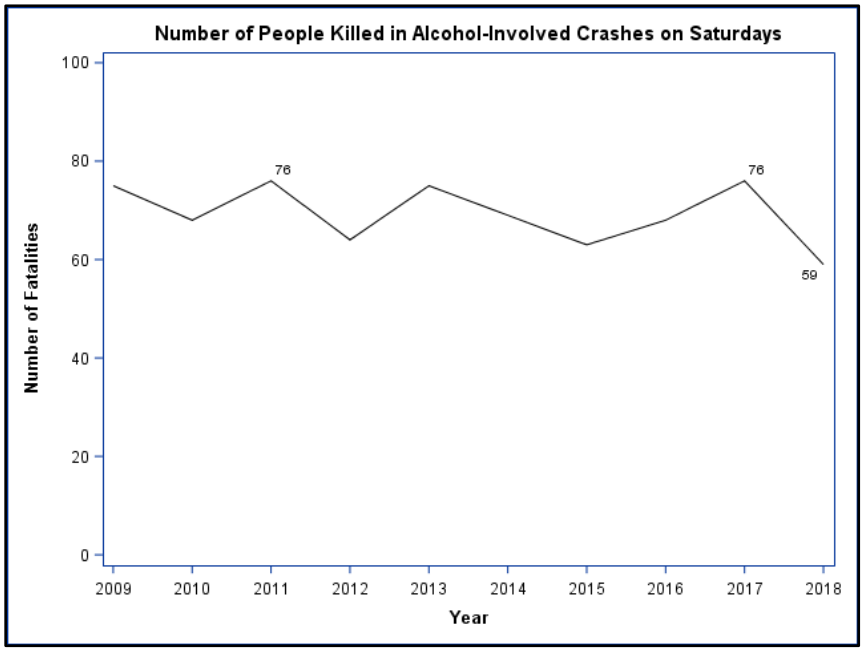


Over the past ten years, the highest number of fatal crashes involving a heavy truck or bus occurred in 2016 with 104, and the low was in 2011 with 69. There were 84 heavy truck/bus fatal crashes in 2017, and the number rose nearly to 2016 levels in 2018 with 102.

Saturdays



Over the past ten years, more fatalities on the roads have occurred on Saturdays than any other day of the week. From 2009 to 2018, an average of about 169 fatalities per year took place on Saturdays, around 150 on Sundays and Fridays, and from about 118 to 123 on each of the other days of the week. During this time period, the peak number of Saturday fatalities occurred in 2016 with 195, and the low was in 2010 with 139 (see chart at the bottom of the previous page). The 159 fatalities on Saturday in 2018 reflected a drop of 7.6% from the 172 Saturday fatalities in 2017.



The number of fatalities in alcohol-involved crashes on Saturdays has shown small fluctuations over the past ten years, ranging from a high of 76 in both 2011 and 2017 to a low of 59 in 2018 (see chart above). Out of all fatalities in Saturday crashes in 2018, 37.1% involved alcohol, which was down from 44.2% in 2017.

Number of Fatal Crashes 2014-2018

Number of Fatal Crashes by Category	2014	2015	2016	2017	2018	2014-2015 Percent Change	2015-2016 Percent Change	2016-2017 Percent Change	2017-2018 Percent Change	2014-2018 Percent Change
All fatal crashes	806	893	980	937	905	10.8%	9.7%	-4.4%	-3.4%	12.3%
Alcohol involved	222	271	254	320	287	22.1%	-6.3%	26.0%	-10.3%	29.3%
Drug involved	131	159	216	221	220	21.4%	35.8%	2.3%	-0.5%	67.9%
Construction/maintenance zone	17	11	16	21	15	-35.3%	45.5%	31.3%	-28.6%	-11.8%
Head-on crashes	119	103	115	100	99	-13.4%	11.7%	-13.0%	-1.0%	-16.8%
Bicyclist involved	21	34	33	21	23	61.9%	-2.9%	-36.4%	9.5%	9.5%
Farm equipment involved	1	4	2	1	2	300.0%	-50.0%	-50.0%	100.0%	100.0%
Hit-and-run	62	65	69	52	54	4.8%	6.2%	-24.6%	3.8%	-12.9%
Lane departure - multiple vehicle	108	105	118	98	103	-2.8%	12.4%	-16.9%	5.1%	-4.6%
Lane departure - parked vehicle	7	8	12	6	4	14.3%	50.0%	-50.0%	-33.3%	-42.9%
Motorcycle involved	105	133	138	131	126	26.7%	3.8%	-5.1%	-3.8%	20.0%
Pedestrian involved	148	168	164	156	145	13.5%	-2.4%	-4.9%	-7.1%	-2.0%
Truck or bus involved	94	78	104	84	102	-17.0%	33.3%	-19.2%	21.4%	8.5%
Saturday/Sunday	292	294	320	286	308	0.7%	8.8%	-10.6%	7.7%	5.5%
US route	75	74	99	93	101	-1.3%	33.8%	-6.1%	8.6%	34.7%
Interstate route	90	81	92	84	94	-10.0%	13.6%	-8.7%	11.9%	4.4%
County road, city street, or unknown	456	536	565	554	505	17.5%	5.4%	-1.9%	-8.8%	10.7%
Dark unlighted	260	235	243	248	255	-9.6%	3.4%	2.1%	2.8%	-1.9%
Two traffic lanes	498	550	573	576	555	10.4%	4.2%	0.5%	-3.6%	11.4%
Dry road	609	699	741	700	676	14.8%	6.0%	-5.5%	-3.4%	11.0%
Wet road	109	119	126	148	129	9.2%	5.9%	17.5%	-12.8%	18.3%
Icy road	46	35	40	25	32	-23.9%	14.3%	-37.5%	28.0%	-30.4%
Snowy road	32	19	34	28	33	-40.6%	78.9%	-17.6%	17.9%	3.1%

Number of Fatalities 2014-2018

Number of Fatalities by Category	2014	2015	2016	2017	2018	2014-2015 Percent Change	2015-2016 Percent Change	2016-2017 Percent Change	2017-2018 Percent Change	2014-2018 Percent Change
All fatalities	876	963	1,064	1,028	974	9.9%	10.5%	-3.4%	-5.3%	11.2%
Alcohol involved	236	303	274	359	315	28.4%	-9.6%	31.0%	-12.3%	33.5%
Drug involved	150	179	239	246	247	19.3%	33.5%	2.9%	0.4%	64.7%
Construction/maintenance zone	17	15	17	23	16	-11.8%	13.3%	35.3%	-30.4%	-5.9%
Head-on crashes	147	125	137	119	109	-15.0%	9.6%	-13.1%	-8.4%	-25.9%
Bicyclist fatalities	21	33	38	21	21	57.1%	15.2%	-44.7%	0.0%	0.0%
Farm equipment involved	1	4	2	1	2	300.0%	-50.0%	-50.0%	100.0%	100.0%
Hit-and-run	63	68	75	55	56	7.9%	10.3%	-26.7%	1.8%	-11.1%
Lane departure - multiple vehicle	132	126	140	118	112	-4.5%	11.1%	-15.7%	-5.1%	-15.2%
Lane departure - parked vehicle	7	10	14	6	5	42.9%	40.0%	-57.1%	-16.7%	-28.6%
Motorcyclist fatalities	107	138	141	137	134	29.0%	2.2%	-2.8%	-2.2%	25.2%
Pedestrian fatalities	148	170	165	158	145	14.9%	-2.9%	-4.2%	-8.2%	-2.0%
Truck or bus involved	105	85	120	95	112	-19.0%	41.2%	-20.8%	17.9%	6.7%
Saturday/Sunday	310	326	351	322	334	5.2%	7.7%	-8.3%	3.7%	7.7%
US route	84	76	109	111	116	-9.5%	43.4%	1.8%	4.5%	38.1%
Interstate route	98	95	104	96	101	-3.1%	9.5%	-7.7%	5.2%	3.1%
County road, city street, or unknown	492	578	610	596	533	17.5%	5.5%	-2.3%	-10.6%	8.3%
Dark unlighted	292	248	258	269	267	-15.1%	4.0%	4.3%	-0.7%	-8.6%
Two traffic lanes	551	592	629	634	597	7.4%	6.3%	0.8%	-5.8%	8.3%
Dry road	660	753	803	767	735	14.1%	6.6%	-4.5%	-4.2%	11.4%
Wet road	116	127	133	163	135	9.5%	4.7%	22.6%	-17.2%	16.4%
Icy road	50	40	50	29	32	-20.0%	25.0%	-42.0%	10.3%	-36.0%
Snowy road	38	21	36	30	37	-44.7%	71.4%	-16.7%	23.3%	-2.6%