

## VEHICLE TYPE AND CRASH INVOLVEMENT

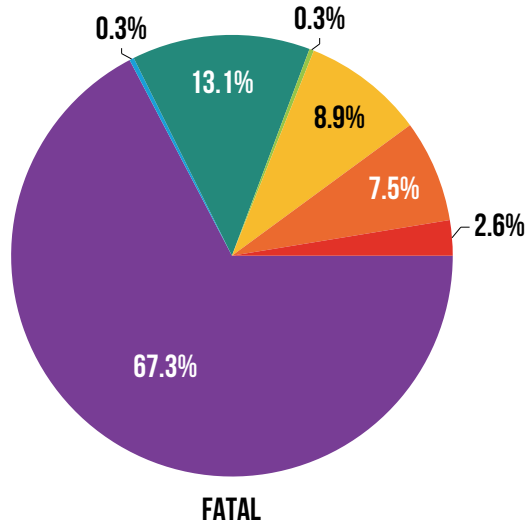
VEHICLE TYPE	MOTOR VEHICLES		FATAL CRASH		INJURY CRASH	PROPERTY DAMAGE ONLY	FATALITY IN VEHICLE		INJURY	NO INJURY
	Number of Vehicles	% of Total	Number	% of Total			Number	% of Total		
Passenger Car, SUV, Van	438,195	82.0	1,016	67.3	85,268	351,911	512	68.0	53,266	384,417
Motor Home	1,425	0.3	5	0.3	230	1,190	2	0.3	130	1,293
Pickup Truck	58,811	11.0	197	13.1	10,061	48,553	76	10.1	5,201	53,534
Small Truck under 10,000 lbs. GVWR	2,999	0.6	5	0.3	455	2,539	1	0.1	194	2,804
Motorcycle	2,728	0.5	134	8.9	2,004	590	127	16.9	1,971	630
Moped / Goped	390	0.1	5	0.3	298	87	5	0.7	294	91
Go-cart / Golf Cart	39	0.0	1	0.1	16	22	1	0.1	16	22
Snowmobile	78	0.0	0	0.0	50	28	0	0.0	47	31
Off-Road Vehicle - ORV / All-Terrain Vehicle - ATV	283	0.1	15	1.0	218	50	15	2.0	210	58
Other	2,104	0.4	4	0.3	318	1,782	3	0.4	128	1,973
Unknown	11,632	2.2	14	0.9	1,258	10,360	0	0.0	12	11,620
CDL Truck/Bus (breakdown below)	15,539	2.9	113	7.5	2,662	12,764	11	1.5	774	14,754
<b>Total Number of Vehicles</b>	<b>534,223</b>	<b>100.0</b>	<b>1,509</b>	<b>100.0</b>	<b>102,838</b>	<b>429,876</b>	<b>753</b>	<b>100.0</b>	<b>62,243</b>	<b>471,227</b>

Note: School bus cannot be broken out of CDL Truck/Bus

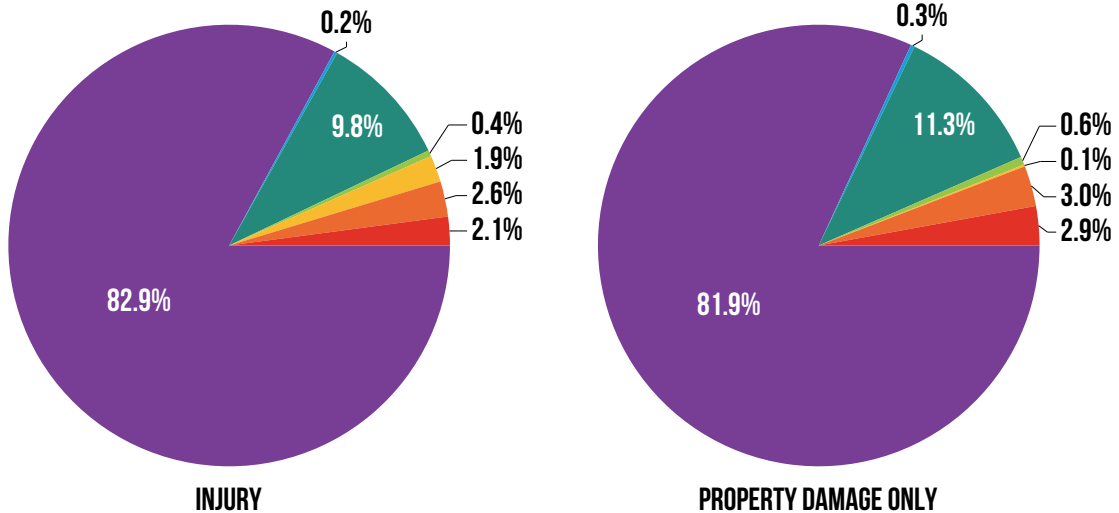
CDL TRUCK/BUS SUB-CATEGORY TYPE	MOTOR VEHICLES		FATAL CRASH		INJURY CRASH	PROPERTY DAMAGE ONLY	FATALITY IN VEHICLE		INJURY	NO INJURY
	Number of Vehicles	% of Total	Number	% of Total			Number	% of Total		
10,000 lbs. or Less	240	1.5	3	2.7	19	218	2	18.2	12	226
10,001 - 26,000 lbs.	4,795	30.9	21	18.6	683	4,091	1	9.1	218	4,576
Greater than 26,000 lbs.	10,113	65.1	89	78.8	1,932	8,092	8	72.7	541	9,564
Unknown Truck	391	2.5	0	0.0	28	363	0	0.0	3	388
<b>Total Number of Vehicles</b>	<b>15,539</b>	<b>100.0</b>	<b>113</b>	<b>100.0</b>	<b>2,662</b>	<b>12,764</b>	<b>11</b>	<b>100.0</b>	<b>774</b>	<b>14,754</b>

# VEHICLE TYPES IN CRASHES BY CRASH SEVERITY

■ PASSENGER CAR, SUV, VAN 
 ■ MOTOR HOME 
 ■ PICKUP TRUCK 
 ■ TRUCK UNDER 10,000 LBS. 
 ■ MOTORCYCLE 
 ■ CDL TRUCK/BUS 
 ■ OTHER



The chart shows that 81.0 percent of vehicles involved in fatal crashes are passenger vehicles (passenger cars, SUVs, vans, motor homes, pickup trucks, or trucks under 10,000 lbs.). Motorcycles make up 8.9 percent of fatal crash involvements.



Passenger vehicles (passenger cars, SUVs, vans, motor homes, pickup trucks, or trucks under 10,000 lbs.) make up an even larger share of vehicles in injury crashes (93.4%) and property damage only (PDO) crashes (94.0%) than they do of fatal crashes.

*Note: "Other" consists of moped, go-cart, snowmobile, off-road vehicle, other, and unknown.*

## ACTION PRIOR TO CRASH

DRIVER ACTION	VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number	% of Total		A	B	C	
Going straight ahead	292,339	54.7	1,090	5,158	16,886	36,710	232,495
Turning left	37,040	6.9	83	714	2,920	5,753	27,570
Turning right	15,817	3.0	9	112	639	1,396	13,661
Stopped on roadway	50,952	9.5	80	382	2,536	8,451	39,503
In prior crash	417	0.1	3	19	30	70	295
Changing lanes	16,978	3.2	27	98	416	1,203	15,234
Backing	10,970	2.1	7	20	101	258	10,584
Slowing/stopping on roadway	52,433	9.8	50	359	1,951	7,567	42,506
Slowing/stopping other	593	0.1	0	11	30	87	465
Starting up on roadway	9,167	1.7	19	98	459	1,450	7,141
Starting up other	96	0.0	0	0	4	11	81
Entering parking	468	0.1	1	2	9	36	420
Leaving parking	1,121	0.2	1	11	60	131	918
Entering roadway	5,938	1.1	10	86	344	773	4,725
Leaving roadway	640	0.1	4	30	46	98	462
Making U-turn	1,007	0.2	1	28	72	123	783
Overtaking or passing	3,125	0.6	21	90	171	253	2,590
Avoiding object	427	0.1	2	13	27	39	346
Avoiding animal	856	0.2	0	15	71	116	654
Avoiding pedestrian	70	0.0	4	3	9	10	44
Avoiding vehicle (front/back)	3,250	0.6	13	54	241	399	2,543
Avoiding vehicle (angle)	1,281	0.2	3	31	106	164	977
Driverless moving	236	0.0	1	10	14	21	190
Parked	18,909	3.5	27	164	543	936	17,239
Crossing at intersection	61	0.0	2	2	6	10	41
Crossing not at intersection	4	0.0	0	0	1	1	2
Getting on/off vehicle	7	0.0	0	0	3	1	3
In roadway with traffic	20	0.0	0	0	1	3	16
In roadway against traffic	11	0.0	0	1	1	4	5
Standing or lying in roadway	3	0.0	0	0	0	0	3
Pushing/working on vehicle	4	0.0	0	0	1	0	3
Other working in roadway	3	0.0	0	0	0	0	3
Playing in roadway	0	0.0	0	0	0	0	0
In roadway other reason	20	0.0	1	1	2	4	12
Not in roadway	64	0.0	0	2	7	10	45
Negotiating a curve	3,428	0.6	38	133	289	394	2,574
Other	683	0.1	2	20	43	90	528
Unknown	5,785	1.1	10	51	131	378	5,215
<b>TOTAL</b>	<b>534,223</b>	<b>100.0</b>	<b>1,509</b>	<b>7,718</b>	<b>28,170</b>	<b>66,950</b>	<b>429,876</b>

## ACTION PRIOR TO CRASH (CONTINUED)

MOTORCYCLIST ACTION	MOTORCYCLES		MOTORCYCLISTS*		FATALITY	INJURY			NO INJURY
	Number of Motorcycles	% of Total	Number of Motorcyclists	% of Total		A	B	C	
Going straight ahead	1,858	68.1	2,061	68.4	109	479	689	341	410
Turning left	125	4.6	137	4.5	2	25	59	21	28
Turning right	75	2.7	79	2.6	0	9	32	16	21
Stopped on roadway	106	3.9	121	4.0	3	6	17	28	67
In prior crash	0	0.0	0	0.0	0	0	0	0	0
Changing lanes	39	1.4	41	1.4	2	9	9	7	11
Backing	0	0.0	0	0.0	0	0	0	0	0
Slowing/stopping on roadway	139	5.1	153	5.1	3	32	53	23	42
Slowing/stopping other	1	0.0	1	0.0	0	0	0	0	1
Starting up on roadway	22	0.8	23	0.8	0	4	7	5	7
Starting up other	1	0.0	1	0.0	0	0	1	0	0
Entering parking	1	0.0	1	0.0	0	1	0	0	0
Leaving parking	2	0.1	2	0.1	0	1	0	0	1
Entering roadway	12	0.4	13	0.4	0	1	7	2	2
Leaving roadway	2	0.1	2	0.1	0	0	1	0	1
Making U-turn	5	0.2	6	0.2	0	0	3	2	0
Overtaking or passing	60	2.2	63	2.1	6	17	19	6	12
Avoiding object	6	0.2	6	0.2	0	1	3	2	0
Avoiding animal	14	0.5	14	0.5	0	1	5	7	1
Avoiding pedestrian	2	0.1	3	0.1	0	0	2	0	1
Avoiding vehicle (front/back)	50	1.8	57	1.9	1	8	35	4	9
Avoiding vehicle (angle)	32	1.2	36	1.2	0	3	20	9	4
Driverless moving	0	0.0	0	0.0	0	0	0	0	0
Parked	28	1.0	28	0.9	0	0	0	0	3
Crossing at intersection	1	0.0	1	0.0	0	0	0	0	0
Crossing not at intersection	0	0.0	0	0.0	0	0	0	0	0
Getting on/off vehicle	0	0.0	0	0.0	0	0	0	0	0
In roadway with traffic	0	0.0	0	0.0	0	0	0	0	0
In roadway against traffic	0	0.0	0	0.0	0	0	0	0	0
Standing or lying in roadway	0	0.0	0	0.0	0	0	0	0	0
Pushing/working on vehicle	0	0.0	0	0.0	0	0	0	0	0
Other working in roadway	0	0.0	0	0.0	0	0	0	0	0
Playing in roadway	0	0.0	0	0.0	0	0	0	0	0
In roadway other reason	0	0.0	0	0.0	0	0	0	0	0
Not in roadway	0	0.0	0	0.0	0	0	0	0	0
Negotiating a curve	122	4.5	136	4.5	8	55	37	20	14
Other	13	0.5	15	0.5	0	5	4	2	3
Unknown	12	0.4	12	0.4	0	2	2	1	0
<b>TOTAL</b>	<b>2,728</b>	<b>100.0</b>	<b>3,012</b>	<b>100.0</b>	<b>134</b>	<b>659</b>	<b>1,005</b>	<b>496.0</b>	<b>638.0</b>

\*This table includes 80 motorcyclists (drivers and passengers) with unknown injury severity

## ACTION PRIOR TO CRASH (CONTINUED)

BICYCLIST ACTION	BICYCLISTS*		FATALITY	INJURY			NO INJURY
	Number of Bicyclists	% of Total		A	B	C	
Going straight ahead	944	60.6	14	74	311	333	162
Turning left	36	2.3	0	5	15	7	6
Turning right	14	0.9	0	0	4	4	4
Stopped on roadway	8	0.5	0	3	2	1	2
In prior crash	0	0.0	0	0	0	0	0
Changing lanes	11	0.7	0	3	4	0	4
Backing	1	0.1	0	0	0	0	1
Slowing/stopping on roadway	6	0.4	0	1	0	4	1
Slowing/stopping other	1	0.1	0	0	1	0	0
Starting up on roadway	7	0.4	0	0	0	2	5
Starting up other	1	0.1	0	0	0	1	0
Entering parking	2	0.1	0	0	1	1	0
Leaving parking	1	0.1	0	0	0	0	1
Entering roadway	67	4.3	1	7	29	22	5
Leaving roadway	1	0.1	0	0	1	0	0
Making U-turn	1	0.1	0	1	0	0	0
Overtaking or passing	2	0.1	0	0	1	1	0
Avoiding object	0	0.0	0	0	0	0	0
Avoiding animal	0	0.0	0	0	0	0	0
Avoiding pedestrian	1	0.1	0	0	0	0	1
Avoiding vehicle (front/back)	2	0.1	0	0	0	2	0
Avoiding vehicle (angle)	2	0.1	0	0	1	0	1
Driverless moving	0	0.0	0	0	0	0	0
Parked	0	0.0	0	0	0	0	0
Crossing at intersection	300	19.3	0	21	116	109	43
Crossing not at intersection	60	3.9	0	11	28	15	5
Getting on/off vehicle	0	0.0	0	0	0	0	0
In roadway with traffic	25	1.6	4	4	10	5	1
In roadway against traffic	15	1.0	0	4	5	3	2
Standing or lying in roadway	0	0.0	0	0	0	0	0
Pushing/working on vehicle	0	0.0	0	0	0	0	0
Other working in roadway	0	0.0	0	0	0	0	0
Playing in roadway	3	0.2	0	0	2	0	0
In roadway other reason	6	0.4	0	1	0	3	2
Not in roadway	11	0.7	0	1	5	2	2
Negotiating a curve	0	0.0	0	0	0	0	0
Other	19	1.2	1	0	4	9	2
Unknown	11	0.7	1	0	1	1	7
<b>TOTAL</b>	<b>1,558</b>	<b>100.0</b>	<b>21</b>	<b>136</b>	<b>541</b>	<b>525</b>	<b>257</b>

\*Includes 78 bicyclists with unknown injury severity

## ACTION PRIOR TO CRASH (CONTINUED)

PEDESTRIAN ACTION	PEDESTRIANS*		FATALITY	INJURY			NO INJURY
	Number of Pedestrians	% of Total		A	B	C	
Going straight ahead	29	1.3	0	4	11	9	5
Turning left	0	0.0	0	0	0	0	0
Turning right	0	0.0	0	0	0	0	0
Stopped on roadway	2	0.1	0	0	2	0	0
In prior crash	0	0.0	0	0	0	0	0
Changing lanes	1	0.0	0	0	0	0	1
Backing	1	0.0	0	0	0	0	1
Slowing/stopping on roadway	0	0.0	0	0	0	0	0
Slowing/stopping other	0	0.0	0	0	0	0	0
Starting up on roadway	0	0.0	0	0	0	0	0
Starting up other	1	0.0	0	0	0	0	1
Entering parking	0	0.0	0	0	0	0	0
Leaving parking	0	0.0	0	0	0	0	0
Entering roadway	7	0.3	0	1	2	2	2
Leaving roadway	1	0.0	0	1	0	0	0
Making U-turn	0	0.0	0	0	0	0	0
Overtaking or passing	0	0.0	0	0	0	0	0
Avoiding object	0	0.0	0	0	0	0	0
Avoiding animal	0	0.0	0	0	0	0	0
Avoiding pedestrian	0	0.0	0	0	0	0	0
Avoiding vehicle (front/back)	1	0.0	0	0	0	1	0
Avoiding vehicle (angle)	0	0.0	0	0	0	0	0
Driverless moving	0	0.0	0	0	0	0	0
Parked	0	0.0	0	0	0	0	0
Crossing at intersection	837	36.1	28	95	261	333	86
Crossing not at intersection	468	20.2	35	114	138	125	37
Getting on/off vehicle	33	1.4	2	6	18	6	1
In roadway with traffic	219	9.5	21	25	62	60	40
In roadway against traffic	37	1.6	4	5	10	10	8
Standing or lying in roadway	135	5.8	18	41	28	40	2
Pushing/working on vehicle	20	0.9	3	6	4	7	0
Other working in roadway	31	1.3	2	5	8	9	7
Playing in roadway	28	1.2	0	12	8	6	2
In roadway other reason	200	8.6	14	47	46	55	27
Not in roadway	124	5.4	8	25	37	31	19
Negotiating a curve	1	0.0	0	0	0	0	1
Other	87	3.8	5	18	23	25	9
Unknown	54	2.3	5	13	15	10	7
<b>TOTAL</b>	<b>2,317</b>	<b>100.0</b>	<b>145</b>	<b>418</b>	<b>673</b>	<b>729</b>	<b>256</b>

\*Includes 96 pedestrians with unknown injury severity

## MOST HARMFUL EVENT

NONCOLLISION	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Loss of control	3,222	0.6	6	118	300	452	2,346
Cross center/median	732	0.1	6	31	65	98	532
Ran off road left	1,047	0.2	4	25	92	114	812
Ran off road right	1,840	0.3	4	43	138	211	1,444
Re-center road	145	0.0	0	3	10	16	116
Overturn	5,964	1.1	72	393	1,170	1,270	3,059
Separation of Units	316	0.1	0	2	11	48	255
Fire/explosion	374	0.1	12	9	19	12	322
Immersion	213	0.0	4	0	5	18	186
Jackknife	205	0.0	0	2	5	19	179
Downhill runaway	18	0.0	0	0	1	2	15
Cargo loss/shift	446	0.1	0	3	11	16	416
Individual fell off	335	0.1	16	104	145	41	29
Other noncollision	1,084	0.2	1	24	68	106	885
<b>SUBTOTAL</b>	<b>15,941</b>	<b>3.0</b>	<b>125</b>	<b>757</b>	<b>2,040</b>	<b>2,423</b>	<b>10,596</b>

COLLISION WITH A NONFIXED OBJECT	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Pedestrian	1,991	0.4	146	366	601	616	262
Bicycle/ Pedalcycle	1,464	0.3	21	133	511	496	303
Motor vehicle in transport	397,562	74.4	961	5,127	21,166	57,103	313,205
Parked motor vehicle	16,585	3.1	12	122	419	815	15,217
Railway train	59	0.0	0	2	6	7	44
Animal	54,816	10.3	11	73	299	642	53,791
Other nonfixed objects	4,042	0.8	11	31	100	154	3,746
<b>SUBTOTAL</b>	<b>476,519</b>	<b>89.2</b>	<b>1,162</b>	<b>5,854</b>	<b>23,102</b>	<b>59,833</b>	<b>386,568</b>

## MOST HARMFUL EVENT (CONTINUED)

COLLISION WITH A FIXED OBJECT	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Bridge/pier/abutment	188	0.0	6	4	20	28	130
Bridge rail	412	0.1	1	5	22	35	349
Guardrail face	2,919	0.5	7	41	144	289	2,438
Guardrail end	580	0.1	2	13	45	88	432
Median barrier	4,079	0.8	5	97	307	762	2,908
Highway traffic sign post	2,964	0.6	5	13	59	122	2,765
Highway signal post	179	0.0	1	4	9	14	151
Luminaire/light support	3,538	0.7	21	86	310	525	2,596
Other pole	1,121	0.2	2	17	54	102	946
Culvert	451	0.1	4	27	60	60	300
Curb	1,478	0.3	6	23	62	66	1,321
Ditch	5,904	1.1	13	111	434	634	4,712
Embankment	927	0.2	5	31	74	116	701
Fence	823	0.2	0	10	28	59	726
Mailbox	1,443	0.3	0	4	17	30	1,392
Tree	8,861	1.7	116	497	1,042	1,229	5,977
Rail crossing signal	76	0.0	0	2	5	4	65
Building	526	0.1	11	31	76	86	322
Traffic island	40	0.0	0	0	4	4	32
Fire hydrant	420	0.1	0	5	12	39	364
Impact attenuator	211	0.0	0	14	11	32	154
Other fixed object	1,710	0.3	15	41	131	163	1,360
<b>SUBTOTAL</b>	<b>38,850</b>	<b>7.3</b>	<b>220</b>	<b>1,076</b>	<b>2,926</b>	<b>4,487</b>	<b>30,141</b>

	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Unknown Event	2,913	0.5	2	31	102	207	2,571
<b>MOST HARMFUL EVENT TOTAL</b>	<b>534,223</b>	<b>100.0</b>	<b>1,509</b>	<b>7,718</b>	<b>28,170</b>	<b>66,950</b>	<b>429,876</b>



## VEHICLE DEFECTS IN CRASH INVOLVEMENT

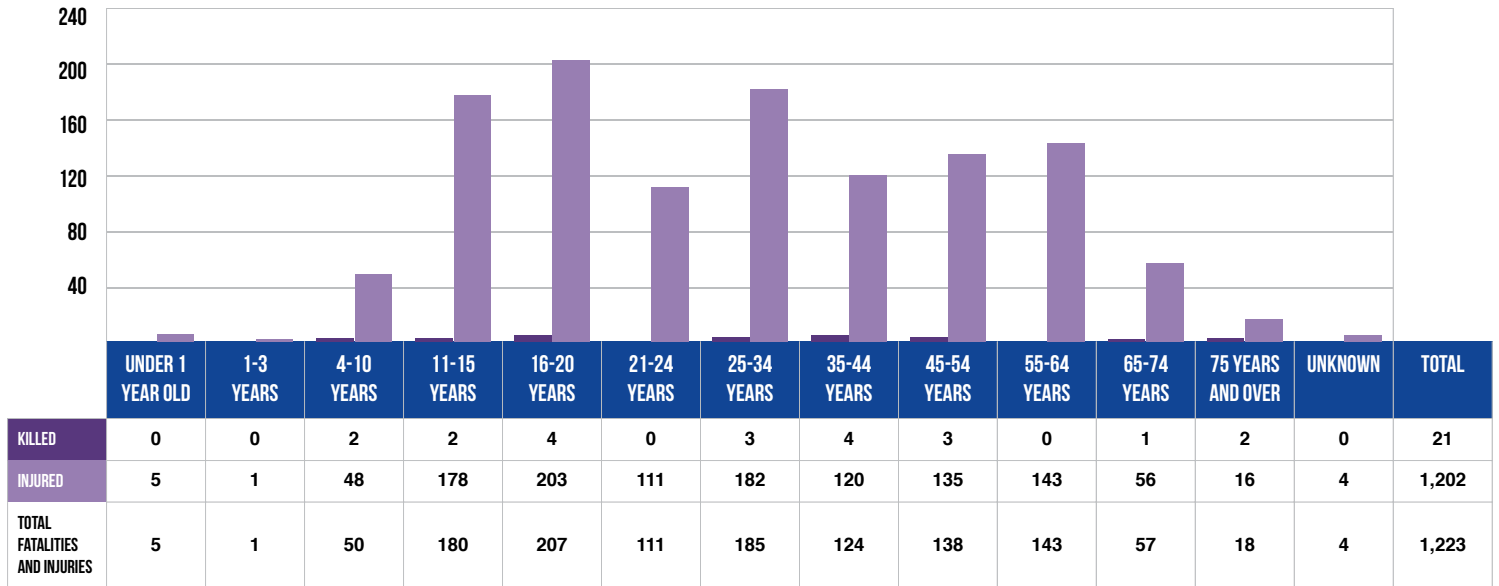
VEHICLE DEFECTS	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Brakes	853	0.2	2	11	49	149	642
Lights/reflectors	127	0.0	1	3	9	11	103
Steering	213	0.0	0	6	14	22	171
Tires/wheels	742	0.1	4	22	58	78	580
Windows	39	0.0	0	0	3	6	30
Coupling/hitch/chains	96	0.0	0	0	3	5	88
Other	1,910	0.4	8	37	86	254	1,525
None or Unknown	530,243	99.3	1,494	7,639	27,948	66,425	426,737
<b>TOTAL</b>	<b>534,223</b>	<b>100.0</b>	<b>1,509</b>	<b>7,718</b>	<b>28,170</b>	<b>66,950</b>	<b>429,876</b>

## DRIVER HAZARDOUS ACTION

HAZARDOUS ACTION	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
None	271,102	50.7	626	3,285	12,873	31,971	222,347
Speed too fast	31,239	5.8	182	764	2,193	4,001	24,099
Speed too slow	269	0.1	3	4	22	36	204
Failed to yield	46,846	8.8	100	832	3,654	7,492	34,768
Disregard traffic control	10,395	1.9	66	359	1,279	2,551	6,140
Drove wrong way	404	0.1	6	26	43	70	259
Drove left of center	2,456	0.5	60	131	291	374	1,600
Improper passing	2,853	0.5	7	36	107	188	2,515
Improper lane use	13,594	2.5	8	93	377	919	12,197
Improper turn	5,203	1.0	3	63	238	479	4,420
Improper/no signal	450	0.1	0	7	16	27	400
Improper backing	7,453	1.4	1	7	46	124	7,275
Unable to stop in assured clear distance	72,568	13.6	59	454	2,827	10,882	58,346
Reckless driving	2,291	0.4	64	183	293	370	1,381
Careless/negligent driving	11,998	2.2	91	516	1,213	1,707	8,471
Other	16,814	3.1	70	394	1,176	1,989	13,185
Unknown	38,288	7.2	163	564	1,522	3,770	32,269
<b>Total</b>	<b>534,223</b>	<b>100.0</b>	<b>1,509</b>	<b>7,718</b>	<b>28,170</b>	<b>66,950</b>	<b>429,876</b>

## MICHIGAN BICYCLE CRASHES

### 2018 BICYCLIST FATALITIES AND INJURIES



In 2018, there were 1,558 bicyclists involved in motor vehicle crashes, with 21 bicyclists killed and 1,202 injured. The top two age groups for bicyclist fatalities were the 16-20 and 35-44 age groups with four fatalities each (19.0%). The 16-20 age group had the greatest percentage of total fatalities and injuries (16.9%).

### BICYCLE HELMET USE AND INJURY SEVERITY

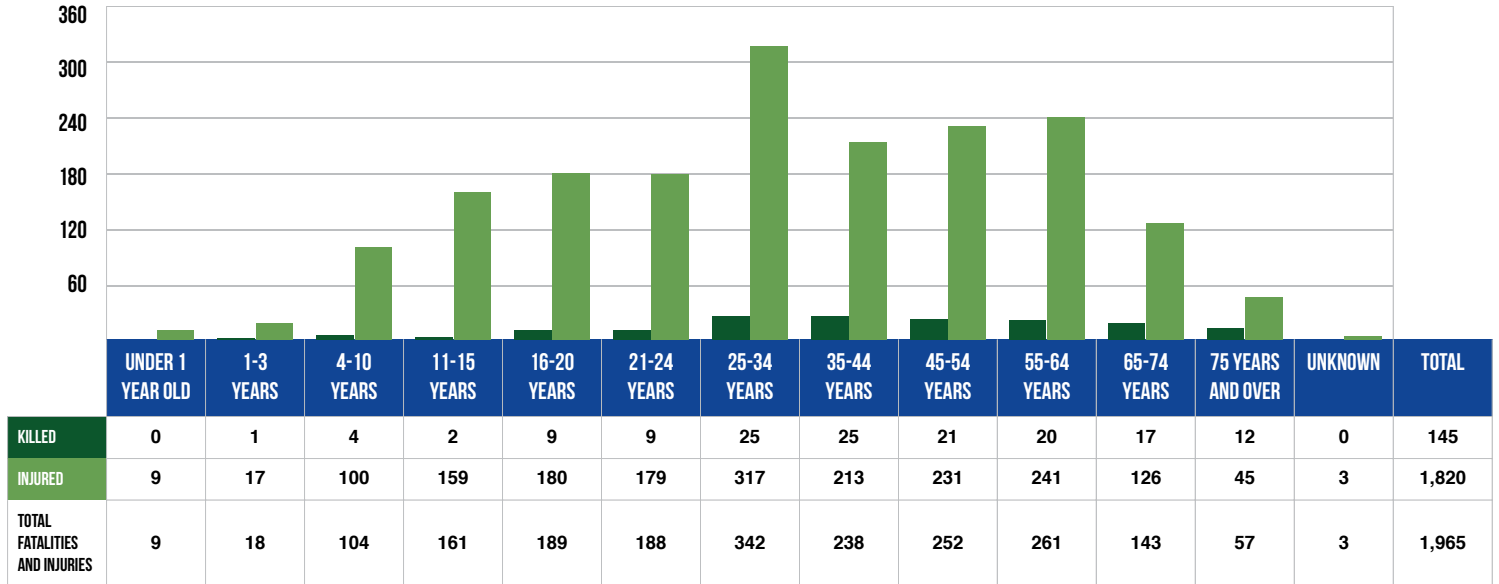
HELMET USE	FATALITY	INJURY			NO INJURY
		A	B	C	
<b>Worn</b>	2	23	77	52	32
<b>Not Worn</b>	11	54	267	263	118
<b>Unknown</b>	8	59	197	210	107
<b>Total</b>	21	136	541	525	257

*Note: 78 bicyclists had an unknown degree of injury and are not represented in this table*

The National Center for Statistics and Analysis of the National Highway Traffic Safety Administration cites a study by the Centers for Disease Control [12]: "Bicycle helmets are 85 to 88 percent effective in mitigating head and brain injuries in all types of bicycle accidents, making the use of helmets the single most effective countermeasure available to reduce head injuries and fatalities resulting from bicycle crashes."

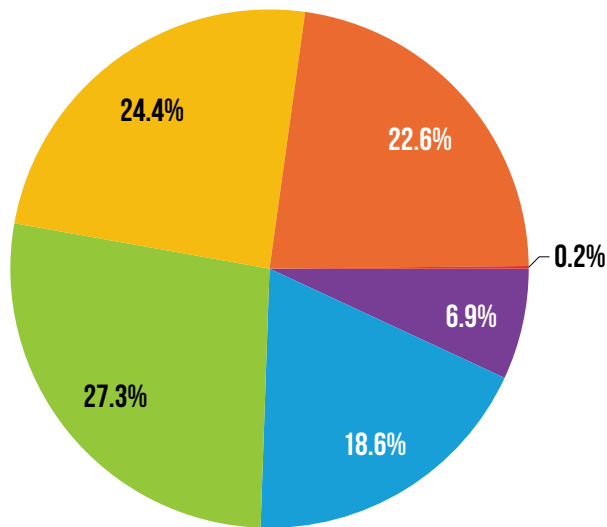
# MICHIGAN PEDESTRIAN CRASHES

## 2018 PEDESTRIAN FATALITIES AND INJURIES

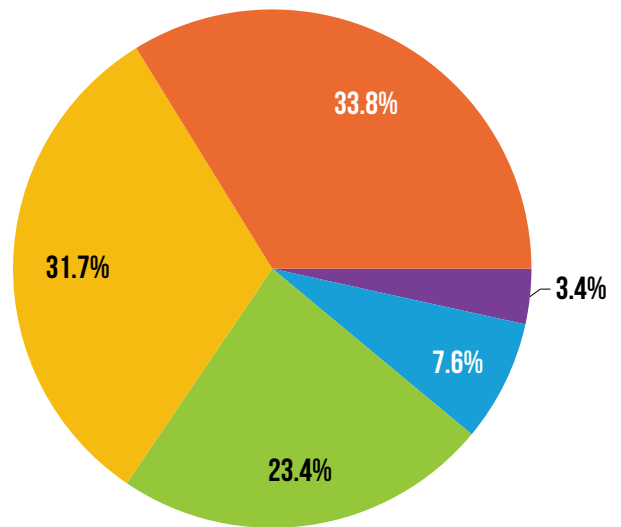


In 2018, there were 2,317 pedestrians involved in motor vehicle crashes, with 145 pedestrians killed and 1,820 injured. The top two age groups for pedestrian fatalities were the 25-34 and 35-44 age groups with 25 fatalities each (17.2%). The 25-34 age group had the greatest number of injuries (17.4%), and the greatest percentage of total fatalities and injuries (17.4%).

■ 0-10 YEARS   
 ■ 11-20 YEARS   
 ■ 21-34 YEARS   
 ■ 35-54 YEARS   
 ■ 55 AND OVER   
 ■ UNKNOWN



PEDESTRIANS INJURED



PEDESTRIANS KILLED

## MICHIGAN SNOWMOBILE CRASHES ON PUBLIC ROADWAYS - MOST HARMFUL EVENT

NONCOLLISION	SNOWMOBILES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Snowmobiles	% of Total		A	B	C	
Loss of control	0	0.0	0	0	0	0	0
Cross center/median	0	0.0	0	0	0	0	0
Ran off road left	1	1.3	0	0	0	0	1
Ran off road right	0	0.0	0	0	0	0	0
Re-center road	0	0.0	0	0	0	0	0
Overturn	10	12.8	0	2	2	4	2
Separation of Units	0	0.0	0	0	0	0	0
Fire/explosion	2	2.6	0	0	0	0	2
Immersion	0	0.0	0	0	0	0	0
Jackknife	0	0.0	0	0	0	0	0
Downhill runaway	0	0.0	0	0	0	0	0
Cargo loss/shift	0	0.0	0	0	0	0	0
Individual fell off	10	12.8	0	5	5	0	0
Other noncollision	1	1.3	0	0	0	1	0
<b>SUBTOTAL</b>	<b>24</b>	<b>30.8</b>	<b>0</b>	<b>7</b>	<b>7</b>	<b>5</b>	<b>5</b>

COLLISION WITH A NONFIXED OBJECT	SNOWMOBILES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Snowmobiles	% of Total		A	B	C	
Pedestrian	0	0.0	0	0	0	0	0
Bicycle/ Pedalcycle	0	0.0	0	0	0	0	0
Motor vehicle in transport	30	38.5	0	6	3	7	14
Parked motor vehicle	3	3.8	0	0	1	0	2
Railway train	1	1.3	0	0	0	0	1
Animal	2	2.6	0	0	0	1	1
Other nonfixed objects	0	0.0	0	0	0	0	0
<b>SUBTOTAL</b>	<b>36</b>	<b>46.2</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>8</b>	<b>18</b>

## MICHIGAN SNOWMOBILE CRASHES ON PUBLIC ROADWAYS - MOST HARMFUL EVENT (CONTINUED)

COLLISION WITH A FIXED OBJECT	SNOWMOBILES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Snowmobiles	% of Total		A	B	C	
Bridge/pier/abutment	0	0.0	0	0	0	0	0
Bridge rail	0	0.0	0	0	0	0	0
Guardrail face	0	0.0	0	0	0	0	0
Guardrail end	0	0.0	0	0	0	0	0
Median barrier	0	0.0	0	0	0	0	0
Highway traffic sign post	0	0.0	0	0	0	0	0
Highway signal post	0	0.0	0	0	0	0	0
Luminaire/light support	0	0.0	0	0	0	0	0
Other pole	0	0.0	0	0	0	0	0
Culvert	1	1.3	0	0	0	0	1
Curb	0	0.0	0	0	0	0	0
Ditch	1	1.3	0	1	0	0	0
Embankment	0	0.0	0	0	0	0	0
Fence	1	1.3	0	0	1	0	0
Mailbox	0	0.0	0	0	0	0	0
Tree	14	17.9	0	4	5	1	4
Rail crossing signal	0	0.0	0	0	0	0	0
Building	0	0.0	0	0	0	0	0
Traffic island	0	0.0	0	0	0	0	0
Fire hydrant	0	0.0	0	0	0	0	0
Impact attenuator	0	0.0	0	0	0	0	0
Other fixed object	1	1.3	0	1	0	0	0
<b>SUBTOTAL</b>	<b>18</b>	<b>23.1</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>1</b>	<b>5</b>

	SNOWMOBILES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Snowmobiles	% of Total		A	B	C	
Unknown Event	0	0.0	0	0	0	0	0
<b>MOST HARMFUL EVENT TOTAL</b>	<b>78</b>	<b>100.0</b>	<b>0</b>	<b>19</b>	<b>17</b>	<b>14</b>	<b>28</b>

Note: These crashes involve a motor vehicle in transport on a public trafficway and result in injury, death, or at least \$1,000 in property damage.

A total of 78 snowmobiles were reported in crashes on Michigan public roadways during 2018, but none of the crashes involved fatalities. A total of 50 snowmobiles were involved in 47 injury crashes.

## MICHIGAN ORV/ATV CRASHES ON PUBLIC ROADWAYS - MOST HARMFUL EVENT

NONCOLLISION	ORV/ATV		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of ORV/ATVs	% of Total		A	B	C	
Loss of control	14	4.9	0	4	4	5	1
Cross center/median	1	0.4	0	0	0	0	1
Ran off road left	0	0.0	0	0	0	0	0
Ran off road right	2	0.7	0	0	2	0	0
Re-center road	1	0.4	0	0	1	0	0
Overturn	62	21.9	1	25	23	10	3
Separation of Units	1	0.4	0	1	0	0	0
Fire/explosion	0	0.0	0	0	0	0	0
Immersion	0	0.0	0	0	0	0	0
Jackknife	0	0.0	0	0	0	0	0
Downhill runaway	0	0.0	0	0	0	0	0
Cargo loss/shift	0	0.0	0	0	0	0	0
Individual fell off	27	9.5	2	11	9	4	1
Other noncollision	1	0.4	0	1	0	0	0
<b>SUBTOTAL</b>	<b>109</b>	<b>38.5</b>	<b>3</b>	<b>42</b>	<b>39</b>	<b>19</b>	<b>6</b>

COLLISION WITH A NONFIXED OBJECT	ORV/ATV		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of ORV/ATVs	% of Total		A	B	C	
Pedestrian	1	0.4	0	1	0	0	0
Bicycle/ Pedalcycle	1	0.4	0	0	1	0	0
Motor vehicle in transport	100	35.3	5	21	25	15	34
Parked motor vehicle	7	2.5	0	2	2	0	3
Railway train	0	0.0	0	0	0	0	0
Animal	2	0.7	0	1	0	1	0
Other nonfixed objects	3	1.1	0	0	1	1	1
<b>SUBTOTAL</b>	<b>114</b>	<b>40.3</b>	<b>5</b>	<b>25</b>	<b>29</b>	<b>17</b>	<b>38</b>

## MICHIGAN ORV/ATV CRASHES ON PUBLIC ROADWAYS - MOST HARMFUL EVENT (CONTINUED)

COLLISION WITH A FIXED OBJECT	ORV/ATV		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of ORV/ATVs	% of Total		A	B	C	
Bridge/pier/abutment	0	0.0	0	0	0	0	0
Bridge rail	0	0.0	0	0	0	0	0
Guardrail face	1	0.4	0	0	0	0	1
Guardrail end	0	0.0	0	0	0	0	0
Median barrier	0	0.0	0	0	0	0	0
Highway traffic sign post	2	0.7	0	0	0	1	1
Highway signal post	0	0.0	0	0	0	0	0
Luminaire/light support	0	0.0	0	0	0	0	0
Other pole	0	0.0	0	0	0	0	0
Culvert	1	0.4	0	1	0	0	0
Curb	2	0.7	0	1	1	0	0
Ditch	8	2.8	0	1	3	3	1
Embankment	2	0.7	0	1	1	0	0
Fence	0	0.0	0	0	0	0	0
Mailbox	3	1.1	0	1	1	0	1
Tree	31	11.0	7	11	10	3	0
Rail crossing signal	0	0.0	0	0	0	0	0
Building	0	0.0	0	0	0	0	0
Traffic island	0	0.0	0	0	0	0	0
Fire hydrant	1	0.4	0	0	0	0	1
Impact attenuator	0	0.0	0	0	0	0	0
Other fixed object	8	2.8	0	6	1	1	0
<b>SUBTOTAL</b>	<b>59</b>	<b>20.8</b>	<b>7</b>	<b>22</b>	<b>17</b>	<b>8</b>	<b>5</b>

	ORV/ATV		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of ORV/ATVs	% of Total		A	B	C	
Unknown Event	1	0.4	0	0	0	0	1
<b>MOST HARMFUL EVENT TOTAL</b>	<b>283</b>	<b>100.0</b>	<b>15</b>	<b>89</b>	<b>85</b>	<b>44</b>	<b>50</b>

Note: These crashes involve a motor vehicle in transport on a public trafficway and result in injury, death, or at least \$1,000 in property damage.

A total of 283 off-road/all-terrain vehicles were reported in crashes on Michigan public roadways during 2018, resulting in 15 fatal crashes. An additional 218 ORV/ATVs were involved in 212 injury crashes.

## MICHIGAN SNOWMOBILE CRASHES ON PUBLIC ROADWAYS

HAZARDOUS ACTION	SNOWMOBILES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Snowmobiles	% of Total		A	B	C	
None	23	29.5	0	2	7	6	8
Speed too fast	18	23.1	0	6	3	2	7
Speed too slow	0	0.0	0	0	0	0	0
Failed to yield	14	17.9	0	2	0	3	9
Disregard traffic control	3	3.8	0	0	0	2	1
Drove wrong way	0	0.0	0	0	0	0	0
Drove left of center	0	0.0	0	0	0	0	0
Improper passing	0	0.0	0	0	0	0	0
Improper lane use	0	0.0	0	0	0	0	0
Improper turn	0	0.0	0	0	0	0	0
Improper/no signal	0	0.0	0	0	0	0	0
Improper backing	0	0.0	0	0	0	0	0
Unable to stop in assured clear distance	3	3.8	0	0	1	0	2
Reckless driving	1	1.3	0	0	1	0	0
Careless/negligent driving	4	5.1	0	3	1	0	0
Other	5	6.4	0	2	1	1	1
Unknown	7	9.0	0	4	3	0	0
<b>Total</b>	<b>78</b>	<b>100.0</b>	<b>0</b>	<b>19</b>	<b>17</b>	<b>14</b>	<b>28</b>

## MICHIGAN ORV/ATV CRASHES ON PUBLIC ROADWAYS

HAZARDOUS ACTION	ORV/ATV		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of ORV/ATVs	% of Total		A	B	C	
None	37	13.1	1	12	9	5	10
Speed too fast	69	24.4	7	21	25	10	6
Speed too slow	0	0.0	0	0	0	0	0
Failed to yield	28	9.9	4	5	5	3	11
Disregard traffic control	7	2.5	1	3	1	1	1
Drove wrong way	2	0.7	0	0	2	0	0
Drove left of center	2	0.7	0	0	0	1	1
Improper passing	2	0.7	0	1	0	0	1
Improper lane use	5	1.8	0	1	0	1	3
Improper turn	4	1.4	0	1	3	0	0
Improper/no signal	1	0.4	0	1	0	0	0
Improper backing	2	0.7	0	0	0	0	2
Unable to stop in assured clear distance	8	2.8	0	4	4	0	0
Reckless driving	15	5.3	0	7	3	3	2
Careless/negligent driving	32	11.3	0	11	12	6	3
Other	30	10.6	1	5	12	7	5
Unknown	39	13.8	1	17	9	7	5
<b>Total</b>	<b>283</b>	<b>100.0</b>	<b>15</b>	<b>89</b>	<b>85</b>	<b>44</b>	<b>50</b>

Note: These crashes involve a motor vehicle in transport on a public trafficway and result in injury, death, or at least \$1,000 in property damage.



## MICHIGAN FARM EQUIPMENT CRASHES

FARM EQUIPMENT CRASHES	2017	2018	% CHANGE
Crashes	223	206	-7.6%
Fatalities	1	2	100.0%
Injuries	65	75	15.4%

A total of 206 crashes involving farm equipment were reported on Michigan roadways during 2018. Of those crashes, two were fatal with two people killed.

## MICHIGAN VEHICLE-TRAIN CRASHES

VEHICLE TRAIN CRASHES	2017	2018	% CHANGE
Crashes	51	72	41.2%
Fatalities	2	0	-100.0%
Injuries	20	23	15.0%

A total of 72 crashes involving trains were reported in Michigan during 2018. None of the crashes were fatal.

## MICHIGAN MOTORCYCLE CRASHES

MOTORCYCLE DATA	2017	2018	% CHANGE
Motorcycle Registrations	258,487	252,969	-2.1%
Motorcycles in Crashes	2,964	2,728	-8.0%
Motorcyclist Deaths	137	134	-2.2%
Motorcyclists Injured	2,238	2,160	-3.5%
Death Rate based on 10,000 motorcycle registrations	5.30	5.30	-0.1%
Estimated Mileage based on 3,000 miles per motorcycle	775,461,000	758,907,000	-2.1%
Death Rate based on deaths per 100 million vehicle miles traveled	17.67	17.66	-0.1%

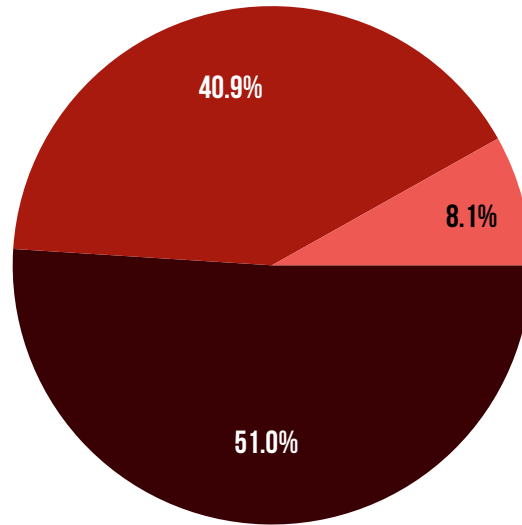
Motorcycles were involved in 0.8 percent of all traffic crashes in Michigan in 2018. Injuries were proportionately more severe to motorcyclists than to persons in motor vehicles.

## DRIVER GENDER INFORMATION

MALES

FEMALES

UNKNOWN

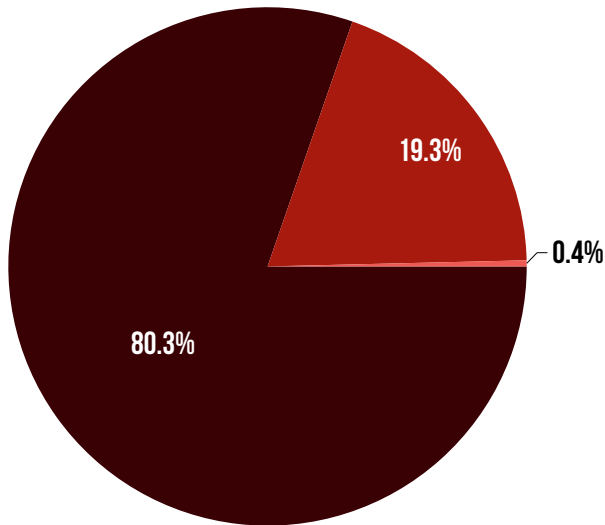


ALL CRASHES

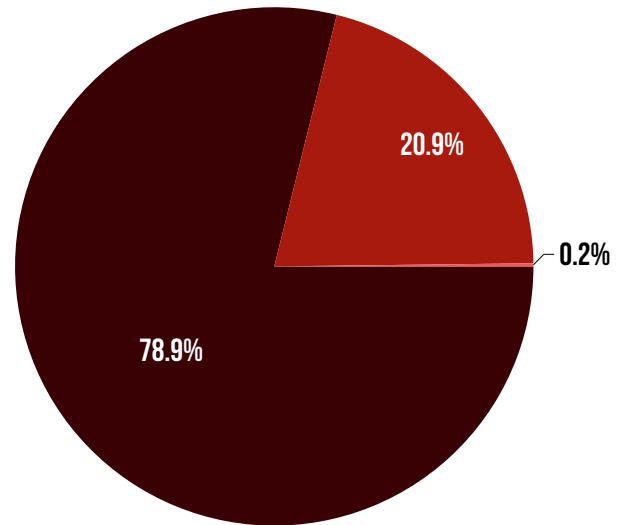
PROPERTY DAMAGE ONLY

INJURY

FATAL



MALE CRASH SEVERITY



FEMALE CRASH SEVERITY

A higher proportion of crashes involved male drivers than female drivers. When examining the severity of crashes involving drivers of each gender, fatal crashes are more prevalent among male drivers than female drivers (0.4% vs. 0.2%).

## PERSON AGE - DEMOGRAPHICS AND CRASH INVOLVEMENTS

AGE	LICENSED DRIVERS	POPULATION	TOTAL DRIVERS IN CRASHES	DRIVERS IN FATAL CRASHES	OCCUPANTS KILLED	OCCUPANTS INJURED	TOTAL BICYCLISTS IN CRASHES	BICYCLISTS IN FATAL CRASHES	TOTAL PEDESTRIANS IN CRASHES	PEDESTRIANS IN FATAL CRASHES
0-15	50,746	1,904,719	768	5	23	4,634	298	4	356	7
16	77,132	127,583	7,193	9	8	1,218	54	1	40	1
17	90,412	132,366	9,998	12	9	1,582	45	2	45	0
18	88,558	136,339	12,189	22	9	1,930	68	0	43	2
19	99,752	130,973	12,417	28	15	1,949	43	0	53	3
20	107,476	135,208	12,733	27	17	1,927	47	1	36	3
21-24	454,349	559,419	49,415	132	85	7,034	131	0	209	13
25-29	608,630	694,454	57,222	171	73	8,051	133	2	243	12
30-34	569,993	602,197	46,011	152	75	6,117	104	2	154	13
35-39	548,841	599,690	41,442	120	51	5,423	86	2	152	9
40-44	519,037	563,499	36,929	105	42	4,740	70	3	130	19
45-49	575,105	629,912	39,877	121	53	5,232	68	0	147	11
50-54	603,853	660,148	38,019	101	57	5,015	98	3	135	10
55-59	661,104	716,278	36,912	115	62	5,097	105	0	175	12
60-64	641,436	686,526	30,521	93	56	4,209	62	0	128	9
65-69	536,836	571,956	21,505	74	43	3,186	49	1	109	12
70-74	407,729	432,746	14,836	52	35	2,258	14	0	53	5
75-79	277,278	302,102	9,319	35	28	1,455	13	0	21	2
80-84	168,624	195,814	5,269	34	24	968	2	0	26	3
85+	135,264	213,986	3,692	41	43	750	4	2	15	7
Unknown	---	---	47,956	60	0	39	64	0	47	0
<b>TOTAL</b>	<b>7,222,155</b>	<b>9,995,915</b>	<b>534,223</b>	<b>1,509</b>	<b>808</b>	<b>72,814</b>	<b>1,558</b>	<b>23</b>	<b>2,317</b>	<b>153</b>

## CRASH RATE PER LICENSED DRIVER BY AGE OF DRIVER IN ALL CRASHES

AGE	LICENSED DRIVERS	TOTAL DRIVERS IN CRASHES*	CRASH RATE
0-15	50,746	768	0.015
16	77,132	7,193	0.093
17	90,412	9,998	0.111
18	88,558	12,189	0.138
19	99,752	12,417	0.124
20	107,476	12,733	0.118
21-24	454,349	49,415	0.109
25-29	608,630	57,222	0.094
30-34	569,993	46,011	0.081
35-39	548,841	41,442	0.076
40-44	519,037	36,929	0.071
45-49	575,105	39,877	0.069
50-54	603,853	38,019	0.063
55-59	661,104	36,912	0.056
60-64	641,436	30,521	0.048
65-69	536,836	21,505	0.040
70-74	407,729	14,836	0.036
75-79	277,278	9,319	0.034
80-84	168,624	5,269	0.031
85-89	92,440	2,690	0.029
90-94	36,450	870	0.024
95-99	5,979	123	0.021
100+	395	9	0.023
<b>TOTAL</b>	<b>7,222,155</b>	<b>486,267</b>	<b>0.067</b>

Note: Data entry errors resulted in an over-representation of age "100+" drivers

\*Excludes 47,956 drivers with unknown age

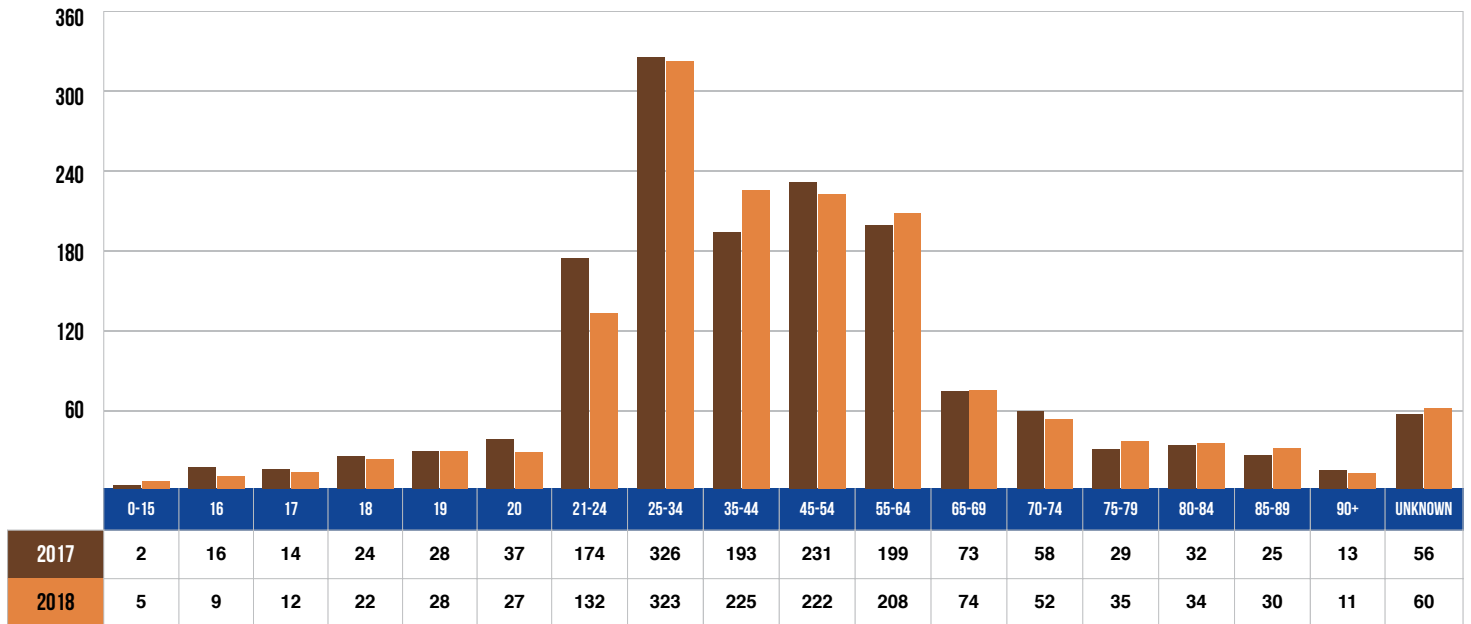
Licensed drivers age 18 have the highest crash rate at 0.138 (total crash involvements in age group divided by total number of licensed drivers in age group). The lower crash rates of the older groups (per licensed driver) may reflect reduced driving and exposure to the risk of a crash.

# DRIVER AGE

AGE OF DRIVERS IN FATAL CRASHES	2017	2018	PERCENT CHANGE	PERCENT 2018 FATAL CRASH INVOLVEMENT	PERCENT ACTIVE DRIVING POPULATION*
15 years and under	2	5	150.0	0.3	0.7
16 years	16	9	-43.8	0.6	1.1
17 years	14	12	-14.3	0.8	1.3
18 years	24	22	-8.3	1.5	1.2
19 years	28	28	0.0	1.9	1.4
20 years	37	27	-27.0	1.8	1.5
21 - 24 years	174	132	-24.1	8.7	6.3
25 - 34 years	326	323	-0.9	21.4	16.4
35 - 44 years	193	225	16.6	14.9	14.8
45 - 54 years	231	222	-3.9	14.7	16.0
55 - 64 years	199	208	4.5	13.8	18.1
65 - 69 years	73	74	1.4	4.9	7.5
70 - 74 years	58	52	-10.3	3.4	5.7
75 - 79 years	29	35	20.7	2.3	3.9
80 - 84 years	32	34	6.3	2.3	2.3
85 - 89 years	25	30	20.0	2.0	1.3
90 years and over	13	11	-15.4	0.7	0.6
Unknown	56	60	7.1	4.0	---
<b>Total</b>	<b>1,530</b>	<b>1,509</b>	<b>-1.4</b>	<b>100.0</b>	<b>100.0</b>

\* Figures courtesy of the Michigan Department of State [13]

## DRIVER AGE IN FATAL CRASHES



## DRIVER CONDITION

POSSIBLE CONDITIONS OF DRIVER	CONDITIONS (CODED BY POLICE)	FATAL CRASHES	INJURY CRASHES			PROPERTY DAMAGE ONLY
			A	B	C	
Normal	424,762	623	4,925	22,198	54,534	342,482
Fatigued or Asleep	3,022	10	128	439	606	1,839
Sick	1,250	6	44	147	321	732
Medicated	640	6	30	111	140	353
Emotional	4,361	52	219	695	1,237	2,158
Physically Disabled	926	25	318	168	151	264
Unknown	41,791	558	1,021	1,675	4,516	34,021
Other	8,497	169	690	1,444	1,828	4,366

Note: Drivers may have more than one condition including "Normal." These are driver conditions that, in the opinion of the investigating officer, were involved in the crash. While some conditions may be evident, others (such as distraction) will only be known if the driver admits to the condition, thus leading to possible underreporting.

## DRIVER INJURY SEVERITY BY RESTRAINT, ALCOHOL, AND DRUG USE

RESTRAINT USAGE	DRIVERS		FATALITY		INJURY			NO INJURY	UNKNOWN
	Number	% of Total	Number	% of Total	A	B	C		
<b>ALL DRIVERS</b>									
Restraint Used*	459,855	86.1	349	55.1	2,873	13,253	33,942	409,307	131
Restraint Not Used	4,526	0.8	201	31.8	660	924	596	2,140	5
Unknown	69,842	13.1	83	13.1	398	714	1,751	17,814	49,082
<b>TOTAL</b>	<b>534,223</b>	<b>100.0</b>	<b>633</b>	<b>100.0</b>	<b>3,931</b>	<b>14,891</b>	<b>36,289</b>	<b>429,261</b>	<b>49,218</b>
<b>DRINKING DRIVERS ONLY</b>									
Restraint Used*	6,350	75.4	38	38.0	241	688	783	4,599	1
Restraint Not Used	581	6.9	46	46.0	156	161	81	137	0
Unknown	1,496	17.8	16	16.0	85	152	188	1,054	1
<b>TOTAL</b>	<b>8,427</b>	<b>100.0</b>	<b>100</b>	<b>100.0</b>	<b>482</b>	<b>1,001</b>	<b>1,052</b>	<b>5,790</b>	<b>2</b>
<b>DRUGGED DRIVERS ONLY</b>									
Restraint Used*	1,080	77.1	41	66.1	72	143	199	625	0
Restraint Not Used	104	7.4	13	21.0	29	22	21	19	0
Unknown	217	15.5	8	12.9	26	25	36	122	0
<b>TOTAL</b>	<b>1,401</b>	<b>100.0</b>	<b>62</b>	<b>100.0</b>	<b>127</b>	<b>190</b>	<b>256</b>	<b>766</b>	<b>0</b>
<b>DRINKING AND DRUGGED DRIVERS ONLY</b>									
Restraint Used*	782	65.1	18	26.9	56	134	123	451	0
Restraint Not Used	124	10.3	33	49.3	31	24	10	26	0
Unknown	295	24.6	16	23.9	24	30	53	172	0
<b>TOTAL</b>	<b>1,201</b>	<b>100.0</b>	<b>67</b>	<b>100.0</b>	<b>111</b>	<b>188</b>	<b>186</b>	<b>649</b>	<b>0</b>

Note: 'Restraint Used' includes shoulder belt only, lap belt only, both lap and shoulder belts, restraint failed, and helmet worn