

## VEHICLE TYPE AND CRASH INVOLVEMENT

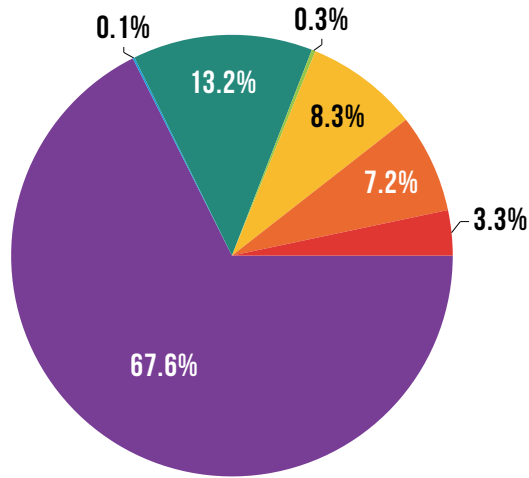
VEHICLE TYPE	MOTOR VEHICLES		FATAL CRASH		INJURY CRASH	PROPERTY DAMAGE ONLY	FATALITY IN VEHICLE		INJURY	NO INJURY
	Number of Vehicles	% of Total	Number	% of Total			Number	% of Total		
Passenger Car, SUV, Van	435,411	81.3	980	67.6	83,761	350,670	508	67.4	52,324	382,579
Motor Home	1,197	0.2	2	0.1	201	994	1	0.1	118	1,078
Pickup Truck	61,615	11.5	191	13.2	10,248	51,176	81	10.7	5,209	56,325
Small Truck under 10,000 lbs. GVWR	2,495	0.5	4	0.3	418	2,073	2	0.3	171	2,322
Motorcycle	2,809	0.5	120	8.3	2,047	642	116	15.4	1,999	694
Moped / Goped	375	0.1	11	0.8	284	80	11	1.5	275	89
Go-cart / Golf Cart	36	0.0	1	0.1	15	20	1	0.1	13	22
Snowmobile	156	0.0	9	0.6	115	32	8	1.1	101	47
Off-Road Vehicle - ORV / All-Terrain Vehicle - ATV	289	0.1	7	0.5	214	68	7	0.9	203	79
Other	2,027	0.4	7	0.5	299	1,721	4	0.5	133	1,890
Unknown	12,708	2.4	13	0.9	1,360	11,335	0	0.0	9	12,699
CDL Truck/Bus (breakdown below)	16,603	3.1	105	7.2	2,805	13,693	15	2.0	760	15,828
<b>Total Number of Vehicles</b>	<b>535,721</b>	<b>100.0</b>	<b>1,450</b>	<b>100.0</b>	<b>101,767</b>	<b>432,504</b>	<b>754</b>	<b>100.0</b>	<b>61,315</b>	<b>473,652</b>

Note: Buses 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	193	1.2	0	0.0	11	182	0	0.0	5	188
10,001 - 26,000 lbs.	5,306	32.0	18	17.1	770	4,518	3	20.0	221	5,082
Greater than 26,000 lbs.	10,773	64.9	87	82.9	2,013	8,673	12	80.0	534	10,227
Unknown Truck	331	2.0	0	0.0	11	320	0	0.0	0	331
<b>Total Number of Vehicles</b>	<b>16,603</b>	<b>100.0</b>	<b>105</b>	<b>100.0</b>	<b>2,805</b>	<b>13,693</b>	<b>15</b>	<b>100.0</b>	<b>760</b>	<b>15,828</b>

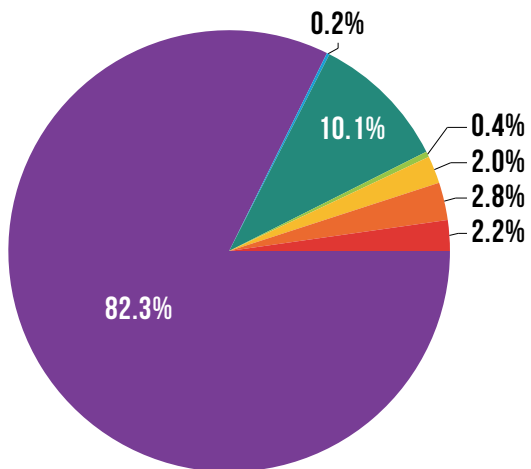
## VEHICLE TYPES IN CRASHES BY CRASH SEVERITY

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

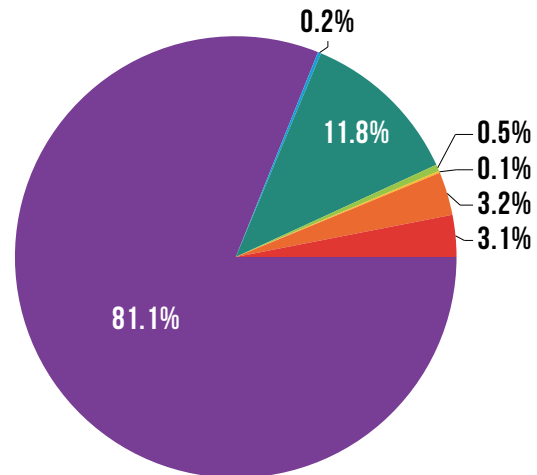


### FATAL

The chart shows that 81.2 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 8.3 percent of fatal crash involvements.



### INJURY



### PROPERTY DAMAGE ONLY

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 (93.0%) and property damage only (PDO) crashes (93.6%) 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	294,340	54.9	1,076	5,120	16,874	36,159	235,111
Turning left	36,918	6.9	90	762	3,058	5,605	27,403
Turning right	15,742	2.9	10	123	596	1,314	13,699
Stopped on roadway	50,059	9.3	47	431	2,413	7,967	39,201
In prior crash	389	0.1	4	11	32	74	268
Changing lanes	17,146	3.2	17	112	431	1,241	15,345
Backing	10,660	2.0	2	17	84	262	10,295
Slowing/stopping on roadway	52,844	9.9	30	349	1,987	7,595	42,883
Slowing/stopping other	684	0.1	0	8	23	108	545
Starting up on roadway	8,938	1.7	18	120	471	1,317	7,012
Starting up other	88	0.0	2	1	7	21	57
Entering parking	475	0.1	0	1	10	24	440
Leaving parking	1,063	0.2	2	8	61	111	881
Entering roadway	5,847	1.1	10	90	347	810	4,590
Leaving roadway	625	0.1	4	22	50	87	462
Making U-turn	1,058	0.2	3	26	87	149	793
Overtaking or passing	3,232	0.6	21	79	156	267	2,709
Avoiding object	361	0.1	1	9	21	31	299
Avoiding animal	801	0.1	0	14	76	89	622
Avoiding pedestrian	91	0.0	5	8	8	12	58
Avoiding vehicle (front/back)	3,010	0.6	14	93	192	398	2,313
Avoiding vehicle (angle)	1,285	0.2	7	31	88	181	978
Driverless moving	183	0.0	2	5	9	13	154
Parked	19,404	3.6	37	222	533	1,003	17,609
Crossing at intersection	68	0.0	0	4	10	14	40
Crossing not at intersection	7	0.0	1	1	1	0	4
Getting on/off vehicle	0	0.0	0	0	0	0	0
In roadway with traffic	16	0.0	0	0	0	4	12
In roadway against traffic	20	0.0	0	1	4	6	9
Standing or lying in roadway	2	0.0	1	1	0	0	0
Pushing/working on vehicle	7	0.0	0	2	1	2	2
Other working in roadway	7	0.0	1	0	0	1	5
Playing in roadway	0	0.0	0	0	0	0	0
In roadway other reason	15	0.0	0	1	1	1	12
Not in roadway	53	0.0	1	3	8	12	29
Negotiating a curve	4,204	0.8	37	143	334	470	3,220
Other	695	0.1	1	19	51	79	545
Unknown	5,384	1.0	6	53	105	321	4,899
<b>TOTAL</b>	<b>535,721</b>	<b>100.0</b>	<b>1,450</b>	<b>7,890</b>	<b>28,129</b>	<b>65,748</b>	<b>432,504</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	1,878	66.9	2,068	67.1	107	506	652	343	414
Turning left	128	4.6	140	4.5	1	21	49	25	43
Turning right	68	2.4	73	2.4	2	7	28	17	17
Stopped on roadway	92	3.3	104	3.4	0	7	13	22	61
In prior crash	0	0.0	0	0.0	0	0	0	0	0
Changing lanes	51	1.8	55	1.8	2	18	13	6	13
Backing	0	0.0	0	0.0	0	0	0	0	0
Slowing/stopping on roadway	169	6.0	187	6.1	0	26	68	42	50
Slowing/stopping other	2	0.1	2	0.1	0	0	0	0	2
Starting up on roadway	29	1.0	30	1.0	0	4	6	9	11
Starting up other	0	0.0	0	0.0	0	0	0	0	0
Entering parking	0	0.0	0	0.0	0	0	0	0	0
Leaving parking	3	0.1	4	0.1	0	1	2	0	1
Entering roadway	23	0.8	26	0.8	1	6	11	1	6
Leaving roadway	2	0.1	2	0.1	0	0	0	0	2
Making U-turn	8	0.3	8	0.3	0	1	3	0	4
Overtaking or passing	47	1.7	55	1.8	0	19	14	11	8
Avoiding object	7	0.2	7	0.2	0	2	3	1	1
Avoiding animal	14	0.5	15	0.5	0	2	10	1	2
Avoiding pedestrian	0	0.0	0	0.0	0	0	0	0	0
Avoiding vehicle (front/back)	60	2.1	66	2.1	2	11	30	6	17
Avoiding vehicle (angle)	39	1.4	45	1.5	1	9	18	9	8
Driverless moving	1	0.0	1	0.0	0	0	0	0	0
Parked	35	1.2	35	1.1	0	1	1	0	7
Crossing at intersection	1	0.0	1	0.0	0	0	0	1	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	1	0.0	1	0.0	1	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	133	4.7	138	4.5	4	40	51	22	19
Other	5	0.2	6	0.2	1	0	1	2	2
Unknown	13	0.5	14	0.5	0	2	1	1	3
<b>TOTAL</b>	<b>2,809</b>	<b>100.0</b>	<b>3,083</b>	<b>100.0</b>	<b>122</b>	<b>683</b>	<b>974</b>	<b>519</b>	<b>691</b>

\*This table includes 94 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	881	58.7	11	84	301	277	160
Turning left	26	1.7	1	3	8	9	5
Turning right	11	0.7	0	0	2	4	4
Stopped on roadway	8	0.5	0	1	1	3	3
In prior crash	0	0.0	0	0	0	0	0
Changing lanes	10	0.7	0	1	5	3	0
Backing	1	0.1	0	0	0	0	1
Slowing/stopping on roadway	4	0.3	0	0	2	1	0
Slowing/stopping other	1	0.1	0	0	0	0	1
Starting up on roadway	5	0.3	0	1	3	0	1
Starting up other	3	0.2	0	0	0	2	1
Entering parking	1	0.1	0	0	0	0	1
Leaving parking	1	0.1	0	0	1	0	0
Entering roadway	52	3.5	0	8	18	8	17
Leaving roadway	0	0.0	0	0	0	0	0
Making U-turn	4	0.3	0	0	3	0	1
Overtaking or passing	3	0.2	0	0	2	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)	5	0.3	0	0	2	1	1
Avoiding vehicle (angle)	5	0.3	0	1	0	3	1
Driverless moving	0	0.0	0	0	0	0	0
Parked	0	0.0	0	0	0	0	0
Crossing at intersection	310	20.7	3	25	119	98	58
Crossing not at intersection	66	4.4	2	11	24	16	5
Getting on/off vehicle	0	0.0	0	0	0	0	0
In roadway with traffic	23	1.5	1	5	1	13	2
In roadway against traffic	19	1.3	0	6	8	3	1
Standing or lying in roadway	1	0.1	0	0	1	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	4	0.3	0	0	1	2	1
In roadway other reason	9	0.6	0	3	3	2	1
Not in roadway	9	0.6	0	1	4	2	1
Negotiating a curve	6	0.4	0	0	1	4	1
Other	15	1.0	0	0	2	8	4
Unknown	18	1.2	3	3	4	1	0
<b>TOTAL</b>	<b>1,501</b>	<b>100.0</b>	<b>21</b>	<b>153</b>	<b>516</b>	<b>460</b>	<b>271</b>

\*Includes 80 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	23	1.0	1	0	12	6	2
Turning left	0	0.0	0	0	0	0	0
Turning right	0	0.0	0	0	0	0	0
Stopped on roadway	3	0.1	0	0	1	2	0
In prior crash	0	0.0	0	0	0	0	0
Changing lanes	0	0.0	0	0	0	0	0
Backing	0	0.0	0	0	0	0	0
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	2	0.1	0	0	1	1	0
Starting up other	0	0.0	0	0	0	0	0
Entering parking	0	0.0	0	0	0	0	0
Leaving parking	0	0.0	0	0	0	0	0
Entering roadway	6	0.2	0	1	2	3	0
Leaving roadway	0	0.0	0	0	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)	0	0.0	0	0	0	0	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	900	37.5	18	119	284	349	95
Crossing not at intersection	501	20.8	51	116	147	135	27
Getting on/off vehicle	25	1.0	1	8	6	10	0
In roadway with traffic	213	8.9	18	43	64	52	30
In roadway against traffic	49	2.0	5	8	15	12	6
Standing or lying in roadway	133	5.5	18	41	38	27	5
Pushing/working on vehicle	25	1.0	1	13	5	3	3
Other working in roadway	31	1.3	0	3	8	10	7
Playing in roadway	20	0.8	0	2	7	7	4
In roadway other reason	198	8.2	21	47	52	51	18
Not in roadway	108	4.5	7	21	32	31	13
Negotiating a curve	0	0.0	0	0	0	0	0
Other	122	5.1	4	20	34	37	18
Unknown	44	1.8	4	13	4	7	8
<b>TOTAL</b>	<b>2,403</b>	<b>100.0</b>	<b>149</b>	<b>455</b>	<b>712</b>	<b>743</b>	<b>236</b>

\*Includes 108 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	3,799	0.7	8	139	338	526	2,788
Cross center/median	811	0.2	1	24	50	107	629
Ran off road left	1,192	0.2	2	34	90	101	965
Ran off road right	1,971	0.4	1	54	139	195	1,582
Re-enter road	175	0.0	0	3	8	19	145
Overturn	5,670	1.1	97	390	1,038	1,158	2,987
Separation of Units	395	0.1	0	7	24	61	303
Fire/explosion	422	0.1	7	12	19	23	361
Immersion	115	0.0	2	2	5	5	101
Jackknife	301	0.1	1	0	6	24	270
Downhill runaway	12	0.0	0	0	0	3	9
Cargo loss/shift	391	0.1	1	1	7	14	368
Individual fell off	320	0.1	15	102	136	39	28
Other noncollision	940	0.2	2	33	73	139	693
<b>SUBTOTAL</b>	<b>16,514</b>	<b>3.1</b>	<b>137</b>	<b>801</b>	<b>1,933</b>	<b>2,414</b>	<b>11,229</b>

COLLISION WITH A NONFIXED OBJECT	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Pedestrian	2,021	0.4	150	394	621	600	256
Bicycle/ Pedalcycle	1,393	0.3	21	143	482	422	325
Motor vehicle in transport	396,975	74.1	891	5,301	21,416	55,855	313,512
Parked motor vehicle	17,229	3.2	21	156	436	948	15,668
Railway train	43	0.0	4	1	5	6	27
Animal	56,742	10.6	6	65	361	640	55,670
Other nonfixed objects	3,954	0.7	1	39	141	159	3,614
<b>SUBTOTAL</b>	<b>478,357</b>	<b>89.3</b>	<b>1,094</b>	<b>6,099</b>	<b>23,462</b>	<b>58,630</b>	<b>389,072</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	190	0.0	1	7	16	21	145
Bridge rail	309	0.1	2	3	18	39	247
Guardrail face	2,892	0.5	6	34	144	334	2,374
Guardrail end	552	0.1	5	12	42	76	417
Median barrier	3,999	0.7	8	72	289	797	2,833
Highway traffic sign post	2,999	0.6	3	17	52	135	2,792
Highway signal post	210	0.0	0	0	11	12	187
Luminaire/light support	3,415	0.6	21	88	303	482	2,521
Other pole	1,179	0.2	1	14	51	100	1,013
Culvert	389	0.1	2	24	44	52	267
Curb	1,495	0.3	2	17	58	116	1,302
Ditch	5,858	1.1	13	127	405	603	4,710
Embankment	912	0.2	6	32	68	110	696
Fence	778	0.1	1	9	25	57	686
Mailbox	1,466	0.3	0	5	15	37	1,409
Tree	8,515	1.6	133	439	909	1,188	5,846
Rail crossing signal	64	0.0	0	1	2	5	56
Building	522	0.1	7	25	57	97	336
Traffic island	36	0.0	0	0	2	5	29
Fire hydrant	436	0.1	1	3	21	43	368
Impact attenuator	153	0.0	0	5	12	39	97
Other fixed object	1,615	0.3	3	31	116	154	1,311
<b>SUBTOTAL</b>	<b>37,984</b>	<b>7.1</b>	<b>215</b>	<b>965</b>	<b>2,660</b>	<b>4,502</b>	<b>29,642</b>

	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Unknown Event	2,866	0.5	4	25	74	202	2,561
<b>MOST HARMFUL EVENT TOTAL</b>	<b>535,721</b>	<b>100.0</b>	<b>1,450</b>	<b>7,890</b>	<b>28,129</b>	<b>65,748</b>	<b>432,504</b>



## VEHICLE DEFECTS IN CRASH INVOLVEMENT

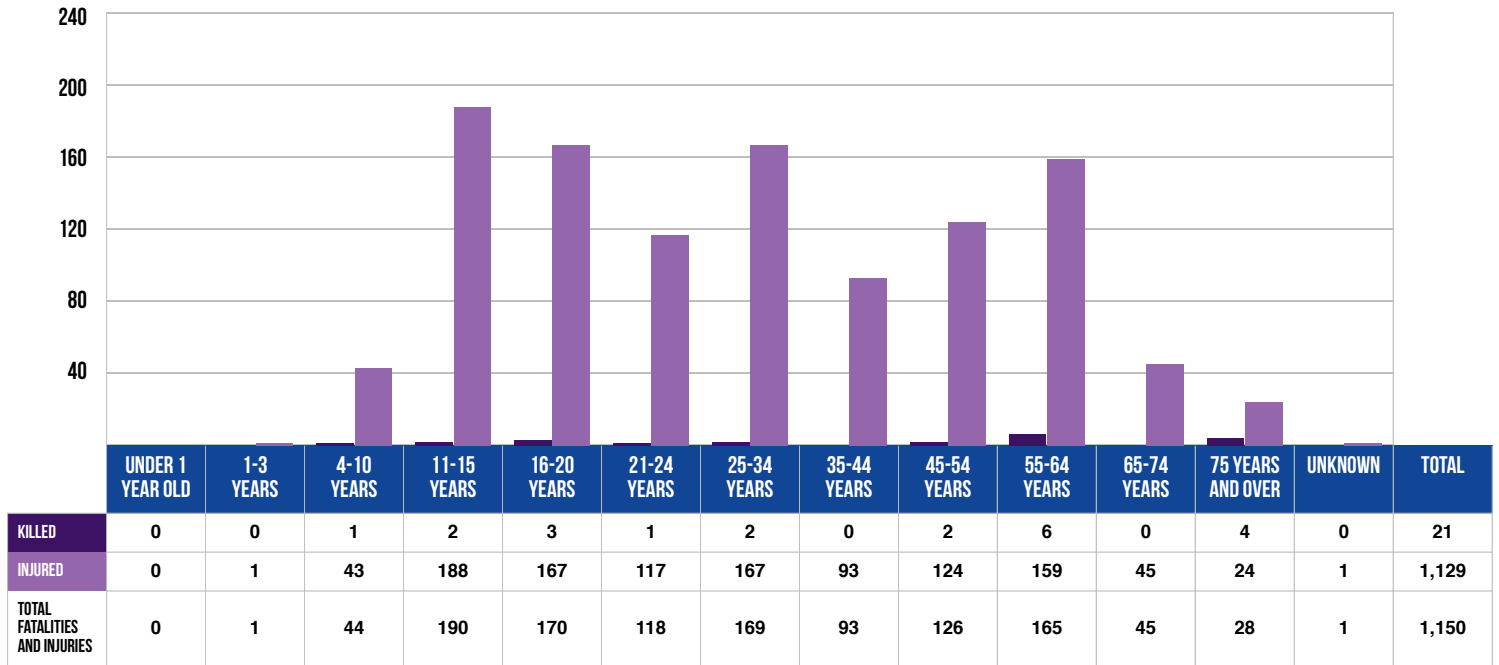
VEHICLE DEFECTS	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
Brakes	858	0.2	3	14	51	138	652
Lights/reflectors	143	0.0	1	3	7	11	121
Steering	215	0.0	0	7	21	26	161
Tires/wheels	698	0.1	5	20	44	101	528
Windows	30	0.0	0	2	2	4	22
Coupling/hitch/chains	79	0.0	1	0	2	6	70
Other	1,636	0.3	2	38	73	182	1,341
None or Unknown	532,062	99.3	1,438	7,806	27,929	65,280	429,609
<b>TOTAL</b>	<b>535,721</b>	<b>100.0</b>	<b>1,450</b>	<b>7,890</b>	<b>28,129</b>	<b>65,748</b>	<b>432,504</b>

## DRIVER HAZARDOUS ACTION

HAZARDOUS ACTION	MOTOR VEHICLES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Vehicles	% of Total		A	B	C	
None	273,443	51.0	579	3,427	12,927	31,628	224,882
Speed too fast	31,724	5.9	177	754	1,969	3,890	24,934
Speed too slow	198	0.0	2	3	9	30	154
Failed to yield	47,139	8.8	107	894	3,754	7,347	35,037
Disregard traffic control	10,370	1.9	58	354	1,274	2,489	6,195
Drove wrong way	373	0.1	1	21	36	64	251
Drove left of center	2,473	0.5	68	123	290	335	1,657
Improper passing	2,999	0.6	9	40	89	228	2,633
Improper lane use	13,969	2.6	12	98	364	981	12,514
Improper turn	5,548	1.0	6	58	264	587	4,633
Improper/no signal	449	0.1	0	2	17	36	394
Improper backing	7,435	1.4	0	6	41	140	7,248
Unable to stop in assured clear distance	72,328	13.5	43	416	2,842	10,754	58,273
Reckless driving	2,286	0.4	52	216	286	363	1,369
Careless/negligent driving	11,483	2.1	79	515	1,161	1,648	8,080
Other	16,703	3.1	79	408	1,213	1,969	13,034
Unknown	36,801	6.9	178	555	1,593	3,259	31,216
<b>TOTAL</b>	<b>535,721</b>	<b>100.0</b>	<b>1,450</b>	<b>7,890</b>	<b>28,129</b>	<b>65,748</b>	<b>432,504</b>

# MICHIGAN BICYCLE CRASHES

## 2019 BICYCLIST FATALITIES AND INJURIES



In 2019, there were 1,501 bicyclists involved in motor vehicle crashes, with 21 bicyclists killed and 1,129 injured. The top age group for bicyclist fatalities was the 55-64 age group with six fatalities (28.6%). The 11-15 age group had the greatest percentage of total fatalities and injuries (16.5%).

## BICYCLE HELMET USE AND INJURY SEVERITY

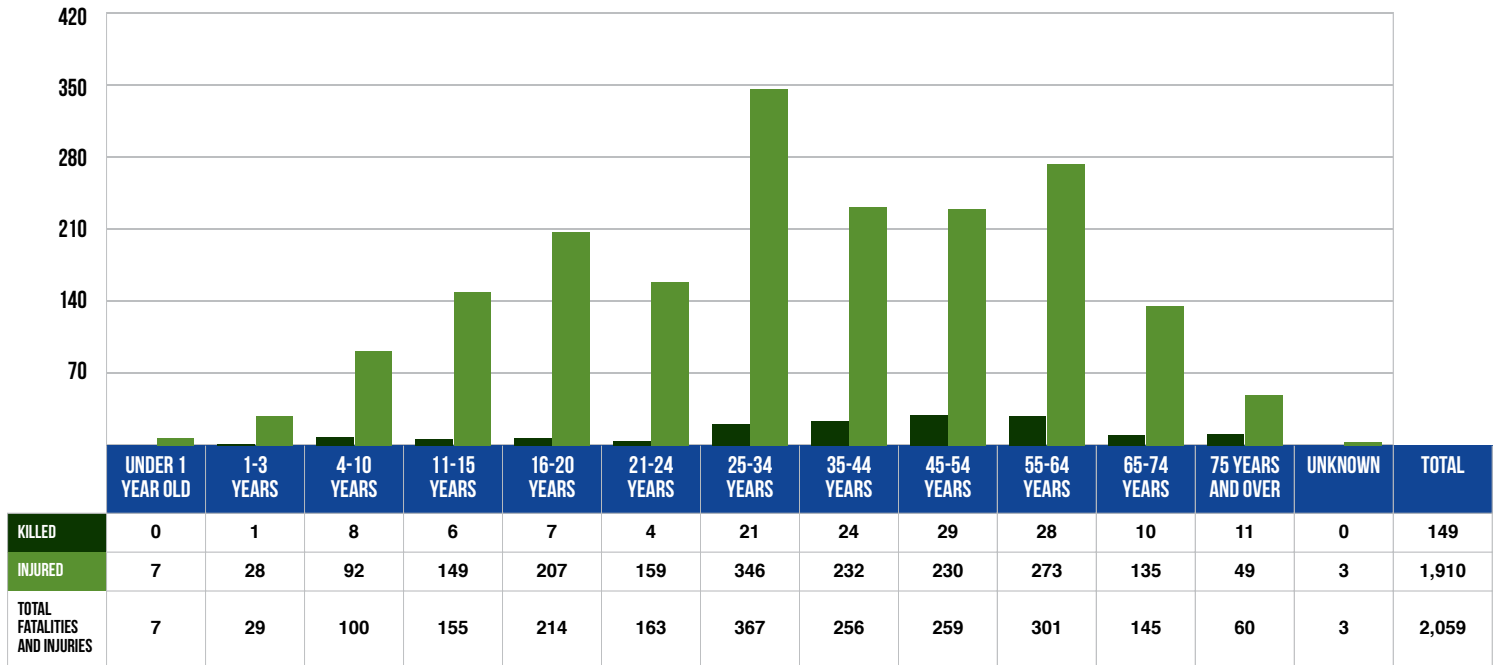
HELMET USE	FATALITY	INJURY			NO INJURY	UNKNOWN	TOTAL
		A	B	C			
Worn	1	30	101	42	34	2	210
Not Worn	10	68	224	206	101	20	629
Unknown	10	55	191	212	136	58	662
<b>Total</b>	<b>21</b>	<b>153</b>	<b>516</b>	<b>460</b>	<b>271</b>	<b>80</b>	<b>1,501</b>

*Note: The data does not include helmet use for all bicyclists. There were 662 bicyclists with unknown helmet use.*

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.”

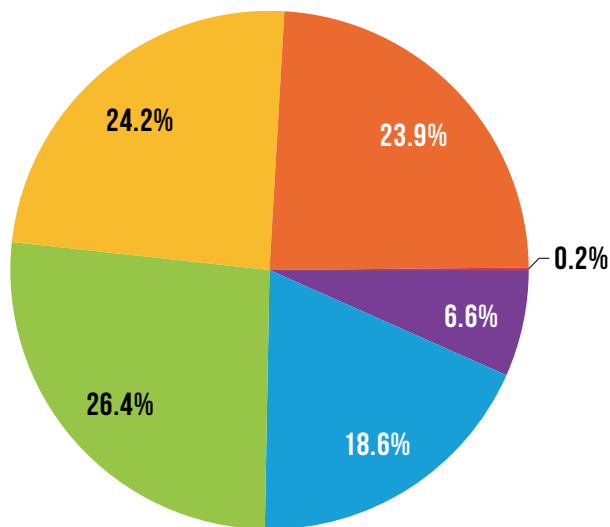
# MICHIGAN PEDESTRIAN CRASHES

## 2019 PEDESTRIAN FATALITIES AND INJURIES

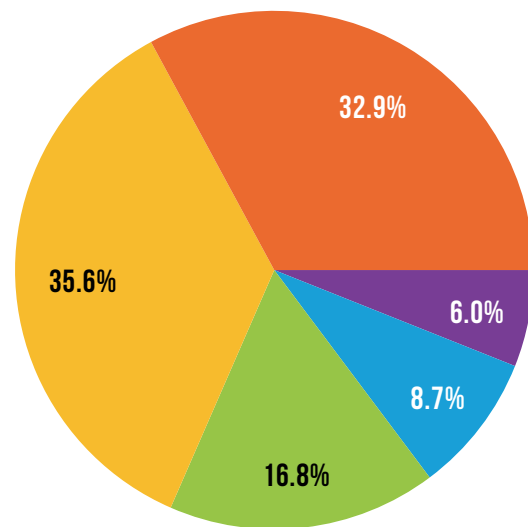


In 2019, there were 2,403 pedestrians involved in motor vehicle crashes, with 149 pedestrians killed and 1,910 injured. The top age group for pedestrian fatalities was the 45-54 age group with 29 fatalities (19.5%). The 25-34 age group had the greatest number of injuries (18.1%), and the greatest percentage of total fatalities and injuries (17.8%).

■ 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	1	0.6	0	0	1	0	0
Cross center/median	1	0.6	0	0	0	1	0
Ran off road left	1	0.6	0	0	0	0	1
Ran off road right	0	0.0	0	0	0	0	0
Re-enter road	0	0.0	0	0	0	0	0
Overturn	15	9.6	1	5	4	4	1
Separation of Units	0	0.0	0	0	0	0	0
Fire/explosion	4	2.6	0	0	1	0	3
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	12	7.7	1	6	4	0	1
Other noncollision	3	1.9	0	0	2	1	0
<b>SUBTOTAL</b>	<b>37</b>	<b>23.7</b>	<b>2</b>	<b>11</b>	<b>12</b>	<b>6</b>	<b>6</b>

COLLISION WITH A NONFIXED OBJECT	SNOWMOBILES		FATAL CRASH	INJURY CRASH			PROPERTY DAMAGE ONLY
	Number of Snowmobiles	% of Total		A	B	C	
Pedestrian	1	0.6	0	1	0	0	0
Bicycle/ Pedalcycle	0	0.0	0	0	0	0	0
Motor vehicle in transport	67	42.9	5	20	11	15	16
Parked motor vehicle	5	3.2	0	3	1	0	1
Railway train	0	0.0	0	0	0	0	0
Animal	2	1.3	0	0	0	0	2
Other nonfixed objects	3	1.9	0	1	0	1	1
<b>SUBTOTAL</b>	<b>78</b>	<b>50.0</b>	<b>5</b>	<b>25</b>	<b>12</b>	<b>16</b>	<b>20</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	1	0.6	0	0	0	1	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	1	0.6	0	0	1	0	0
Other pole	2	1.3	0	1	0	0	1
Culvert	0	0.0	0	0	0	0	0
Curb	0	0.0	0	0	0	0	0
Ditch	2	1.3	0	2	0	0	0
Embankment	5	3.2	0	2	1	2	0
Fence	0	0.0	0	0	0	0	0
Mailbox	0	0.0	0	0	0	0	0
Tree	27	17.3	2	10	10	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	1	0.6	0	1	0	0	0
Other fixed object	2	1.3	0	0	1	0	1
<b>SUBTOTAL</b>	<b>41</b>	<b>26.3</b>	<b>2</b>	<b>16</b>	<b>13</b>	<b>4</b>	<b>6</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>156</b>	<b>100.0</b>	<b>9</b>	<b>52</b>	<b>37</b>	<b>26</b>	<b>32</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 156 snowmobiles were reported in crashes on Michigan public roadways during 2019, resulting in seven fatal crashes. A total of 115 snowmobiles were involved in 96 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	15	5.2	0	5	4	2	4
Cross center/median	1	0.3	0	0	0	0	1
Ran off road left	2	0.7	0	0	0	0	2
Ran off road right	2	0.7	0	0	2	0	0
Re-enter road	1	0.3	0	0	0	0	1
Overturn	66	22.8	4	27	23	9	3
Separation of Units	0	0.0	0	0	0	0	0
Fire/explosion	2	0.7	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	2	0.7	0	0	0	1	1
Individual fell off	31	10.7	0	10	17	3	1
Other noncollision	0	0.0	0	0	0	0	0
<b>SUBTOTAL</b>	<b>122</b>	<b>42.2</b>	<b>4</b>	<b>42</b>	<b>46</b>	<b>15</b>	<b>15</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	0	0.0	0	0	0	0	0
Bicycle/ Pedalcycle	2	0.7	0	1	0	1	0
Motor vehicle in transport	107	37.0	0	23	21	20	43
Parked motor vehicle	7	2.4	0	1	0	2	4
Railway train	0	0.0	0	0	0	0	0
Animal	3	1.0	0	1	0	1	1
Other nonfixed objects	1	0.3	0	0	1	0	0
<b>SUBTOTAL</b>	<b>120</b>	<b>41.5</b>	<b>0</b>	<b>26</b>	<b>22</b>	<b>24</b>	<b>48</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	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	1	0.3	0	0	0	0	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	0	0.0	0	0	0	0	0
Curb	2	0.7	0	0	1	1	0
Ditch	10	3.5	1	3	4	1	1
Embankment	1	0.3	0	0	1	0	0
Fence	0	0.0	0	0	0	0	0
Mailbox	2	0.7	0	0	1	0	1
Tree	28	9.7	1	17	6	2	2
Rail crossing signal	0	0.0	0	0	0	0	0
Building	1	0.3	1	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	0.3	0	1	0	0	0
<b>SUBTOTAL</b>	<b>46</b>	<b>15.9</b>	<b>3</b>	<b>21</b>	<b>13</b>	<b>4</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	0.3	0	0	1	0	0
<b>MOST HARMFUL EVENT TOTAL</b>	<b>289</b>	<b>100.0</b>	<b>7</b>	<b>89</b>	<b>82</b>	<b>43</b>	<b>68</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 289 off-road/all-terrain vehicles were reported in crashes on Michigan public roadways during 2019, resulting in seven fatal crashes. An additional 214 ORV/ATVs were involved in 211 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	45	28.8	2	12	10	9	12
Speed too fast	42	26.9	3	16	15	5	3
Speed too slow	0	0.0	0	0	0	0	0
Failed to yield	14	9.0	1	3	3	3	4
Disregard traffic control	7	4.5	0	4	0	2	1
Drove wrong way	1	0.6	0	1	0	0	0
Drove left of center	1	0.6	0	0	0	0	1
Improper passing	0	0.0	0	0	0	0	0
Improper lane use	3	1.9	0	1	0	1	1
Improper turn	0	0.0	0	0	0	0	0
Improper/no signal	1	0.6	0	0	1	0	0
Improper backing	0	0.0	0	0	0	0	0
Unable to stop in assured clear distance	8	5.1	1	3	1	1	2
Reckless driving	1	0.6	0	1	0	0	0
Careless/negligent driving	13	8.3	0	5	4	1	3
Other	11	7.1	0	5	2	3	1
Unknown	9	5.8	2	1	1	1	4
<b>Total</b>	<b>156</b>	<b>100.0</b>	<b>9</b>	<b>52</b>	<b>37</b>	<b>26</b>	<b>32</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	51	17.6	0	13	7	15	16
Speed too fast	81	28.0	4	32	24	10	11
Speed too slow	0	0.0	0	0	0	0	0
Failed to yield	24	8.3	0	9	5	4	6
Disregard traffic control	5	1.7	0	0	4	0	1
Drove wrong way	2	0.7	0	1	0	0	1
Drove left of center	1	0.3	0	0	0	0	1
Improper passing	1	0.3	0	0	0	0	1
Improper lane use	6	2.1	0	2	1	1	2
Improper turn	6	2.1	0	1	3	2	0
Improper/no signal	4	1.4	0	0	2	0	2
Improper backing	2	0.7	0	0	0	0	2
Unable to stop in assured clear distance	10	3.5	0	0	5	1	4
Reckless driving	15	5.2	0	5	3	3	4
Careless/negligent driving	27	9.3	1	10	10	2	4
Other	27	9.3	1	8	7	2	9
Unknown	27	9.3	1	8	11	3	4
<b>Total</b>	<b>289</b>	<b>100.0</b>	<b>7</b>	<b>89</b>	<b>82</b>	<b>43</b>	<b>68</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	2018	2019	% CHANGE
Crashes	206	232	12.6%
Fatalities	2	6	200.0%
Injuries	75	75	0.0%

A total of 232 crashes involving farm equipment were reported on Michigan roadways during 2019. Of those crashes, five were fatal with six people killed.

## MICHIGAN VEHICLE-TRAIN CRASHES

VEHICLE TRAIN CRASHES	2018	2019	% CHANGE
Crashes	72	53	-26.4%
Fatalities	0	7	---
Injuries	23	14	-39.1%

A total of 53 crashes involving trains were reported in Michigan during 2019. Of those crashes, four were fatal with seven people killed.

## MICHIGAN MOTORCYCLE CRASHES

MOTORCYCLE DATA	2018	2019	% CHANGE
Motorcycle Registrations	252,969	251,048	-0.8%
Motorcycles in Crashes	2,728	2,809	3.0%
Motorcyclist Deaths	134	122	-9.0%
Motorcyclists Injured	2,160	2,176	0.7%
Death Rate based on 10,000 motorcycle registrations	5.30	4.86	-8.3%
Estimated Mileage based on 3,000 miles per motorcycle	758,907,000	753,144,000	-0.8%
Death Rate based on deaths per 100 million vehicle miles traveled	17.66	16.20	-8.3%

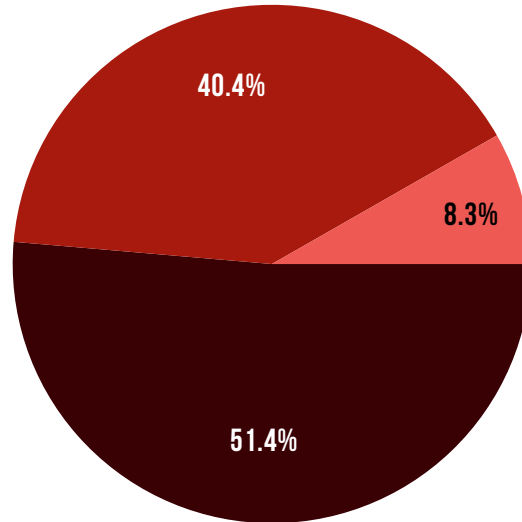
Motorcycles were involved in 0.9 percent of all traffic crashes in Michigan in 2019. Injuries were proportionately more severe to motorcyclists than to persons in motor vehicles.

## DRIVER GENDER INFORMATION

MALES

FEMALES

UNKNOWN

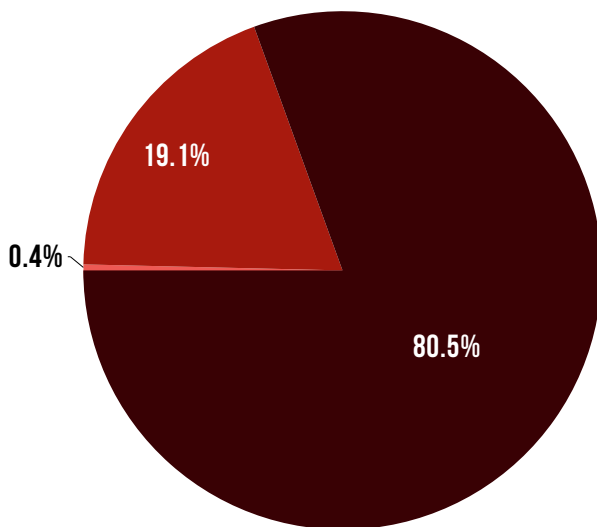


ALL DRIVERS

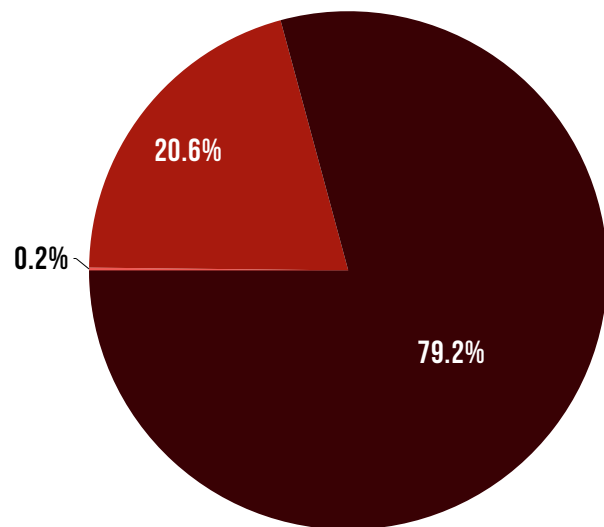
FATAL

INJURY

PROPERTY DAMAGE ONLY



MALE CRASH SEVERITY



FEMALE CRASH SEVERITY

A higher proportion of drivers in crashes are male than female. 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	50,996	1,889,940	765	8	32	4,667	296	3	331	19
16	78,185	126,571	7,386	6	0	1,205	48	0	45	2
17	88,661	127,422	9,855	12	5	1,561	38	0	38	1
18	85,513	132,978	11,790	31	19	1,820	52	1	58	1
19	100,276	130,779	12,284	31	14	1,869	39	1	54	0
20	105,749	133,397	12,271	39	24	1,842	39	1	58	3
21-24	449,272	548,369	48,612	122	60	7,018	140	1	187	4
25-29	603,009	697,811	57,073	160	81	7,835	126	1	221	16
30-34	583,736	613,803	47,014	120	68	6,216	94	1	188	10
35-39	552,989	599,328	41,985	131	60	5,504	73	0	158	18
40-44	525,445	566,844	37,824	102	46	4,718	50	0	136	7
45-49	558,172	612,531	38,381	96	46	4,934	67	0	140	12
50-54	593,967	642,148	37,443	97	56	4,799	90	2	153	19
55-59	653,372	708,151	36,868	117	66	4,951	124	3	184	11
60-64	645,235	691,384	31,096	93	56	4,252	72	3	157	17
65-69	551,758	584,379	21,831	58	36	3,004	37	0	107	5
70-74	430,039	453,201	15,632	43	34	2,354	17	0	54	5
75-79	287,299	313,609	9,988	55	44	1,602	18	1	29	4
80-84	172,955	201,076	5,415	34	36	963	9	2	22	4
85+	136,779	213,136	3,649	31	32	769	3	1	14	3
Unknown	---	---	48,559	64	0	41	69	0	69	0
<b>TOTAL</b>	<b>7,253,407</b>	<b>9,986,857</b>	<b>535,721</b>	<b>1,450</b>	<b>815</b>	<b>71,924</b>	<b>1,501</b>	<b>21</b>	<b>2,403</b>	<b>161</b>

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

AGE	LICENSED DRIVERS	TOTAL DRIVERS IN CRASHES*	CRASH RATE
0-15	50,996	765	0.015
16	78,185	7,386	0.094
17	88,661	9,855	0.111
18	85,513	11,790	0.138
19	100,276	12,284	0.123
20	105,749	12,271	0.116
21-24	449,272	48,612	0.108
25-29	603,009	57,073	0.095
30-34	583,736	47,014	0.081
35-39	552,989	41,985	0.076
40-44	525,445	37,824	0.072
45-49	558,172	38,381	0.069
50-54	593,967	37,443	0.063
55-59	653,372	36,868	0.056
60-64	645,235	31,096	0.048
65-69	551,758	21,831	0.040
70-74	430,039	15,632	0.036
75-79	287,299	9,988	0.035
80-84	172,955	5,415	0.031
85-89	92,970	2,660	0.029
90-94	37,076	850	0.023
95-99	6,329	132	0.021
100+	404	7	0.017
<b>TOTAL</b>	<b>7,253,407</b>	<b>487,162</b>	<b>0.067</b>

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

\*Excludes 48,559 drivers with unknown age

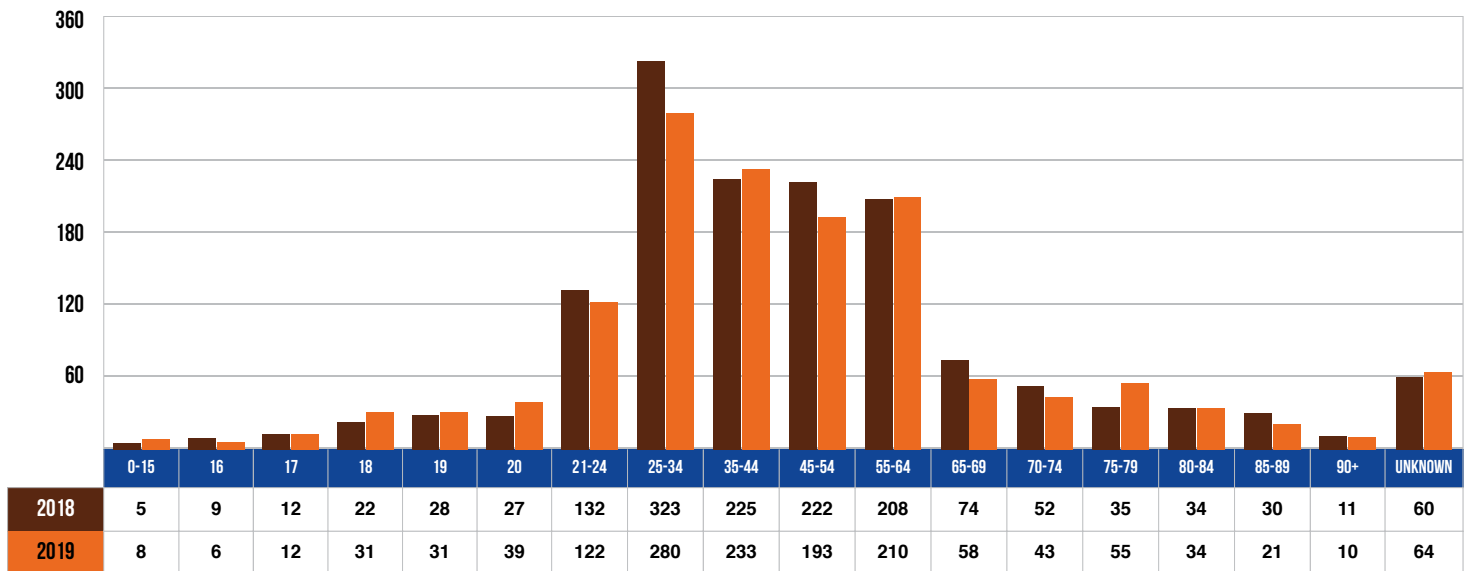
Licensed drivers age 18 have the highest crash rate at 0.138 (total crash involvements in age group divided by total number of licensed drivers in age group). The lower crash rates of the older groups (per licensed driver) may reflect reduced driving and exposure to the risk of a crash.

# DRIVER AGE

AGE OF DRIVERS IN FATAL CRASHES	2018	2019	PERCENT CHANGE	PERCENT 2019 FATAL CRASH INVOLVEMENT	PERCENT ACTIVE DRIVING POPULATION*
15 years and under	5	8	60.0	0.6	0.7
16 years	9	6	-33.3	0.4	1.1
17 years	12	12	0.0	0.8	1.2
18 years	22	31	40.9	2.1	1.2
19 years	28	31	10.7	2.1	1.4
20 years	27	39	44.4	2.7	1.5
21 - 24 years	132	122	-7.6	8.4	6.2
25 - 34 years	323	280	-13.3	19.3	16.4
35 - 44 years	225	233	3.6	16.1	14.9
45 - 54 years	222	193	-13.1	13.3	15.9
55 - 64 years	208	210	1.0	14.5	17.9
65 - 69 years	74	58	-21.6	4.0	7.6
70 - 74 years	52	43	-17.3	3.0	5.9
75 - 79 years	35	55	57.1	3.8	4.0
80 - 84 years	34	34	0.0	2.3	2.4
85 - 89 years	30	21	-30.0	1.4	1.3
90 years and over	11	10	-9.1	0.7	0.6
Unknown	60	64	6.7	4.4	---
<b>Total</b>	<b>1,509</b>	<b>1,450</b>	<b>-3.9</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	426,142	595	4,900	22,100	53,720	344,827
Fatigued or Asleep	2,813	14	144	386	567	1,702
Sick	1,084	8	38	142	309	587
Medicated	489	1	23	79	117	269
Emotional	4,893	59	290	803	1,402	2,339
Physically Disabled	963	39	352	181	162	229
Unknown	42,036	503	1,053	1,791	4,088	34,601
Other	8,576	169	705	1,412	1,865	4,425

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*	459,904	85.8	323	51.2	2,807	13,050	33,106	410,613	5
Restraint Not Used	4,646	0.9	222	35.2	714	878	631	2,200	1
Unknown	71,171	13.3	86	13.6	351	768	1,798	18,563	49,605
<b>TOTAL</b>	<b>535,721</b>	<b>100.0</b>	<b>631</b>	<b>100.0</b>	<b>3,872</b>	<b>14,696</b>	<b>35,535</b>	<b>431,376</b>	<b>49,611</b>
<b>DRINKING DRIVERS ONLY</b>									
Restraint Used*	6,301	74.7	33	32.7	234	684	744	4,606	0
Restraint Not Used	625	7.4	51	50.5	194	177	65	138	0
Unknown	1,505	17.9	17	16.8	90	165	159	1,074	0
<b>TOTAL</b>	<b>8,431</b>	<b>100.0</b>	<b>101</b>	<b>100.0</b>	<b>518</b>	<b>1,026</b>	<b>968</b>	<b>5,818</b>	<b>0</b>
<b>DRUGGED DRIVERS ONLY</b>									
Restraint Used*	1,078	77.7	29	48.3	71	141	220	617	0
Restraint Not Used	110	7.9	19	31.7	38	15	14	24	0
Unknown	200	14.4	12	20.0	17	26	40	105	0
<b>TOTAL</b>	<b>1,388</b>	<b>100.0</b>	<b>60</b>	<b>100.0</b>	<b>126</b>	<b>182</b>	<b>274</b>	<b>746</b>	<b>0</b>
<b>DRINKING AND DRUGGED DRIVERS ONLY</b>									
Restraint Used*	736	62.4	16	23.9	54	92	123	451	0
Restraint Not Used	165	14.0	39	58.2	37	37	26	26	0
Unknown	278	23.6	12	17.9	25	36	46	159	0
<b>TOTAL</b>	<b>1,179</b>	<b>100.0</b>	<b>67</b>	<b>100.0</b>	<b>116</b>	<b>165</b>	<b>195</b>	<b>636</b>	<b>0</b>

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