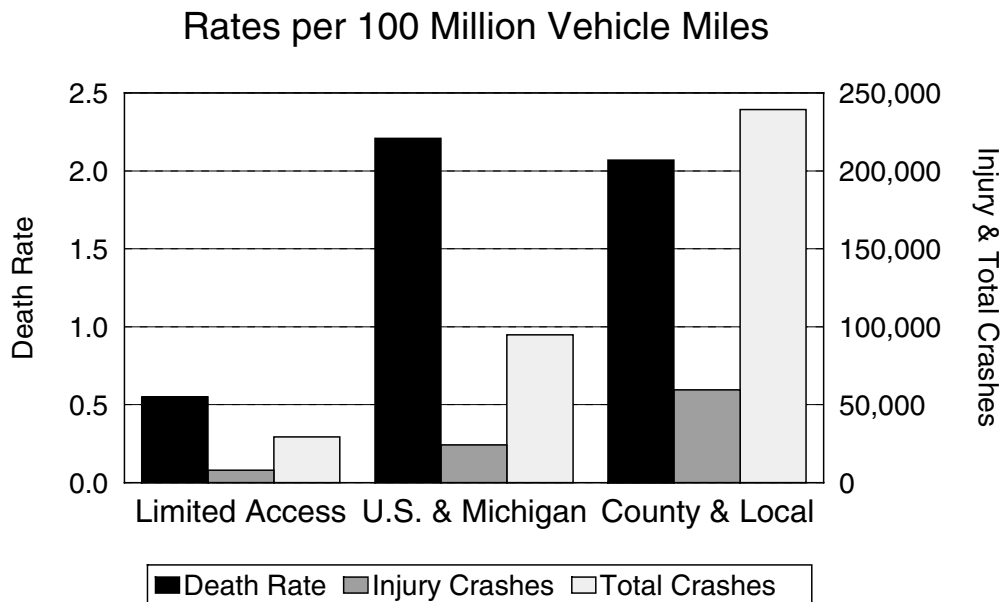


## CRASH EXPERIENCE BY ROADWAY TYPE

The table below provides a detailed breakdown of estimated vehicle mileage, crashes, death rates (deaths per 100 million vehicle miles), and crash rates (crashes per 100 million vehicle miles) for the major roadway types in Michigan. All rates are lowest on limited access highways. 1993 estimated mileage figures were provided by the Michigan Department of Transportation [4].

STATEWIDE	Estimated Mileage (Billions)	All Crashes	Injury Crashes	Deaths	Total Crash Rate	Injury Crash Rate	Death Rate
Limited Access Roadways	25.4	29,377	7,921	139	115.7	31.2	0.5
U.S. & Michigan Roads	20.1	94,858	24,260	444	471.9	120.7	2.2
County & Local Roads	40.2	239,401	59,547	831	595.5	148.1	2.1
Totals	85.7	363,636	91,728	1,414	424.3	107.0	1.6



## CRASH TYPE

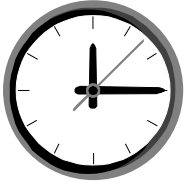
CRASH TYPE	All Crashes		Fatal Crashes		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Single Vehicle	94,208	25.9	510	40.2	4,524	7,656	8,382	73,136
Head On	12,129	3.3	199	15.7	966	1,217	1,439	8,308
Head On - Left Turn	14,589	4.0	34	2.7	1,012	1,871	3,042	8,630
Angle	74,590	20.5	325	25.6	3,482	6,532	13,341	50,910
Rear End	86,111	23.7	79	6.2	1,739	4,149	20,155	59,989
Rear End - Left Turn	4,618	1.3	4	0.3	169	278	829	3,338
Rear End - Right Turn	3,093	0.9	1	0.1	38	99	459	2,496
Sideswipe - Same Direction	31,182	8.6	24	1.9	381	773	2,252	27,752
Sideswipe - Opposite Direct	12,395	3.4	14	1.1	250	431	1,044	10,656
Other	21,879	6.0	58	4.6	720	1,146	1,744	18,211
Unknown	8,842	2.4	21	1.7	276	418	914	7,213
<b>Totals</b>	<b>363,636</b>	<b>100.0</b>	<b>1,269</b>	<b>100.0</b>	<b>13,557</b>	<b>24,570</b>	<b>53,601</b>	<b>270,639</b>

Single Vehicle, Head On, and Angle crash types produce the highest number of fatal crashes (84.2%). Single Vehicle crashes include rollovers, which are particularly deadly crash types. Rear End and Sideswipe crashes produce the lowest number of fatal crashes (9.6%).

## RELATION TO ROADWAY

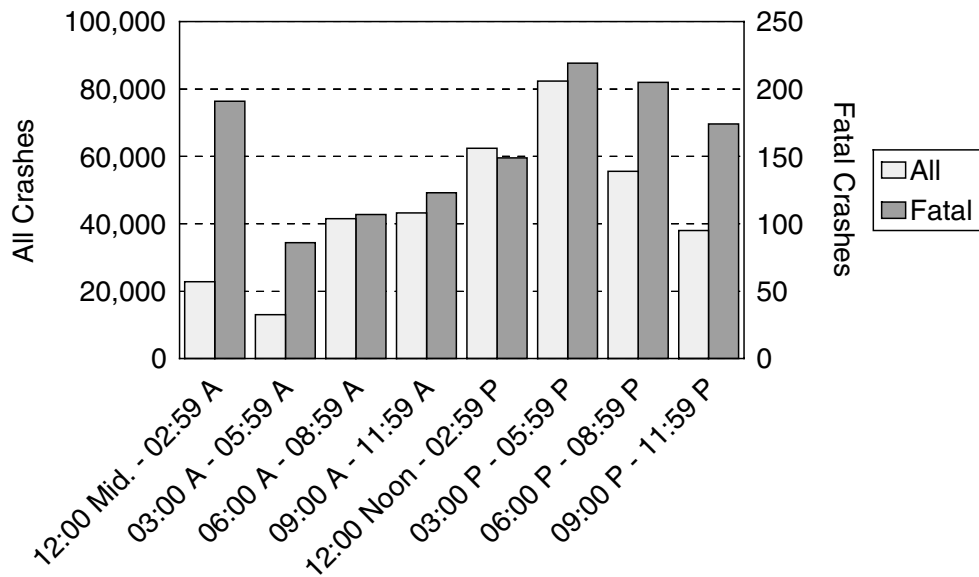
LOCATION OF FIRST IMPACT	All Crashes		Fatal Crashes		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
On Road	309,268	84.8	864	68.1	9,940	18,373	46,614	233,477
Median	2,264	0.6	25	2.0	174	275	325	1,465
Shoulder	15,630	4.3	99	7.8	835	1,546	1,885	11,265
Outside of Shoulder/Curb	28,038	7.7	258	20.3	2,106	3,662	3,871	18,141
Gore	584	0.2	4	0.3	38	51	103	388
Other/Unknown	7,852	2.2	19	1.5	464	663	803	5,903
<b>Totals</b>	<b>363,636</b>	<b>100.0</b>	<b>1,269</b>	<b>100.0</b>	<b>13,557</b>	<b>24,570</b>	<b>53,601</b>	<b>270,639</b>

Crashes that happen outside of the normal driving lanes are overrepresented in causing fatalities. Only 7.7% of crashes occur outside the shoulder of the road, but these crashes account for 20.3% of the fatal crashes.

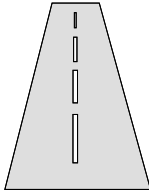


## TIME AND SEVERITY

TIME OF DAY	All Crashes		Fatal Crashes		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
12:00 mid. - 02:59 a.m.	22,849	6.3	191	15.1	1,369	2,282	2,668	16,339
03:00 a.m. - 05:59 a.m.	13,064	3.4	86	6.8	605	1,000	1,180	10,193
06:00 a.m. - 08:59 a.m.	41,507	10.6	107	8.4	1,177	2,191	5,573	32,459
09:00 a.m. - 11:59 a.m.	43,179	11.7	123	9.7	1,389	2,664	6,771	32,232
12:00 noon - 02:59 p.m.	62,428	17.1	149	11.7	2,250	4,165	10,710	45,154
03:00 p.m. - 05:59 p.m.	82,335	22.9	219	17.3	2,870	5,616	14,135	59,495
06:00 p.m. - 08:59 p.m.	55,598	15.6	205	16.2	2,080	3,721	7,574	42,018
09:00 p.m. - 11:59 p.m.	38,030	10.7	174	13.7	1,689	2,735	4,522	28,910
Unknown	4,646	1.8	15	1.2	128	196	468	3,839
<b>Total</b>	<b>363,636</b>	<b>100.0</b>	<b>1,269</b>	<b>100.0</b>	<b>13,557</b>	<b>24,570</b>	<b>53,601</b>	<b>270,639</b>



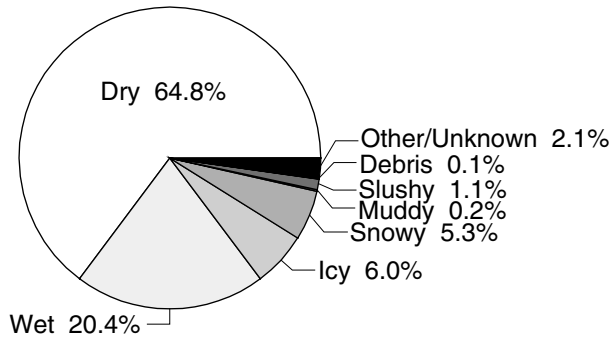
Crash frequencies peak in midafternoon and drop off by midnight, while fatal crash frequencies rise with the frequency of other crashes, but continue at a high rate well into the early morning hours. There are proportionally more fatal crashes during the midnight to 3:00 AM time period.



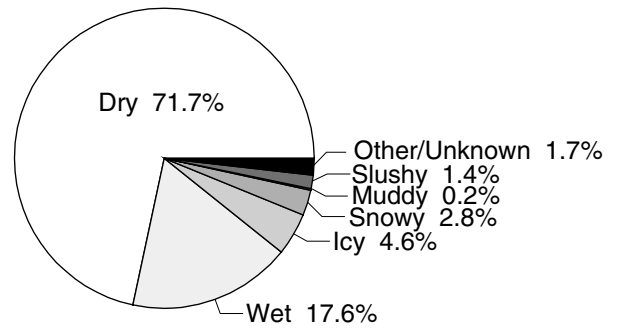
## ROAD CONDITION

ROAD SURFACE CONDITION	All Crashes		Fatal Crashes		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Dry	235,755	64.8	910	71.7	9,329	16,707	34,109	174,700
Wet	74,011	20.4	223	17.6	2,534	4,806	12,911	53,537
Icy	21,845	6.0	59	4.6	626	1,239	2,872	17,049
Snowy	19,454	5.3	35	2.8	539	968	2,158	15,754
Muddy	669	0.2	2	0.2	39	75	73	480
Slushy	3,965	1.1	18	1.4	139	254	533	3,021
Debris	193	0.1	0	0.0	8	21	18	146
Other/Unknown	7,744	2.1	22	1.7	343	500	927	5,952
Totals	363,636	100.0	1,269	100.0	13,557	24,570	53,601	270,639

ALL CRASHES



FATAL CRASHES



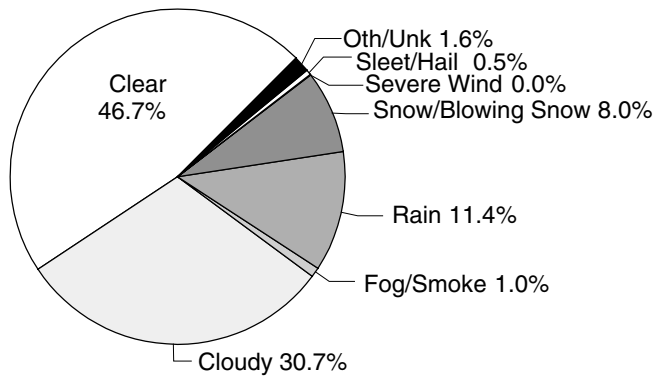
Most crashes (64.8%) and most fatal crashes (71.7%) occur on dry roads. This indicates that Michigan drivers do a good job of adjusting their driving behavior for bad road conditions.



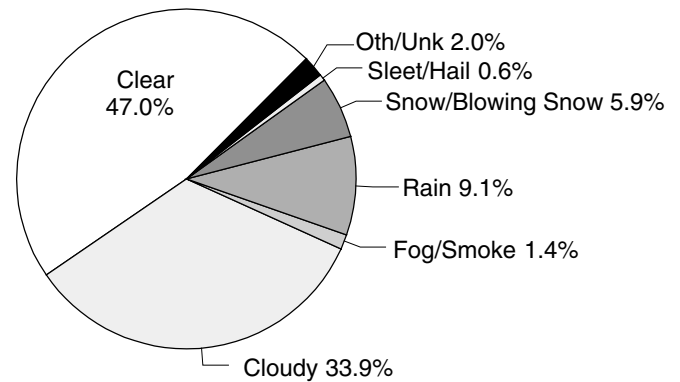
## WEATHER CONDITION

WEATHER CONDITION	All Crashes		Fatal Crashes		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Clear	169,996	46.7	596	47.0	6,936	12,098	24,248	126,118
Cloudy	111,470	30.7	430	33.9	3,990	7,467	16,728	82,855
Fog/Smoke	3,466	1.0	18	1.4	128	250	352	2,718
Rain	41,575	11.4	116	9.1	1,451	2,815	7,529	29,664
Snow/Blowing Snow	29,175	8.0	75	5.9	836	1,531	3,835	22,898
Severe Wind	158	0.0	0	0.0	5	7	29	117
Sleet/Hail	1,906	0.5	8	0.6	40	135	252	1,471
Other/Unknown	5,890	1.6	26	2.0	171	267	628	4,798
<b>Totals</b>	<b>363,636</b>	<b>100.0</b>	<b>1,269</b>	<b>100.0</b>	<b>13,557</b>	<b>24,570</b>	<b>53,601</b>	<b>270,639</b>

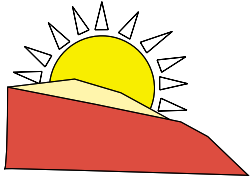
**ALL CRASHES**



**FATAL CRASHES**



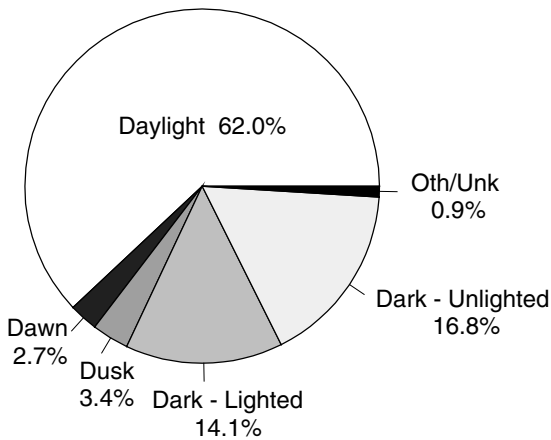
The majority of all crashes occur in good weather (46.7%) as do the majority of fatal crashes (47.0%). Of bad weather conditions, fog and smoke present the greatest hazard as they are overrepresented in fatal crashes.



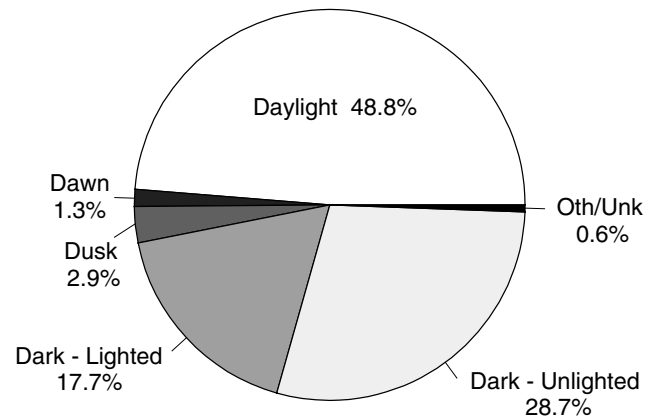
## LIGHT CONDITION

LIGHT CONDITION	All Crashes		Fatal Crashes		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Daylight	225,499	62.0	619	48.8	8,135	15,318	37,695	163,732
Dawn	9,760	2.7	17	1.3	226	453	1,038	8,026
Dusk	12,460	3.4	37	2.9	413	762	1,654	9,594
Dark - Lighted	51,400	14.1	225	17.7	2,504	4,337	8,180	36,154
Dark - Unlighted	61,103	16.8	364	28.7	2,212	3,580	4,812	50,135
Other/Unknown	3,414	0.9	7	0.6	67	120	222	2,998
Totals	363,636	100.0	1,269	100.0	13,557	24,570	53,601	270,639

ALL CRASHES



FATAL CRASHES



The majority of all crashes happen during the day, while the majority of fatal crashes happen during nondaylight hours. Areas without street lights have the highest fatality rate.