

## INJURY EXPERIENCE FOR PERSONS WHO HAD BEEN DRINKING

Alcohol and/or drug use affects the judgment and behavior of persons in addition to motor vehicle drivers. Consider the experience of drinking bicyclists, pedestrians, motorcyclists, snowmobilers, and ORV/ATV riders, when looking at crash statistics. Alcohol should not be used by anyone intending to navigate a roadway.

<b>BICYCLIST</b>	Total	Drinking in Crash	Drinking Bicyclist
Bicyclists Killed	29	7	6
Bicyclists Injured	2,367	132	95
Bicyclists in Crashes	2,929	159	119



<b>PEDESTRIAN</b>	Total	Drinking in Crash	Drinking Pedestrian
Pedestrians Killed	167	71	56
Pedestrians Injured	3,198	324	205
Pedestrians in Crashes	3,749	412	272



<b>MOTORCYCLIST</b>	Total	Drinking in Crash	Drinking Motorcyclist
Motorcyclists Killed	63	30	27
Motorcyclists Injured	2,103	277	236
Motorcyclists in Crashes	2,835	338	287



<b>SNOWMOBILER *</b>	Total	Drinking in Crash	Drinking Snowmobiler
Snowmobilers Killed	17	9	9
Snowmobilers Injured	298	69	68
Snowmobilers in Crashes	516	96	92

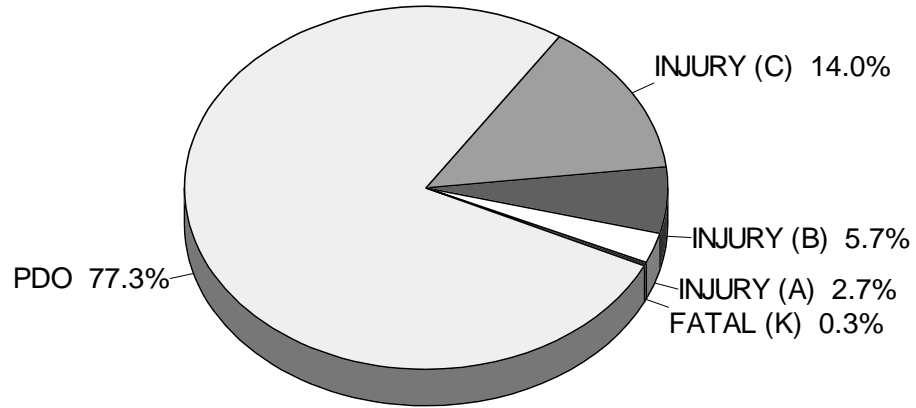


<b>ORV/ATV RIDER *</b>	Total	Drinking in Crash	Drinking ORV/ATV Rider
ORV/ATV Rider Killed	5	3	3
ORV/ATV Rider Injured	135	20	19
ORV/ATV Rider in Crashes	200	25	24

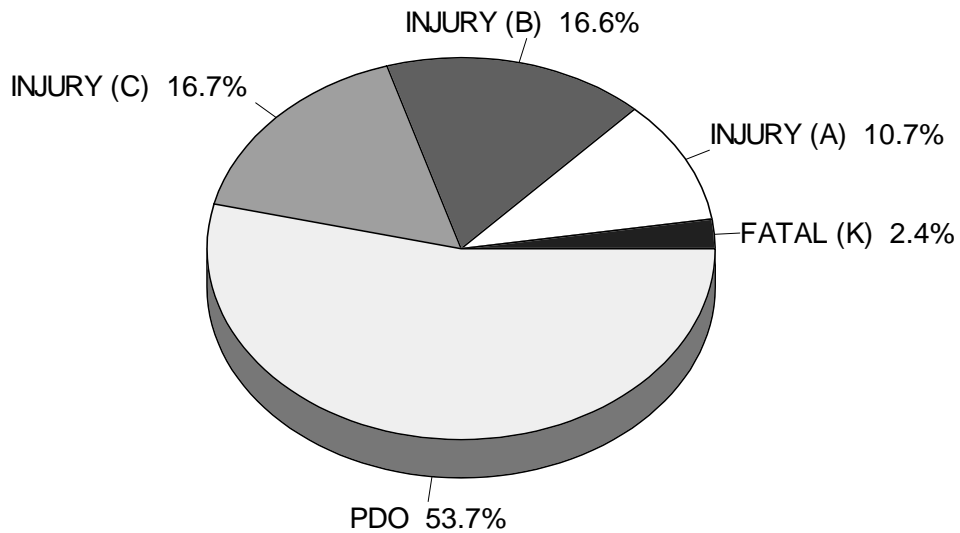


\* on-road crashes

## ALL CRASHES BY INJURY SEVERITY



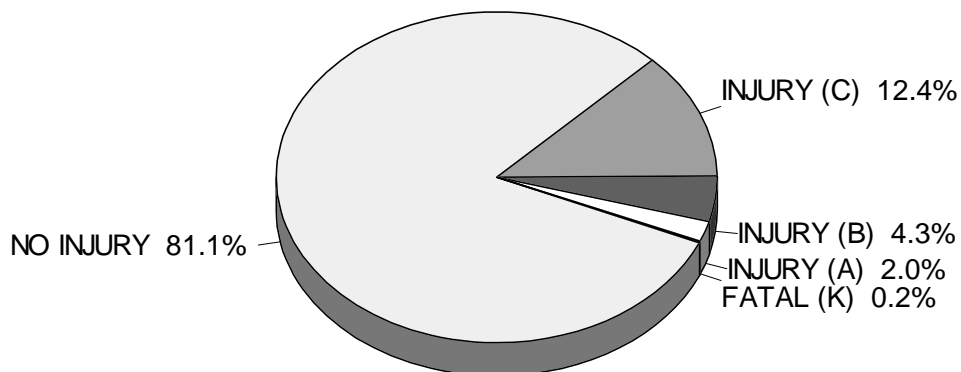
## HBD CRASHES BY INJURY SEVERITY



The problem of the drinking driver, pedestrian, and/or cyclist is seen when one compares the two charts on this page. A fatality in the crash is eight times more likely when one of the crash-involved operators is reported as had been drinking.

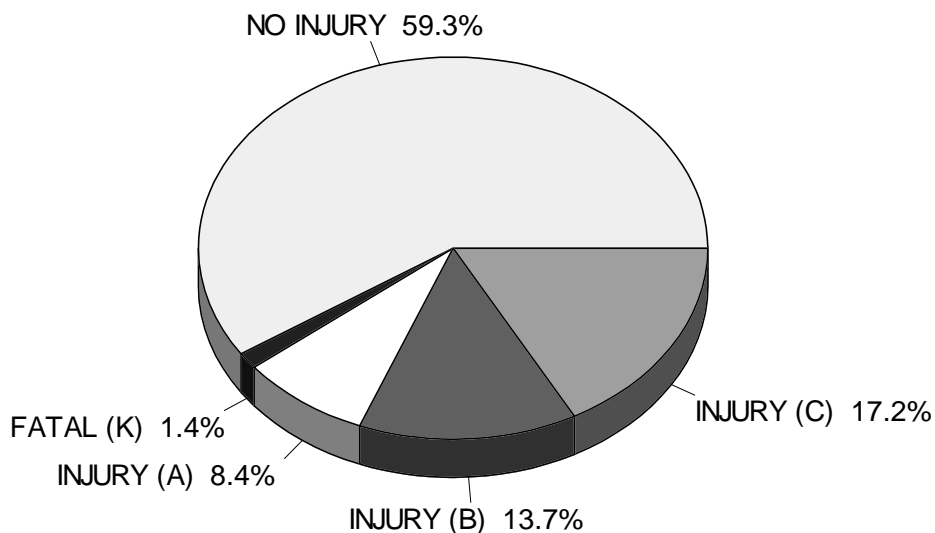
## DEATH & INJURY PER CRASH INVOLVED OCCUPANT

### Occupants in Crashes



The majority of occupants involved in crashes are not injured (81.1%). Two thirds of those who are injured receive only minor (C) injuries. Increased use of occupant restraints and airbags can reduce the number of killed and injured even further.

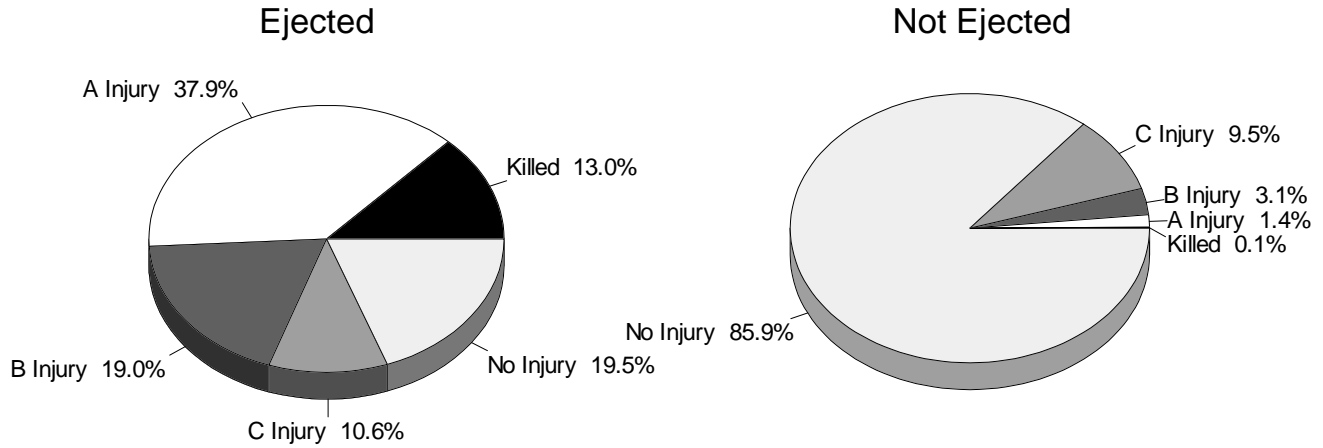
### Occupants in HBD Crashes



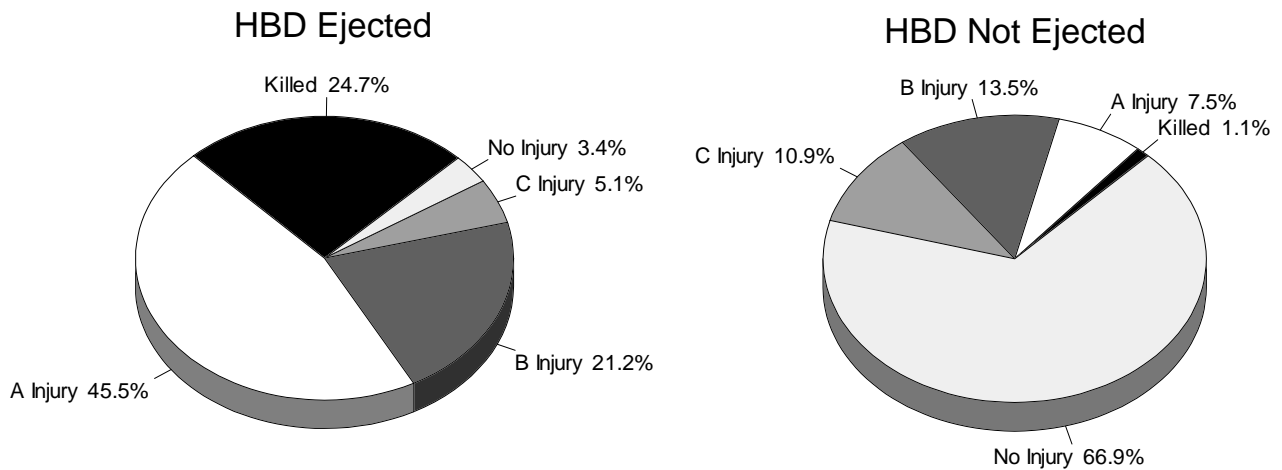
Crashes involving drinking tend to be more serious than nondrinking crashes. The percentage of fatalities is seven times higher than in all crashes and the more serious injury levels are three to four times higher.

## ALL DRIVERS and HBD DRIVERS INJURY SEVERITY - EJECTED vs. NOT EJECTED

As can be seen in the two charts below, death and injury are much more likely when drivers are ejected from their vehicles.

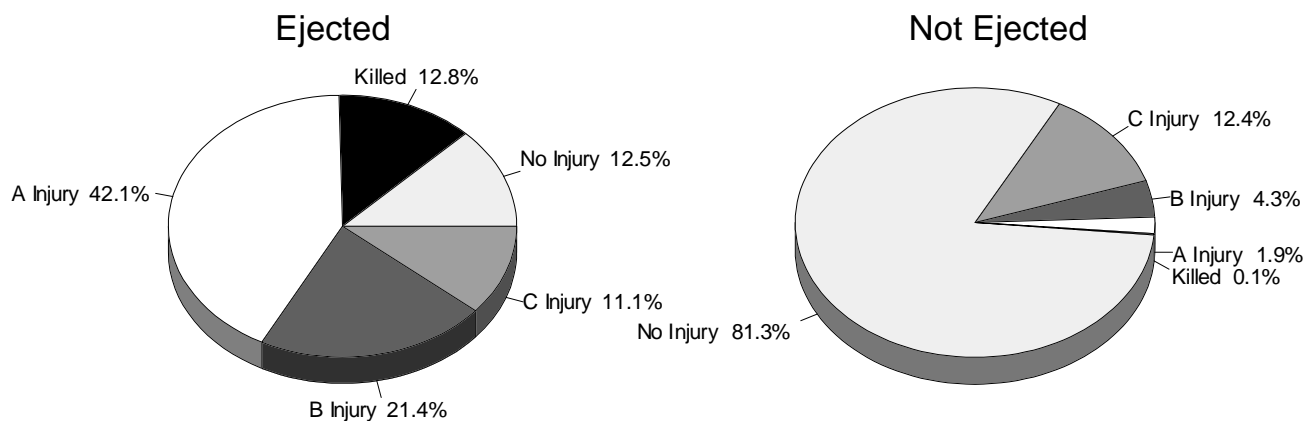


When compared to the charts above, the charts below demonstrate that the injury severity is much worse for drivers who had been drinking in both ejected, and nonejected events.

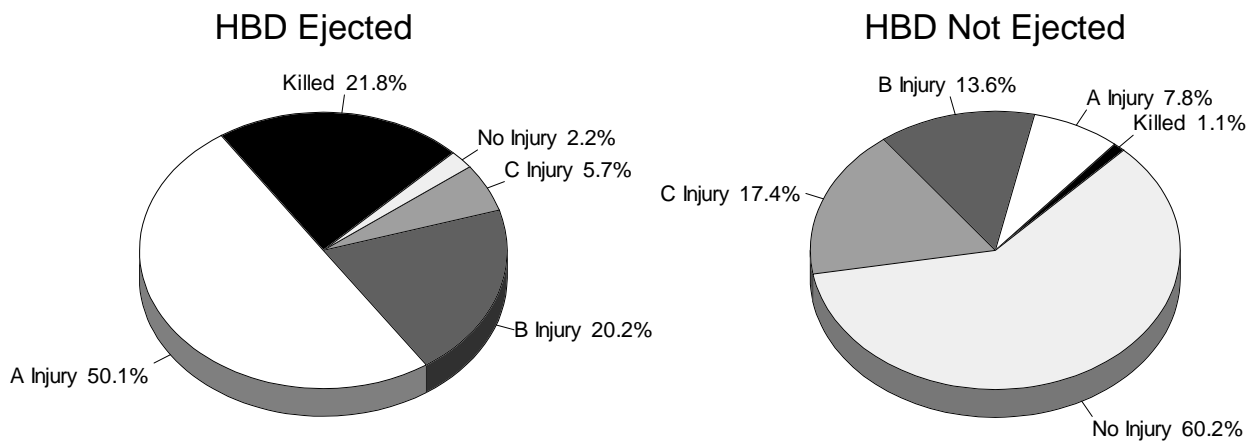


## ALL OCCUPANTS and OCCUPANTS of HBD CRASHES INJURY SEVERITY - EJECTED vs. NOT EJECTED

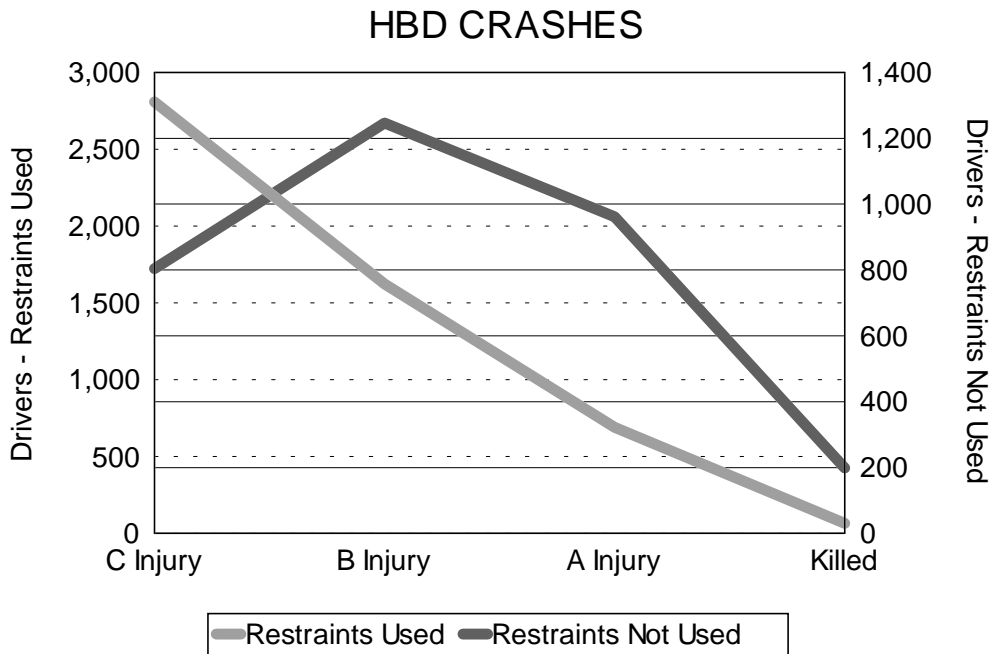
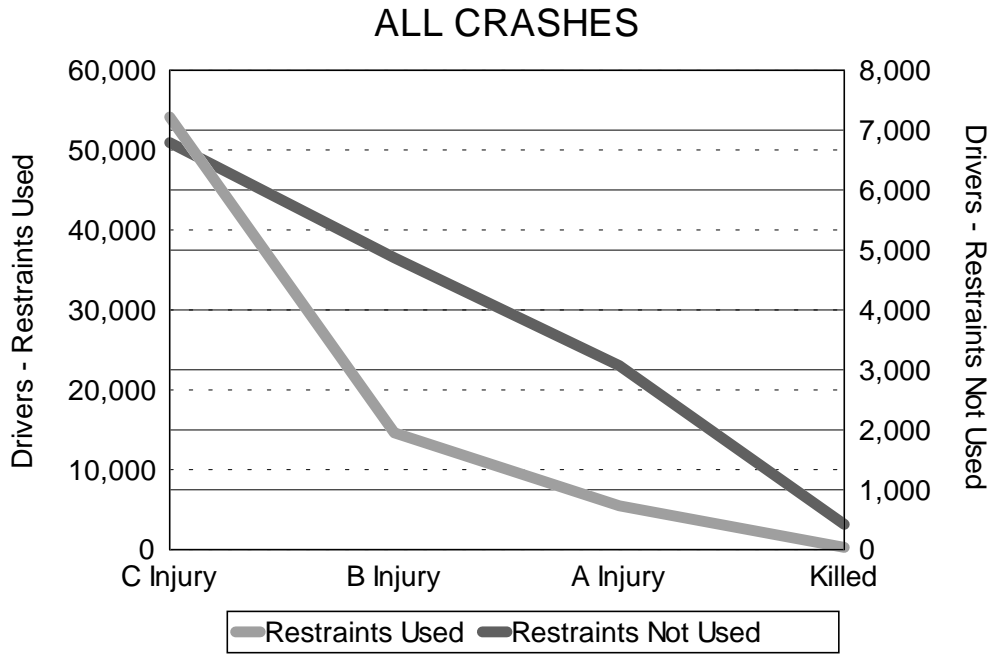
As can be seen in the two charts below, death and injury are much more likely when occupants are ejected from their vehicles.



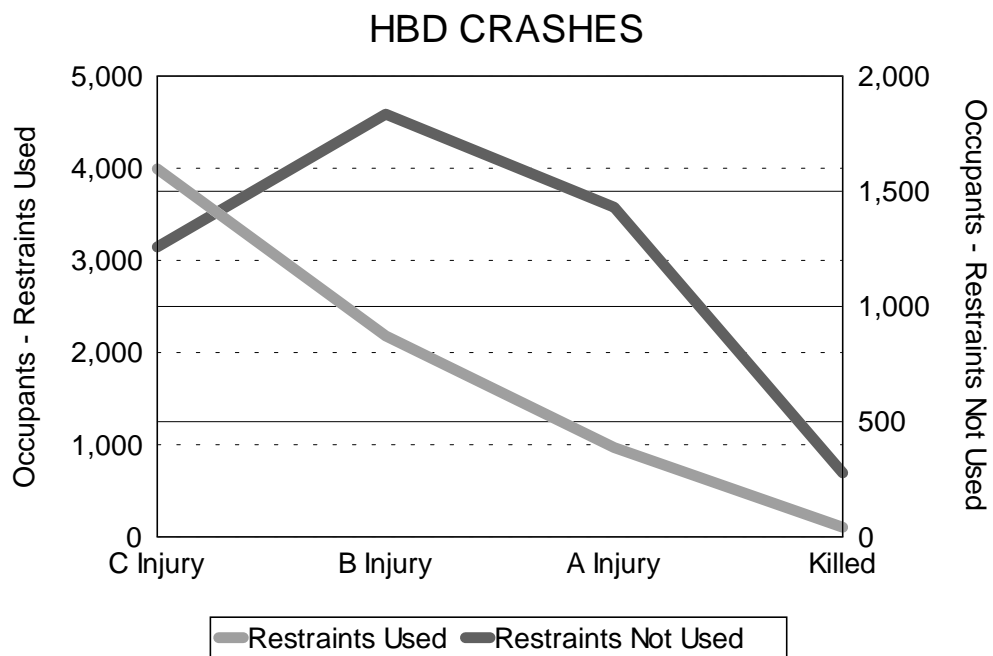
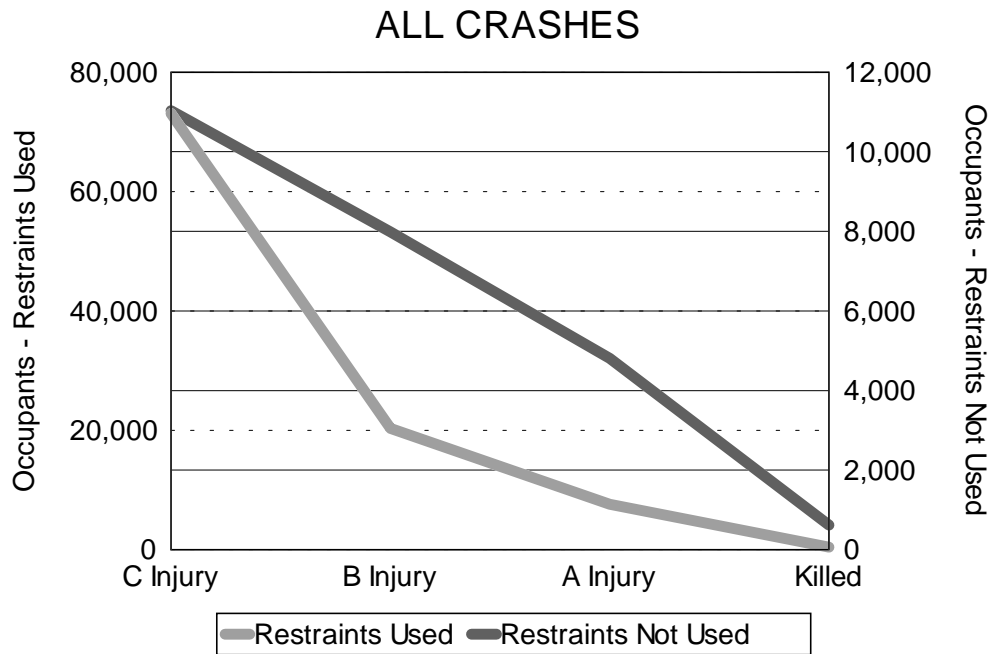
When compared to the charts above, the charts below demonstrate that the injury severity is much worse for occupants in a crash where drinking is reported in both ejected, and nonejected events.



## INJURY SEVERITY & RESTRAINT USE FOR CRASH INVOLVED KABC DRIVERS



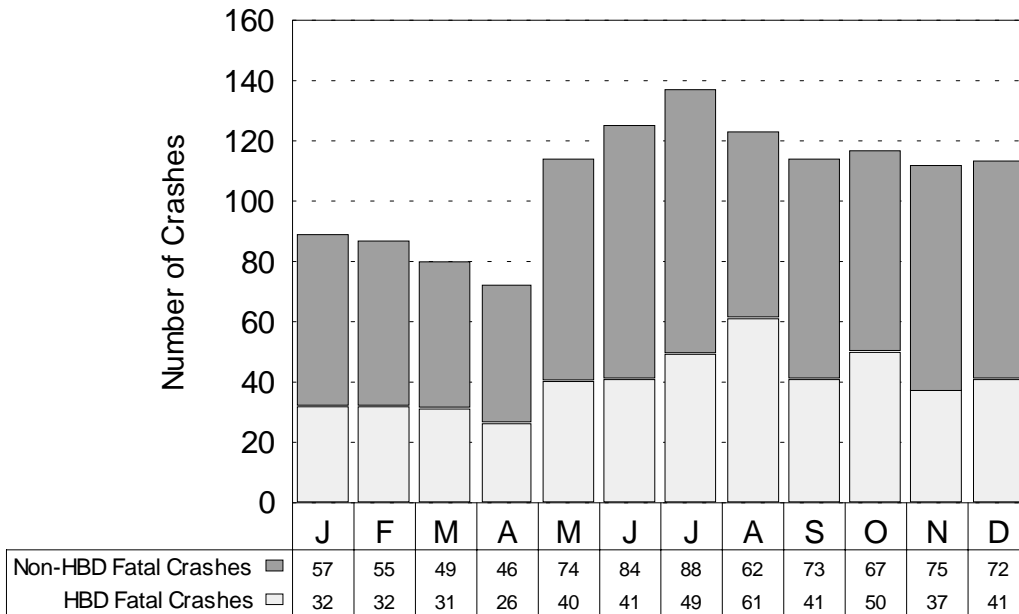
## INJURY SEVERITY & RESTRAINT USE FOR CRASH INVOLVED KABC OCCUPANTS



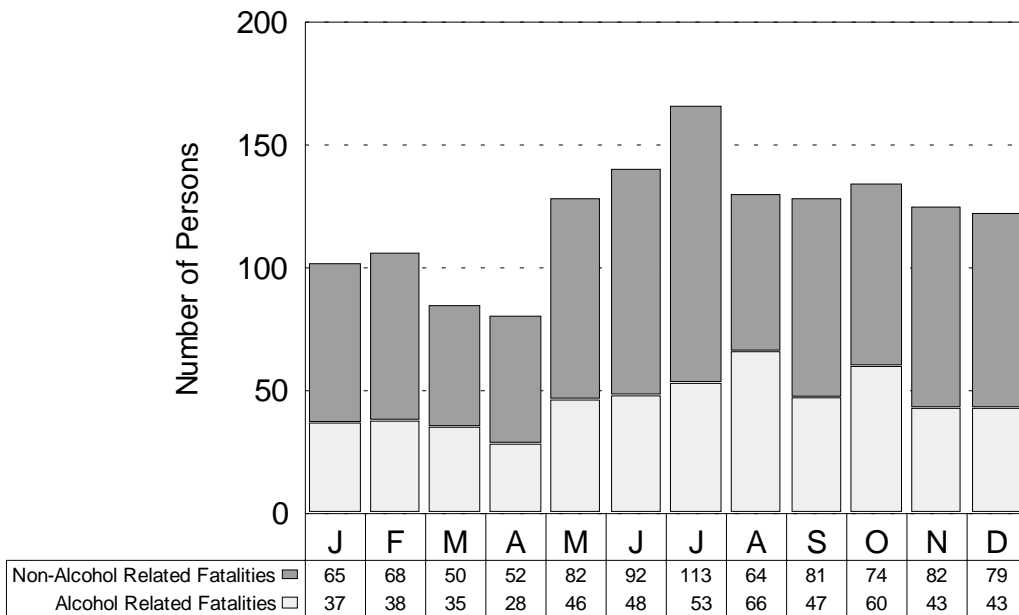
## ALCOHOL INVOLVEMENT IN FATAL CRASHES

Fatal crashes were lowest in number during February, March and April. The number of fatal crashes then increased, peaking in July. These numbers follow the increase in travel during the summer months. The number of HBD fatal crashes peaked in August. Total persons killed in fatal crashes closely follows the number of crashes, as would be expected.

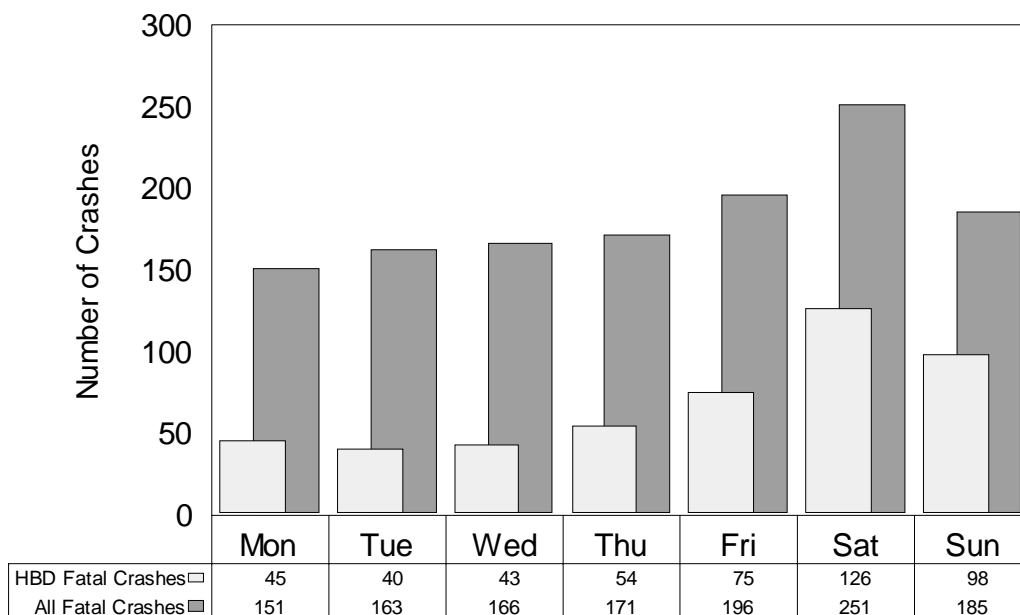
### HBD Fatal Crashes by Month



### Alcohol Related Fatalities by Month

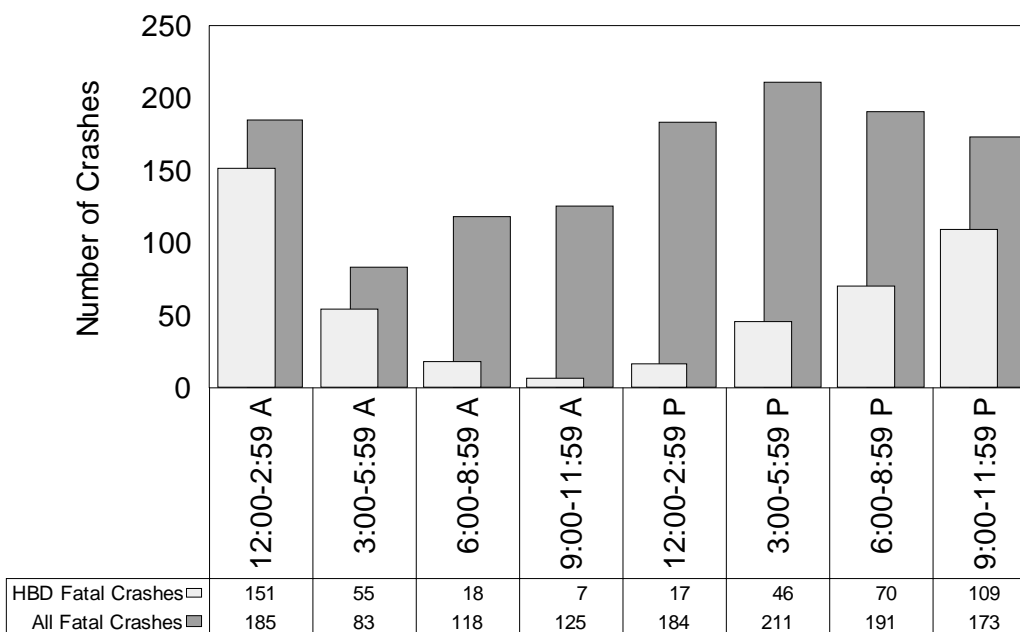


## HBD Fatal Crashes by Day of Week



Saturday had the most fatal crashes in 1997. Saturday and Sunday had the highest proportions of drinking related fatal crashes. Half of the weekend fatal crashes involved drinking, while only 24.5 percent of fatal crashes on Tuesday involved drinking.

## HBD Fatal Crashes by Time of Day



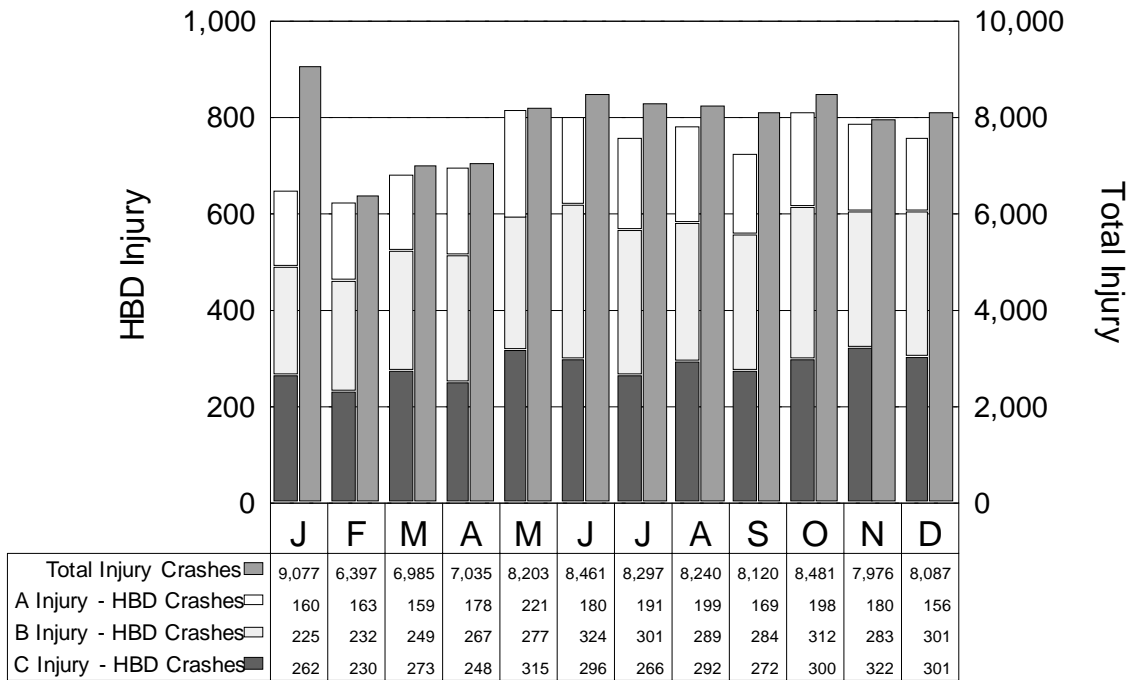
Not surprisingly, the midnight to 2:59 AM time period had the highest rate of drinking involvement (81.6%), while the late morning hours had the lowest (5.6%).

There were 13 fatal crashes where the time of day was unknown. Of these 13 fatal crashes, 8 were HBD.

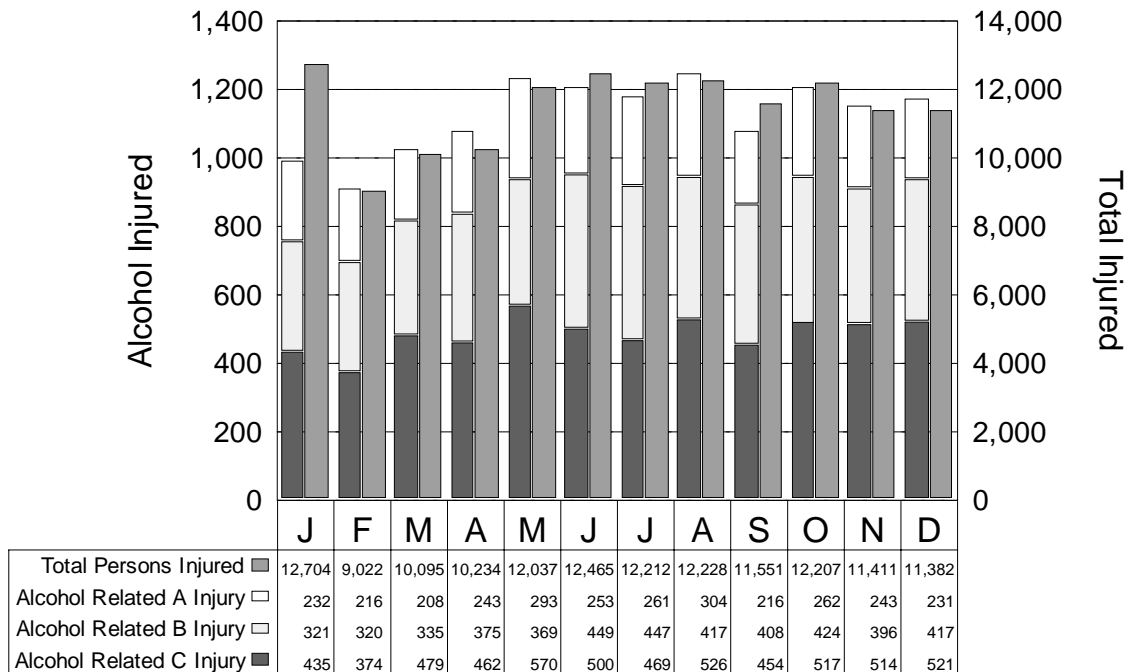
## ALCOHOL INVOLVEMENT IN INJURY CRASHES

Alcohol involvement in injury crashes is an important indicator of the alcohol impaired driving problem. In 1997, the highest number of HBD injury crashes occurred in May with 813. The highest proportion of HBD injury crashes occurred in May with 9.91 percent of the injury crashes in that month involving alcohol.

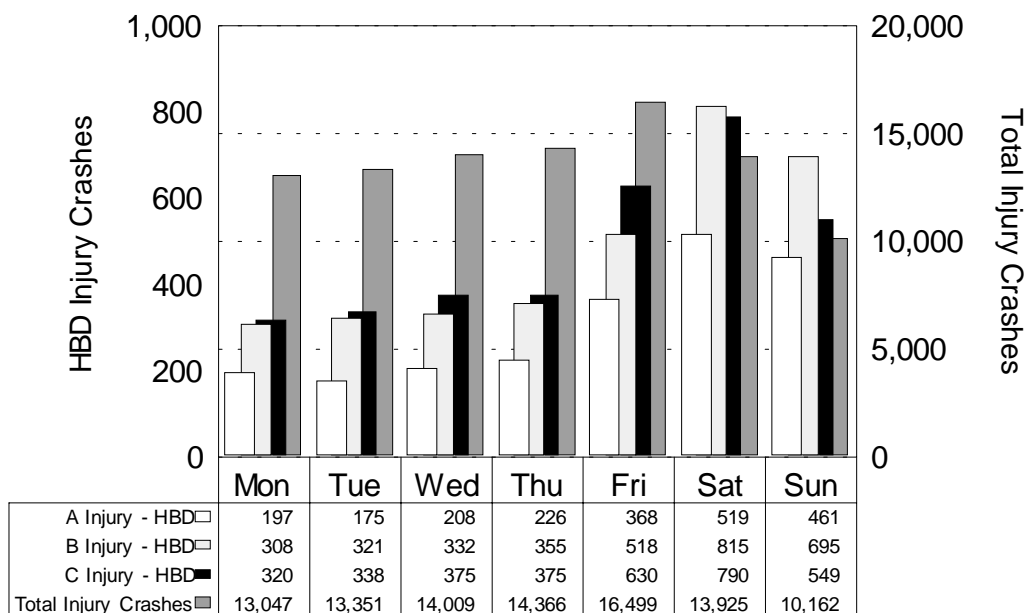
### HBD Injury Crashes by Month



### Alcohol Related Injuries by Month

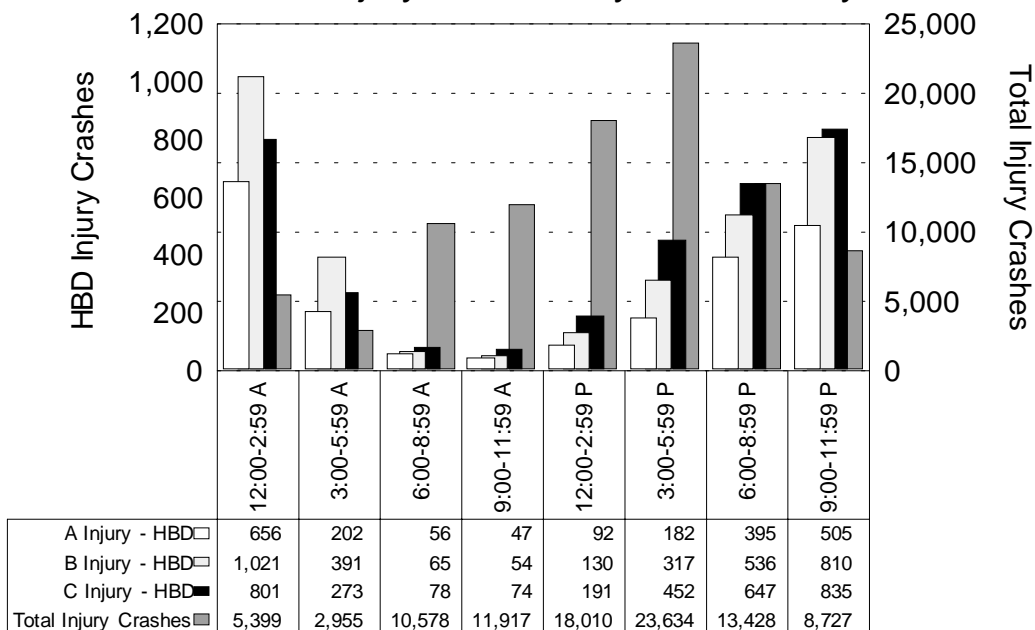


## HBD Injury Crashes by Day of Week



HBD injury crashes follow the same basic trends as total crashes through the work week, but the weekend sees a dramatic increase in the proportion of HBD injury crashes to total injury crashes.

## HBD Injury Crashes by Time of Day



Total injury crash frequencies peak in the hours between 12:00 PM and 5:59 PM, while HBD injury crash frequencies peak between 9:00 PM and 2:59 AM. A particularly hazardous travel period is 12:00 AM to 2:59 AM.

## REPORTED AGE OF DRINKING DRIVERS INVOLVED IN CRASHES

COUNTY	All ages	0-15 years	16-20 years	21-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75 yrs & over	DOB unk
Alcona	49	0	3	4	17	17	4	2	1	0	1
Alger	32	0	2	3	7	5	3	4	2	1	5
Allegan	288	2	35	48	84	70	22	10	4	3	10
Alpena	65	0	8	10	20	17	6	1	0	1	2
Antrim	61	0	6	10	20	12	6	2	3	1	1
Arenac	66	0	10	8	12	19	10	2	1	2	2
Baraga	21	1	0	3	7	7	2	1	0	0	0
Barry	138	2	14	15	43	40	11	5	2	0	6
Bay	359	1	46	54	111	87	34	11	4	1	10
Benzie	41	0	5	6	9	15	1	2	1	0	2
Berrien	326	1	32	55	98	52	27	17	8	2	34
Branch	80	0	8	16	22	23	3	1	3	0	4
Calhoun	344	1	28	43	109	93	42	7	8	1	12
Cass	137	0	8	14	32	39	7	2	1	1	33
Charlevoix	52	0	7	8	18	16	2	0	1	0	0
Cheboygan	71	1	3	10	23	17	7	4	4	0	2
Chippewa	105	0	13	22	24	16	14	2	2	2	10
Clare	64	0	6	9	20	16	5	4	0	1	3
Clinton	126	0	21	22	31	31	12	2	2	3	2
Crawford	39	0	5	4	8	12	6	2	1	0	1
Delta	85	0	13	15	18	18	7	4	3	2	5
Dickinson	62	0	7	6	15	17	5	2	3	0	7
Eaton	208	0	21	32	71	45	20	4	7	0	8
Emmet	60	0	8	7	15	15	8	1	1	0	5
Genesee	1,343	9	105	147	379	312	165	63	20	3	140
Gladwin	60	1	1	3	24	19	4	4	4	0	0
Gogebic	39	0	7	3	2	8	8	1	2	0	8
Grand Traverse	140	0	20	23	36	37	11	6	2	3	2
Gratiot	59	1	6	14	13	16	2	2	1	0	4
Hillsdale	74	0	10	19	18	13	7	4	1	0	2
Houghton	66	0	8	11	18	8	10	5	2	0	4
Huron	62	0	9	16	15	10	5	0	4	1	2
Ingham	566	1	57	90	167	129	59	16	9	7	31
Ionia	157	2	12	25	51	34	21	5	4	1	2
Iosco	80	1	6	8	22	18	16	5	3	1	0
Iron	44	0	7	4	11	13	3	0	2	0	4
Isabella	114	0	15	29	31	23	9	2	2	0	3
Jackson	399	1	37	70	114	105	38	10	9	2	13
Kalamazoo	437	1	53	54	157	82	45	20	9	3	13
Kalkaska	60	1	3	7	20	18	6	3	1	0	1
Kent	1,069	3	114	195	313	244	103	37	21	5	34
Keweenaw	8	0	1	2	1	2	0	1	0	0	1
Lake	31	0	0	4	6	8	8	3	1	0	1
Lapeer	189	2	16	19	62	48	24	10	1	2	5
Leelanau	37	1	4	12	7	6	2	1	0	1	3

## REPORTED AGE OF DRINKING DRIVERS INVOLVED IN CRASHES (continued)

COUNTY	All ages	0-15 years	16-20 years	21-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75 yrs & over	DOB unk
Lenawee	194	0	30	23	57	45	12	6	1	1	19
Livingston	328	0	57	52	78	88	36	5	4	0	8
Luce	10	0	2	1	2	0	1	0	2	0	2
Mackinac	51	0	1	9	15	12	8	1	1	0	4
Macomb	1,540	4	145	188	495	380	185	64	35	5	39
Manistee	60	0	11	10	15	12	4	2	2	1	3
Marquette	135	1	16	29	33	26	12	6	4	0	8
Mason	53	0	9	8	12	16	5	1	0	0	2
Mecosta	119	0	29	19	34	19	9	3	4	0	2
Menominee	68	0	7	10	14	16	5	1	2	0	13
Midland	108	0	11	16	32	30	14	1	1	0	3
Missaukee	24	0	6	4	8	4	1	1	0	0	0
Monroe	355	1	45	42	87	75	24	10	6	0	65
Montcalm	189	0	26	26	66	38	22	4	3	0	4
Montmorency	24	0	2	3	10	4	1	2	1	0	1
Muskegon	287	1	24	41	66	73	46	22	7	5	2
Newaygo	127	0	9	15	46	35	14	4	2	0	2
Oakland	2,132	2	166	260	647	561	264	85	49	18	80
Oceana	86	2	13	5	29	18	10	1	1	1	6
Ogemaw	67	0	3	7	22	14	14	4	0	0	3
Ontonagon	30	0	5	5	7	5	1	1	1	0	5
Osceola	52	1	12	9	14	11	3	1	1	0	0
Oscoda	20	0	0	2	5	7	3	1	1	0	1
Otsego	50	0	9	4	13	10	6	4	1	0	3
Ottawa	315	3	46	48	105	58	24	11	2	2	16
Presque Isle	32	0	3	4	13	7	3	0	2	0	0
Roscommon	86	0	5	14	20	24	13	5	2	1	2
Saginaw	490	1	48	78	155	106	65	18	6	3	10
St. Clair	380	1	53	53	113	89	44	6	4	2	15
St. Joseph	155	0	10	23	47	23	13	6	4	2	27
Sanilac	95	0	15	18	25	19	13	4	0	0	1
Schoolcraft	36	0	5	7	11	6	4	3	0	0	0
Shiawassee	148	1	17	16	56	35	15	4	0	0	4
Tuscola	142	0	23	19	43	37	11	2	3	0	4
Van Buren	220	1	22	36	61	45	18	7	10	1	19
Washtenaw	528	0	50	79	169	127	51	24	8	0	20
Wayne	3,388	8	246	361	915	890	472	172	104	22	198
Wexford	95	0	12	13	37	15	12	0	2	0	4
UNKNOWN	7	0	1	1	4	0	0	0	0	0	1
Totals	20,139	60	1,994	2,737	5,882	4,832	2,268	782	436	114	1,034



## MALE DRIVERS & INJURY SEVERITY IN CRASH

### ALL CRASHES

#### MOST SEVERE OUTCOME IN CRASH

AGE OF DRIVER IN CRASH	Male Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	204	0.1	0	0.0	8	14	25	157
1 - 3 years	30	0.0	0	0.0	2	2	5	21
4 - 10 years	89	0.0	0	0.0	11	13	15	50
11 - 15 years	1,063	0.3	9	0.6	68	150	171	665
16 - 20 years	59,968	15.2	177	12.4	1896	4349	9283	44263
21 - 24 years	35,653	9.0	118	8.3	1128	2362	5320	26725
25 - 34 years	85,137	21.6	332	23.2	2596	5105	12890	64214
35 - 44 years	74,538	18.9	252	17.6	2089	4200	11407	56590
45 - 54 years	50,175	12.7	162	11.3	1418	2837	7611	38147
55 - 64 years	26,894	6.8	111	7.8	705	1382	4125	20571
65 - 74 years	17,465	4.4	90	6.3	467	1043	2848	13017
75 years and over	10,226	2.6	91	6.4	336	739	1727	7333
Not Stated	32,602	8.3	88	6.2	739	1523	4531	25721
<b>TOTAL</b>	<b>394,044</b>	<b>100.0</b>	<b>1,430</b>	<b>100.0</b>	<b>11,463</b>	<b>23,719</b>	<b>59,958</b>	<b>297,474</b>

The fatal crash involvement for male drivers is down 4.5 percent from 1996.

### DRINKING DRIVER

#### MOST SEVERE OUTCOME IN CRASH

AGE OF DRINKING DRIVER IN CRASH	Male Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	15	0.1	0	0.0	1	4	1	9
1 - 3 years	4	0.0	0	0.0	1	1	1	1
4 - 10 years	4	0.0	0	0.0	1	0	1	2
11 - 15 years	23	0.1	1	0.3	3	2	3	14
16 - 20 years	1,610	10.1	34	9.1	175	317	225	859
21 - 24 years	2,259	14.2	51	13.7	257	399	312	1240
25 - 34 years	4,575	28.8	130	34.9	554	776	712	2403
35 - 44 years	3,632	22.8	75	20.2	389	586	649	1933
45 - 54 years	1,858	11.7	35	9.4	164	314	335	1010
55 - 64 years	657	4.1	15	4.0	56	95	136	355
65 - 74 years	388	2.4	16	4.3	34	38	67	233
75 years and over	100	0.6	3	0.8	5	9	21	62
Not Stated	776	4.9	12	3.2	63	109	134	458
<b>TOTAL</b>	<b>15,901</b>	<b>100.0</b>	<b>372</b>	<b>100.0</b>	<b>1,703</b>	<b>2,650</b>	<b>2,597</b>	<b>8,579</b>

The fatal crash involvement for male drinking drivers is up 4.5 percent from 1996.



**FEMALE DRIVERS &  
INJURY SEVERITY IN CRASH**

**ALL CRASHES**

**MOST SEVERE OUTCOME IN CRASH**

AGE OF DRIVER IN CRASH	Female Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	135	0.0	0	0.0	2	7	20	106
1 - 3 years	21	0.0	0	0.0	0	3	1	17
4 - 10 years	54	0.0	0	0.0	3	10	11	30
11 - 15 years	747	0.3	3	0.5	43	88	122	491
16 - 20 years	42,945	15.8	85	14.7	1263	3167	8178	30252
21 - 24 years	25,732	9.5	46	7.9	749	1587	4904	18446
25 - 34 years	61,109	22.5	126	21.7	1661	3638	11386	44298
35 - 44 years	55,714	20.5	89	15.3	1385	2997	10335	40908
45 - 54 years	35,769	13.2	72	12.4	920	1896	6631	26250
55 - 64 years	16,910	6.2	45	7.8	436	916	3138	12375
65 - 74 years	11,151	4.1	43	7.4	328	664	1998	8118
75 years and over	7,647	2.8	52	9.0	270	533	1385	5407
Not Stated	13,197	4.9	19	3.3	255	543	1960	10420
<b>TOTAL</b>	<b>271,131</b>	<b>100.0</b>	<b>580</b>	<b>100.0</b>	<b>7,315</b>	<b>16,049</b>	<b>50,069</b>	<b>197,118</b>

The fatal crash involvement for female drivers is down 8.5 percent from 1996.

**DRINKING DRIVER**

**MOST SEVERE OUTCOME IN CRASH**

AGE OF DRINKING DRIVER IN CRASH	Female Drivers		Fatal		Injury			PDO
	Number	% of Total	Number	% of Fatal	A	B	C	
Under 1 year old	3	0.1	0	0.0	0	1	0	2
1 - 3 years	0	0.0	0	0.0	0	0	0	0
4 - 10 years	0	0.0	0	0.0	0	0	0	0
11 - 15 years	9	0.2	1	1.5	0	3	1	4
16 - 20 years	354	9.2	7	10.4	28	63	62	194
21 - 24 years	437	11.4	9	13.4	54	63	77	234
25 - 34 years	1,224	31.9	23	34.3	133	214	220	634
35 - 44 years	1,141	29.7	16	23.9	108	176	217	624
45 - 54 years	375	9.8	3	4.5	36	46	78	212
55 - 64 years	115	3.0	4	6.0	8	15	19	69
65 - 74 years	45	1.2	3	4.5	5	4	5	28
75 years and over	11	0.3	0	0.0	1	0	1	9
Not Stated	128	3.3	1	1.5	16	14	20	77
<b>TOTAL</b>	<b>3,842</b>	<b>100.0</b>	<b>67</b>	<b>100.0</b>	<b>389</b>	<b>599</b>	<b>700</b>	<b>2,087</b>

The fatal crash involvement for female drinking drivers is down 14.1 percent from 1996.

The tables on this page and the previous page exclude 396 drinking drivers of unknown gender.

## FATAL CRASHES AND FATALITIES WITH DRINKING INVOLVEMENT BY COUNTY

COUNTY	C R A S H E S			P E R S O N S		
	All Fatal Crashes	HBD Fatal Crashes	Percent HBD	Total Fatalities	HBD Fatalities	Percent HBD
Alcona	5	2	40.0	8	2	25.0
Alger	2	1	50.0	3	2	66.7
Allegan	18	6	33.3	21	7	33.3
Alpena	4	2	50.0	4	2	50.0
Antrim	5	3	60.0	5	3	60.0
Arenac	3	1	33.3	3	1	33.3
Baraga	4	0	0.0	7	0	0.0
Barry	9	3	33.3	11	4	36.4
Bay	19	7	36.8	22	8	36.4
Benzie	4	3	75.0	4	3	75.0
Berrien	26	11	42.3	28	12	42.9
Branch	8	2	25.0	8	2	25.0
Calhoun	21	2	9.5	24	2	8.3
Cass	11	5	45.5	11	5	45.5
Charlevoix	1	1	100.0	1	1	100.0
Cheboygan	10	2	20.0	14	2	14.3
Chippewa	2	1	50.0	2	1	50.0
Clare	12	4	33.3	16	5	31.3
Clinton	16	3	18.8	18	3	16.7
Crawford	4	0	0.0	4	0	0.0
Delta	6	0	0.0	6	0	0.0
Dickinson	8	6	75.0	10	7	70.0
Eaton	19	9	47.4	19	9	47.4
Emmet	9	1	11.1	11	1	9.1
Genesee	73	39	53.4	82	43	52.4
Gladwin	4	1	25.0	4	1	25.0
Gogebic	0	0	0.0	0	0	0.0
Grand Traverse	16	5	31.3	19	6	31.6
Gratiot	3	0	0.0	3	0	0.0
Hillsdale	9	2	22.2	9	2	22.2
Houghton	1	1	100.0	1	1	100.0
Huron	7	1	14.3	7	1	14.3
Ingham	15	4	26.7	15	4	26.7
Ionia	12	7	58.3	13	7	53.8
Iosco	4	0	0.0	4	0	0.0
Iron	4	1	25.0	4	1	25.0
Isabella	12	6	50.0	14	8	57.1
Jackson	34	7	20.6	47	8	17.0
Kalamazoo	20	13	65.0	22	14	63.6
Kalkaska	6	3	50.0	6	3	50.0
Kent	51	17	33.3	57	22	38.6
Keweenaw	1	1	100.0	1	1	100.0
Lake	6	1	16.7	6	1	16.7
Lapeer	18	9	50.0	19	10	52.6

## FATAL CRASHES AND FATALITIES WITH DRINKING INVOLVEMENT BY COUNTY (continued)

COUNTY	C R A S H E S			P E R S O N S		
	All Fatal Crashes	HBD Fatal Crashes	Percent HBD	Total Fatalities	HBD Fatalities	Percent HBD
Leelanau	2	0	0.0	3	0	0.0
Lenawee	23	7	30.4	29	10	34.5
Livingston	14	6	42.9	14	6	42.9
Luce	2	1	50.0	2	1	50.0
Mackinac	2	0	0.0	2	0	0.0
Macomb	57	25	43.9	58	26	44.8
Manistee	1	1	100.0	1	1	100.0
Marquette	9	6	66.7	12	6	50.0
Mason	4	1	25.0	5	2	40.0
Mecosta	14	6	42.9	19	8	42.1
Menominee	2	1	50.0	2	1	50.0
Midland	16	5	31.3	18	5	27.8
Missaukee	1	0	0.0	2	0	0.0
Monroe	28	11	39.3	29	12	41.4
Montcalm	17	9	52.9	20	12	60.0
Montmorency	0	0	0.0	0	0	0.0
Muskegon	22	8	36.4	23	9	39.1
Newaygo	20	5	25.0	23	6	26.1
Oakland	81	27	33.3	93	34	36.6
Oceana	6	3	50.0	6	3	50.0
Ogemaw	9	3	33.3	9	3	33.3
Ontonagon	1	1	100.0	1	1	100.0
Osceola	5	3	60.0	7	4	57.1
Oscoda	2	1	50.0	2	1	50.0
Otsego	4	2	50.0	4	2	50.0
Ottawa	25	8	32.0	27	9	33.3
Presque Isle	5	1	20.0	6	2	33.3
Roscommon	5	2	40.0	8	2	25.0
Saginaw	21	10	47.6	26	11	42.3
St. Clair	25	8	32.0	29	10	34.5
St. Joseph	16	5	31.3	21	8	38.1
Sanilac	11	3	27.3	12	3	25.0
Schoolcraft	1	0	0.0	1	0	0.0
Shiawassee	12	6	50.0	12	6	50.0
Tuscola	6	2	33.3	6	2	33.3
Van Buren	17	7	41.2	17	7	41.2
Washtenaw	36	13	36.1	39	14	35.9
Wayne	235	89	37.9	261	100	38.3
Wexford	4	2	50.0	4	2	50.0
Totals	1,283	481	37.5	1,446	544	37.6



## MOST SEVERE OUTCOME IN HBD CRASHES BY COUNTY

Note: While the Michigan *Traffic Crash Report* (UD-10) requests officers to report Bodily Alcohol Content (BAC) of all persons tested for alcohol after a traffic crash, only the BAC testing of deceased motor vehicle drivers and deceased railroad train engineers is required by law. Consequently, alcohol involvement in nonfatal crashes is frequently unreported, and is therefore generally believed to be higher than indicated in this table.

### MOST SEVERE OUTCOME IN HBD CRASH

COUNTY	All HBD Crashes	Fatal	Injury			PDO
			A	B	C	
Alcona	47	2	12	6	3	24
Alger	33	1	4	8	4	16
Allegan	287	6	43	53	36	149
Alpena	64	2	6	10	6	40
Antrim	62	3	7	12	8	32
Arenac	65	1	7	11	7	39
Baraga	21	0	3	6	1	11
Barry	137	3	20	31	19	64
Bay	358	7	35	67	45	204
Benzie	42	3	8	5	11	15
Berrien	327	11	30	60	60	166
Branch	81	2	11	12	11	45
Calhoun	344	2	37	55	48	202
Cass	138	5	24	23	10	76
Charlevoix	52	1	7	8	5	31
Cheboygan	71	2	4	17	17	31
Chippewa	102	1	17	16	7	61
Clare	64	4	5	11	14	30
Clinton	126	3	11	25	19	68
Crawford	38	0	12	3	0	23
Delta	85	0	11	13	13	48
Dickinson	61	6	7	10	9	29
Eaton	211	9	26	35	27	114
Emmet	61	1	7	10	8	35
Genesee	1,346	39	81	269	241	716
Gladwin	59	1	9	8	9	32
Gogebic	37	0	2	3	6	26
Grand Traverse	140	5	12	21	29	73
Gratiot	59	0	6	10	8	35
Hillsdale	73	2	11	14	14	32
Houghton	68	1	9	9	4	45
Huron	62	1	7	8	7	39
Ingham	574	4	71	87	98	314
Ionia	156	7	24	23	20	82
Iosco	82	0	8	15	13	46
Iron	44	1	7	7	4	25
Isabella	115	6	13	25	12	59
Jackson	398	7	36	65	79	211
Kalamazoo	433	13	48	80	55	237
Kalkaska	61	3	13	8	8	29
Kent	1,073	17	114	160	174	608
Keweenaw	8	1	0	1	0	6

## MOST SEVERE OUTCOME IN HBD CRASHES BY COUNTY (continued)

### MOST SEVERE OUTCOME IN HBD CRASH

COUNTY	All HBD Crashes	Fatal	Injury			PDO
			A	B	C	
Lake	30	1	4	5	5	15
Lapeer	186	9	28	32	28	89
Leelanau	36	0	5	7	3	21
Lenawee	195	7	16	33	32	107
Livingston	329	6	53	76	44	150
Luce	10	1	2	3	1	3
Mackinac	50	0	7	9	8	26
Macomb	1,557	25	145	243	309	835
Manistee	62	1	6	16	5	34
Marquette	137	6	16	27	16	72
Mason	53	1	6	8	9	29
Mecosta	118	6	11	28	9	64
Menominee	69	1	10	16	6	36
Midland	109	5	11	19	16	58
Missaukee	24	0	4	5	7	8
Monroe	351	11	37	67	45	191
Montcalm	187	9	26	33	17	102
Montmorency	24	0	2	4	1	17
Muskegon	283	8	35	55	42	143
Newaygo	125	5	22	19	18	61
Oakland	2,132	27	196	330	423	1156
Oceana	84	3	8	12	6	55
Ogemaw	65	3	8	11	12	31
Ontonagon	31	1	3	3	3	21
Osceola	52	3	5	7	6	31
Oscoda	20	1	2	3	3	11
Otsego	51	2	10	10	6	23
Ottawa	316	8	35	35	61	177
Presque Isle	30	1	6	7	2	14
Roscommon	86	2	10	9	8	57
Saginaw	499	10	74	79	65	271
St. Clair	378	8	53	55	52	210
St. Joseph	156	5	23	23	21	84
Sanilac	93	3	11	10	13	56
Schoolcraft	36	0	5	7	1	23
Shiawassee	146	6	15	34	24	67
Tuscola	141	2	14	25	12	88
Van Buren	220	7	27	36	38	112
Washtenaw	536	13	45	93	107	278
Wayne	3,419	89	322	517	701	1790
Wexford	93	2	11	10	21	49
Unknown	6	0	0	3	2	1
Totals	20,190	481	2,154	3,344	3,377	10,834

## COUNTY RANKING BY HBD FATAL CRASH RATE per 1,000 Michigan Residents

COUNTY	1997 Population Estimate	All Crashes	Fatal Crashes	HBD Crashes	HBD Fatal Crashes	HBD Fatal Crash Rate per 1,000 people	Rank
Keweenaw	2,078	79	1	8	1	0.4812	1
Dickinson	27,062	1,523	8	61	6	0.2217	2
Benzie	14,290	669	4	42	3	0.2099	3
Kalkaska	15,451	867	6	61	3	0.1942	4
Alcona	10,980	989	5	47	2	0.1821	5
Mecosta	39,178	2,891	14	118	6	0.1531	6
Luce	6,584	329	2	10	1	0.1519	7
Montcalm	59,647	3,394	17	187	9	0.1509	8
Ogemaw	20,955	1,310	9	65	3	0.1432	9
Antrim	20,975	1,102	5	62	3	0.1430	10
Clare	29,011	1,666	12	64	4	0.1379	11
Osceola	22,028	1,662	5	52	3	0.1362	12
Ontonagon	8,117	572	1	31	1	0.1232	13
Oceana	24,599	1,252	6	84	3	0.1220	14
Ionia	61,112	2,878	12	156	7	0.1145	15
Oscoda	8,844	535	2	20	1	0.1131	16
Newaygo	45,059	2,218	20	125	5	0.1110	17
Isabella	57,623	2,904	12	115	6	0.1041	18
Lapeer	86,893	3,839	18	186	9	0.1036	19
Alger	9,958	471	2	33	1	0.1004	20
Cass	49,967	2,062	11	138	5	0.1001	21
Lake	10,153	657	6	30	1	0.0985	22
Marquette	61,792	2,765	9	137	6	0.0971	23
Van Buren	75,686	3,112	17	220	7	0.0925	24
Otsego	21,800	1,163	4	51	2	0.0917	25
Eaton	100,173	4,605	19	211	9	0.0898	26
Genesee	435,393	16,330	73	1,346	39	0.0896	27
Roscommon	23,174	1,279	5	86	2	0.0863	28
Cheboygan	23,535	1,132	10	71	2	0.0850	29
Shiawassee	72,236	2,640	12	146	6	0.0831	30
St. Joseph	61,234	2,607	16	156	5	0.0817	31
Monroe	142,301	4,969	28	351	11	0.0773	32
Iron	13,067	897	4	44	1	0.0765	33
Lenawee	97,998	3,809	23	195	7	0.0714	34
Sanilac	42,736	2,038	11	93	3	0.0702	35
Presque Isle	14,392	770	5	30	1	0.0695	36
Wexford	29,147	1,894	4	93	2	0.0686	37
Berrien	160,713	5,995	26	327	11	0.0684	38
Grand Traverse	73,161	3,746	16	140	5	0.0683	39
Alpena	30,638	1,429	4	64	2	0.0653	40
Bay	110,423	4,329	19	358	7	0.0634	41
Midland	81,248	3,232	16	109	5	0.0615	42
Arenac	16,411	1,108	3	65	1	0.0609	43
Allegan	100,585	4,064	18	287	6	0.0597	44
Kalamazoo	229,192	9,748	20	433	13	0.0567	45

# ALCOHOL

## COUNTY RANKING BY HBD FATAL CRASH RATE per 1,000 Michigan Residents (continued)

COUNTY	1997 Population Estimate	All Crashes	Fatal Crashes	HBD Crashes	HBD Fatal Crashes	HBD Fatal Crash Rate per 1,000 people	Rank
Barry	53,533	2,598	9	137	3	0.0560	46
St. Clair	157,704	5,704	25	378	8	0.0507	47
Muskegon	165,882	6,180	22	283	8	0.0482	48
Clinton	63,087	2,890	16	126	3	0.0476	49
Saginaw	211,278	8,967	21	499	10	0.0473	50
Branch	43,628	2,239	8	81	2	0.0458	51
Jackson	155,346	7,439	34	398	7	0.0451	52
Washtenaw	299,503	12,671	36	536	13	0.0434	53
Hillsdale	46,240	2,347	9	73	2	0.0433	54
Manistee	23,179	1,155	1	62	1	0.0431	55
Charlevoix	23,630	1,299	1	52	1	0.0423	56
Livingston	141,914	5,758	14	329	6	0.0423	57
Wayne	2,127,087	92,962	235	3,419	89	0.0418	58
Menominee	24,443	1,743	2	69	1	0.0409	59
Gladwin	24,879	1,195	4	59	1	0.0402	60
Ottawa	220,403	7,968	25	316	8	0.0363	61
Mason	27,854	1,773	4	53	1	0.0359	62
Emmet	28,339	1,782	9	61	1	0.0353	63
Tuscola	58,087	2,349	6	141	2	0.0344	64
Macomb	783,451	28,245	57	1,557	25	0.0319	65
Kent	539,425	25,094	51	1,073	17	0.0315	66
Huron	35,270	2,074	7	62	1	0.0284	67
Houghton	35,810	1,320	1	68	1	0.0279	68
Chippewa	37,900	1,656	2	102	1	0.0264	69
Oakland	1,166,512	49,330	81	2,132	27	0.0231	70
Calhoun	141,821	7,142	21	344	2	0.0141	71
Ingham	284,089	12,930	15	574	4	0.0141	72
Baraga	8,448	493	4	21	0	0.0000	73
Crawford	13,880	870	4	38	0	0.0000	74
Delta	38,801	2,465	6	85	0	0.0000	75
Gogebic	17,439	645	0	37	0	0.0000	76
Gratiot	40,024	1,830	3	59	0	0.0000	77
Iosco	25,129	1,346	4	82	0	0.0000	78
Leelanau	18,755	714	2	36	0	0.0000	79
Mackinac	11,113	1,008	2	50	0	0.0000	80
Missaukee	13,682	815	1	24	0	0.0000	81
Montmorency	9,980	543	0	24	0	0.0000	82
Schoolcraft	8,748	603	1	36	0	0.0000	83
Unknown		121	0	6	0		
<b>State Totals</b>	<b>9,773,892</b>	<b>425,793</b>	<b>1,283</b>	<b>20,190</b>	<b>481</b>	<b>0.04921</b>	



# ALCOHOL

## REPORTED STATEWIDE ALCOHOL INVOLVED TRAFFIC CRASHES BY COUNTY IN MICHIGAN

COUNTY	All	Fatal	Injury	Property Damage	Inter- state	US Route	State Route	Local Street	Persons Killed	Persons Injured
Alcona	47	2	21	24	0	6	5	36	2	28
Alger	33	1	16	16	0	1	7	25	2	21
Allegan	287	6	132	149	7	16	26	238	7	199
Alpena	64	2	22	40	0	8	9	47	2	36
Antrim	62	3	27	32	0	8	12	42	3	43
Arenac	65	1	25	39	3	11	2	49	1	44
Baraga	21	0	10	11	0	4	1	16	0	17
Barry	137	3	70	64	0	0	33	104	4	99
Bay	358	7	147	204	15	9	75	259	8	220
Benzie	42	3	24	15	0	6	5	31	3	36
Berrien	327	11	150	166	43	35	38	211	12	238
Branch	81	2	34	45	8	6	6	61	2	48
Calhoun	344	2	140	202	49	5	36	254	2	194
Cass	138	5	57	76	0	13	34	91	5	88
Charlevoix	52	1	20	31	0	6	11	35	1	35
Cheboygan	71	2	38	31	4	4	9	54	2	51
Chippewa	102	1	40	61	12	0	17	73	1	55
Clare	64	4	30	30	0	11	12	41	5	49
Clinton	126	3	55	68	13	14	4	95	3	76
Crawford	38	0	15	23	6	0	4	28	0	24
Delta	85	0	37	48	0	22	15	48	0	53
Dickinson	61	6	26	29	0	15	12	34	7	40
Eaton	211	9	88	114	24	8	49	130	9	142
Emmet	61	1	25	35	0	11	3	47	1	41
Genesee	1,346	39	591	716	121	30	194	1,001	43	894
Gladwin	59	1	26	32	0	0	13	46	1	42
Gogebic	37	0	11	26	0	14	1	22	0	14
Grand Traverse	140	5	62	73	0	28	13	99	6	105
Gratiot	59	0	24	35	0	17	7	35	0	30
Hillsdale	73	2	39	32	0	2	6	65	2	56
Houghton	68	1	22	45	0	15	10	43	1	29
Huron	62	1	22	39	0	0	16	46	1	30
Ingham	574	4	256	314	103	12	92	367	4	369
Ionia	156	7	67	82	17	0	31	108	7	107
Iosco	82	0	36	46	0	12	10	60	0	42
Iron	44	1	18	25	0	4	10	30	1	20
Isabella	115	6	50	59	0	13	14	88	8	88
Jackson	398	7	180	211	58	9	47	284	8	264
Kalamazoo	433	13	183	237	30	29	40	334	14	250
Kalkaska	61	3	29	29	0	8	8	45	3	57
Kent	1,073	17	448	608	52	93	130	798	22	672
Keweenaw	8	1	1	6	0	1	1	6	1	1
Lake	30	1	14	15	0	3	3	24	1	22
Lapeer	186	9	88	89	9	0	53	124	10	154
Leelanau	36	0	15	21	0	0	7	29	0	22
Lenawee	195	7	81	107	0	40	19	136	10	120

## REPORTED STATEWIDE ALCOHOL INVOLVED TRAFFIC CRASHES BY COUNTY IN MICHIGAN (Continued)

COUNTY	All	Fatal	Injury	Property Damage	Inter- state	US Route	State Route	Local Street	Persons Killed	Persons Injured
Livingston	329	6	173	150	70	18	24	217	6	246
Luce	10	1	6	3	0	0	3	7	1	11
Mackinac	50	0	24	26	12	2	6	30	0	30
Macomb	1,557	25	697	835	123	0	411	1,023	26	1,065
Manistee	62	1	27	34	0	8	15	39	1	35
Marquette	137	6	59	72	0	31	12	94	6	79
Mason	53	1	23	29	0	13	3	37	2	34
Mecosta	118	6	48	64	0	21	14	83	8	79
Menominee	69	1	32	36	0	23	6	40	1	49
Midland	109	5	46	58	0	12	18	79	5	61
Missaukee	24	0	16	8	0	0	9	15	0	19
Monroe	351	11	149	191	32	42	33	244	12	232
Montcalm	187	9	76	102	0	8	46	133	12	117
Montmorency	24	0	7	17	0	0	5	19	0	9
Muskegon	283	8	132	143	1	45	26	211	9	202
Newaygo	125	5	59	61	0	0	22	103	6	84
Oakland	2,132	27	949	1,156	307	100	296	1,429	34	1,397
Oceana	84	3	26	55	0	11	7	66	3	41
Ogemaw	65	3	31	31	9	0	7	49	3	52
Ontonagon	31	1	9	21	0	3	8	20	1	11
Osceola	52	3	18	31	0	15	5	32	4	28
Oscoda	20	1	8	11	0	0	6	14	1	12
Otsego	51	2	26	23	14	0	6	31	2	39
Ottawa	316	8	131	177	15	39	24	238	9	205
Presque Isle	30	1	15	14	0	2	4	24	2	20
Roscommon	86	2	27	57	10	2	17	57	2	39
Saginaw	499	10	218	271	29	0	116	354	11	328
St. Clair	378	8	160	210	42	0	58	278	10	261
St. Joseph	156	5	67	84	0	26	19	111	8	109
Sanilac	93	3	34	56	0	0	29	64	3	49
Schoolcraft	36	0	13	23	1	1	3	31	0	15
Shiawassee	146	6	73	67	9	1	23	113	6	110
Tuscola	141	2	51	88	0	0	31	110	2	77
Van Buren	220	7	101	112	30	0	30	160	7	154
Washtenaw	536	13	245	278	57	68	29	382	14	355
Wayne	3,419	89	1,540	1,790	507	222	440	2,250	100	2,466
Wexford	93	2	42	49	0	18	18	57	2	70
UNKNOWN	6	0	5	1	0	0	0	6	0	6
Totals	20,190	481	8,875	10,834	1,842	1,280	2,979	14,089	544	13,461

