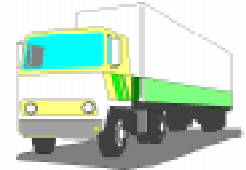




## VEHICLE TYPE CRASH INVOLVEMENT



### MOST SEVERE OUTCOME IN CRASH

### MOST SEVERE OUTCOME IN VEHICLE

Vehicle Types	Motor Vehicles		Fatal Crash		Injury	PDO	Fatality in Veh		Injury	No Injury
	Number	% of Total	Number	% of Total			Number	% of Total		
Passenger Car and Station Wagon	486,025	69.2	1,219	60.1	122,764	362,042	754	70.9	79,137	406,134
Van and Motorhome	53,679	7.6	162	8.0	12,760	40,757	63	5.9	6,971	46,645
Pickup	103,199	14.7	347	17.1	22,041	80,811	144	13.5	11,491	91,564
Small Truck (under 10,000 lbs.)	13,293	1.9	40	2.0	2,956	10,297	12	1.1	1,548	11,733
Motorcycle	2,931	0.4	52	2.6	2,198	681	49	4.6	2,152	730
Moped	271	0.0	2	0.1	202	67	2	0.2	191	78
Go Cart	15	0.0	0	0.0	8	7	0	0.0	8	7
Snowmobile	387	0.1	22	1.1	232	133	20	1.9	201	166
Off Road Vehicle	199	0.0	3	0.1	154	42	3	0.3	139	57
Other	1,835	0.3	9	0.4	392	1,434	4	0.4	169	1,662
Unkown	21,359	3.0	17	0.8	2,583	18,759	3	0.3	563	20,793
CDL Truck/Bus (breakdown below)	19,487	2.8	156	7.7	3,932	15,399	10	0.9	1,021	18,456
<b>Totals</b>	<b>702,680</b>	<b>100.0</b>	<b>2,029</b>	<b>100.0</b>	<b>170,222</b>	<b>530,429</b>	<b>1,064</b>	<b>100.0</b>	<b>103,591</b>	<b>598,025</b>

Special Note: School bus is not recorded on the UD-10 and cannot be broken out of CDL Truck/Bus.

### CDL Truck/Bus Sub-category Types

CDL Truck/Bus Sub-category Types	Motor Vehicles		Fatal Crash		Injury	PDO	Fatality in Veh		Injury	No Injury
	Number	% of Total	Number	% of Total			Number	% of Total		
Commercial Vehicle: Group A	9,476	48.6	113	72.4	2,004	7,359	6	60.0	434	9,036
Commercial Vehicle: Group B	4,202	21.6	24	15.4	881	3,297	1	10.0	303	3,898
Commercial Vehicle: Group C	528	2.7	0	0.0	115	413	0	0.0	46	482
Other Truck	1,124	5.8	8	5.1	238	878	1	10.0	78	1,045
Unknown Truck	4,157	21.3	11	7.1	694	3,452	2	20.0	160	3,995
<b>Totals</b>	<b>19,487</b>	<b>100.0</b>	<b>156</b>	<b>100.0</b>	<b>3,932</b>	<b>15,399</b>	<b>10</b>	<b>100.0</b>	<b>1,021</b>	<b>18,456</b>

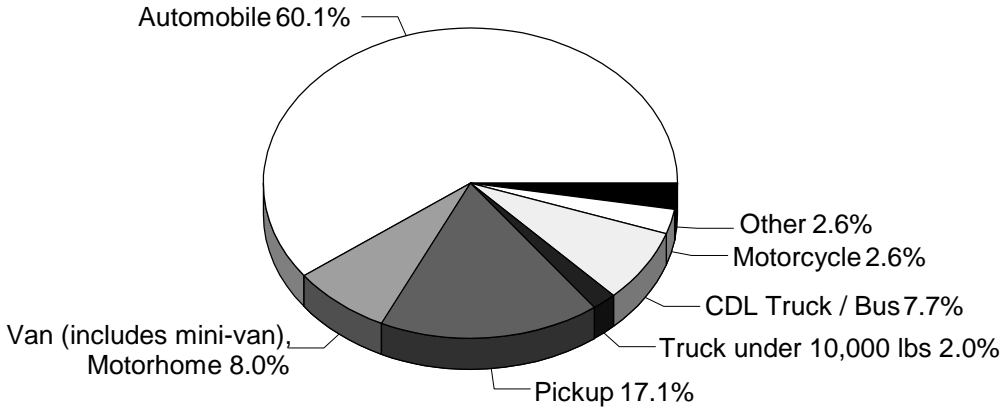
Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.

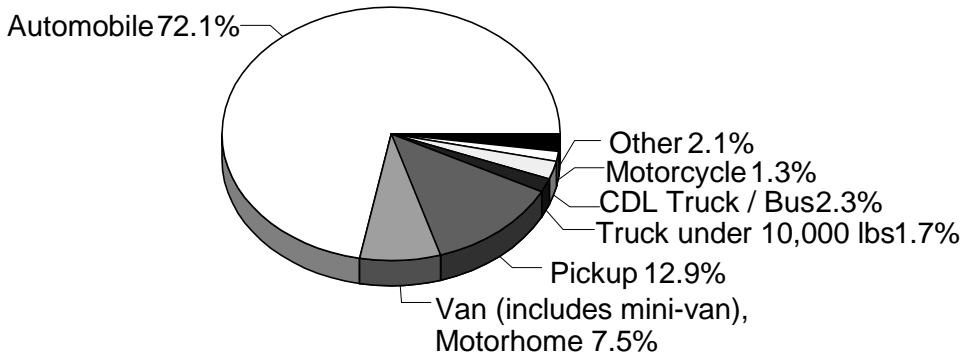
# VEHICLE TYPES IN CRASHES BY CRASH SEVERITY

## FATAL



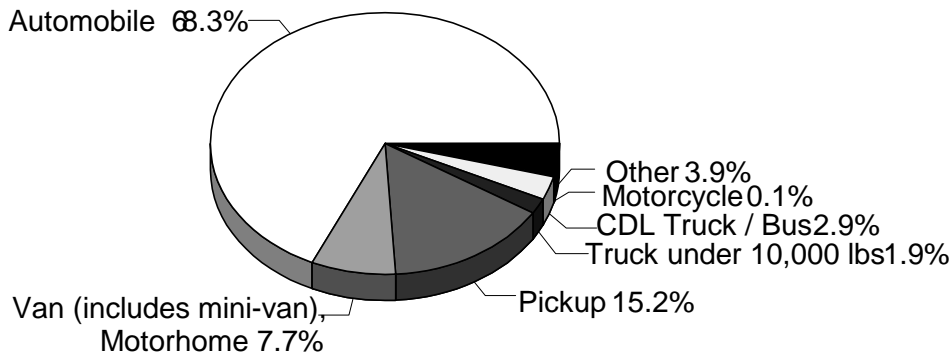
The top chart shows that 3 out of 4 vehicles involved in fatal crashes are automobiles or pickups. Van, Motorhome, the vehicle type that includes the popular minivan, has a fatal crash involvement of 8.0 percent.

## INJURY



Special Note: "Other" consists of Moped, Go Cart, Snowmobile, Off Road Vehicle, Other, and Unknown.

## PROPERTY DAMAGE ONLY



As with fatal crashes, Injury and PDO crashes are represented primarily by cars and pickups. One should also note the decline in proportional representation for motorcycles and heavy trucks compared to their levels in fatal crashes.

## ACTION PRIOR TO CRASH

### MOST SEVERE OUTCOME IN CRASH

DRIVER ACTION	All Vehicles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Going straight ahead	355,229	50.6	1,518	11,770	23,754	53,767	264,420
Turning left	54,684	7.8	100	1,830	4,443	9,631	38,680
Turning right	19,863	2.8	8	302	859	2,234	16,460
Stopped on roadway	70,309	10.0	75	1,152	3,323	16,517	49,242
In prior crash	957	0.1	4	38	95	196	624
Changing lanes	16,234	2.3	37	259	521	1,704	13,713
Backing	18,159	2.6	9	96	219	680	17,155
Slowing/stopping on roadway	59,226	8.4	40	780	2,217	12,887	43,302
Slowing/stopping other	835	0.1	3	17	32	185	598
Starting up on roadway	13,385	1.9	19	337	757	2,542	9,730
Starting up other	403	0.1	0	13	34	71	285
Entering parking	1,047	0.1	0	6	24	74	943
Leaving parking	2,865	0.4	5	51	148	327	2,334
Entering roadway	10,904	1.6	16	314	699	1,648	8,227
Leaving roadway	1,355	0.2	17	103	156	177	902
Making U-turn	1,760	0.3	5	62	116	275	1,302
Overtaking or passing	6,194	0.9	36	213	350	704	4,891
Avoiding object	2,010	0.3	4	88	215	289	1,414
Avoiding pedestrian	211	0.0	4	24	37	40	106
Avoiding vehicle (front/back)	5,435	0.8	36	223	417	938	3,821
Avoiding vehicle (angle)	2,421	0.3	8	82	190	419	1,722
Driverless moving	540	0.1	1	11	20	38	470
Parked	29,961	4.3	41	418	840	1,416	27,246
Crossing at intersection	78	0.0	0	8	10	17	43
Crossing not at intersection	48	0.0	0	10	8	13	17
Getting on/off vehicle	9	0.0	1	2	0	0	6
In roadway with traffic	8	0.0	0	2	0	2	4
In roadway against traffic	9	0.0	0	0	0	2	7
Standing or lying in roadway	7	0.0	0	2	1	2	2
Pushing/working on vehicle	17	0.0	0	3	3	1	10
Other working in roadway	5	0.0	0	0	3	0	2
Playing in roadway	3	0.0	1	0	0	1	1
In roadway other reason	7	0.0	0	2	1	1	3
Not in roadway	16	0.0	0	2	4	3	7
Other	649	0.1	5	33	56	90	465
Unknown	27,837	4.0	36	612	1,307	3,607	22,275
<b>TOTAL</b>	<b>702,680</b>	<b>100.0</b>	<b>2,029</b>	<b>18,865</b>	<b>40,859</b>	<b>110,498</b>	<b>530,429</b>

## ACTION PRIOR TO CRASH (continued)

### MOTORCYCLIST – INJURY SEVERITY

MOTORCYCLIST ACTION	All Motorcycles		All Motorcyclists		Fatal	Injury			No Injury
	Number	% of Total	Number	% of Total		A	B	C	
Going straight ahead	1,884	64.3	2,120	63.9	42	495	722	449	361
Turning left	161	5.5	180	5.4	1	24	51	49	50
Turning right	121	4.1	131	3.9	0	18	41	34	35
Stopped on roadway	122	4.2	139	4.2	0	9	14	39	76
In prior crash	3	0.1	3	0.1	0	0	0	0	1
Changing lanes	51	1.7	61	1.8	0	18	22	6	15
Backing	1	0.0	2	0.1	0	1	1	0	0
Slowing/stopping on roadway	154	5.3	167	5.0	2	25	51	36	51
Slowing/stopping other	6	0.2	7	0.2	0	2	2	1	2
Starting up on roadway	43	1.5	52	1.6	2	6	11	11	20
Starting up other	2	0.1	2	0.1	0	0	0	1	0
Entering parking	2	0.1	2	0.1	0	0	0	0	2
Leaving parking	8	0.3	8	0.2	0	0	3	2	3
Entering roadway	31	1.1	43	1.3	0	12	17	8	5
Leaving roadway	17	0.6	19	0.6	0	9	8	1	1
Making U-turn	8	0.3	8	0.2	0	0	4	1	3
Overtaking or passing	65	2.2	75	2.3	1	26	27	7	9
Avoiding object	23	0.8	24	0.7	0	5	7	5	7
Avoiding pedestrian	3	0.1	3	0.1	0	0	1	0	2
Avoiding vehicle (front/back)	65	2.2	67	2.0	0	8	20	21	15
Avoiding vehicle (angle)	36	1.2	44	1.3	2	6	19	9	6
Driverless moving	0	0.0	0	0.0	0	0	0	0	0
Parked	38	1.3	38	1.1	0	0	1	1	8
Crossing at intersection	1	0.0	20	0.6	0	4	3	6	6
Crossing not at intersection	0	0.0	4	0.1	0	0	2	2	0
Getting on/off vehicle	1	0.0	1	0.0	1	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	3	0.1	0	0	1	1	0
Standing or lying in roadway	0	0.0	0	0.0	0	0	0	0	0
Pushing/working on vehicle	2	0.1	2	0.1	0	0	2	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	1	0.0	0	0	1	0	0
Not in roadway	1	0.0	2	0.1	0	1	0	0	1
Other	7	0.2	8	0.2	0	0	6	1	0
Unknown	75	2.6	84	2.5	2	21	23	15	14
<b>TOTAL</b>	<b>2,931</b>	<b>100.0</b>	<b>3,320*</b>	<b>100.0</b>	<b>53</b>	<b>690</b>	<b>1,060</b>	<b>706</b>	<b>693</b>

\* Includes 118 motorcyclists (drivers and passengers) with unknown injury severity

## ACTION PRIOR TO CRASH (continued)

### BICYCLIST - INJURY SEVERITY

BICYCLIST ACTION	All Bicycles		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Going straight ahead	1,629	52.6	12	166	565	588	251
Turning left	82	2.6	1	15	27	20	16
Turning right	39	1.3	0	8	14	9	7
Stopped on roadway	22	0.7	0	0	8	10	3
In prior crash	1	0.0	0	0	0	0	1
Changing lanes	40	1.3	1	6	19	7	6
Backing	4	0.1	0	0	3	0	1
Slowing/stopping on roadway	10	0.3	0	0	5	4	1
Slowing/stopping other	6	0.2	0	1	3	0	2
Starting up on roadway	18	0.6	0	3	11	3	1
Starting up other	4	0.1	1	0	1	2	0
Entering parking	3	0.1	0	1	1	1	0
Leaving parking	7	0.2	0	0	3	4	0
Entering roadway	219	7.1	4	31	87	64	31
Leaving roadway	2	0.1	0	0	1	1	0
Making U-turn	9	0.3	0	0	4	1	4
Overtaking or passing	2	0.1	0	1	0	1	0
Avoiding object	3	0.1	0	1	2	0	0
Avoiding pedestrian	1	0.0	0	0	0	0	1
Avoiding vehicle (front/back)	11	0.4	0	0	6	3	1
Avoiding vehicle (angle)	12	0.4	0	1	7	2	2
Driverless moving	0	0.0	0	0	0	0	0
Parked	6	0.2	0	0	2	1	1
Crossing at intersection	404	13.0	0	38	147	157	52
Crossing not at intersection	212	6.8	3	42	77	60	14
Getting on/off vehicle	2	0.1	0	1	0	0	1
In roadway with traffic	37	1.2	1	6	12	13	4
In roadway against traffic	38	1.2	2	1	11	12	9
Standing or lying in roadway	1	0.0	0	0	0	1	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	19	0.6	1	1	3	12	1
In roadway other reason	29	0.9	0	2	12	9	4
Not in roadway	20	0.6	0	1	7	9	2
Other	67	2.2	0	7	22	24	12
Unknown	138	4.5	1	15	46	38	22
<b>TOTAL</b>	<b>3,097*</b>	<b>100.0</b>	<b>27</b>	<b>348</b>	<b>1,106</b>	<b>1,056</b>	<b>450</b>

\* Includes 110 bicyclists with unknown injury severity

## ACTION PRIOR TO CRASH (continued)

### PEDESTRIAN - INJURY SEVERITY

PEDESTRIAN ACTION	All Pedestrians		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Going straight ahead	146	3.8	2	31	40	51	16
Turning left	21	0.5	0	3	8	5	3
Turning right	12	0.3	1	0	4	5	1
Stopped on roadway	6	0.2	0	1	0	2	2
In prior crash	7	0.2	2	2	2	1	0
Changing lanes	1	0.0	0	0	0	1	0
Backing	1	0.0	0	1	0	0	0
Slowing/stopping on roadway	3	0.1	0	0	0	0	3
Slowing/stopping other	0	0.0	0	0	0	0	0
Starting up on roadway	5	0.1	0	2	1	1	1
Starting up other	0	0.0	0	0	0	0	0
Entering parking	1	0.0	0	0	1	0	0
Leaving parking	1	0.0	0	1	0	0	0
Entering roadway	40	1.0	1	10	12	12	2
Leaving roadway	4	0.1	0	0	1	1	2
Making U-turn	0	0.0	0	0	0	0	0
Overtaking or passing	1	0.0	0	0	1	0	0
Avoiding object	0	0.0	0	0	0	0	0
Avoiding pedestrian	0	0.0	0	0	0	0	0
Avoiding vehicle (front/back)	3	0.1	0	1	0	0	1
Avoiding vehicle (angle)	1	0.0	0	1	0	0	0
Driverless moving	3	0.1	0	0	0	0	2
Parked	17	0.4	0	2	0	3	7
Crossing at intersection	885	22.7	16	164	232	369	70
Crossing not at intersection	1,234	31.7	80	314	398	340	49
Getting on/off vehicle	87	2.2	1	25	27	31	2
In roadway with traffic	161	4.1	13	43	48	44	9
In roadway against traffic	52	1.3	3	12	17	14	3
Standing or lying in roadway	153	3.9	14	50	36	47	4
Pushing/working on vehicle	55	1.4	1	17	14	20	1
Other working in roadway	43	1.1	0	13	8	18	3
Playing in roadway	92	2.4	3	15	36	26	8
In roadway other reason	211	5.4	8	48	68	71	10
Not in roadway	180	4.6	9	53	55	50	7
Other	128	3.3	6	32	41	37	8
Unknown	337	8.7	12	71	99	104	15
<b>TOTAL</b>	<b>3,891*</b>	<b>100.0</b>	<b>172</b>	<b>912</b>	<b>1,149</b>	<b>1,253</b>	<b>229</b>

\* Includes 176 pedestrians with unknown injury severity

## MOST HARMFUL EVENT

### MOST SEVERE OUTCOME IN CRASH

NONCOLLISION	Motor Vehicles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Loss of control	4,864	0.7	8	191	375	806	3,484
Cross center/median	985	0.1	0	45	53	123	764
Ran off road left	897	0.1	3	31	89	116	658
Ran off road right	1,486	0.2	1	56	88	247	1,094
Re-enter road	214	0.0	1	14	29	45	125
Overturn	7,808	1.1	135	842	1,693	1,686	3,452
Separation of units	2,905	0.4	11	56	144	473	2,221
Fire/explosion	1,009	0.1	10	24	36	88	851
Immersion	107	0.0	2	6	4	16	79
Jackknife	385	0.1	0	8	8	39	330
Downhill runaway	90	0.0	0	2	5	18	65
Cargo loss/shift	895	0.1	0	5	16	35	839
Individual fell off	436	0.1	12	105	158	79	82
Other noncollision	2,098	0.3	2	43	115	238	1,700
NONCOLLISION Subtotal	24,179	3.4	185	1,428	2,813	4,009	15,744

### MOST SEVERE OUTCOME IN CRASH

HAD A COLLISION WITH NONFIXED OBJECT	Motor Vehicles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Pedestrian	3,059	0.4	171	719	924	963	282
Pedalcycle	2,840	0.4	30	303	999	950	558
Motor vehicle in transport	483,381	68.8	1,292	12,242	27,488	88,177	354,182
Parked motor vehicle	20,457	2.9	12	237	542	932	18,734
Railway train	141	0.0	9	15	17	18	82
Animal	61,432	8.7	3	88	439	872	60,030
Other nonfixed objects	6,395	0.9	11	85	226	384	5,689
COLLISION NONFIXED Subtotal	577,705	82.2	1,528	13,689	30,635	92,296	439,557

## MOST HARMFUL EVENT (continued)

### MOST SEVERE OUTCOME IN CRASH

HAD A COLLISION WITH FIXED OBJECT	Motor Vehicles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Bridge/pier/abutment	689	0.1	8	44	59	106	472
Bridge parapet end	324	0.0	0	10	14	16	284
Bridge rail	423	0.1	3	13	39	61	307
Guardrail face	2,568	0.4	6	82	188	363	1,929
Guardrail end	418	0.1	3	18	72	59	266
Median barrier	2,604	0.4	6	114	302	591	1,591
Highway traffic sign post	2,416	0.3	1	23	71	136	2,185
Signal post	256	0.0	1	6	15	15	219
Luminaire/light support	590	0.1	5	23	61	69	432
Utility pole	3,670	0.5	35	258	597	610	2,170
Other pole	1,029	0.1	4	39	70	99	817
Culvert	718	0.1	8	71	108	111	420
Curb	1,982	0.3	2	34	64	154	1,728
Ditch	6,861	1.0	13	306	739	1,082	4,721
Embankment	1,678	0.2	8	99	226	316	1,029
Fence	1,470	0.2	0	27	55	113	1,275
Mailbox	2,064	0.3	2	15	57	76	1,914
Tree	10,194	1.5	162	929	1,515	1,581	6,007
Rail crossing signal	118	0.0	1	1	3	6	107
Building	932	0.1	7	57	115	121	632
Traffic island	46	0.0	0	0	6	4	36
Fire hydrant	552	0.1	0	10	54	77	411
Impact attenuator	56	0.0	0	4	9	5	38
Other fixed object	3,202	0.5	8	124	292	339	2,439
<b>COLLISION FIXED Subtotal</b>	<b>44,860</b>	<b>6.4</b>	<b>283</b>	<b>2,307</b>	<b>4,731</b>	<b>6,110</b>	<b>31,429</b>

### MOST SEVERE OUTCOME IN CRASH

	Motor Vehicles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Unknown Event	55,936	8.0	33	1441	2,680	8,083	43,699
<b>TOTAL MOST HARMFUL EVENT</b>	<b>702,680</b>	<b>100.0</b>	<b>2,029</b>	<b>18,865</b>	<b>40,859</b>	<b>110,498</b>	<b>530,429</b>

## VEHICLE DEFECTS IN CRASH INVOLVEMENT

### MOST SEVERE OUTCOME IN CRASH

VEHICLE DEFECTS	Motor Vehicles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Brakes	1,936	0.3	9	71	128	394	1,334
Lights/reflectors	430	0.1	3	19	17	56	335
Steering	274	0.0	1	6	24	50	193
Tires/wheels	750	0.1	4	30	62	98	556
Windows	142	0.0	2	8	5	24	103
Other	1,438	0.2	3	72	74	150	1,139
Unknown	697,710	99.3	2,007	18,659	40,549	109,726	526,769
<b>TOTAL</b>	<b>702,680</b>	<b>100.0</b>	<b>2,029</b>	<b>18,865</b>	<b>40,859</b>	<b>110,498</b>	<b>530,429</b>

## DRIVER HAZARDOUS ACTION

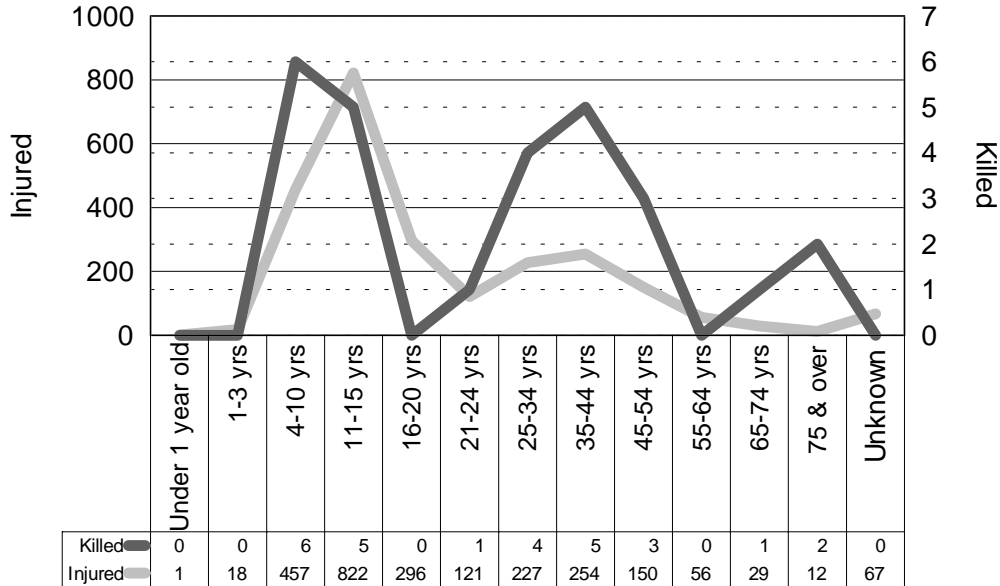
### MOST SEVERE OUTCOME IN CRASH

HAZARDOUS ACTION	All Vehicles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
None	359,608	51.2	821	8,270	18,472	54,182	277,863
Speed too fast	33,654	4.8	310	1,939	3,645	5,600	22,160
Speed too slow	1,359	0.2	0	35	78	285	961
Failed to yield	64,567	9.2	169	2,344	5,492	11,743	44,819
Disregard traffic control	16,579	2.4	122	1,060	1,965	3,978	9,454
Drove wrong way	549	0.1	10	36	49	88	366
Drove left of center	4,360	0.6	130	379	530	616	2,705
Improper passing	5,102	0.7	11	111	186	469	4,325
Improper lane use	15,702	2.2	19	225	447	1,339	13,672
Improper turn	9,312	1.3	9	217	469	1,154	7,463
Improper/no signal	970	0.1	1	27	27	109	806
Improper backing	13,820	2.0	4	43	104	400	13,269
Unable to stop in assured clear distance	93,518	13.3	63	1,341	3,905	20,676	67,533
Other	37,351	5.3	171	1,722	3,465	5,007	26,986
Unknown	46,229	6.6	189	1,116	2,025	4,852	38,047
<b>TOTAL</b>	<b>702,680</b>	<b>100.0</b>	<b>2,029</b>	<b>18,865</b>	<b>40,859</b>	<b>110,498</b>	<b>530,429</b>



## MICHIGAN BICYCLE CRASHES

1998 Bicycle Crash Information



In 1998, there were 3,097 bicyclists involved in motor vehicles crashes, with 27 bicyclists killed and 2,510 injured. The number of bicyclists killed represents a 6.9 percent decrease from 1997.

Children under 16 years of age accounted for 11 (40.7%) of the bicycle deaths in 1998.

### BICYCLE HELMET USE AND INJURY SEVERITY

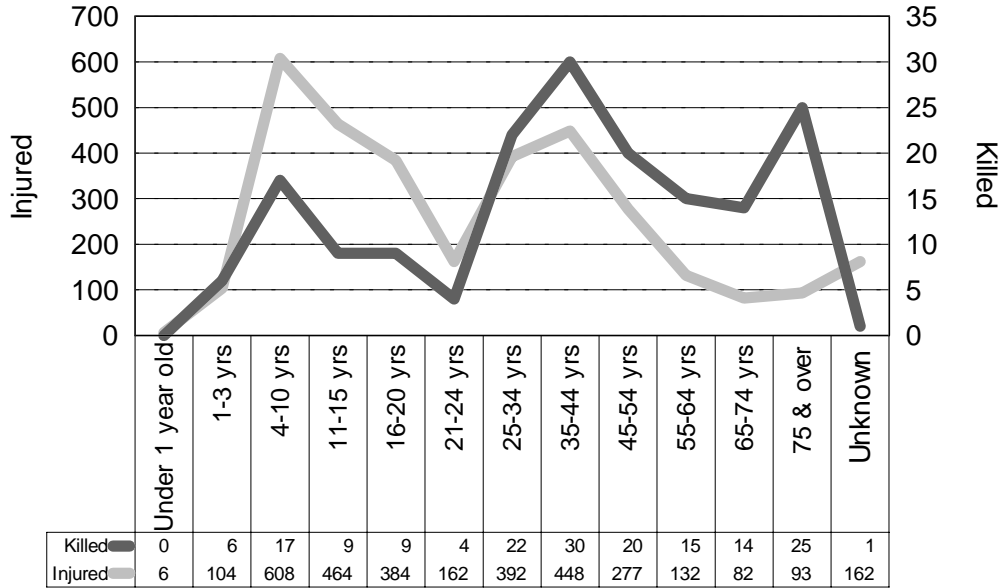
HELMET USE	Fatality	Injury			No Injury
		A	B	C	
Worn	2	7	62	45	10
Not Worn	12	113	346	337	105
Unknown	13	228	698	674	335
<b>TOTALS</b>	<b>27</b>	<b>348</b>	<b>1,106</b>	<b>1,056</b>	<b>450</b>

The National Center for Statistics and Analysis of the National Highway Traffic Safety Administration cites a study by the Centers for Disease Control [11] in giving us the following information: "Bicycle helmets are 85 to 88 percent effective in mitigating head and brain injuries, making the use of helmets the **single most effective countermeasure** available to reduce head injuries and fatalities resulting from bicycle crashes."



# MICHIGAN PEDESTRIAN CRASHES

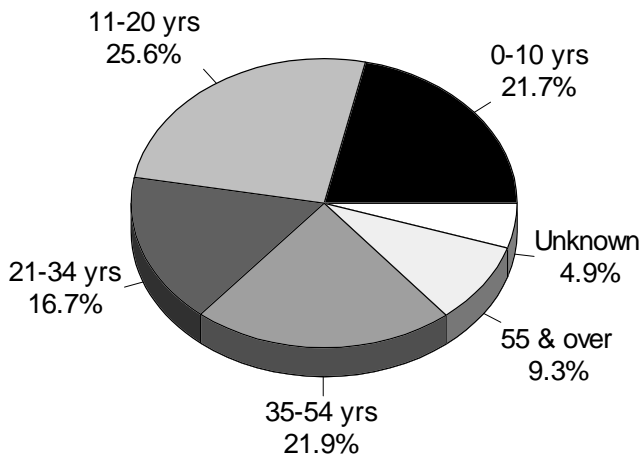
## 1998 Pedestrian Crash Information



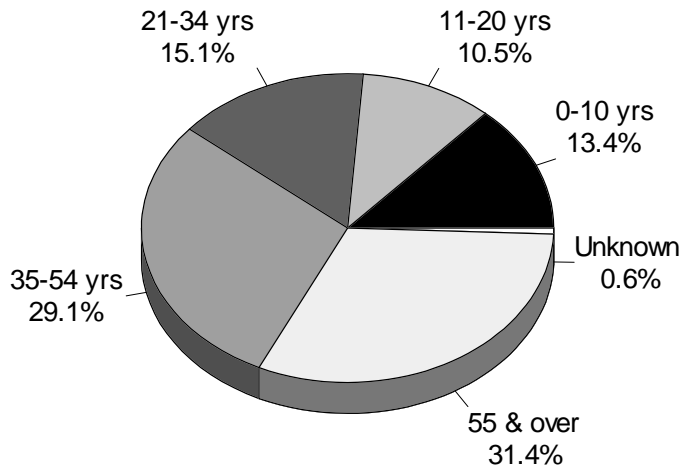
In 1998, there were 3,891 pedestrians involved in motor vehicles crashes, with 172 pedestrians killed and 3,314 injured. The number killed represents a 3.0 percent increase in fatalities from 1997.

Children under 16 years of age accounted for 32 (18.6%) of the pedestrian deaths in 1998. Adults over the age of 54 accounted for 54 (31.4%) of the pedestrian deaths in 1998.

### Pedestrians Injured



### Pedestrians Killed





## MICHIGAN SNOWMOBILE ON PUBLIC ROADWAY CRASHES

### Most Harmful Event

MOST SEVERE OUTCOME IN CRASH

NONCOLLISION	Snowmobiles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Loss of control	15	3.9	0	6	4	3	2
Cross center/median	0	0.0	0	0	0	0	0
Ran off road left	1	0.3	0	0	0	0	1
Ran off road right	1	0.3	0	0	0	0	1
Re-enter road	0	0.0	0	0	0	0	0
Overturn	30	7.8	0	8	12	4	6
Separation of units	5	1.3	0	1	0	1	3
Fire/explosion	0	0.0	0	0	0	0	0
Immersion	1	0.3	0	0	0	0	1
Jackknife	0	0.0	0	0	0	0	0
Downhill runaway	0	0.0	0	0	0	0	0
Cargo loss/shift	1	0.3	0	0	0	0	1
Individual fell off	21	5.4	1	10	8	2	0
Other noncollision	3	0.8	0	0	0	0	3
NONCOLLISION Subtotal	78	20.2	1	25	24	10	18

MOST SEVERE OUTCOME IN CRASH

HAD A COLLISION WITH NONFIXED OBJECT	Snowmobiles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Pedestrian	7	1.8	1	5	0	1	0
Pedalcycle	0	0.0	0	0	0	0	0
Motor vehicle in transport	134	34.6	5	40	17	19	53
Parked motor vehicle	12	3.1	2	3	2	0	5
Railway train	0	0.0	0	0	0	0	0
Animal	12	3.1	0	0	0	2	10
Other nonfixed objects	10	2.6	2	1	2	2	3
COLLISION NONFIXED Subtotal	175	45.2	10	49	21	24	71



## MICHIGAN SNOWMOBILE ON PUBLIC ROADWAY CRASHES (continued)

### Most Harmful Event

#### MOST SEVERE OUTCOME IN CRASH

HAD A COLLISION WITH FIXED OBJECT	Snowmobiles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Bridge/pier/abutment	0	0.0	0	0	0	0	0
Bridge parapet end	0	0.0	0	0	0	0	0
Bridge rail	3	0.8	0	0	1	0	2
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	2	0.5	0	0	0	0	2
Signal post	0	0.0	0	0	0	0	0
Luminaire/light support	0	0.0	0	0	0	0	0
Utility pole	4	1.0	0	2	0	0	2
Other pole	3	0.8	0	0	0	0	3
Culvert	3	0.8	0	0	1	1	1
Curb	0	0.0	0	0	0	0	0
Ditch	3	0.8	0	2	1	0	0
Embankment	6	1.6	0	2	1	2	1
Fence	6	1.6	0	1	1	1	3
Mailbox	4	1.0	0	0	2	0	2
Tree	59	15.2	11	20	16	5	7
Rail crossing signal	0	0.0	0	0	0	0	0
Building	2	0.5	0	0	1	0	1
Traffic island	0	0.0	0	0	0	0	0
Fire hydrant	1	0.3	0	1	0	0	0
Impact attenuator	1	0.3	0	0	0	0	1
Other fixed object	10	2.6	0	4	1	3	2
<b>COLLISION FIXED Subtotal</b>	<b>107</b>	<b>27.6</b>	<b>11</b>	<b>32</b>	<b>25</b>	<b>12</b>	<b>27</b>
<b>Unknown Event</b>	<b>27</b>	<b>7.0</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>17</b>
<b>TOTAL MOST HARMFUL EVENT</b>	<b>387</b>	<b>100.0</b>	<b>22</b>	<b>112</b>	<b>74</b>	<b>46</b>	<b>133</b>

A total of 387 snowmobiles were reported in crashes on Michigan public roadways during 1998. Of these snowmobiles, 22 were involved in fatal crashes with 18 of their drivers, 3 passengers and 1 pedestrian killed.



## MICHIGAN ORV/ATV ON PUBLIC ROADWAY CRASHES

### Most Harmful Event

### MOST SEVERE OUTCOME IN CRASH

NONCOLLISION	ORV/ATV		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Loss of control	6	3.0	0	2	3	1	0
Cross center/medium	1	0.5	0	0	0	0	1
Ran off road right	1	0.5	0	0	0	0	1
Overturn	24	12.1	0	11	9	4	0
Separation of Unit	1	0.5	0	0	0	0	1
Individual fell off	9	4.5	0	5	1	3	0
Other noncollision	3	1.5	0	1	2	0	0
<b>NONCOLLISION Subtotal</b>	<b>45</b>	<b>22.6</b>	<b>0</b>	<b>19</b>	<b>15</b>	<b>8</b>	<b>3</b>
<b>HAD A COLLISION WITH NONFIXED OBJECT</b>							
Pedestrian	2	1.0	0	1	1	0	0
Pedalcycle	0	0.0	0	0	0	0	0
Motor vehicle in transport	78	39.2	3	25	16	13	21
Parked motor vehicle	6	3.0	0	0	0	0	6
Animal	5	2.5	0	0	3	0	2
Other nonfixed objects	4	2.0	0	0	2	1	1
<b>COLLISION NONFIXED Subtotal</b>	<b>95</b>	<b>47.7</b>	<b>3</b>	<b>26</b>	<b>22</b>	<b>14</b>	<b>30</b>
<b>HAD A COLLISION WITH FIXED OBJECT</b>							
Bridge pier/abutment	1	0.5	0	0	0	1	0
Traffic sign post	1	0.5	0	0	0	0	1
Luminaire support	0	0.0	0	0	0	0	0
Utility pole	0	0.0	0	0	0	0	0
Culvert	1	0.5	0	1	0	0	0
Curb	1	0.5	0	0	1	0	0
Ditch	10	5.0	0	3	3	4	0
Embankment	4	2.0	0	2	2	0	0
Mailbox	2	1.0	0	2	0	0	0
Tree	17	8.5	0	10	3	2	2
Building	1	0.5	0	0	0	0	1
Other fixed object	10	5.0	0	0	5	3	2
<b>COLLISION FIXED Subtotal</b>	<b>48</b>	<b>24.1</b>	<b>0</b>	<b>18</b>	<b>14</b>	<b>10</b>	<b>6</b>
Unknown Event	11	5.5	0	3	5	0	3
<b>TOTAL MOST HARMFUL EVENT</b>	<b>199</b>	<b>100.0</b>	<b>3</b>	<b>66</b>	<b>56</b>	<b>32</b>	<b>42</b>

A total of 199 Off Road Vehicles/All Terrain Vehicles were reported in crashes on Michigan public roadways during 1998. Of these ORV/ATVs, 3 were involved in fatal crashes and 3 of their operators and 1 passenger were killed.

## MICHIGAN SNOWMOBILE ON PUBLIC ROADWAY CRASHES

### MOST SEVERE OUTCOME IN CRASH

Driver Hazardous Action	All Snowmobiles		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
None	107	27.6	0	26	21	16	44
Speed too fast	126	32.6	18	46	30	9	23
Speed too slow	1	0.3	0	0	1	0	0
Failed to yield	28	7.2	0	10	4	3	11
Disregard traffic control	2	0.5	0	0	0	0	2
Drove wrong way	4	1.0	0	1	0	1	2
Drove left of center	2	0.5	0	0	0	0	2
Improper passing	1	0.3	0	0	0	0	1
Improper lane use	9	2.3	0	1	1	0	7
Improper turn	4	1.0	0	1	0	0	3
Improper/no signal	2	0.5	0	0	0	0	2
Improper backing	3	0.8	0	0	0	0	3
Unable to stop in assured clear distance	25	6.5	3	10	3	5	4
Other	46	11.9	0	11	8	9	18
Unknown	27	7.0	1	6	6	3	11
<b>TOTAL</b>	<b>387</b>	<b>100.0</b>	<b>22</b>	<b>112</b>	<b>74</b>	<b>46</b>	<b>133</b>

## MICHIGAN ORV/ATV ON PUBLIC ROADWAY CRASHES

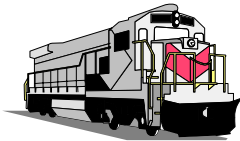
### MOST SEVERE OUTCOME IN CRASH

Driver Hazardous Action	All ORV/ATVs		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
None	32	16.1	0	7	10	5	10
Speed too fast	46	23.1	0	18	16	9	3
Speed too slow	1	0.5	0	0	0	0	1
Failed to yield	23	11.6	2	9	3	4	5
Disregard traffic control	3	1.5	1	2	0	0	0
Drove wrong way	2	1.0	0	2	0	0	0
Drove left of center	1	0.5	0	0	0	0	1
Improper passing	1	0.5	0	0	0	0	1
Improper lane use	2	1.0	0	0	0	1	1
Improper turn	5	2.5	0	1	3	1	0
Improper/no signal	1	0.5	0	0	0	1	0
Improper backing	3	1.5	0	0	0	0	3
Unable to stop in assured clear distance	14	7.0	0	6	1	1	6
Other	54	27.1	0	19	18	8	9
Unknown	11	5.5	0	2	5	2	2
<b>TOTAL</b>	<b>199</b>	<b>100.0</b>	<b>3</b>	<b>66</b>	<b>56</b>	<b>32</b>	<b>42</b>



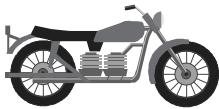
## MICHIGAN FARM EQUIPMENT CRASHES

A total of 217 crashes involving farm equipment were reported on Michigan roadways during 1998. Of these crashes, 5 were fatal crashes with 1 driver and 1 passenger of the farm equipment killed, and 3 fatalities in other vehicles.



## MICHIGAN VEHICLE - TRAIN CRASHES

A total of 90 crashes involving trains were reported in Michigan during 1998. The National Highway Traffic Safety Administration's 1998 Fatal Accident Reporting System [12] reported 9 fatal train crashes in Michigan, and 10 persons killed as a result of those collisions.

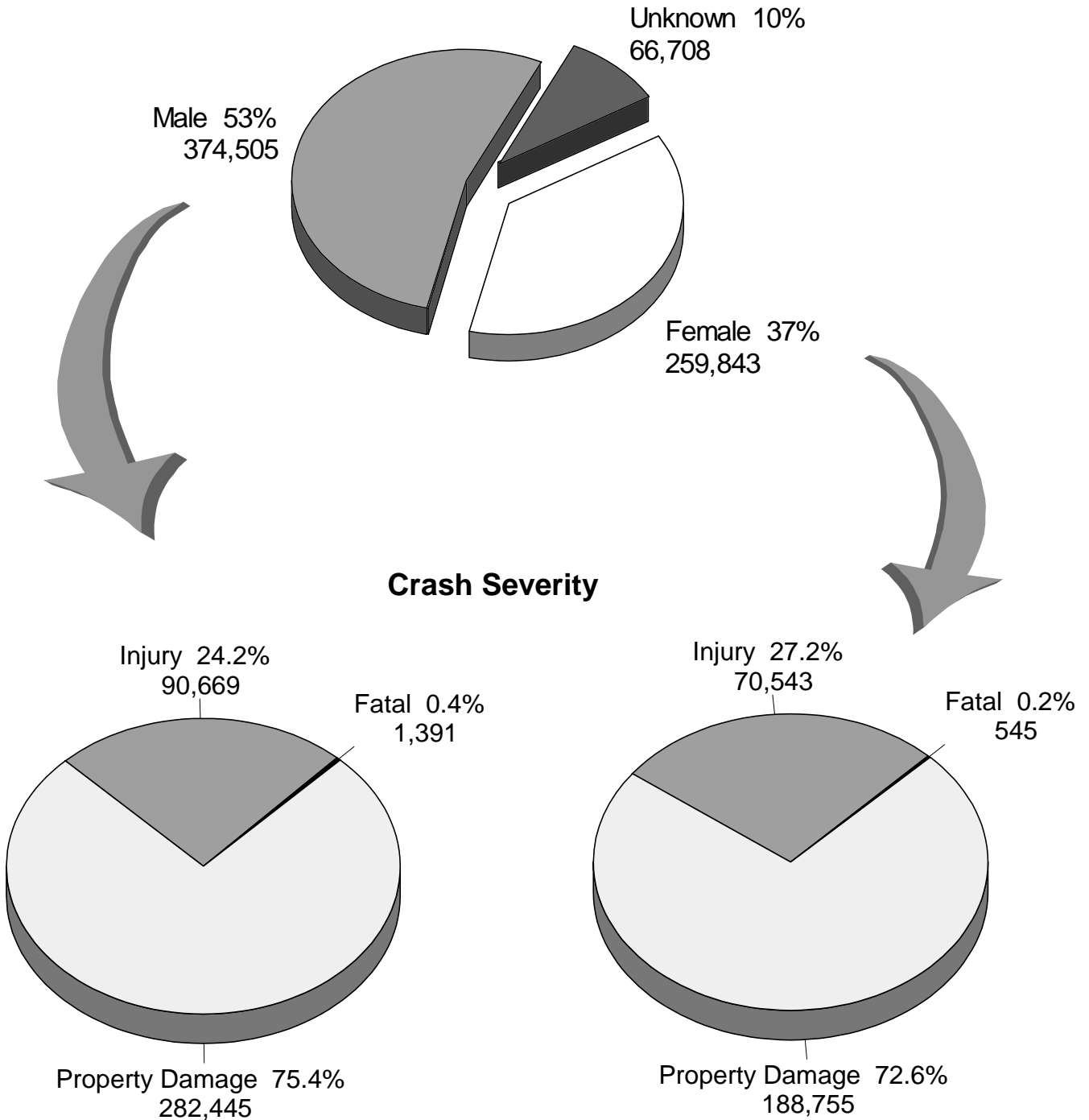


## MICHIGAN MOTORCYCLE CRASHES

MOTORCYCLE DATA	1997	1998	% Change
Registrations	136,030.0	147,056.0	8.1
Crashes	2,465.0	2,931.0	18.9
Deaths	63.0	53.0	-15.9
Persons Injured	2,103.0	2,456.0	16.8
Death Rate based on 10,000 motorcycle registrations	4.6	3.6	-21.7
Estimated Mileage based on 3,000 miles per motorcycle	408,090,000.0	441,168,000.0	8.1
Death Rate based on deaths per 100 million vehicle miles traveled	15.4	12.0	-22.1

Motorcycles were involved in 0.73 percent of all traffic crashes in Michigan in 1998. Injuries were proportionately more severe to motorcyclists than to persons in motor vehicles. The 1998 death rate for motorcyclists was 12.0 per 100 million vehicle miles traveled compared to the overall 1.5 mileage death rate per 100 million vehicle miles traveled.

## DRIVER GENDER INFORMATION - ALL CRASHES



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

This 1998 chart was processed with numbers for all drivers (vehicle level).

## REPORTED AGE OF DRIVERS INVOLVED IN ALL 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	1,019	3	124	70	214	211	171	109	56	34	27
Alger	532	3	75	36	72	104	87	41	29	20	65
Allegan	5,495	25	970	471	1,137	1,122	655	341	176	129	469
Alpena	1,983	2	362	174	351	364	258	167	106	78	121
Antrim	1,293	3	184	106	249	245	183	115	73	30	105
Arenac	1,387	6	215	95	254	302	203	133	69	47	63
Baraga	619	3	79	48	103	119	87	69	29	16	66
Barry	3,235	12	590	304	668	640	447	230	107	82	155
Bay	7,037	23	1,207	603	1,150	1,311	838	494	352	275	784
Benzie	886	2	133	58	154	180	133	74	41	25	86
Berrien	9,608	43	1,334	709	1,616	1,520	1,091	683	468	388	1,756
Branch	2,889	10	470	240	544	538	351	204	119	80	333
Calhoun	9,746	56	1,444	778	1,837	1,654	1,236	641	466	323	1,311
Cass	2,725	10	418	228	458	483	310	174	85	65	494
Charlevoix	1,689	5	265	133	306	340	227	131	82	53	147
Cheboygan	1,304	6	204	93	236	221	195	101	73	46	129
Chippewa	1,985	11	299	171	371	363	234	127	88	59	262
Clare	2,240	4	320	182	479	431	298	215	142	76	93
Clinton	3,689	11	644	307	727	744	511	264	129	92	260
Crawford	1,239	3	140	92	203	232	174	106	71	29	189
Delta	3,155	8	471	207	520	585	438	253	177	108	388
Dickinson	2,031	8	263	108	304	367	261	144	100	89	387
Eaton	6,513	29	1,076	545	1,238	1,266	971	425	275	185	503
Emmet	2,403	8	383	207	433	439	358	174	99	85	217
Genesee	29,452	109	4,526	2,507	5,727	5,396	3,752	1,941	1,265	739	3,490
Gladwin	1,425	4	214	98	288	310	189	134	98	38	52
Gogebic	880	2	113	38	112	108	76	54	54	50	273
Grand Traverse	6,545	26	1,157	536	1,206	1,312	894	439	279	208	488
Gratiot	2,486	11	406	225	494	463	343	215	99	89	141
Hillsdale	3,152	7	519	306	580	593	381	212	123	92	339
Houghton	1,948	6	357	202	268	293	245	127	93	74	283
Huron	2,611	10	447	223	486	522	323	230	131	110	129
Ingham	21,156	47	3,440	2,601	4,249	3,638	2,677	1,222	723	434	2,125
Ionia	3,777	11	664	353	795	737	528	236	125	69	259
Iosco	1,815	8	272	115	316	422	234	177	113	90	68
Iron	1,180	2	132	57	146	224	184	104	83	52	196
Isabella	2,991	11	522	377	622	565	408	188	105	58	135
Jackson	10,769	54	1,717	867	2,021	2,002	1,482	724	482	302	1,118
Kalamazoo	17,812	55	3,016	2,132	3,466	3,107	2,091	1,043	620	453	1,829
Kalkaska	1,016	4	153	76	190	238	155	86	48	24	42
Kent	47,156	170	7,563	4,862	10,401	8,542	5,440	2,612	1,595	1,072	4,899
Keweenaw	103	1	18	7	19	18	13	10	3	5	9
Lake	803	5	86	61	147	173	134	67	49	26	55
Lapeer	5,508	12	996	458	1,156	1,184	747	342	189	108	316
Leelanau	831	3	137	53	141	149	124	64	43	26	91

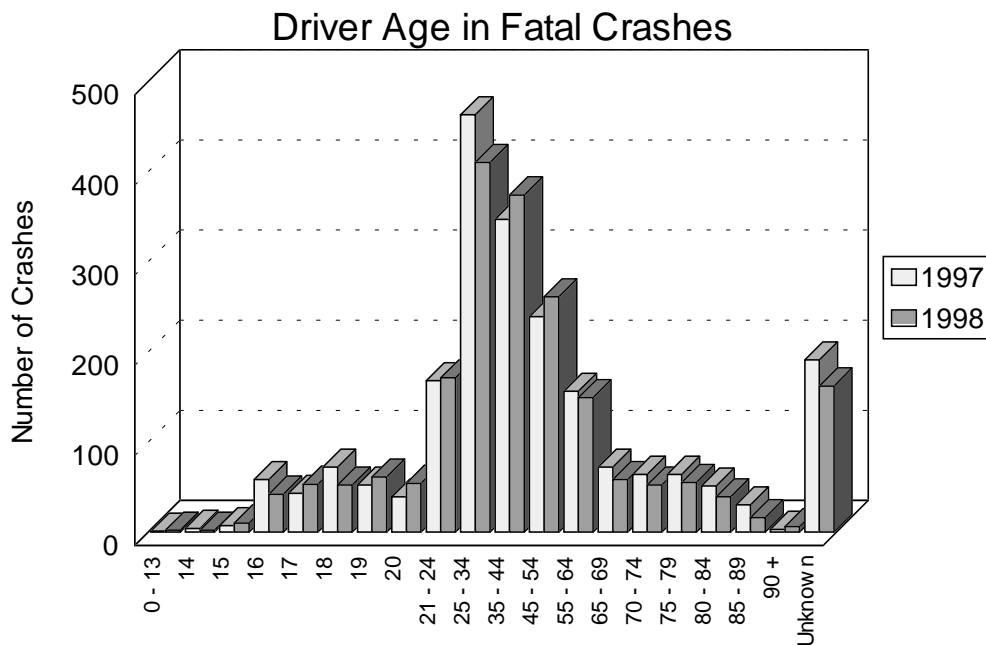
## REPORTED AGE OF DRIVERS INVOLVED IN ALL CRASHES (continued)

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	5,646	31	1,011	465	941	950	752	387	272	180	657
Livingston	8,506	40	1,668	767	1,666	1,762	1,100	539	258	157	549
Luce	312	3	36	29	62	45	53	32	18	8	26
Mackinac	959	4	88	69	173	190	149	90	39	24	133
Macomb	52,388	136	7,861	4,391	10,734	9,707	6,229	3,401	2,266	1,658	6,005
Manistee	1,486	9	214	108	253	286	222	106	98	58	132
Marquette	3,817	15	650	341	558	663	496	238	168	125	563
Mason	2,265	6	376	189	414	444	292	161	110	80	193
Mecosta	3,556	8	674	464	654	611	438	277	142	93	195
Menominee	2,392	12	344	158	343	417	277	158	110	66	507
Midland	5,020	19	952	428	982	971	655	374	204	158	277
Missaukee	993	3	179	69	203	208	141	80	47	32	31
Monroe	7,227	26	1,320	549	1,217	1,179	797	407	262	148	1,322
Montcalm	4,288	16	702	389	916	856	532	328	183	123	243
Montmorency	616	4	73	58	121	139	82	63	35	15	26
Muskegon	10,286	47	1,761	876	1,986	1,894	1,261	667	526	419	849
Newaygo	2,806	21	515	234	569	596	354	219	98	74	126
Oakland	93,133	220	12,372	7,679	20,915	18,856	12,397	6,153	3,569	2,229	8,743
Oceana	1,554	13	259	124	309	296	195	120	64	43	131
Ogemaw	1,576	5	246	129	285	362	214	135	85	52	63
Ontonagon	644	3	73	36	102	126	101	57	26	19	101
Osceola	1,961	11	320	181	407	427	248	134	98	50	85
Oscoda	678	4	88	38	125	132	102	92	50	29	18
Otsego	1,613	1	305	126	312	306	204	115	71	47	126
Ottawa	13,495	54	2,694	1,365	2,765	2,425	1,481	776	463	387	1,085
Presque Isle	828	4	120	67	146	173	122	77	51	32	36
Roscommon	1,621	9	250	103	295	345	236	144	83	66	90
Saginaw	14,580	50	2,303	1,274	2,834	2,626	1,916	1,080	711	502	1,284
St. Clair	8,944	23	1,683	800	1,671	1,655	1,034	573	373	264	868
St. Joseph	3,499	14	610	287	636	610	382	223	128	99	510
Sanilac	2,375	10	399	218	471	497	349	171	105	63	92
Schoolcraft	691	3	96	56	101	120	87	51	42	33	102
Shiawassee	3,723	8	671	334	730	703	502	242	148	113	272
Tuscola	2,846	14	535	255	574	569	358	241	108	84	108
Van Buren	4,189	15	733	354	761	729	499	249	179	117	553
Washtenaw	21,772	60	3,047	2,364	4,462	3,987	2,692	1,288	712	376	2,784
Wayne	167,772	352	15,428	11,967	31,610	26,502	17,922	9,154	6,362	3,813	44,662
Wexford	2,799	6	431	202	488	521	375	231	129	81	335
UNKNOWN	82	1	9	4	11	11	10	5	5	2	24
Totals	701,056	2,132	99,221	59,666	138,256	126,673	85,393	44,480	28,130	18,452	98,653

## DRIVER AGE

AGE OF DRIVERS IN FATAL CRASHES	1997	1998	% Change	% 1998 Fatal Crash Involvement	Percent Active Driving Population*
13 years and under	1	2	100.0	0.1	0.0
14 years	4	2	-50.0	0.1	0.2
15 years	7	10	42.9	0.5	1.1
16 years	58	42	-27.6	2.1	1.5
17 years	43	53	23.3	2.6	1.6
18 years	72	52	-27.8	2.6	1.8
19 years	52	61	17.3	3.0	1.9
20 years	39	54	38.5	2.7	1.8
21-24 years	168	171	1.8	8.4	7.0
25 - 34 years	463	410	-11.4	20.2	19.6
35 - 44 years	347	374	7.8	18.4	21.8
45 - 54 years	239	261	9.2	12.9	17.4
55 - 64 years	156	149	-4.5	7.3	11.0
65 - 69 years	72	58	-19.4	2.9	4.2
70 - 74 years	64	52	-18.8	2.6	3.9
75 - 79 years	64	55	-14.1	2.7	2.8
80 - 84 years	51	39	-23.5	1.9	1.6
85 - 89 years	30	16	-46.7	0.8	0.6
90 years and over	3	6	100.0	0.3	0.2
Unknown	191	162	-15.2	8.0	---
TOTALS	2,124	2,029	-4.5	100.0	100.0

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



## REGISTRATION TRANSACTIONS

(Includes Original, Renewal, Correction, and Replacements)

Registration data courtesy of the Michigan Department of State [14]

COUNTY	VEHICLE						OTHER		
	Passenger	Commercial	Trailer	Motorcycle	Total Plates	Total Revenue	Watercraft	Snowmobile	Moped
Alcona	7,088	3,676	2,821	172	13,757	751,008.08	2,640	884	64
Alger	5,012	3,104	1,743	230	10,089	540,623.57	1,831	1,414	21
Allegan	58,195	25,472	16,563	1,771	102,001	6,444,291.27	11,163	2,787	296
Alpen	18,638	9,664	6,480	531	35,313	2,175,258.03	4,664	2,289	48
Antrim	13,791	6,236	4,544	424	24,995	1,460,852.17	5,080	1,826	60
Arenac	9,714	5,168	3,528	592	19,002	1,101,830.32	4,036	1,367	46
Baraga	3,943	2,528	1,300	139	7,910	463,475.22	1,080	669	9
Barry	32,461	14,648	9,839	1,110	58,058	3,236,931.32	8,974	1,502	106
Bay	69,928	24,176	18,874	1,731	114,709	7,228,797.39	10,420	4,685	240
Benzie	9,809	4,377	3,128	267	17,581	944,400.61	3,758	1,130	35
Berrien	102,627	32,937	18,560	2,646	156,770	9,545,094.80	13,661	2,529	466
Branch	24,199	11,839	7,240	734	44,012	2,718,856.01	6,324	713	146
Calhoun	87,765	27,787	16,003	2,195	133,750	8,025,180.33	10,406	1,375	369
Cass	28,805	12,875	7,791	909	50,380	2,888,546.59	8,529	1,699	140
Charlevoix	16,178	7,310	4,847	587	28,922	1,761,552.42	4,809	2,202	51
Cheboygan	14,922	7,787	5,180	459	28,348	1,697,442.68	5,278	2,878	85
Chippewa	17,518	9,196	5,897	491	33,102	1,998,342.97	4,694	3,743	76
Clare	17,498	8,963	6,120	531	33,112	1,938,739.10	4,622	1,819	65
Clinton	37,811	15,618	10,809	1,030	65,268	4,042,596.99	6,311	2,284	188
Crawford	7,148	3,779	2,694	252	13,873	786,238.51	2,777	1,213	23
Delta	23,354	12,352	8,243	665	44,614	2,669,514.37	4,902	2,988	125
Dickinson	16,351	8,330	5,563	625	30,869	1,924,370.33	3,615	1,857	150
Eaton	61,011	22,117	13,972	1,767	98,867	7,637,121.32	8,414	1,994	202
Emmet	19,871	8,301	5,371	566	34,109	2,195,399.79	5,254	2,489	84
Genesee	271,749	81,098	45,732	6,634	405,213	25,802,221.17	32,239	10,389	546
Gladwin	15,085	7,769	5,386	490	28,730	1,599,682.45	4,845	1,584	67
Gogebic	9,061	4,763	2,456	270	16,550	920,054.17	2,452	1,451	51
Grand Traverse	52,254	17,896	14,040	1,354	85,544	5,629,338.72	12,732	4,255	140

**REGISTRATION TRANSACTIONS (continued)**

COUNTY	VEHICLE						OTHER		
	Passenger	Commercial	Trailer	Motorcycle	Total Plates	Total Revenue	Watercraft	Snowmobile	Moped
Gratiot	22,876	10,479	7,304	633	41,292	2,458,846.55	3,469	1,375	86
Hillsdale	25,597	13,167	7,230	803	46,797	2,743,983.96	4,946	764	101
Houghton	17,844	7,667	3,847	552	29,910	1,733,313.97	3,773	2,180	67
Huron	23,064	12,053	7,040	563	42,720	2,807,714.18	3,502	2,338	201
Ingham	175,081	41,831	22,540	3,687	243,139	15,599,161.37	15,804	3,289	492
Ionia	32,287	14,403	8,792	931	56,413	3,256,140.65	5,238	1,290	165
Iosco	17,031	8,033	5,983	455	31,502	1,822,332.51	5,209	1,547	109
Iron	7,326	4,327	2,509	295	14,457	813,803.86	2,441	1,016	39
Isabella	28,019	12,487	8,060	740	49,306	3,493,924.53	4,543	1,529	77
Jackson	93,332	34,341	20,342	2,850	150,865	9,425,327.09	15,636	2,762	329
Kalamazoo	148,650	38,248	23,866	3,685	214,449	14,189,823.28	18,819	2,574	448
Kalkaska	8,841	5,682	3,664	298	18,485	1,468,951.72	2,679	1,684	20
Kent	359,898	106,312	67,640	7,885	541,735	43,767,971.38	45,008	8,600	1,016
Keweenaw	1,119	544	256	28	1,947	104,416.07	383	139	4
Lake	5,750	3,164	1,984	181	11,079	592,893.54	2,298	799	30
Lapeer	49,590	24,089	13,336	1,833	88,848	5,693,454.09	7,155	3,393	93
Leelanau	13,021	4,881	4,050	330	22,282	1,327,118.19	5,217	1,339	75
Lenawee	58,058	23,991	13,412	1,848	97,309	5,861,753.32	9,026	2,614	315
Livingston	92,875	33,189	21,415	3,317	150,796	10,264,654.54	17,248	4,748	172
Luce	3,151	2,220	1,585	61	7,017	458,206.60	1,333	1,014	17
Mackinac	6,439	3,722	2,317	163	12,641	726,013.92	3,057	1,988	28
Macomb	535,815	125,876	61,775	11,542	735,008	52,703,505.95	48,972	14,206	1,121
Manistee	14,616	6,878	4,781	443	26,718	1,546,909.35	3,807	1,211	73
Marquette	35,988	15,870	8,842	1,222	61,922	3,625,305.79	6,930	3,983	126
Mason	17,108	7,608	5,112	520	30,348	1,821,502.56	4,214	1,096	78
Mecosta	20,055	9,358	6,061	589	36,063	2,081,981.76	4,921	1,329	44
Menominee	13,500	6,839	4,812	465	25,616	1,505,907.91	2,850	1,412	313
Midland	54,428	17,193	14,006	1,552	87,179	5,216,085.27	9,217	2,314	155
Missaukee	7,241	4,693	3,024	251	15,209	914,310.28	2,120	1,137	25

**REGISTRATION TRANSACTIONS (continued)**

COUNTY	VEHICLE						OTHER		
	Passenger	Commercial	Trailer	Motorcycle	Total Plates	Total Revenue	Watercraft	Snowmobile	Moped
Monroe	87,662	35,321	18,203	2,983	144,169	9,360,813.52	10,862	3,817	382
Montcalm	33,149	16,185	10,363	938	60,635	3,517,990.68	7,083	1,676	160
Montmorency	5,773	3,640	2,515	144	12,072	744,786.25	2,289	1,292	13
Muskegon	104,017	32,281	22,665	3,254	162,217	9,269,546.62	15,281	3,822	477
Newaygo	25,896	12,723	8,693	821	48,133	2,629,861.83	6,817	2,084	99
Oakland	842,340	174,114	92,076	17,743	1,126,273	87,103,011.88	81,989	19,436	1,399
Oceana	15,204	7,681	4,136	452	27,473	1,559,837.52	2,877	1,411	93
Ogemaw	12,280	6,928	4,758	447	24,413	1,465,588.19	3,336	1,561	42
Ontonagon	4,450	2,816	1,569	140	8,975	492,805.38	1,115	1,167	18
Osceola	12,813	7,181	4,253	345	24,592	1,511,450.16	2,694	1,339	26
Oscoda	5,170	3,028	1,871	186	10,255	566,540.18	1,960	916	10
Otsego	13,423	7,293	4,556	441	25,713	1,913,541.25	3,138	2,466	29
Ottawa	138,589	41,805	34,999	3,476	218,869	14,487,097.20	23,546	5,200	812
Presque Isle	8,605	5,330	3,138	213	17,286	1,022,053.90	2,991	1,584	35
Roscommon	16,003	7,184	5,712	432	29,331	1,684,155.43	6,390	3,218	161
Saginaw	133,357	39,001	27,730	2,748	202,836	13,144,353.59	16,576	6,400	364
St. Clair	99,586	37,622	20,008	2,992	160,208	10,097,176.30	14,838	4,721	297
St. Joseph	36,236	15,731	9,638	1,428	63,033	3,547,165.04	8,515	806	190
Sanilac	25,245	13,265	6,921	824	46,255	2,967,553.31	2,218	1,595	78
Schoolcraft	4,745	3,041	2,055	167	10,008	594,492.59	1,801	1,242	32
Shiawassee	43,615	19,236	11,622	1,348	75,821	4,674,715.34	6,059	2,651	169
Tuscola	34,126	17,653	10,937	1,152	63,868	3,707,930.82	4,859	2,793	151
Van Buren	42,977	18,059	9,891	1,321	72,248	4,180,671.37	8,362	1,758	176
Washtenaw	189,669	42,605	20,720	4,287	257,281	17,487,201.24	15,131	3,284	429
Wayne	1,266,438	248,068	98,823	21,022	1,634,351	120,032,567.51	70,483	13,683	2,088
Wexford	18,173	8,041	5,625	526	32,365	1,975,548.56	4,643	2,049	61
Non-Resident	53,898	23,750	12,710	332	90,690	38,635,383.20	37,134	4,545	124
Unknown County							325	90	9
Totals	6,213,825	1,848,493	1,066,496	147,056	9,275,870	\$664,526,913.75	818,637	236,291	17,642