

Grand Valley Metropolitan Council

Traffic Crash Facts 2011

March 2013

Introduction

The Grand Valley Metro Council (GVMC) is the designated MPO for Grand Rapids Metro area and is responsible for the traffic safety planning in this area. The crash data assembled by GVMC staff can provide information to the MPO stakeholder and public for the future safety planning and selection of future road projects.

This report include statistics of crash data for the Grand Rapids Metropolitan Area such as crash facts in 2011, top 50 crash intersections, and top 50 crash segments.

Definition

The terms defined in this report as applied to the crash facts are as follows,

PDO: Number of crashes involving Property Damage Only

Injury: Number of crashes involving injuries, not the number of injuries

A-Type: Number of crashes involving incapacitating injuries

B-Type: Number of crashes involving non-incapacitating injuries

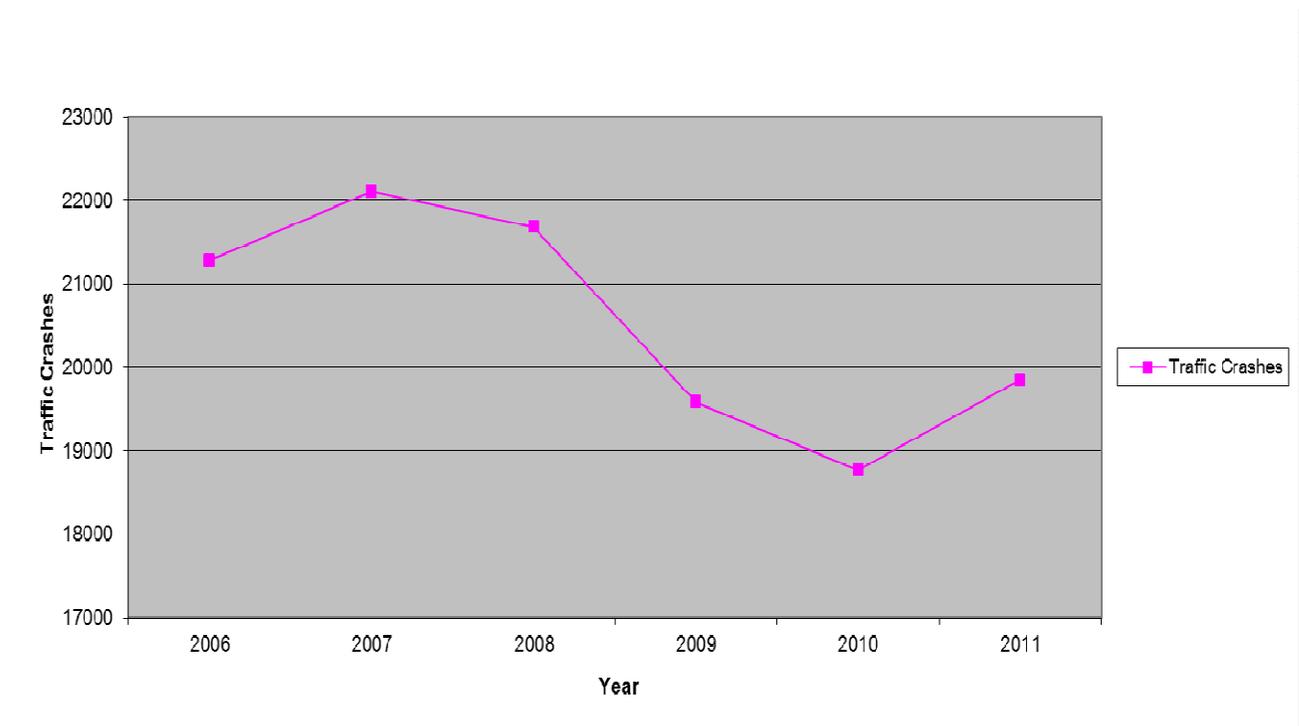
C-Type: Number of crashes involving possible injuries

Fatal: Number of crashes involving fatalities, not the number of fatalities

All Traffic Crashes

In 2011, there are 19,843 traffic crashes reported in GVMC area. This is an increase of 5.7 percent from 2010 and a decrease of 6.8 percent from 2006. Figure 1 below shows total traffic crashes form 2006 to 2011.

Figure 1 **Traffic Crashes, 2006-2011**



Source: www.michigantrafficcrashfacts.org

Traffic Crashes by Jurisdiction

Table 1 shows the number of total crashes by jurisdiction in GVMC area from 2006-2011.

Local Governments	2006	2007	2008	2009	2010	2011
Ada	370	430	380	327	356	355
Algoma	380	376	403	350	254	269
Allendale	327	376	393	368	270	305
Alpine	386	380	368	333	275	318
Blendon	139	144	161	156	145	149
Bowne	97	102	101	109	73	72
Byron	518	619	642	626	528	579
Caledonia	368	403	395	363	365	347
Cannon	282	286	280	263	239	207
Cascade	737	844	767	655	620	667
Casnovia	3	4	3	5	3	4
Cedar Springs	86	90	64	64	78	64
Chester	83	65	58	65	45	41
Courtland	224	176	211	187	173	174
East Grand Rapids	175	190	174	158	185	154
Gaines	469	514	504	434	418	445
Georgetown	822	949	850	828	745	748
City of Grand Rapids	6927	7280	6840	6257	6377	6931
Grand Rapids Township	610	602	604	563	468	538
Grandville	784	717	891	726	611	674
Grattan	121	114	118	125	118	101
Hudsonville	149	184	184	165	186	187
Jamestown	151	190	196	165	149	180
Kent City	19	13	18	10	31	20
Kentwood	1214	1253	1262	1055	1069	1047
Lowell	341	353	366	322	313	275
Nelson	159	137	137	129	126	98
Oakfield	143	154	166	154	132	158
Plainfield	887	1018	1004	824	854	807
Polkton	223	230	247	191	182	197
Rockford	135	141	150	121	135	109
Sand Lake	10	9	9	4	5	6
Solon	196	158	183	172	191	166
Sparta	229	237	221	209	201	220
Spencer	94	89	91	91	78	78
Tallmadge	297	281	278	245	180	223
Tyrone	136	114	111	115	85	113
Vergennes	154	158	145	130	113	106
Walker	1332	1275	1166	1086	1093	1084
Wright	249	218	190	216	210	212
Wyoming	1951	1895	2006	1848	1674	2014

Traffic Crashes by Severity

Of the 19,843 traffic crashes in GVMC area in 2011, there are 4,066 crashes causing fatalities or injuries. A total of 40 fatal crashes resulted in 101 deaths, and a total of 4,066 injury crashes resulted in some degree of injuries of 10,565 people. Figure 2 shows traffic crashes distribution by injury severity in 2011. Table 2 shows the number of each severity and the number of fatalities and injuries caused by the crashes.

Figure 2 **Traffic Crash Severities in 2011**

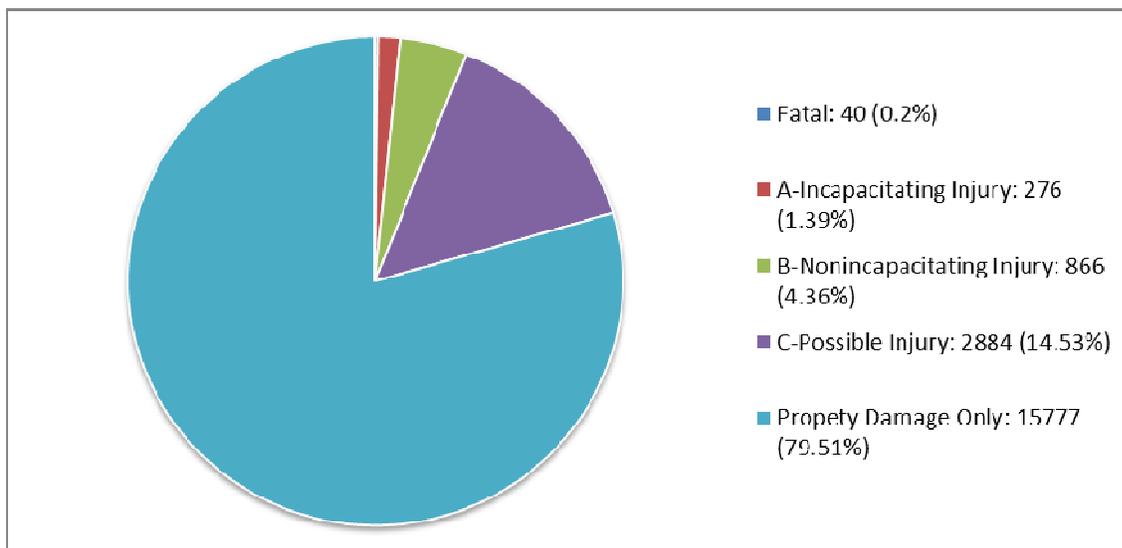


Table 2 **Traffic Crash Severity in 2011**

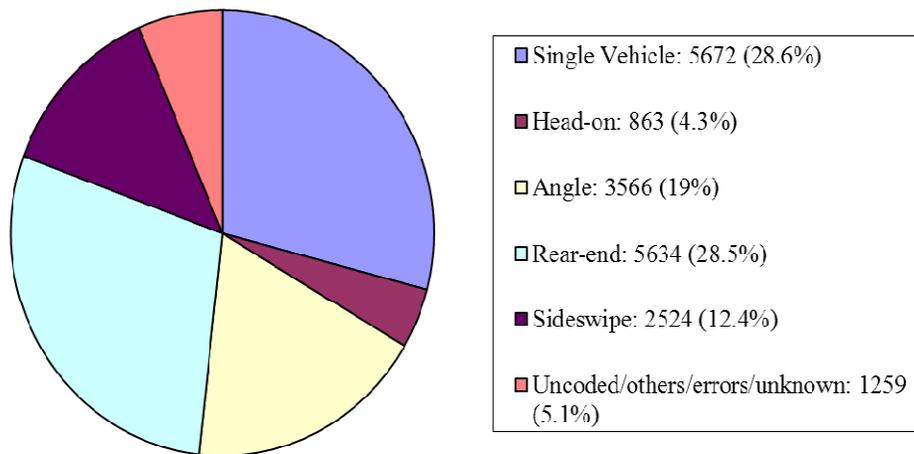
Crash Severity	Number of Traffic Crashes	Number of Injuries
Fatal	40	101
A-Type Injury	276	765
B-Type Injury	866	2,234
C-Type Injury	2,884	7,465
Injury and Fatality subtotal	4,066	10,565
PDO	15,777	
Total	19,843	

Source: www.michigantrafficcrashfacts.org

Traffic Crashes by Crash Type

Figure 3 shows traffic crash distribution by crash type in 2011. As shown in the figure, the most common type of crash was single motor vehicle crash, which accounted for 28.6% of all traffic crashes, and the least common type crash was head-on, which accounted for 4.3%.

Figure 3 **Traffic Crashes by Crash Type in 2011**

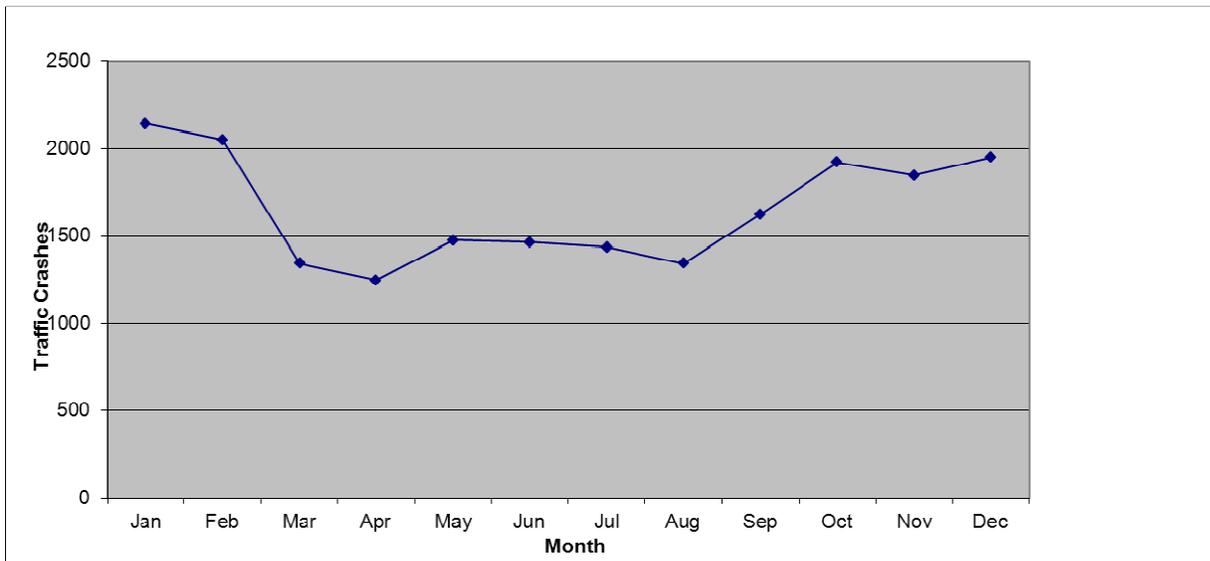


Source: www.michigantrafficcrashfacts.org

Traffic Crashes by Month, Day, and Hour

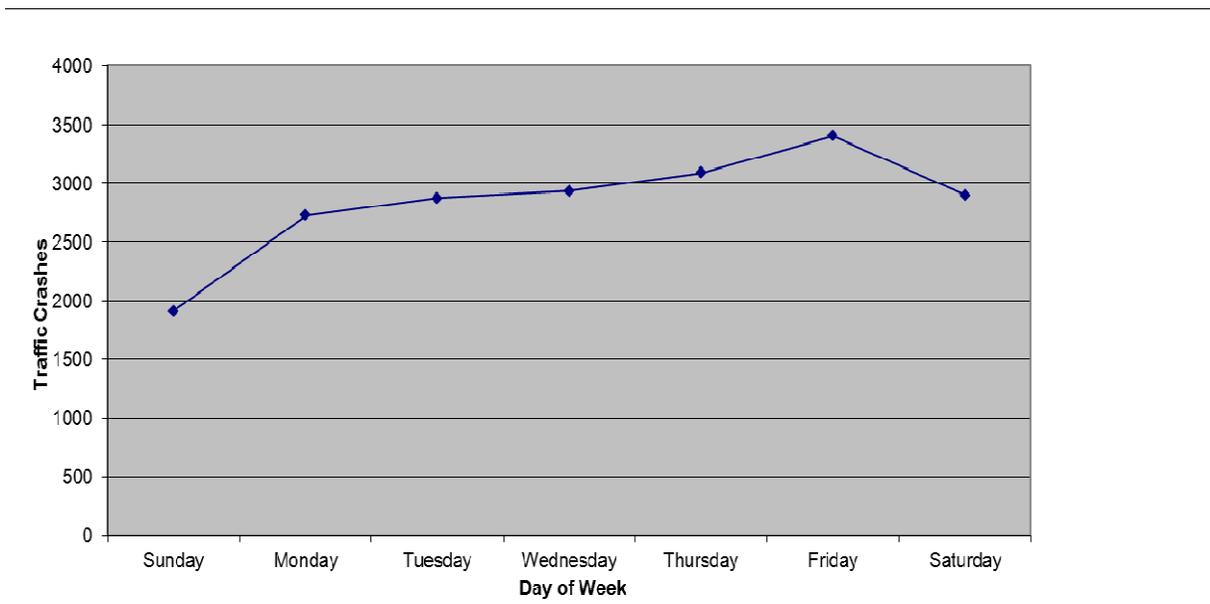
Figure 4-6 show traffic crashes distribution by month, day and hour, respectively. As shown in Figure 4, there were more traffic crashes in January than any other month in 2011(2,142). March and August had the fewest crashes (1,343) in 2011. Figure 5 shows that more traffic crashes occurred on Fridays than any other day of the week (3,402) in 2011, and Sunday had the fewest traffic crashes (1,912). Figure 6 shows that more traffic crashes occurred between 5 pm and 6 pm than any other hour interval in 2011 (1,748), and the time of day with the fewest crashes was between 4 am and 5 am (211 crashes).

Figure 4 **Traffic Crashes by Month in 2011**



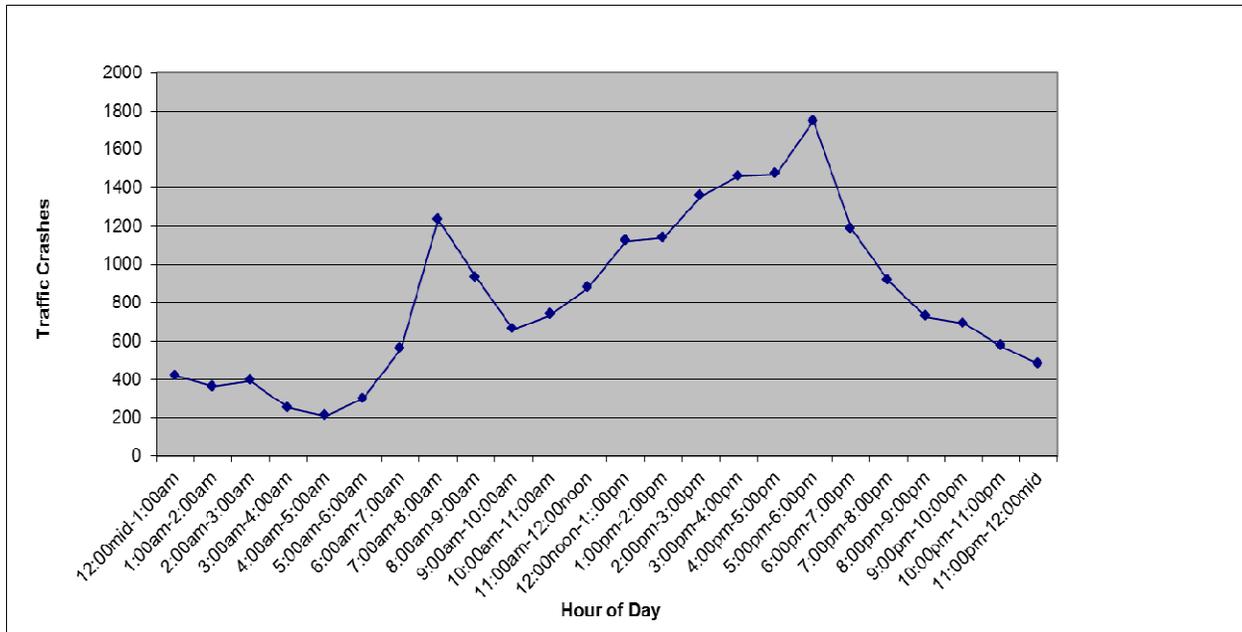
Source: www.michigantrafficcrashfacts.org

Figure 5 **Traffic Crashes by Day of Week in 2011**



Source: www.michigantrafficcrashfacts.org

Figure 6 **Traffic Crashes by Hour of Day in 2011**



Source: www.michigantrafficcrashfacts.org

Injury Traffic Crashes

Injury traffic crash is defined as a crash resulting in an injury, but not a fatality. Figure 7 below shows injury traffic crash in GVMC area. Injury traffic crashes decreased 6.5 percent from 2006 to 2011, and Figure 8 shows a 7.9 percent decline in number of injuries from 2006 to 2011.

Figure 7 Injury Traffic Crashes, 2006- 2011

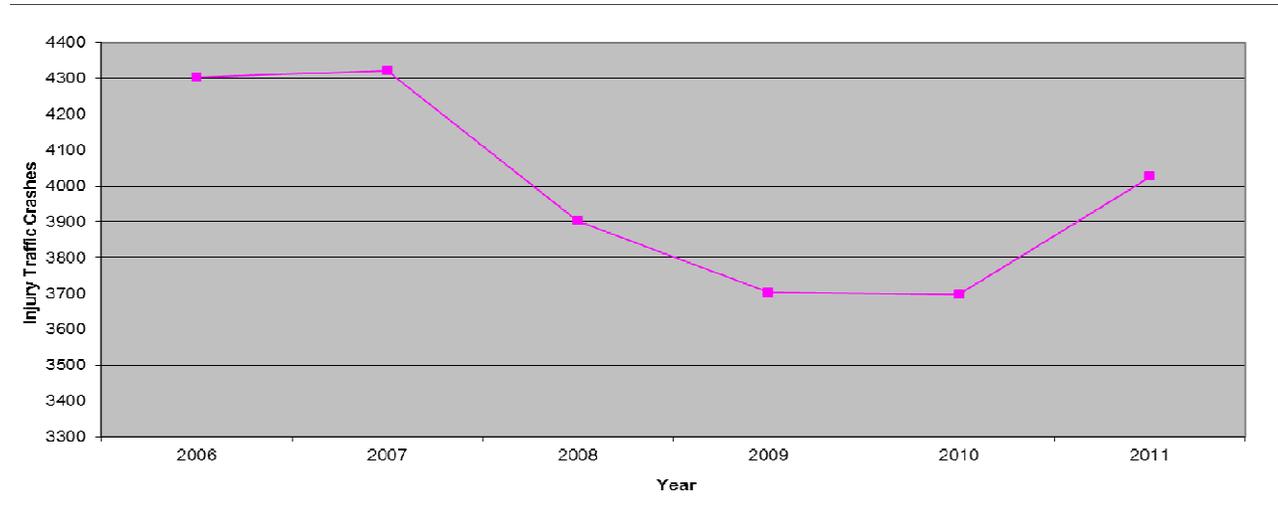
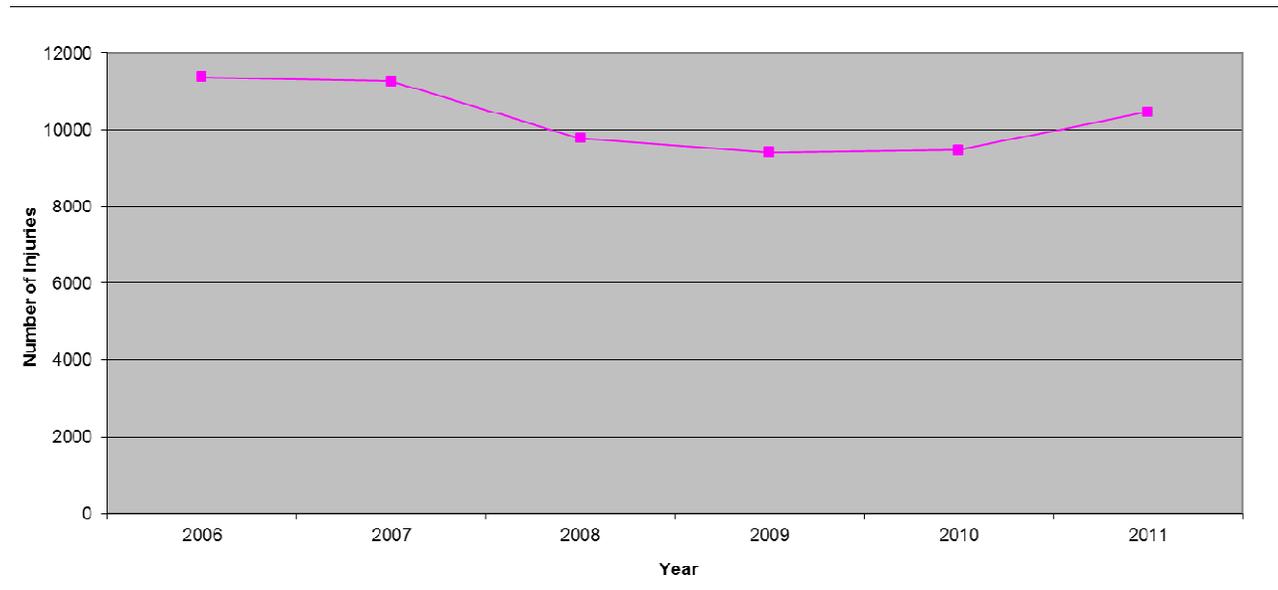


Figure 8 Numbers of Injuries, 2006- 2011



Injury Traffic Crashes by Jurisdiction

Table 3 shows the number of injury traffic crashes by jurisdiction in GVMC area from 2006-2011.

Local Governments	2006	2007	2008	2009	2010	2011
Ada	60	75	61	58	64	62
Algoma	78	70	65	57	54	56
Allendale	57	67	71	69	47	49
Alpine	81	86	75	82	66	78
Blendon	19	27	26	16	21	32
Bowne	15	14	16	22	8	14
Byron	108	146	118	124	121	114
Caledonia	64	71	63	62	81	67
Cannon	49	56	36	44	45	37
Cascade	135	147	120	114	104	122
Casnovia	1	1	1	1	2	0
Cedar Springs	18	23	12	10	29	17
Chester	25	12	12	13	5	7
Courtland	50	36	40	36	34	34
East Grand Rapids	20	27	25	20	33	23
Gaines	99	108	89	95	79	90
Georgetown	174	180	154	156	137	160
City of Grand Rapids	1417	1395	1172	1157	1197	1358
Grand Rapids Township	136	123	113	98	89	90
Grandville	152	150	155	146	119	142
Grattan	14	14	14	15	14	8
Hudsonville	32	26	25	40	30	30
Jamestown	21	36	33	31	29	23
Kent City	6	4	7	4	6	5
Kentwood	270	289	295	248	277	277
Lowell	57	73	70	57	57	62
Nelson	28	23	19	20	22	12
Oakfield	32	28	39	37	27	29
Plainfield	199	190	176	149	156	172
Polkton	40	28	45	25	20	24
Rockford	25	24	17	20	16	18
Sand Lake	2	1	0	1	1	0
Solon	39	24	41	34	43	38
Sparta	52	37	38	42	38	52
Spencer	13	17	16	14	18	13
Tallmadge	59	42	49	31	33	28
Tyrone	27	24	15	11	14	28
Vergennes	32	30	19	15	17	16
Walker	259	249	232	195	202	215
Wright	46	37	42	27	32	36
Wyoming	423	415	411	388	388	487

Injury Traffic Crashes by Crash Type

Figure 9 shows that rear-end crashes was the most common type of injury crashes (31.6%) in 2011, and sideswipe crashes was the least common type of injury crashes (5%)

Table 4 shows head-on crashes are more likely to cause injury than any other type of crashes, with 41 percent of head-on crashes resulting in injury. Only 9.1% of sideswipe crashes causes injury in 2011.

Figure 9 **Injury Traffic Crashes by Crash Type in 2011**

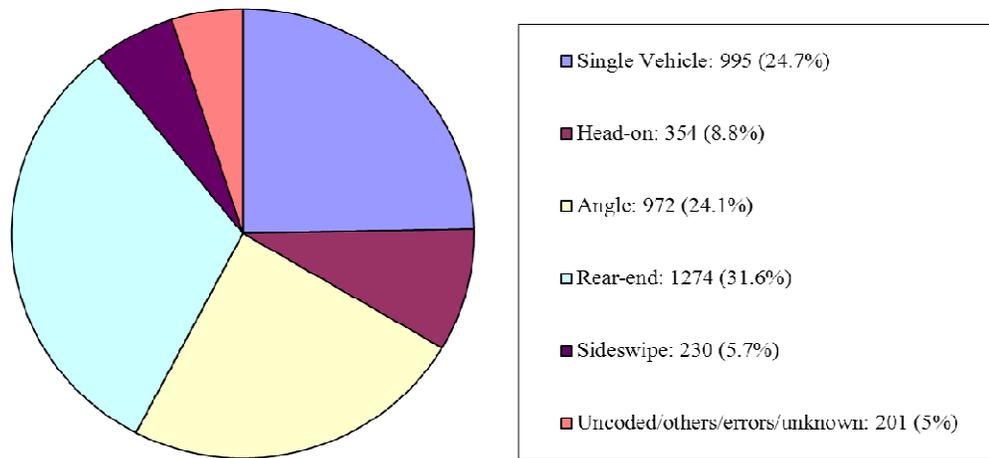


Table 4 **Traffic Crash Type by Percent Resulting in Injury in 2011**

Crash Type	Injury Crashes	All Crashes	Percent Resulting in Injury
Head-on	354	863	41%
Angle	972	3,566	27.3%
Rear-End	1,274	5,634	22.6%
Single-Vehicle	995	5,672	17.5%
Sideswipe	230	2,524	9.1%
Uncoded/others/errors/unknown	201	1,259	16%
Total	4,026	19,843	20.3%

Source: www.michigantrafficcrashfacts.org

Injury Traffic Crashes by Month, Day, and Hour

Figure 10 shows more injury traffic crashes occurred in October than any other months in 2011, with 409 injury traffic crash, and Figure 11 shows that Fridays was the day of week in 2011 with the most injury traffic crashes (663).

Figure 10 **Injury Traffic Crashes by Month in 2011**

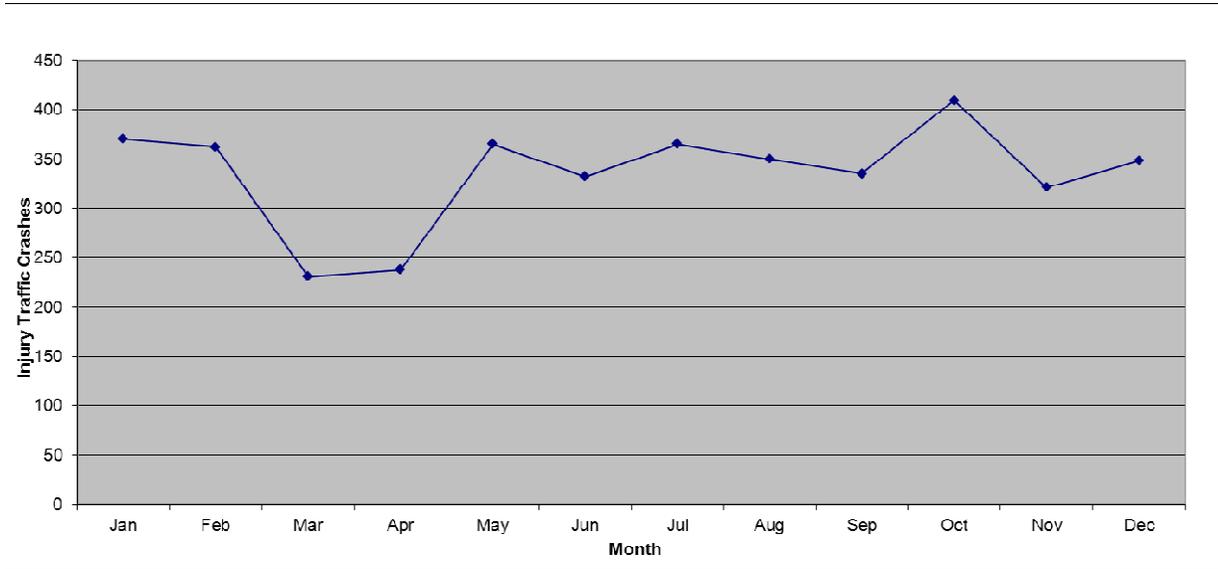
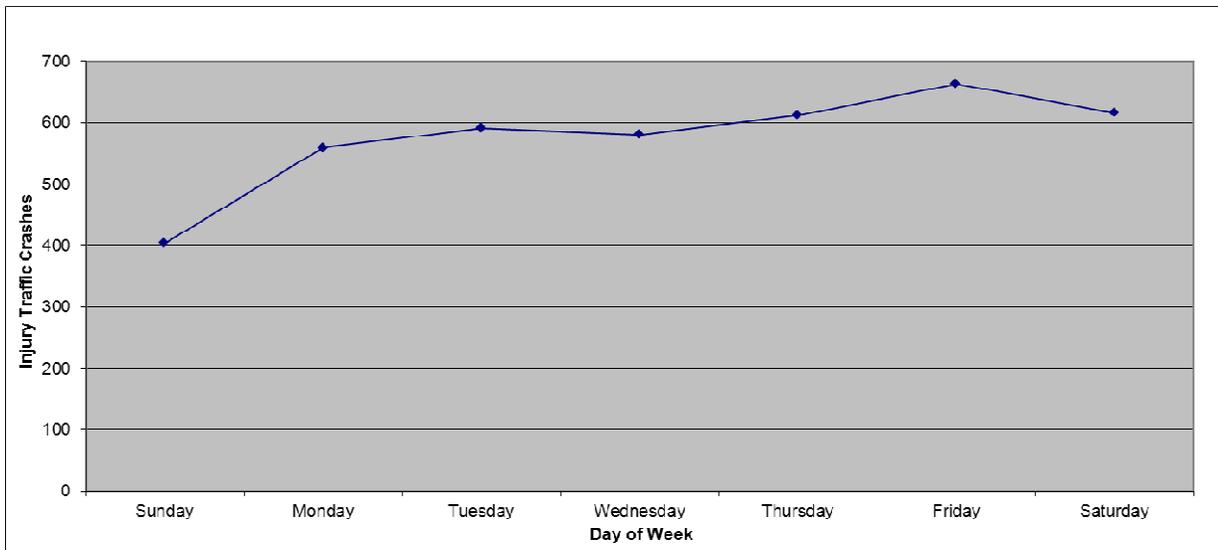


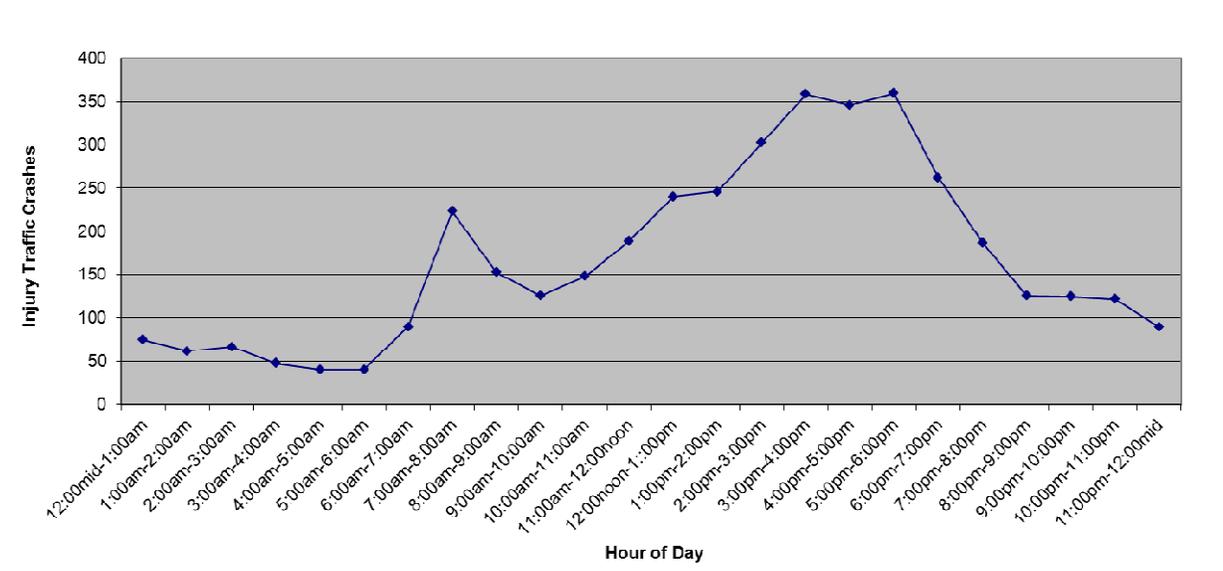
Figure 11 **Injury Traffic Crashes by Day of Week in 2011**



Source: www.michigantrafficcrashfacts.org

Figure 12 indicates that most injury traffic crashes occurred between 5 pm to 6 pm during each hour interval in 2011, with 359 injury crashes.

Figure 12 **Injury Traffic Crashes by Hour of Day in 2011**



Source: www.michigantrafficcrashfacts.org

Fatal Traffic Crashes

Fatal crash is defined as a crash that causes death within 30 days of the crash. There were 40 fatal crashes in GVMC area in 2011, a 31% decrease from 2006, which had 58 fatal crashes. Figure 13 and Figure 14 show the number fatal crashes and the number of fatalities caused by traffic crashes from 2006 to 2011.

Figure 13 **Fatal Traffic Crashes, 2006-2011**

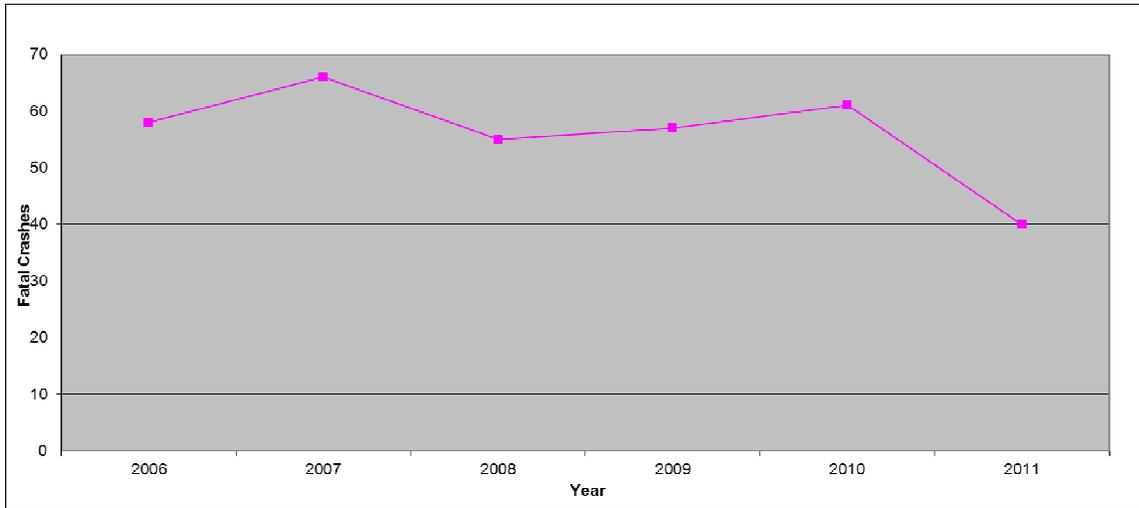
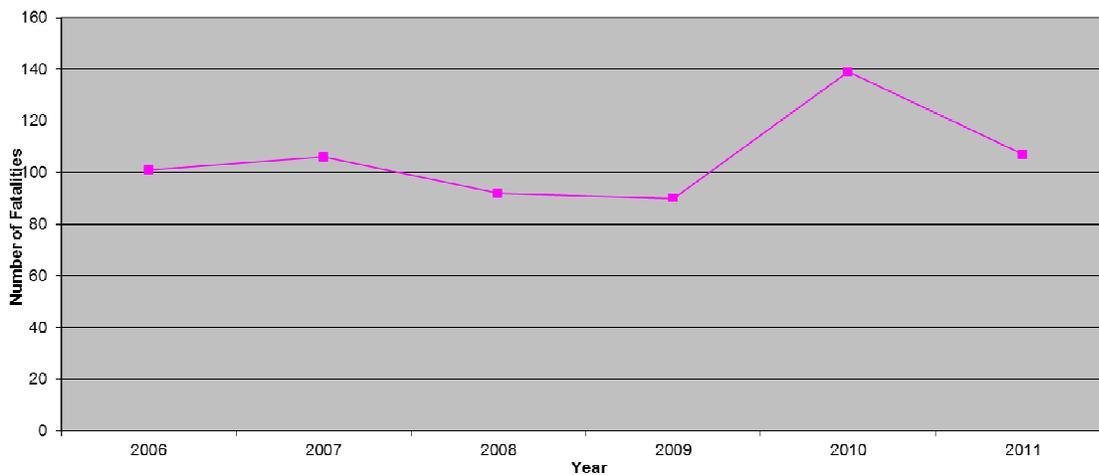


Figure 14 **Traffic Crash Fatalities, 2006-2011**



Source: www.michigantrafficcrashfacts.org

Fatal Traffic Crashes by Crash Type

Figure 15 shows that the most common type of crash causing fatalities in 2011 was single vehicle crash, which accounts for 47.5 percent of all fatal crashes. But Head-on crashes were more likely to result in a fatality, with 0.7% of Head-on crashes causing fatality.

Figure 15 **Fatal Traffic Crashes by Crash Type in 2011**

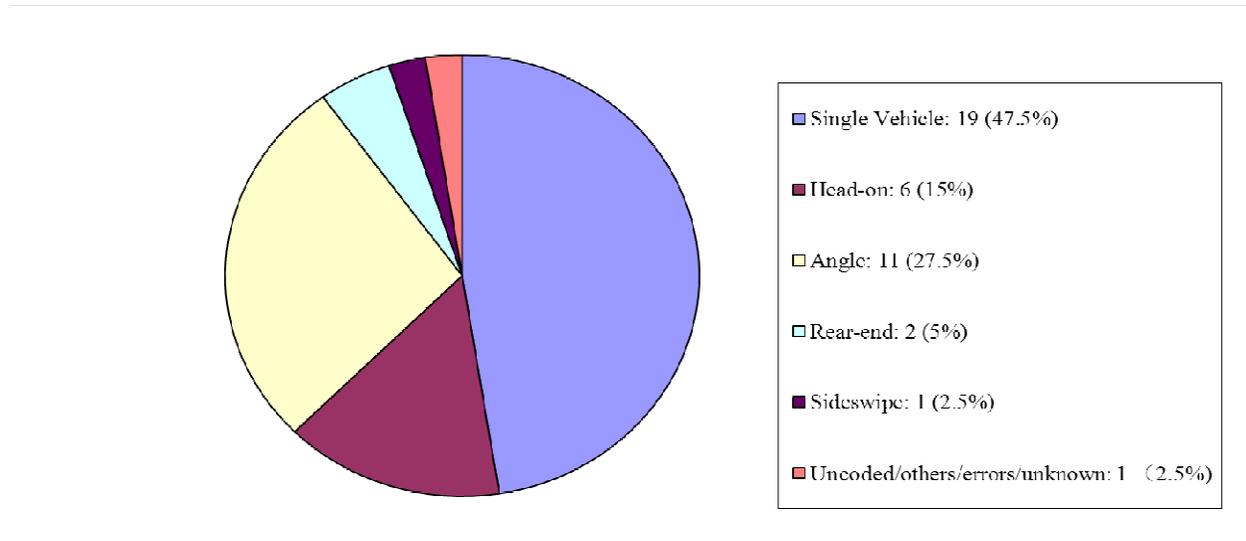


Table 5 **Crash Type by Percent Resulting in Fatality in 2011**

Crash Type	Fatal Crashes	All Crashes	Percent Resulting in Fatality
Head-on	6	863	0.7%
Single-Vehicle	19	3,566	0.53%
Angle	11	5,634	0.2%
Sideswipe	1	5,672	0.017%
Rear-End	2	2,524	0.079%
Uncoded/others/errors/unknown	1	1,259	0.079%
Total	40	19,843	0.2%

Source: www.michigantrafficcrashfacts.org

Fatal Traffic Crashes by Month, Day, and Hour

Figure 17 shows that fatal crashes were more likely to occur in August than any other month in 2011, and Figure 18 indicates Thursdays had the most fatal crashes in 2011.

Figure 16 **Fatal Traffic Crashes by Month in 2011**

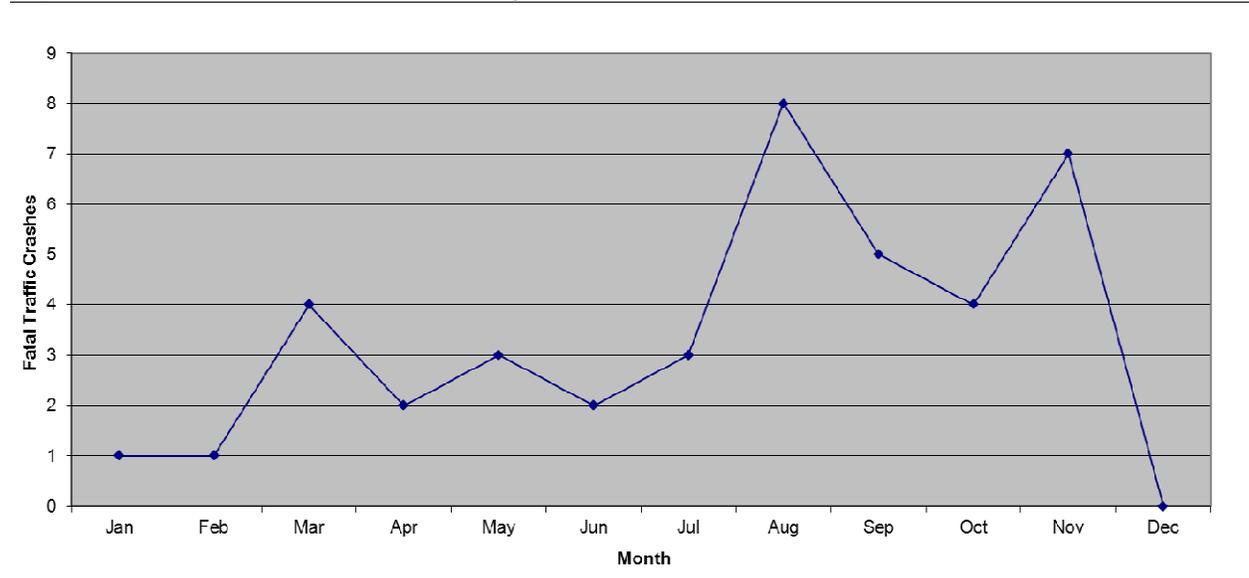
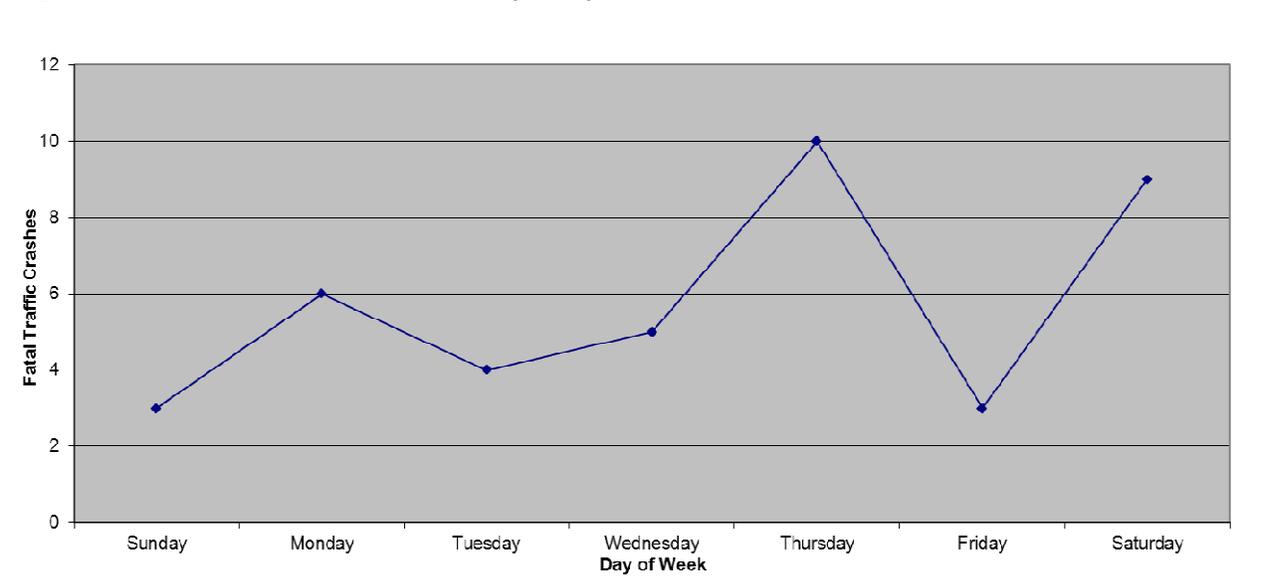


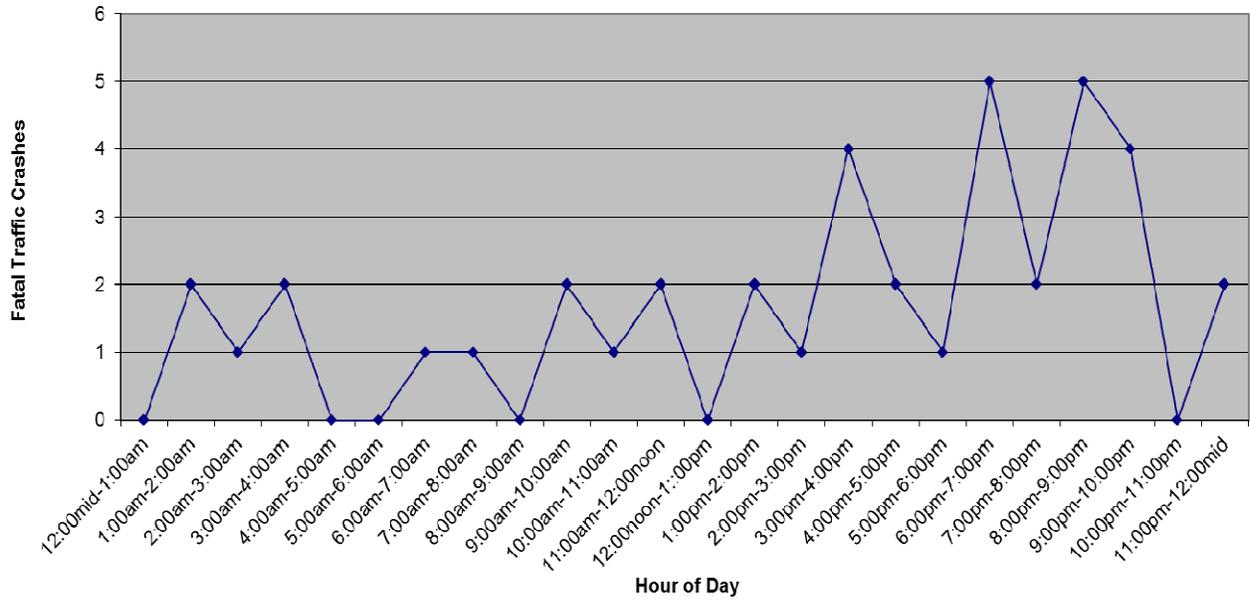
Figure 17 **Fatal Traffic Crashes by Day of Week in 2011**



Source: www.michigantrafficcrashfacts.org

Figure 18 below shows the distribution of fatal traffic crashes in GVMC area in 2011.

Figure 18 **Fatal Traffic Crashes by Hour of Day in 2011**



Source: www.michigantrafficcrashfacts.org

Alcohol-Involved Traffic Crashes

An alcohol-involved crash is defined as a crash in which a driver, pedestrian or bicyclist had any measurable alcohol in their system. Figure 19 shows the decreasing trend of alcohol-involved traffic crashes in GVMC area, down from 1,030 in 2006 to 825 in 2011.

Figure 20 shows that alcohol-involved crashes accounted for 4.3 percent of all traffic crashes in 2011.

Figure 19 Alcohol-Involved Traffic Crashes, 2006-2011

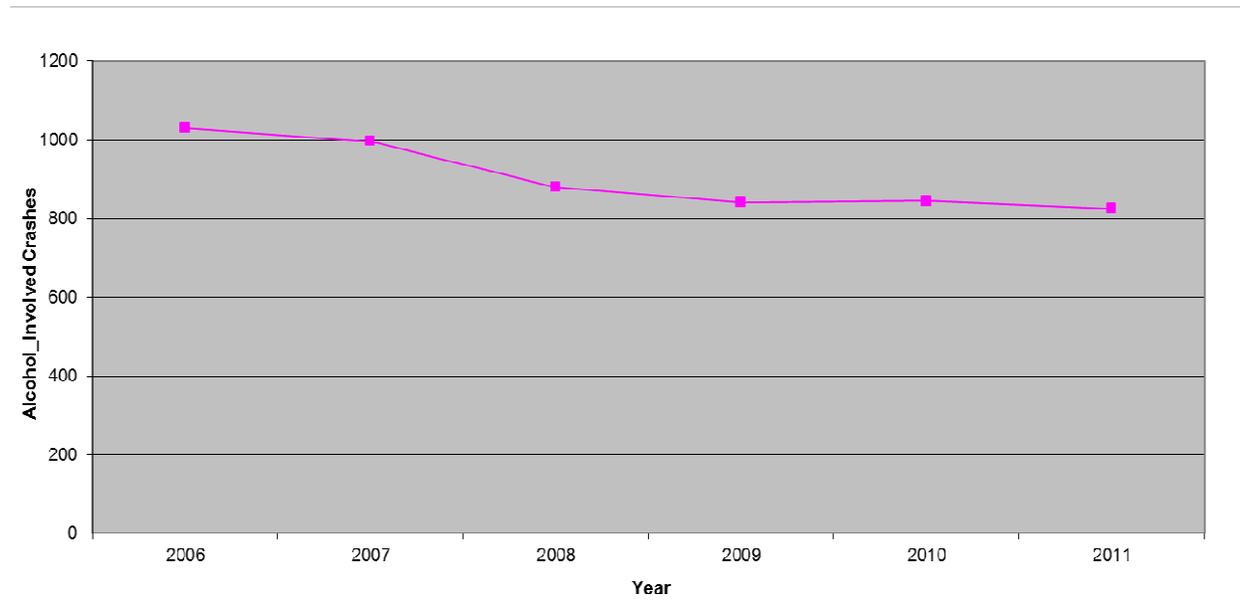


Figure 20 Percentages of Alcohol-Involved Traffic Crashes

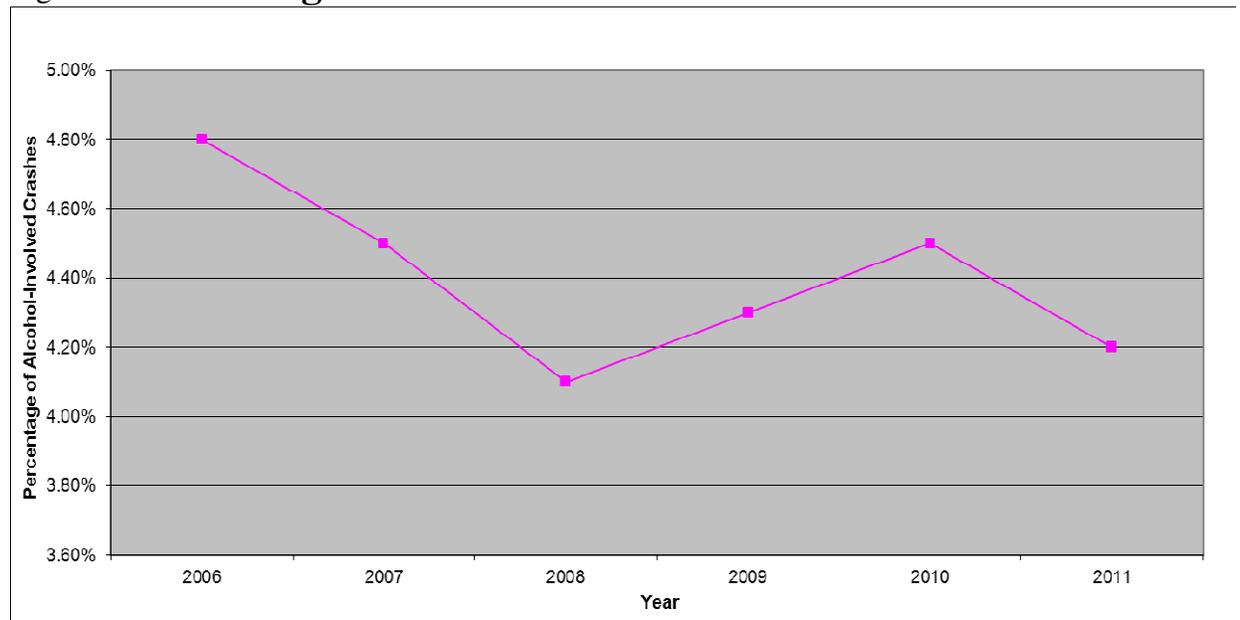


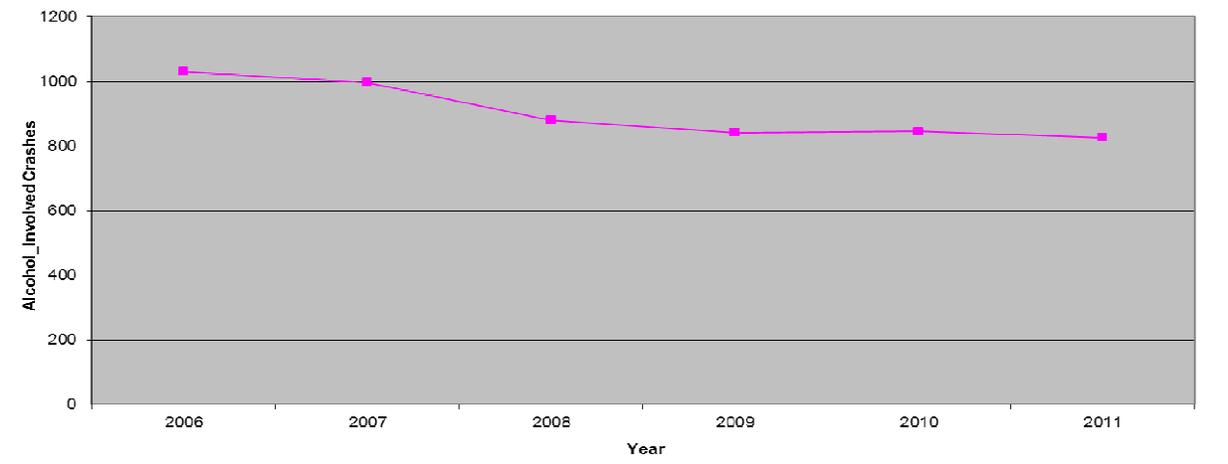
Table 6 below shows the number of Alcohol-Involved traffic crashes by jurisdiction in GVMC area from 2006-2011.

Local Governments	2006	2007	2008	2009	2010	2011
Ada	20	17	10	9	18	16
Algoma	18	20	19	7	16	12
Allendale	23	15	17	19	9	12
Alpine	26	22	25	20	26	21
Blendon	2	5	4	4	5	5
Bowne	5	4	4	12	6	1
Byron	18	19	15	37	20	37
Caledonia	13	18	16	8	14	9
Cannon	19	14	10	12	12	12
Cascade	24	28	19	16	14	25
Casnovia	0	0	0	1	1	0
Cedar Springs	4	2	2	3	1	1
Chester	10	6	6	5	3	1
Courtland	9	11	9	11	8	9
East Grand Rapids	6	4	5	2	7	3
Gaines	19	12	9	9	15	8
Georgetown	37	27	26	30	34	33
City of Grand Rapids	390	369	313	290	325	286
Grand Rapids Township	21	29	19	19	21	14
Grandville	24	29	30	22	21	20
Grattan	6	4	8	7	5	3
Hudsonville	3	4	3	2	6	3
Jamestown	6	7	6	4	6	5
Kent City	1	1	1	1	0	1
Kentwood	43	32	47	32	17	38
Lowell	14	17	10	16	8	10
Nelson	8	7	5	8	2	6
Oakfield	11	10	12	14	4	15
Plainfield	42	60	55	37	43	47
Polkton	11	15	5	7	8	8
Rockford	8	6	1	5	7	5
Sand Lake	0	0	0	1	0	0
Solon	11	10	14	9	12	7
Sparta	18	10	7	15	15	14
Spencer	7	8	8	6	11	10
Tallmadge	17	12	12	13	13	9
Tyrone	15	13	7	4	5	10
Vergennes	10	9	3	6	3	6
Walker	48	52	37	59	41	51
Wright	13	10	15	14	10	6
Wyoming	86	94	95	75	78	66

Alcohol-Involved Traffic Crashes by Severity

Although alcohol-involved traffic crashes only accounts for 4.2 percent of all traffic crashes in 2011, there were 30 percent fatal crashes related to alcohol, and 17 percent of all A-Type injuries involved alcohol. As shown in the table below, alcohol-involved crashes are more likely to cause death or serious injuries compared to other non-alcohol-involved crashes.

Figure 21 **Alcohol-Involved Traffic Crashes by Severity in 2011**



Source: www.michigantrafficcrashfacts.org

Table 7 **Alcohol-Involved Traffic Crash by Severity in 2011**

Crash Severity	Alcohol-Involved Traffic Crashes	All Traffic Crashes	Alcohol-Involved Percentage
Fatal	12	40	30%
A-Type Injury	47	276	17%
B-Type Injury	94	866	10.9%
C-Type Injury	134	2,884	4.6%
PDO	538	15,777	3.4%
Total	825	19,843	4.2%

Source: www.michigantrafficcrashfacts.org

Alcohol-Involved Traffic Crashes by Crash Type

Figure 22 shows that the most common type of alcohol-involved crashes were single-vehicle crashes, accounting for 53.5 percent of all alcohol-involved crashes. Table 8 shows the percentage of alcohol-involved crashes in all traffic crashes.

Figure 22 Alcohol-Involved Traffic Crashes by Type in 2011

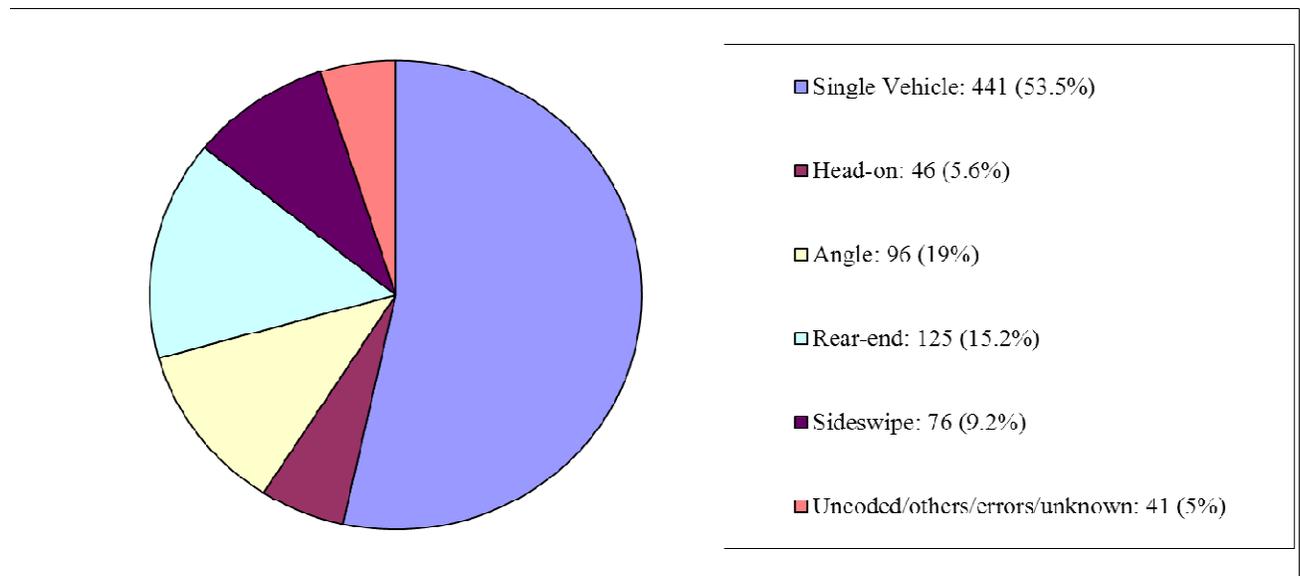


Table 8 Percentage of Alcohol-Involved Traffic Crashes

Crash Type	Alcohol-Involved Traffic Crashes	All Crashes	Percentage of Alcohol-Involved Crash
Single-Vehicle	441	5,672	7.8%
Head-on	46	863	5.3%
Angle	96	3,566	2.7%
Rear-End	125	5,634	2.2%
Sideswipe	76	2,524	3%
Uncoded/others/errors/unknown	41	1,259	3.3%
Total	825	19,843	4.2%

Source: www.michigantrafficcrashfacts.org

Alcohol-Involved Traffic Crashes by Month, Day and Hour

Figure 23 shows that most alcohol-involved crashes occurred in December with 88 crashes and the fewest took place in September with 56 crashes. Figure 24 indicates Saturdays had the most alcohol-involved traffic crashes (217) compared to any other days of week, while Mondays had the fewest alcohol-involved crashes (67) in 2011.

Figure 23 Alcohol-Involved Traffic Crashes by Month in 2011

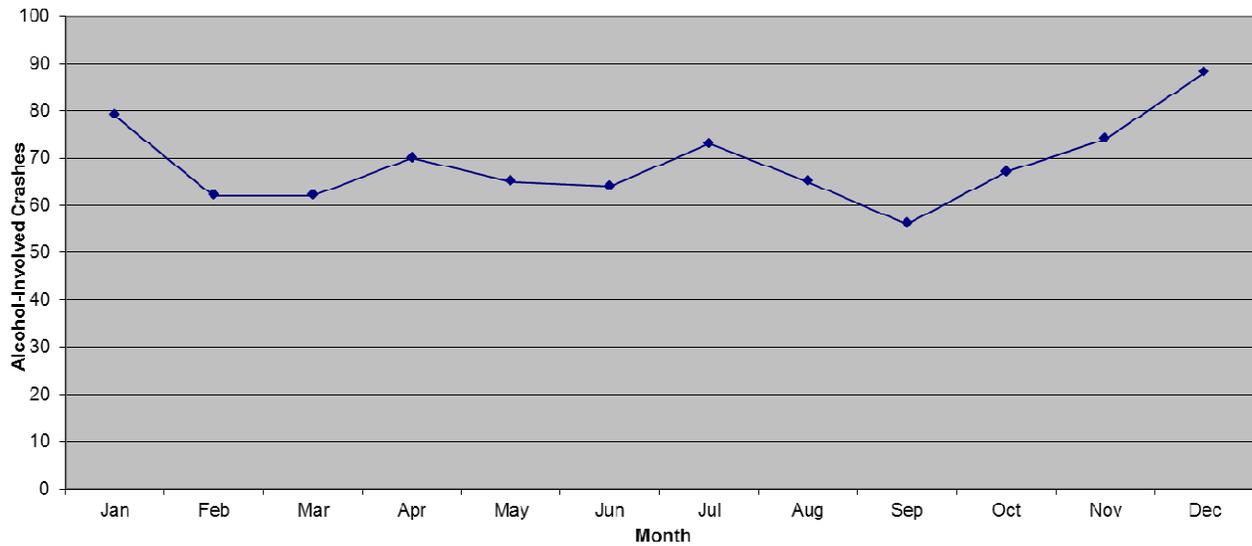
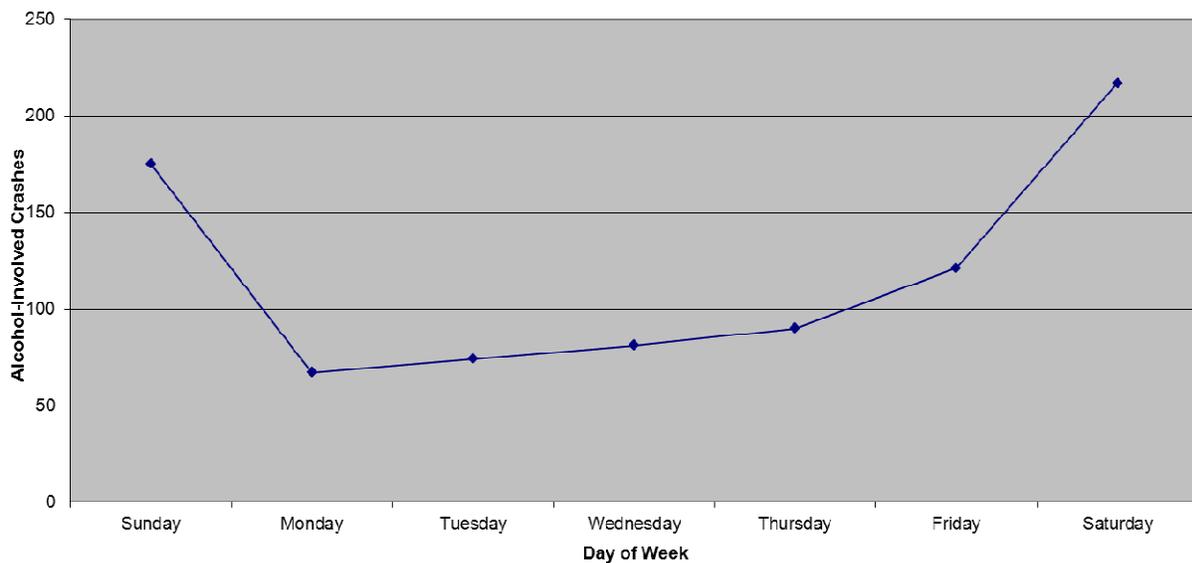


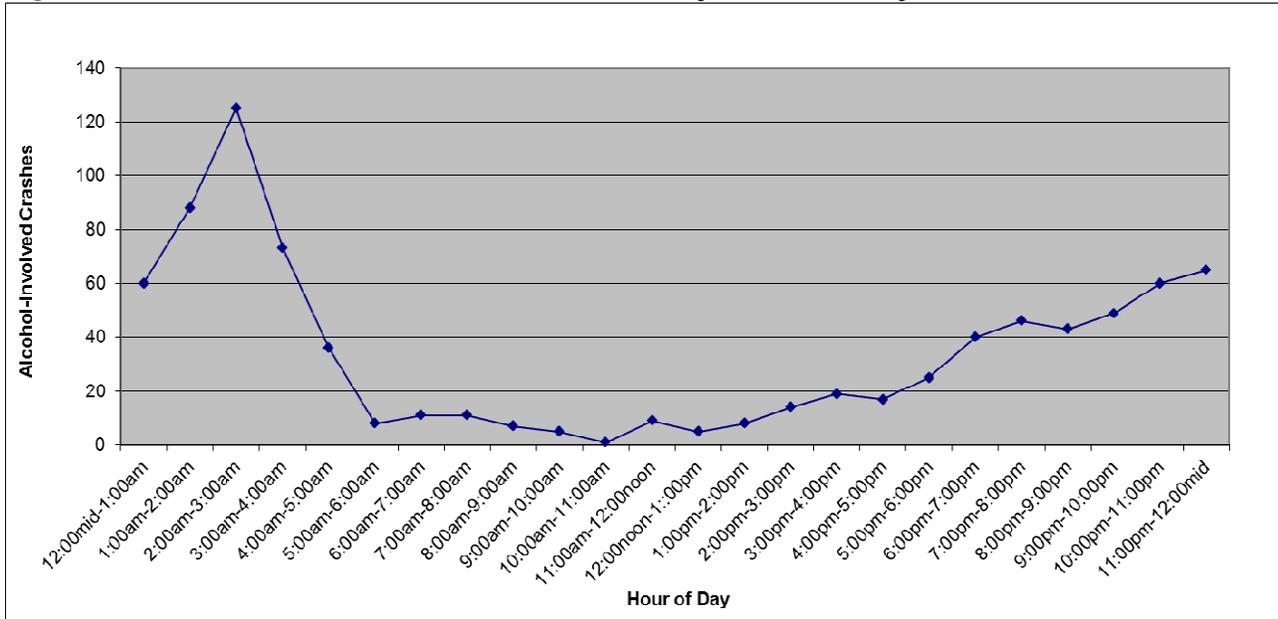
Figure 24 Alcohol-Involved Traffic Crashes by Day of Week in 2011



Source: www.michigantrafficcrashfacts.org

As shown in Figure 25, most alcohol-involved crashes occurred between 2 a.m. to 3 a.m. with 125 crashes in 2011, and the fewest alcohol-involved crashes took place between 10 a.m. to 11 a.m. with only 1 crash.

Figure 25 Alcohol-Involved Traffic Crashes by Hour of day in 2011



Source: www.michigantrafficcrashfacts.org

Vehicle-Deer Traffic Crashes

There were 2,048 traffic crashes between vehicle and deer in GVMC area in 2011, an 8.9 percent decrease from 2010. As shown in Figure 27, the percentage of vehicle-deer crash in GVMC area increased from 12 percent in 2010 to 10.3 percent in 2011.

Figure 26 **Vehicle-Deer Traffic Crashes, 2006-2011**

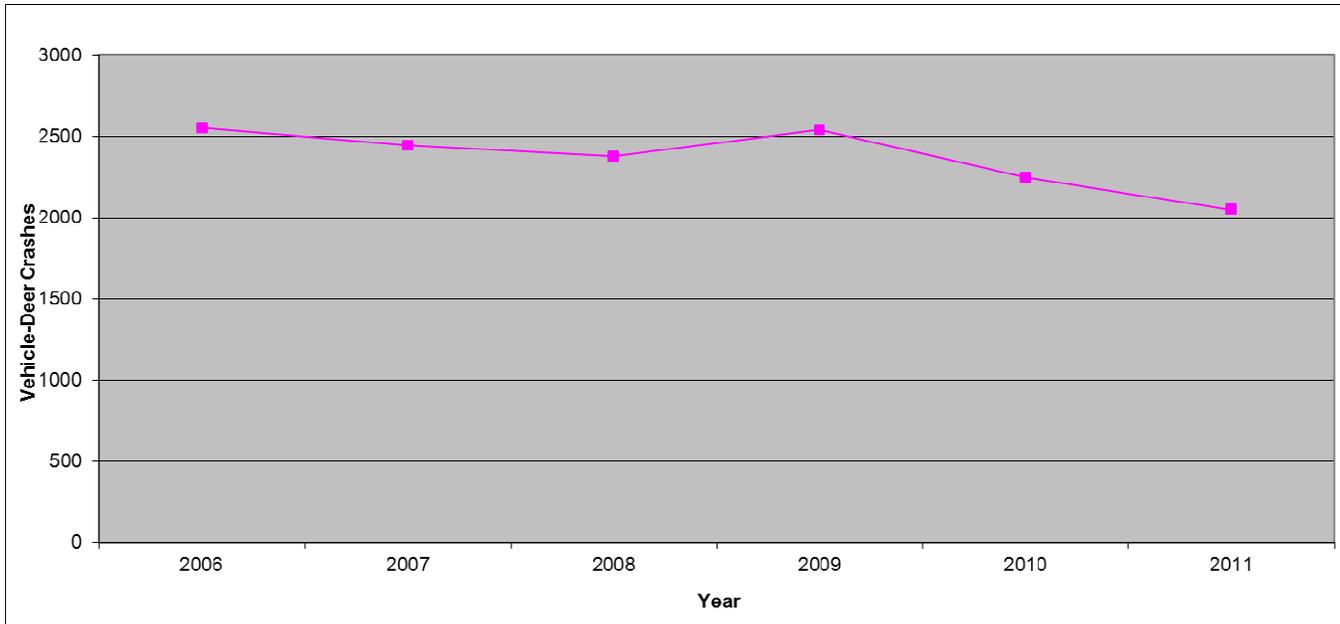
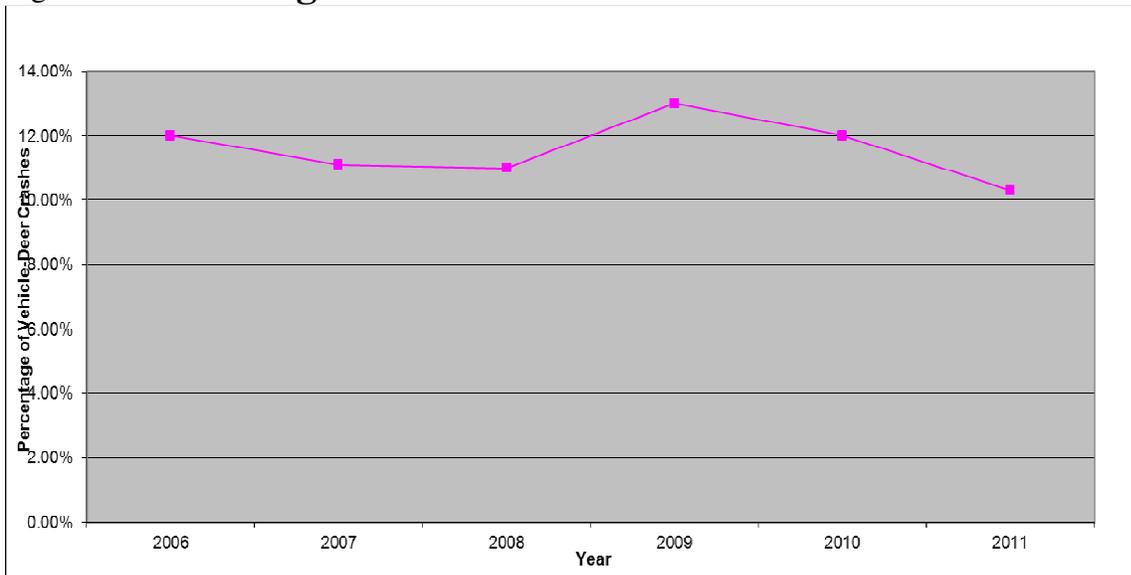


Figure 27 **Percentages of Vehicle-Deer Crashes in 2011**



Source: www.michigantrafficcrashfacts.org

Vehicle-Deer Traffic Crashes by Severity

As shown in Figure 28 and Table 9, most vehicle-deer crashes only caused property damage in GVMC area in 2011, which accounted for 96.4% of all vehicle-Deer crashes and 15.5% of all PDO crashes.

Figure 28 **Vehicle-Deer Traffic Crashes by Type in 2011**

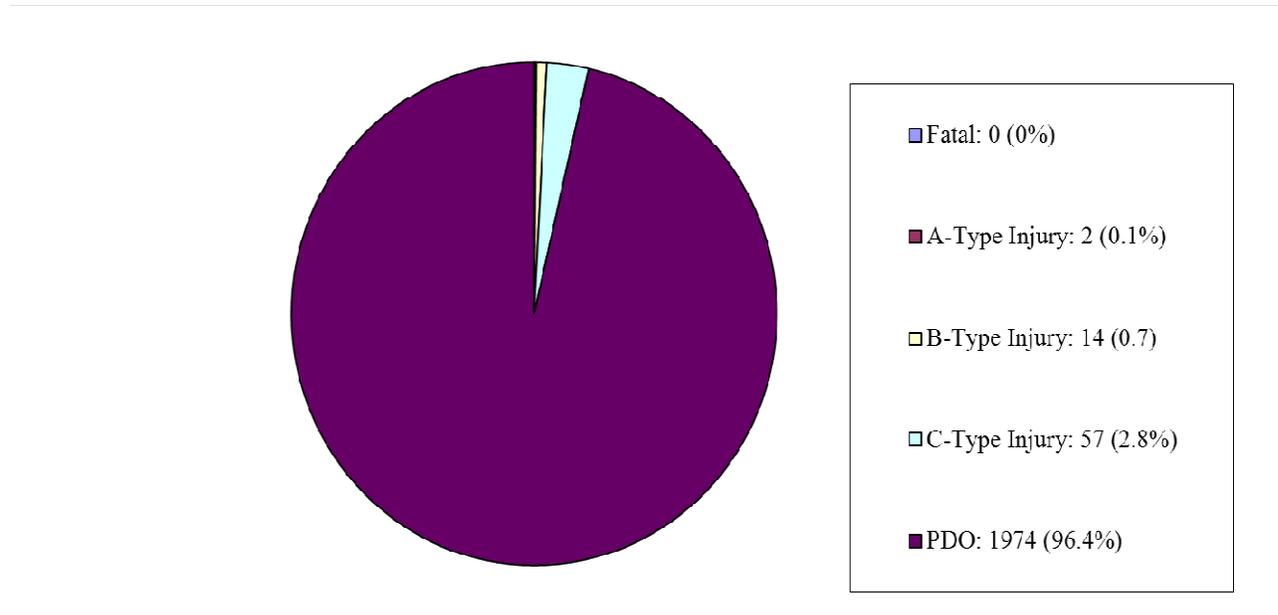


Table 9 **Vehicle-Deer Traffic Crashes by Severity in 2011**

Crash Severity	Vehicle-Deer Traffic Crashes	All Traffic Crashes	Vehicle-Deer Percentage
Fatal	1	40	2.5%
A-Type Injury	2	276	0.7%
B-Type Injury	14	866	1.6%
C-Type Injury	57	2,884	2%
PDO	1,974	15,777	12.5%
Total	2,048	19,843	10.3%

Source: www.michigantrafficcrashfacts.org

Vehicle-Deer Traffic Crashes by Month, Day and Hour in 2011

Figure 29 shows that November had the most vehicle-deer crashes at 461 in 2011, and August had the fewest vehicle-deer crashes at 60. Figure 30 shows that more deer crashes took place on Tuesdays in 2011 than any other days of week.

Figure 29 **Vehicle-Deer Traffic Crashes by Month in 2011**

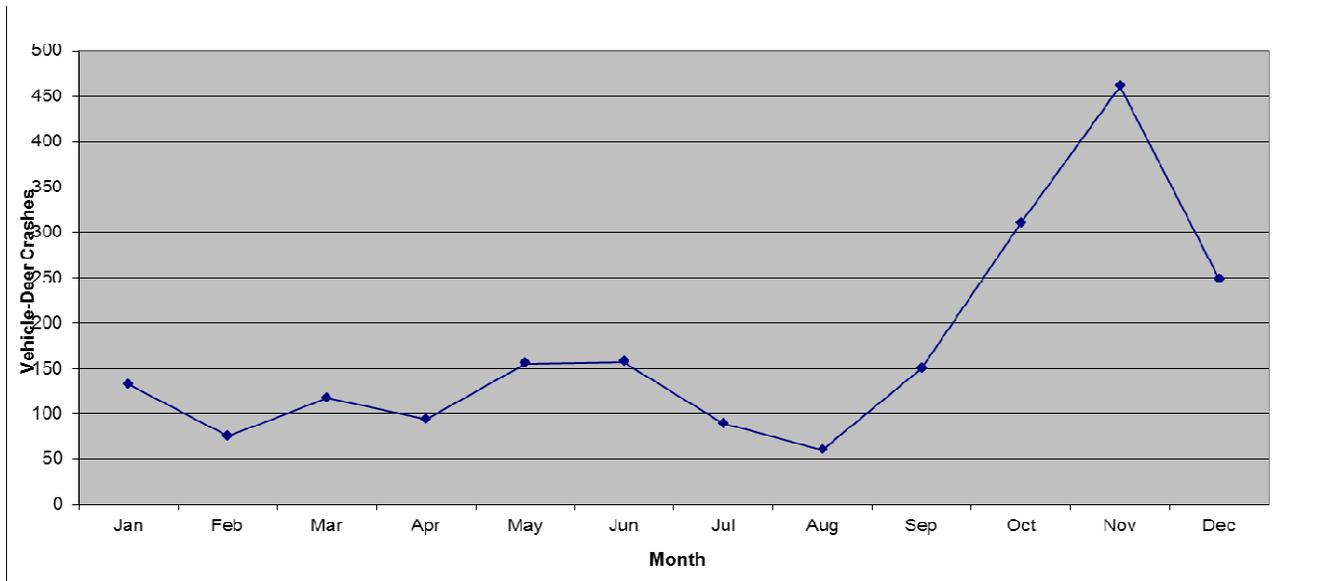
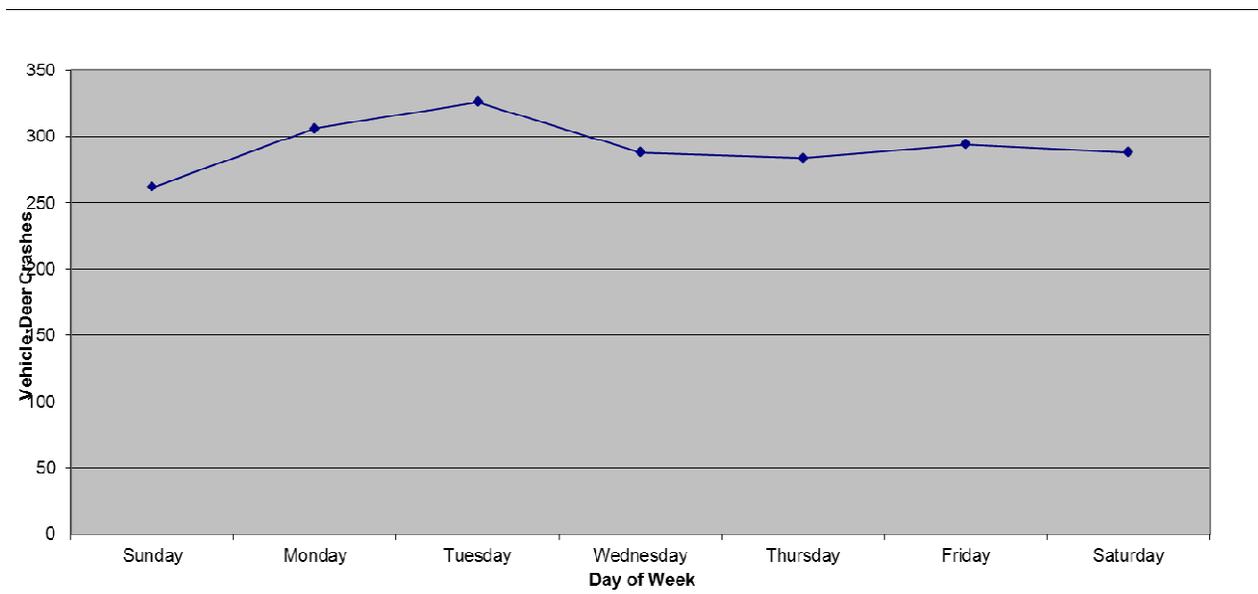


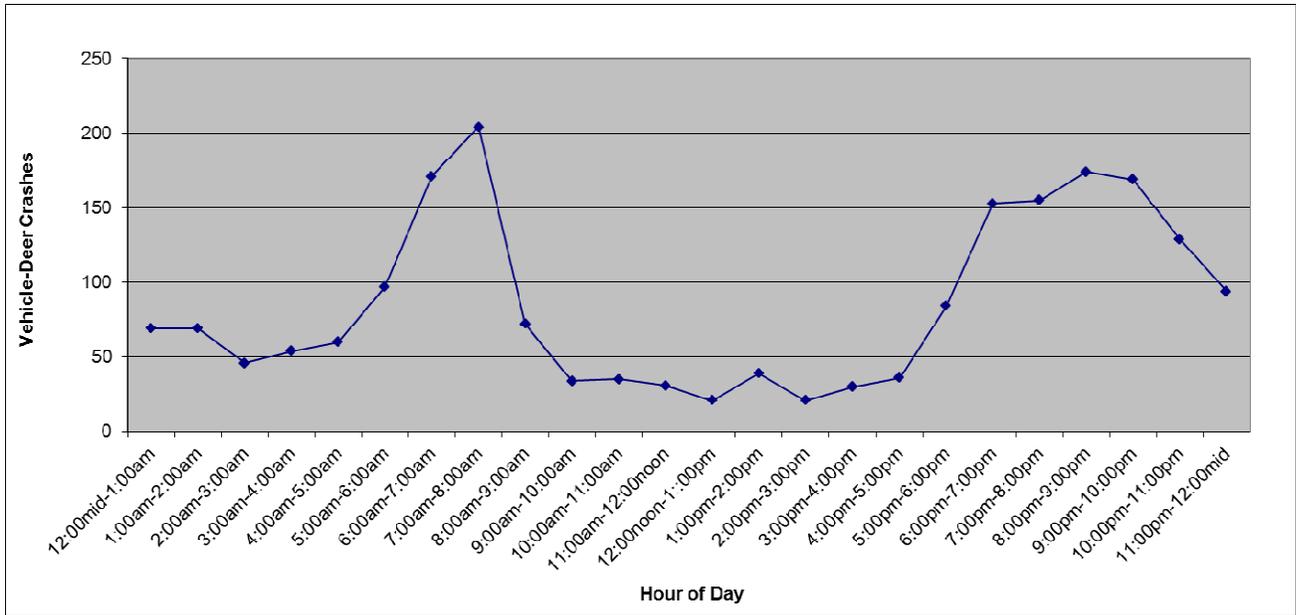
Figure 30 **Vehicle-Deer Traffic Crashes by Day of Week in 2011**



Source: www.michigantrafficcrashfacts.org

Figure 31 shows that deer crashes were most likely to occur during early mornings and early evenings, and much fewer deer crashes occurred between 9 am and 5 pm.

Figure 31 **Vehicle-Deer Traffic Crashes by Hour of Day in 2011**

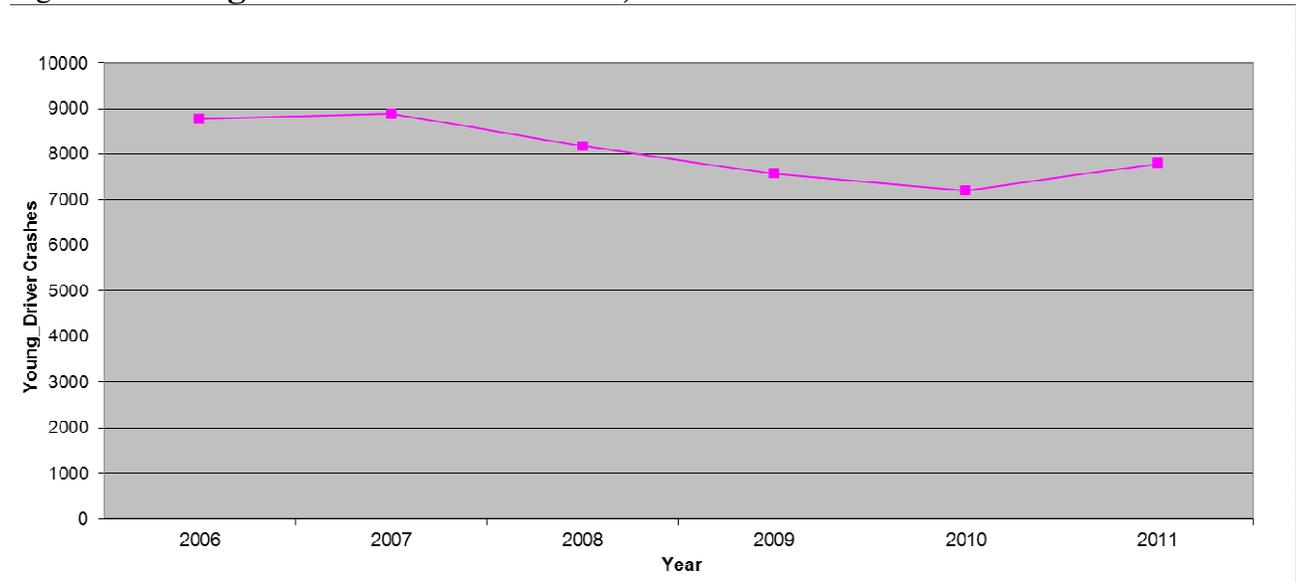


Source: www.michigantrafficcrashfacts.org

Young-Driver Traffic Crashes

A young driver is defined as a driver whose age is between 16 and 24. Figure 32 shows the young-driver crashes from 2006 to 2011 in GVMC area, down from 8,778 in 2006 to 7,789 in 2011. Table 10 shows the percentage of young-driver traffic crashes for 2006-2011.

Figure 32 **Young-Driver Traffic Crashes, 2006-2011**



Source: www.michigantrafficcrashfacts.org

Table 10 **Percentages of Young-Driver Traffic Crashes, 2006-2011**

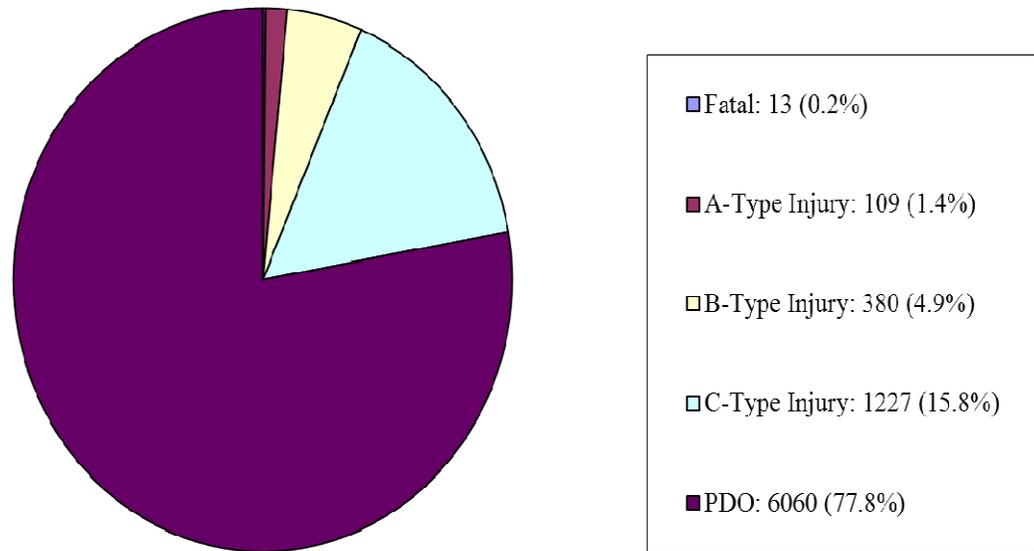
Year	Young-Driver Traffic Crashes	All Traffic Crashes	Percentage of Young-Driver Traffic Crashes
2006	8,778	21,283	41.2%
2007	8,891	22,111	40.2%
2008	8,180	21,681	37.7%
2009	7,563	19,586	38.6%
2010	7,204	18,771	38.4%
2011	7,789	19,843	39.3%

Source: www.michigantrafficcrashfacts.org

Young-Driver Traffic Crashes by Severity

Figure 33 shows the distribution of traffic crashes severity involving young driver in 2011. Table 11 indicates young driver traffic crashes accounted for a significantly large portion of fatal and injured crashes .

Figure 33 Young-Driver Traffic Crashes Severity in 2011



Source: www.michigantrafficcrashfacts.org

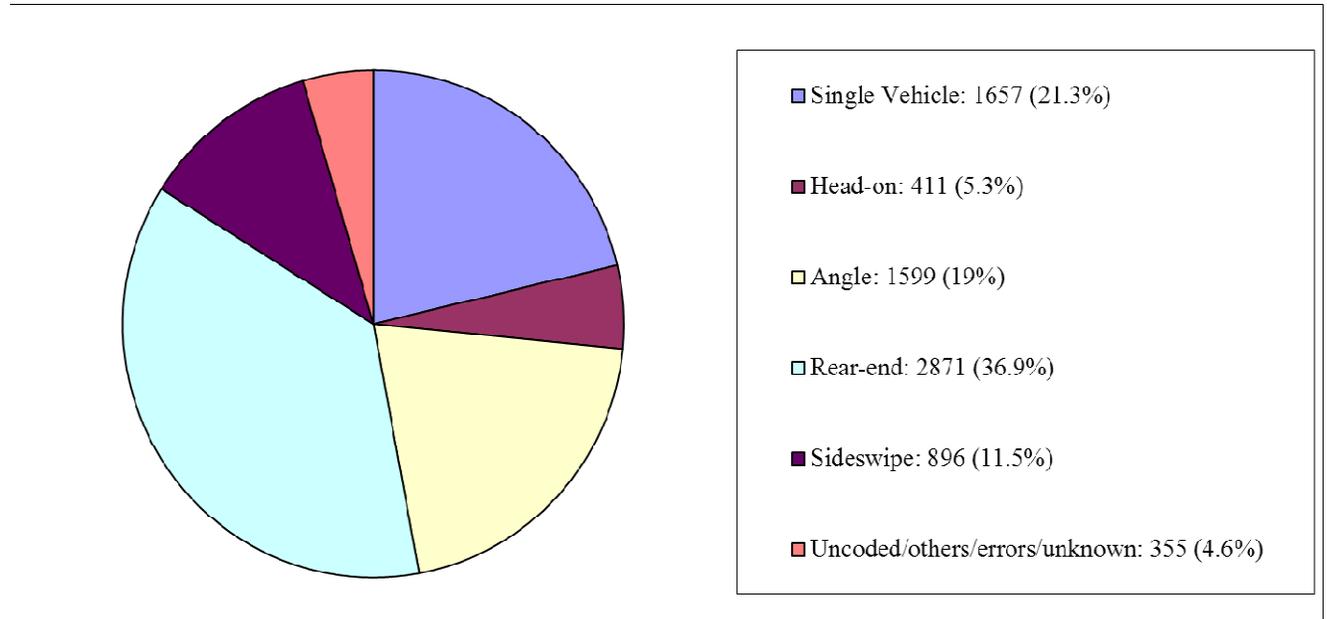
Table 11 Young-Driver Traffic Crash by Severity in 2011

Crash Severity	Young-Driver Traffic Crashes	All Traffic Crashes	Young-Driver Percentage
Fatal	13	40	32.5%
A-Type Injury	109	276	39.5%
B-Type Injury	380	866	43.9%
C-Type Injury	1,227	2,884	42.5%
PDO	6,060	15,777	38.4%
Total	7,789	19,843	39.3%

Source: www.michigantrafficcrashfacts.org

Figure 34 below shows that young drivers were more likely to have rear-end, single vehicle and angle crashes, and less likely to have sideswipe and head-on crashes.

Figure 34 **Young-Driver Traffic Crashes by Crash Type in 2011**



Source: www.michigantrafficcrashfacts.org

Young-Driver Traffic Crashes by Month, Day and Hour

As shown in Figure 35, young-driver crashes were more likely to occur in January than any other months in 2011.

Figure 35 **Young-Driver Traffic Crashes by Month in 2011**

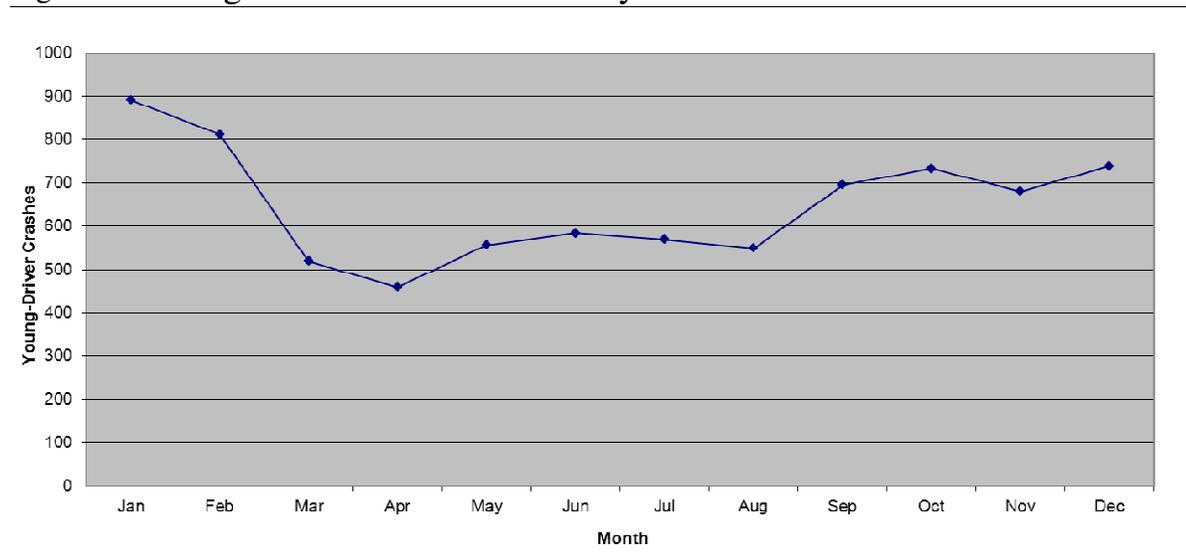
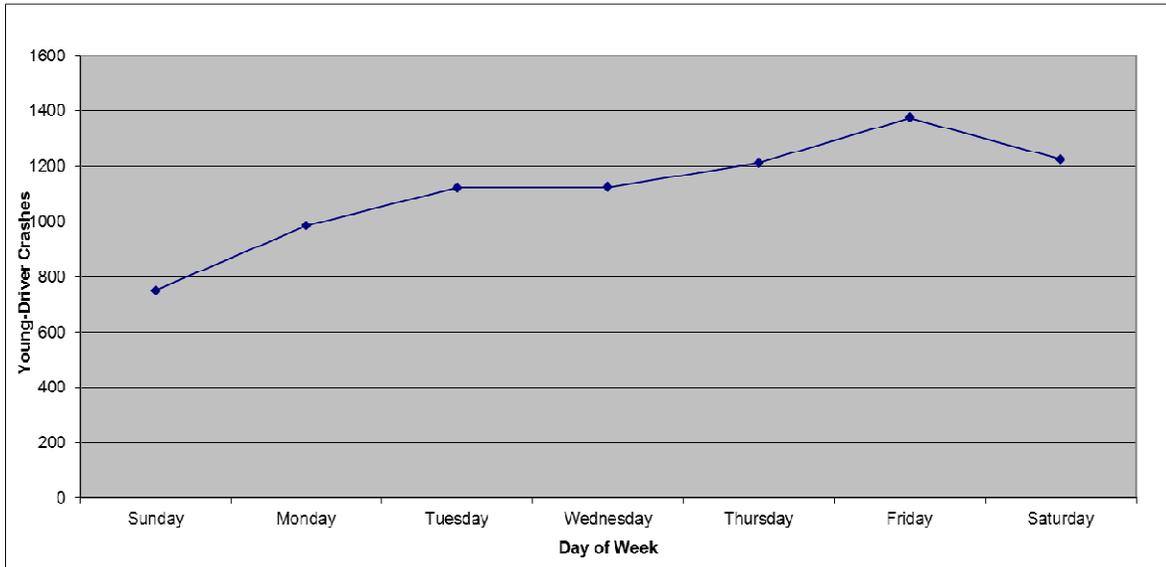


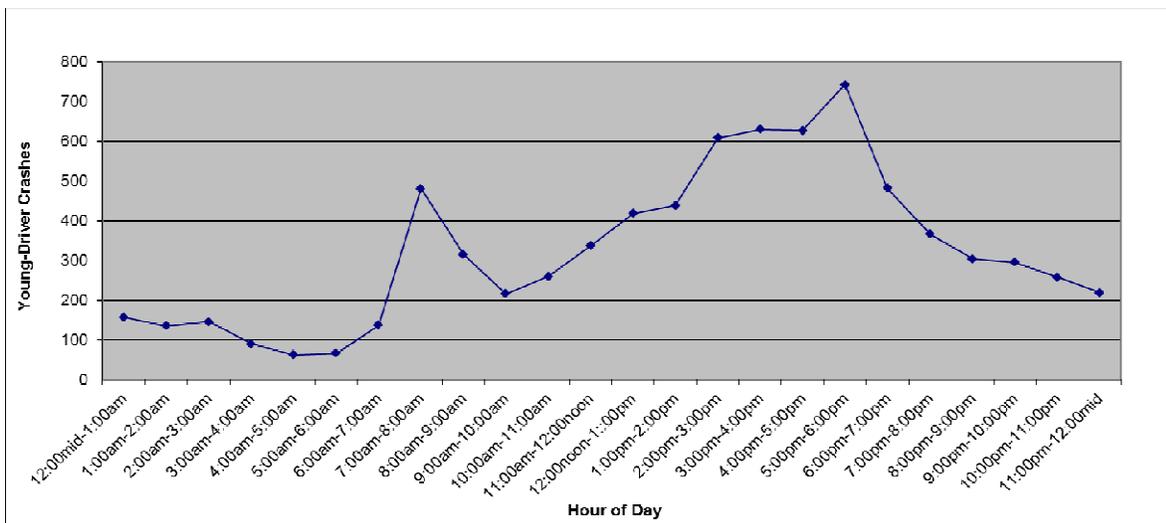
Figure 36 shows that Fridays had the most young-driver traffic crashes, and Sundays had the least crashes in 2011. Figure 37 shows that young –driver crashes were more likely to occur during afternoon, and were less likely to occur during early morning.

Figure 36 **Young-Driver Traffic Crashes by Day of Week in 2011**



Source: www.michigantrafficcrashfacts.org

Figure 37 **Young-Driver Traffic Crashes by Hour of Day in 2011**

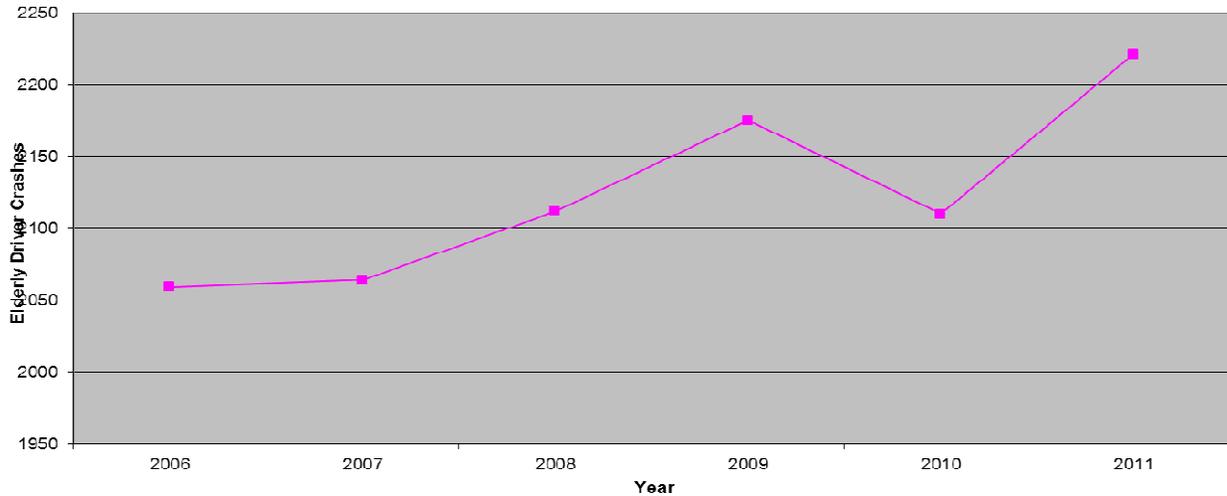


Source: www.michigantrafficcrashfacts.org

Elderly Driver Traffic Crashes

Elderly Driver is defined as a driver aging 65 or over. Figure 38 shows increasing trend in elderly driver traffic crashes between 2006 and 2011, with the exception of 2010. Table 12 shows the percentages of elderly driver crashes from 2006 to 2011.

Figure 38 **Elderly Driver Traffic Crashes, 2006-2011**



Source: www.michigantrafficcrashfacts.org

Table 12 **Percentages of Elderly Driver Traffic Crashes, 2006-2011**

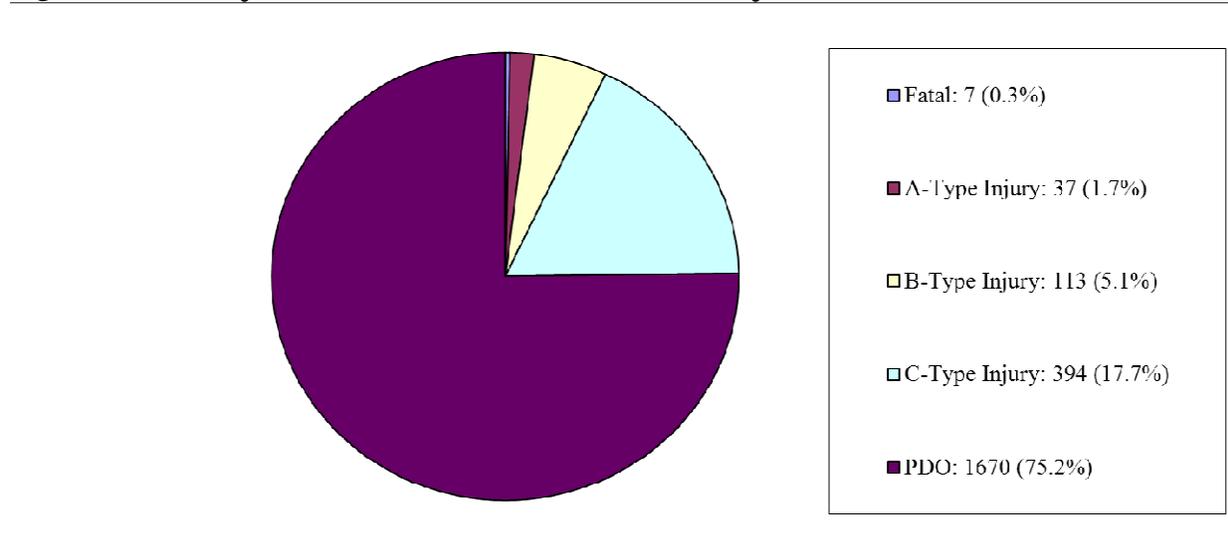
Year	Elderly Driver Traffic Crashes	All Traffic Crashes	Percentage of Elderly Driver Traffic Crashes
2006	2059	21283	9.7%
2007	2064	22111	9.3%
2008	2112	21681	9.7%
2009	2175	19586	11.1%
2010	2110	18771	11.2%
2011	2221	19843	11.2%

Source: www.michigantrafficcrashfacts.org

Elderly Driver Traffic Crashes by Severity

Figure 39 shows the distribution of traffic crash severity involving elderly driver in 2011. As shown in Table 13, fatal crashes caused by elderly driver accounted for 26.3 percent in all fatal traffic crashes in 2011.

Figure 39 Elderly Driver Traffic Crashes Severity in 2011



Source: www.michigantrafficcrashfacts.org

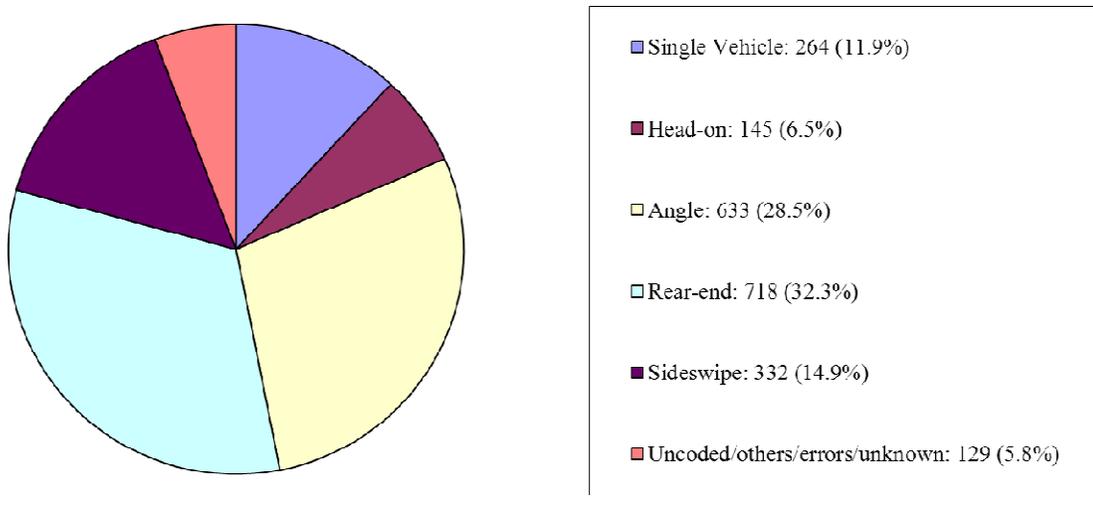
Table 13 Elderly Driver Traffic Crash by Severity in 2011

Crash Severity	Elderly-Driver Traffic Crashes	All Traffic Crashes	Elderly-Driver Percentage
Fatal	7	40	17.5%
A-Type Injury	37	276	13.4 %
B-Type Injury	113	866	13%
C-Type Injury	394	2,884	13.7%
PDO	1,670	15,777	10.6%
Total	2,221	19,843	11.2%

Source: www.michigantrafficcrashfacts.org

Figure 40 shows that elderly driver were most likely to have rear-end crashes, and were least likely to have head-on crashes.

Figure 40 Elderly Driver Traffic Crashes by Crash Type in 2011

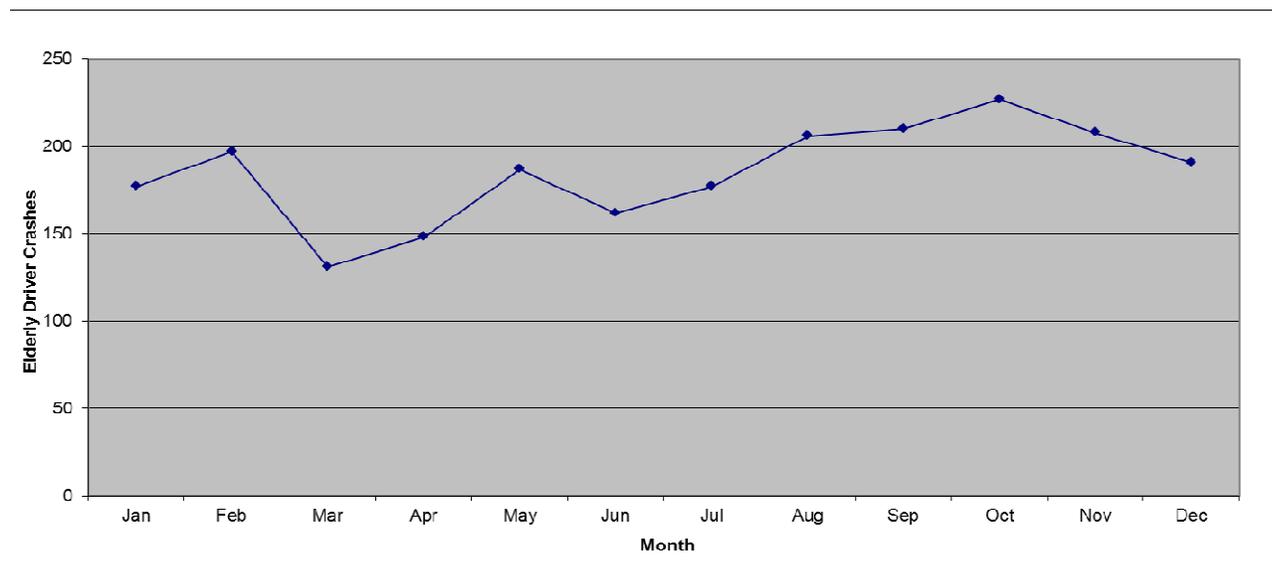


Source: www.michigantrafficcrashfacts.org

Elderly Driver Traffic Crashes by Month, Day and Hour

As shown in Figure 41, elderly driver traffic crashes were more likely to occur in October, and were less likely to occur in March.

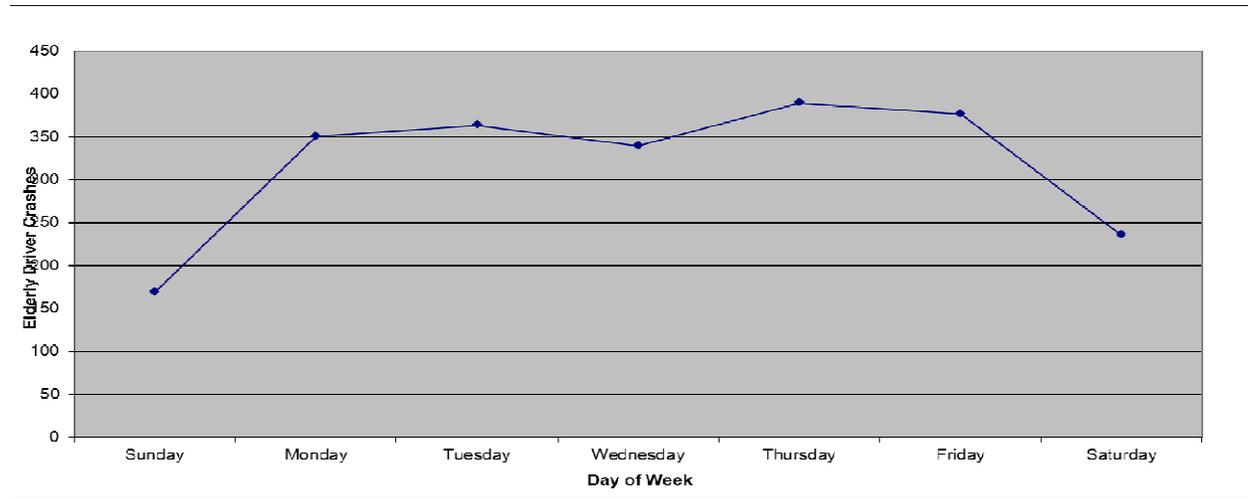
Figure 41 Elderly Driver Traffic Crashes by Month in 2011



Source: www.michigantrafficcrashfacts.org

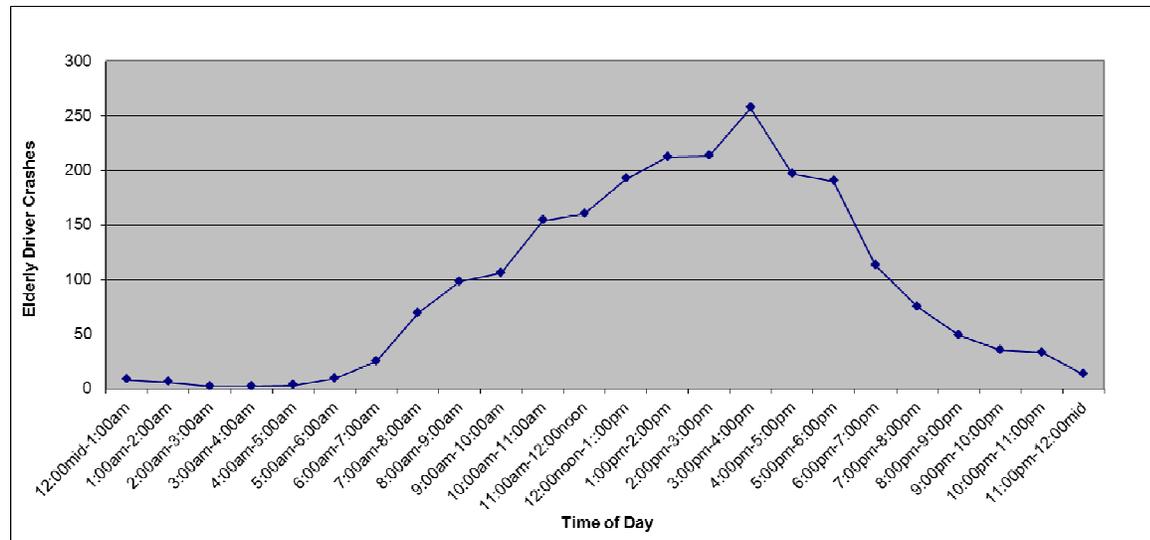
Figure 42 and Figure 43 show Elderly driver traffic crashes by Day of Week, and by Hour of Day, respectively.

Figure 42 Elderly Driver Traffic Crashes by Day of Week in 2011



Source: www.michigantrafficcrashfacts.org

Figure 43 Elderly Driver Traffic Crashes by Hour of Day in 2011

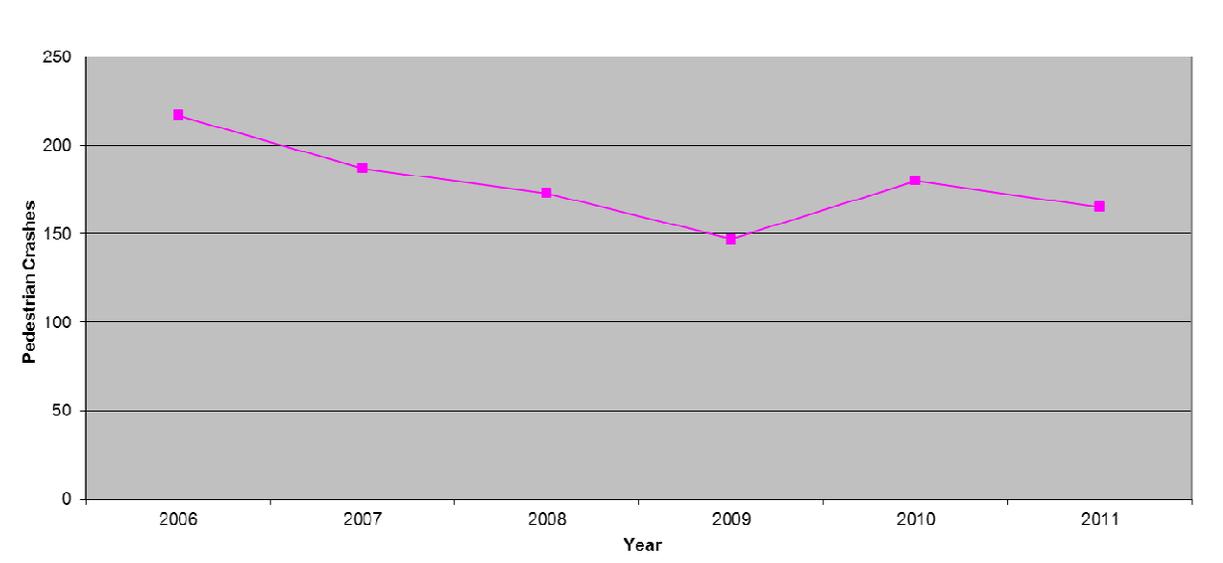


Source: www.michigantrafficcrashfacts.org

Pedestrian Traffic Crashes

As shown in Figure 44, there was a 24 percent decrease of pedestrian traffic crashes between 2006 and 2011 in GVMC area, down from 217 in 2006 to 165 in 2011. Figure 45 and Table 13 show pedestrian traffic crashes by severity in 2011.

Figure 44 **Pedestrian Traffic Crashes, 2006-2011**



Source: www.michigantrafficcrashfacts.org

Pedestrian Traffic Crashes by Severity

Figure 45 **Pedestrian Traffic Crashes by Severity in 2011**

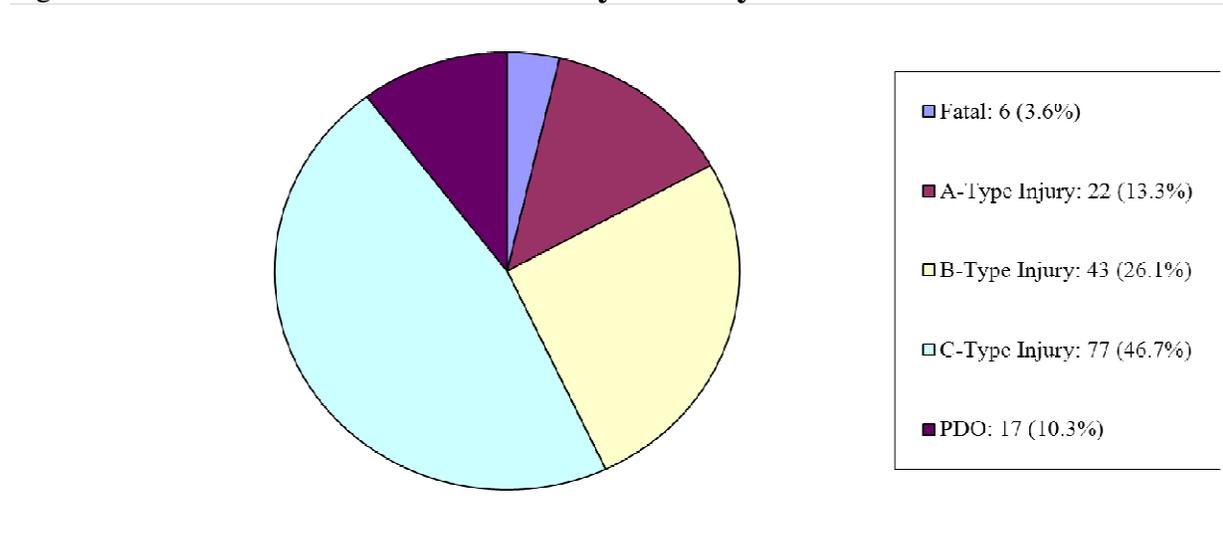


Table 13 **Pedestrian Traffic Crash by Severity in 2011**

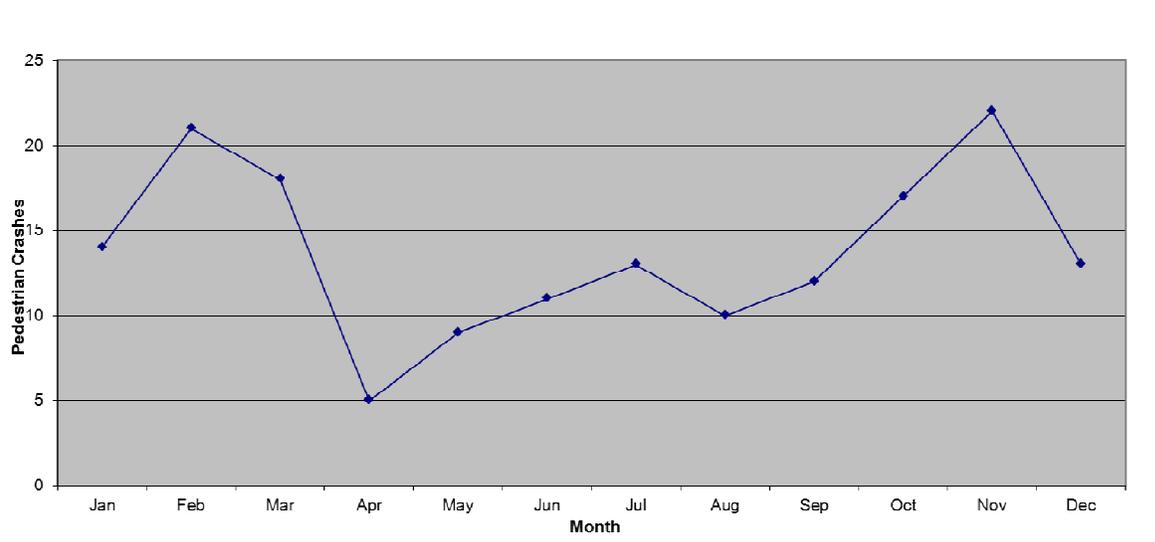
Crash Severity	Pedestrian Traffic Crashes	All Traffic Crashes	Pedestrian Crashes Percentage
Fatal	6	40	15 %
A-Type Injury	22	276	8%
B-Type Injury	43	866	5%
C-Type Injury	77	2,884	2.7%
PDO	17	15,777	0.1%
Total	165	19,843	0.8%

Source: www.michigantrafficcrashfacts.org

Pedestrian Traffic Crashes by Month, Day and Hour

Figure 46 shows pedestrian traffic crashes were more likely to occur on November than any other months in 2011.

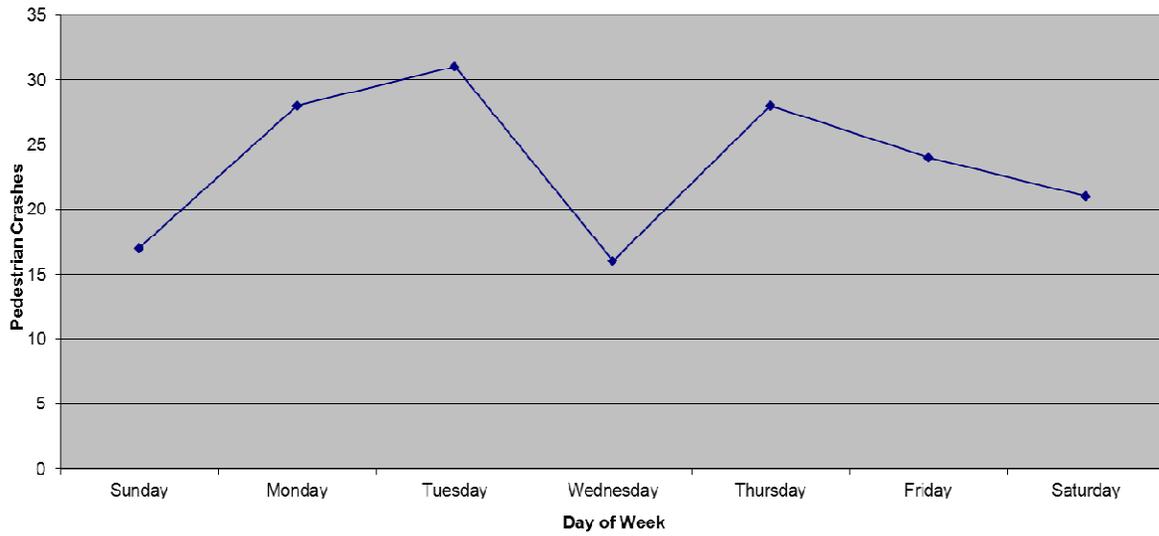
Figure 46 **Pedestrian Traffic Crashes by Month in 2011**



Source: www.michigantrafficcrashfacts.org

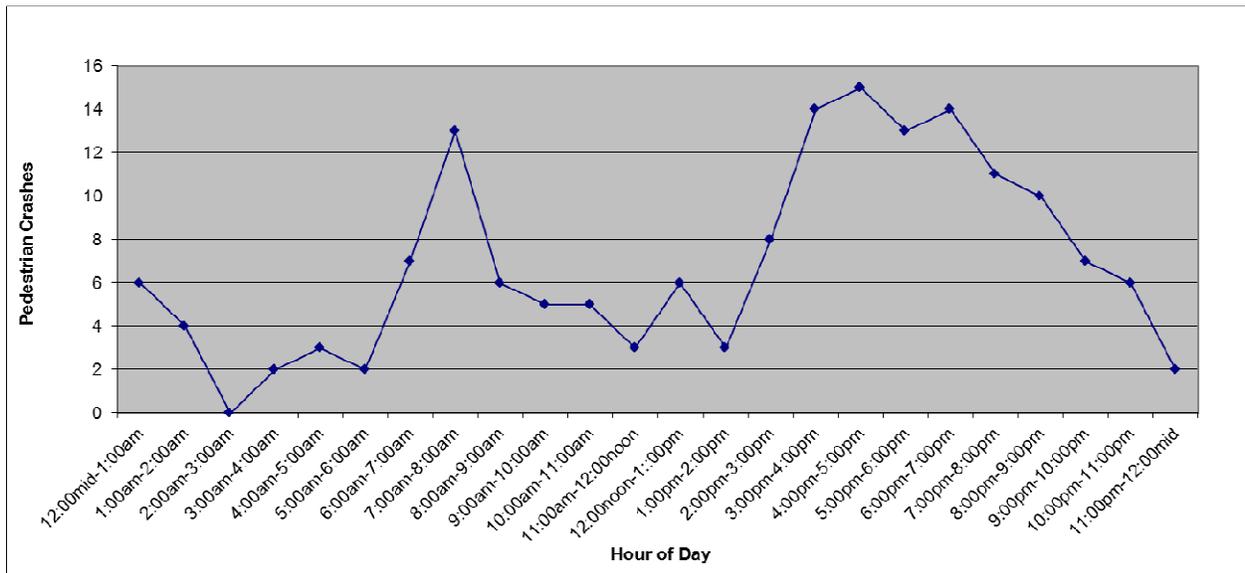
It can be seen from Figure 47 that Thursdays had the most pedestrian crashes and Wednesdays the fewest. As shown in Figure 48, pedestrian crashes were most likely to occur between 4:00pm to 5:00pm in 2011.

Figure 47 **Pedestrian Traffic Crashes by Day of Week in 2011**



Source: www.michigantrafficcrashfacts.org

Figure 48 **Pedestrian Traffic Crashes by Hour of Day in 2011**

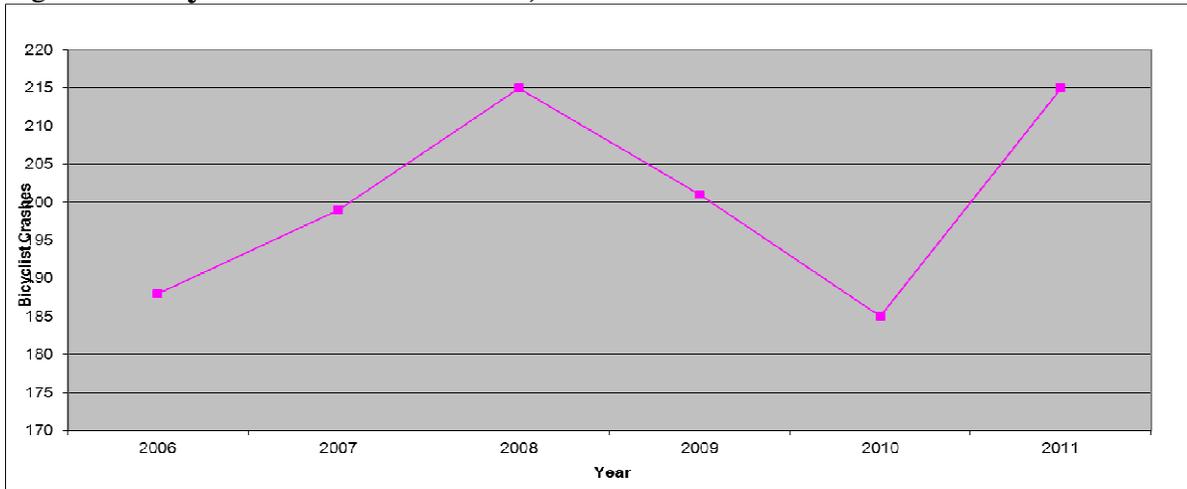


Source: www.michigantrafficcrashfacts.org

Bicyclist Traffic Crashes

Figure 49 shows bicyclist traffic crashes between 2006 and 2011. Although there was a decrease from 2008 to 2010, the number of bicyclist crashes was the highest in 2011.

Figure 49 **Bicyclist Traffic Crashes, 2006-2011**

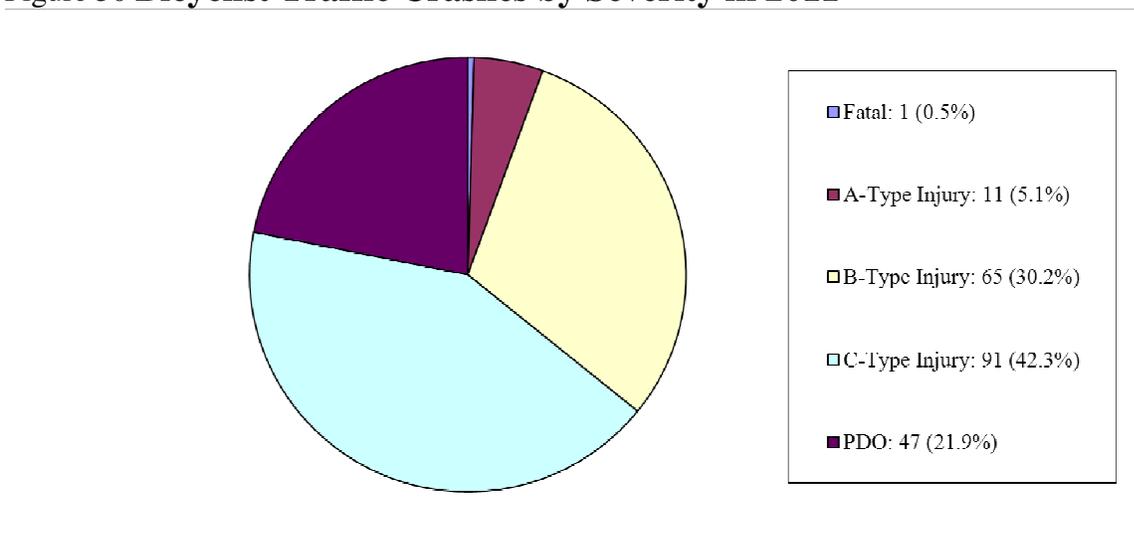


Source: www.michigantrafficcrashfacts.org

Bicyclist Traffic Crashes by Severity

Figure 50 indicates that bicyclists are easily to be injured when involved in traffic crashes, since PDO only accounted for 21.9 percent of all bicyclist traffic crashes. Table 14 shows the distribution of bicyclist severity in 2011.

Figure 50 **Bicyclist Traffic Crashes by Severity in 2011**



Source: www.michigantrafficcrashfacts.org

Table 14 **Bicyclist Traffic Crash by Severity in 2011**

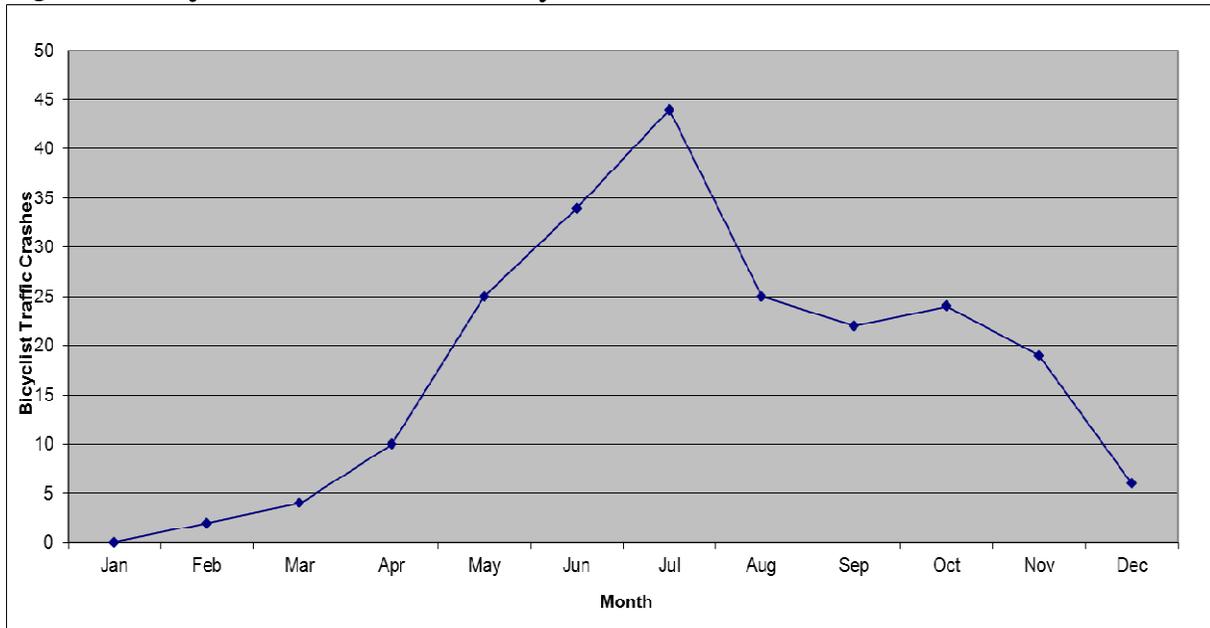
Crash Severity	Bicyclist Traffic Crashes	All Traffic Crashes	Bicyclist Crashes Percentage
Fatal	1	40	2.5 %
A-Type Injury	11	276	2.9%
B-Type Injury	65	866	7.5%
C-Type Injury	91	2,884	3.2%
PDO	47	15,777	0.29%
Total	215	19,843	1.1%

Source: www.michigantrafficcrashfacts.org

Bicyclist Traffic Crashes by Month, Day and Hour

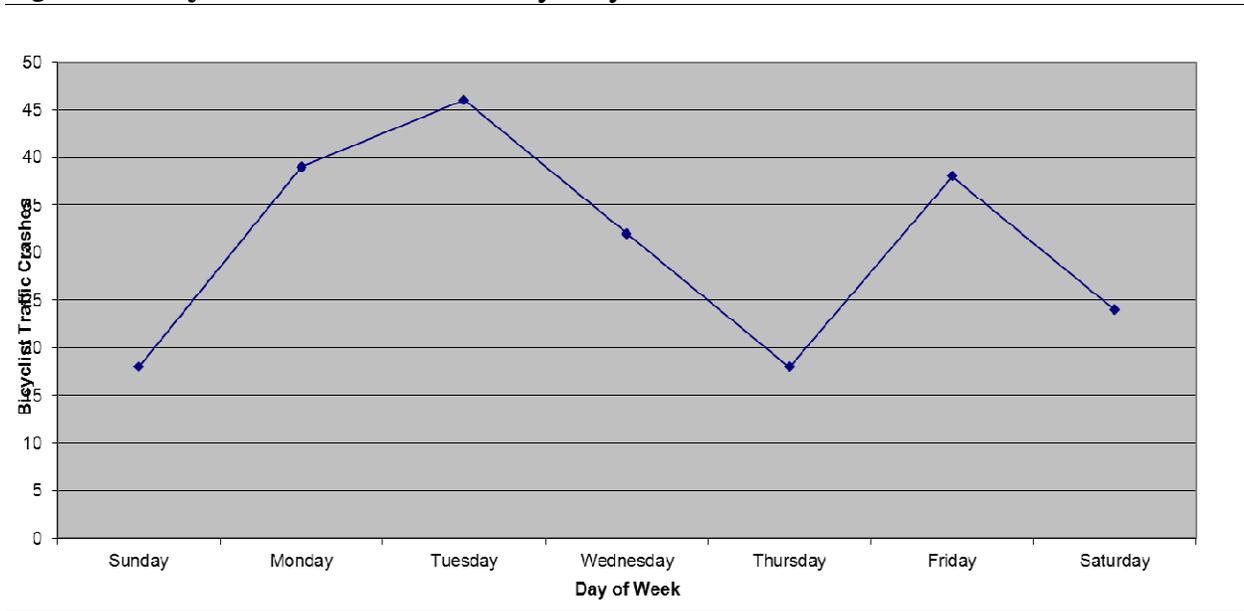
As shown in Figure 51, bicyclist traffic crashes were more likely to occur during summer time and least likely to occur during winter season due to the harsh weather condition. Figure 52 shows weekdays had more bicyclist traffic crashes than weekends.

Figure 51 **Bicyclist Traffic Crashes by Month in 2011**



Source: www.michigantrafficcrashfacts.org

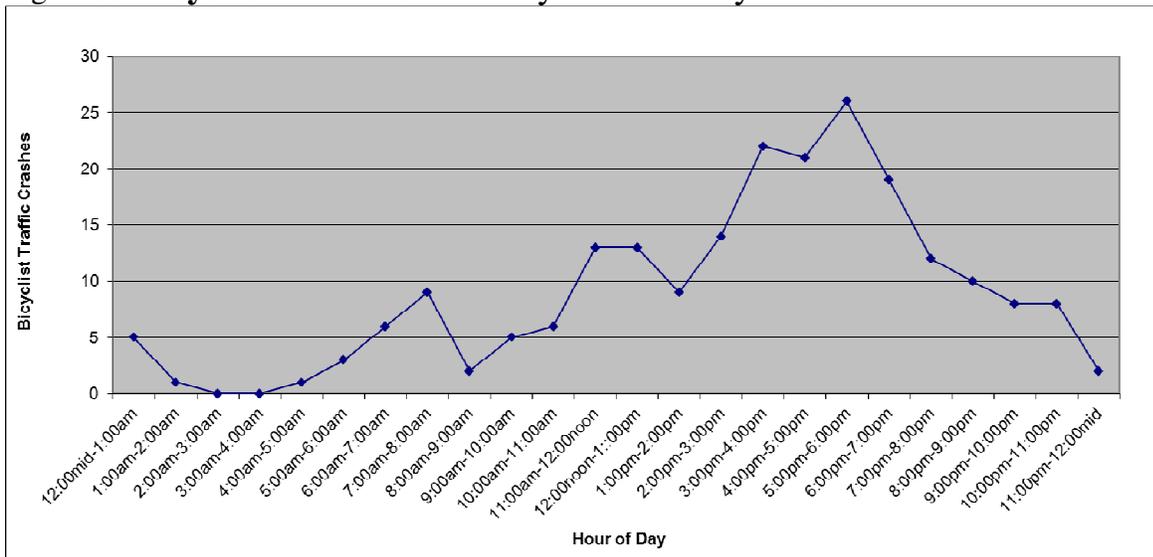
Figure 52 **Bicyclist** Traffic Crashes by Day of Week in 2011



Source: www.michigantrafficcrashfacts.org

It can be seen from Figure 53 that bicyclist traffic crashes were more likely to take place during late afternoon and early evening.

Figure 53 **Bicyclist** Traffic Crashes by Hour of Day in 2011

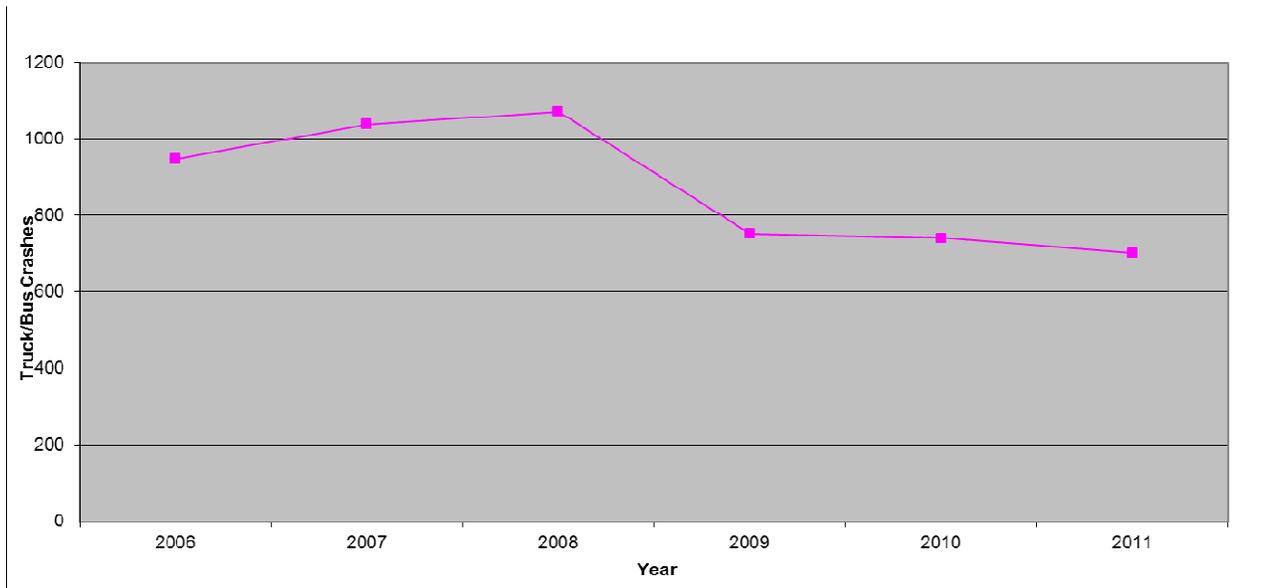


Source: www.michigantrafficcrashfacts.org

Truck/Bus Traffic Crashes

Figure 54 shows the decrease trend of truck/bus crashes from 2008 to 2011 in GVMC area, despite of slight increase in 2007 and 2008.

Figure 54 **Truck/Bus Traffic Crashes, 2006-2011**

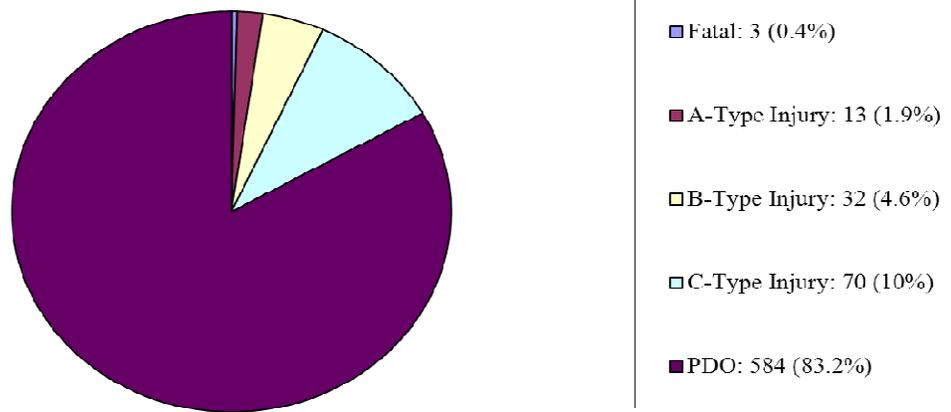


Source: www.michigantrafficcrashfacts.org

Truck/Bus Traffic Crashes by Severity

Figure 55 shows truck/bus traffic crashes by severity in 2011. Most of the crashes were PDO crash (83.2%). As shown in Table 15, fatalities and A-type injuries in truck/bus crashes accounted for 7 percent of all traffic crashes, respectively.

Figure 55 **Truck/Bus Traffic Crashes by Severity in 2011**



Source: www.michigantrafficcrashfacts.org

Table 15 **Truck/Bus Traffic Crash by Severity in 2011**

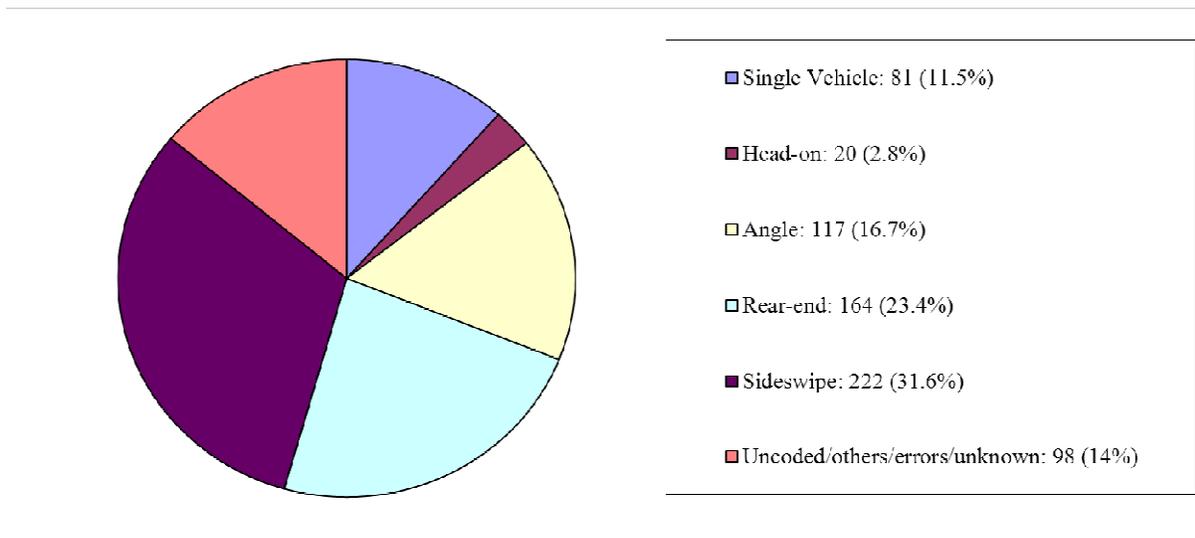
Crash Severity	Truck/Bus Traffic Crashes	All Traffic Crashes	Truck/Bus Crashes Percentage
Fatal	3	40	7.5%
A-Type Injury	13	276	4.7%
B-Type Injury	32	866	3.7%
C-Type Injury	70	2,884	2.4%
PDO	584	15,777	3.7%
Total	702	19,843	3.5%

Source: www.michigantrafficcrashfacts.org

Truck/Bus Traffic Crashes by Crash Type

Figure 56 shows the crash type distribution of truck/bus crashes. It can be seen that sideswipe accounted for more truck/bus crashes (31.6%) than any other crash type in 2011, and head-on were the fewest crash type (2.8%).

Figure 56 **Truck/Bus Traffic Crashes by Crash Type in 2011**

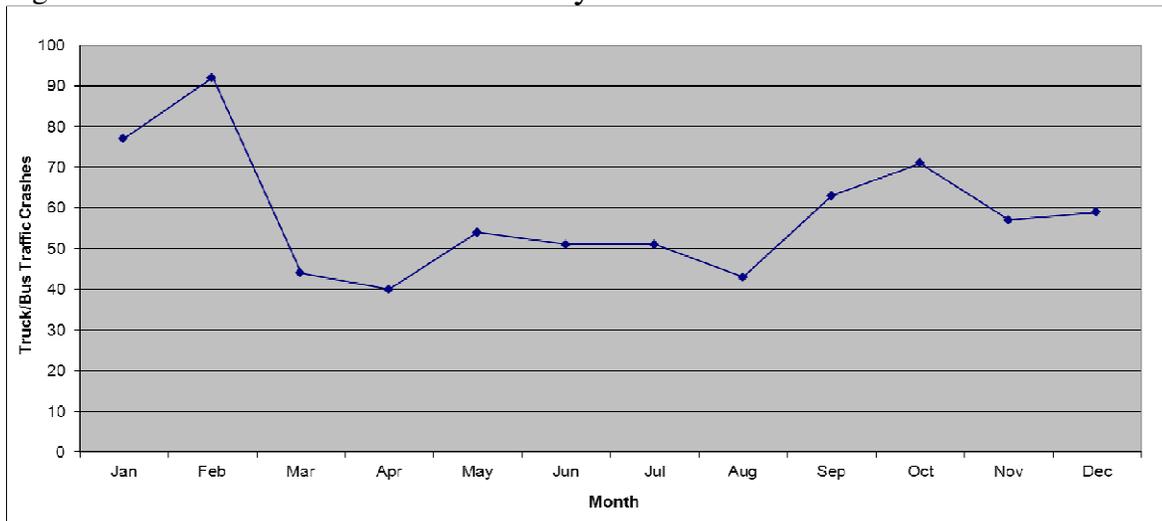


Source: www.michigantrafficcrashfacts.org

Truck/Bus Traffic Crashes by Month, Day and Hour

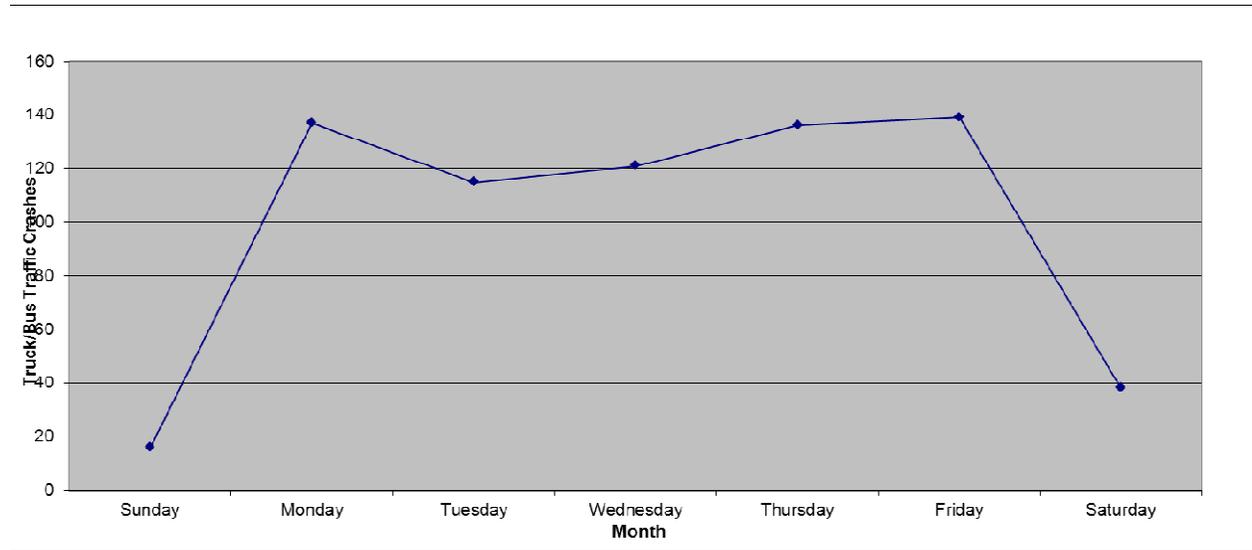
Figure 57 shows that truck/bus crashes were more likely to take place in February, and less likely to occur in April.

Figure 57 **Truck/Bus Traffic Crashes by Month in 2011**



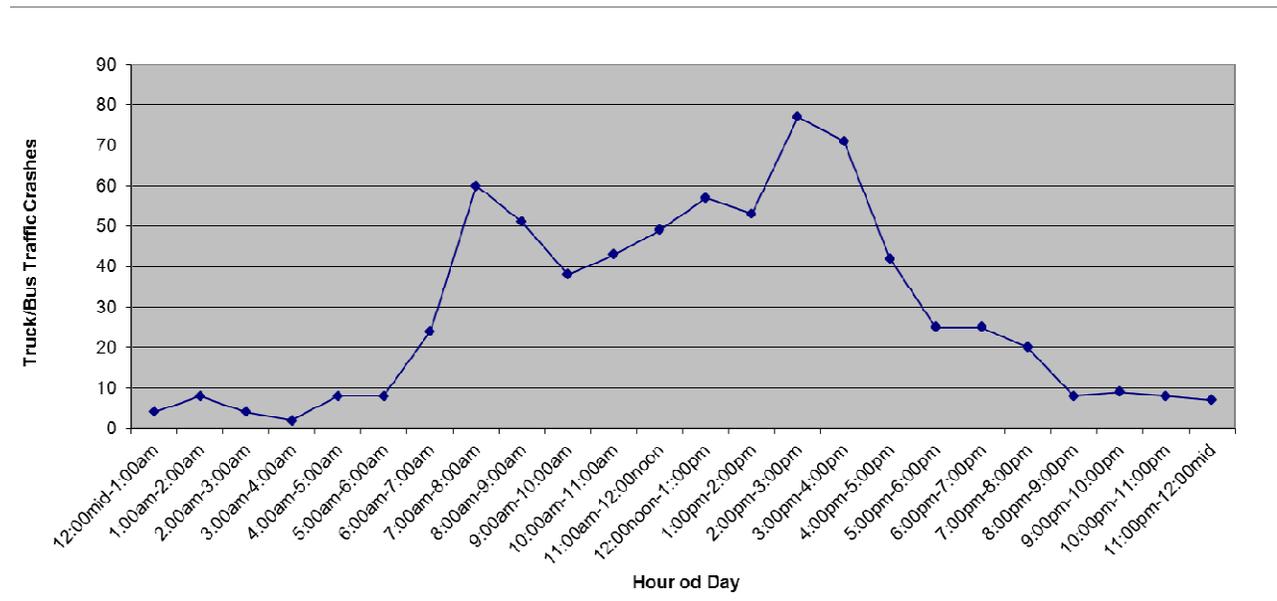
Source: www.michigantrafficcrashfacts.org

Figure 58 **Truck/Bus** Traffic Crashes by Day of Week in 2011



Source: www.michigantrafficcrashfacts.org

Figure 59 **Truck/Bus** Traffic Crashes by Hour of Day in 2011



Source: www.michigantrafficcrashfacts.org

Appendix: 2009-2011 Top 50 Crash intersections and Segments

Table 15 2009-2011 Top 50 Crash Intersections

Rank	Street	Cross Street	Total Crashes	Fatal	Injury	PDO	EPDO	Modified EPDO
1	28th St	Breton	158	0	27	131	1,422	206,822
2	Eastern Ave	28th St	156	1	37	118	2,695	204,204
3	E Beltline Ave	28th St	151	0	40	111	1,359	197,659
4	N I 296/Alpine RAMP	Alpine Ave	132	0	24	108	1,188	172,788
5	S Division Ave	28th St	123	0	30	93	1,107	161,007
6	Michigan St	Ottawa Ave	123	0	19	104	1,107	161,007
7	East Paris Ave	28th St	117	0	14	103	1,053	153,153
8	28th St SE	Kalamazoo Ave	115	0	16	99	1,035	150,535
9	Fuller Ave	Michigan St	112	0	21	91	1,008	146,608
10	Alpine Ave	4 Mile Rd	110	0	25	85	990	143,990
11	Breton Rd	44th St	109	0	29	80	981	142,681
12	Lake Eastbrook Blvd	E Beltline Ave	108	0	17	91	972	141,372
13	44th St	S Division Ave	107	0	34	73	963	140,063
14	Clyde Park Ave	28th St SW	106	0	23	83	954	138,754
15	Center Dr NW	Alpine Ave	103	0	21	82	927	134,827
16	Byron Center Ave	44th St	99	0	24	75	891	129,591
17	Kalamazoo Ave	44th St SE	96	0	23	73	864	125,664
18	28th St	Radcliff Ave	91	0	16	75	819	119,119
19	Wilson Ave NW	Lake Michigan Dr	89	0	14	75	801	116,501
20	44th St SE &	Eastern Ave	85	0	31	54	765	111,265
21	Fuller Ave	Leonard St	83	0	14	69	747	108,647
22	52nd St	Eastern Ave	83	1	20	62	2038	108,647
23	Alpine Ave	3 Mile Rd	82	0	18	64	738	107,338
24	Coventry Dr	Alpine Ave	81	0	21	60	729	106,029
25	Canal Ave	44th St	80	0	16	64	720	104,720
26	Clyde Park Ave	44th St	80	0	16	64	720	104,720
27	Buchanan Ave	28th St	79	0	16	63	711	103,411
28	28th St	Burlingame Ave	79	0	12	67	711	103,411
29	Leonard St	Scribner Ave	79	0	21	58	711	103,411
30	44th St	Ivanrest Ave	78	0	11	67	702	102,102
31	Cottonwood Dr	Baldwin St	78	0	26	52	702	102,102
32	28th St	Patterson Ave	77	0	11	66	693	100,793
33	E Beltline Ave	Burton St	76	0	14	62	684	99,484
34	Kingsbury St	Alpine Ave	74	0	14	60	666	96,866
35	Alpine Ave NW	Center Dr NW	74	0	17	57	666	96,866

Table 15 2009-2011 Top 50 Crash Intersections (Cont')

Rank	Street	Cross Street	Total Crashes	Fatal	Injury	PDO	EPDO	Modified EPDO
36	Alpine Ave NW	Henze Dr	73	0	16	57	657	95,557
37	Turner Ave	Leonard St	73	0	12	61	657	95,557
38	E I 96/E 28th RAMP	28th St SE	72	0	10	62	648	94,248
39	Lake Eastbrook Blvd	28th St	72	0	15	57	648	94,248
40	E I 96/Beltline RAMP	E Beltline Ave	71	0	16	55	639	92,939
41	Dehoop Ave	28th St	70	1	13	56	1921	91,630
42	54th St SW	S Division Ave	69	0	26	43	621	90,321
43	Chicago Dr	Main St	68	0	19	49	612	89,012
44	28th St SE	Madison Ave	68	0	15	53	612	89,012
45	Kalamazoo Ave	60th St	66	0	23	43	594	86,394
46	N US 131/Wealthy RAMP	Wealthy St	65	0	9	56	585	85,085
47	Cannonsburg Rd	Northland Dr	65	0	15	50	585	85,085
48	E Beltline Ave	& Burton St	63	0	17	46	567	82,467
49	Michigan St	College Ave	62	0	7	55	558	81,158
50	Shaffer Ave	28th St	61	1	9	51	1840	79,849

Table 16 2009-2011 Top 50 Segments

Rank	Segment Name	From	To	Length	Crashes	Fatal	Injured	PDO
1	Alpine Ave NW	4 Mile Rd	Alpenhorn Dr	0.436	152	0	51	101
2	28th St	Lake Eastbrook Blvd	East Paris Ave	0.325	136	0	20	116
3	Alpine Ave	Center Dr	Coventry Dr	0.125	123	0	27	96
4	N I 296/Alpine RAMP	N US 131	Alpine Ave	0.37	122	0	24	98
5	28th StE	Broadmoor Ave	Lake Eastbrook Blvd	0.424	116	0	24	92
6	28th St	Breton Rd	Woodlawn Ave	0.485	106	0	24	82
7	Alpine Ave	Kingsbury St	4 Mile Rd	0.126	103	0	19	84
8	28th St	City/Twp Line	Eastern Ave	0.199	101	1	18	82
9	Alpine Ave	Old Orchard Dr	Kingsbury St	0.102	98	0	35	63
10	28th St	Eastern Ave	Brooklyn Ave	0.461	97	0	25	72
11	28th St	Vineland Ave	Kalamazoo Ave	0.32	93	0	16	77
12	28th St SW	Buchanan Ave	S Division Ave	0.25	93	0	22	71
13	28th St SE	Birchcrest Dr	Breton Rd	0.113	91	0	18	73
14	Alpine Ave	Coventry Dr	Old Orchard Dr	0.207	91	0	15	76
15	E Beltline Ave	Broadmoor Ave	Mall Dr	0.213	86	1	22	63
16	N US 131	N US 131/Wealthy RAMP	Wealthy St SW	0.119	84	0	18	66
17	28th St SW	Hook Ave	Dehoop Ave	0.203	78	0	23	55
18	E I 196	E I 196/1st RAMP	Lane Ave	0.21	77	0	19	58
19	28th St SE	Ridgemoor Dr	Radcliff Ave	0.124	73	0	16	57
20	28th St SE	Radcliff Ave	Shaffer Ave	0.18	72	1	16	55
21	Kalamazoo Ave	Auditorium Dr	60th St SE	0.332	71	0	16	55
22	44th St SE	Applewood Dr	Breton Rd SE	0.289	70	0	18	52
23	E Beltline Ave	Bradford St NE	Leonard St NE	0.498	69	0	14	55
24	28th St SE	Kalamazoo Ave	Chamberlain Ave	0.483	69	0	8	61
25	28th St SE	Plaza Dr	Broadmoor Ave	0.124	68	0	20	48

Table 16 2009-2011 Top 50 Segments (Cont')

Rank	Segment Name	From	To	Length	Crashes	Fatal	Injured	PDO
26	28th St SW	Grand Elk Railroad	Buchanan Ave	0.257	68	0	8	60
27	N US 131	Franklin RAMP	Franklin St	0.13	67	0	20	47
28	28th St SE	Acquest Ave SE	Patterson Ave	0.497	66	1	21	44
29	28th St SE	East Paris Ave	Acquest Ave	0.501	66	0	13	53
30	S US 131	Wealthy St SW	S US 131/Wealthy RAMP	0.188	66	0	19	47
31	E Beltline Ave	Burton Ridge Rd	Burton St	0.118	63	0	9	54
32	Lake Michigan Dr	Ferndale Ave	Wilson Ave	0.187	62	0	9	53
33	28th St SE	Madison Ave SE	Union Ave SE	0.156	61	0	14	47
34	Rivertown Pkwy		Wilson Ave	0.501	61	0	9	52
35	E I 196	Chicago/W I 196	I 196 Crossover	1.04	60	0	16	44
36	28th St SE	Patterson Ave SE	Northern Dr SE	0.272	60	0	17	43
37	W I 96	I 96 Crossover	24th Ave	2.58	60	0	9	51
38	E I 196	Fulton/W I 196 RAMP	Bridge St NW	0.394	59	0	13	46
39	Wilson Ave	Lake Michigan Dr	O Brien Rd	1.001	59	0	11	48
40	N US 131	Franklin St SW	Franklin/N US 131 RAMP	0.17	59	0	10	49
41	Alpine Ave NW	Alpine/W I 96 RAMP	Center Dr	0.092	59	0	9	50
42	28th St SE	W I 96 RAMP	Kraft Ave	0.226	58	0	12	46
43	28th St SW	Tennyson Dr	Clyde Park Ave	0.061	58	0	18	40
44	Baldwin St	Thomas Ave	Cottonwood Dr	0.272	58	0	17	41
45	E Beltline Ave SE	E Mall Dr SE	Lake Eastbrook Blvd	0.175	57	0	6	51
46	Michigan St NE	Monroe Ave	Ottawa Ave	0.112	57	0	10	47
47	54th St SW	Haughey Ave	S Division Ave	0.319	56	0	17	39
48	Fillmore St	Meana Dr	28th Ave	0.96	56	1	10	45
49	Lake Michigan Dr	Wilson Ave	Saint Clair Ave	0.092	55	0	8	47
50	Leonard St NE	Fuller Ave NE	Carlton Ave	0.25	54	0	11	43

