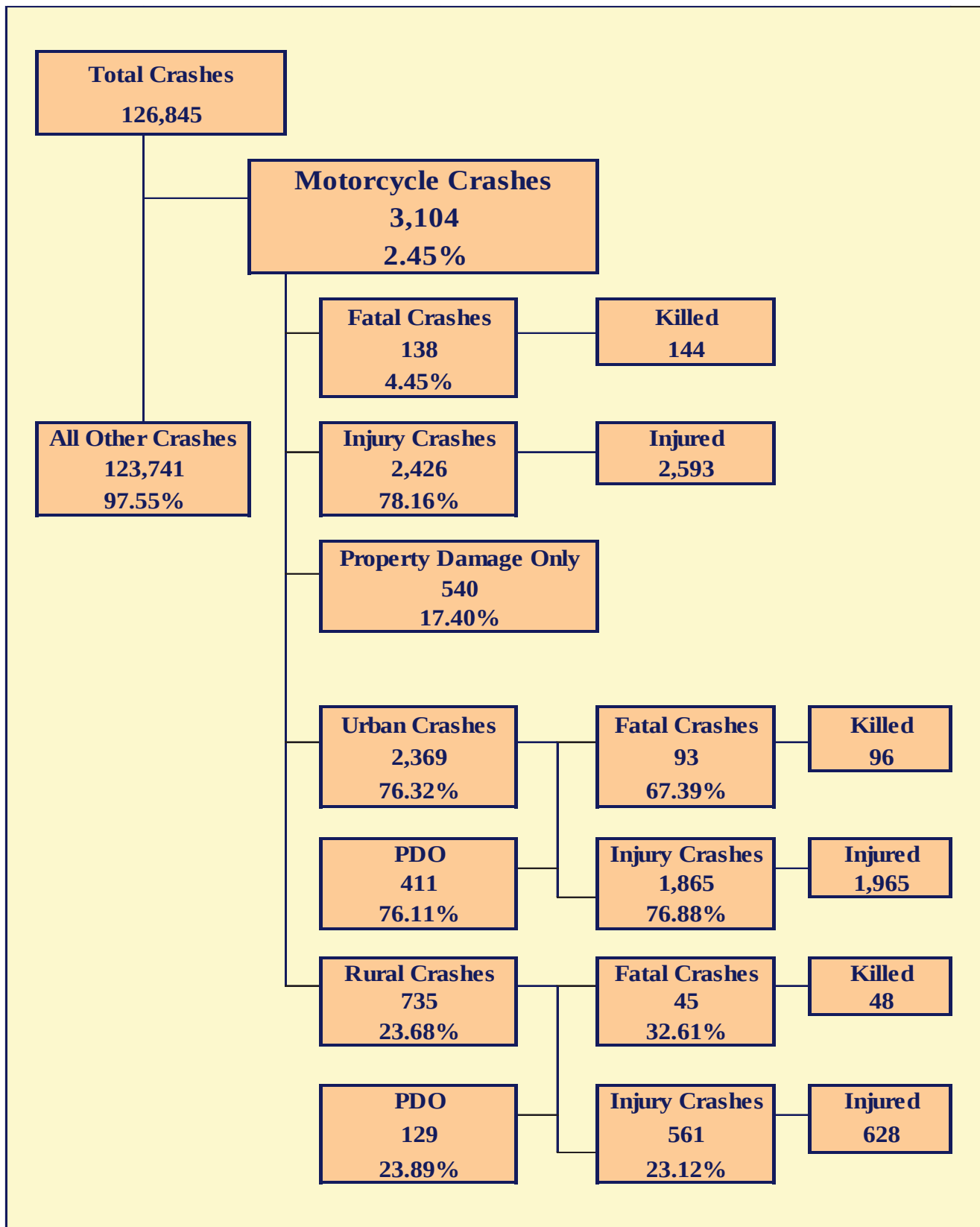




Section 8: – Motorcycle (MC) Crashes

Chart 8 – 1
MC Fatalities by Year

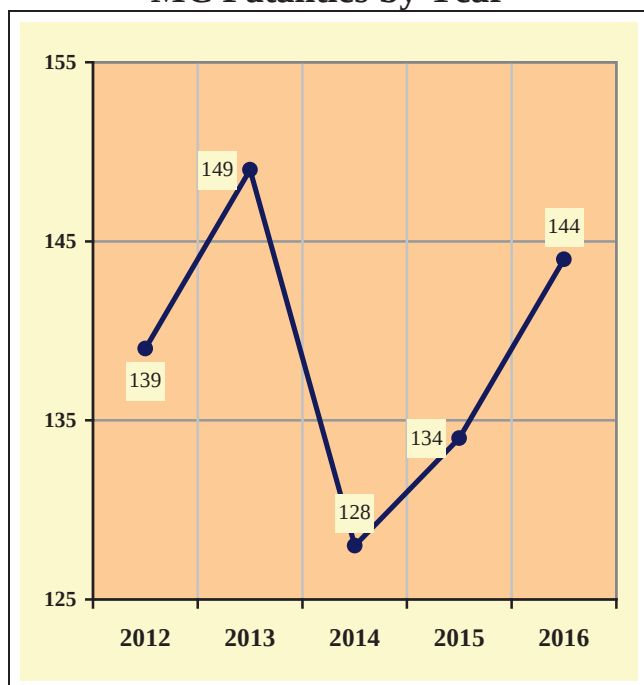
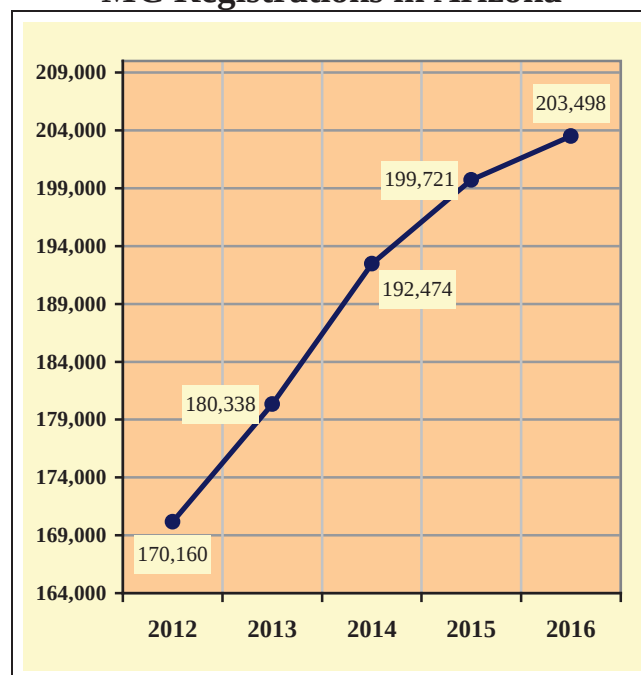


Chart 8 – 2
MC Registrations in Arizona



Total Point-in-Time of Registered Motorcycles at the end of Calendar year 2016.

(Source: MVD - MV988 MV630419 Currently Registered Vehicles by County Listing (motorcycle sub category), reports dated 12/31/16.)

Chart 8 – 3
Fatality Rate per Registered MC

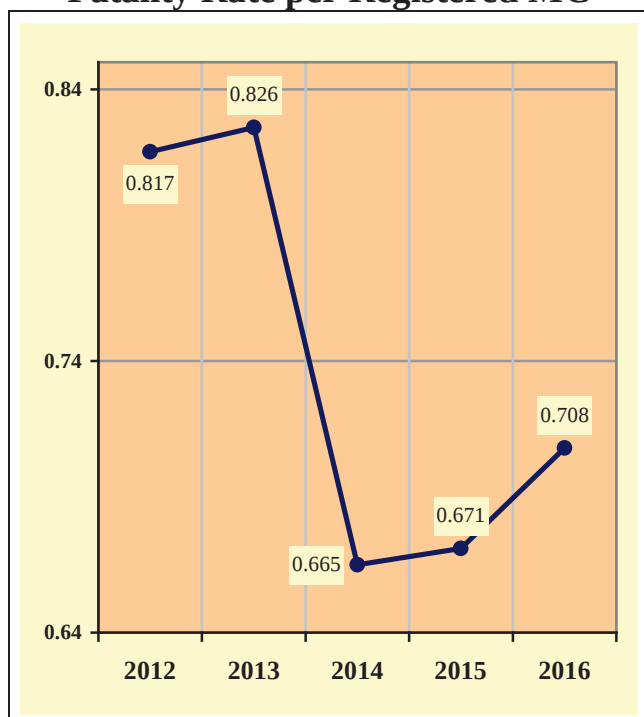
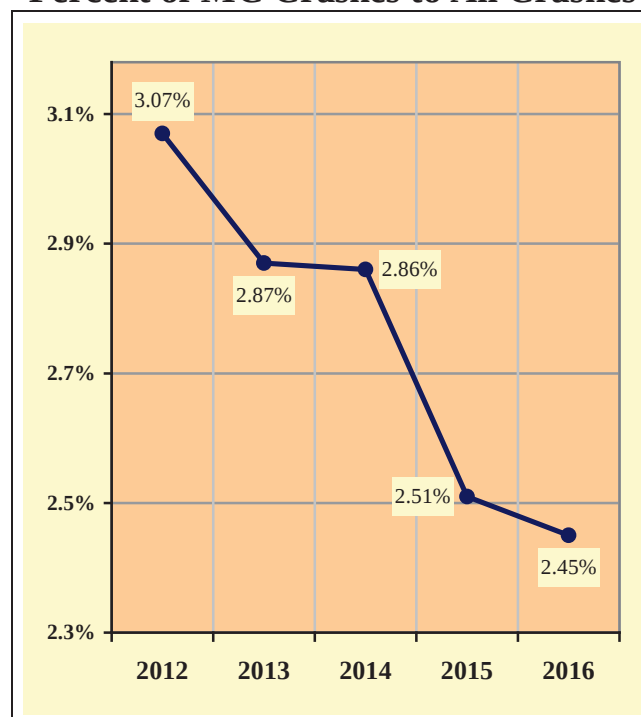


Chart 8 – 4
Percent of MC Crashes to All Crashes



Section 8: – Motorcycle (MC) Crashes

Table 8 – 1
MC Crashes by First Harmful Event

First Harmful Event Type	Number of Crashes			
	Total	Fatal	Injury	PDO
Collision with Motor Vehicle in Transport	1,778	85	1,312	381
Overtaking	694	23	605	66
Collision with Pedestrian	19	0	19	0
Collision with Pedalcyclist	13	0	12	1
Collision with Animal	31	0	24	7
Collision with Fixed Object	308	28	255	25
Collision with Non-fixed Object*	76	2	45	29
Vehicle Fire or Explosion	2	0	1	1
Other Non-collision**	53	0	45	8
Unknown	130	0	108	22
TOTAL	3,104	138	2,426	540
*Includes Collision with Parked Vehicles, Trains, Railway Vehicles, and Work Zone Equipment				
**Includes Vehicle Immersion, Jackknife, and Cargo Loss or Shift				

Table 8 – 2
Lighting Conditions in MC Crashes

Type of Lighting Conditions	Number of Crashes			
	Total	Fatal	Injury	PDO
Daylight	2,098	73	1,652	373
Dawn	49	1	39	9
Dusk	114	9	84	21
Dark - Lighted	656	32	514	110
Dark - Not Lighted	163	11	129	23
Dark - Unknown Lighting	24	12	8	4
TOTAL	3,104	138	2,426	540

Table 8 – 3
Road Surface Conditions in MC Crashes

Type of Road Surface Condition	Number of Operators			
	Total	In Fatal Crashes	In Injury Crashes	In PDO Crashes
Dry	3,020	119	2,385	516
Wet	83	2	63	18
Snow	0	0	0	0
Slush	3	0	0	3
Ice/Frost	0	0	0	0
Water (standing or moving)	1	0	1	0
Sand	3	0	2	1
Mud, Dirt, Gravel	23	1	15	7
Oil	9	0	9	0
Other	4	0	3	1
Unknown	33	20	2	11
TOTAL	3,179	142	2,480	557

Section 8: – Motorcycle (MC) Crashes

Table 8 – 4
MC Crashes by Geographic Location

Category	Total	Urban	Percent of Total	Rural	Percent of Total
Total Crashes	3,104	2,369	76.32%	735	23.68%
Fatal Crashes	138	93	67.39%	45	32.61%
Injury Crashes	2,426	1,865	76.88%	561	23.12%
PDO Crashes	540	411	76.11%	129	23.89%
Persons Killed	144	96	66.67%	48	33.33%
Persons Injured	2,593	1,965	75.78%	628	24.22%

Table 8 – 5
Operator Involvement by Age in MC Crashes

Operator Age Group	Number of Operators							
	Total	Percent of Total	In Fatal Crashes	Percent of Fatal	In Injury Crashes	Percent of Injury	In PDO Crashes	Percent of PDO
15 & Under	9	0.28%	1	0.70%	8	0.32%	0	0.00%
16	13	0.41%	0	0.00%	12	0.48%	1	0.18%
17	14	0.44%	0	0.00%	11	0.44%	3	0.54%
18	40	1.26%	2	1.41%	30	1.21%	8	1.44%
19	78	2.45%	1	0.70%	62	2.50%	15	2.69%
20	97	3.05%	1	0.70%	75	3.02%	21	3.77%
21	95	2.99%	2	1.41%	80	3.23%	13	2.33%
22	117	3.68%	1	0.70%	100	4.03%	16	2.87%
23	89	2.80%	3	2.11%	73	2.94%	13	2.33%
24	101	3.18%	5	3.52%	81	3.27%	15	2.69%
25-34	706	22.21%	26	18.31%	570	22.98%	110	19.75%
35-44	486	15.29%	27	19.01%	382	15.40%	77	13.82%
45-54	557	17.52%	32	22.54%	440	17.74%	85	15.26%
55-64	458	14.41%	25	17.61%	358	14.44%	75	13.46%
65-74	192	6.04%	12	8.45%	150	6.05%	30	5.39%
75 & Older	30	0.94%	3	2.11%	21	0.85%	6	1.08%
Unknown	97	3.05%	1	0.70%	27	1.09%	69	12.39%
TOTAL	3,179	100.00%	142	100.00%	2,480	100.00%	557	100.00%

Table 8 – 6
MC Operator Physical Condition

Type of Condition	Number of Operators							
	Total	Percent of Total	In Fatal Crashes	Percent of Fatal	In Injury Crashes	Percent of Injury	In PDO Crashes	Percent of PDO
No Apparent Influence	2,691	84.65%	45	31.69%	2,163	87.22%	483	86.71%
Alcohol	181	5.69%	43	30.28%	131	5.28%	7	1.26%
Appeared to be Under the Influence of Drugs*	18	0.57%	12	8.45%	6	0.24%	0	0.00%
Medications	1	0.03%	0	0.00%	1	0.04%	0	0.00%
Illness	5	0.16%	0	0.00%	4	0.16%	1	0.18%
Physical Impairment	1	0.03%	0	0.00%	1	0.04%	0	0.00%
Fell Asleep or Fatigued	5	0.16%	0	0.00%	4	0.16%	1	0.18%
Other	21	0.66%	0	0.00%	11	0.44%	10	1.80%
Unknown	256	8.05%	42	29.58%	159	6.41%	55	9.87%
TOTAL	3,179	100.00%	142	100.00%	2,480	100.00%	557	100.00%

*Illegal drugs or narcotics

Section 8: – Motorcycle (MC) Crashes

Table 8 – 7
Helmet Use by Gender

Gender	Number of Operators and Passengers							
	Helmet Used	Percent of Helmet Used	Helmet Not Used	Percent of Helmet Not Used	Helmet Use Unknown	Percent of Unknown	Total	Percent of Total
Male	1,406	88.59%	705	86.40%	808	80.24%	2,919	85.60%
Female	179	11.28%	108	13.24%	134	13.31%	421	12.35%
Unknown	2	0.13%	3	0.37%	65	6.45%	70	2.05%
TOTAL	1,587	100.00%	816	100.00%	1,007	100.00%	3,410	100.00%

Table 8 – 8
MC Operator's Helmet Use

Severity of Injury	Helmet Used	Percent of Total	Helmet Not Used	Percent of Total	Unknown	Percent of Total	Total	Percent of Total
No Injury	247	16.43%	88	11.76%	238	25.65%	573	18.02%
Unknown Injury	6	0.40%	5	0.67%	44	4.74%	55	1.73%
Possible Injury	253	16.83%	96	12.83%	164	17.67%	513	16.14%
Non-Incapacitating Injury	644	42.85%	305	40.78%	300	32.33%	1,249	39.29%
Incapacitating Injury	303	20.16%	184	24.60%	168	18.10%	655	20.60%
Fatal Injury	50	3.33%	70	9.36%	14	1.51%	134	4.22%
TOTALS	1,503	100.00%	748	100.00%	928	100.00%	3,179	100.00%

Table 8 – 9
MC Passenger's Helmet Use

Severity of Injury	Helmet Used	Percent of Total	Helmet Not Used	Percent of Total	Unknown	Percent of Total	Total	Percent of Total
No Injury	14	16.67%	8	11.76%	18	22.78%	40	17.32%
Unknown Injury	0	0.00%	1	1.47%	4	5.06%	5	2.16%
Possible Injury	15	17.86%	8	11.76%	16	20.25%	39	16.88%
Non-Incapacitating Injury	40	47.62%	29	42.65%	27	34.18%	96	41.56%
Incapacitating Injury	13	15.48%	15	22.06%	13	16.46%	41	17.75%
Fatal Injury	2	2.38%	7	10.29%	1	1.27%	10	4.33%
TOTALS	84	100.00%	68	100.00%	79	100.00%	231	100.00%

Section 8: – Motorcycle (MC) Crashes

Table 8 – 10

MC Operators and Passengers Killed and Injured

Age of Victim	Persons Killed			Persons Injured			
	Total	Male	Female	Total	Male	Female	Gender Unknown
0-4	0	0	0	1	1	0	0
5-9	0	0	0	4	3	1	0
10-14	0	0	0	13	8	5	0
15-19	5	4	1	130	114	16	0
20-24	12	11	1	418	387	31	0
25-34	26	23	3	591	524	67	0
35-44	27	26	1	408	348	60	0
45-54	35	31	4	459	372	87	0
55-64	24	23	1	374	322	52	0
65-74	12	11	1	153	141	12	0
75 & Older	3	3	0	21	19	2	0
Unknown	0	0	0	21	15	3	3
TOTAL	144	132	12	2,593	2,254	336	3

Table 8 – 11

MC Operator Violations

Type of Violation or Behavior	Number of Operators							
	Total	Percent of Total	In Fatal Crashes	Percent of Fatal	In Injury Crashes	Percent of Injury	In PDO Crashes	Percent of PDO
No Improper Action	1,559	49.04%	40	28.17%	1,232	49.68%	287	51.53%
Speed too Fast for Conditions	753	23.69%	25	17.61%	608	24.52%	120	21.54%
Exceeded Lawful Speed	69	2.17%	9	6.34%	54	2.18%	6	1.08%
Failed to Yield Right-Of-Way	81	2.55%	5	3.52%	52	2.10%	24	4.31%
Followed Too Closely	79	2.49%	2	1.41%	55	2.22%	22	3.95%
Ran Stop Sign	19	0.60%	2	1.41%	16	0.65%	1	0.18%
Disregarded Traffic Signal	42	1.32%	4	2.82%	36	1.45%	2	0.36%
Made Improper Turn	29	0.91%	1	0.70%	19	0.77%	9	1.62%
Drove in Opposing Lane	22	0.69%	3	2.11%	17	0.69%	2	0.36%
Knowingly Operated with Faulty or Missing Equipment	11	0.35%	1	0.70%	8	0.32%	2	0.36%
Required Motorcycle Safety Equipment Not Used	9	0.28%	4	2.82%	4	0.16%	1	0.18%
Passed in No-Passing Zone	8	0.25%	0	0.00%	7	0.28%	1	0.18%
Unsafe Lane Change	49	1.54%	2	1.41%	39	1.57%	8	1.44%
Failed to Keep in Proper Lane	94	2.96%	13	9.15%	74	2.98%	7	1.26%
Disregarded Pavement Markings	6	0.19%	1	0.70%	4	0.16%	1	0.18%
Other Unsafe Passing	27	0.85%	0	0.00%	17	0.69%	10	1.80%
Other	96	3.02%	1	0.70%	80	3.23%	15	2.69%
Unknown	226	7.11%	29	20.42%	158	6.37%	39	7.00%
TOTAL	3,179	100.00%	142	100.00%	2,480	100.00%	557	100.00%

Section 8: – Motorcycle (MC) Crashes

Chart 8 – 5

All MC Crashes vs. Fatal MC Crashes by Time of Day - Weekdays

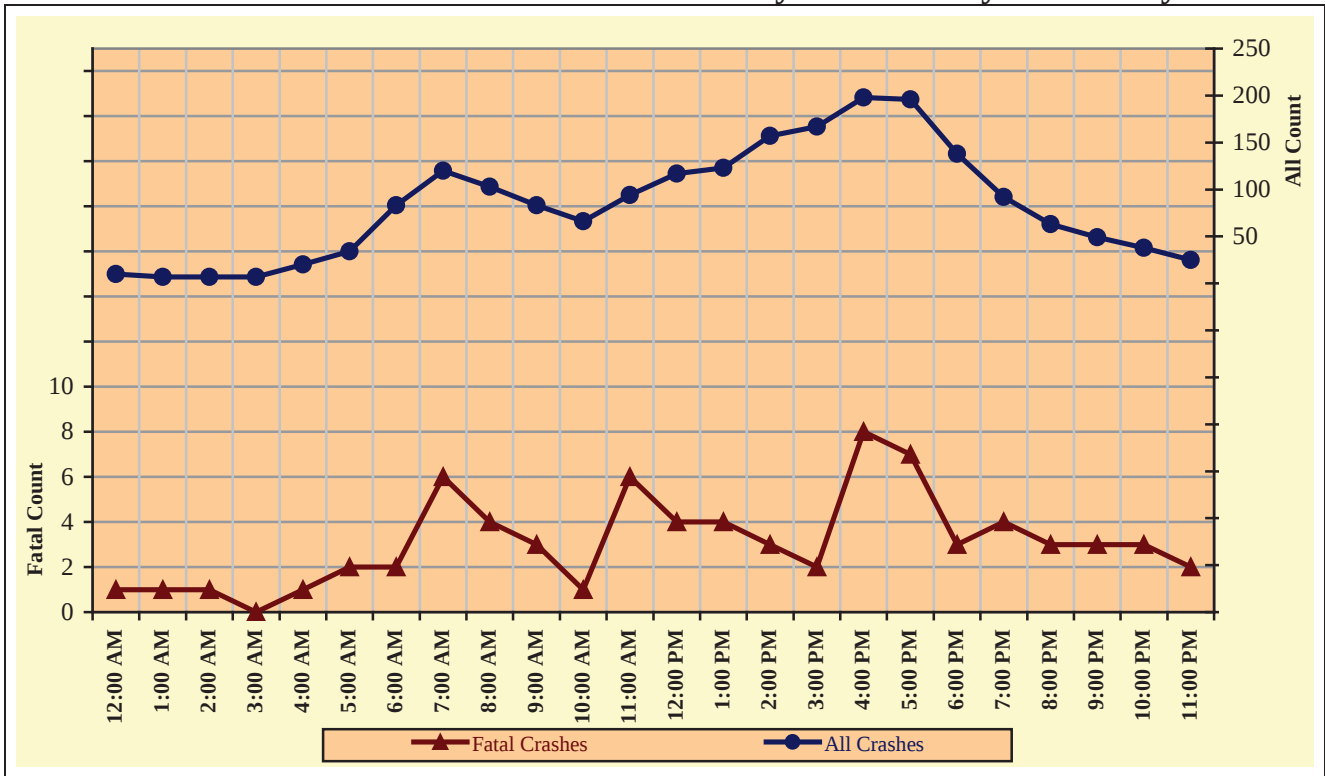
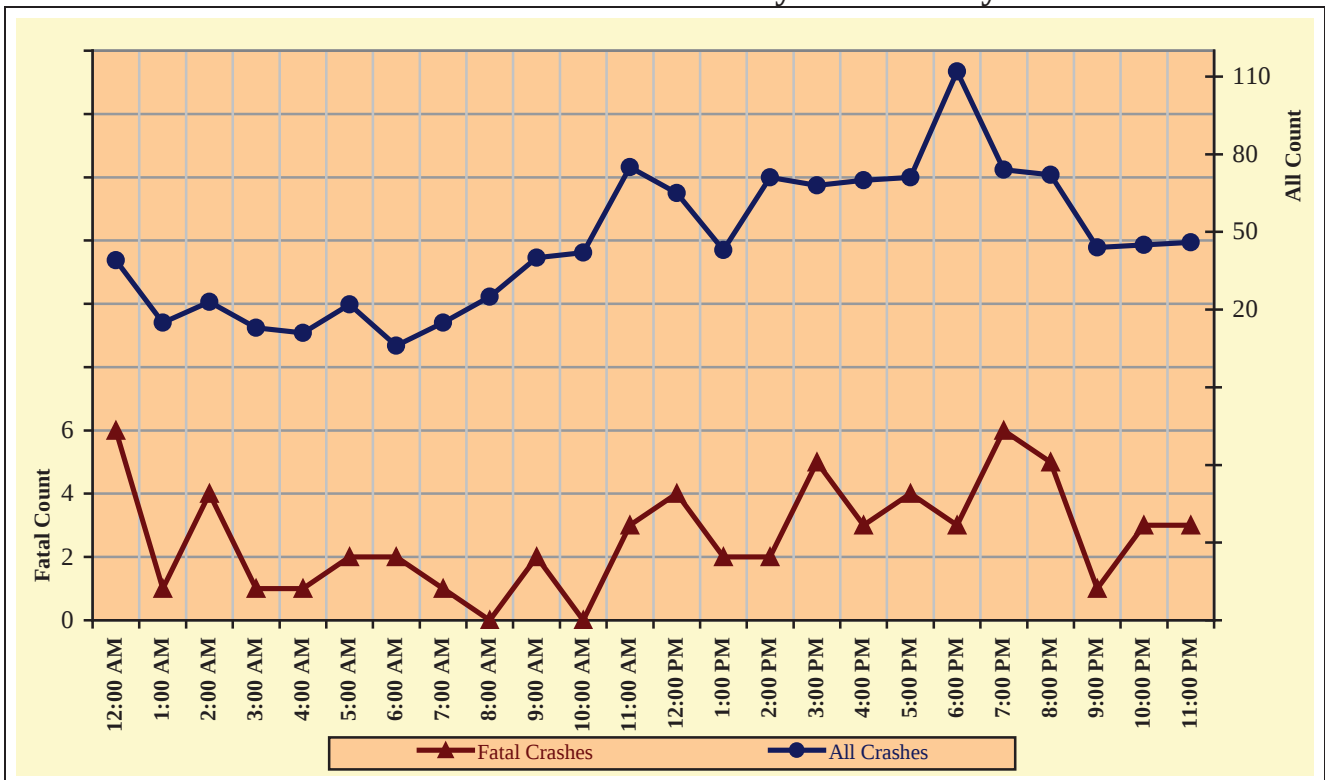


Chart 8 – 6

All MC Crashes vs. Fatal MC Crashes by Time of Day - Weekends



Section 8: – Motorcycle (MC) Crashes

Chart 8 – 7
All MC Crashes vs. Fatal MC Crashes by Day of Week

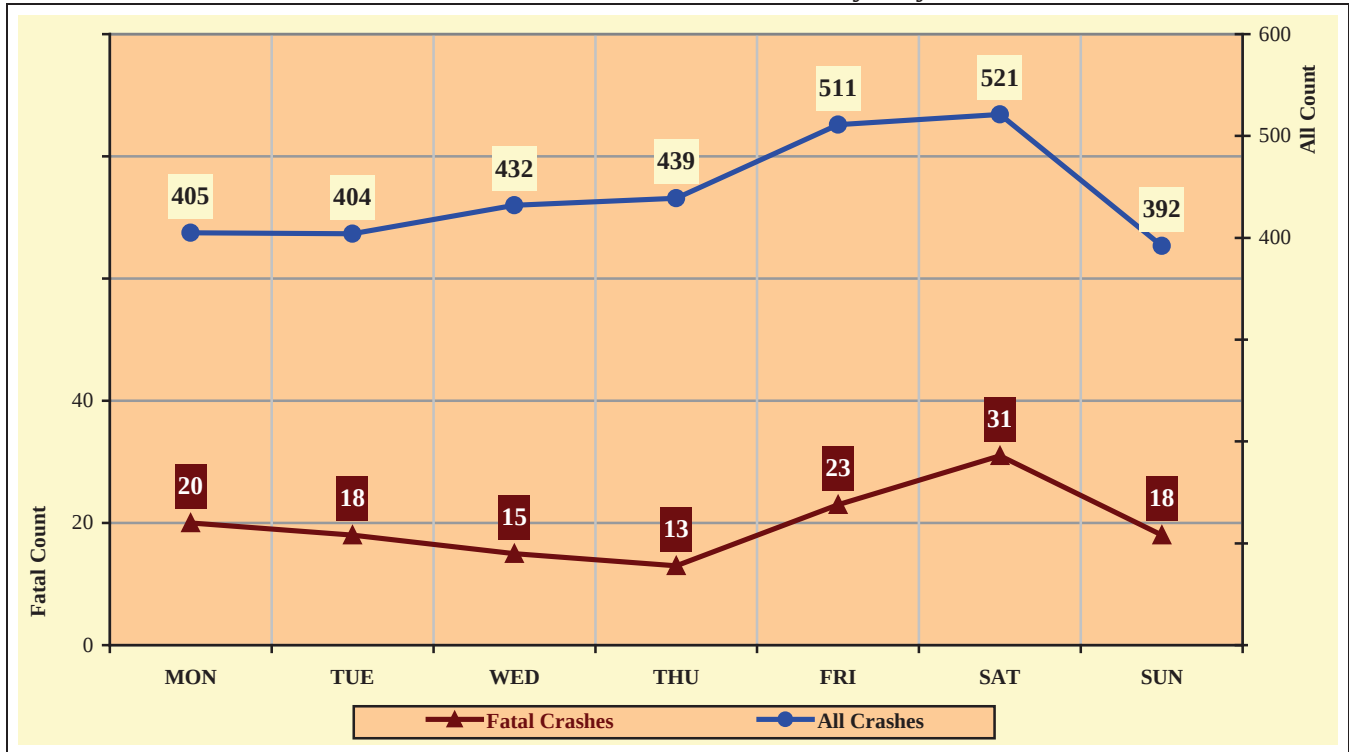
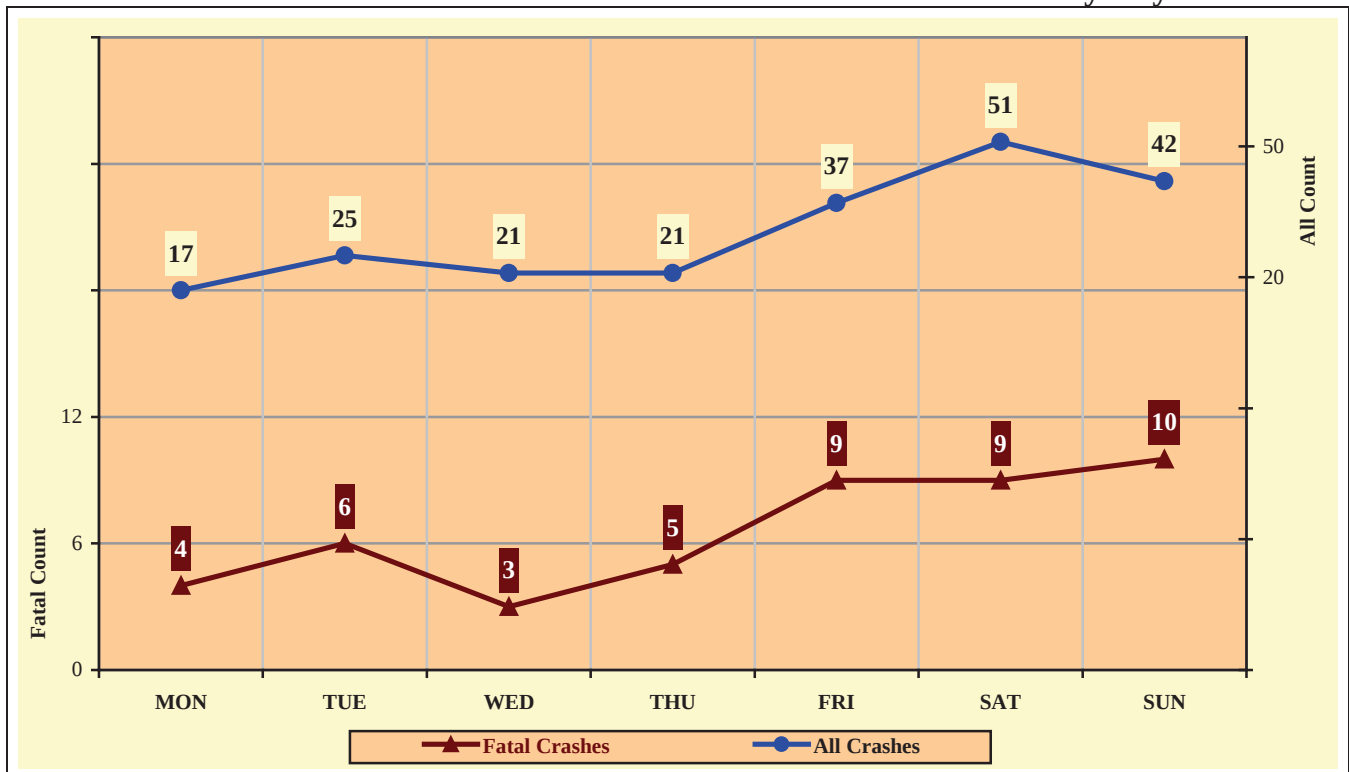


Chart 8 – 8
Alcohol Related MC Crashes vs. Fatal Alcohol Related MC Crashes by Day of Week



Section 8: – Motorcycle (MC) Crashes

Table 8 – 12

MC Crashes by Hour and Day of Week

Hour Beginning	Total Crashes		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Weekdays		Weekends	
	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal
12:00 AM	49	7	4	0	2	1	5	0	1	0	2	0	17	3	18	3	10	1	39	6
1:00 AM	22	2	4	0	1	1	1	0	1	0	4	0	6	0	5	1	7	1	15	1
2:00 AM	30	5	3	1	1	0	1	0	2	0	3	1	8	3	12	0	7	1	23	4
3:00 AM	20	1	3	0	1	0	3	0	2	0	1	0	6	0	4	1	7	0	13	1
4:00 AM	31	2	4	0	6	0	4	0	6	0	4	1	3	1	4	0	20	1	11	1
5:00 AM	56	4	10	2	9	0	5	0	12	1	8	1	4	0	8	0	34	2	22	2
6:00 AM	89	4	13	1	15	0	13	1	25	0	17	0	5	2	1	0	83	2	6	2
7:00 AM	135	7	22	2	29	2	28	1	21	1	20	0	9	1	6	0	120	6	15	1
8:00 AM	128	4	18	2	20	1	21	1	25	0	19	0	20	0	5	0	103	4	25	0
9:00 AM	123	5	16	0	16	0	17	1	17	0	17	2	22	2	18	0	83	3	40	2
10:00 AM	108	1	13	0	13	0	11	1	11	0	18	0	26	0	16	0	66	1	42	0
11:00 AM	169	9	14	1	12	4	22	0	15	0	31	1	40	0	35	3	94	6	75	3
12:00 PM	182	8	25	3	22	0	24	0	19	0	27	1	42	4	23	0	117	4	65	4
1:00 PM	166	6	23	0	17	0	34	2	26	2	23	0	27	2	16	0	123	4	43	2
2:00 PM	228	5	31	1	31	0	28	2	27	0	40	0	33	1	38	1	157	3	71	2
3:00 PM	235	7	33	1	36	0	25	1	39	0	34	0	41	3	27	2	167	2	68	5
4:00 PM	268	11	34	2	39	2	53	0	38	3	34	1	45	2	25	1	198	8	70	3
5:00 PM	267	11	23	0	39	2	42	2	49	0	43	3	32	2	39	2	196	7	71	4
6:00 PM	250	6	41	0	29	1	38	1	30	1	46	2	38	0	28	1	138	3	112	3
7:00 PM	166	10	22	2	25	1	14	0	31	1	24	3	27	1	23	2	92	4	74	6
8:00 PM	135	8	18	0	15	1	15	1	15	1	33	3	25	2	14	0	63	3	72	5
9:00 PM	93	4	14	0	13	1	11	1	11	1	20	1	15	0	9	0	49	3	44	1
10:00 PM	83	6	14	2	8	1	7	0	9	0	20	1	12	1	13	1	38	3	45	3
11:00 PM	71	5	3	0	5	0	10	0	7	2	23	2	18	1	5	0	25	2	46	3
TOTAL	3,104	138	405	20	404	18	432	15	439	13	511	23	521	31	392	18	1,997	74	1,107	64

Crashes during Weekends accounted for 35.66% of all MC crashes and 46.38% of Fatal MC Crashes.

Crashes during Weekdays accounted for 64.34% of all MC crashes and 53.62% of Fatal MC Crashes.

Section 8: – Motorcycle (MC) Crashes

Table 8 – 13

MC Crashes by County

County	Number of Crashes				Number of Persons	
	Total	Fatal	Injury	PDO	Killed	Injured
Apache	6	0	5	1	0	5
Cochise	57	3	45	9	3	49
Coconino	75	1	48	26	1	63
Gila	34	4	27	3	5	33
Graham	5	1	4	0	1	5
Greenlee	8	0	7	1	0	9
La Paz	17	2	15	0	2	18
Maricopa	2,045	83	1,601	361	85	1,681
Mohave	110	9	80	21	10	90
Navajo	14	0	10	4	0	14
Pima	385	18	316	51	19	330
Pinal	145	8	113	24	8	130
Santa Cruz	11	0	11	0	0	11
Yavapai	133	6	99	28	7	107
Yuma	59	3	45	11	3	48
TOTAL	3,104	138	2,426	540	144	2,593

Table 8 – 14

Manner of Collision in MC Crashes

Manner of Collision Type	Number of Crashes							
	Total	Percent of All Crashes	Fatal	Percent of Fatal Crashes	Injury	Percent of Injury Crashes	PDO	Percent of PDO Crashes
Angle	324	16.27%	20	21.51%	268	18.22%	36	8.43%
Left Turn	495	24.86%	33	35.48%	387	26.31%	75	17.56%
Rear End	667	33.50%	14	15.05%	448	30.46%	205	48.01%
Head-On	39	1.96%	4	4.30%	30	2.04%	5	1.17%
Sideswipe (same)	279	14.01%	11	11.83%	197	13.39%	71	16.63%
Sideswipe (opposite)	32	1.61%	0	0.00%	28	1.90%	4	0.94%
Rear to Side	9	0.45%	0	0.00%	5	0.34%	4	0.94%
Rear to Rear	3	0.15%	0	0.00%	2	0.14%	1	0.23%
Other	126	6.33%	10	10.75%	95	6.46%	21	4.92%
Unknown	17	0.85%	1	1.08%	11	0.75%	5	1.17%
TOTAL	1,991	100.00%	93	100.00%	1,471	100.00%	427	100.00%

Note: Includes only multi-vehicle MC crashes