



2016

Annual Crash Report



David Rico, Traffic Studies Analyst
City of Mesa
10/24/2017

SECTION 1:

FATALITIES

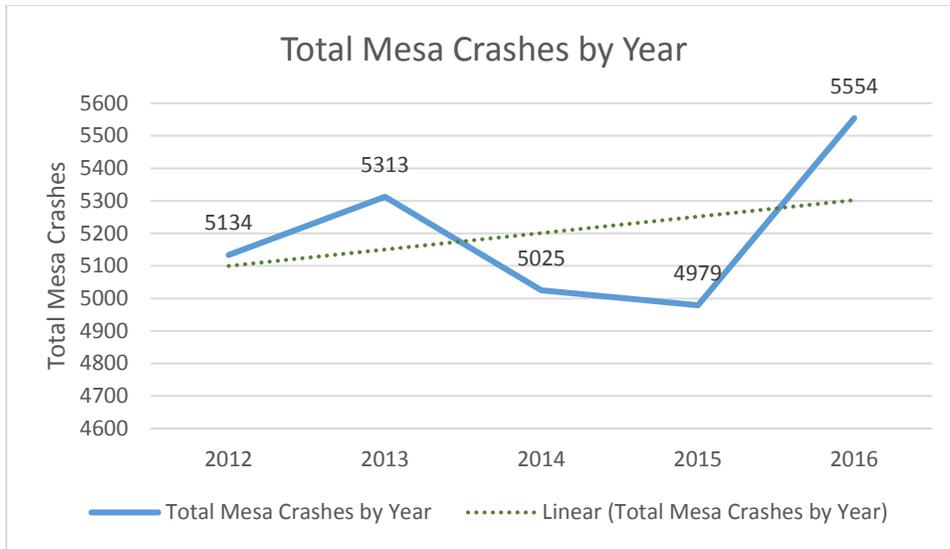
In 2016, the City of Mesa had 28 fatal crashes with a total of 30 fatalities. The following collection of charts and tables documents fatal crashes of 2016. Descriptions of these tables and charts will be found underneath their respective tables and charts.

For the purposes of this document, “Vehicle 1” is defined as the motorist (or non-motorist) deemed at fault by Mesa Police Department. “Vehicle 2” is defined as the involved motorist (or non-motorist) that was deemed the victim by Mesa Police Department.

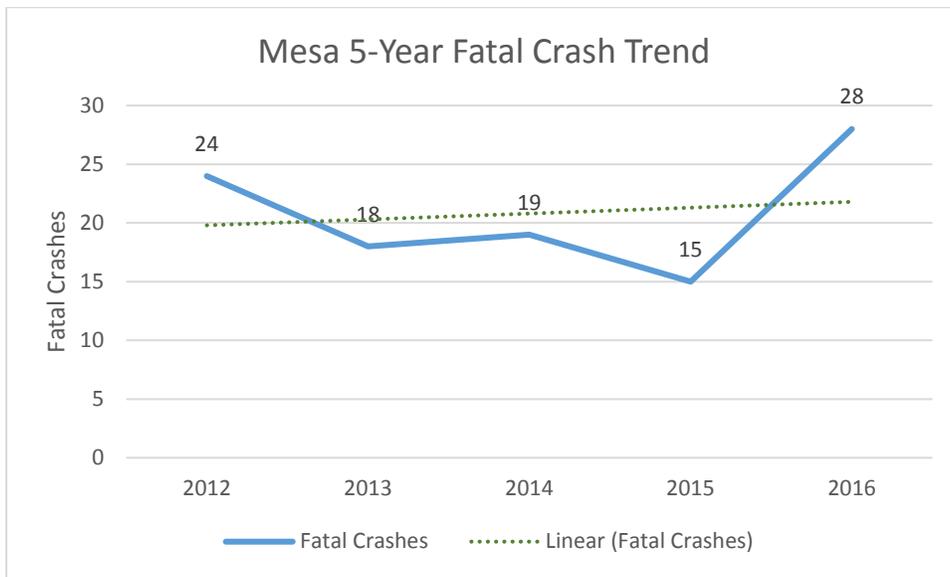
For the purposes of this document, the term “bike” and “pedalcycle” may be used interchangeably. Likewise, the term “bicyclist” and “pedalcyclist” may be used interchangeably.

Mesa Fatal Crashes: General View w/ 5-Year Average						
YEAR	FATAL CRASHES BY YEAR	TOTAL FATALITIES BY YEAR	MESA TOTAL CRASHES BY YEAR	MESA ESTIMATED POPULATION BY YEAR	TOTAL FATALITIES PER 100,000 POPULATION	FATALITIES PER 100,000: PERCENT FROM 5 YEAR AVERAGE
2001	31	31	9928	416301	7	
2002	22	23	9155	427923	5	
2003	30	31	8520	435391	7	
2004	25	27	9184	443733	6	
2005	64	67	9205	450948	15	
2006	47	50	8522	456449	11	
2007	25	26	7933	460493	6	
2008	25	26	5908	463829	6	
2009	19	21	5504	467157	4	
2010	15	15	5118	440031	3	
2011	27	29	5178	444685	7	
2012	24	24	5134	451677	5.3	11.1%
2013	18	22	5313	457587	4.8	0.5%
2014	19	20	5025	464704	4.3	-10.0%
2015	15	15	4979	471825	3.2	-33.5%
2016	28	30	5554	475274	6.3	32.0%
2016 5-YR AVG	21	22	5201	464213	4.8	
Information provided by City of Mesa website. (Their source is ESRI Community Analysis)						
Information from http://population.us/az/mesa/						
Information from https://www.census.gov/quickfacts/						

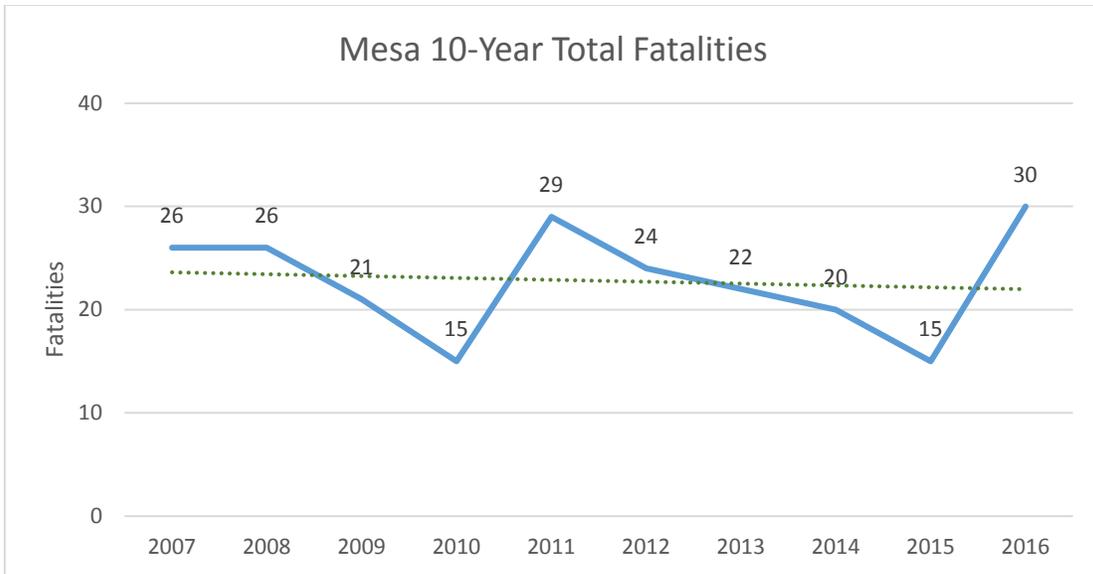
The outlined cells represent the 5-year period that is used to calculate the averages. Fatalities per 100,000 population were up 32.0% from the 5-year average of 4.8 fatalities per 100,000 population.



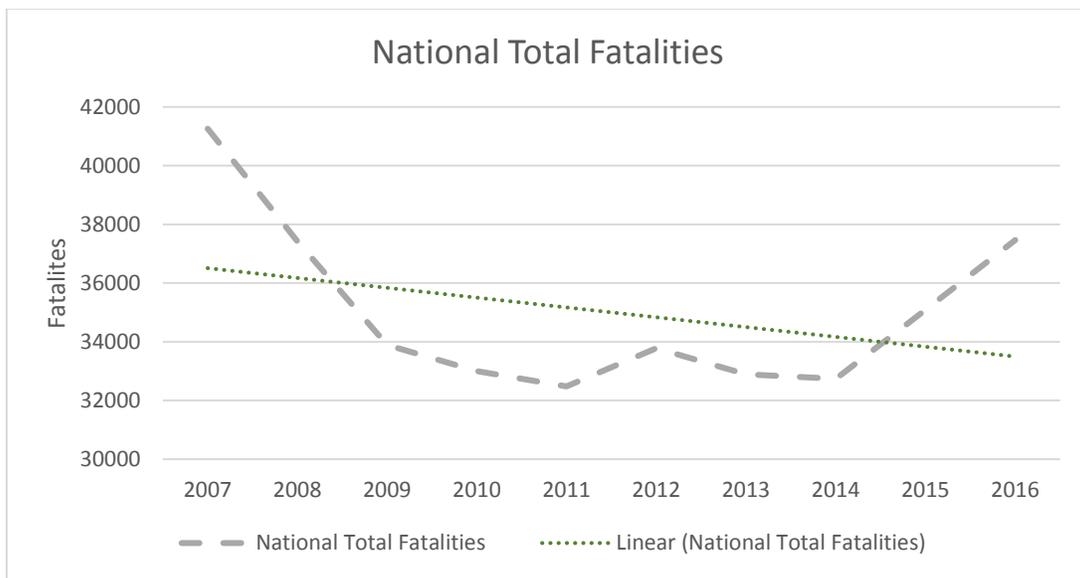
There were 11.5% more total vehicle crashes in 2016 compared to 2015.



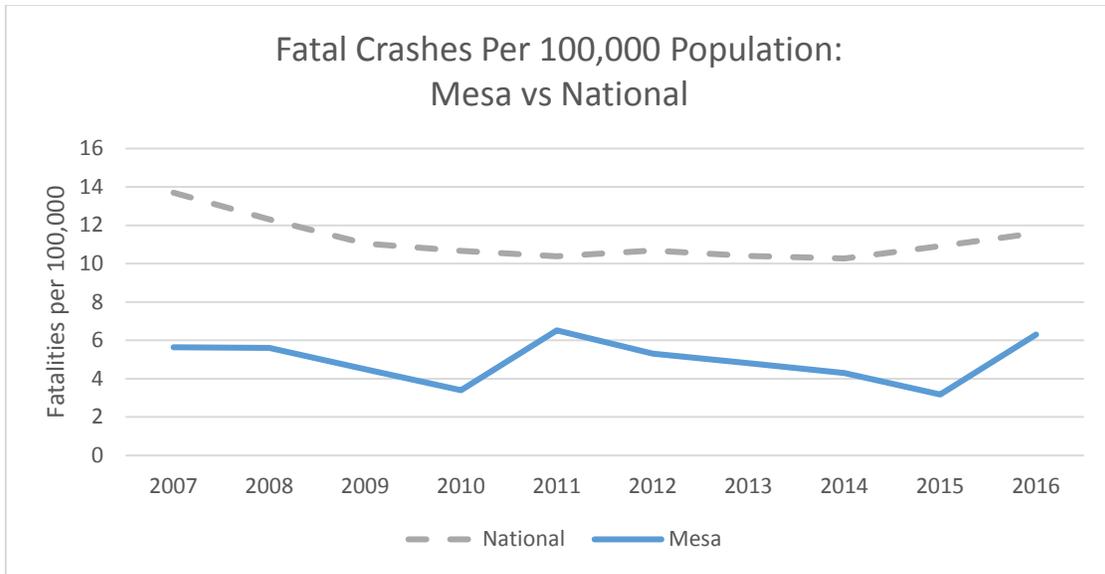
Based on a 5-year average (2012 – 2016), fatal crashes are trending upward.



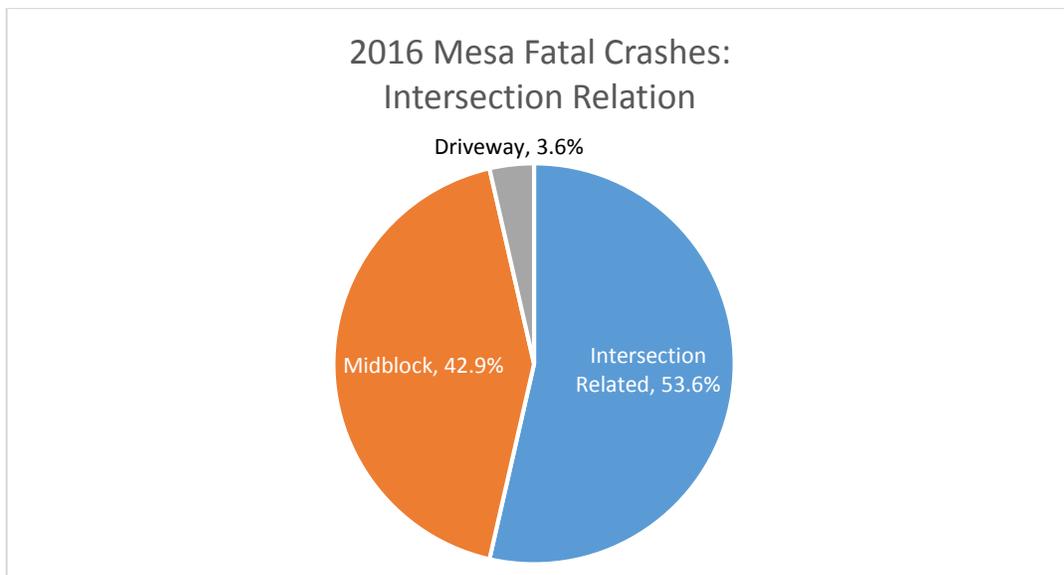
Based on a 10-year average (2007 – 2016), total fatalities are trending downward which is consistent with the national average over a 10-year period, as shown below.



Nationally, 2016 saw a significant increase in total fatalities.

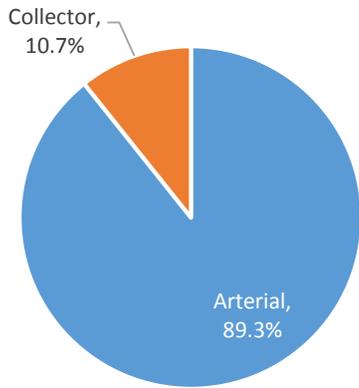


Fatalities per 100,000 population for Mesa have consistently been below the national average.

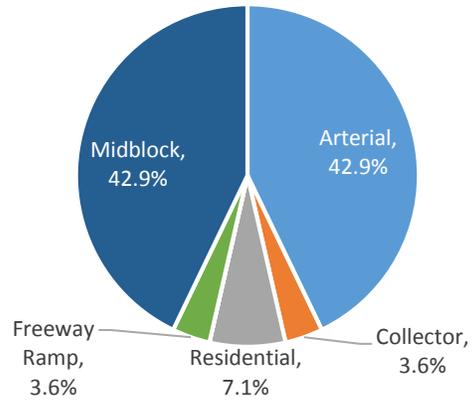


Of the 28 fatal crashes, 15 (53.6%) were intersection related, 12 (42.9%) occurred midblock, and one (3.6%) occurred at a driveway.

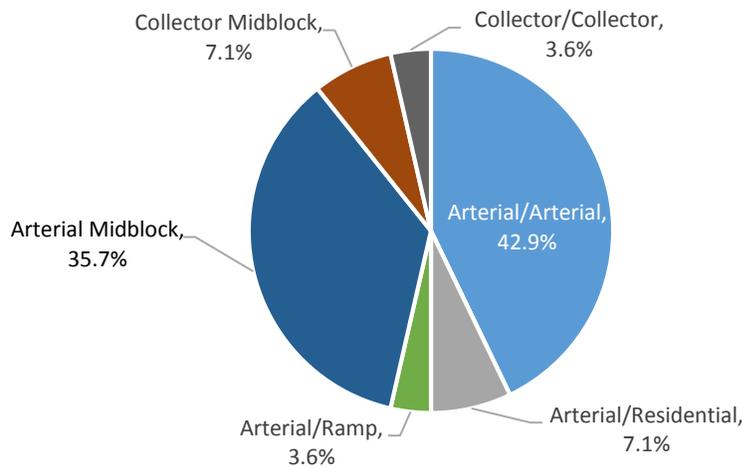
2016 Mesa Fatal Crashes:
On Street Classification



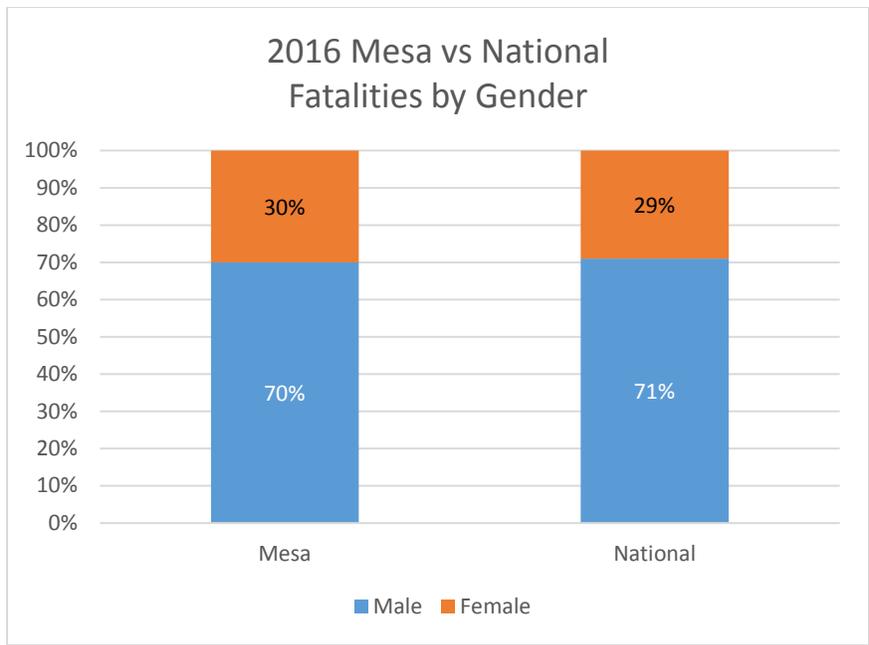
2016 Mesa Fatal Crashes:
Cross Street Classification



Mesa 2016 Fatal Crashes:
Intersection Classification

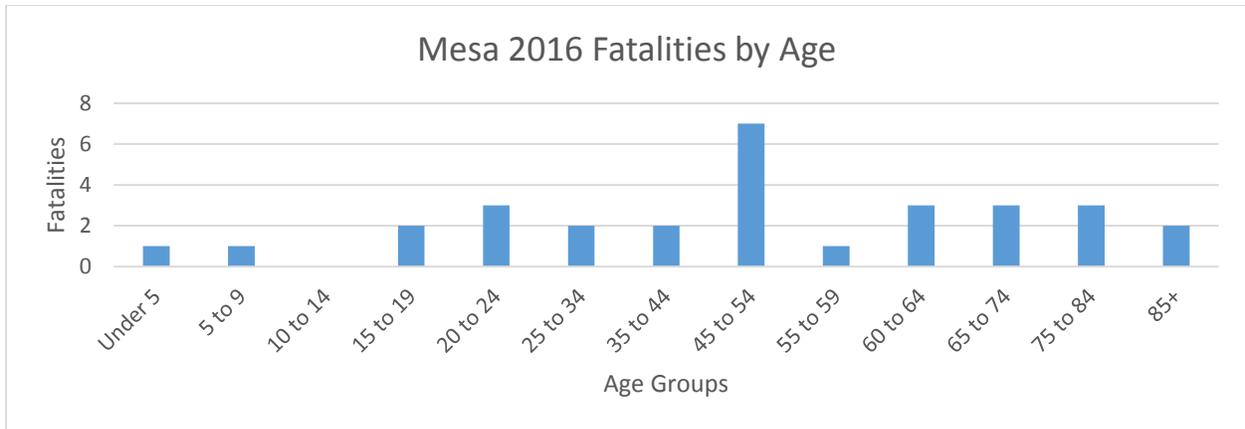


Of the 28 fatal crashes within Mesa in 2016, 25 (89.3%) occurred on an arterial roadway, and three (10.7%) crossed an arterial.

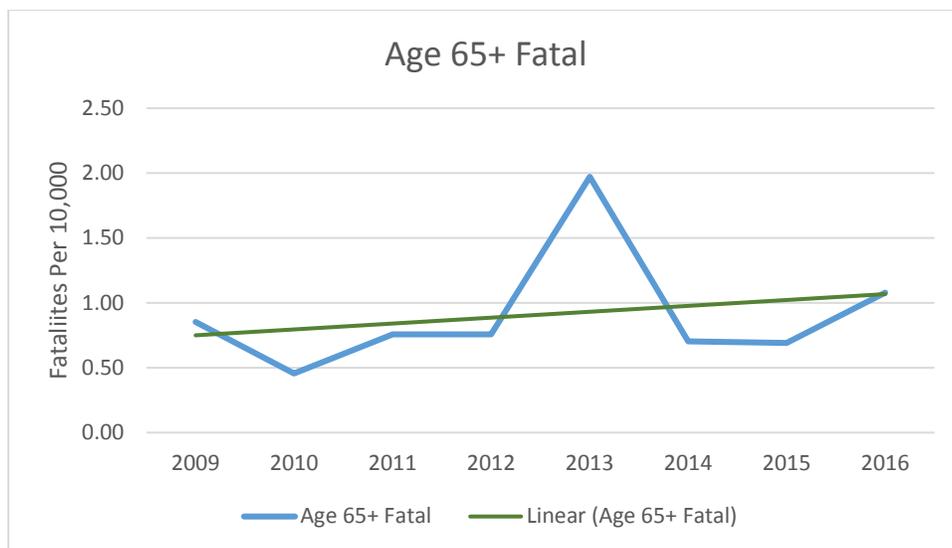


Fatalities by gender are similar in Mesa compared to the national average. Additionally, the gender of vehicle 1 in Mesa was predominantly male with 57.1%.

Mesa 2016 Fatalities by Age Group and Gender						
AGE		MESA 2016 POPULATION	PERCENT OF TOTAL POPULATION	NO. OF FATALITIES	PERCENT OF TOTAL FATALITIES	FATALITIES/ 10,000 PERSONS
Under	5	32794	6.9%	1	3.3%	0.30
5	to 9	33269	7.0%	1	3.3%	0.30
10	to 14	31843	6.7%	0	0.0%	0.00
15	to 19	31368	6.6%	2	6.7%	0.64
20	to 24	34695	7.3%	3	10.0%	0.86
25	to 34	67964	14.3%	2	6.7%	0.29
35	to 44	57033	12.0%	2	6.7%	0.35
45	to 54	58934	12.4%	7	23.3%	1.19
55	to 59	27091	5.7%	1	3.3%	0.37
60	to 64	26140	5.5%	3	10.0%	1.15
65	to 74	39448	8.3%	3	10.0%	0.76
75	to 84	24714	5.2%	3	10.0%	1.21
85	+	9981	2.1%	2	6.7%	2.00
Total		475274		30		

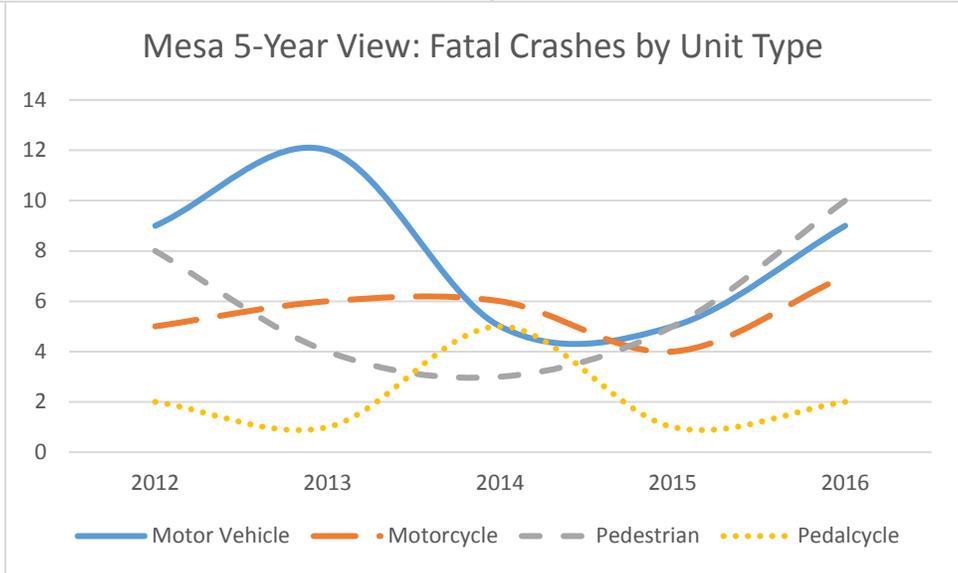
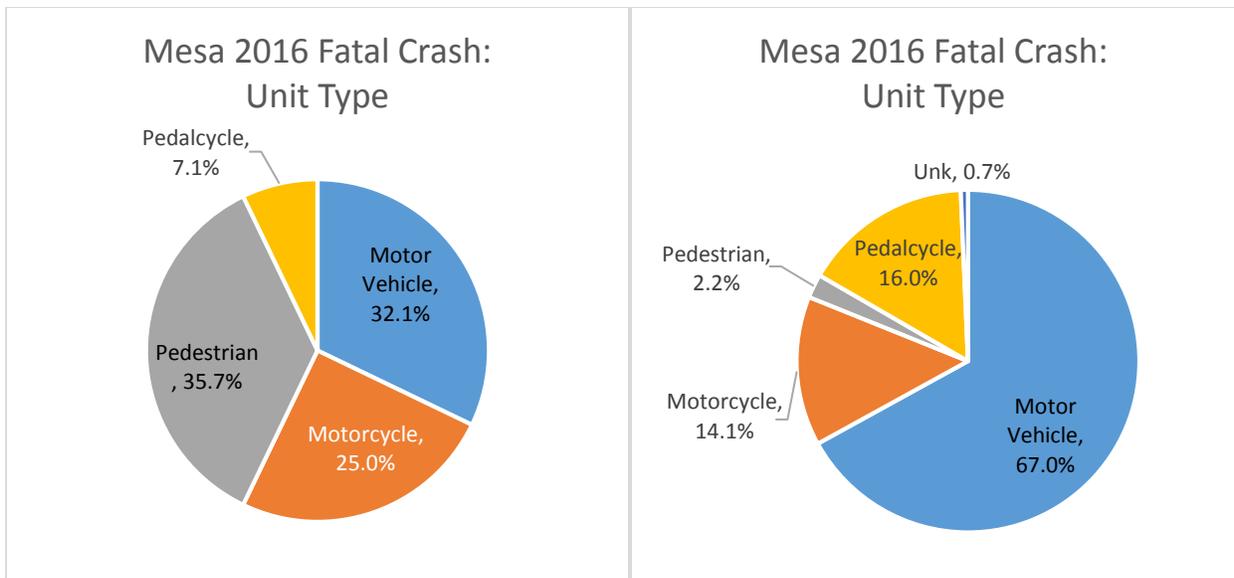


The greatest number of fatalities occurred among people aged 45 to 54.



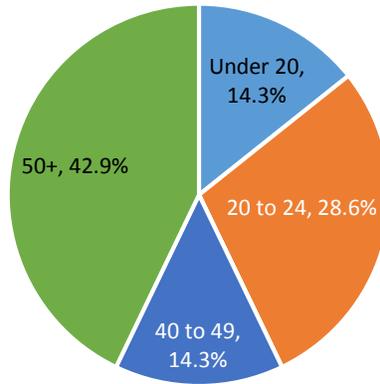
2016 numbers landed slightly above the trendline, with 1.08 fatalities per 10,000 people aged 65 and over.

National Fatal Crashes by Year and Unit Type					
National Statistics*	2012	2013	2014	2015	2016
MV	23017	22383	21706	23897	25096
Motorcycle	4986	4692	4594	5029	5286
Pedalcycle	734	743	729	829	840
Pedestrian	4818	4735	4910	5495	5987
Unk	227	190	204	235	252
Total	33782	32743	32143	35485	37461
MV includes passenger cars, light trucks, and large trucks					
*Information from https://crashstats.nhtsa.dot.gov					



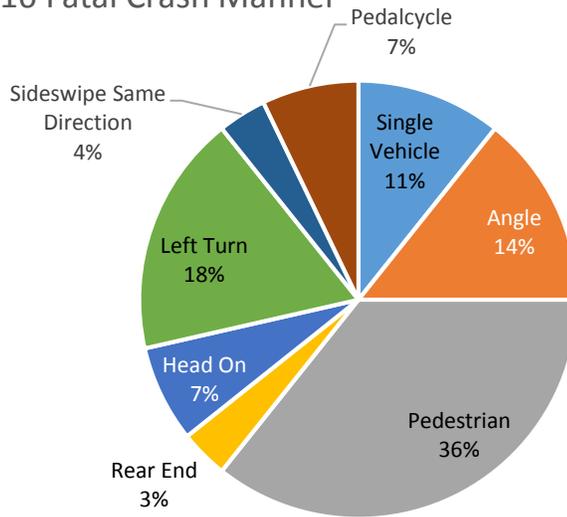
In 2016, Mesa had nine motor vehicle fatalities, seven motorcycle fatalities, 10 pedestrian fatalities, and two bicycle fatalities. Their distribution differs from national numbers.

Mesa 2016 Motorcycle Fatalities by Age Group

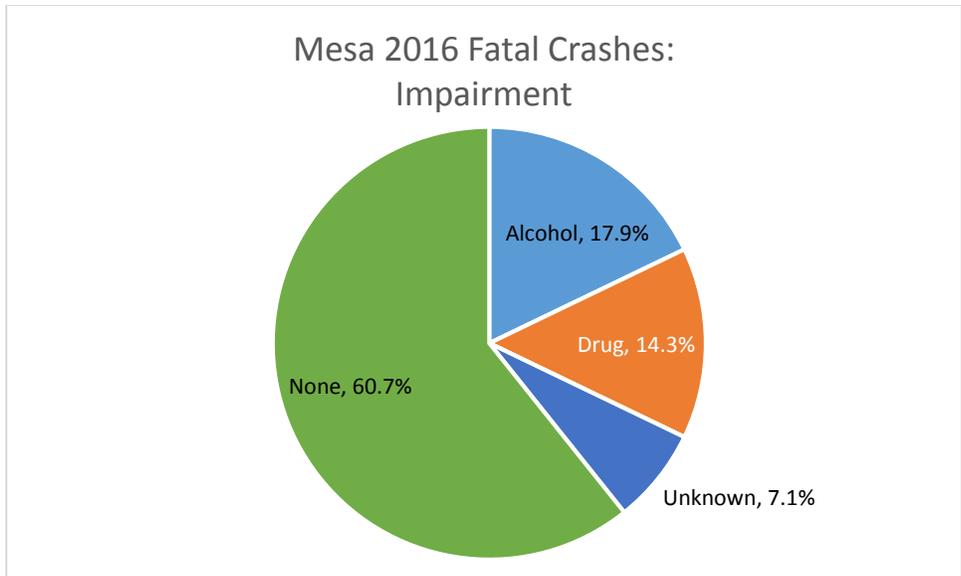


Most of the motorcyclist fatalities in 2016 were people aged 50 years and over. Over one-quarter of motorcycle fatalities involved a rider aged 20 to 24.

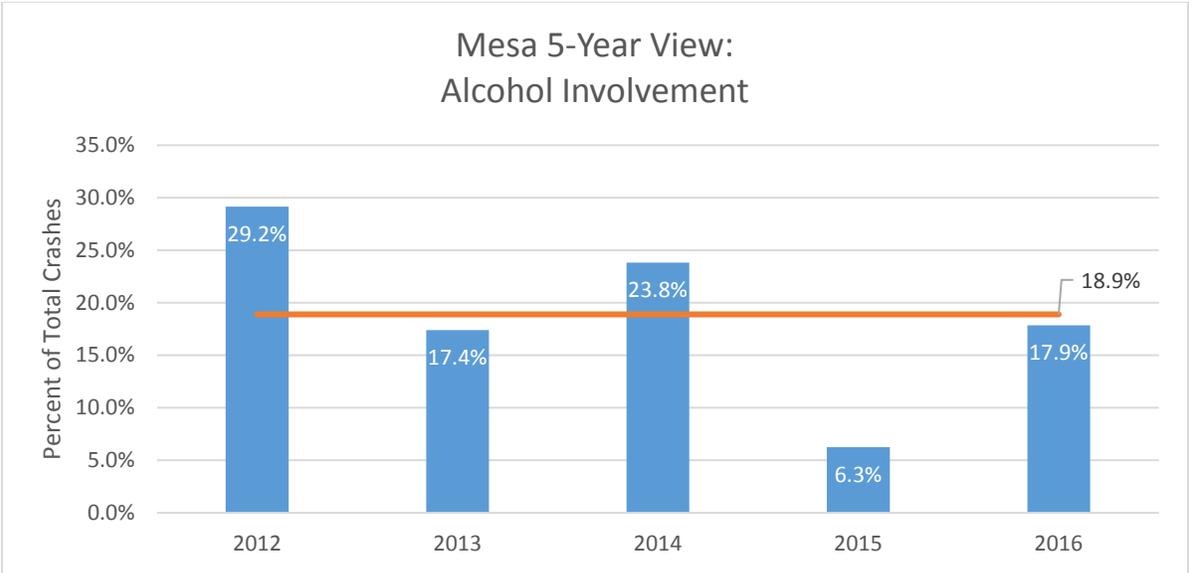
Mesa 2016 Fatal Crash Manner



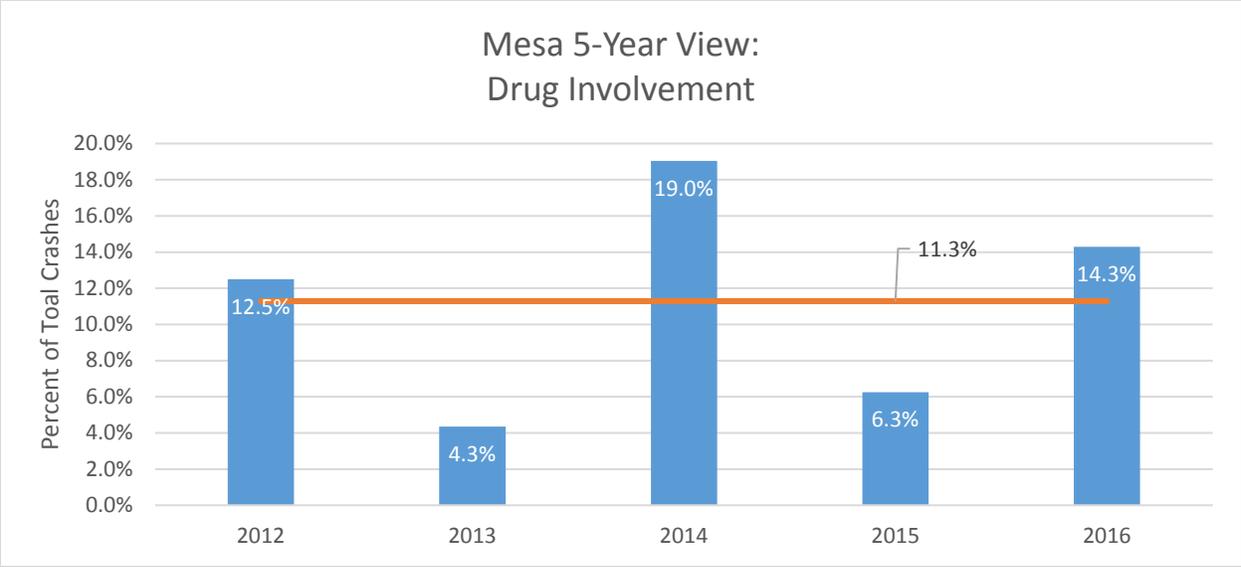
In 2016, left turn crashes, angle crashes, and pedestrian crashes accounted for 68% of all fatal crashes in Mesa.



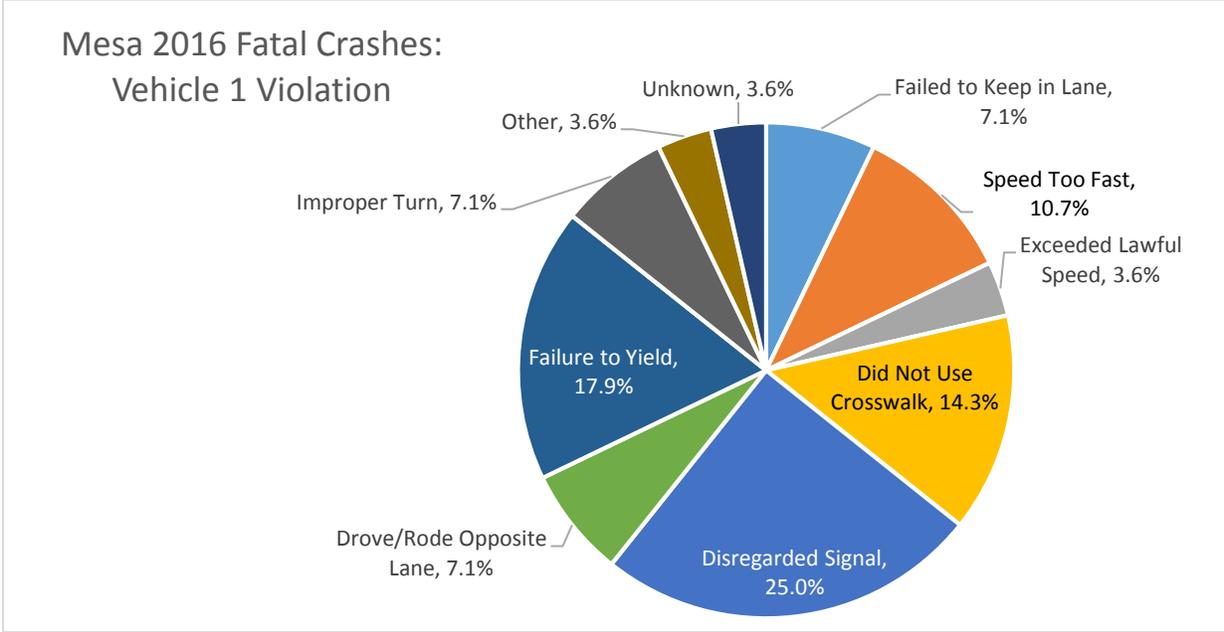
Nine of the 28 fatal crashes in Mesa 2016 involved impairment. Alcohol was involved in five fatal crashes, and drugs were involved in four fatal crashes.



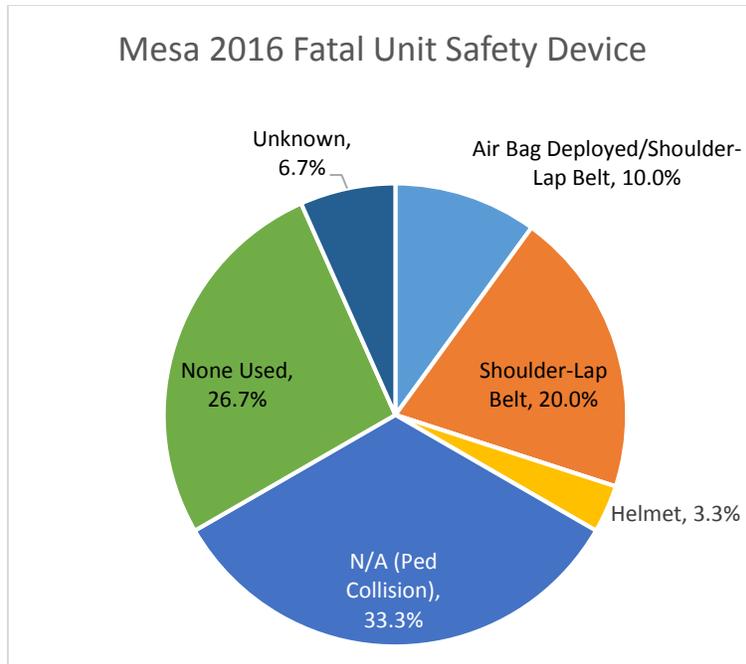
The above chart shows a 5-year trend in alcohol impairment linked to fatal crashes. Over the past five years, approximately 19% of fatal collisions involved a person under the influence of alcohol.



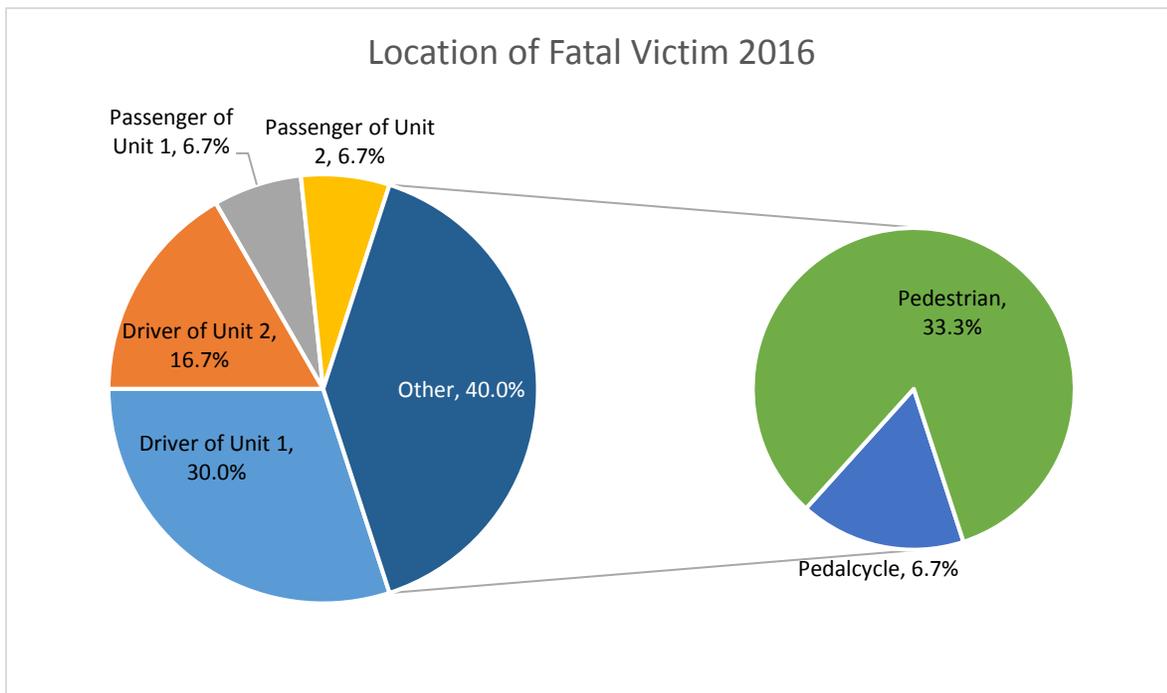
The above chart shows a 5-year trend in drug impairment linked to fatal crashes. Over the past five years, approximately 11% of fatal collisions involved a person under the influence of drugs.



The above chart details the violations made by vehicle 1 leading to fatal crashes within Mesa in 2016.

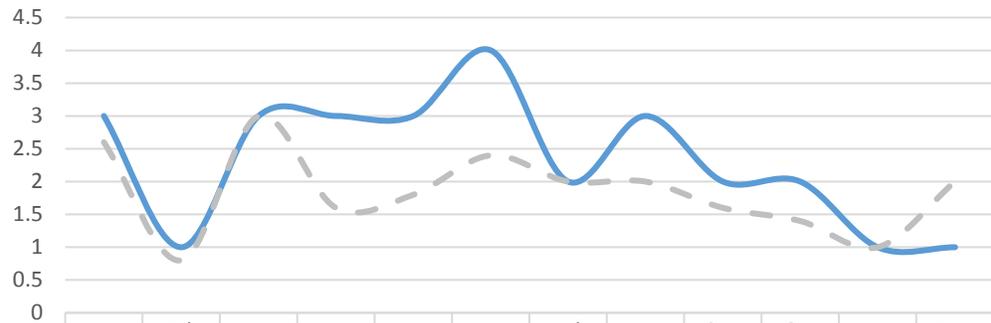


The chart above shows the known and unknown victim safety devices involved in the 30 Mesa fatalities in 2016. Eight (26.7%) involved victims that were not using a safety device.



There were 30 fatalities in 2016. Of those 30 fatalities, 12 involved a non-motorist victim (10 pedestrian collisions and two pedalcycle collisions).

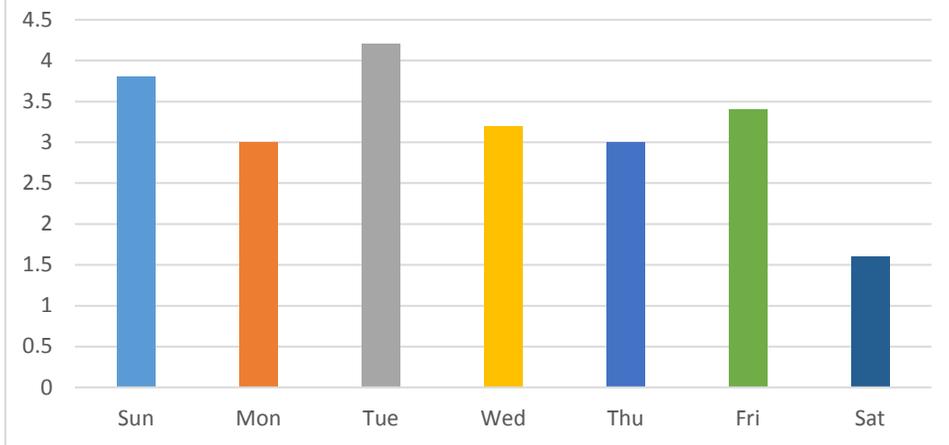
Mesa 2016 vs 5-Year Average:
Fatal Crashes by Month



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	3	1	3	3	3	4	2	3	2	2	1	1
5-Year Average	2.6	0.8	3	1.6	1.8	2.4	2	2	1.6	1.4	1	2

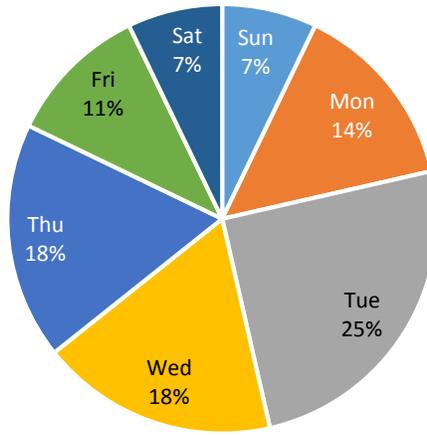
Over the past five years (2012 – 2016), fatal collisions by month have varied, with a rise in March. Comparatively, fatal crashes within Mesa in 2016 rose from March to Jun, then slowly declined.

Mesa Fatal Crashes by Day of Week
(Average from 2012 - 2016)



Over a five-year average, Sunday and Tuesday had the highest number of fatal crashes.

Mesa 2016 Fatal Crashes by Day of Week



In 2016, the highest concentration of fatalities happened during the 3-day periods of Tuesday, Wednesday, and Thursday.

Mesa 2016 Fatal Crashes by Time of Day									
		Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
12:00:00 AM	1:00:00 AM	0	0	0	0	0	0	0	0
1:00:00 AM	2:00:00 AM	0	0	0	0	0	0	0	0
2:00:00 AM	3:00:00 AM	0	0	0	0	0	0	0	0
3:00:00 AM	4:00:00 AM	0	0	0	0	0	0	0	0
4:00:00 AM	5:00:00 AM	0	0	0	0	0	0	0	0
5:00:00 AM	6:00:00 AM	0	0	0	0	1	0	0	1
6:00:00 AM	7:00:00 AM	0	0	0	0	0	0	1	1
7:00:00 AM	8:00:00 AM	0	0	0	0	0	0	0	0
8:00:00 AM	9:00:00 AM	0	0	0	0	0	0	0	0
9:00:00 AM	10:00:00 AM	0	0	0	0	0	0	0	0
10:00:00 AM	11:00:00 AM	0	0	0	0	1	0	0	1
11:00:00 AM	12:00:00 PM	0	0	1	0	0	0	0	1
12:00:00 PM	1:00:00 PM	0	0	0	0	0	0	0	0
1:00:00 PM	2:00:00 PM	0	0	0	0	1	0	0	1
2:00:00 PM	3:00:00 PM	0	2	1	1	0	0	0	4
3:00:00 PM	4:00:00 PM	0	0	0	0	1	1	0	2
4:00:00 PM	5:00:00 PM	0	0	0	0	0	0	0	0
5:00:00 PM	6:00:00 PM	0	0	1	0	0	1	1	3
6:00:00 PM	7:00:00 PM	0	0	0	0	0	0	0	0
7:00:00 PM	8:00:00 PM	1	0	1	2	0	0	0	4
8:00:00 PM	9:00:00 PM	0	1	2	0	1	0	0	4
9:00:00 PM	10:00:00 PM	1	1	1	1	0	0	0	4
10:00:00 PM	11:00:00 PM	0	0	0	0	0	1	0	1
11:00:00 PM	12:00:00 AM	0	0	0	1	0	0	0	1
	Total	2	4	7	5	5	3	2	28

In 2016, the highest concentration of fatal crashes within a three-hour period occurred from 7:00AM to 10:00PM.

Mesa 5-Year Trend: Fatal Crashes by Time of Day

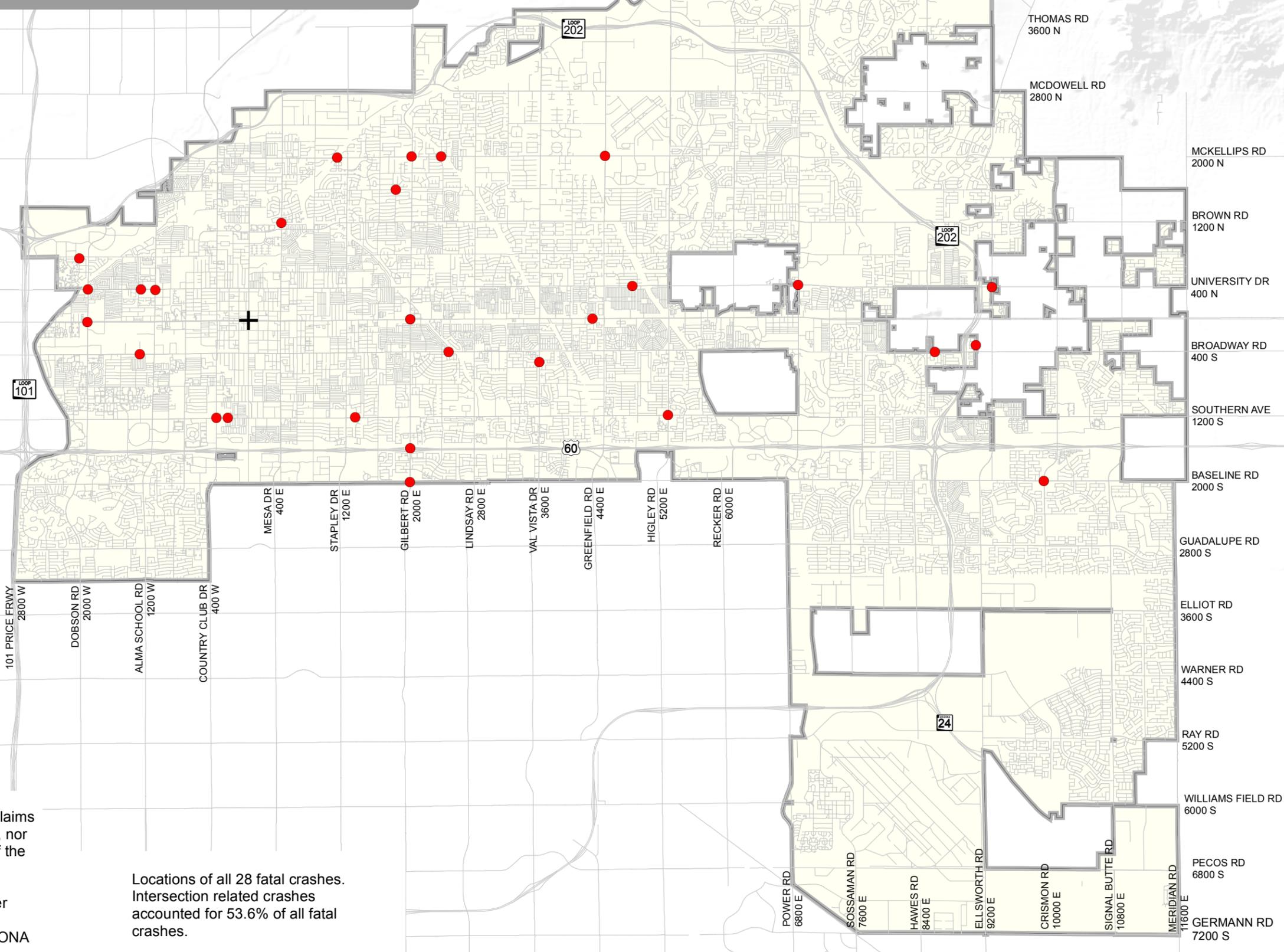
		2012	2013	2014	2015	2016	5-Year Total	5-Year Percent	6- HR TOTAL
12:00:00 AM	1:00:00 AM	1	0	0	0	0	1	0.9%	7pm-1am 40
1:00:00 AM	2:00:00 AM	0	1	1	0	0	2	1.8%	8pm-2am 32
2:00:00 AM	3:00:00 AM	0	0	0	0	0	0	0.0%	9pm-3am 23
3:00:00 AM	4:00:00 AM	0	0	0	1	0	1	0.9%	10pm-4am 16
4:00:00 AM	5:00:00 AM	0	0	0	0	0	0	0.0%	11pm-5am 9
5:00:00 AM	6:00:00 AM	0	0	2	0	1	3	2.7%	12am-6am 7
6:00:00 AM	7:00:00 AM	1	0	0	0	1	2	1.8%	1am-7am 8
7:00:00 AM	8:00:00 AM	0	1	2	0	0	3	2.7%	2am-8am 9
8:00:00 AM	9:00:00 AM	0	0	0	0	0	0	0.0%	3am-9am 9
9:00:00 AM	10:00:00 AM	2	2	1	1	0	6	5.4%	4am-10am 14
10:00:00 AM	11:00:00 AM	1	0	0	3	1	5	4.5%	5am-11am 19
11:00:00 AM	12:00:00 PM	2	5	1	2	1	11	9.8%	6am-12pm 27
12:00:00 PM	1:00:00 PM	0	0	1	1	0	2	1.8%	7am-1pm 27
1:00:00 PM	2:00:00 PM	0	2	2	0	1	5	4.5%	8am-2pm 29
2:00:00 PM	3:00:00 PM	2	0	3	1	4	10	8.9%	9am-3pm 39
3:00:00 PM	4:00:00 PM	3	0	0	2	2	7	6.3%	10am-4pm 40
4:00:00 PM	5:00:00 PM	2	0	1	0	0	3	2.7%	11am-5pm 38
5:00:00 PM	6:00:00 PM	0	1	1	2	3	7	6.3%	12pm-6pm 34
6:00:00 PM	7:00:00 PM	0	3	1	1	0	5	4.5%	1pm-7pm 37
7:00:00 PM	8:00:00 PM	4	1	1	0	4	10	8.9%	2pm-8pm 42
8:00:00 PM	9:00:00 PM	1	4	0	0	4	9	8.0%	3pm-9pm 41
9:00:00 PM	10:00:00 PM	1	1	2	0	4	8	7.1%	4pm-10pm 42
10:00:00 PM	11:00:00 PM	2	2	1	1	1	7	6.3%	5pm-11pm 46
11:00:00 PM	12:00:00 AM	2	0	1	1	1	5	4.5%	6pm-12am 44
	Total	24	23	21	16	28	112		

Over a 5-year trend, the peak six-hour period for fatal crashes was between 5:00PM and 11:00PM.



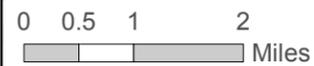
FATAL CRASH LOCATIONS

2016



Legend

- Fatal Crashes
- ⊕ Center of Downtown Mesa
- ▭ City of Mesa Boundary



Please note that the City of Mesa makes no claims concerning the accuracy of the data provided, nor assumes any liability resulting from the use of the information herein. The data provided is the property of the City of Mesa and is not to be distributed in any form nor used in any manner not authorized by the City of Mesa in writing. Copyright 1988, 2017. CITY OF MESA, ARIZONA

Locations of all 28 fatal crashes. Intersection related crashes accounted for 53.6% of all fatal crashes.



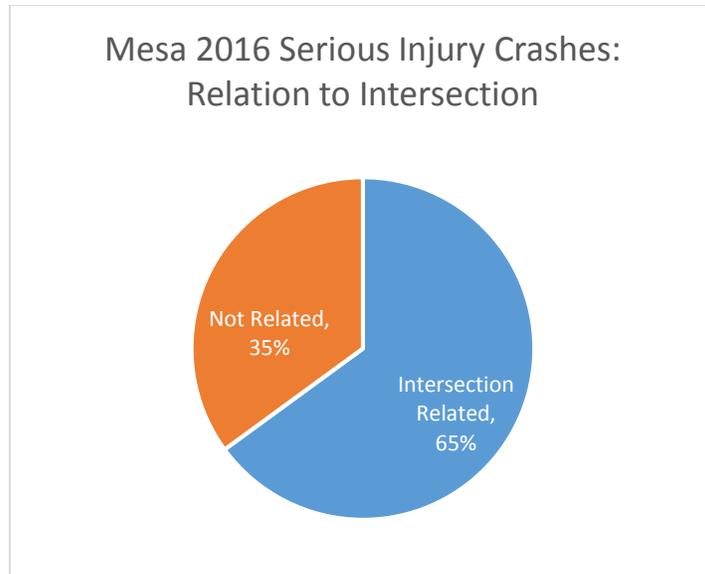
SECTION 2: SERIOUS INJURIES

As of 2014, serious injury crashes are now being measured by the City of Mesa to help determine problematic areas on roadways. This metric is likely to give a clearer view of the behaviors and factors that lead to collisions resulting in serious injuries by significantly increasing the sample size of analyzed crashes.

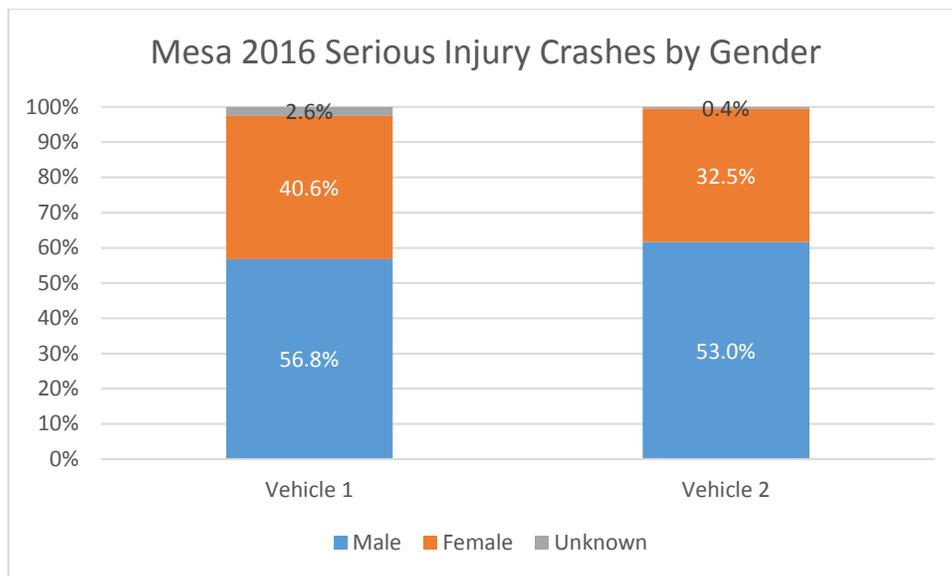
Mesa Serious Injury Crashes: General View							
YEAR	SERIOUS INJURY CRASHES BY YEAR	TOTAL SERIOUS INJURIES BY YEAR	MESA TOTAL CRASHES BY YEAR	MESA ESTIMATED POPULATION BY YEAR	PERCENT OF SERIOUS INJURIES PER TOTAL CRASHES	TOTAL SERIOUS INJURIES PER 100,000 POPULATION	SERIOUS INJURIES PER 100,000: PERCENT CHANGE FROM 5-YEAR AVERAGE
2001			9928	416301			
2002			9155	427923			
2003			8520	435391			
2004			9184	443733			
2005			9205	450948			
2006			8522	456449			
2007			7933	460493			
2008			5908	463829			
2009			5504	467157			
2010		228	5118	440031	4.5%	52	
2011		236	5178	444685	4.6%	53	
2012	-	233	5134	451677	4.5%	51.6	-0.7%
2013	-	239	5313	457587	4.5%	52.2	0.6%
2014	183	237	5025	464704	4.7%	51.0	-1.8%
2015	181	249	4979	471825	5.0%	52.8	1.6%
2016	234	272	5554	475274	4.9%	57.2	10.2%
2016 5-YR AVG	-	246	5201	464213	4.7%	53.0	
Information provided by City of Mesa website. (Their source is ESRI Community Analysis)							
Information from http://population.us/az/mesa/							
Information from https://www.census.gov/quickfacts/							

In 2016, 234 serious injury crashes occurred on Mesa roadways resulting in 272 serious injuries. The percentage of severe injury crashes per total vehicle crashes slightly decreased from the previous year.

The 5-year average per 100,000 population was 53, and 2016 was above that average with about 57 serious injury crashes per 100,000 population.

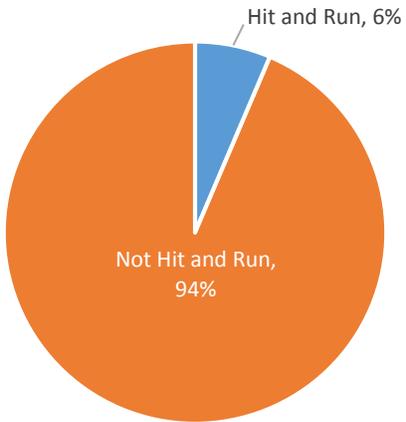


Of the 234 serious injury crashes that happened within Mesa in 2016, 152 were intersection related.



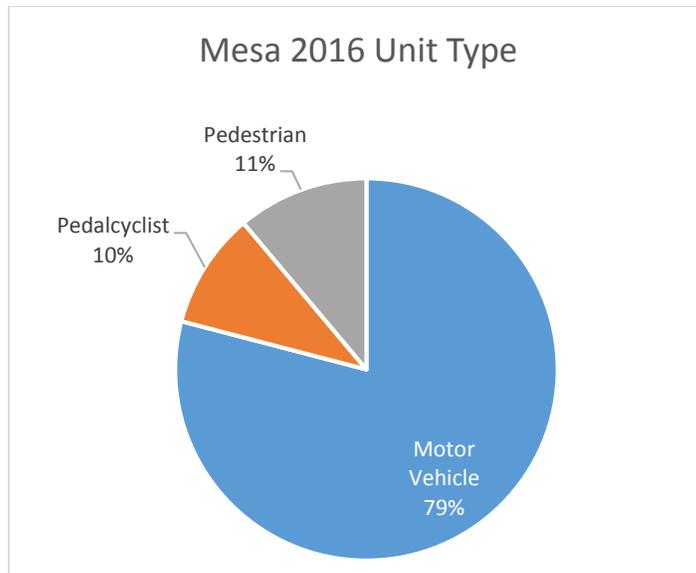
Of the 234 serious injury crashes that occurred within Mesa in 2016, the gender of vehicle 1 was predominantly male at 133. Of the 201 serious injury crashes that involved two or more units, the gender of vehicle 2 was mostly male at 124.

Mesa 2016 Serious Injury Crashes: Hit and Run Percentage

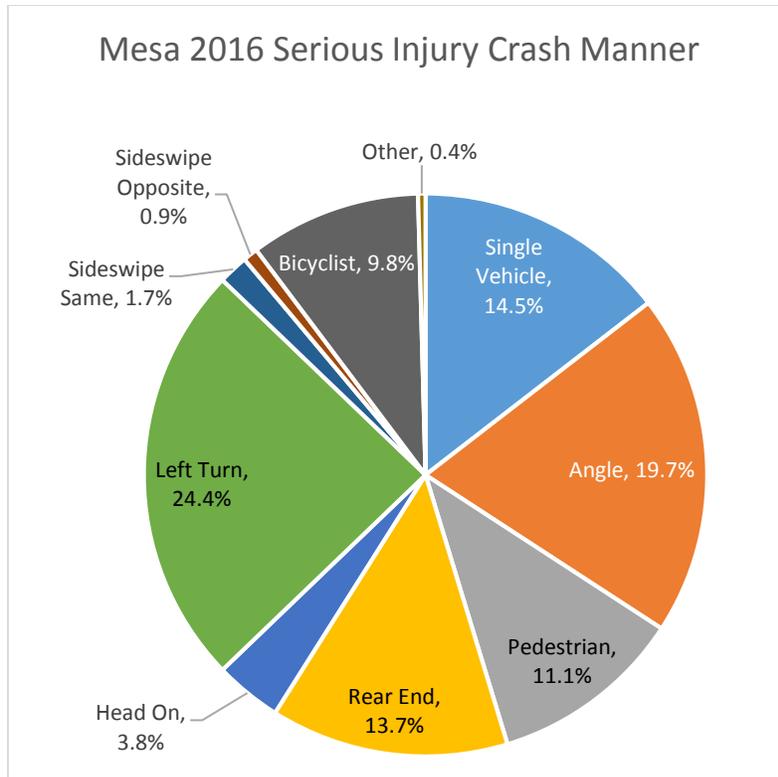


There were 15 serious injury crashes that were classified as hit and run in 2016.

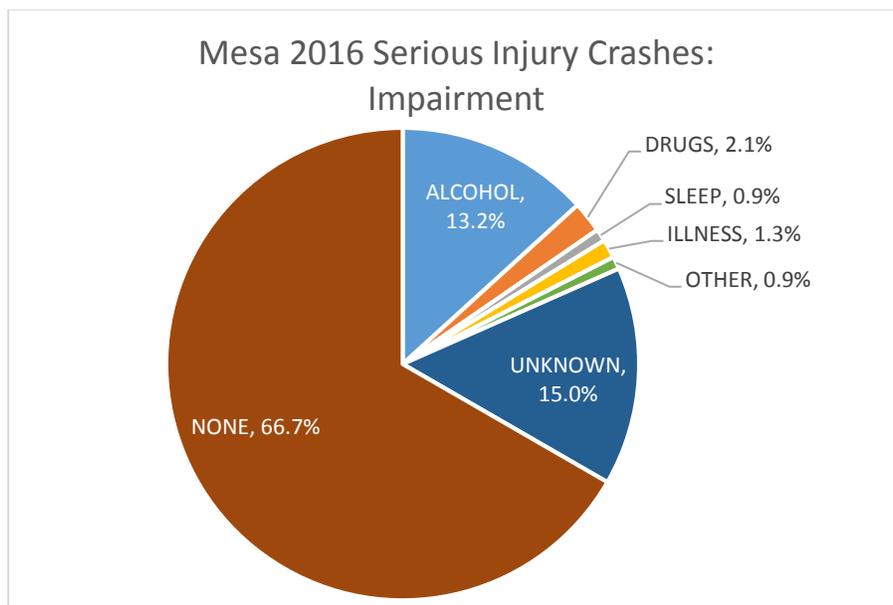
Mesa 2016 Unit Type



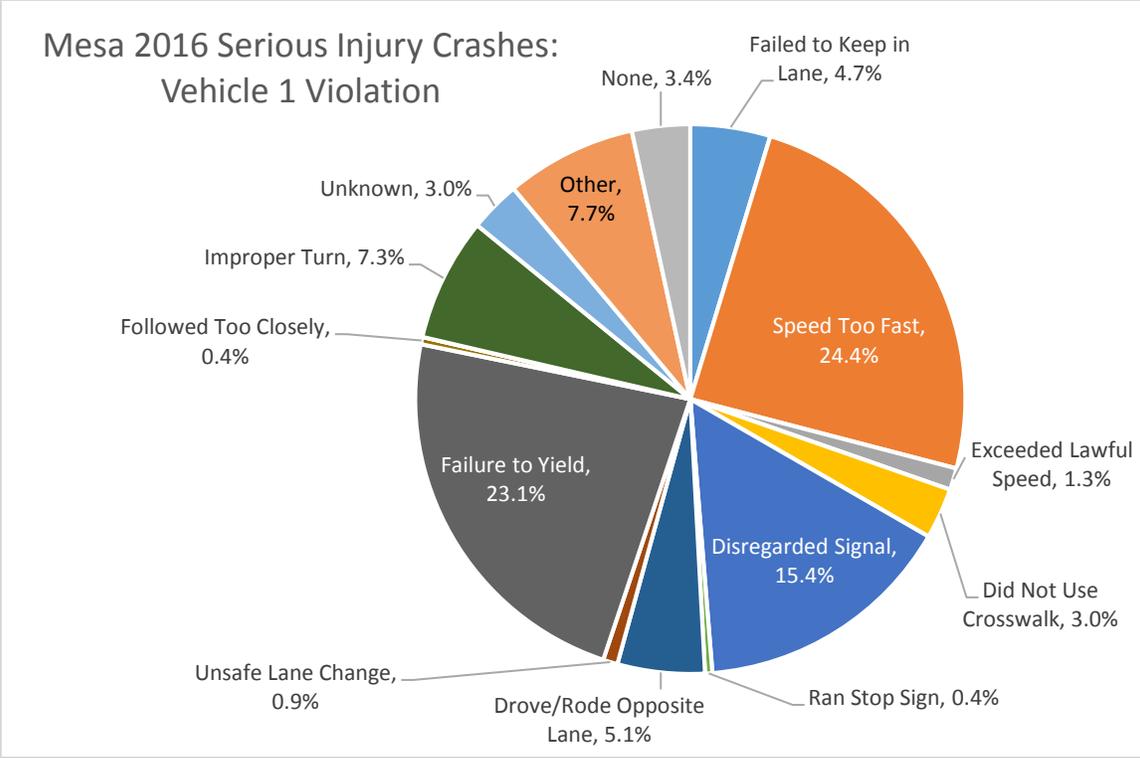
Most of the serious injury crashes that occurred in Mesa in 2016 were motor vehicle collisions. This number includes motorcyclists and single vehicle crashes.



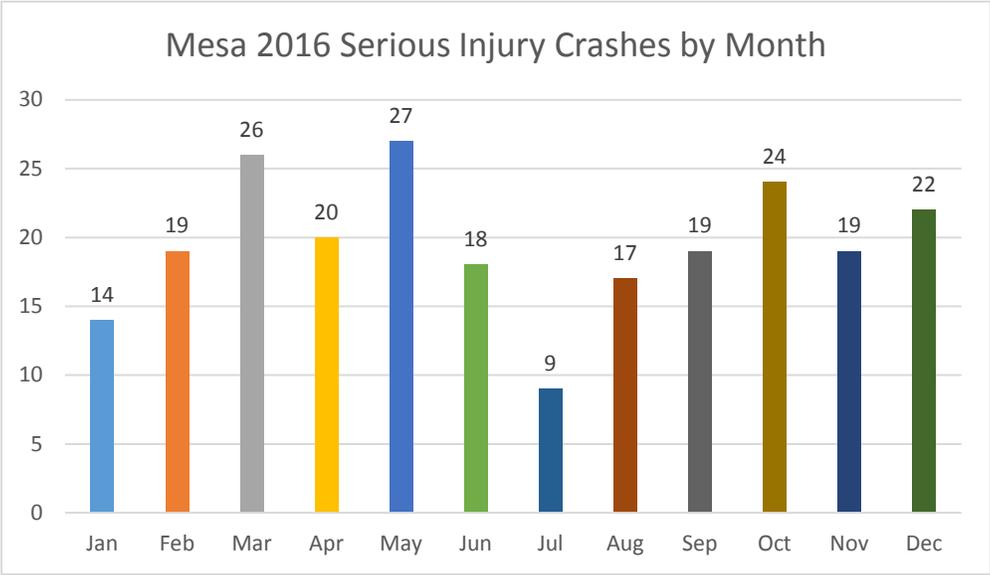
In 2016 the leading crash manners resulting in serious injuries were Left Turn and Angle crashes. Bike and pedestrian collisions account for another 20.9% of serious injuries.



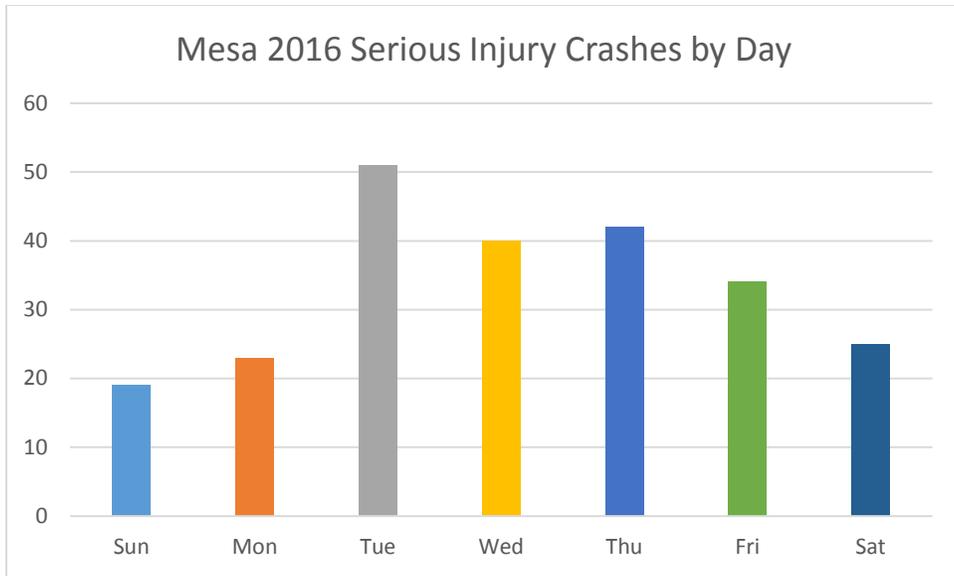
Impairment was a factor in 18.4% of serious injury crashes in 2016.



This chart shows a distribution of Mesa vehicle 1 violations in 2016 that resulted in crashes with serious injuries.



Within Mesa in 2016, there was a rise of serious injury crashes during the Spring and Fall seasons.



The highest 3-day period for serious injury crashes was Tuesday, Wednesday, and Thursday, which is consistent to high-volume periods.

Mesa 2016 Serious Injury Crashes by Time and Day of Week w/ 6-Hour Totals

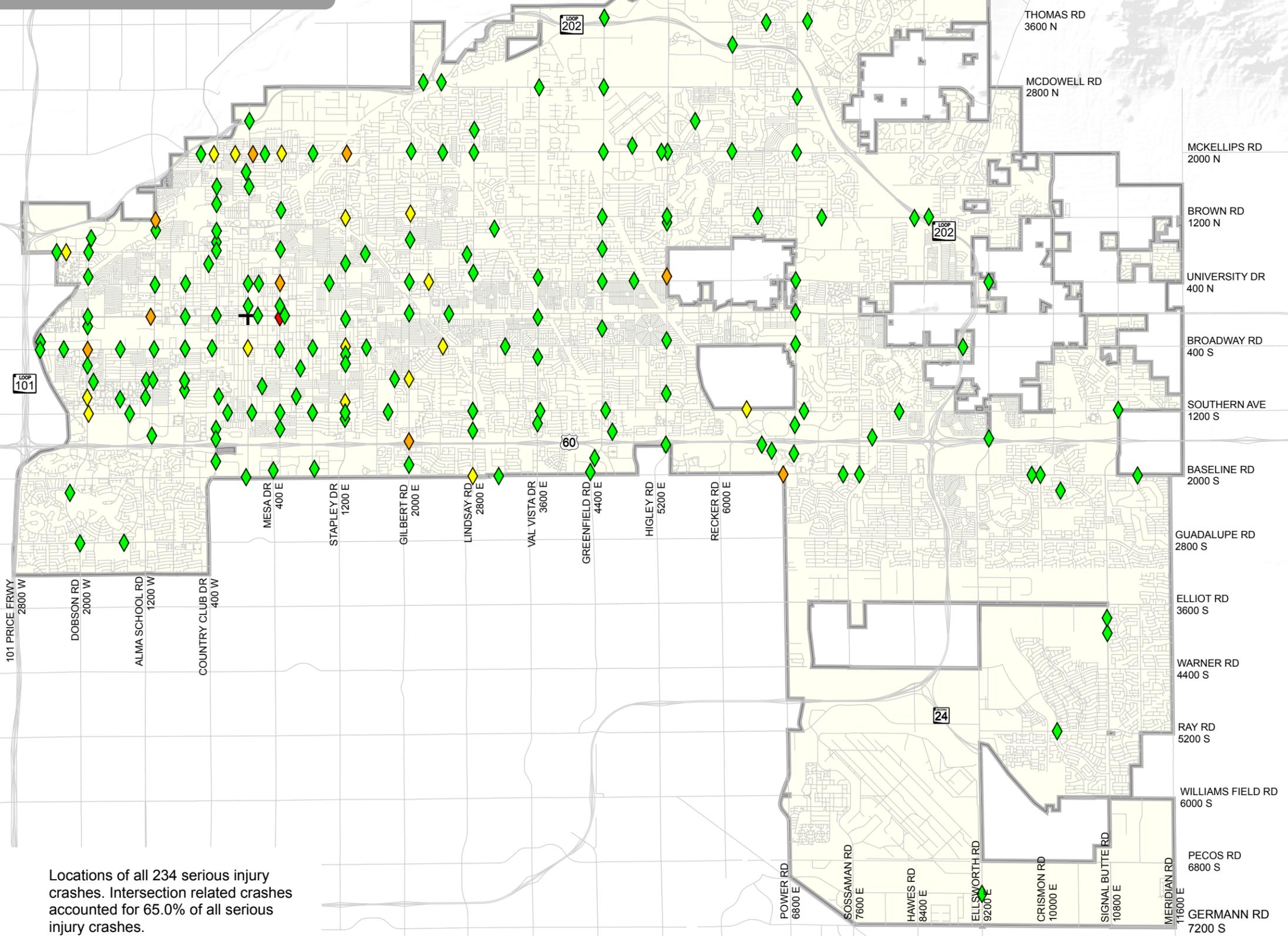
		1	2	3	4	5	6	7	2016 Total	Percent	6- HR TOTAL	
12:00:00 AM	1:00:00 AM	3	0	0	0	0	0	0	3	1.3%	7pm-1am	53
1:00:00 AM	2:00:00 AM	0	0	0	0	0	0	0	0	0.0%	8pm-2am	35
2:00:00 AM	3:00:00 AM	1	1	1	0	0	0	0	3	1.3%	9pm-3am	26
3:00:00 AM	4:00:00 AM	0	0	0	0	0	0	1	1	0.4%	10pm-4am	19
4:00:00 AM	5:00:00 AM	0	1	0	0	0	0	0	1	0.4%	11pm-5am	13
5:00:00 AM	6:00:00 AM	0	0	1	3	1	0	0	5	2.1%	12am-6am	13
6:00:00 AM	7:00:00 AM	1	0	2	3	1	0	0	7	3.0%	1am-7am	17
7:00:00 AM	8:00:00 AM	0	2	5	2	2	0	1	12	5.1%	2am-8am	29
8:00:00 AM	9:00:00 AM	0	2	2	0	3	1	1	9	3.8%	3am-9am	35
9:00:00 AM	10:00:00 AM	0	0	1	1	1	2	1	6	2.6%	4am-10am	40
10:00:00 AM	11:00:00 AM	1	4	0	1	1	4	0	11	4.7%	5am-11am	50
11:00:00 AM	12:00:00 PM	0	2	3	1	2	2	2	12	5.1%	6am-12pm	57
12:00:00 PM	1:00:00 PM	1	0	1	1	3	3	1	10	4.3%	7am-1pm	60
1:00:00 PM	2:00:00 PM	0	3	5	2	2	3	1	16	6.8%	8am-2pm	64
2:00:00 PM	3:00:00 PM	1	1	3	2	5	3	0	15	6.4%	9am-3pm	70
3:00:00 PM	4:00:00 PM	0	0	6	5	3	5	2	21	9.0%	10am-4pm	85
4:00:00 PM	5:00:00 PM	3	0	2	4	2	3	3	17	7.3%	11am-5pm	91
5:00:00 PM	6:00:00 PM	2	2	3	4	5	4	2	22	9.4%	12pm-6pm	101
6:00:00 PM	7:00:00 PM	1	2	1	4	2	1	2	13	5.6%	1pm-7pm	104
7:00:00 PM	8:00:00 PM	3	0	6	2	5	0	2	18	7.7%	2pm-8pm	106
8:00:00 PM	9:00:00 PM	0	1	6	1	2	1	1	12	5.1%	3pm-9pm	103
9:00:00 PM	10:00:00 PM	1	1	1	2	0	1	2	8	3.4%	4pm-10pm	90
10:00:00 PM	11:00:00 PM	0	0	1	2	1	0	3	7	3.0%	5pm-11pm	80
11:00:00 PM	12:00:00 AM	1	1	1	0	1	1	0	5	2.1%	6pm-12am	63
	Total	19	23	51	40	42	34	25	234			
		SUN	MON	TUE	WED	THU	FRI	SAT				

Most crashes in Mesa in 2016 that resulted in a serious injury occurred from 5:00 PM-6:00 PM. The lowest number of crashes happened from 1:00 AM-2:00 AM.



SERIOUS INJURY CRASH LOCATIONS

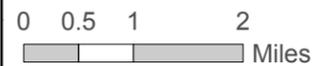
2016



Legend

Serious Injury Crashes

- ◆ 1 Crash
- ◆ 2 Crashes
- ◆ 3 Crashes
- ◆ 4 Crashes
- + Center of Downtown Mesa
- City of Mesa Boundary



Please note that the City of Mesa makes no claims concerning the accuracy of the data provided, nor assumes any liability resulting from the use of the information herein. The data provided is the property of the City of Mesa and is not to be distributed in any form nor used in any manner not authorized by the City of Mesa in writing. Copyright 1988, 2017. CITY OF MESA, ARIZONA

Locations of all 234 serious injury crashes. Intersection related crashes accounted for 65.0% of all serious injury crashes.

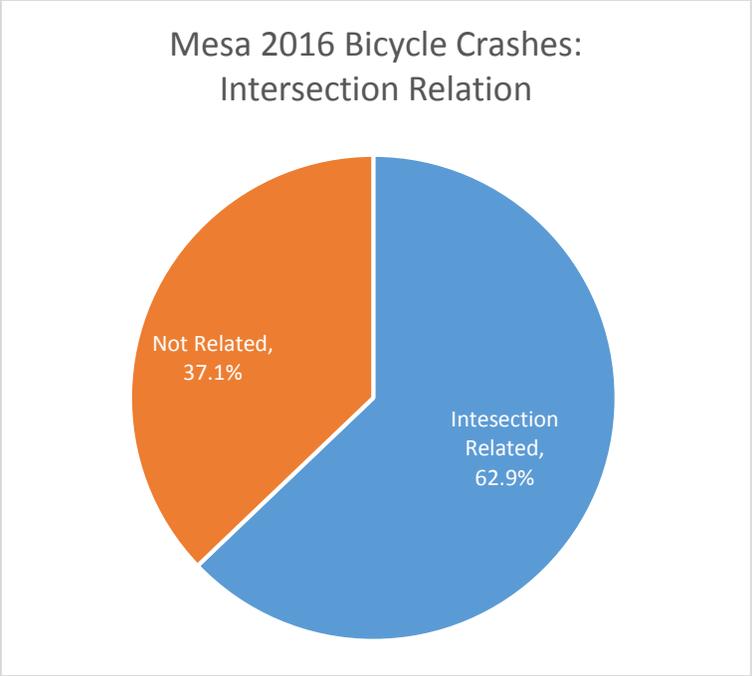
SECTION 3:

BIKE CRASHES

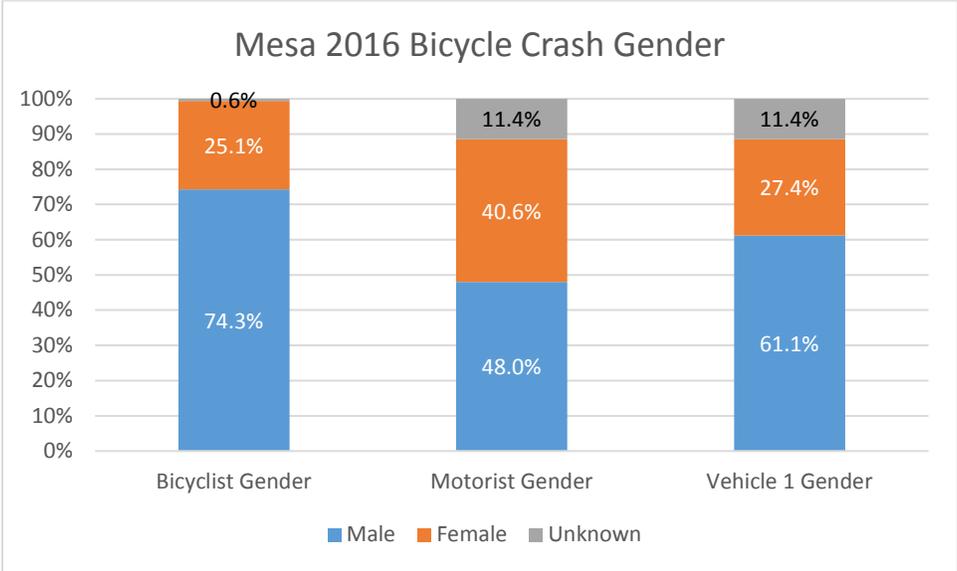
Mesa Bicycle Crashes: General View

YEAR	MESA BIKE CRASHES BY YEAR	TOTAL MESA VEHICLE CRASHES BY YEAR	BIKE CRASHES % OF TOTAL	MESA ESTIMATED POPULATION BY YEAR	MESA BIKE CRASHES PER 100,000 POPULATION	BIKE CRASHES PER 100,000: PERCENT FROM 5-YEAR AVERAGE
2001	284	9928	2.9%	416301	68	
2002	254	9155	2.8%	427923	59	
2003	282	8520	3.3%	435391	65	
2004	258	9184	2.8%	443733	58	
2005	276	9205	3.0%	450948	61	
2006	181	8522	2.1%	456449	40	
2007	231	7933	2.9%	460493	50	
2008	212	5908	3.6%	463829	46	
2009	222	5504	4.0%	467157	48	
2010	206	5118	4.0%	440031	47	
2011	219	5178	4.2%	444685	49	
2012	257	5134	5.0%	451677	56.9	30%
2013	190	5313	3.6%	457587	41.5	5%
2014	163	5025	3.2%	464704	35.1	-13%
2015	131	4979	2.6%	471825	27.8	-43%
2016	175	5554	3.2%	475274	36.8	-8%
2016 5-YR AVG	183.2	5201	3.5%	464213	39.6	
Information provided by City of Mesa website. (Their source is ESRI Community Analysis)						
Information from http://population.us/az/mesa/						
Information from https://www.census.gov/quickfacts/						

The City of Mesa had 175 bike crashes in 2016 which was 3.2% of all Mesa crashes. The number of bike crashes per 100,000 population was 8% less than the 5-year average of about 40 bike crashes per 100,000 population.

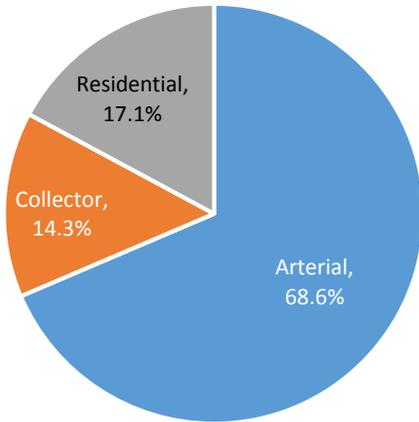


Of the 175 bike crashes in Mesa 2016, 110 were intersection related.

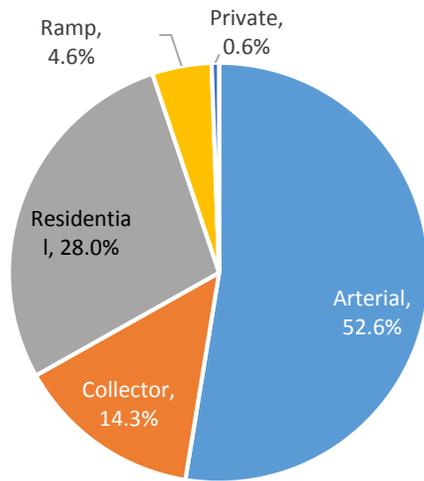


From the chart above, the gender of persons involved in bicycle crashes is primarily male.

Mesa 2016 Bicycle Crashes:
On Street Classification

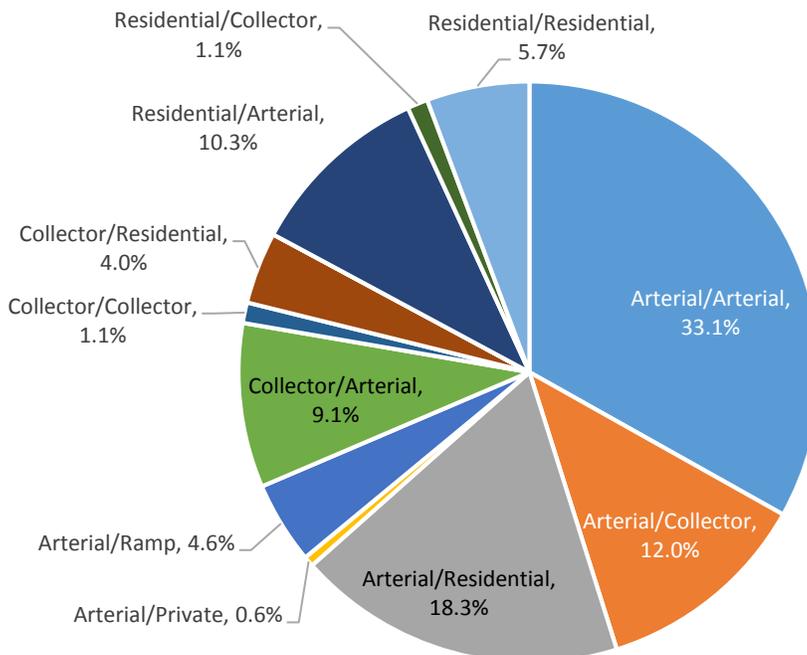


Mesa 2016 Bicycle Crashes:
Cross Street Classification



About 69% of Mesa bike crashes in 2016 occurred on arterial roadways. Likewise, the cross street was primarily an arterial.

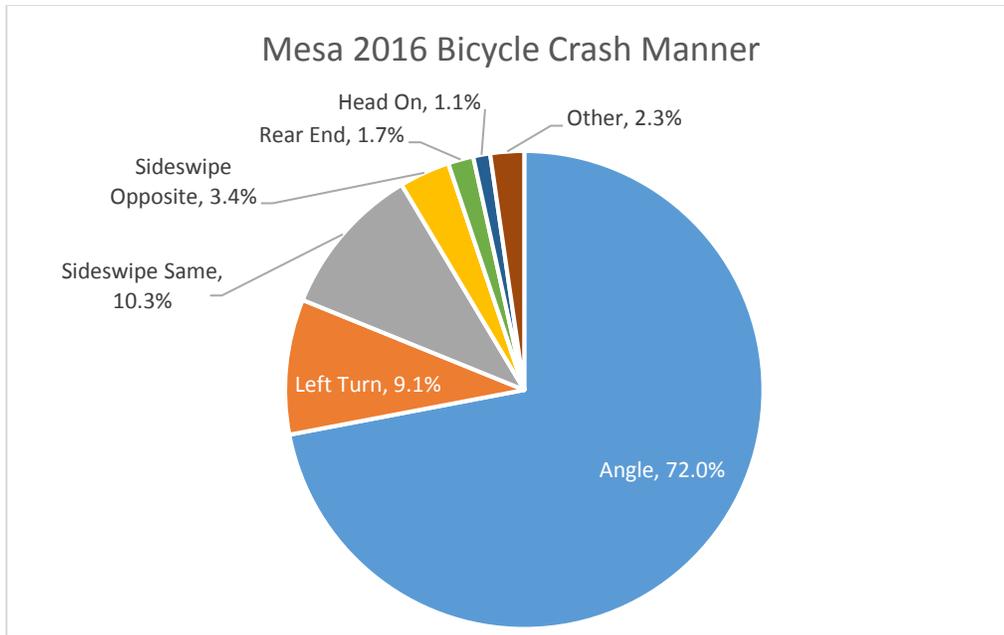
Mesa 2016 Bicycle Crashes:
Intersection Classification



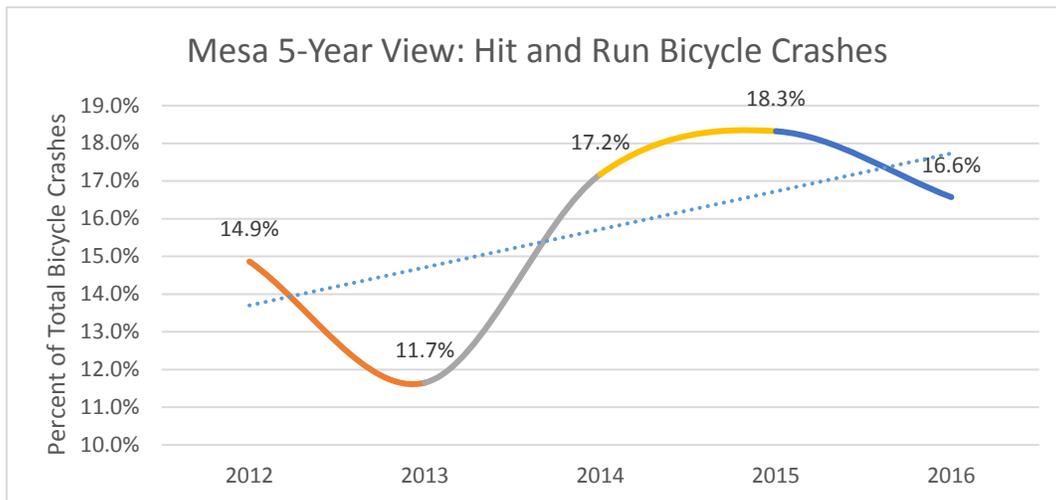
The chart above shows the street intersection classifications for Mesa bicycle crashes in 2016.

Mesa 2016 Bicyclists Involved in Crashes: Age Group						
AGE		MESA 2016 POPULATION	PERCENT OF TOTAL POPULATION	NO. OF BIKE CRASHES	PERCENT OF TOTAL BIKE CRASHES	BIKE CRASHES/ 10,000 POPULATION
Under	5	32794	6.9%	2	1.1%	0.61
5	to 9	33269	7.0%	3	1.7%	0.90
10	to 14	31843	6.7%	15	8.6%	4.71
15	to 19	31368	6.6%	25	14.3%	7.97
20	to 24	34695	7.3%	19	10.9%	5.48
25	to 34	67964	14.3%	21	12.0%	3.09
35	to 44	57033	12.0%	21	12.0%	3.68
45	to 54	58934	12.4%	30	17.1%	5.09
55	to 59	27091	5.7%	19	10.9%	7.01
60	to 64	26140	5.5%	8	4.6%	3.06
65	to 74	39448	8.3%	5	2.9%	1.27
75	to 84	24714	5.2%	5	2.9%	2.02
85	+	9981	2.1%	0	0.0%	0.00
Unknown		-		2	1.1%	
Total		475274		175		

The above table shows the ages of the bicyclists that were involved in crashes within Mesa in 2016. The highest concentration of crashes occurred among bicyclist aged 45 to 54.



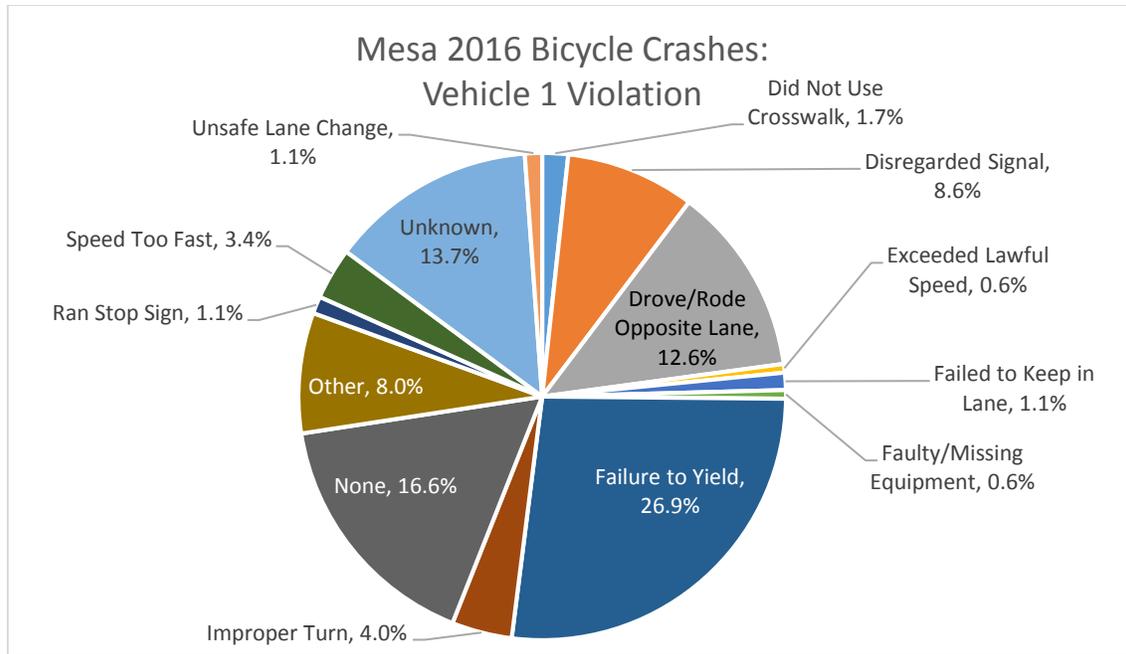
Almost three-quarters of the crashes that involved bicyclists in 2016 were angle crashes. This document will also delve into the behaviors that lead to collisions.



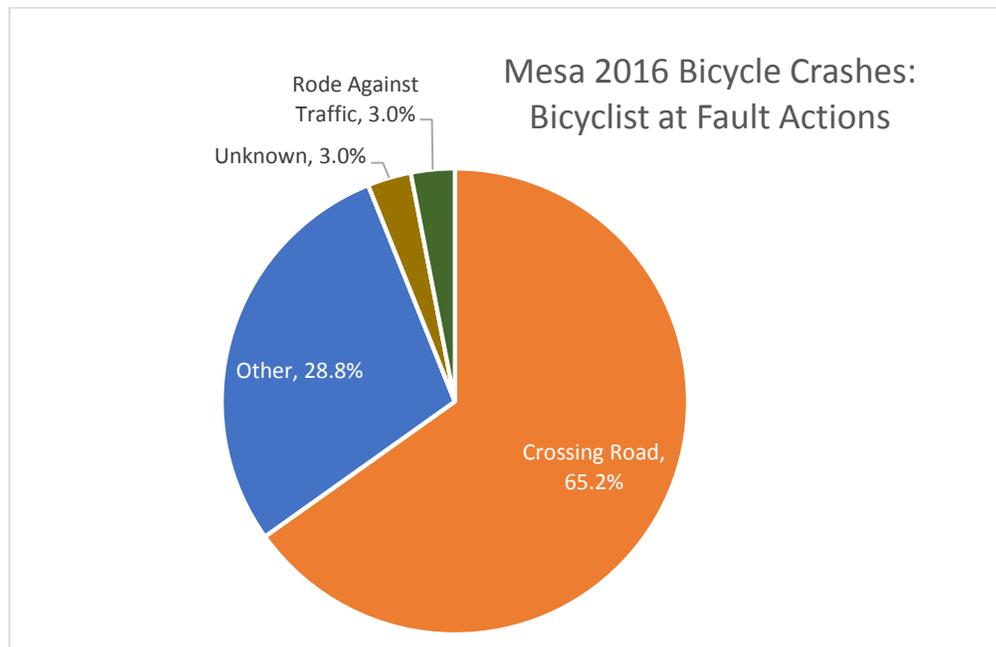
Of the 175 bike crashes in Mesa 2016, 16.6% were deemed hit and run collisions. This percentage is up 1.2% from the 5-year average, and down 1.7% from the previous year.

Mesa 2016 Bicycle Crashes: Vehicle 1 Designation		
Motorist at Fault	109	62.3%
Cyclist at Fault	66	37.7%
Total	175	

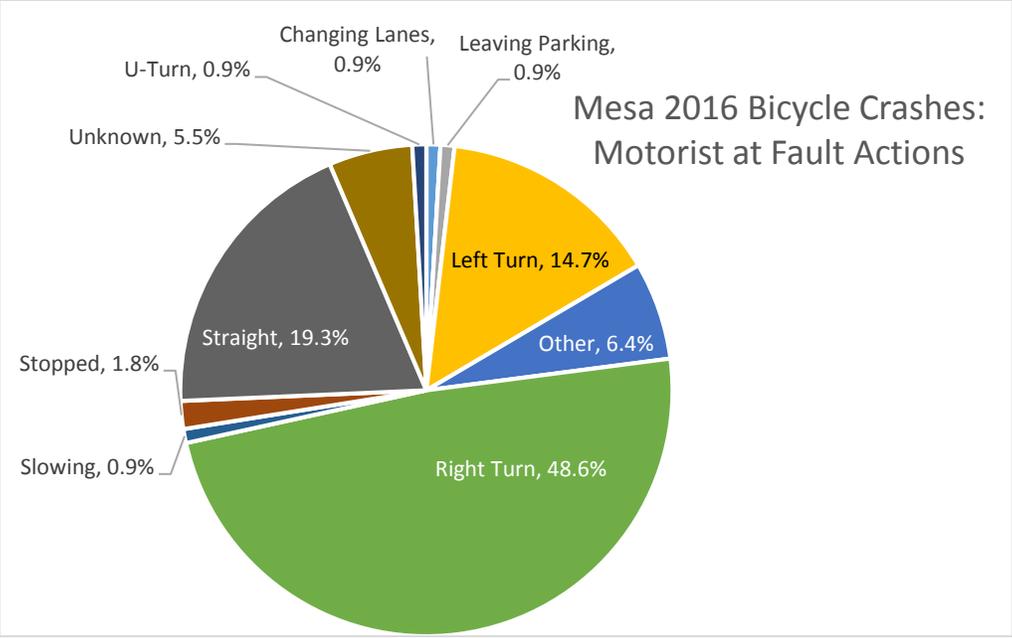
More than half of the cases of bicyclist crashes were the result of a violation by a motorist.



The chart above shows the violations of V1 which includes violations performed by both the cyclist and the motorist. The highest percentage is attributed to a failure to yield and riding in the wrong lane.



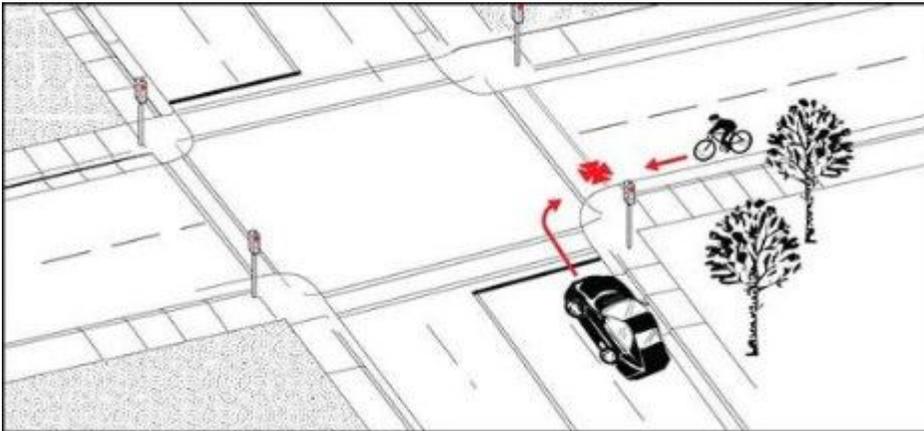
When the cyclist was vehicle 1, they were primarily crossing the road during a non-permitted crossing interval (DON'T WALK interval) or without a crosswalk.



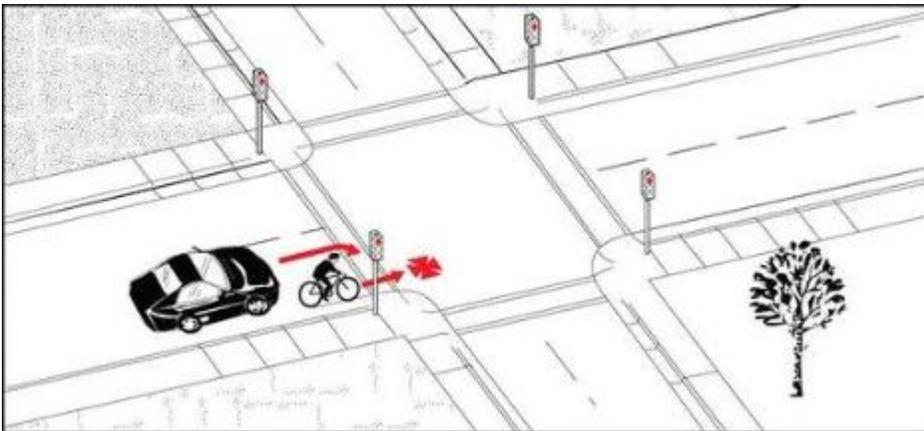
When the motorist was vehicle 1, turning motions were the primary actions.

The following is a list of the most common crash types for bicycle-motorist collisions. They are ordered from highest to lowest and show the number of collisions of a certain type followed by the percentage of total crashes. Graphics sourced from Federal Highway Administration, *Bicycle Crash Types: A 1990's Informational Guide*. The most common crash types for bicycle-motorist collisions of 2016 were as follows:

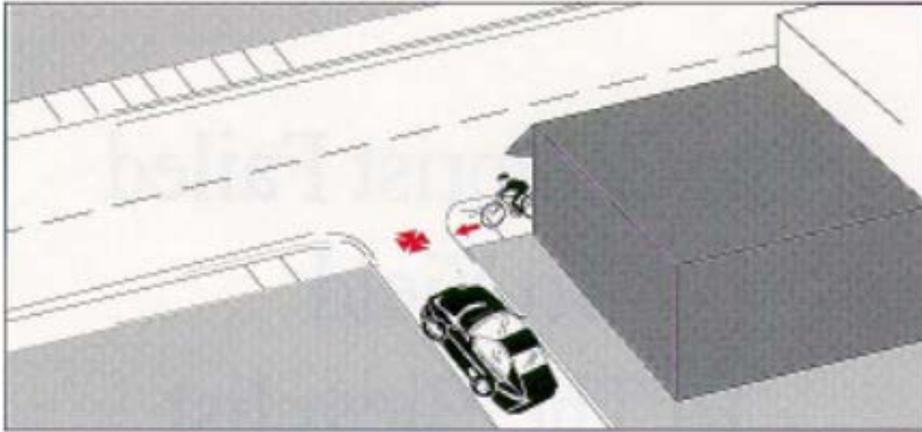
1. **Motorist Right Turn** – bicycle traveling perpendicular direction: 76 (43.4%)



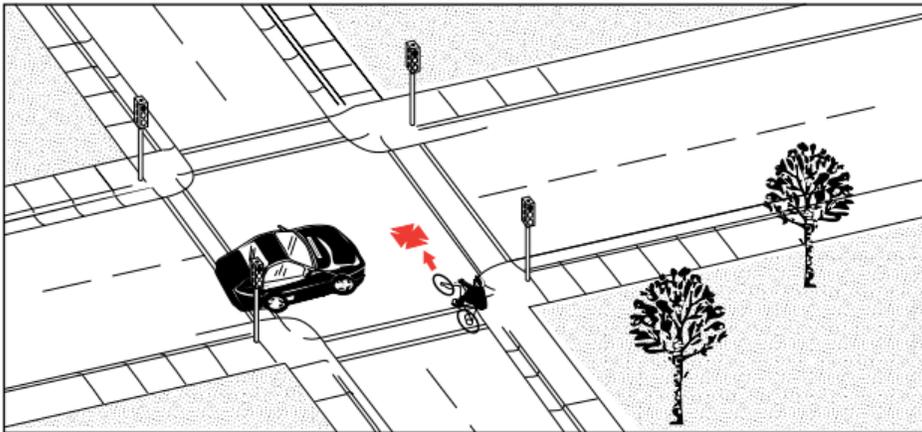
2. **Motorist Right Turn** - bicycle travelling in the same direction: 19 (10.9%)



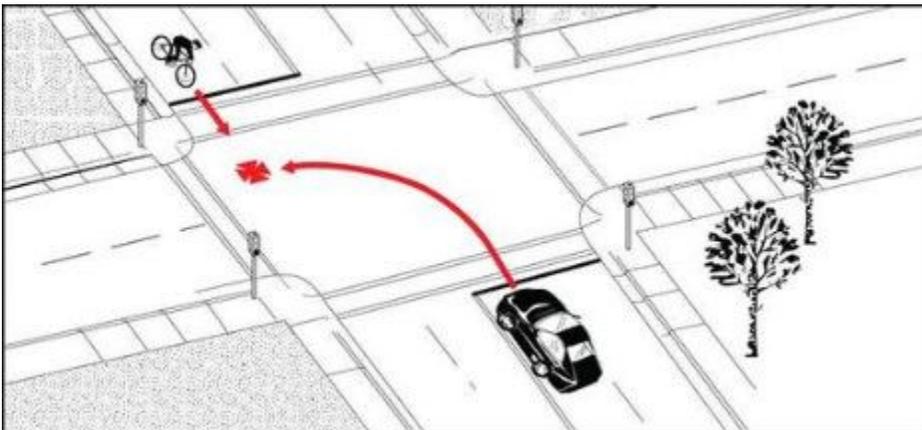
3. Motorist Drive Out – driveway or alley: 19 (10.9%)

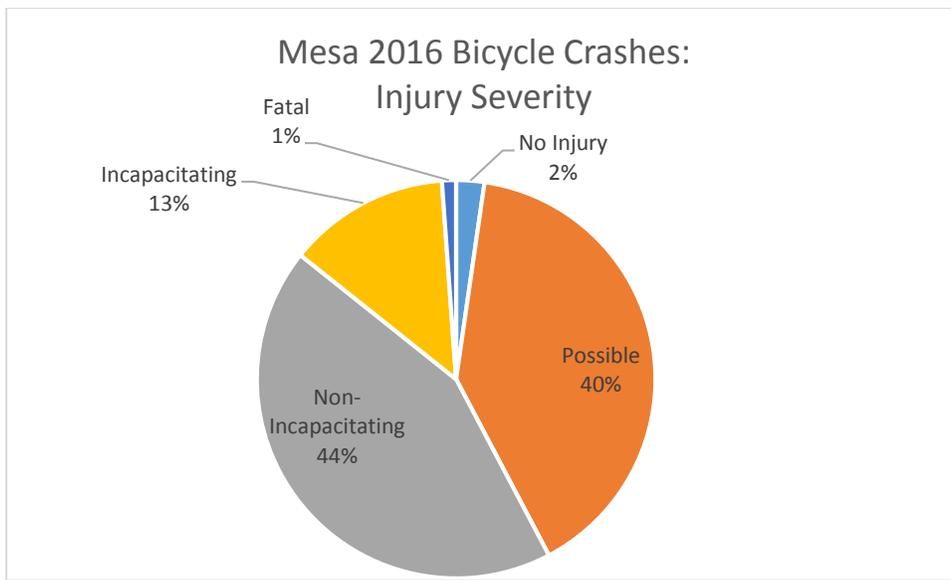
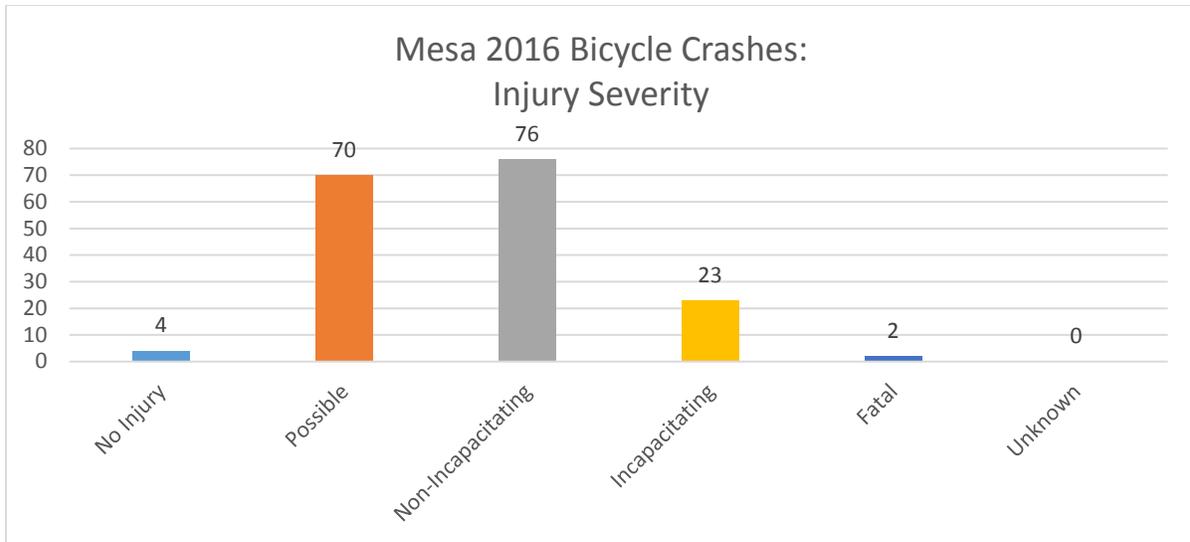


4. Bicycle Ride Through - signal controlled intersection: 15 (8.6%)



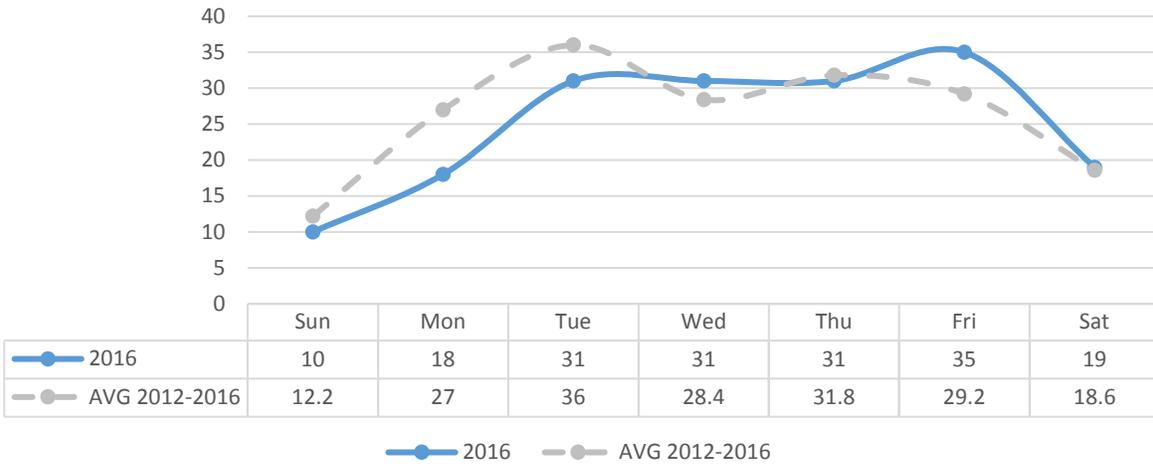
5. Motorist Left Turn – bicycle travelling in the opposite direction: 13 (7.4%)





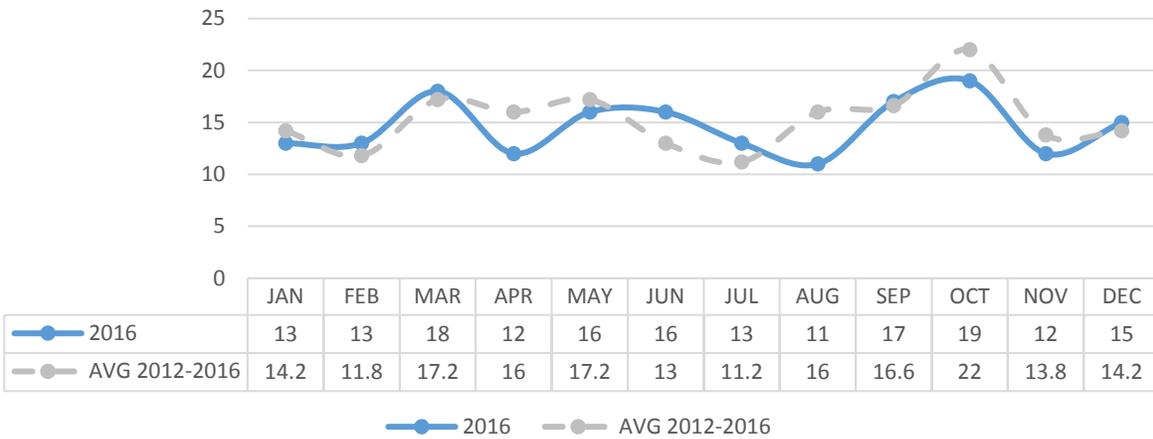
Of the 175 total bike crashes within Mesa in 2016, there were 4 fatalities and 23 serious injuries, totalling 14.2% of all bicycle-related crashes.

Mesa 2016 Bicycle Crashes by Day vs 5-Year Average



2016 mostly remained under the 5-year average for crashes by weekday, rising slightly above on Wednesdays and Fridays. The highest 3-day period for bicycle crashes was Wednesday-Friday.

Mesa 2016 Bicycle Crashes by Month vs 5-Year Average



The bicycle trend in 2016 fluctuated, with rises in the Spring and Fall.

Mesa 2016 Bicycle Crashes by Time of Day and Day of Week

		Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
12:00:00 AM	1:00:00 AM	0	0	0	0	0	0	0	0
1:00:00 AM	2:00:00 AM	0	0	0	0	1	0	0	1
2:00:00 AM	3:00:00 AM	0	0	0	0	0	0	0	0
3:00:00 AM	4:00:00 AM	0	0	0	0	0	0	0	0
4:00:00 AM	5:00:00 AM	0	0	0	0	0	0	0	0
5:00:00 AM	6:00:00 AM	0	0	1	2	0	0	1	4
6:00:00 AM	7:00:00 AM	0	0	1	2	0	0	1	4
7:00:00 AM	8:00:00 AM	1	1	1	3	3	2	0	11
8:00:00 AM	9:00:00 AM	1	1	1	4	4	3	1	15
9:00:00 AM	10:00:00 AM	0	0	3	2	0	2	1	8
10:00:00 AM	11:00:00 AM	0	2	0	0	2	1	1	6
11:00:00 AM	12:00:00 PM	0	0	3	3	0	1	1	8
12:00:00 PM	1:00:00 PM	1	2	5	3	3	1	2	17
1:00:00 PM	2:00:00 PM	0	1	3	2	3	3	1	13
2:00:00 PM	3:00:00 PM	1	2	4	2	3	2	1	15
3:00:00 PM	4:00:00 PM	1	1	2	1	2	3	1	11
4:00:00 PM	5:00:00 PM	1	1	1	2	2	6	0	13
5:00:00 PM	6:00:00 PM	1	2	0	2	2	3	2	12
6:00:00 PM	7:00:00 PM	1	4	3	1	2	0	3	14
7:00:00 PM	8:00:00 PM	1	1	2	1	3	3	1	12
8:00:00 PM	9:00:00 PM	1	0	1	0	0	4	0	6
9:00:00 PM	10:00:00 PM	0	0	0	0	0	1	1	2
10:00:00 PM	11:00:00 PM	0	0	0	1	1	0	1	3
11:00:00 PM	12:00:00 AM	0	0	0	0	0	0	0	0
	Total	10	18	31	31	31	35	19	175

In 2016, most of the bicycle crashes occurred between 12:00PM and 1:00PM.

Mesa 5-Year Trend: Bicycle Crashes by Time of Day

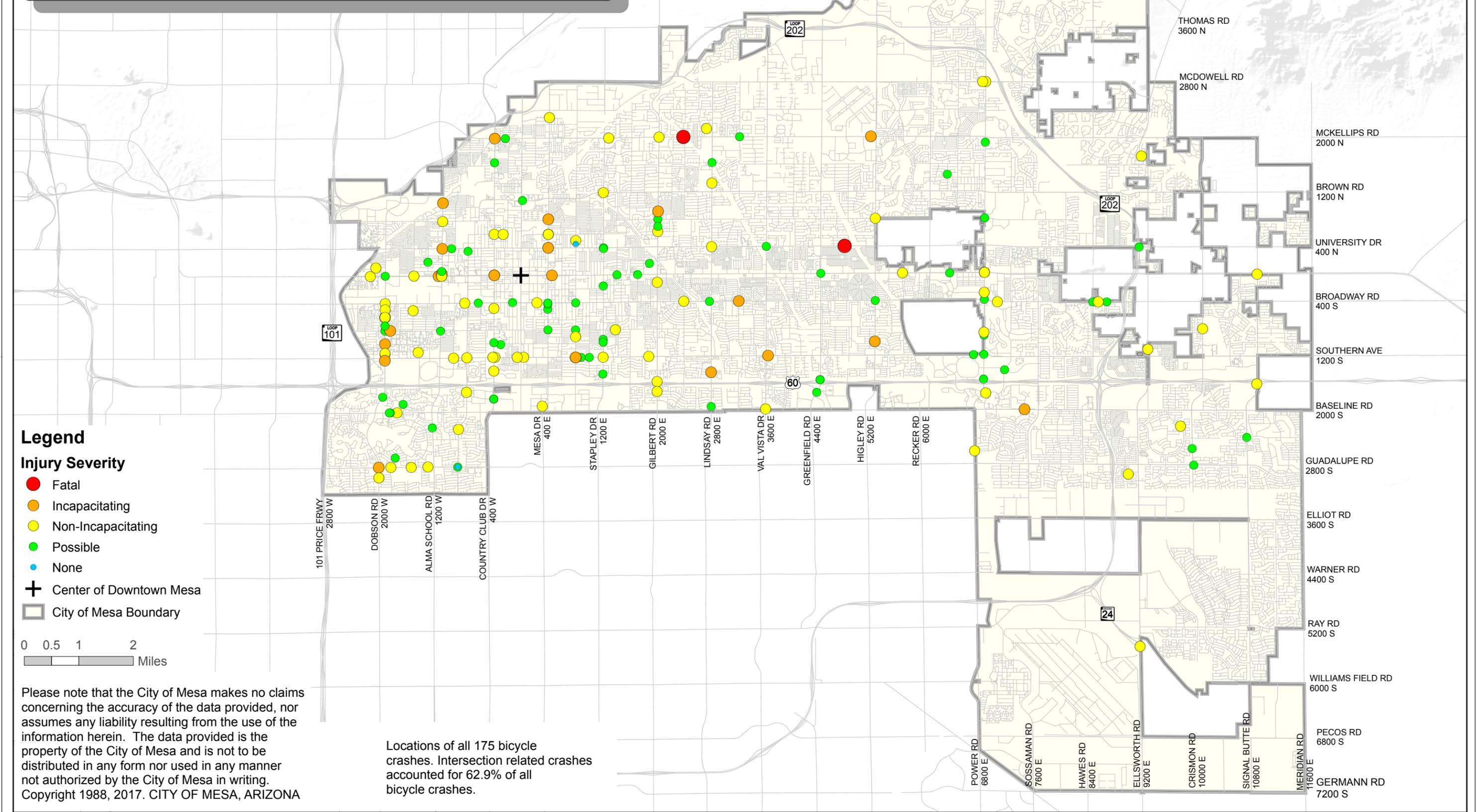
		2012	2013	2014	2015	2016	5-Year Total	5-Year Percent	6- HR TOTAL	
12:00:00 AM	1:00:00 AM	0	0	0	0	0	0	0.0%	7pm-1am	124
1:00:00 AM	2:00:00 AM	0	0	0	0	1	1	0.1%	8pm-2am	69
2:00:00 AM	3:00:00 AM	2	0	0	0	0	2	0.2%	9pm-3am	41
3:00:00 AM	4:00:00 AM	0	0	0	0	0	0	0.0%	10pm-4am	23
4:00:00 AM	5:00:00 AM	0	2	1	0	0	3	0.3%	11pm-5am	12
5:00:00 AM	6:00:00 AM	3	1	5	1	4	14	1.5%	12am-6am	20
6:00:00 AM	7:00:00 AM	7	8	5	5	4	29	3.2%	1am-7am	49
7:00:00 AM	8:00:00 AM	22	11	8	8	11	60	6.6%	2am-8am	108
8:00:00 AM	9:00:00 AM	18	12	8	8	15	61	6.7%	3am-9am	167
9:00:00 AM	10:00:00 AM	9	1	5	10	8	33	3.6%	4am-10am	200
10:00:00 AM	11:00:00 AM	7	6	6	7	6	32	3.5%	5am-11am	229
11:00:00 AM	12:00:00 PM	18	15	11	6	8	58	6.3%	6am-12pm	273
12:00:00 PM	1:00:00 PM	19	9	6	7	17	58	6.3%	7am-1pm	302
1:00:00 PM	2:00:00 PM	11	10	5	5	13	44	4.8%	8am-2pm	286
2:00:00 PM	3:00:00 PM	21	18	8	6	15	68	7.4%	9am-3pm	293
3:00:00 PM	4:00:00 PM	23	23	20	17	11	94	10.3%	10am-4pm	354
4:00:00 PM	5:00:00 PM	29	16	26	18	13	102	11.1%	11am-5pm	424
5:00:00 PM	6:00:00 PM	20	14	12	8	12	66	7.2%	12pm-6pm	432
6:00:00 PM	7:00:00 PM	18	18	10	7	14	67	7.3%	1pm-7pm	441
7:00:00 PM	8:00:00 PM	13	11	13	7	12	56	6.1%	2pm-8pm	453
8:00:00 PM	9:00:00 PM	6	6	6	6	6	30	3.3%	3pm-9pm	415
9:00:00 PM	10:00:00 PM	4	6	3	3	2	18	2.0%	4pm-10pm	339
10:00:00 PM	11:00:00 PM	4	2	3	2	3	14	1.5%	5pm-11pm	251
11:00:00 PM	12:00:00 AM	3	1	2	0	0	6	0.7%	6pm-12am	191
Total		257	190	163	131	175	916			

For bicycle crashes, the highest period over a 5-year trend was between 4:00PM and 5:00PM. Consistent with 2016 numbers, the highest six-hour period is between and 2:00PM to 8:00PM.



BICYCLE CRASH LOCATIONS

2016

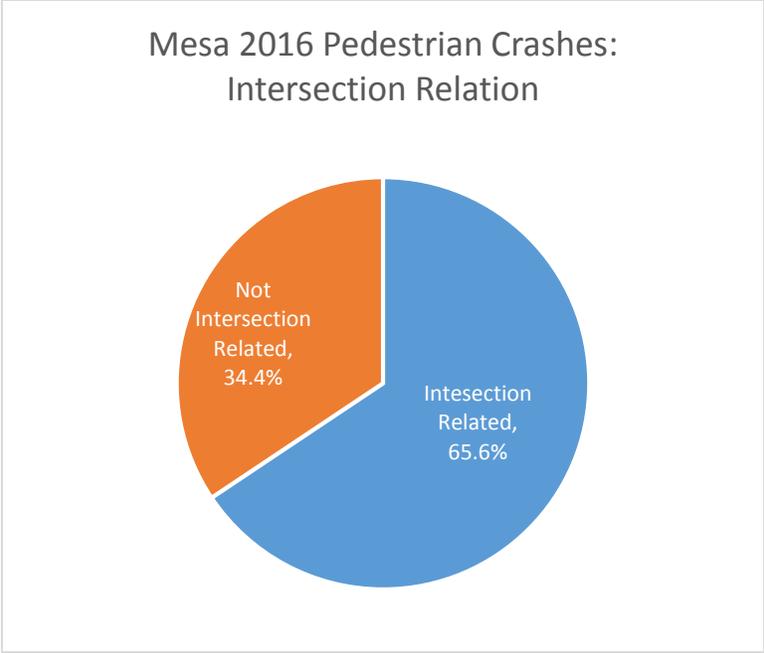


SECTION 4:

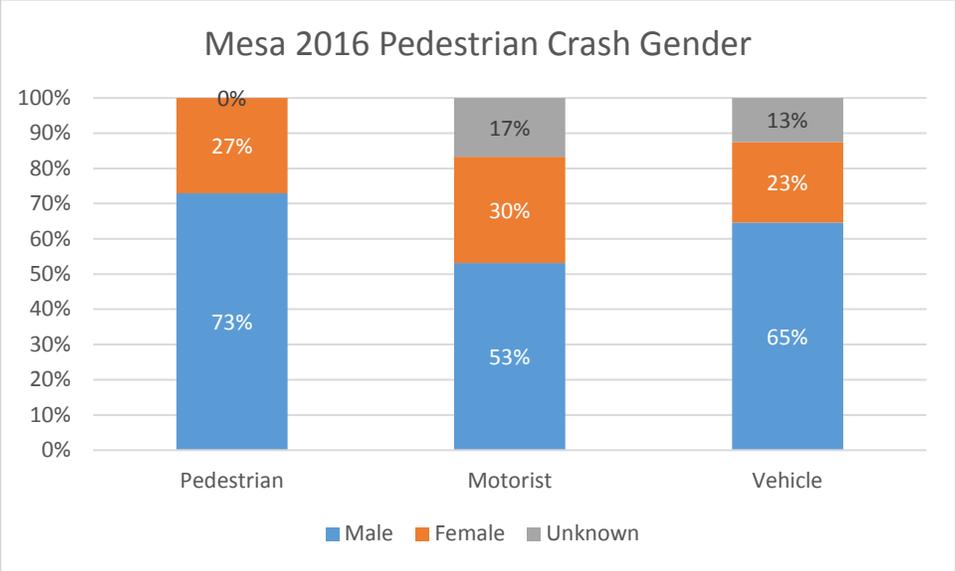
PEDESTRIAN CRASHES

Mesa 2016 Pedestrian Crashes: General View						
YEAR	MESA PED CRASHES BY YEAR	TOTAL MESA VEHICLE CRASHES BY YEAR	PED CRASHES % OF TOTAL	MESA ESTIMATED POPULATION BY YEAR	MESA PED CRASHES PER 100,000 POPULATION	PED CRASHES PER 100,000: PERCENT FROM 5- YEAR AVERAGE
2001	112	9928	1.1%	416301	27	
2002	122	9155	1.3%	427923	29	
2003	116	8520	1.4%	435391	27	
2004	126	9184	1.4%	443733	28	
2005	109	9205	1.2%	450948	24	
2006	102	8522	1.2%	456449	22	
2007	120	7933	1.5%	460493	26	
2008	104	5908	1.8%	463829	22	
2009	102	5504	1.9%	467157	22	
2010	79	5118	1.5%	440031	18	
2011	98	5178	1.9%	444685	22	
2012	120	5134	2.3%	451677	26.6	25.3%
2013	103	5313	1.9%	457587	22.5	11.9%
2014	72	5025	1.4%	464704	15.5	-28.0%
2015	68	4979	1.4%	471825	14.4	-37.6%
2016	96	5554	1.7%	475274	20.2	1.8%
2016 5-YR AVG	92	5201	1.8%	464213	20	
Information provided by City of Mesa website. (Their source is ESRI Community Analysis)						
Information from http://population.us/az/mesa/						
Information from https://www.census.gov/quickfacts/						

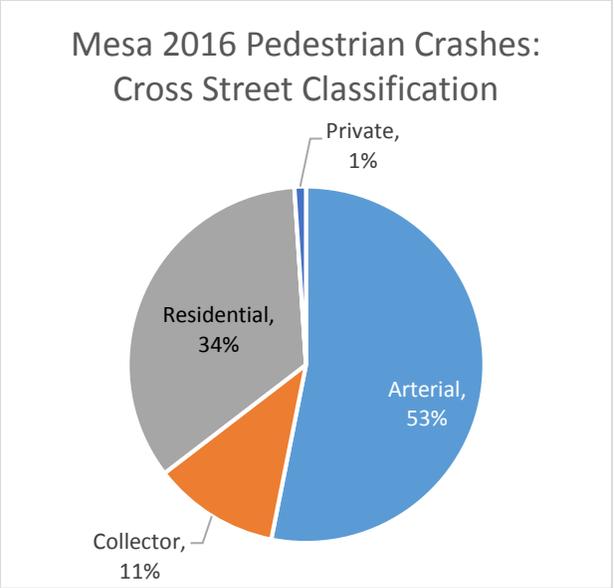
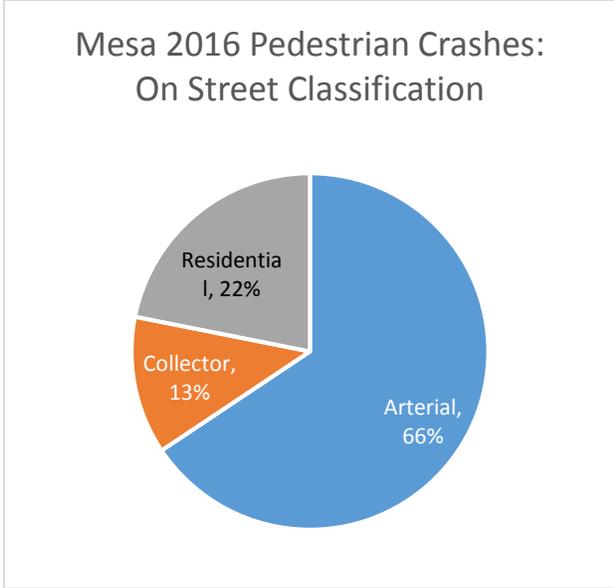
The City of Mesa had 96 pedestrian crashes in 2016, making up 1.7% of all crashes that year. The number of pedestrian crashes per 100,000 people was 1.8% more than the five-year average of 20.



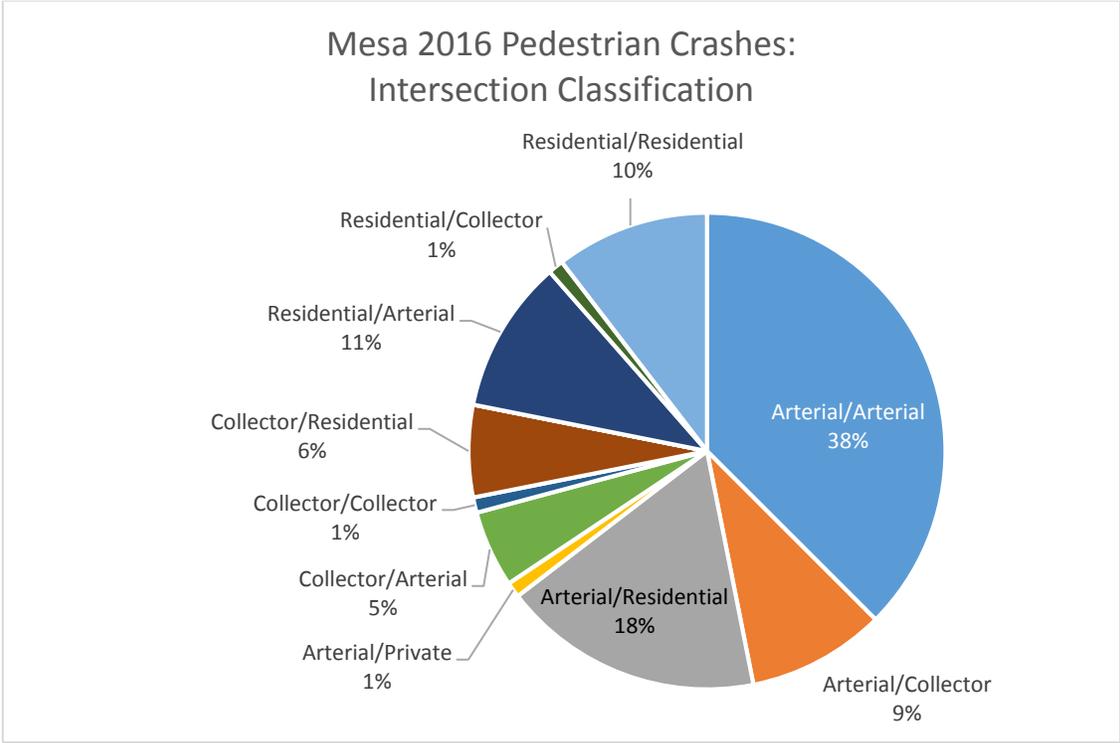
Of the 96 pedestrian crashes, about 66% were intersection related.



The gender of pedestrians involved in collisions was primarily male. The gender of vehicle 1, when involved in a pedestrian crash, was primarily male.



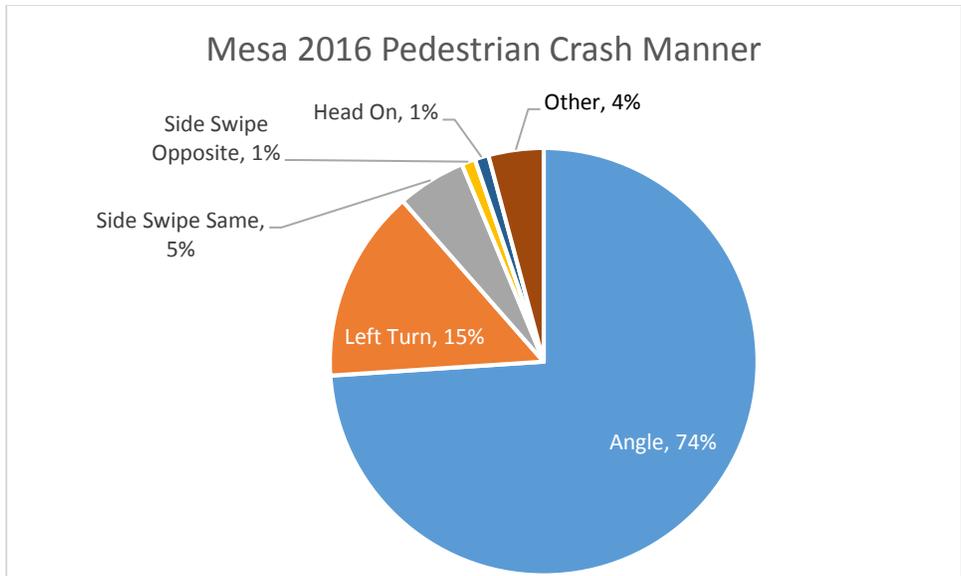
Of the 96 pedestrian crashes within Mesa 2016, 66% occurred along an arterial roadway. 53% of the time, the cross street was an arterial.



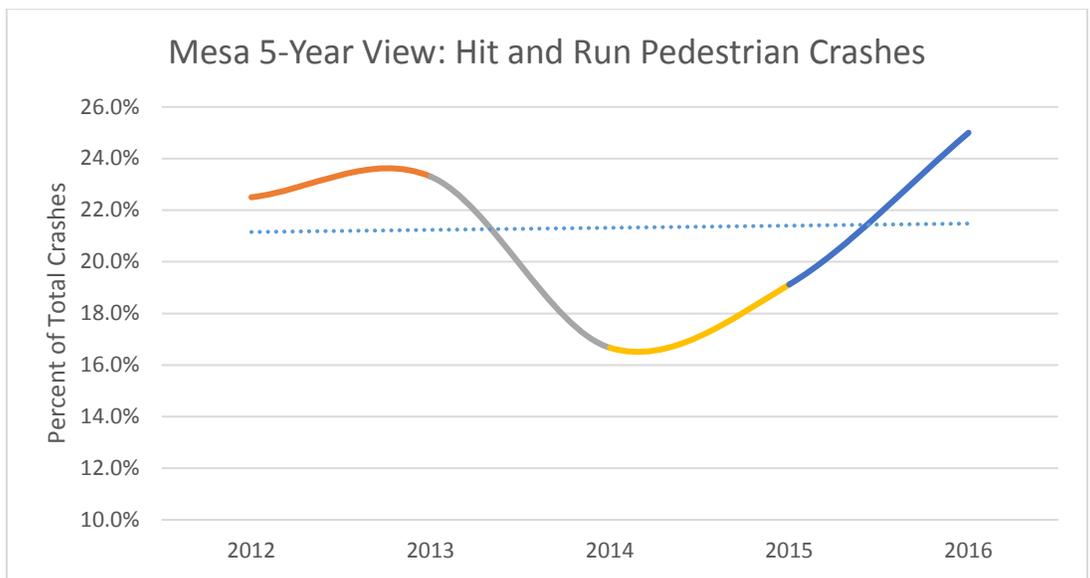
The chart above shows the street intersection classifications for pedestrian crashes within Mesa in 2016.

Mesa 2016 Pedestrian Crashes: Age Group						
AGE		MESA 2016 POPULATION	PERCENT OF TOTAL POPULATION	NO. OF PED CRASHES	PERCENT OF TOTAL PED CRASHES	PED CRASHES/ 10,000 POPULATION
Under	5	32794	6.9%	2	2.1%	0.61
5	to 9	33269	7.0%	3	3.1%	0.90
10	to 14	31843	6.7%	10	10.4%	3.14
15	to 19	31368	6.6%	17	17.7%	5.42
20	to 24	34695	7.3%	8	8.3%	2.31
25	to 34	67964	14.3%	19	19.8%	2.80
35	to 44	57033	12.0%	7	7.3%	1.23
45	to 54	58934	12.4%	10	10.4%	1.70
55	to 59	27091	5.7%	5	5.2%	1.85
60	to 64	26140	5.5%	2	2.1%	0.77
65	to 74	39448	8.3%	10	10.4%	2.53
75	to 84	24714	5.2%	3	3.1%	1.21
85	+	9981	2.1%	0	0.0%	0.00
Total		475274		96		

The above table shows the age groups of the pedestrians involved in crashes within Mesa in 2016. The highest concentration of crashes occurred with people aged 25 to 34.



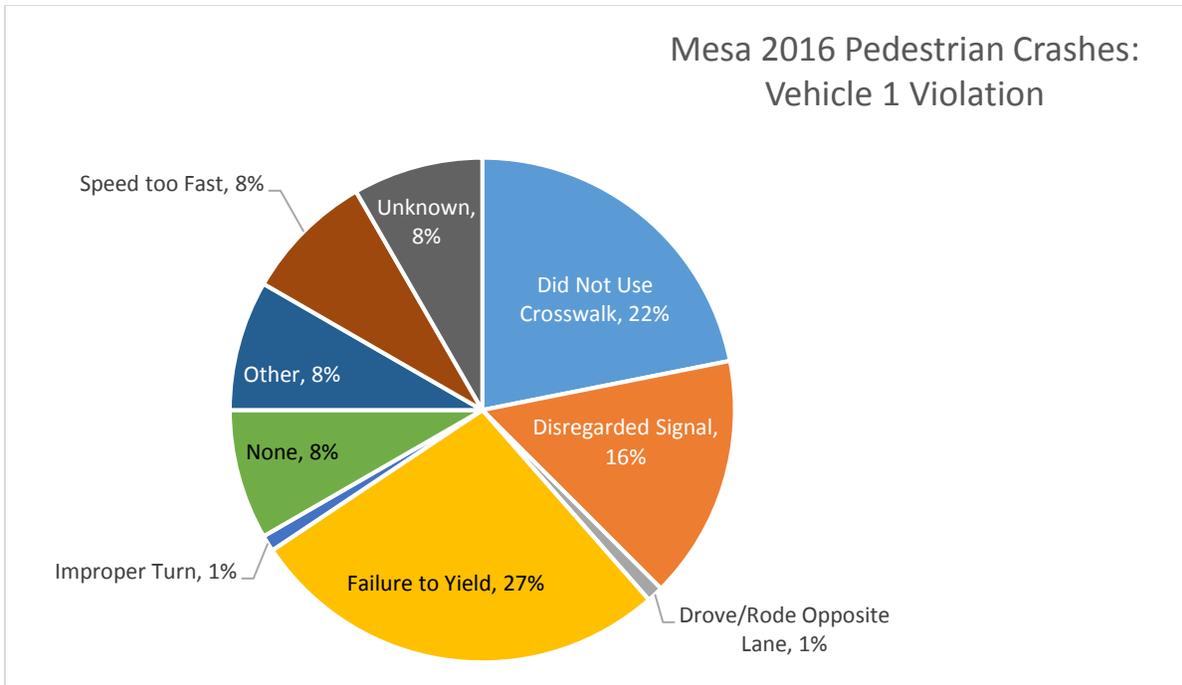
Most crashes that involved both a pedestrian and a motorist were angle crashes with a total of 71 out of 96.



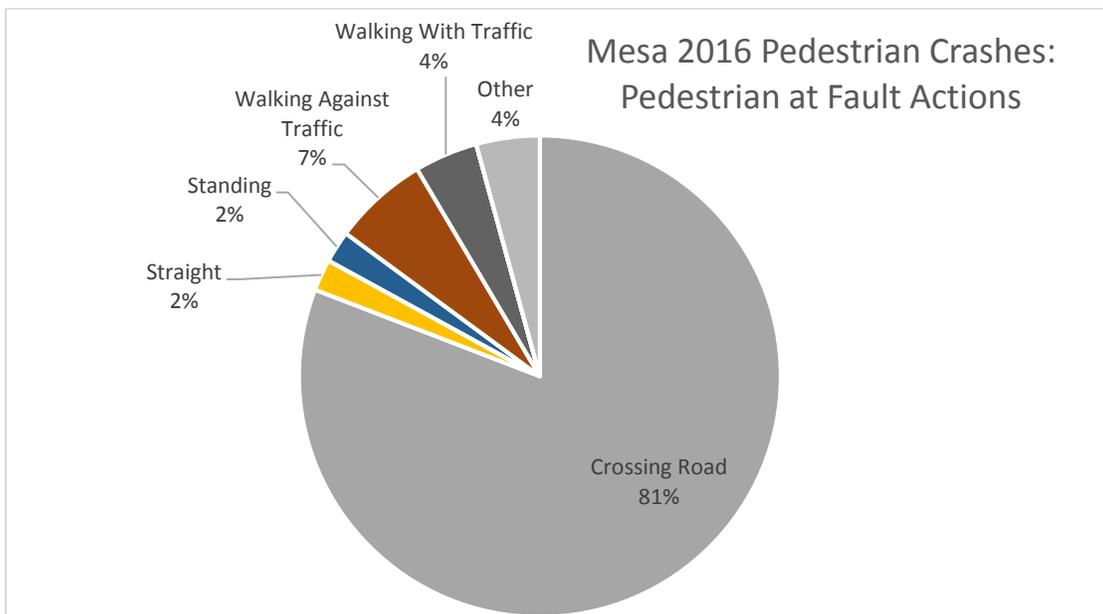
Trending slightly upward, hit and run crashes made up 25% of total pedestrian collisions in 2016 with 24 out of 96.

Mesa 2016 Pedestrian Crashes: Vehicle 1 Designation		
Motorist at Fault	49	51.0%
Ped at Fault	47	49.0%
Total	96	

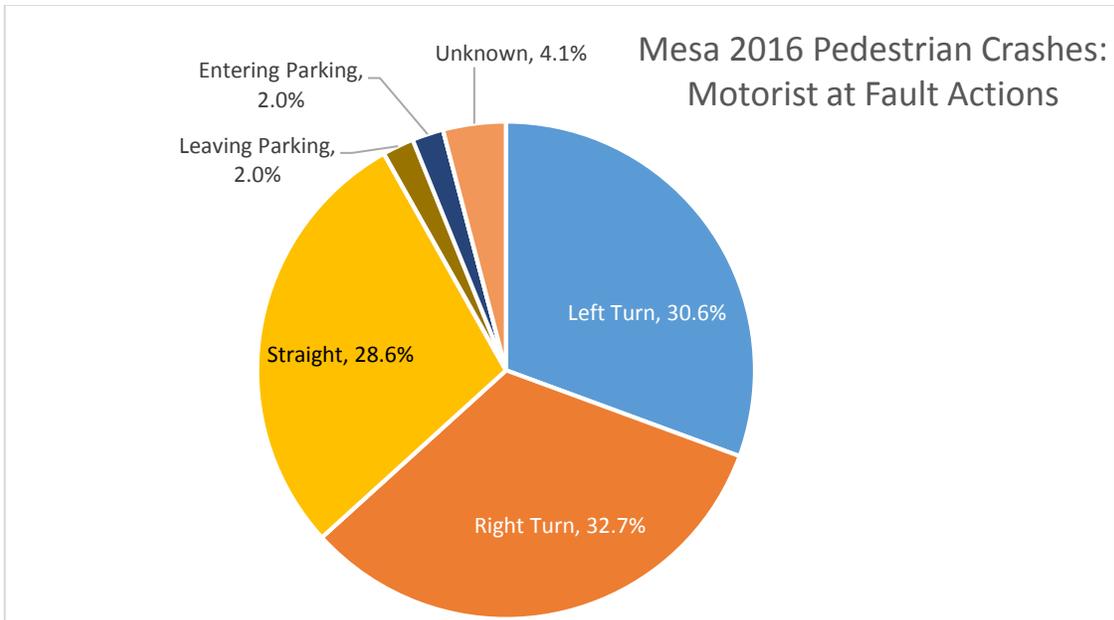
The unit at fault was even for pedestrian crashes in 2016.



The graph above shows the violations of vehicle 1 which includes violations performed by both the pedestrian and the motorist. The highest percentage was a pedestrian violation of not using the crosswalk.



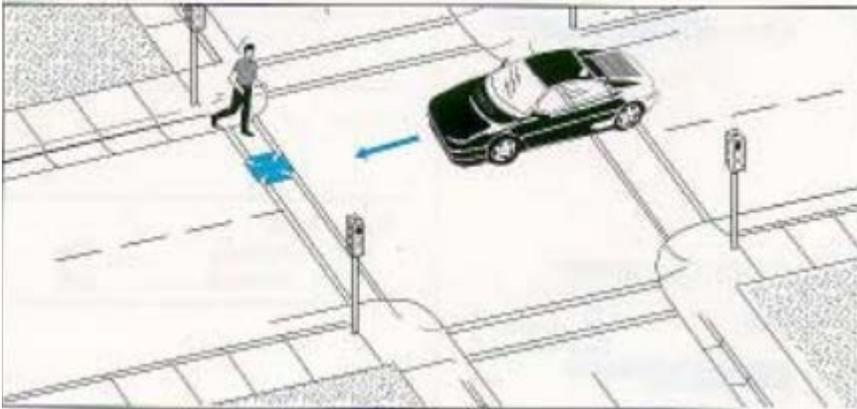
When a pedestrian was at fault, the most common action was crossing the road



When a motorist was at fault, turning actions made up over half of the actions leading up to a crash with a pedestrian.

The following is a list of the most common crash types for pedestrian-motorist collisions. They are ordered from highest to lowest and show the number of collisions of a certain type, followed by the percentage of total crashes. Graphics sourced from Federal Highway Administration, *Pedestrian Crash Types: A 1990's Informational Guide*. The most common crash types for pedestrian-motorist collisions of 2016 were as follows:

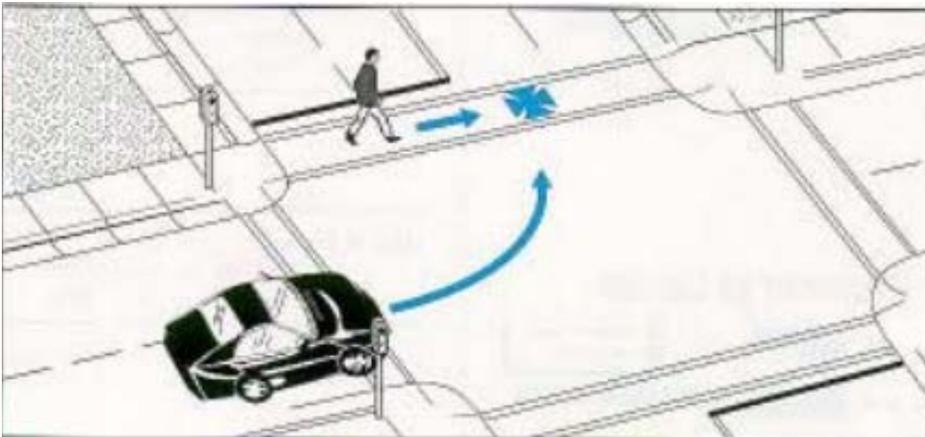
1. **Pedestrian Dash Out** – jaywalking or against the light: 41 (42.7%)



2. **Motorist Right Turn** – perpendicular pedestrian travel (either direction): 31 (32.3%)

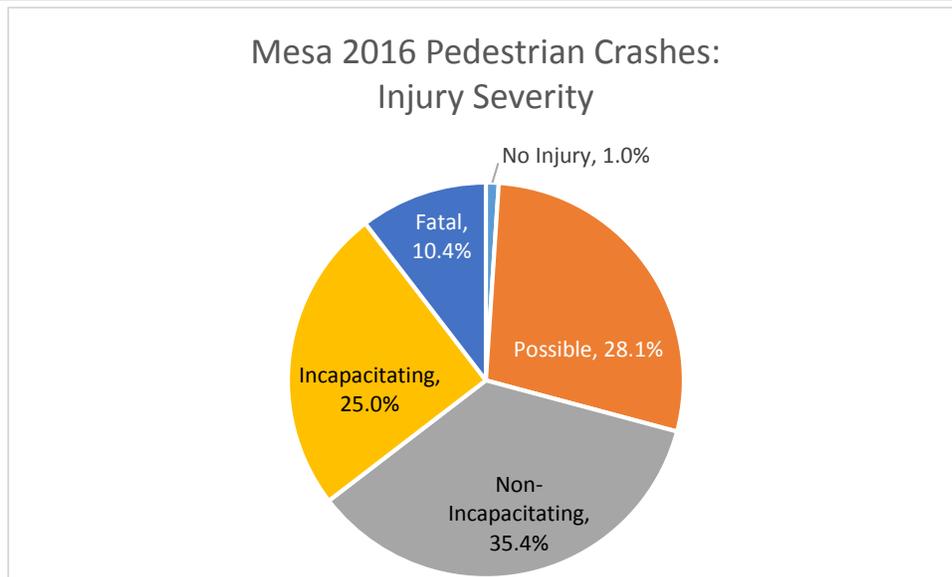
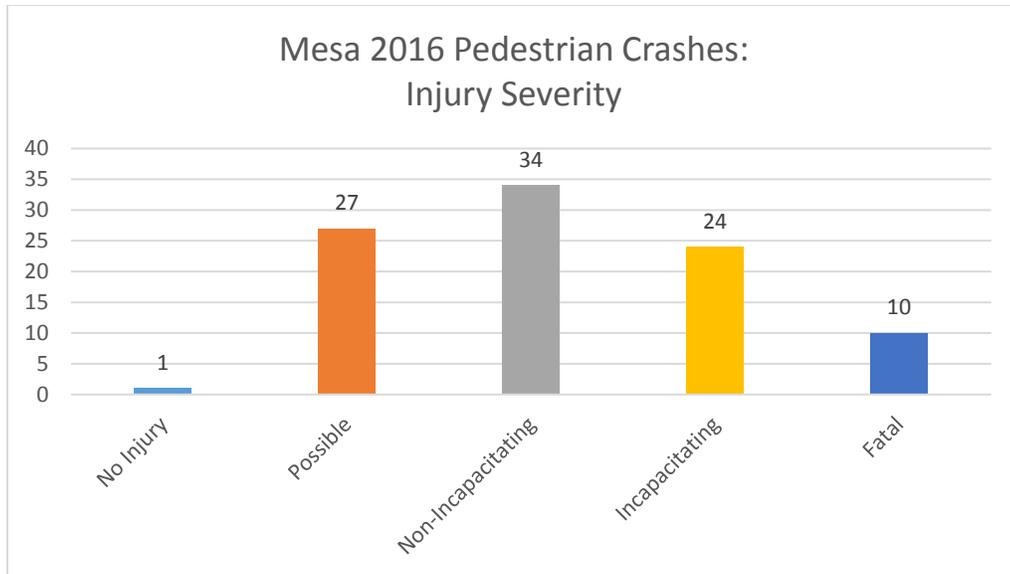
[No Graphic]

3. **Motorist Left Turn** – parallel pedestrian travel (either direction): 17 (17.7%)



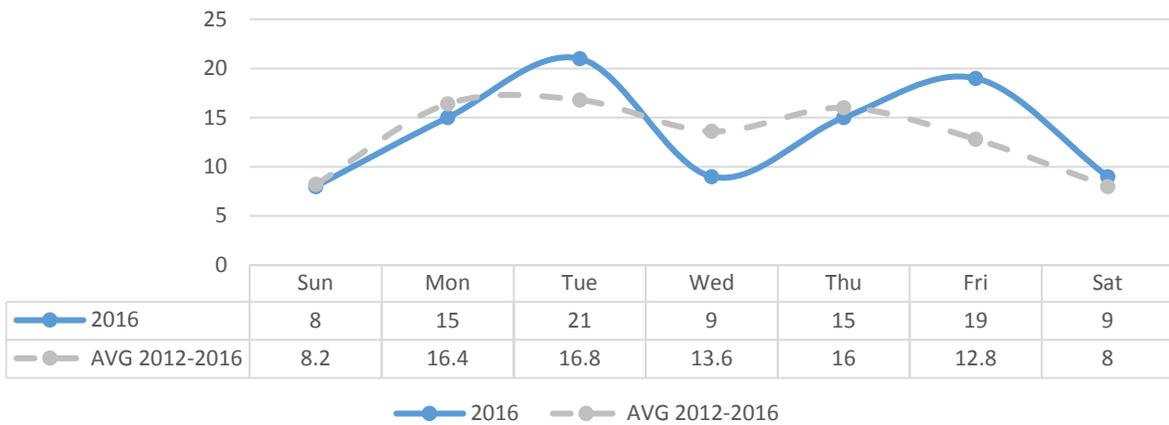
4. **Unusual Circumstance**: 5 (5.2%)

[No Graphic]



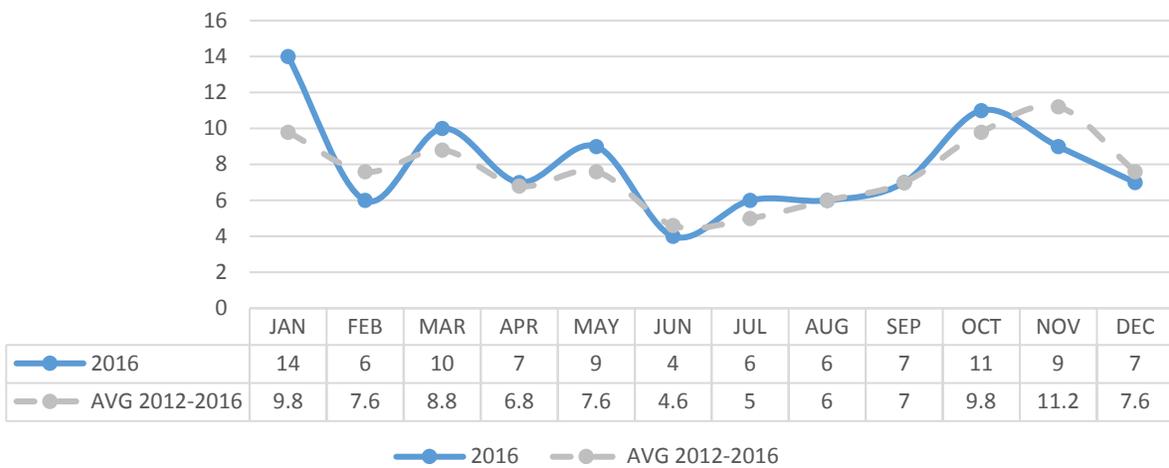
There were 10 fatal pedestrian crashes and 24 serious injuries in 2016, totaling 35.4% of all pedestrian crashes.

Mesa 2016 Pedestrian Crashes by Day vs 5-Year Average



By day, Tuesdays and Fridays were higher in 2016 than the five-year average.

Mesa 2016 Pedestrian Crashes by Month vs 5-Year Average



Pedestrian crashes in 2016 followed the crash pattern of the five-year average. 2016 pedestrian crashes within Mesa were mostly above the average.

Mesa 2016 Pedestrian Crashes by Time and Day of Week

		Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
12:00:00 AM	1:00:00 AM	2	0	0	0	0	1	0	3
1:00:00 AM	2:00:00 AM	0	0	0	0	1	0	0	1
2:00:00 AM	3:00:00 AM	0	0	0	0	0	0	0	0
3:00:00 AM	4:00:00 AM	0	0	0	0	0	0	0	0
4:00:00 AM	5:00:00 AM	0	0	0	0	0	0	0	0
5:00:00 AM	6:00:00 AM	0	0	0	0	0	0	0	0
6:00:00 AM	7:00:00 AM	0	1	0	1	0	1	0	3
7:00:00 AM	8:00:00 AM	1	1	2	0	2	0	1	7
8:00:00 AM	9:00:00 AM	0	0	3	0	1	1	0	5
9:00:00 AM	10:00:00 AM	0	1	2	1	1	0	0	5
10:00:00 AM	11:00:00 AM	0	1	0	0	0	0	0	1
11:00:00 AM	12:00:00 PM	0	0	0	0	0	0	0	0
12:00:00 PM	1:00:00 PM	0	0	1	0	2	0	0	3
1:00:00 PM	2:00:00 PM	0	0	0	0	0	4	3	7
2:00:00 PM	3:00:00 PM	0	1	0	0	0	1	0	2
3:00:00 PM	4:00:00 PM	2	0	2	0	2	0	0	6
4:00:00 PM	5:00:00 PM	1	0	4	1	0	2	0	8
5:00:00 PM	6:00:00 PM	0	0	1	2	2	3	1	9
6:00:00 PM	7:00:00 PM	0	3	1	0	0	3	1	8
7:00:00 PM	8:00:00 PM	1	1	0	1	2	1	0	6
8:00:00 PM	9:00:00 PM	0	2	2	1	1	1	1	8
9:00:00 PM	10:00:00 PM	1	2	2	0	0	1	1	7
10:00:00 PM	11:00:00 PM	0	1	1	1	0	0	1	4
11:00:00 PM	12:00:00 AM	0	1	0	1	1	0	0	3
Total		8	15	21	9	15	19	9	96

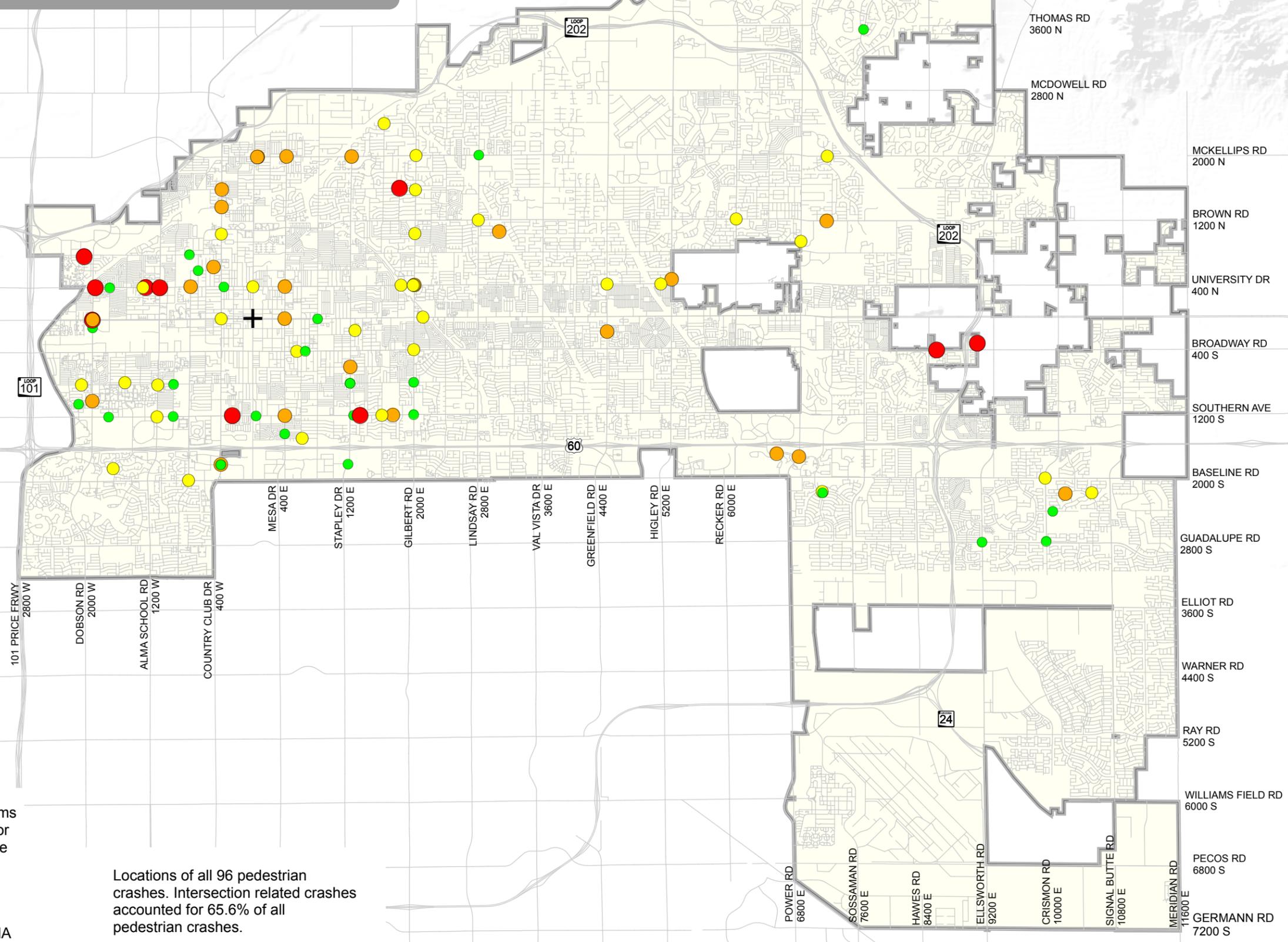
Mesa 5-Year Trend: Pedestrian Crashes by Time of Day										
		2012	2013	2014	2015	2016	5-Year Total	5-Year Percent	6- HR TOTAL	
12:00:00 AM	1:00:00 AM	1	0	0	0	3	4	0.9%	7pm-1am	122
1:00:00 AM	2:00:00 AM	0	0	1	0	1	2	0.4%	8pm-2am	92
2:00:00 AM	3:00:00 AM	1	1	0	0	0	2	0.4%	9pm-3am	68
3:00:00 AM	4:00:00 AM	0	0	0	0	0	0	0.0%	10pm-4am	38
4:00:00 AM	5:00:00 AM	0	1	1	0	0	2	0.4%	11pm-5am	19
5:00:00 AM	6:00:00 AM	0	1	2	0	0	3	0.7%	12am-6am	13
6:00:00 AM	7:00:00 AM	3	3	2	4	3	15	3.3%	1am-7am	24
7:00:00 AM	8:00:00 AM	7	6	5	6	7	31	6.8%	2am-8am	53
8:00:00 AM	9:00:00 AM	4	7	3	0	5	19	4.1%	3am-9am	70
9:00:00 AM	10:00:00 AM	5	7	0	6	5	23	5.0%	4am-10am	93
10:00:00 AM	11:00:00 AM	4	4	0	1	1	10	2.2%	5am-11am	101
11:00:00 AM	12:00:00 PM	8	3	4	1	0	16	3.5%	6am-12pm	114
12:00:00 PM	1:00:00 PM	6	6	0	2	3	17	3.7%	7am-1pm	116
1:00:00 PM	2:00:00 PM	7	5	3	1	7	23	5.0%	8am-2pm	108
2:00:00 PM	3:00:00 PM	9	4	5	7	2	27	5.9%	9am-3pm	116
3:00:00 PM	4:00:00 PM	7	6	8	3	6	30	6.5%	10am-4pm	123
4:00:00 PM	5:00:00 PM	9	7	6	5	8	35	7.6%	11am-5pm	148
5:00:00 PM	6:00:00 PM	11	8	9	6	9	43	9.4%	12pm-6pm	175
6:00:00 PM	7:00:00 PM	10	8	4	9	8	39	8.5%	1pm-7pm	197
7:00:00 PM	8:00:00 PM	4	12	7	3	6	32	7.0%	2pm-8pm	206
8:00:00 PM	9:00:00 PM	7	2	6	3	8	26	5.7%	3pm-9pm	205
9:00:00 PM	10:00:00 PM	11	6	2	4	7	30	6.5%	4pm-10pm	205
10:00:00 PM	11:00:00 PM	6	3	3	5	4	21	4.6%	5pm-11pm	191
11:00:00 PM	12:00:00 AM	0	3	1	2	3	9	2.0%	6pm-12am	157
	Total	120	103	72	68	96	459			

Most pedestrian crashes occurred in the six-hour period between 2:00PM and 8:00PM. The highest concentration in 2016 was from 5:00PM to 6:00PM.



PEDESTRIAN CRASH LOCATIONS

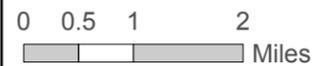
2016



Legend

Injury Severity

- Fatal
- Incapacitating
- Non-Incapacitating
- Possible
- None
- ⊕ Center of Downtown Mesa
- ▭ City of Mesa Boundary



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Locations of all 96 pedestrian crashes. Intersection related crashes accounted for 65.6% of all pedestrian crashes.