

2016 Motorcycle Collision Summary



City of Phoenix

STREET TRANSPORTATION DEPARTMENT

TRAFFIC SERVICES DIVISION

TRAFFIC SAFETY SECTION

JULY 2018



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Introduction

The 2016 Motorcycle Collision Summary provides a brief analysis of Motorcycle collision statistics related to demographics, accident types, and locations. The report also includes collision data from 2012 through 2016 to identify and track motorcycle collision trends that have emerged during the past five years. These statistics provide a strong indication of roadway behaviors that negatively impact motorcyclists' safety and helps identify which violations should be prioritized for increased education and enforcement.

The 2016 collision summary includes a reported 596 motorcycle-related collisions resulting in 495 injuries and 21 fatalities. These motorcycle-related collisions accounted for nearly 2 percent of all collisions, 5 percent of all injuries, and 11 percent of all fatalities occurring on City Streets. Statistics show the number of collisions has increased (4 percent) as compared to the 2015 collisions, the 5-year trend is increasing. Consistent with previous years, male motorcyclists were involved in more collisions at a male:female ratio of 10.5:1. Also, the age groups with the highest number of motorcycle-related collisions were adults between the ages of 26 and 35. The majority (67 percent) of collisions occurred within 150 feet of an intersection.

In 2016 Motorcyclists Injury Severity and reported helmet use include 615 riders (19 passengers), 283 with helmets, 153 without helmets, and 179 not reported.

Helmet Use	Yes		No		No Report		Total
None	41	14%	18	12%	40	22%	99
Possible	59	21%	23	15%	34	19%	116
Minor	111	39%	61	40%	63	35%	235
Serious	62	22%	40	26%	42	23%	144
Fatal	10	4%	11	7%	0	0%	21
Total	283	100%	153	100%	179	100%	615
	46%		25%		29%		100%

The findings in this report are used to inform and influence the design of new motorcycle facilities, the redesign of existing roadways, the development of education programs and enforcement campaigns for motorcyclists and motorists. In an effort to identify locations and collision trends that may require special attention, this report also identifies intersections and street segments with the highest annual motorcycle injury collisions.

NOTE: Some figures in the 2016 Motorcycle Collision Summary differ from the 2016 Traffic Collision Summary due to the detailed analysis of crash reports.

2016 Phoenix Motorcycle Collision Facts-at-a-Glance

596
collisions
495
injuries
21
deaths

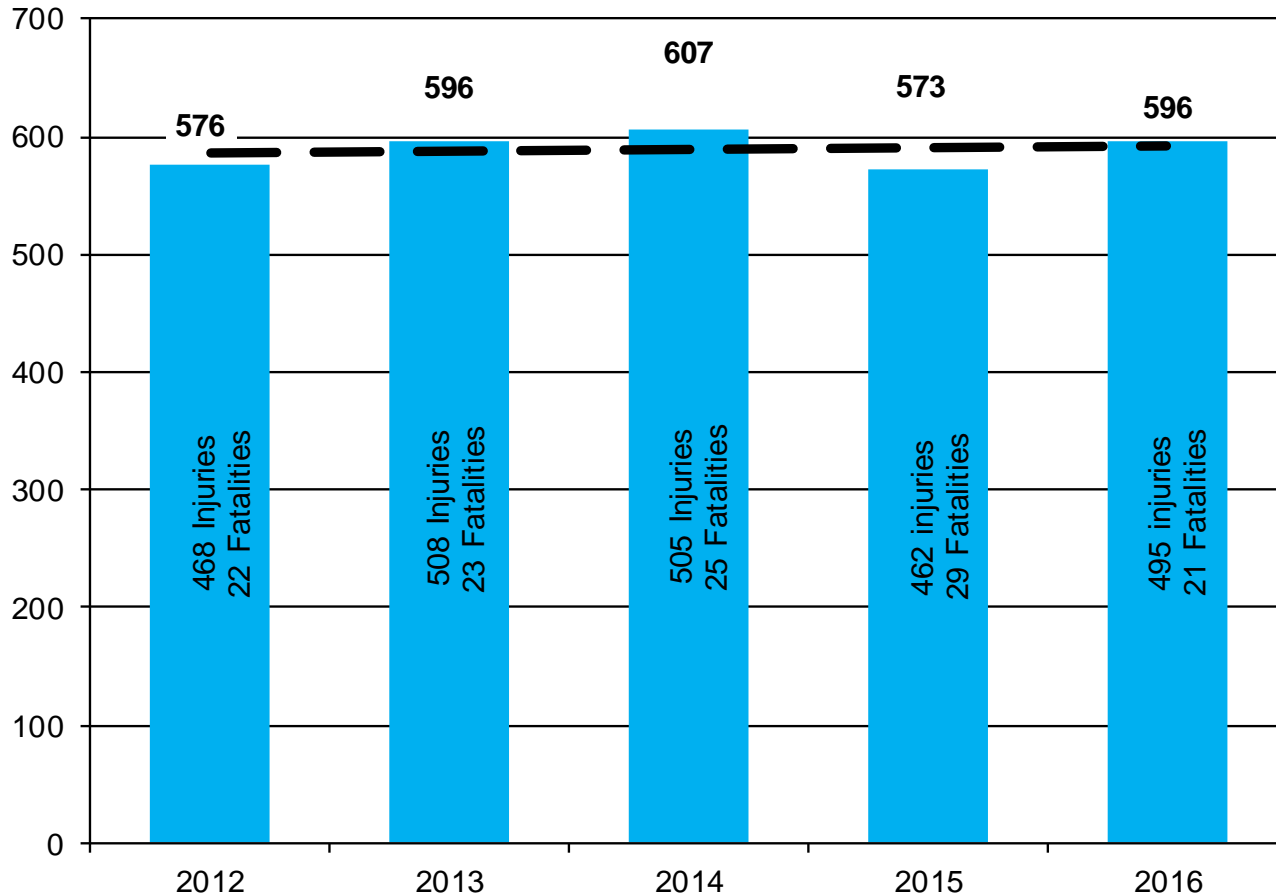
Important Points to Know About the Motorcycle Collision Summary in 2016:

- Motorcycle collisions have averaged 590 per year since 2012.
- Nearly seven out of ten collisions occurred at or within 150 feet of an intersection.
- More than eight out of ten non-intersection-related collisions occurred on an arterial street.
- 69% collisions occurred while the motorcyclist was riding straight.
- Less than 2 in 10 motorcyclists involved in a collision are not injured.
- Motorcycles are less than 4% of registered vehicles in Arizona but 15% of the fatalities statewide

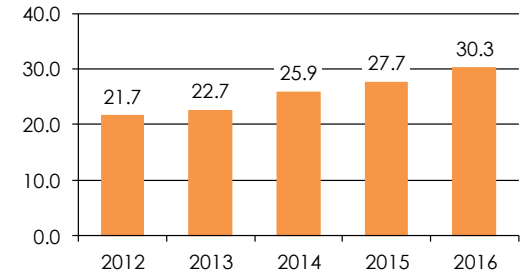
In 2016,

- Motorcycle collisions in 2016 accounted for nearly 2% of all traffic collisions, 5% of all injuries, and 11% of all fatalities.
- Motorcycle passengers involved in a collision were rare in Phoenix for 2016 with 19 of the 596 collisions included a riding passenger, and zero riding passenger fatalities overall.
- There were 131 single vehicle motorcycle collisions, 22% of the total motorcycle collisions.
- Motorists below age of 21 accounted for nearly 10% of the collisions with motorcycles.
- 67% of all collisions were intersection related with Arterial-Collector consisting of 32% of those collisions.
- Only 39% of all motorcycle collisions occurred at night, including twilight, but 57% of motorcyclist fatalities occurred at night.
- Motorcycle collisions occurred most frequently between 3 p.m. and 6 p.m. and the highest day of the week was Thursday.
- March and October had the highest number of motorcycle collisions (66).
- Only 23 motorcyclists and 15 drivers (6% of all collisions) were found to be under the influence of alcohol or drugs.
- 56% of all motorcycle collisions occurred at mid-block locations.
- There were 51 hit and run collisions involving motorcycles.

Five-Year Trend of Motorcyclist-Involved Collisions, Injuries, and Fatalities



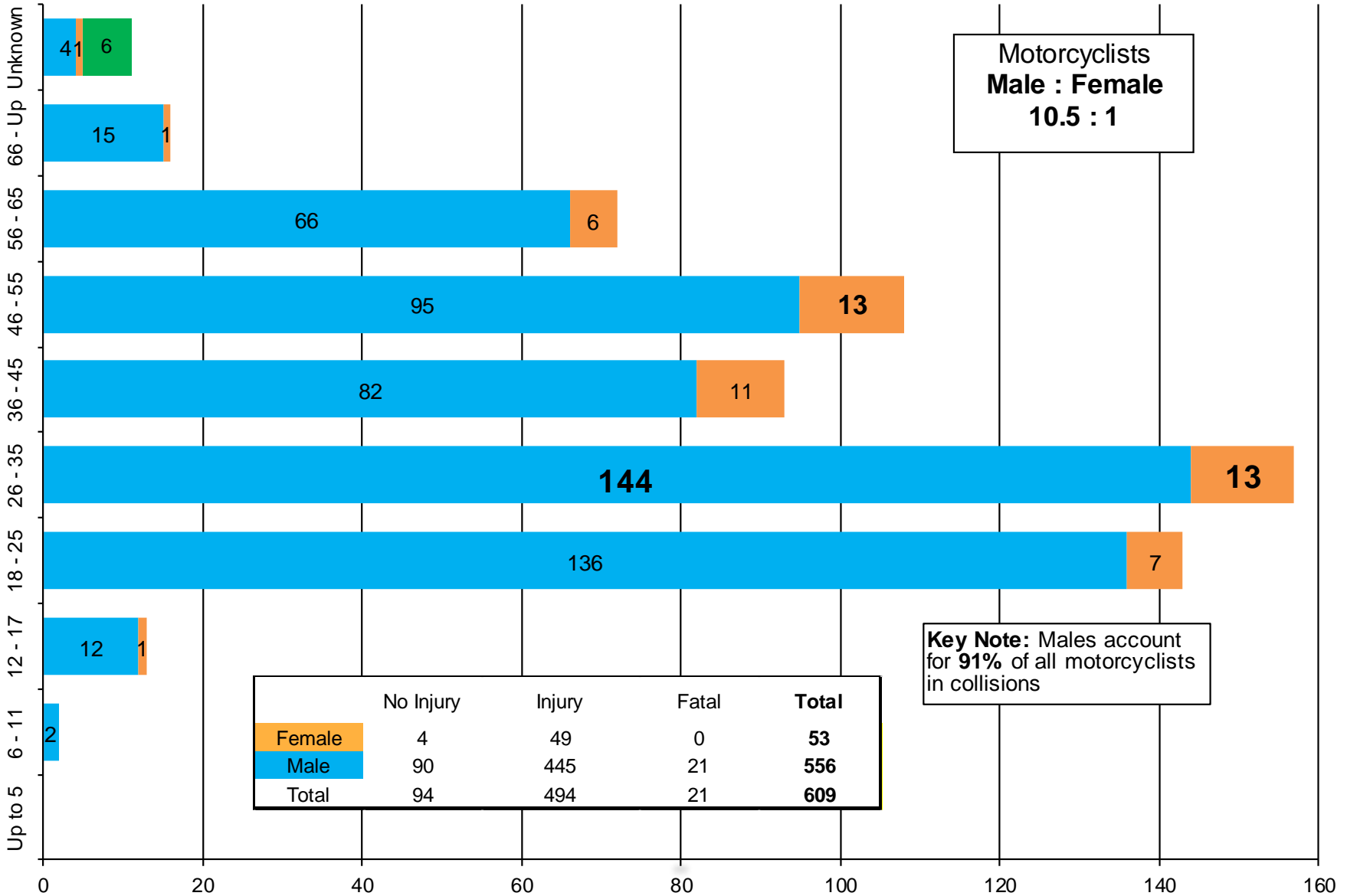
Five Year Trend All Crashes In thousands



Key Note:
The 5 year average is 590 collisions.



Age and Gender of Motorcyclists in Collisions



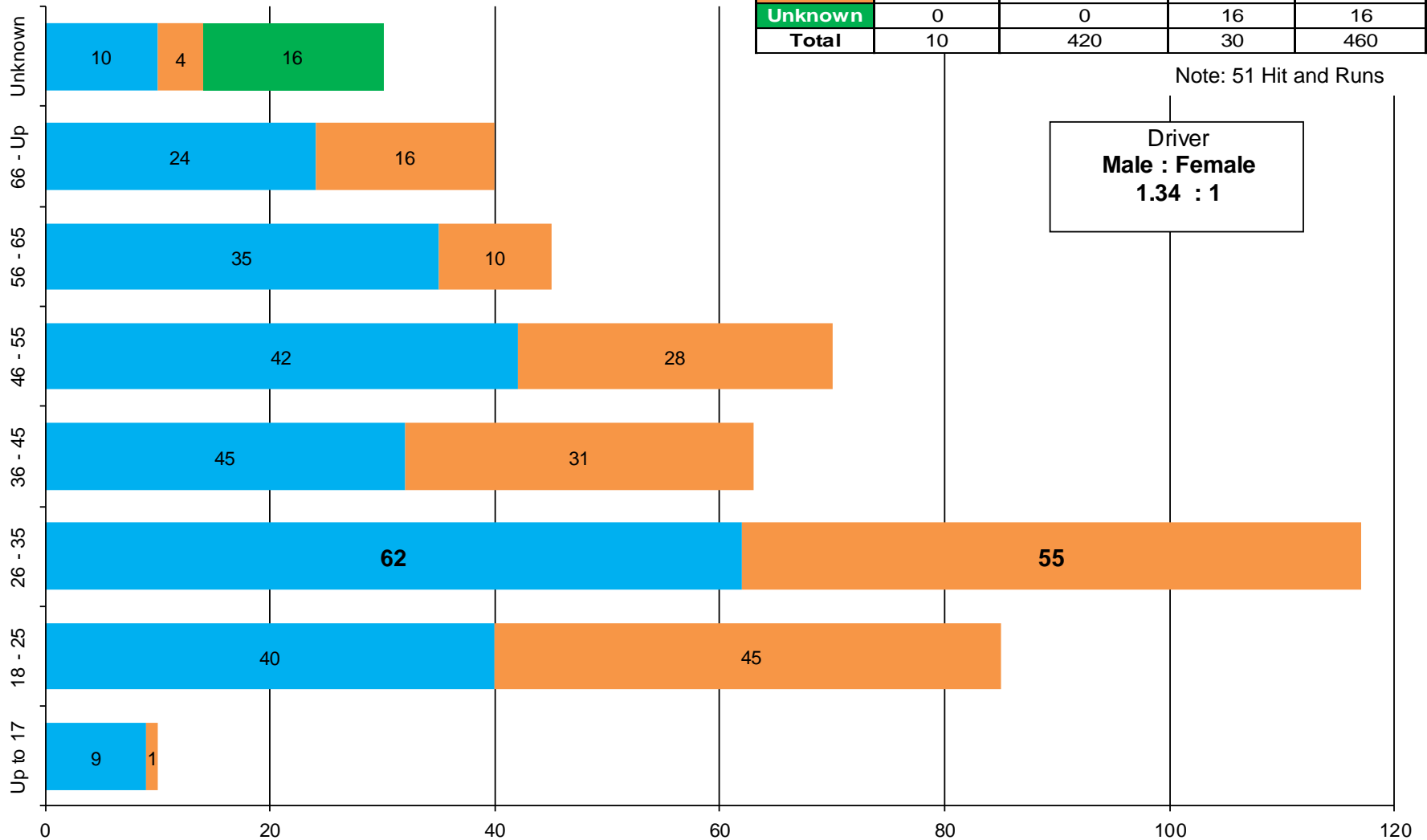
Motorcyclists
Male : Female
10.5 : 1

Key Note: Males account for 91% of all motorcyclists in collisions

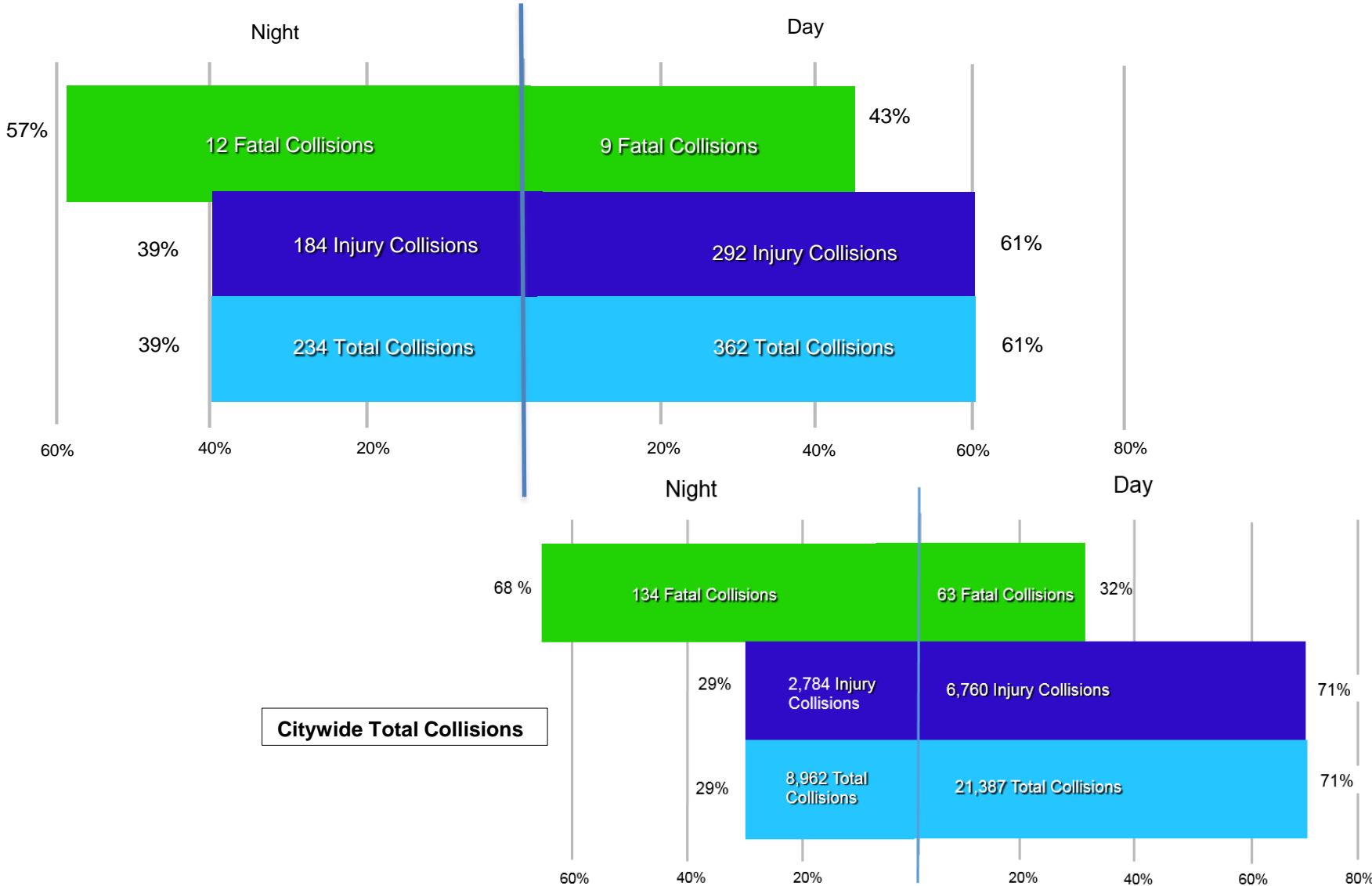
	No Injury	Injury	Fatal	Total
Female	4	49	0	53
Male	90	445	21	556
Total	94	494	21	609

Age and Gender of Drivers in Collisions

	Under 18	18 and Older	Unknown	Total
Male	9	235	10	254
Female	1	185	4	190
Unknown	0	0	16	16
Total	10	420	30	460



Motorcyclists in Collisions by Light Conditions

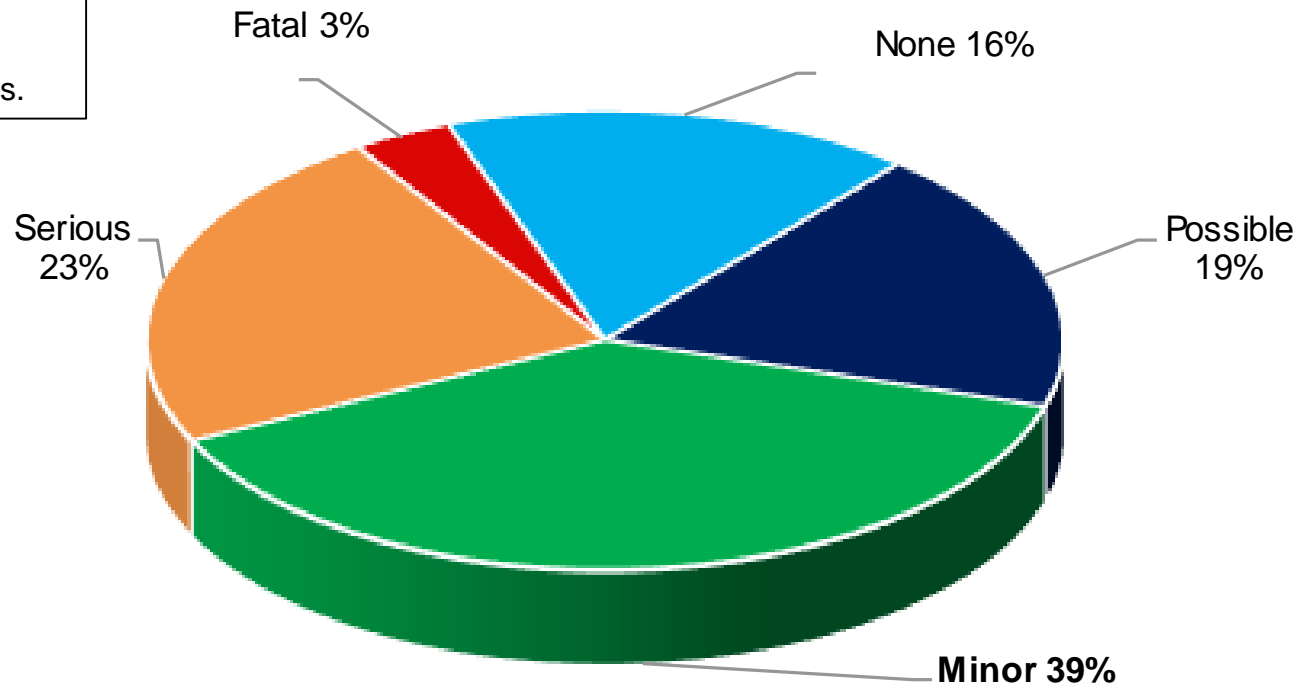


Citywide Total Collisions

Motorcyclists in Collisions by Injury Severity

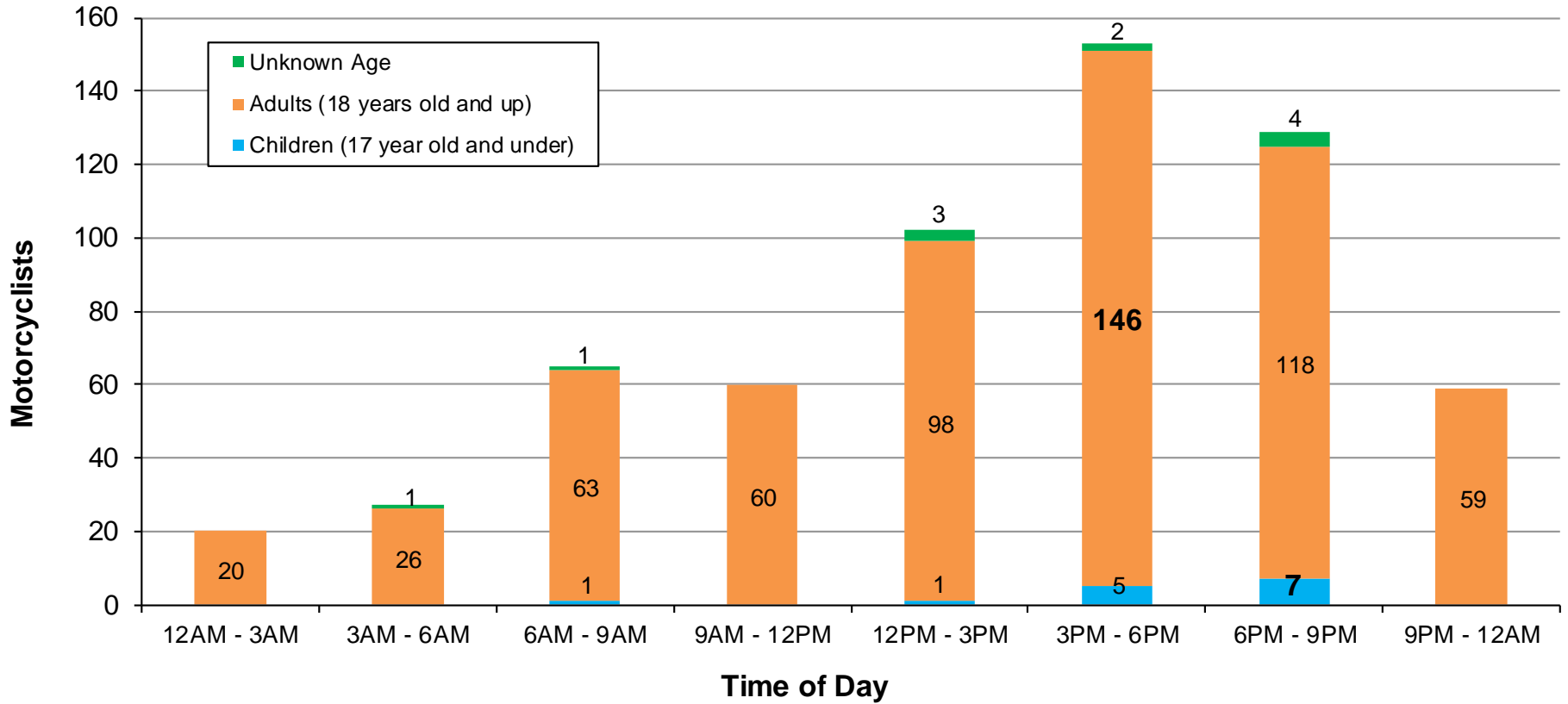
Key Note:

There were 227 minor injuries, 138 serious injuries, and 21 fatalities.

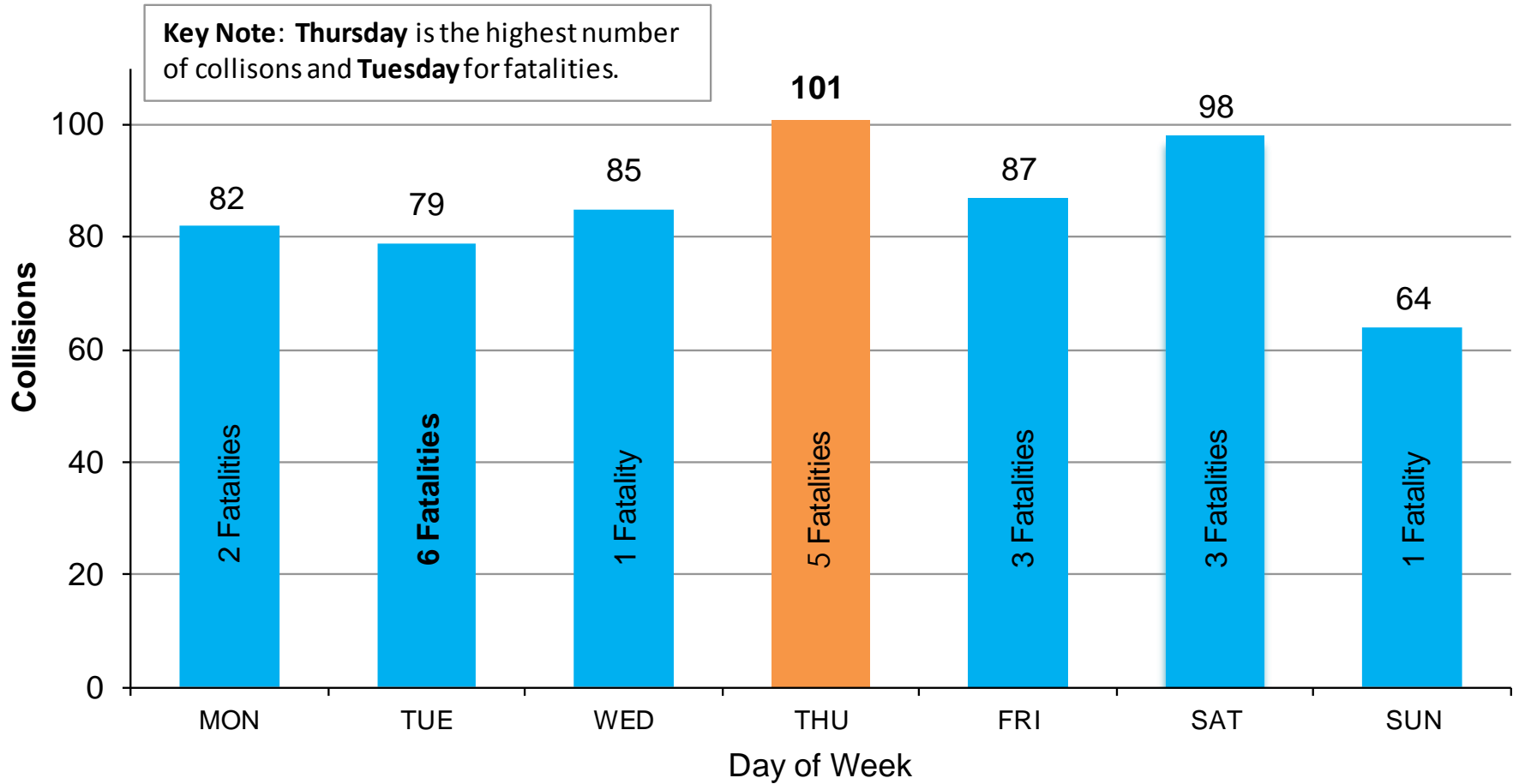




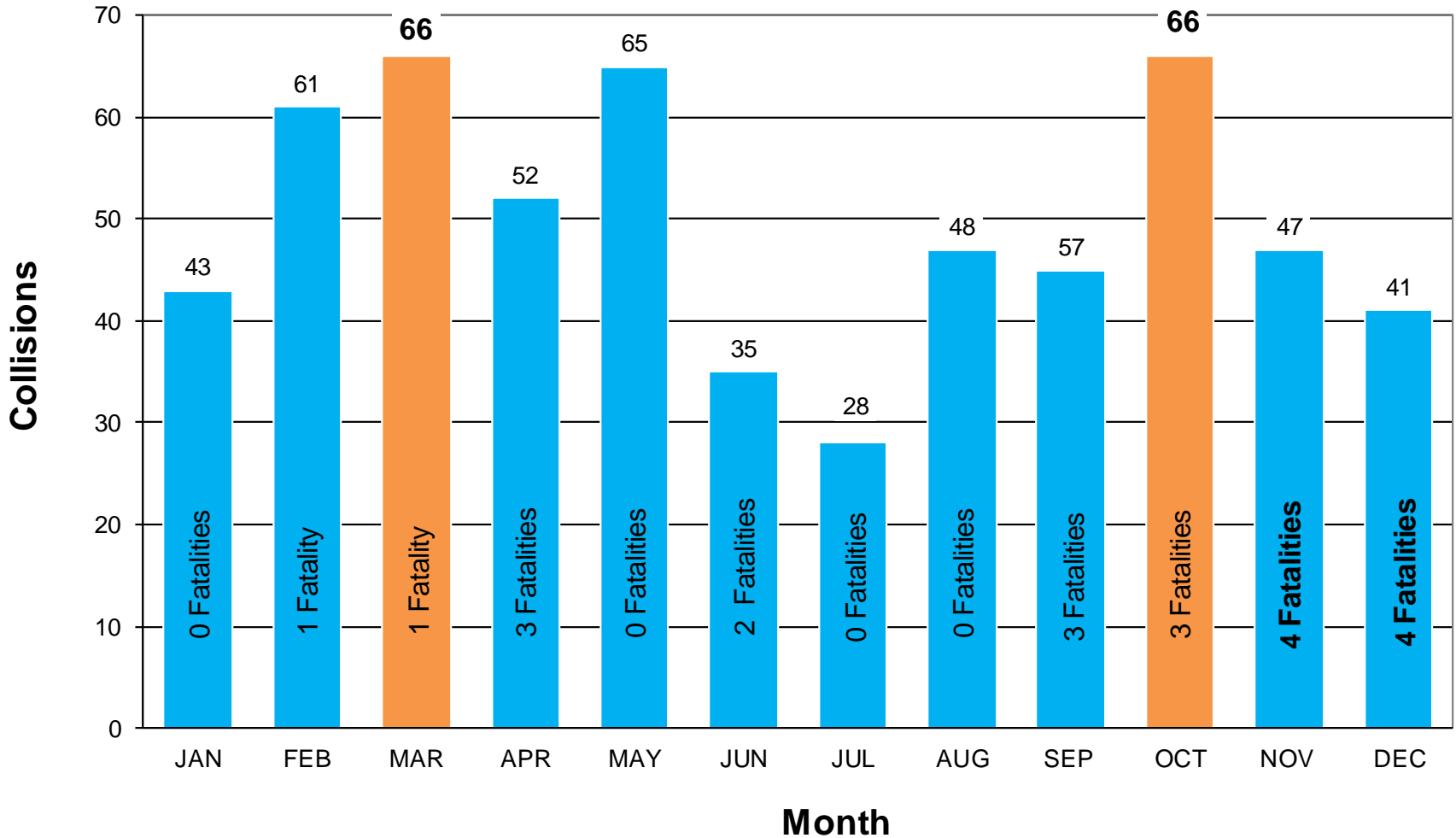
Motorcyclist-Involved Collisions by Time of Day and Age Group



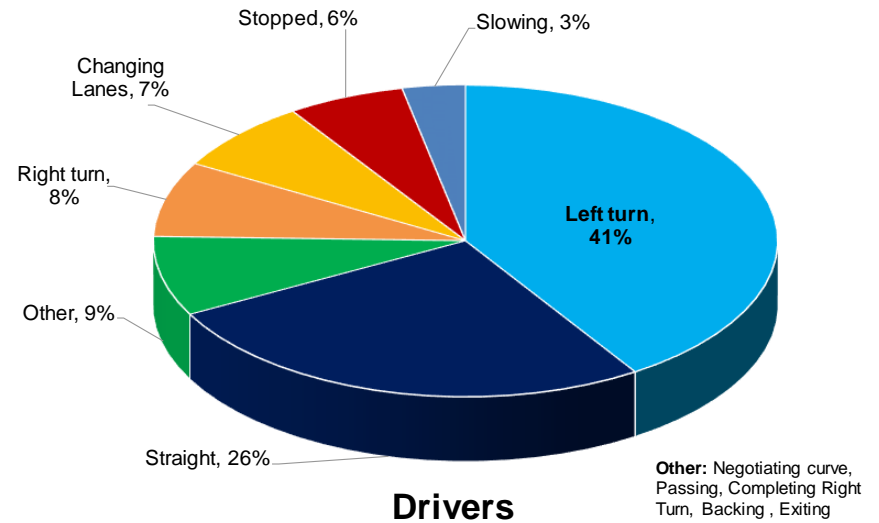
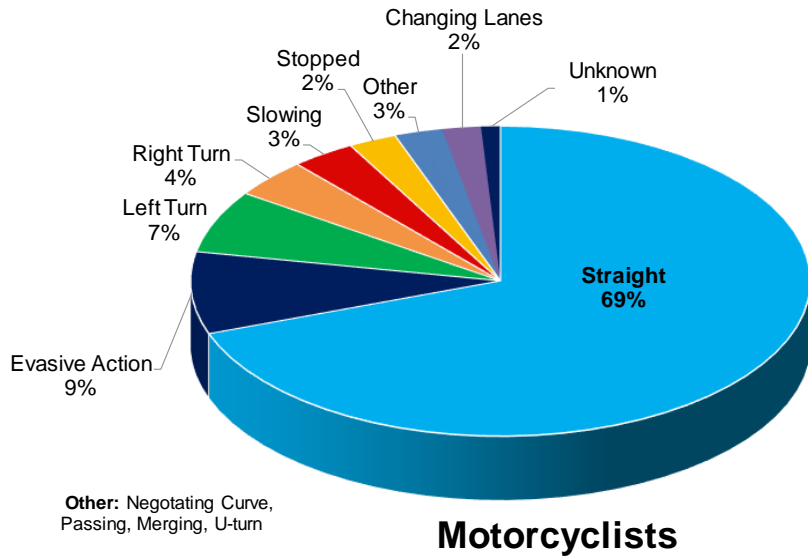
Motorcyclist-Involved Collisions by Day of Week



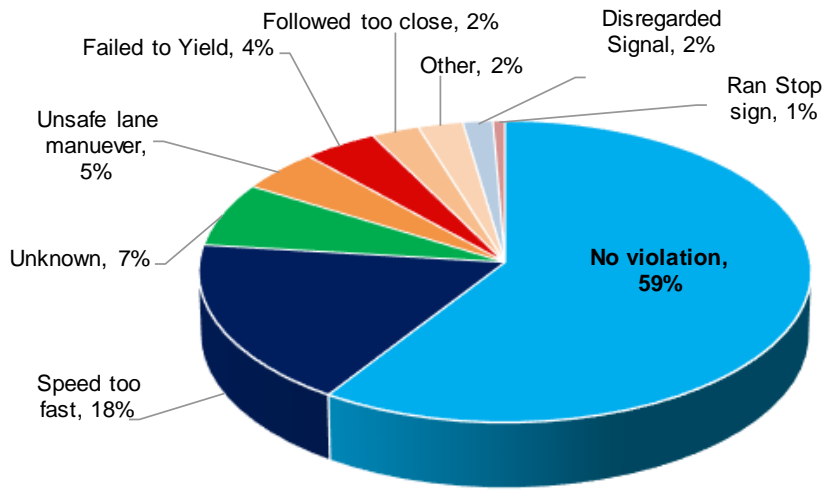
Motorcyclist-Involved Collisions by Month



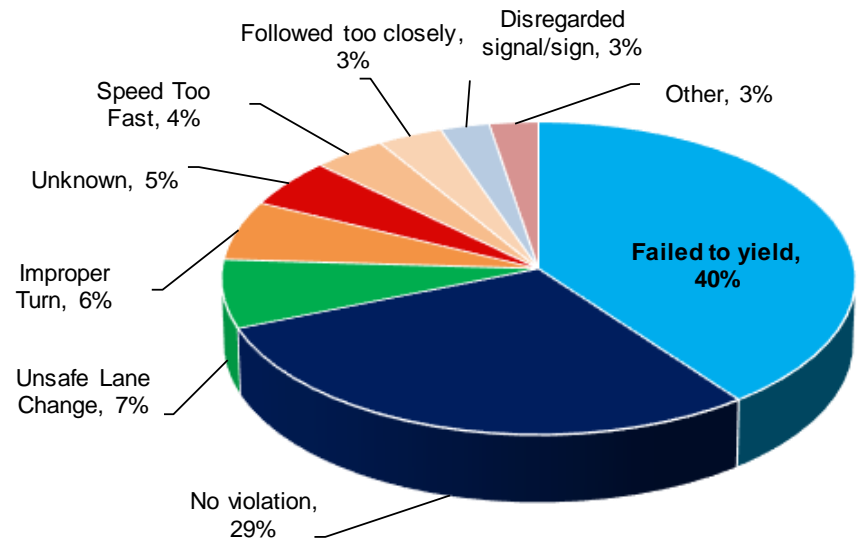
Actions of Motorcyclists and Drivers Involved in a Collision



Behavior/Violations of Motorcyclists and Drivers Involved in a Collision

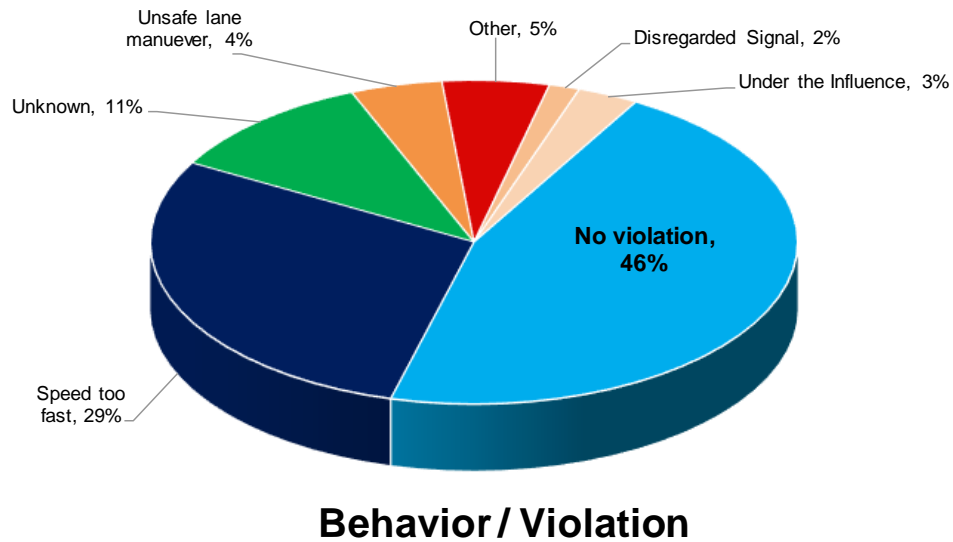
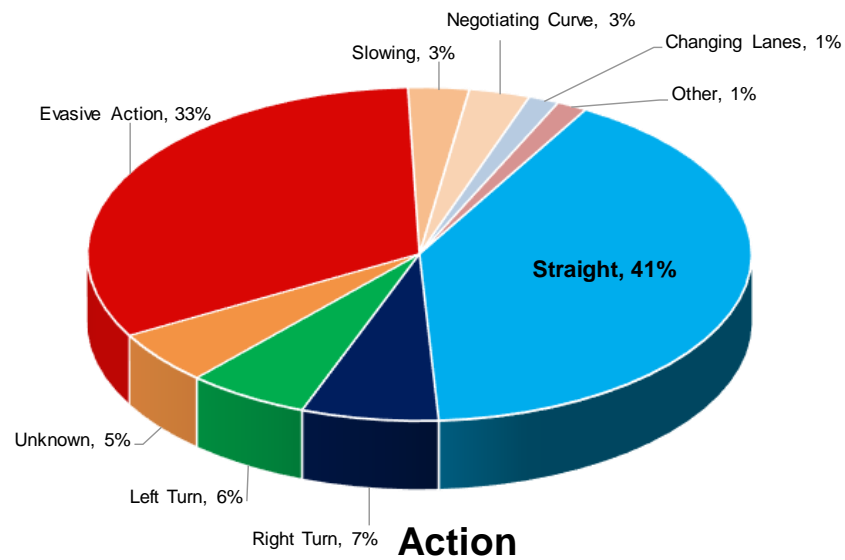
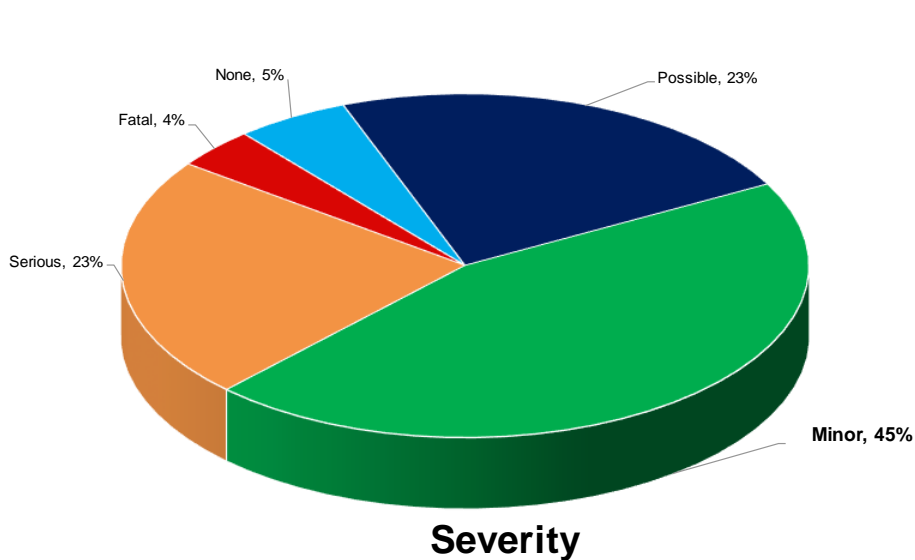


Motorcyclists



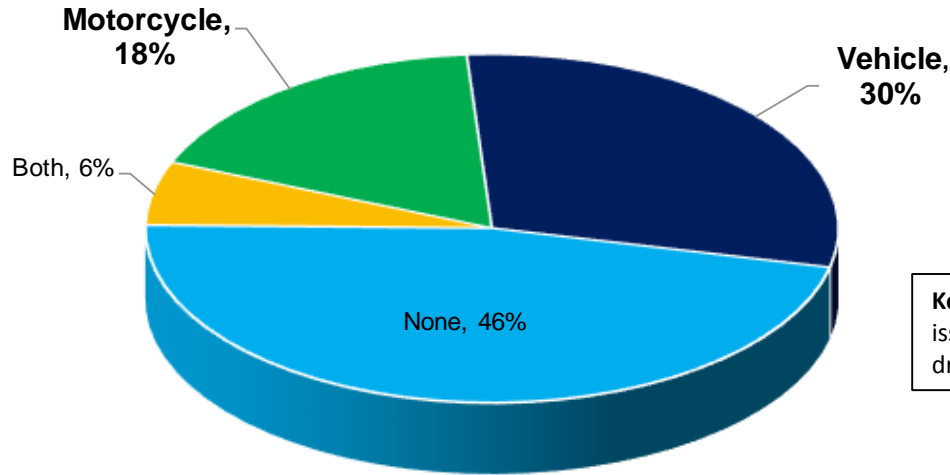
Drivers

Motorcyclists in Single Vehicle Collisions



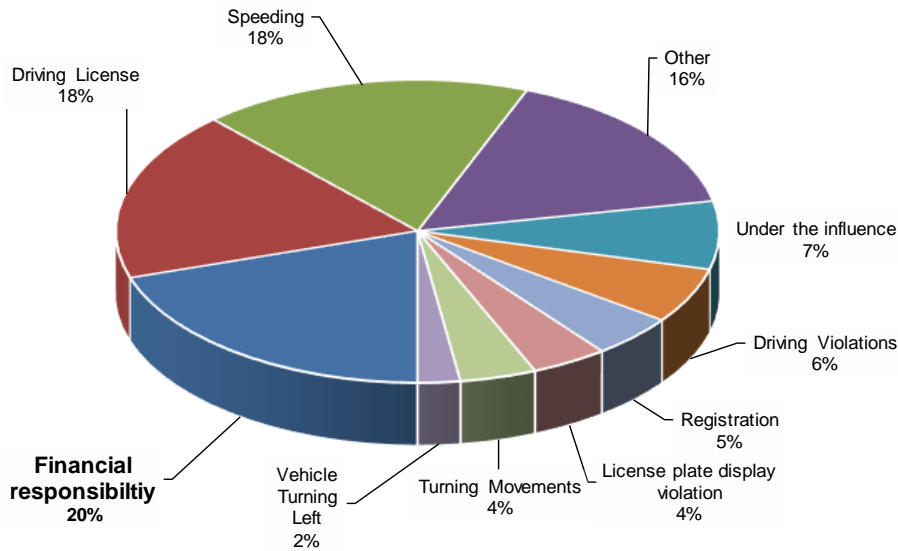
Key Note:
There were 131 single vehicle crashes, 22% of all motorcycle collisions.

Who was Cited in a Collision?

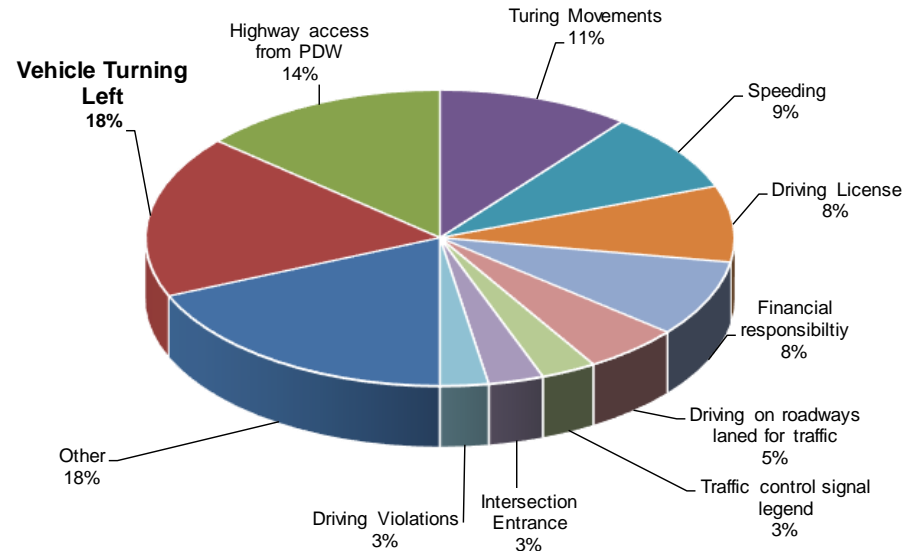


Key Note: 119 motorcyclists were issued 220 citations and 201 drivers were issued 264 citations.

Motorcycle Citations

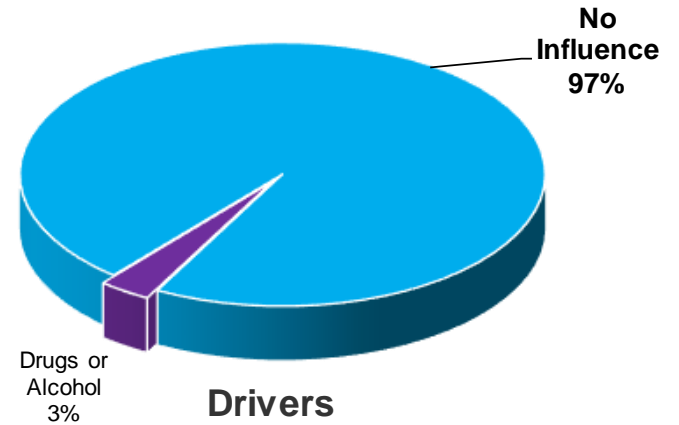
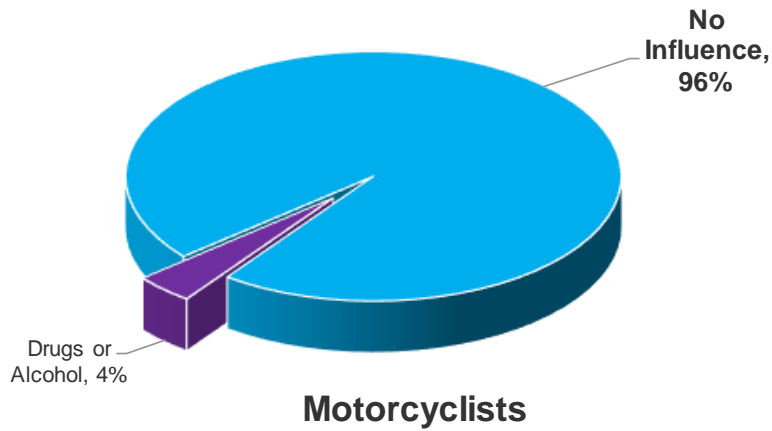


Vehicle Citations

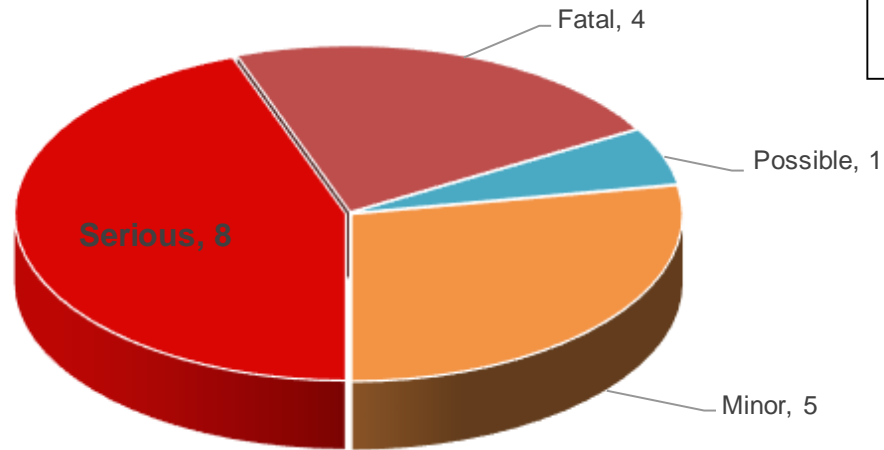
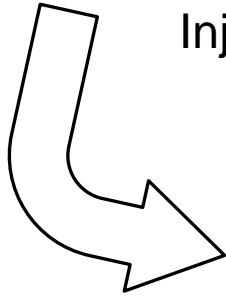




Impairment of Motorcyclists and Drivers



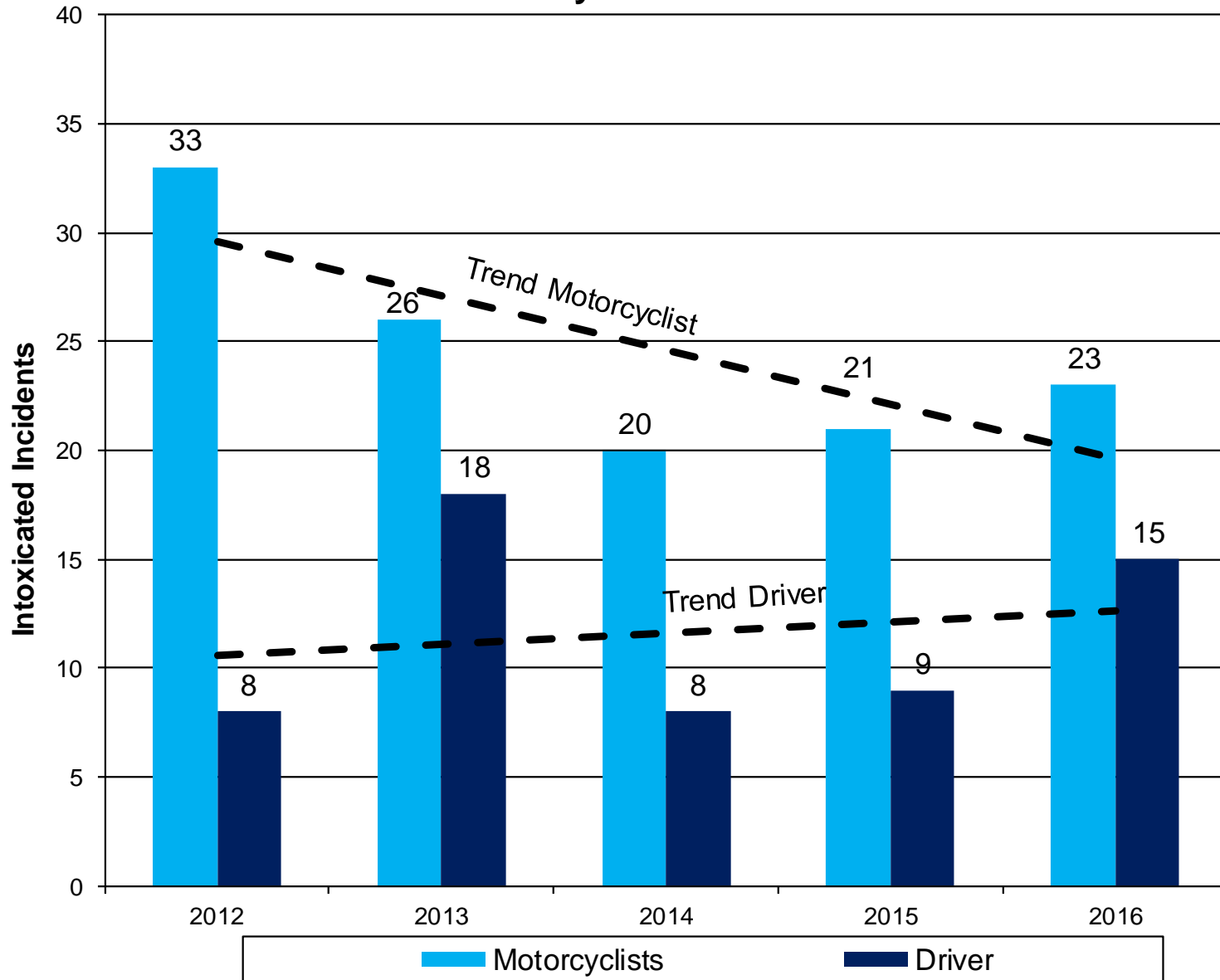
Injury Severity of Motorcyclists under the Influence



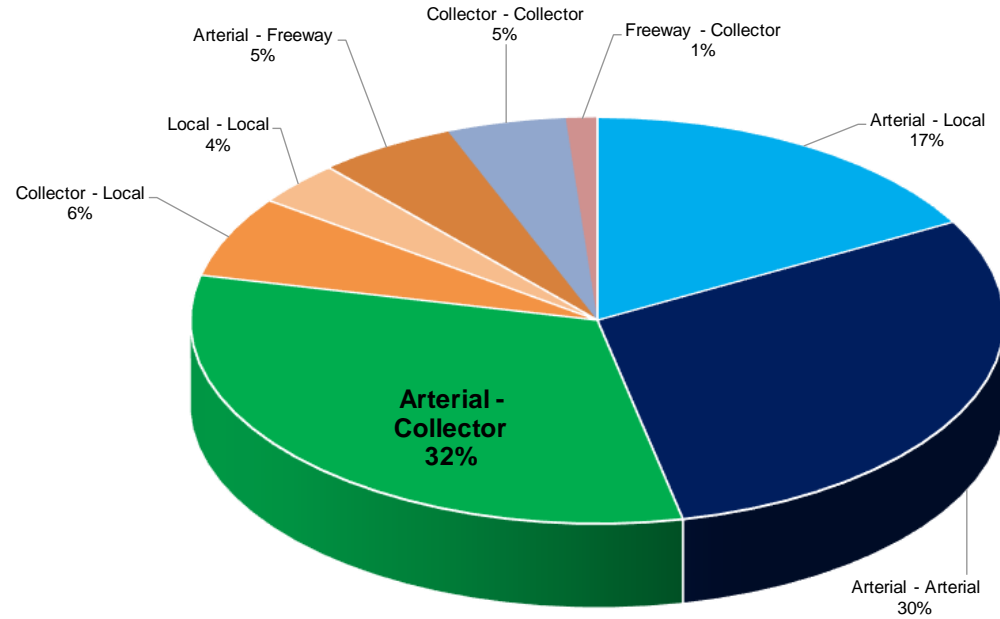
**Under the Influence:
100% involved Males**

Key Note:
There were 1 Possible, 5 Minor, 8 Serious and **4 fatalities** involving Motorcyclist drugs and/or alcohol

Five-Year Trend of Drug or Alcohol Use in Motorcyclist-Involved Collisions

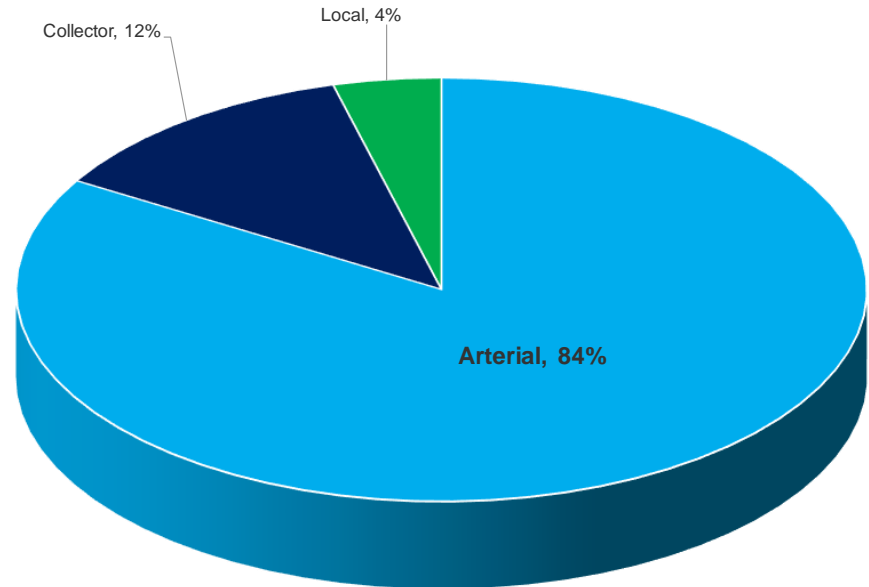


Motorcyclist-Involved Collisions by Street Classification



Non-Intersection-Related
33%
of all Motorcycle collisions

Intersection-Related
67%
of all Motorcycle collisions



Street Classification Examples

Freeways are I-17 (Black Canyon Freeway), I-10, Loop 202, on-ramps, access roads, etc.

Arterial streets are typically the mile-line streets such as 7th Ave, 16th St, Camelback Rd, and Union Hills Dr as defined on the Phoenix Street Classification Map.

Collector streets are typically the half-mile-line streets such as 39th Ave, 28th St, Roeser Rd, and Maryland Ave as defined on the Phoenix Street Classification Map.

Local streets are typically the neighborhood streets such as 88th Ln, Dromedary Rd, Holly St, 21st St, and Glenn Dr and are not defined as arterial or collector streets.

Motorcyclist-Involved Collisions and Traffic Control

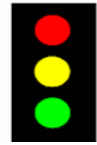
Mid Block Locations
331 collisions (89 1-vehicle)
56% of all collisions
274 injuries – 11 fatalities



STOP Sign Controlled Locations
59 collisions
10% of all collisions
47 injuries – 1 fatality



Signalized Locations
192 collisions
32% of all collisions
144 injuries – 7 fatalities



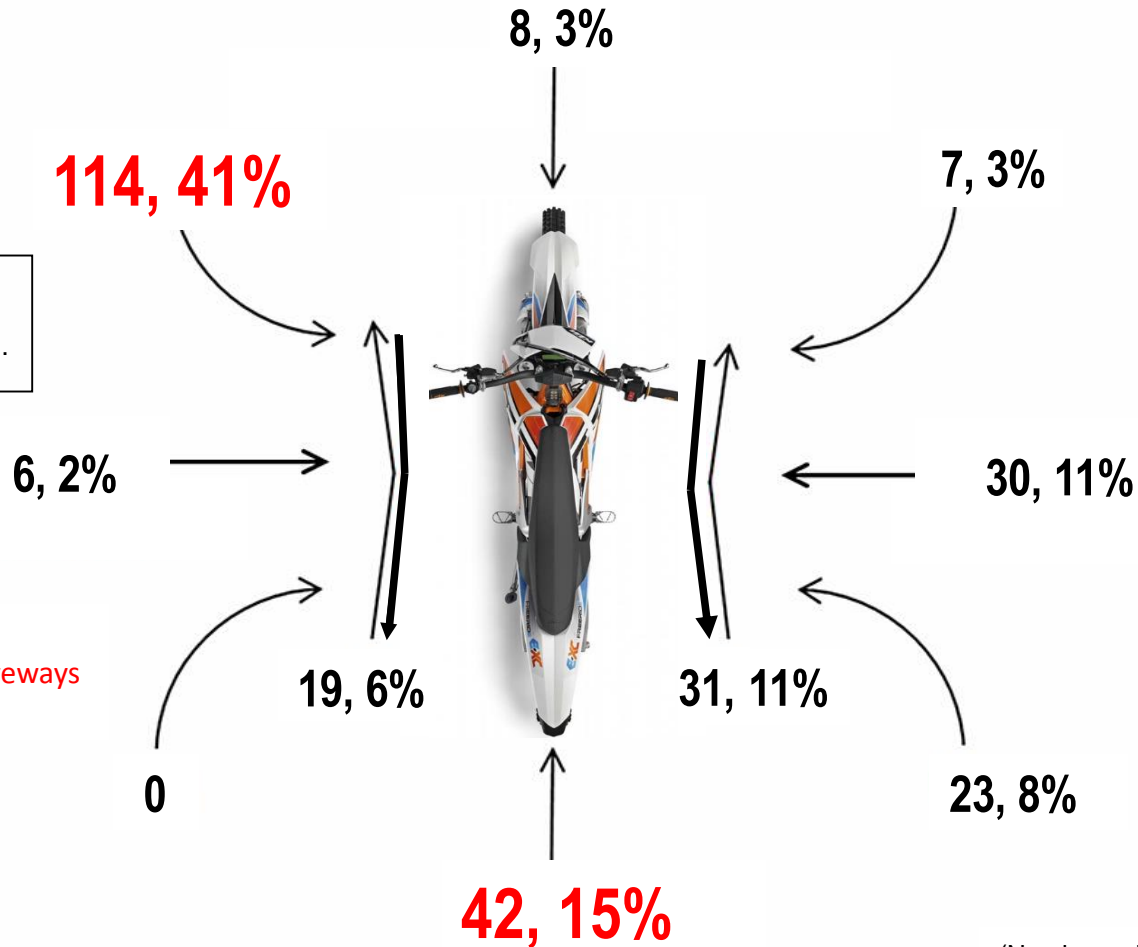
NOTE: There were 14 motorcyclists at unknown/other controls (2% of all collisions) resulting in 11 injuries, 2 fatalities.



Direction of the Vehicle Impact with Motorcyclist

Key Note:
56% of the collisions occurred at Intersections.

158 – Intersections
119 – Mid-block / Driveways
3 – Roundabout



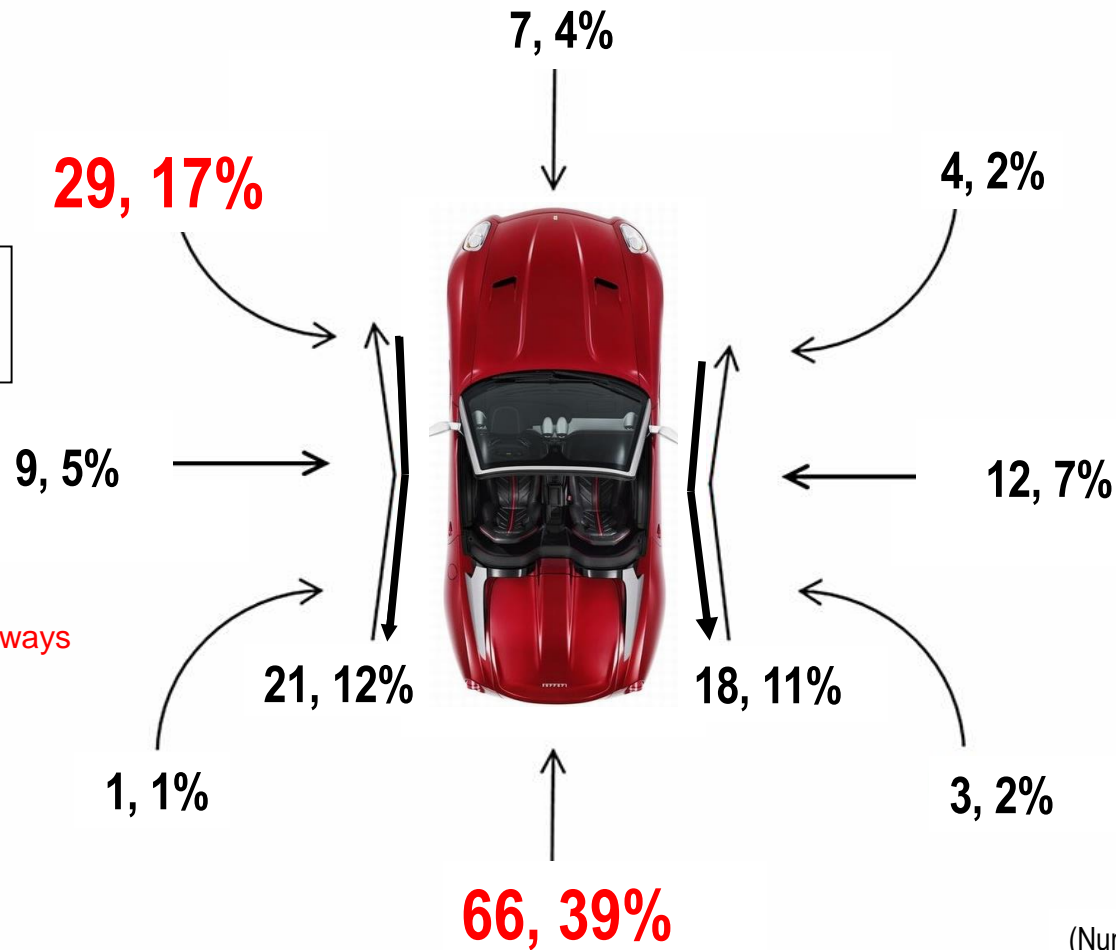
(Number collisions, Percent total)

NOTE: There were **131** Single Motorcycle collisions including **69** caused by Losing Control and **42** by Evasive Maneuvers.
There were **15** collisions involving Bicycles / Pedestrians.

Direction of the Motorcyclist Impact with Vehicle

Key Note:
58% of the collisions occurred at Intersections.

99 – Intersections
71 – Mid-block / Driveways

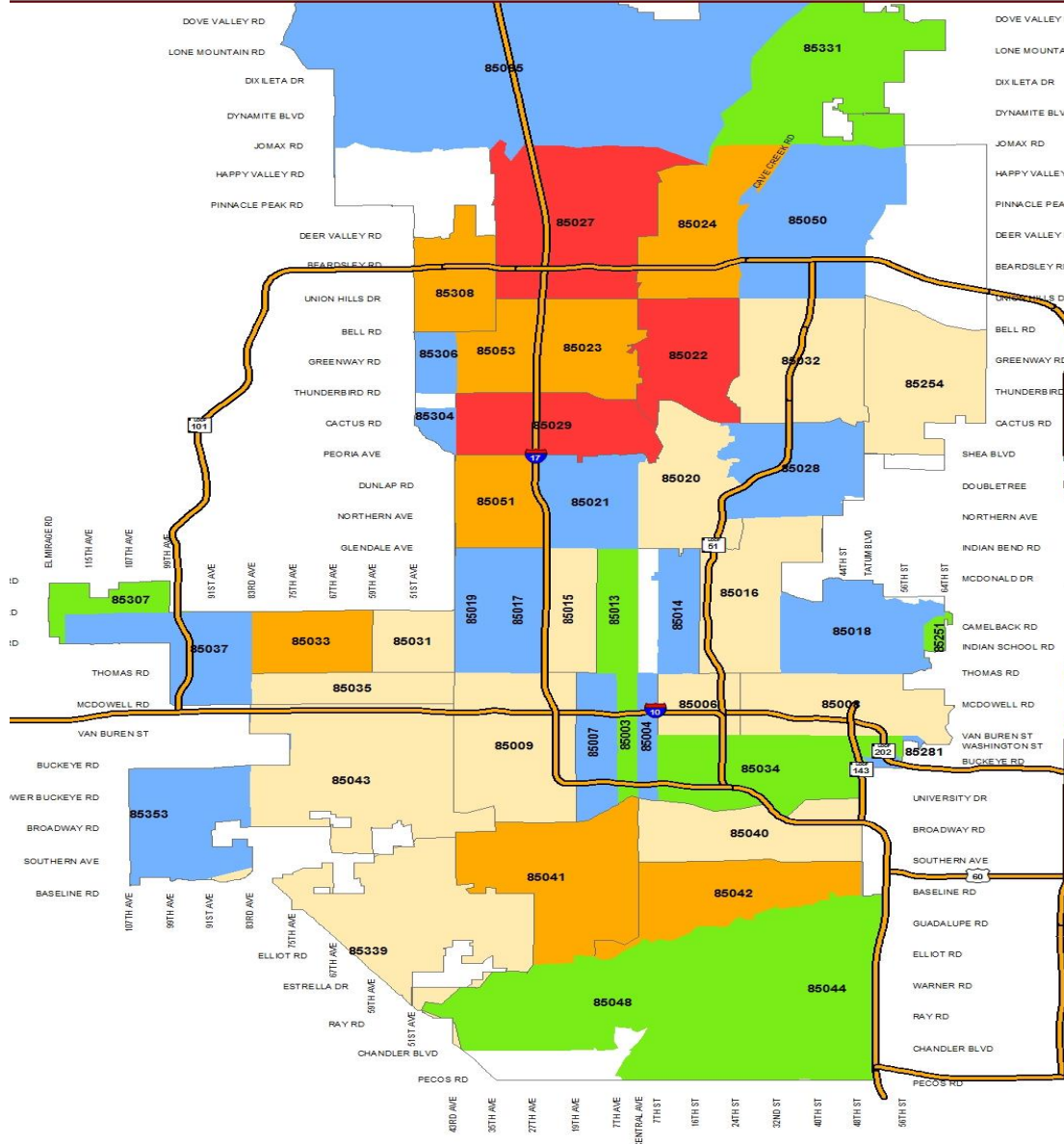
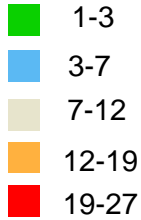


(Number collisions, Percent total)

NOTE: There were 131 Single Motorcycle collisions including 69 caused by Losing Control and 42 by Evasive Maneuvers. There were 15 collisions involving Bicycles / Pedestrians.

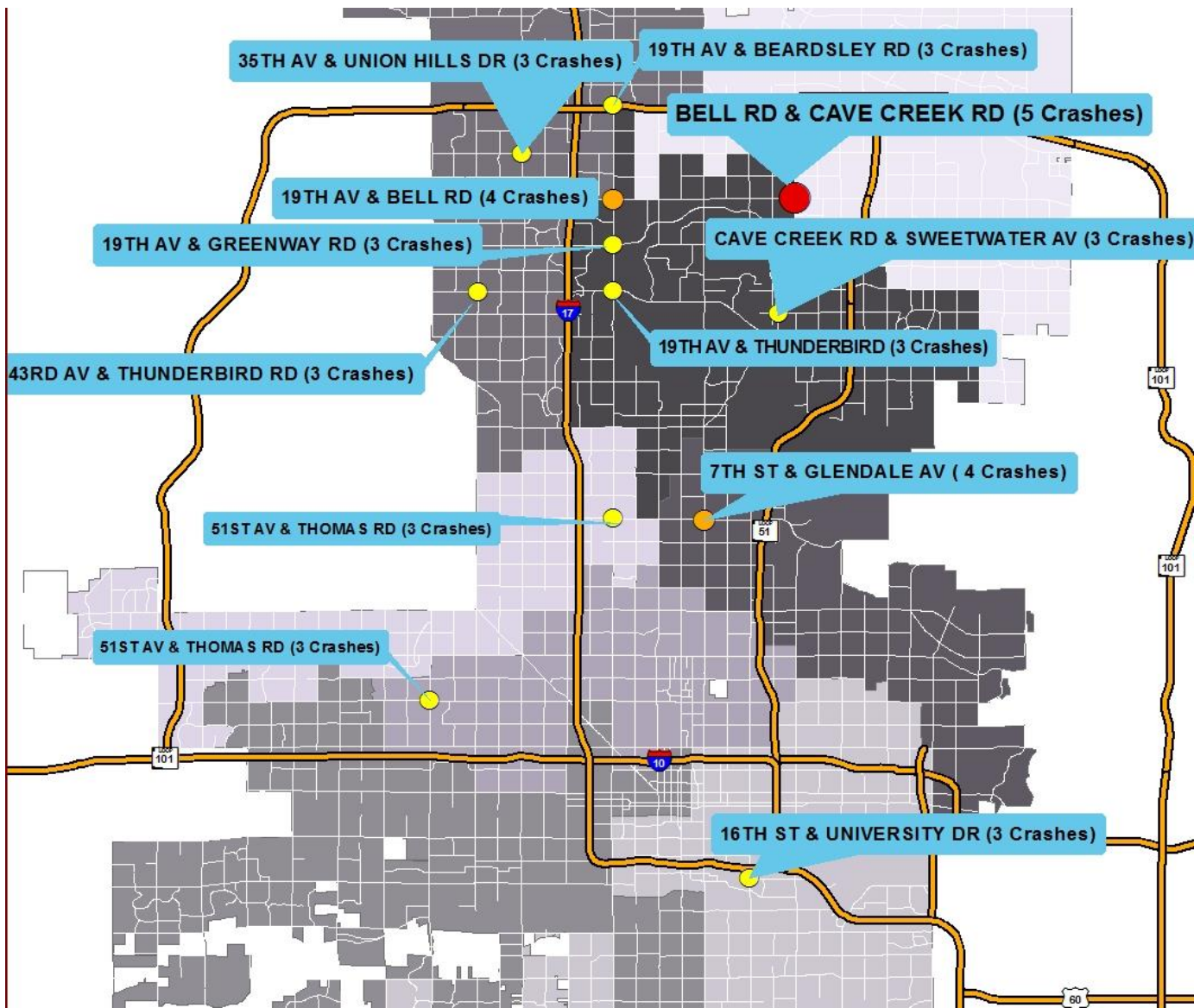
Total Motorcyclists Involved in a Collision by Residential Zip Code

Number of Incidents



Top 12 Locations with the Highest Number of Motorcycle Collisions 2016

- 5 Collisions
- 4 Collisions
- 3 Collisions



Acknowledgements

The 2016 Phoenix Motorcycle Collision Summary documents the collisions involving motorcyclists in the City of Phoenix throughout the 2016 calendar year. Collision data utilized for this report was acquired through Phoenix Police records and the database maintained by the Arizona Department of Transportation (ADOT) known as Safety Data Mart (SDM). The 2016 Phoenix Motorcycle Collision Summary was prepared by Gaurav Pokhrel and Jaylen Gooley (ASU Interns) with assistance from Traffic Safety Section staff Richard Russ (Principal Engineering Technician) and Jacob Martinez (Senior Engineering Technician).

Presentation photographs courtesy Jaylen Gooley (ASU Intern)

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Questions?

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