



2015

MOTOR VEHICLE COLLISIONS



Edmonton

INSIDE

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2015 QUICK FACTS

Legal Note:

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STATISTICS	2014	2015	% CHANGE
TOTAL COLLISIONS	24,627	25,517	↑ 3.6
FATAL COLLISIONS	22	30	↑ 36.4
INJURY COLLISIONS	2,912	3,033	↑ 4.2
FATAL AND INJURY COLLISIONS	2,934	3,063	↑ 4.4
PROPERTY DAMAGE ONLY (PDO) COLLISIONS	21,693	22,454	↑ 3.5
INTERSECTION COLLISIONS	13,559	14,515	↑ 7.1
NUMBER OF FATALITIES	23	32	↑ 39.1
NUMBER OF MAJOR INJURIES	385	383	↓ -0.5
NUMBER OF MINOR INJURIES	3,275	3,422	↑ 4.5
NUMBER OF MAJOR AND MINOR INJURIES	3,660	3,805	↑ 4.0
PEDESTRIAN COLLISIONS	319	316	↓ -0.9
NUMBER OF PEDESTRIAN INJURIES	336	317	↓ -5.7
NUMBER OF PEDESTRIAN FATALITIES	9	12	↑ 33.3
NUMBER OF PEDESTRIAN FATALITIES AND INJURIES	345	329	↓ -4.6
BICYCLE COLLISIONS	177	178	↑ 0.6
NUMBER OF CYCLIST INJURIES	177	158	↓ -10.7
NUMBER OF CYCLIST FATALITIES	1	0	↓ -100.0
NUMBER OF CYCLIST FATALITIES AND INJURIES	178	158	↓ -11.2
MOTORCYCLE COLLISIONS	163	208	↑ 27.6
NUMBER OF MOTORCYCLIST INJURIES	114	121	↑ 6.1
NUMBER OF MOTORCYCLIST FATALITIES	0	6	↑ 600.0
NUMBER OF MOTORCYCLIST FATALITIES AND INJURIES	114	127	↑ 11.4
POPULATION	877,926	895,000	↑ 1.9
PRIVATE PASSENGER VEHICLES	563,829	591,595	↑ 4.9
PRIVATE MOTORCYCLES	16,003	17,415	↑ 8.8
COLLISIONS PER 1,000 POPULATION	28.05	28.51	↑ 1.6
INTERSECTION COLLISIONS PER 1,000 POPULATION	15.44	16.22	↑ 5.0
NUMBER OF FATALITIES AND INJURIES PER 1,000 POPULATION	4.20	4.29	↑ 2.2
COLLISIONS PER 1,000 VEHICLES ¹	42.47	41.90	↓ -1.3
INTERSECTION COLLISIONS PER 1,000 VEHICLES	23.38	23.83	↑ 1.9
NUMBER OF FATALITIES AND INJURIES PER 1,000 VEHICLES	6.35	6.30	↓ -0.8

¹ Per 1,000 vehicles refers to private passenger vehicles and private motorcycles.

2015 SUMMARY

- 25,517 collisions, an increase of 3.6% from 2014
- Collisions per capita increased 1.6% from 2014 levels (28.05), to 28.51 collisions per 1,000 population
- Collisions resulted in 3,063 injuries or fatalities, an increase of 4.4% from 2014. This resulted in 3,422 minor injuries, 383 major injuries, and 32 fatalities²
- The 32 fatalities included 14 vehicle occupants (9 drivers and 5 passengers) and 18 vulnerable road users (12 pedestrians and 6 motorcyclists)
- Collisions at intersections made up 56.9% (14,515) of the collision total and resulted in 71.6% (2,726) of total injuries and 56.3% (18) of the fatalities. Compared to 2014, the number of intersection collisions per 1,000 population increased by 5.0%
- Most common collision causes: followed too closely (38.2%, 9,742 collisions); struck parked vehicle (13.1%, 3,331); changing lanes improperly (10.8%, 2,754); left turn across path (7.0%, 1,790); and ran off road (6.6%, 1,690)
- Collision causes most likely to result in injury or fatality: followed too closely (42.1%, 1,290 collisions); left turn across path (10.9%, 335); and failed to yield to pedestrian (7.4%, 228)

**25,517
COLLISIONS** | **+3.6%**



**COLLISIONS AT
INTERSECTIONS
MADE UP 56.9%
OF ALL COLLISIONS
(14,515)**

**MOST COMMON
CAUSE OF COLLISION:
FOLLOWED TOO
CLOSELY (38.2%)**



- 316 pedestrian-involved collisions resulted in 317 pedestrian injuries, a decrease of 5.7% over 2014. However, there were 12 fatalities compared to 9 in 2014. Of the pedestrian collisions, 52 injuries and 5 fatalities occurred when a pedestrian was crossing without the right of way (jaywalking)
- Cyclists injured or killed decreased 11.2% from 2014, with 178 cyclist collisions resulting in 158 injuries and no fatalities. Among them, 45.6% (72) of the cyclist

injuries were caused by cyclist error or violation

- Motorcycle collisions increased to 208, up 27.6% from 2014. The number of motorcyclists injured increased by 6.1% to 121. There were 6 motorcyclist fatalities in 2015; none in 2014
- Top 3 high-collision intersections in the City of Edmonton in 2015 were: 107 Avenue NW and 142 Street NW (97 collisions); Yellowhead Trail NW and 149 Street NW (71 collisions); and Yellowhead Trail NW and 127 Street NW (68 collisions)
- Top 2 high-collision midblock segments were: Whitemud Drive from 50 Street NW to 66 Street NW (42 collisions) and Whitemud Drive from 122 Street NW to Terwillegar Drive NW (37 collisions)

- 3 midblock locations had 27 collisions each: Whitemud Drive from Quesnell Bridge to 149 Street NW, Yellowhead Trail NW from 82 Street NW to 89 Street NW, and Quesnell Bridge

*“Traffic safety
isn’t luck. Safety
is something we
choose to do.”*

² For classifications of fatality, major and minor injury, please refer to Appendix 1 at the end of this document.



SECTION 1: INTRODUCTION

The City of Edmonton's Office of Traffic Safety maintains the Motor Vehicle Collision Information System (MVCIS), a database of motor vehicle collisions that occur on public roads in the City of Edmonton. The information in the database is collected from the provincial Collision Report Form, which is completed by members of the Edmonton Police Service either on paper at the scene of the collision or electronically at the front counter of a divisional or community police station.

The database reflects all reported collisions on public roadways that result in property damage of \$2,000 or greater, as well as any collision that results in a minor or major injury or fatality. On January 1, 2011, Alberta Transportation implemented a change in its regulations that affected the requirement to report collisions; specifically, the estimated damage amount beyond which a collision is required to be reported to police increased from \$1,000 to \$2,000.

This report presents an overview of collisions that occurred in Edmonton from January 1 to December 31, 2015, based on causes, temporal information, high collision locations and injury severity. The report also provides information on collisions involving pedestrians, cyclists, and motorcyclists.

VISION ZERO

The City of Edmonton uses collision data to make informed decisions on how to reduce collisions and injuries. For example, the number of injury collisions has decreased almost 50% from 6,067 in 2006 to 3,033 in 2015. This is accomplished through a Safe Systems approach that includes engineering, education, enforcement, evaluation, and engagement.

However, the Vision Zero approach to road safety can be summarized in one sentence: **No loss of life is acceptable.** The goal of Vision Zero is zero traffic fatalities and major injuries. Because humans have limited tolerance to violent forces, we are physically vulnerable when involved in motor vehicle collisions. That's why everyone who uses our roadways has a shared responsibility for road safety. This accountability is also shared by those who design, maintain and operate the road system.

"Vision Zero is perfectly timed, coming when more and more people are becoming vocal in their support for safer roads, bike lanes and pedestrian walkways."

— OTS EXECUTIVE DIRECTOR GERRY SHIMKO

FIGURE 1:

HISTORICAL COLLISION STATISTICS FROM 2001 TO 2015

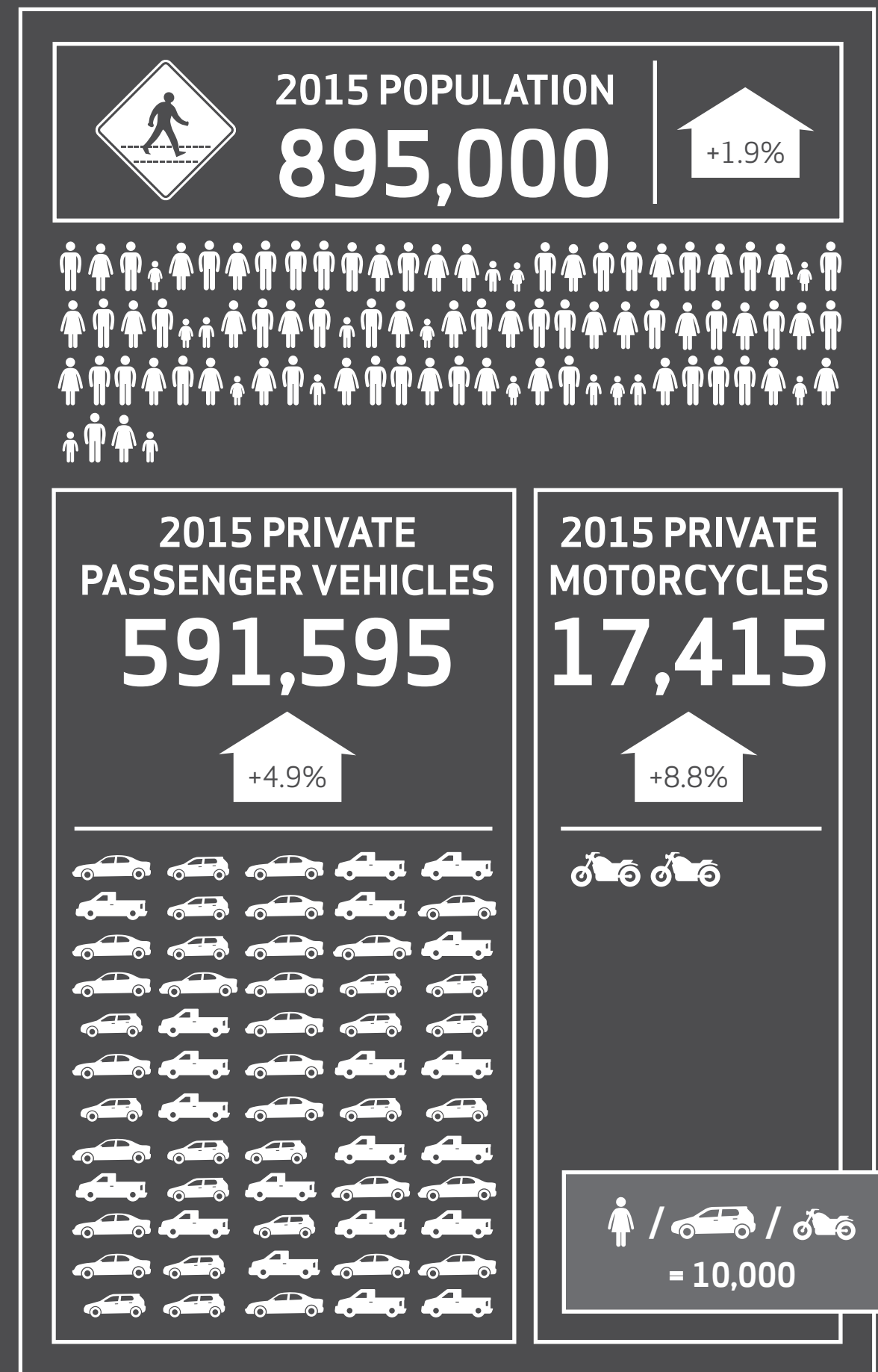
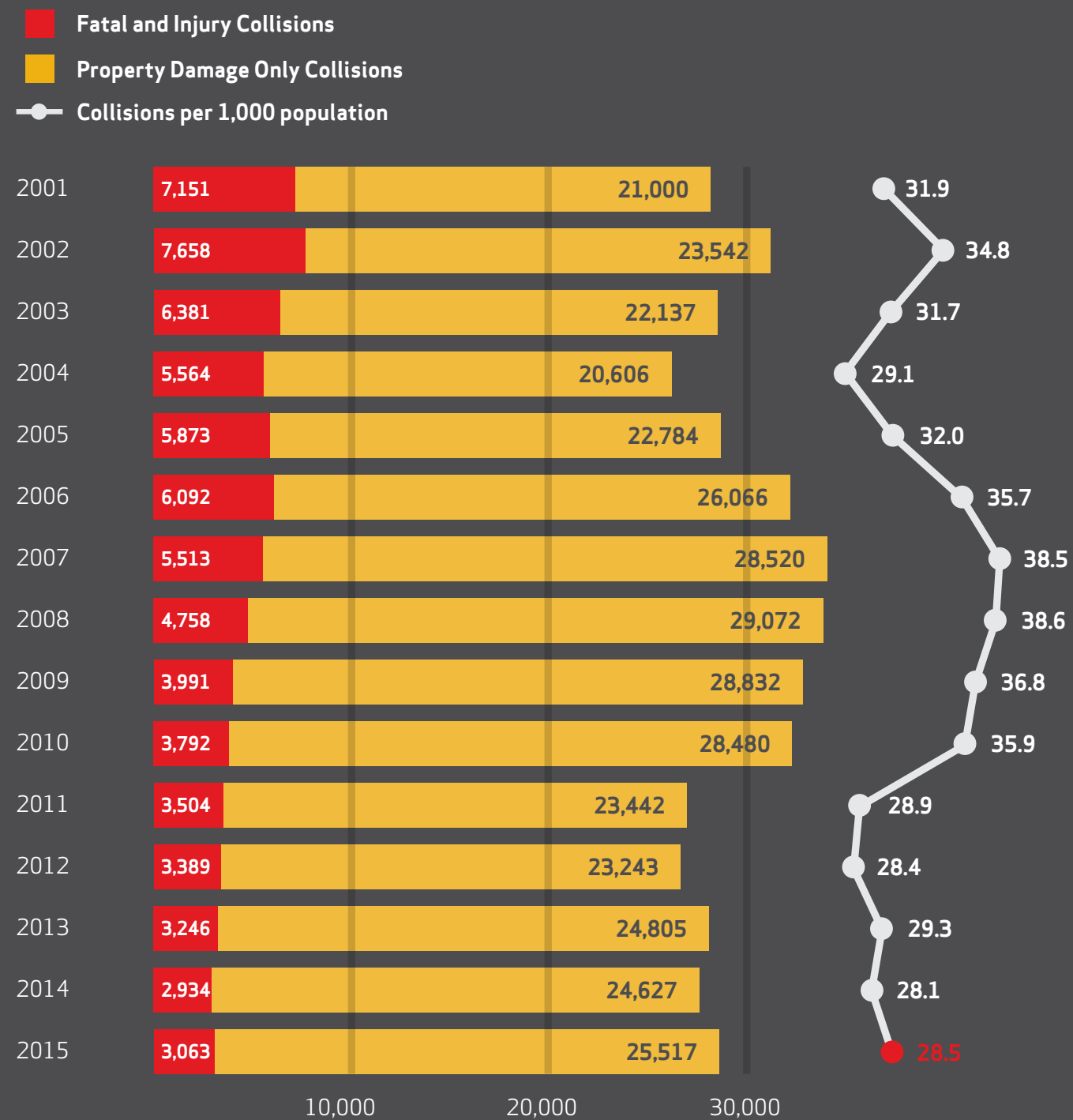


TABLE 1:

SUMMARY OF SELECTED COLLISION STATISTICS FROM 2001 TO 2015

The population figure for 2015 is based on an estimate provided by the Chief Economist for the City of Edmonton. The population figure for 2014 is based on Edmonton’s official population on April 1, 2014, from the 2014 Edmonton Municipal Census (www.edmonton.ca/census). Population figures for previous years were primarily obtained from either Census of Canada or City of Edmonton Municipal Census. [See “Population History” of Edmonton Municipal Census (www.edmonton.ca/census)].

Data on passenger vehicle and motorcycle registrations are based on the Alberta Vehicle Registration Statistics by Vehicle Registration Classes and reflect the number of registrations as of March 31 of each year.

Year	Population	Private Passenger Vehicles	Private Motorcycles	Collisions per 1,000 Population	Intersection Collisions per 1,000 Population	Injuries per 1,000 Population	Collisions per 1,000 Vehicles
2001	657,350	365,232	6,112	31.9	18.0	15.5	56.6
2002	676,300	376,157	6,346	34.8	17.3	16.3	61.5
2003	697,657	380,475	7,070	31.7	17.3	13.1	57.1
2004	707,271	381,456	8,278	29.1	15.7	10.9	52.9
2005	712,391	389,471	8,586	32.0	14.9	11.3	57.2
2006	730,372	407,732	9,236	35.7	14.8	11.1	62.5
2007	741,392	431,425	10,152	38.5	17.9	10.1	64.6
2008	752,412	452,101	12,686	38.6	18.9	8.4	62.5
2009	782,439	470,602	14,378	36.8	17.5	6.7	59.4
2010	793,000	479,194	15,605	35.9	17.0	6.2	57.6
2011	812,201	491,789	14,087	28.9	15.30	5.5	46.3
2012	817,498	509,655	14,945	28.4	15.5	5.4	44.3
2013	847,712	536,737	14,311	29.3	16.1	4.9	45.0
2014	877,926	563,829	16,003	28.1	15.4	4.2	42.5
2015	895,000	591,595	17,415	28.5	16.2	4.3	41.9
% Chg*	1.9 %	4.9 %	8.8 %	1.6 %	5.0 %	2.2 %	-1.3 %

Year	Total Collisions	Injury Collisions	Injuries	Fatal Collisions	Fatalities	Pedestrian Collisions	Pedestrians Injured	Pedestrians Killed	Bicycle Collisions	Cyclists Injured	Cyclists Killed	Motorcycle Collisions	Motorcyclists Injured	Motorcyclists Killed
2001	21,000	7,127	10,284	24	24	372	380	11	227	230	0	148	137	2
2002	23,542	7,638	11,013	20	20	348	365	9	201	199	0	157	141	3
2003	22,137	6,352	9,083	29	32	308	308	6	180	181	0	125	110	1
2004	20,606	5,530	7,686	34	37	296	308	10	196	195	2	161	137	9
2005	22,783	5,847	8,006	26	27	333	346	4	221	221	1	177	162	2
2006	26,066	6,067	8,221	25	25	347	364	0	199	198	0	177	144	1
2007	28,520	5,482	7,445	31	32	366	372	13	184	181	4	213	160	4
2008	29,072	4,730	6,270	28	29	395	395	9	235	234	2	255	186	7
2009	28,832	3,962	5,203	29	32	347	357	9	220	218	2	201	152	2
2010	28,480	3,768	4,910	24	27	306	326	4	182	182	2	211	135	4
2011	23,442	3,482	4,446	22	22	316	324	8	190	188	1	199	139	4
2012	23,243	3,363	4,338	26	27	296	302	8	177	176	1	157	126	4
2013	24,805	3,223	4,123	23	23	298	311	6	177	176	1	172	131	2
2014	24,627	2,912	3,660	22	23	319	336	9	177	177	1	163	114	0
2015	25,517	3,033	3,805	30	32	316	317	12	178	158	0	208	121	6
% Chg*	3.6 %	4.2 %	4.0 %	36.4 %	39.1 %	-0.9 %	-5.7 %	33.3 %	0.6 %	-10.7 %	-100.0 %	27.6 %	6.1 %	600.0 %

* % Change from 2014 to 2015



317
INJURED
PER MONTH

On average, 317 people are injured each month in collisions in Edmonton. That is the equivalent of 9 full ETS buses per month!



SECTION 2: OVERVIEW

The total number of reported collisions increased 3.6% between 2014 and 2015, and collisions resulting in injury and the number of people injured increased 4.2% and 4.0% respectively. Although collisions resulting in injury have been steadily decreasing since the establishment of the City of Edmonton Office of Traffic Safety in 2006, last year saw increases in total collisions, minor injuries, and fatalities from 2014.

Collisions resulting in fatalities increased from 22 in 2014 to 30 in 2015, with the number of fatalities increasing from 23 to 32. Major injuries decreased slightly (0.5%) to 383 in 2015 from 385 in 2014.

Injuries involving pedestrians and cyclists decreased in 2015 compared to 2014 (5.7%, 317; and 10.7%, 158 respectively). However, injuries involving motorcyclists increased to 121, up 6.1% from 2014. Overall collisions involving motorcyclists also increased 27.6% to 208, and there were 6 motorcycle fatalities compared to none in 2014. Pedestrian fatalities increased 33.3% from 2014 to 12 in 2015. Cyclist collisions increased slightly (0.6%) from 2014 to 178 in 2015. However, there were no cyclist fatalities in 2015 compared to 1 in 2014.

Overall total collisions per 1,000 population increased by 1.6% from 2014 to 2015, and fatalities and injuries per 1,000 population increased 2.2%.

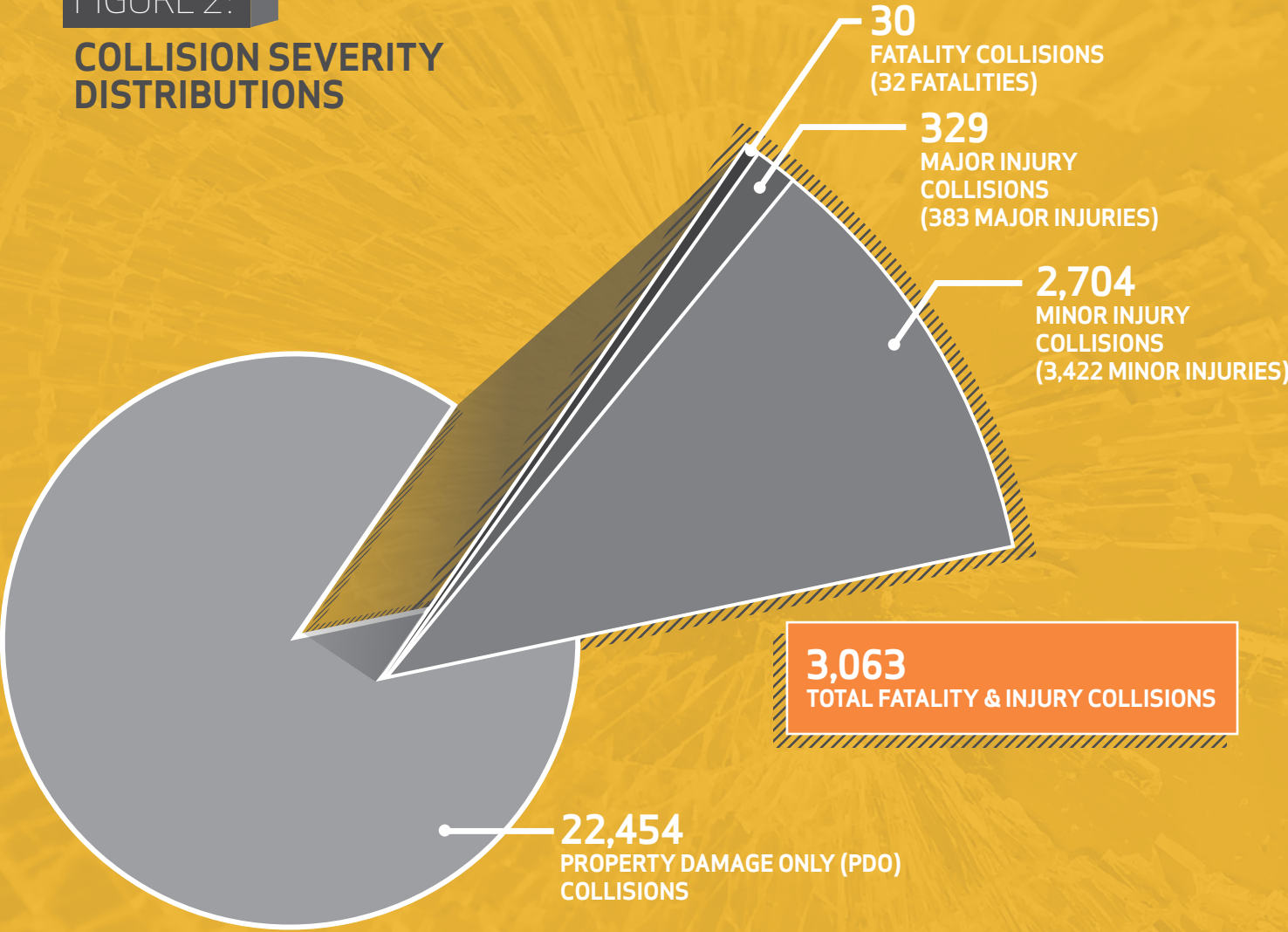
“Traffic safety is much more than just signs and paint lines. I look forward to the day when drivers realize they are responsible for lives both inside and outside of their car.”

— COUNCILLOR DAVE LOKEN

2015 COLLISIONS

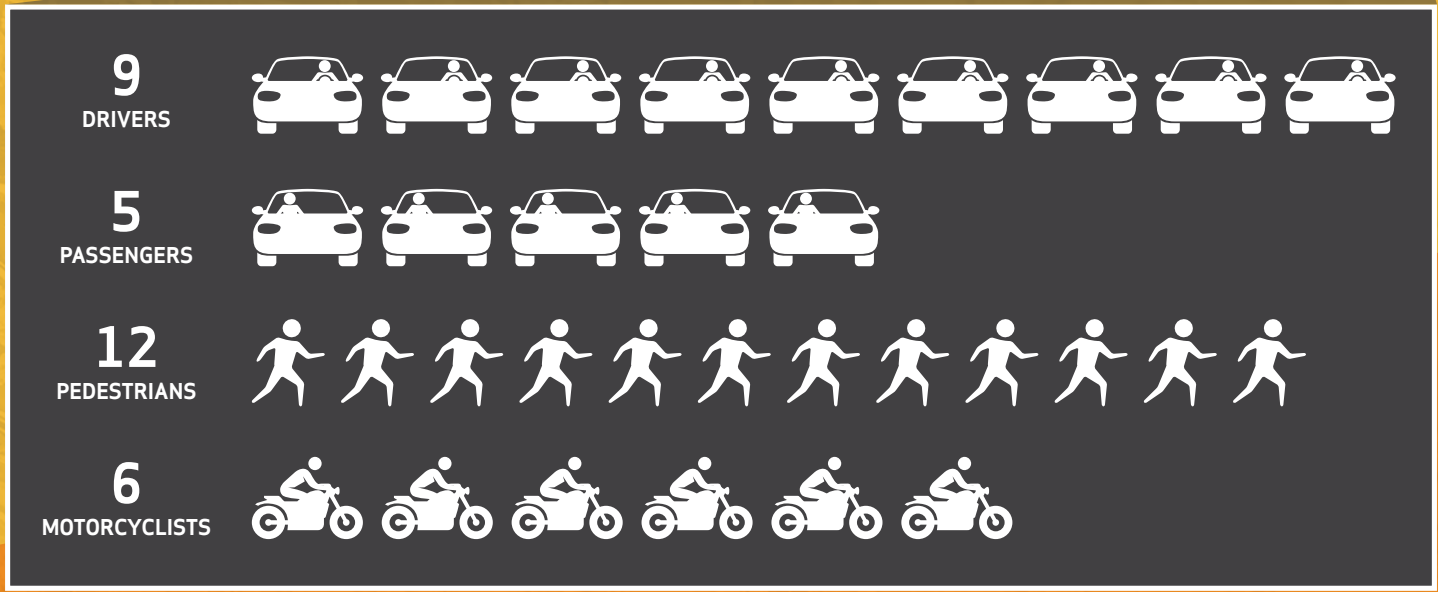
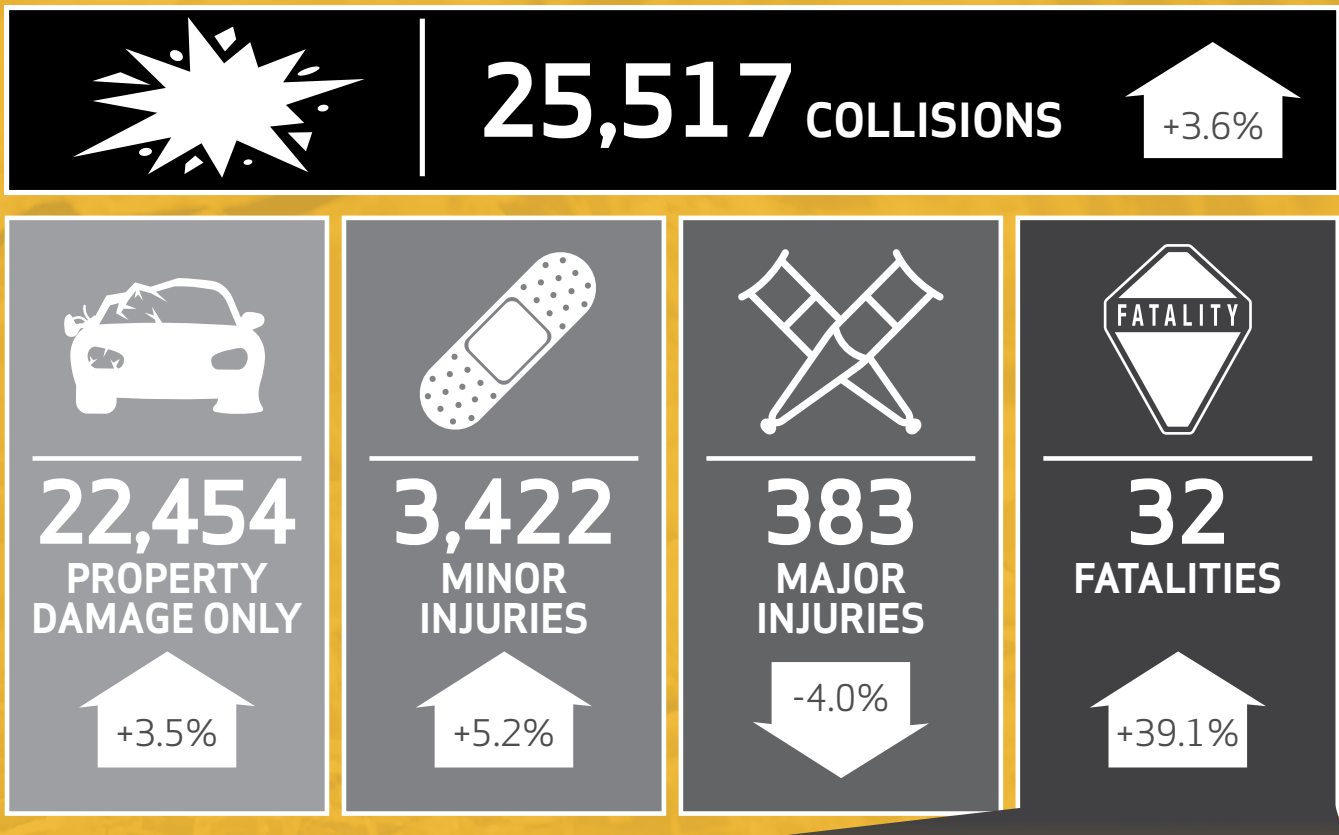
FIGURE 2:

COLLISION SEVERITY DISTRIBUTIONS



Included in the 25,517 reported motor vehicle collisions on Edmonton streets in 2015 are 3,063 (12.0%) collisions that resulted in minor or major injury or death. These 3,063 collisions caused a total of 3,837 injuries or fatalities to drivers, passengers, pedestrians, cyclists, and motorcyclists.

Among them were 32 traffic fatalities, 383 major injuries and 3,422 minor injuries. The fatality figure includes 14 vehicle occupants (9 drivers and 5 passengers), 12 pedestrians, and 6 motorcyclists. (Figure 2)



“These are our mothers, fathers, wives, husbands, children, friends... any loss of life on our roads is unacceptable.”

— MAYOR DON IVESON



SECTION 3:

COLLISION CAUSES

The most common collision cause reported was followed too closely, which was indicated in 38.2% (9,742) of all collisions. Other common collision causes included: struck parked vehicle (13.1%, 3,331); changing lanes improperly (10.8%, 2,754); left turn across path (7.0%, 1,790); and ran off road (6.6%, 1,690).³

The collision causes most likely to result in injury or fatality were: followed too closely (42.1%, 1,290); left turn across path (10.9%, 335); and failed to yield to pedestrian (7.4%, 228). Others were: failed to observe traffic signal (7.1%, 218), ran off road (6.5%, 199), and stop sign violation (6.5%, 199).

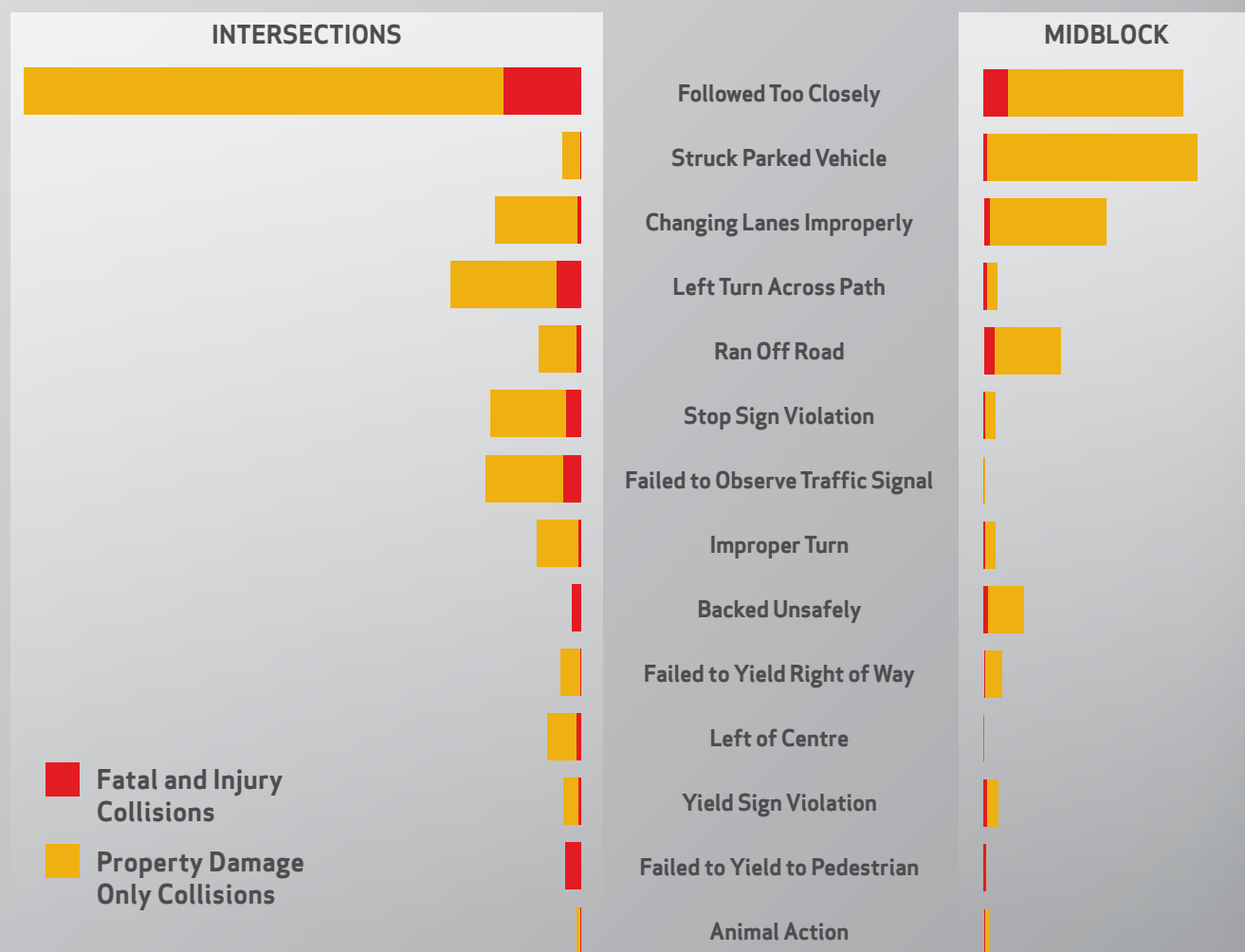
³ For a glossary of collision causes, please refer to Appendix 2 at the end of this document.

“We are committed to protecting our most vulnerable citizens by using the best technology available to make our streets and roadways safe for everyone.”

— COUNCILLOR BEVESSLINGER

FIGURE 3:

TOP COLLISION CAUSES AT INTERSECTIONS AND MIDBLOCK SEGMENTS



There are considerable differences in the profile of collision causes at intersections versus midblock segments.⁴ At intersections, followed too closely was the reported cause in 47.3% (6,862) of all 14,515 intersection collisions. By comparison, followed too closely was the reported cause in only 26.4% (2,440) of all 9,231 collisions along midblocks. (Figure 3)

Of the 1,690 ran off road collisions in 2015, only 30.3% (512) occurred at intersections, versus 55.7% (941) along midblocks. On the other hand,

of the 1,790 left turn across path collisions, 89.4% (1,600) occurred at intersections, versus 9.4% (169) along midblock segments with vehicles turning onto private property or into alleys.

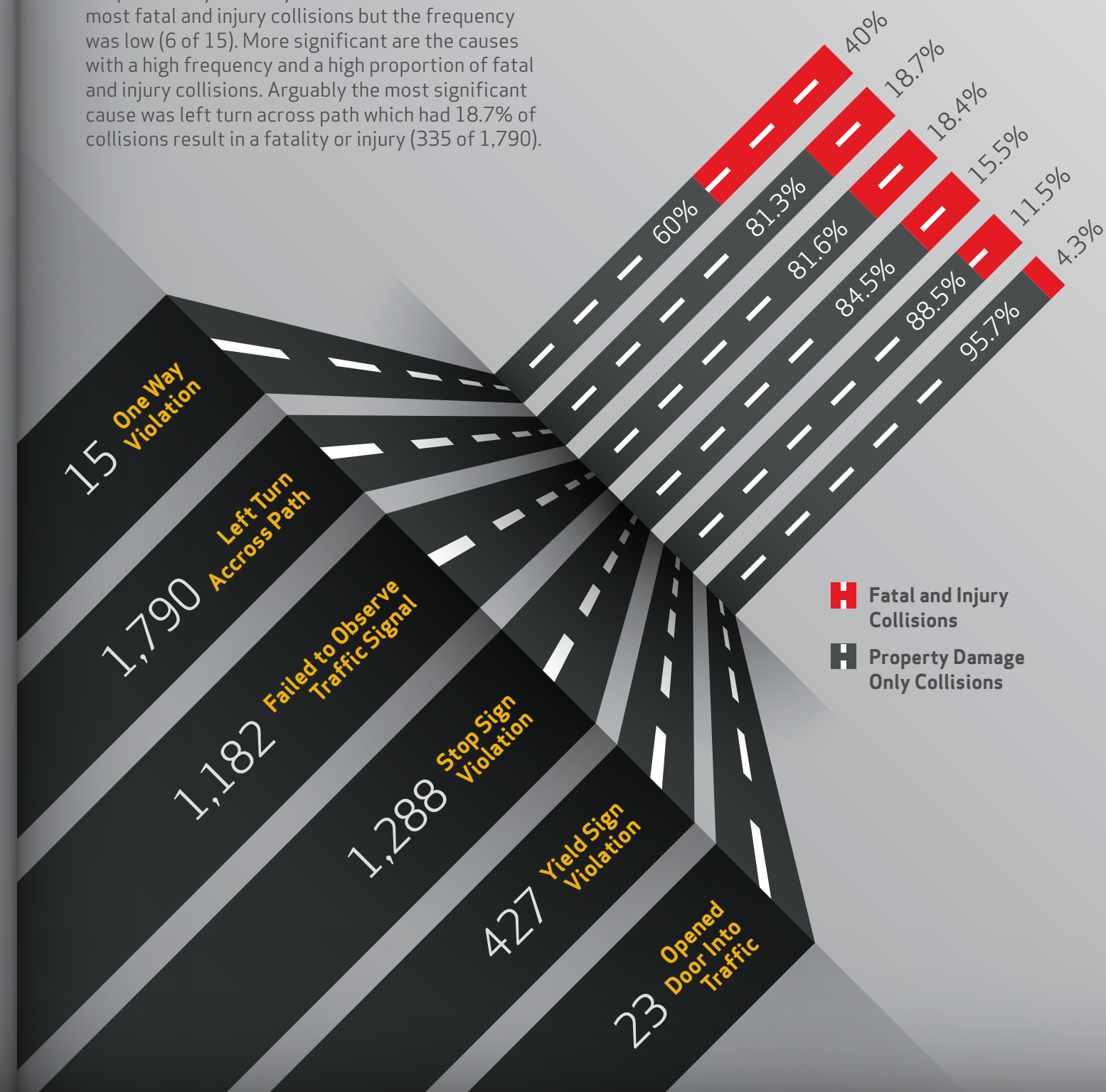
Ranked by the severity of outcome, there were two causes where 100% of collisions resulted in fatality or injury (i.e., no PDO collisions for these two causes). They were failed to yield to pedestrian (228), and pedestrian error / violation (72).

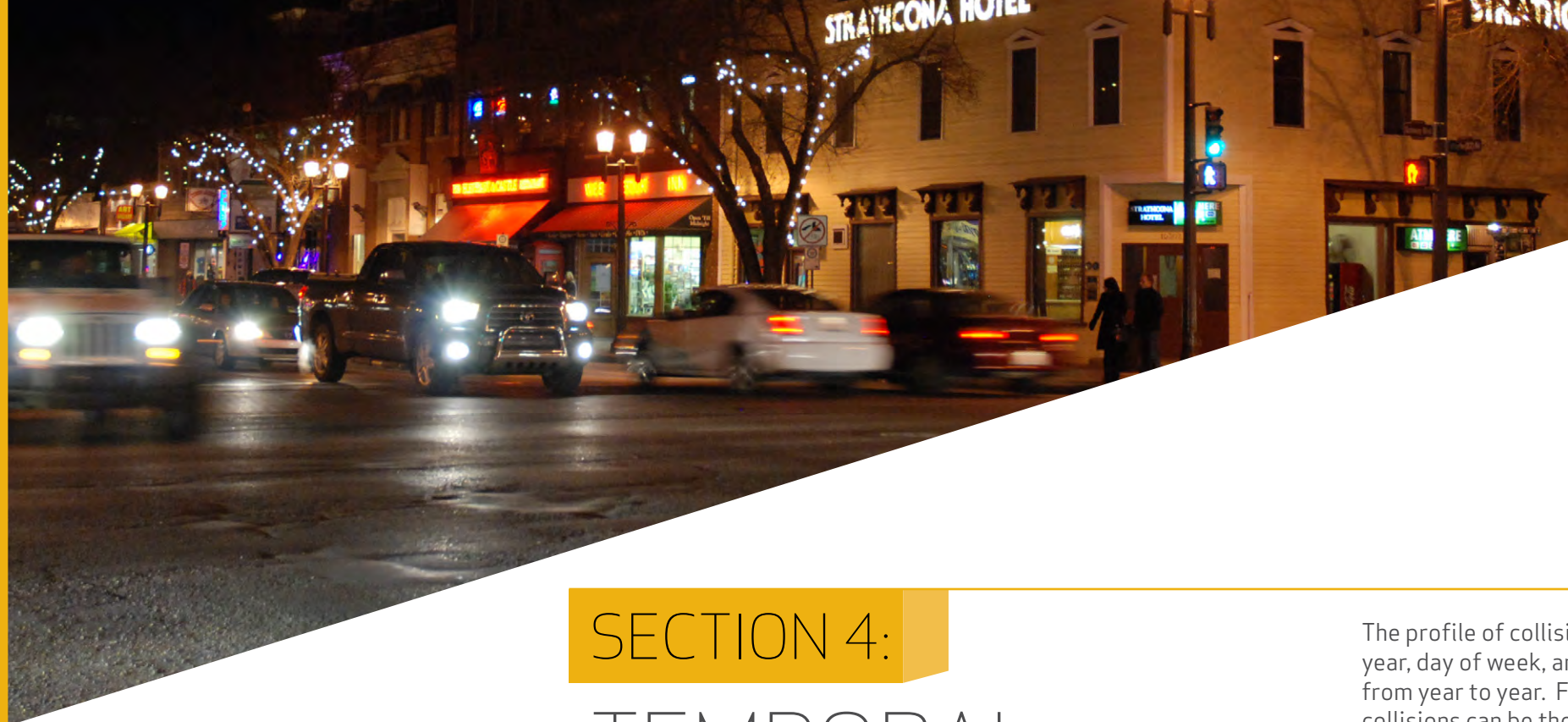
4 The remaining 1,656 collisions occurred either on service roads, in alleys, or did not specifically report a location.

FIGURE 4:

COLLISION SEVERITY BY SELECTED CAUSES

Figure 4 shows other causes ranked by the severity of outcome (severity causes with 100% injury/fatality were not included in this Figure). Proportionally, one way violations resulted in the most fatal and injury collisions but the frequency was low (6 of 15). More significant are the causes with a high frequency and a high proportion of fatal and injury collisions. Arguably the most significant cause was left turn across path which had 18.7% of collisions result in a fatality or injury (335 of 1,790).





SECTION 4:

TEMPORAL ANALYSIS

The profile of collisions in Edmonton by month of year, day of week, and hour of day are consistent from year to year. Fluctuations in the number of collisions can be the result of changing traffic volumes, weather and road conditions, number of

daylight hours, and roadway congestion, as well as many other factors. The following charts exhibit the overall patterns of collisions during the hours, days, and months of 2015.

*"I care that I get home at
the end of the day."*

— EVERETT PANNEWITZ (EDMONTONIAN)



FIGURE 5:

COLLISIONS BY MONTH

In 2015, the breakdown of collisions by month varied from a low of 1,602 collisions in April to 2,878 collisions in January. Overall, 57.4% (14,649) of collisions occurred in the fall and winter months (October - December and January - March). The percentage of collisions in fall and winter is consistent with prior years, and the top three collision months in 2015 were January, February, and December. (Figure 5)

Fatal and injury collisions ranged from 190 in April to 301 in July. The proportion of collisions that result in fatality or injury is slightly higher in the spring and summer (April-September). Fatal and injury collisions made up 10.6% of all fall and winter collisions, but they constituted 13.9% of all spring and summer collisions.

Fatal and Injury Collisions
Property Damage Only Collisions

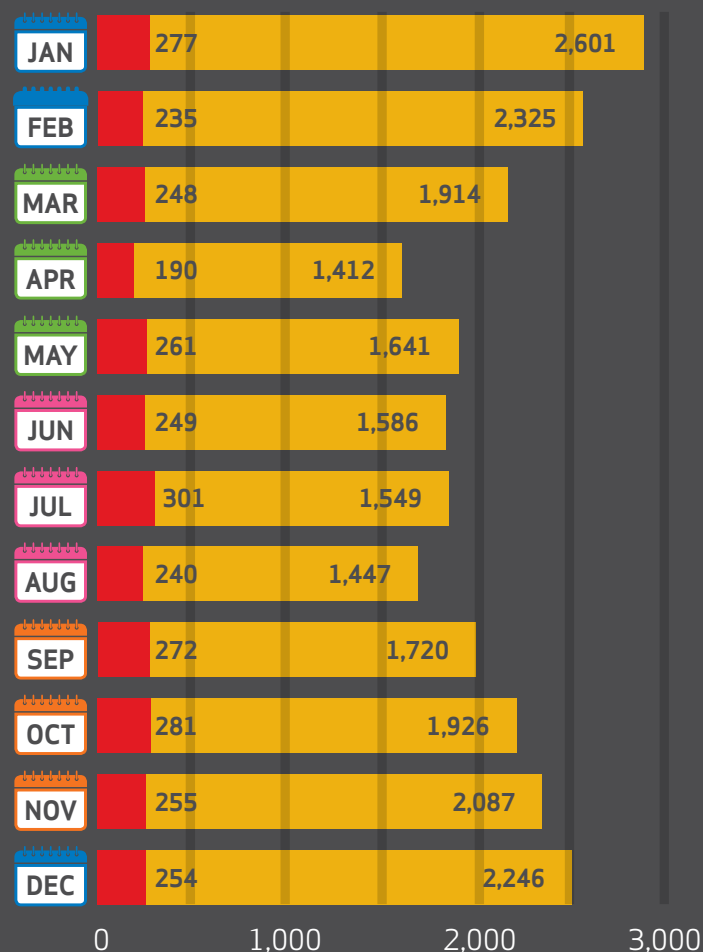


FIGURE 6:

COLLISIONS BY DAY OF WEEK

Friday was the most common day of the week for collisions in 2015, accounting for 17.1% (4,371) of collisions. Least common was Sunday, with 9.3%

(2,366) of all collisions. As in previous years, there were fewer collisions on weekends than on weekdays. (Figure 6)

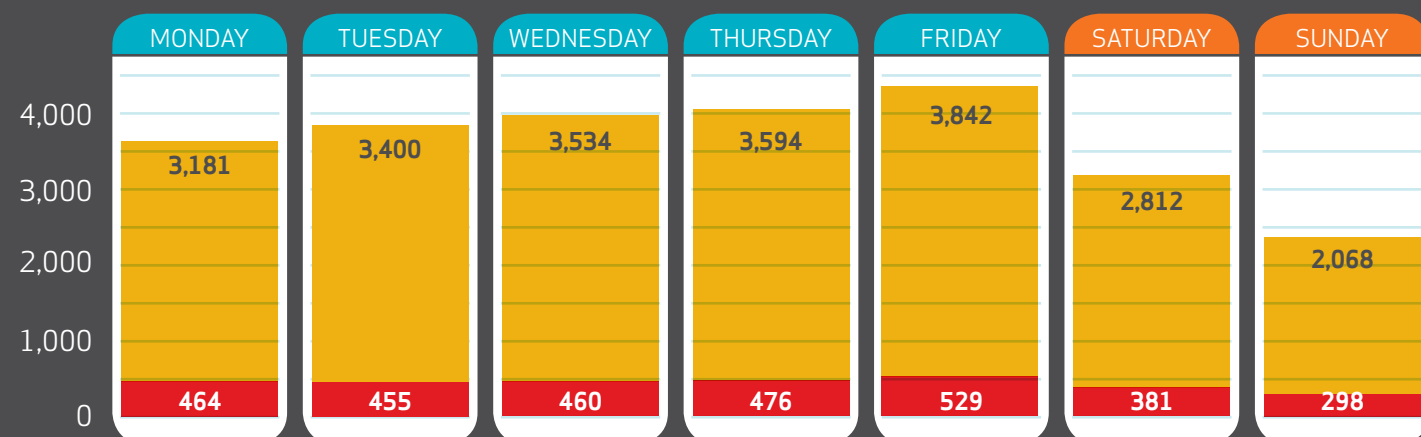
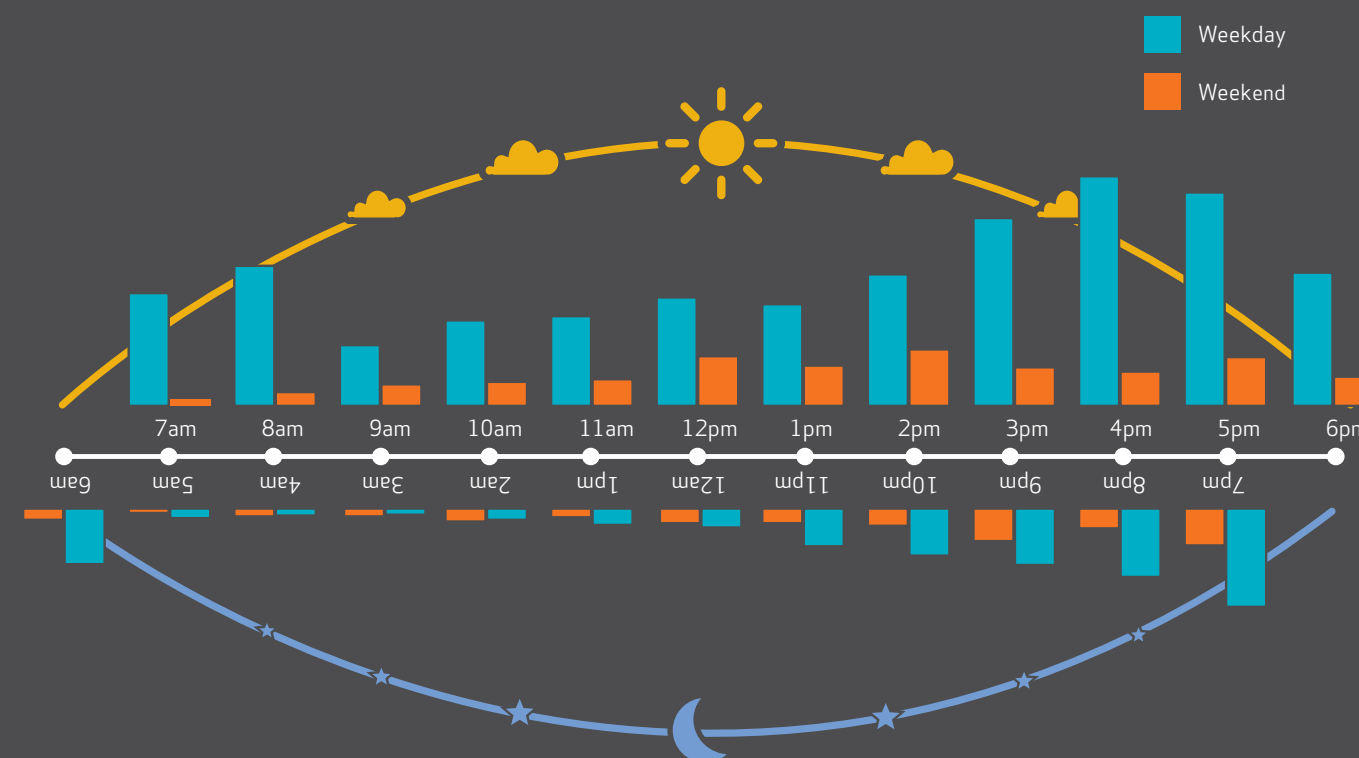


FIGURE 7:

COLLISIONS BY HOUR⁵ OF DAY (WEEKDAY VS. WEEKEND)



During the weekdays, peak collision times match peak travel times. The morning peak period of 6:00 to 9:00 a.m. accounted for 17.3% (3,455) of all weekday collisions, while collisions during the PM peak of 3:00 to 6:00 p.m. made up 29.8% (5,950) of all weekday collisions. (Figure 7)

On weekends, collision patterns shifted in line with traffic patterns, with the number of collisions peaking between noon and 1:00 p.m. Collisions

from noon to 6:00 p.m. made up 46.2% (2,567) of weekend collisions. Collisions during the overnight hours were also more prevalent during the weekends. There were 486 collisions from midnight to 5:00 a.m. on weekends, representing 8.7% of all weekend collisions. By comparison, in the same time period there were 453 collisions over the five weekdays, representing only 2.3% of all weekday collisions.

⁵ Hour name corresponds to "hour ending" in MVCIS, e.g., 6:00am means 5:01am-6:00am inclusive.



SECTION 5:

INTERSECTION AND MIDBLOCK COLLISION HOT SPOTS

“Vision Zero’s Safe System approach recognizes we all make mistakes and we need to acknowledge the limits of our capabilities.”

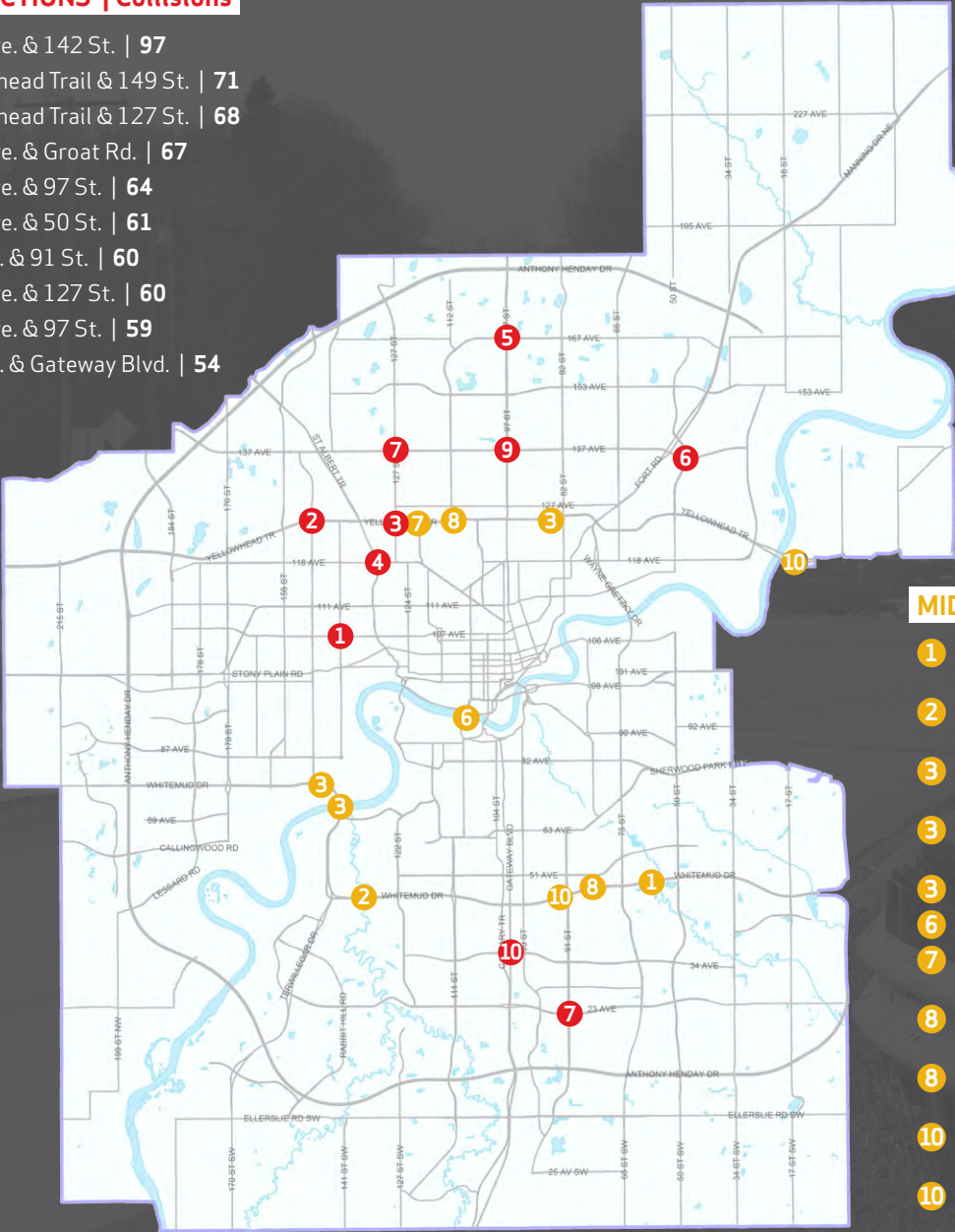
MAP 1:

TOP INTERSECTIONS AND MIDBLOCK SEGMENTS BY NUMBER OF COLLISIONS

Map 1 illustrates the intersections and midblock segments with the highest numbers of collisions in the city for 2015. A high collision location is also called a “hot spot.”

INTERSECTIONS | Collisions

- 1 107 Ave. & 142 St. | 97
- 2 Yellowhead Trail & 149 St. | 71
- 3 Yellowhead Trail & 127 St. | 68
- 4 118 Ave. & Groat Rd. | 67
- 5 167 Ave. & 97 St. | 64
- 6 137 Ave. & 50 St. | 61
- 7 23 Ave. & 91 St. | 60
- 8 137 Ave. & 127 St. | 60
- 9 137 Ave. & 97 St. | 59
- 10 34 Ave. & Gateway Blvd. | 54



MIDBLOCK | Collisions

- 1 Whitemud Dr. between 50 & 66 St. | 42
- 2 Whitemud Dr. between 122 St. & Terwillegar Dr. | 37
- 3 Yellowhead Tr. between 82 & 89 St. | 27
- 3 Whitemud Dr.: North of Quesnell Bridge | 27
- 3 Quesnell Bridge | 27
- 6 High Level Bridge | 25
- 7 Yellowhead Tr. between 121 & 127 St. | 24
- 8 Whitemud Dr. between 66 & 91 St. | 22
- 8 Yellowhead Tr. between 107 & 121 St. | 22
- 10 Whitemud Dr. between 91 & 99 St. | 21
- 10 Yellowhead Tr.: West of 17 St. | 21

TABLE 2:

SUMMARY OF 2015 HOT SPOTS

Some intersections and midblock segments were also hot spots in 2014 while others were new hot spots for 2015. (Table 2)

TYPE	LOCATION NAME	2015 RANK	2015 COLLISIONS	2014 RANK	2014 COLLISIONS
INTERSECTION	107 Avenue & 142 Street	1	97	2	80
	Yellowhead Trail & 149 Street	2	71	1	86
	Yellowhead Trail & 127 Street	3	68	5	65
	118 Avenue & Groat Road	4	67	8	54
	167 Avenue & 97 Street	5	64	7	55
	137 Avenue & 50 Street	6	61	N/A ⁶	48
	23 Avenue & 91 Street	7	60	3	67
	137 Avenue & 127 Street	7	60	N/A	36
	137 Avenue & 97 Street	8	59	N/A	50
	34 Avenue & Gateway Boulevard	9	54	N/A	50
MIDBLOCK	Whitemud Drive-50 to 66 Street	1	42	4	27
	Whitemud Drive-122 Street to Terwillegar Drive	2	37	1	52
	Whitemud Drive-Quesnell Bridge to 149 Street	3	27	5	26
	Yellowhead Trail - 82 to 89 Street	3	27	6	23
	Quesnell Bridge	3	27	N/A	17
	High Level Bridge	6	25	2	34
	Yellowhead Trail-121 to 124 Street	7	24	6	23
	Yellowhead Trail-107 to 121 Street	8	22	N/A	14
	Whitemud Drive-66 to 91 Street	8	22	3	32
	Whitemud Drive-91 to 99 Street	9	21	N/A	13

6 These collision locations were not in the top 10 in 2014.



SECTION 6:

OBJECTS INVOLVED IN COLLISIONS

All collisions in the MVCIS database include at least one motor vehicle. Collisions between two cyclists, for example, would not be entered in the database. Most collisions in 2015 involved two motor vehicles, or a single vehicle and a fixed object.

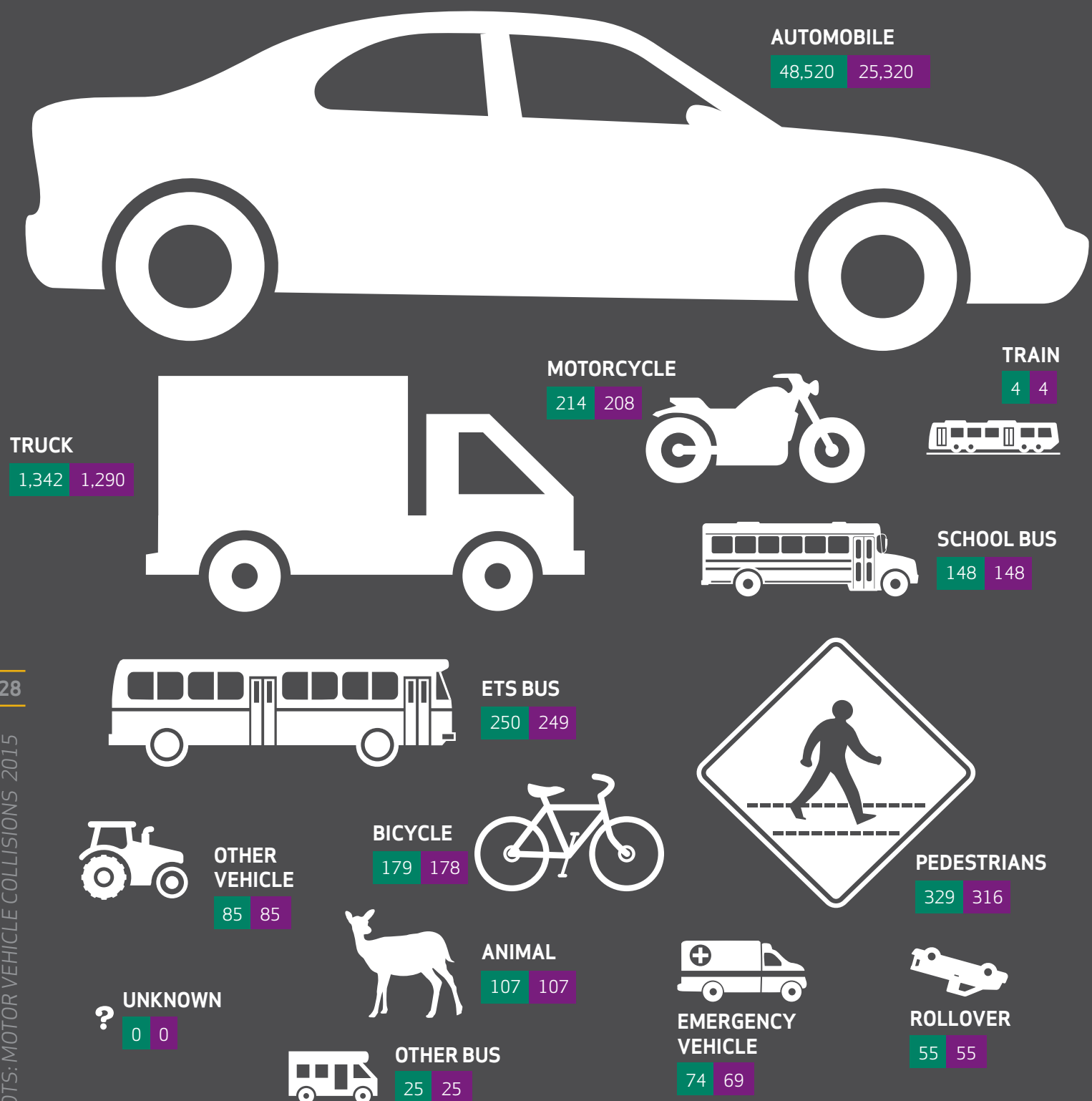
“On average, a vehicle strikes a pole every day of the year!”



FIGURE 8:

OBJECTS INVOLVED IN COLLISIONS

Number of Objects Number of Collisions



There were a range of objects involved in collisions in 2015. Automobiles – a category that includes passenger vehicles, pickup trucks, and SUVs, but excludes large trucks over 4,500 kg and buses – were involved in over 99.2% (25,320) of all 25,517 collisions in 2015. (Figure 8)

Fixed objects were involved in 8.0% (2,032) of all collisions. Other object types included trucks greater than 4,500 kg (5.1%, 1,290 collisions), pedestrians (1.2%, 316 collisions), ETS buses (1.0%, 249 collisions), and motorcycles (0.8%, 208 collisions). Four collisions in 2015 involved a train.

Fixed objects are routinely involved in collisions, and Figure 9 summarizes the type and number of these objects for 2015. As in previous years, the most common fixed object involved in collisions was a pole. In 2015, 374 poles – more than one a day on average – were struck, which is consistent with previous years.

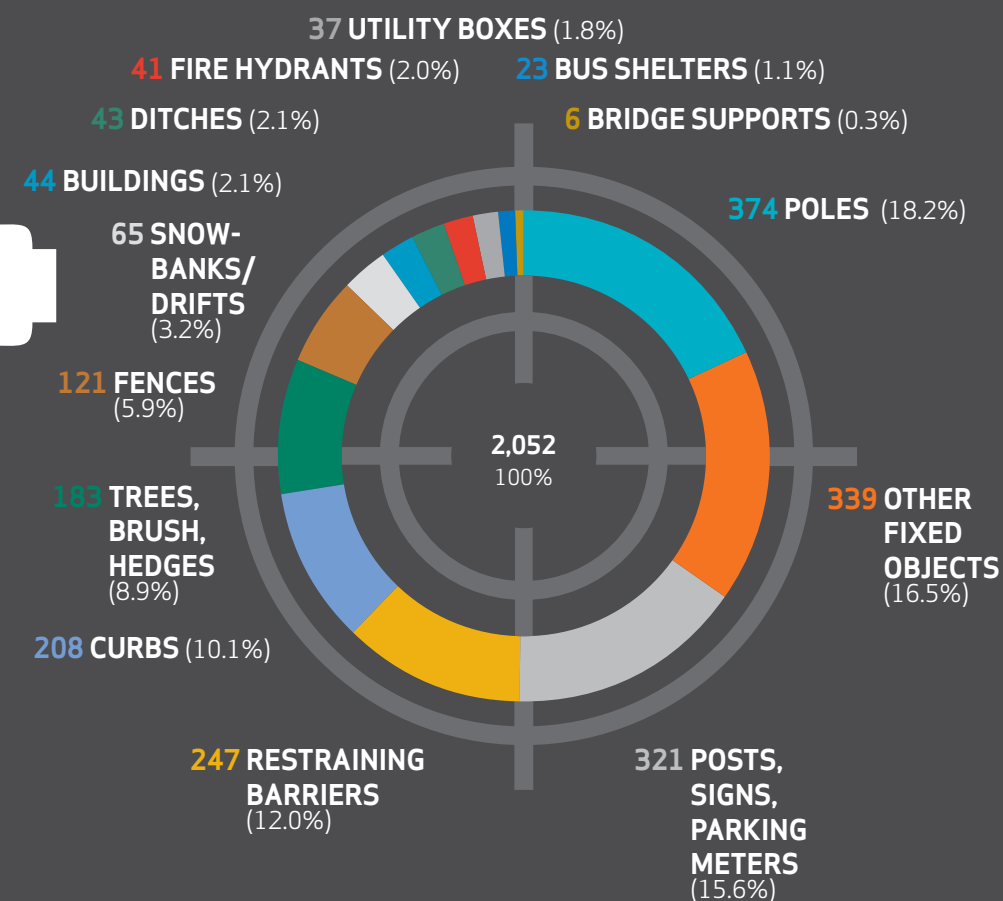
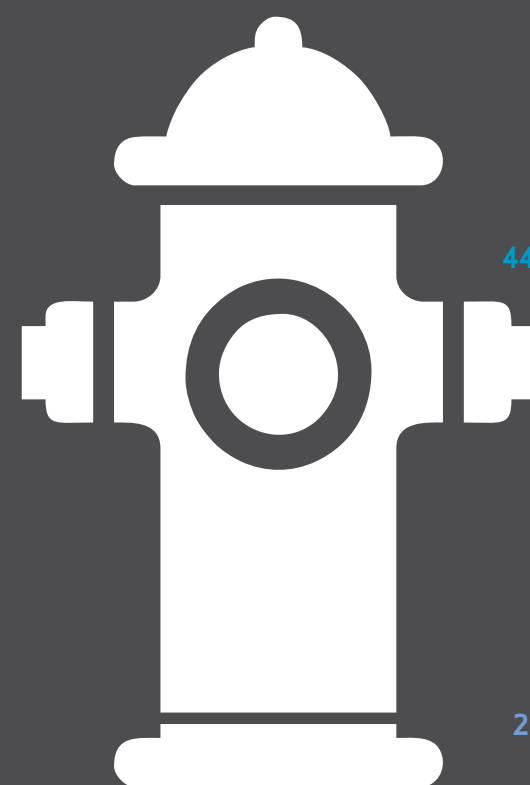
Other fixed objects more frequently involved in collisions included 339 other fixed objects; 321 posts, signs, or parking meters; 247 restraining barriers; 208 curbs; 183 trees, brushes, or hedges; and 121 fences. Other objects listed in Figure 9 were less frequently involved.

FIXED OBJECT

2,052 2,032

FIGURE 9:

FIXED OBJECTS INVOLVED IN COLLISIONS





SECTION 7:

DEMOGRAPHIC ANALYSIS

*"Shared responsibility
means all of us take an
individual and shared role
in road safety."*

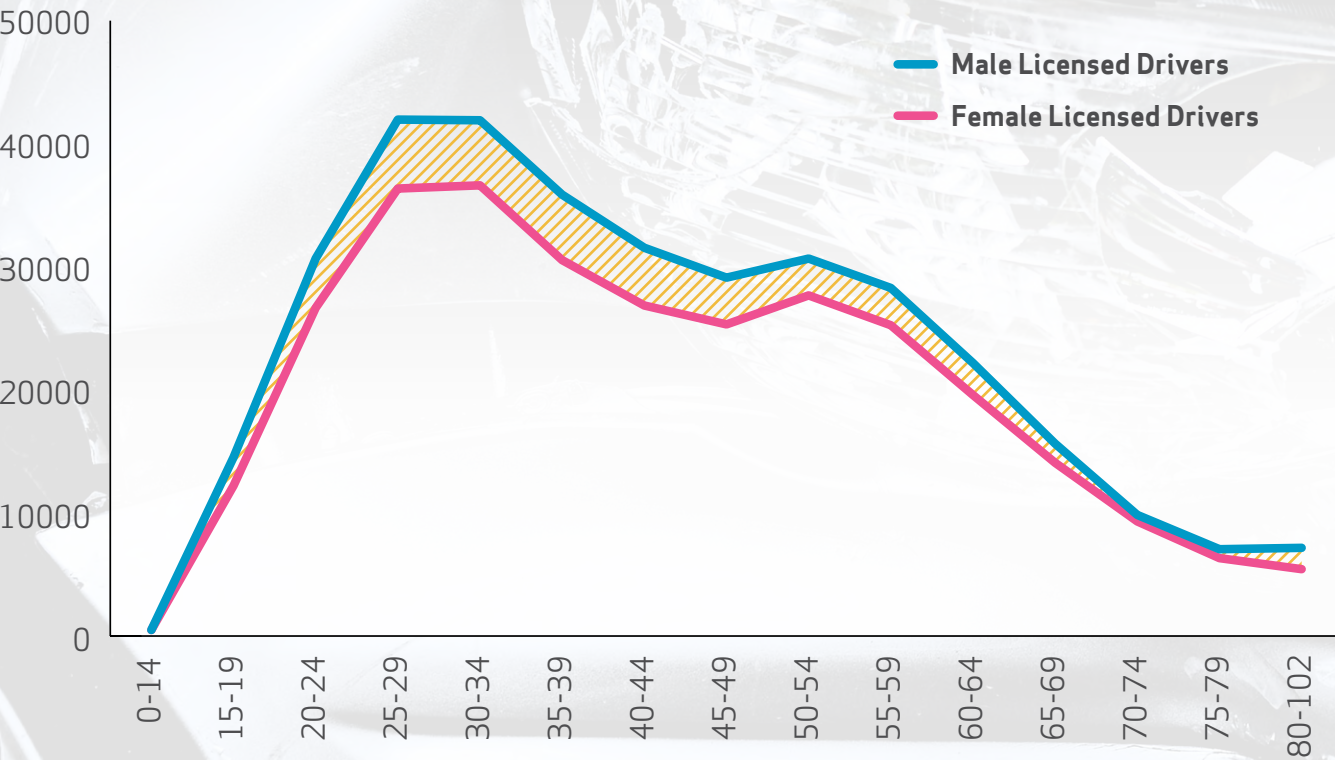


FIGURE 10:

AGE AND GENDER BREAKDOWN OF LICENSED DRIVERS

The demographic breakdown of collision figures and at-fault drivers reveals that approximately 1 in 14.3 licensed males aged 20 to 24 were involved in a collision for which they were deemed at fault in

2015. By comparison, 1 in 20.3 female drivers aged 20 to 24 were at-fault in a collision, while the ratio for all licensed drivers at-fault was approximately 1 in 25.7.





MORE MALE
THAN FEMALE
LICENSED
DRIVERS IN ALL
AGE GROUPS



20- TO 24-YEAR-OLD
DRIVERS HAVE THE MOST
AT-FAULT COLLISIONS

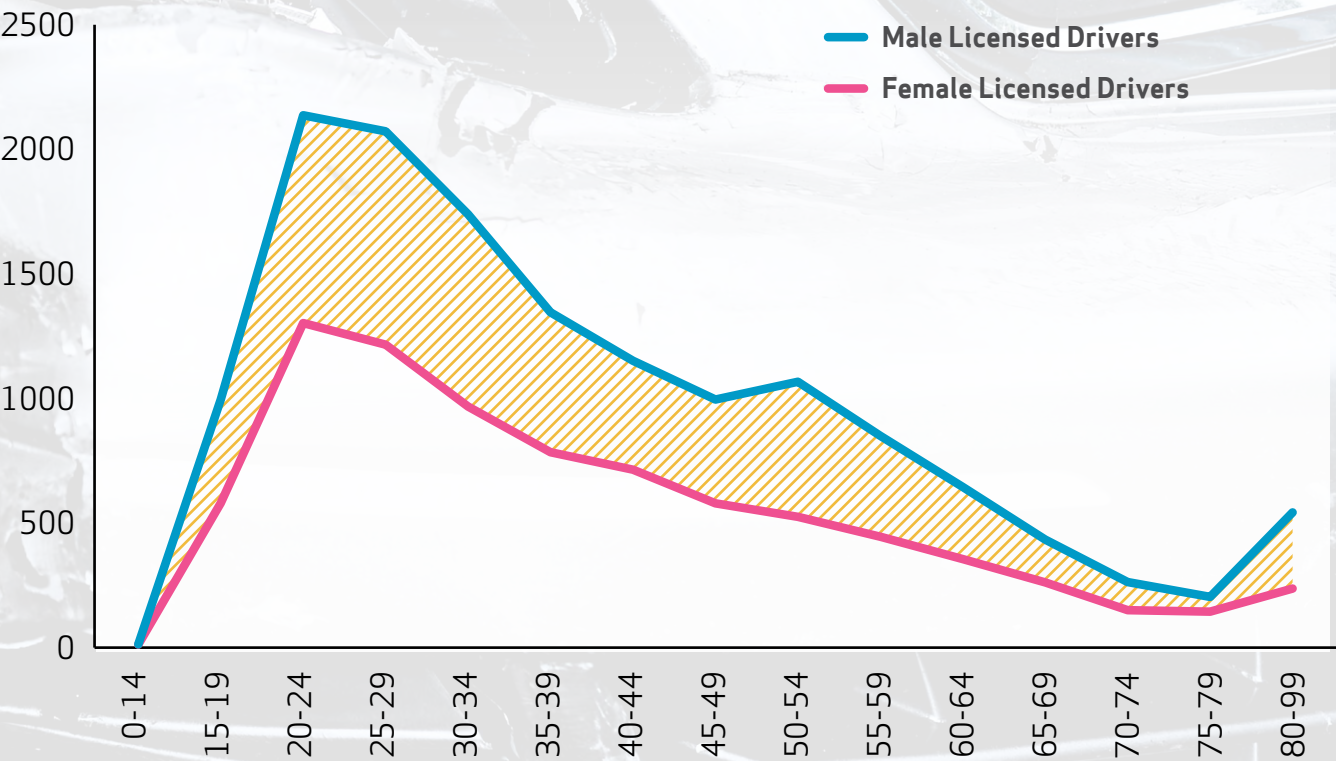
FIGURE 11:

AGE AND GENDER BREAKDOWN OF AT-FAULT DRIVERS

The demographic profile of drivers deemed at fault in a collision, as shown in Figure 11, is fairly consistent with the demographic profile in Edmonton. Young drivers were more likely to be deemed at fault for collisions in Edmonton. Drivers aged 15 to 24 made up 12.9% of Edmonton's licensed drivers in 2015, but were responsible for 19.7% of collisions. By comparison, drivers aged 30 to 49 constituted 24.1% of all licensed drivers and were deemed at fault in 26.5% of collisions.

Gender was also a factor in the likelihood of collision involvement. While males made up 53.4% of licensed drivers in Edmonton in 2015, they were deemed at fault in 57.1% of collisions.

Comparing different age/gender groups showed differences between the driving population and the population of at-fault drivers. Males aged 15 to 19 made up 2.2% of licensed drivers in Edmonton, but accounted for 3.9% of all at-fault drivers in 2015. Expanding the size of the group, males aged 15 to 24 make up 7.0% of the licensed driving population but 12.3% of at-fault drivers.





SECTION 8:

FATAL AND INJURY COLLISIONS

In 2015 a total of 3,805 injuries and 32 fatalities resulted from 3,063 collisions. The following section presents detailed information about fatal and injury collisions in 2015.

“The physical limits of human tolerance to violent forces: we are physically vulnerable when involved in a motor vehicle collision.”

FIGURE 12:

FATAL AND INJURY COLLISIONS BY MONTH

The number of fatal and injury collisions by month varied from a low of 190 collisions in April to a high of 301 collisions in July. The pattern of fatal and injury collisions did not follow that of collisions overall. Figure 12 indicates that while the total number of collisions remained fairly steady through the winter months, the number of fatal and injury collisions is lower. The average percentage of fatal and injury collisions through the spring and summer months (April to September) is 13.9% compared to only 10.6% during the fall and winter months (January to March and October to December).

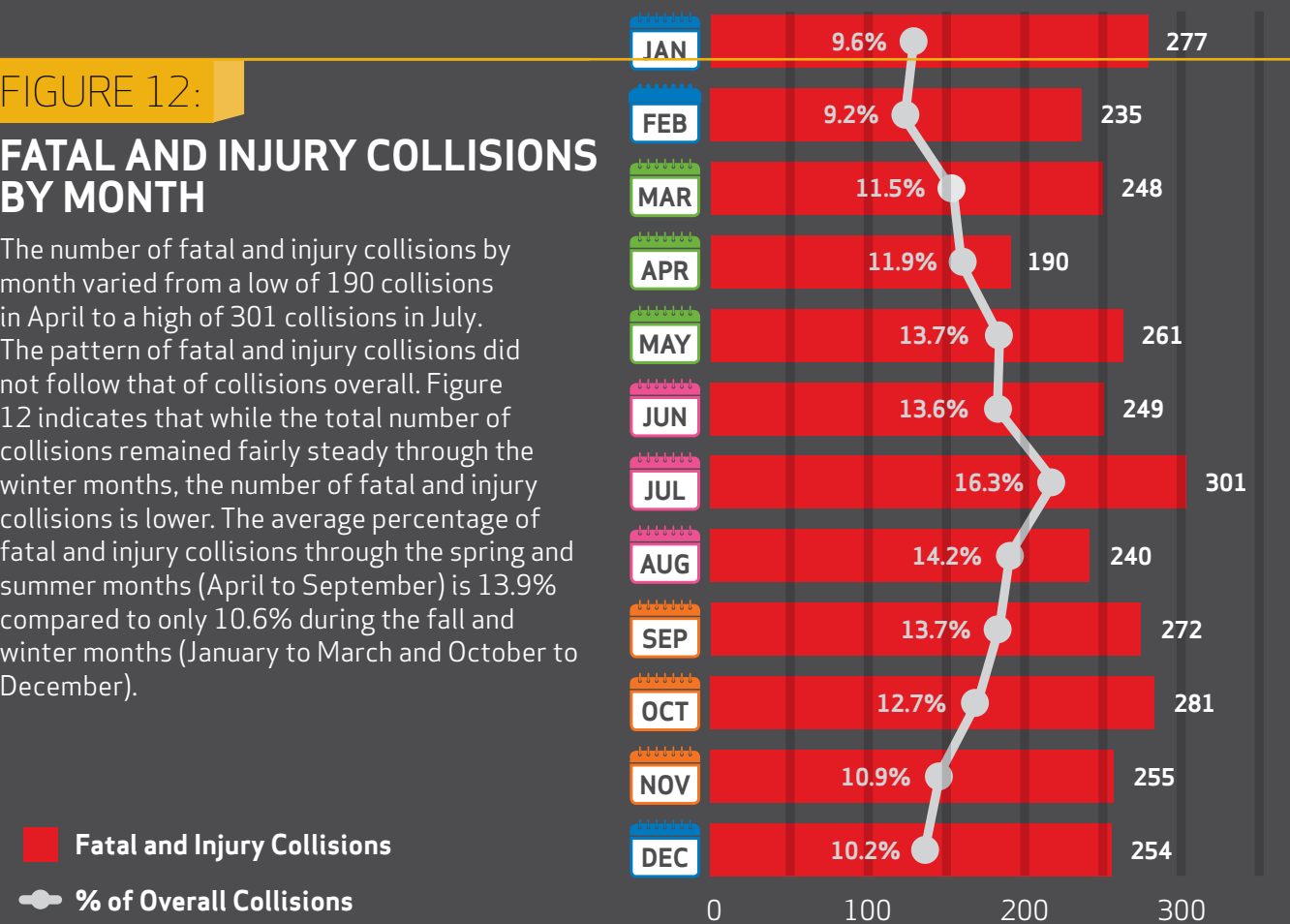
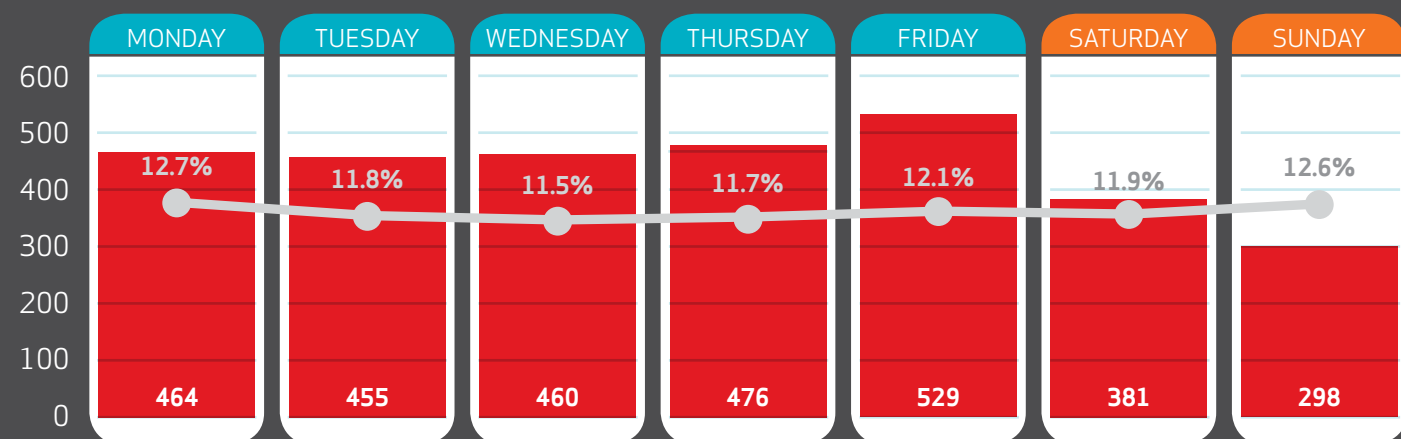


FIGURE 13:

FATAL AND INJURY COLLISIONS BY DAY OF WEEK

Friday had the highest number of fatal and injury collisions with 529, followed by Thursday and Monday (476 collisions and 464 collisions, respectively). By contrast, 298 fatal or injury

collisions occurred on Sunday. The pattern in terms of raw numbers of fatal and injury collisions by day of week generally follows that of overall collisions, with an increase in collisions from Monday to Friday

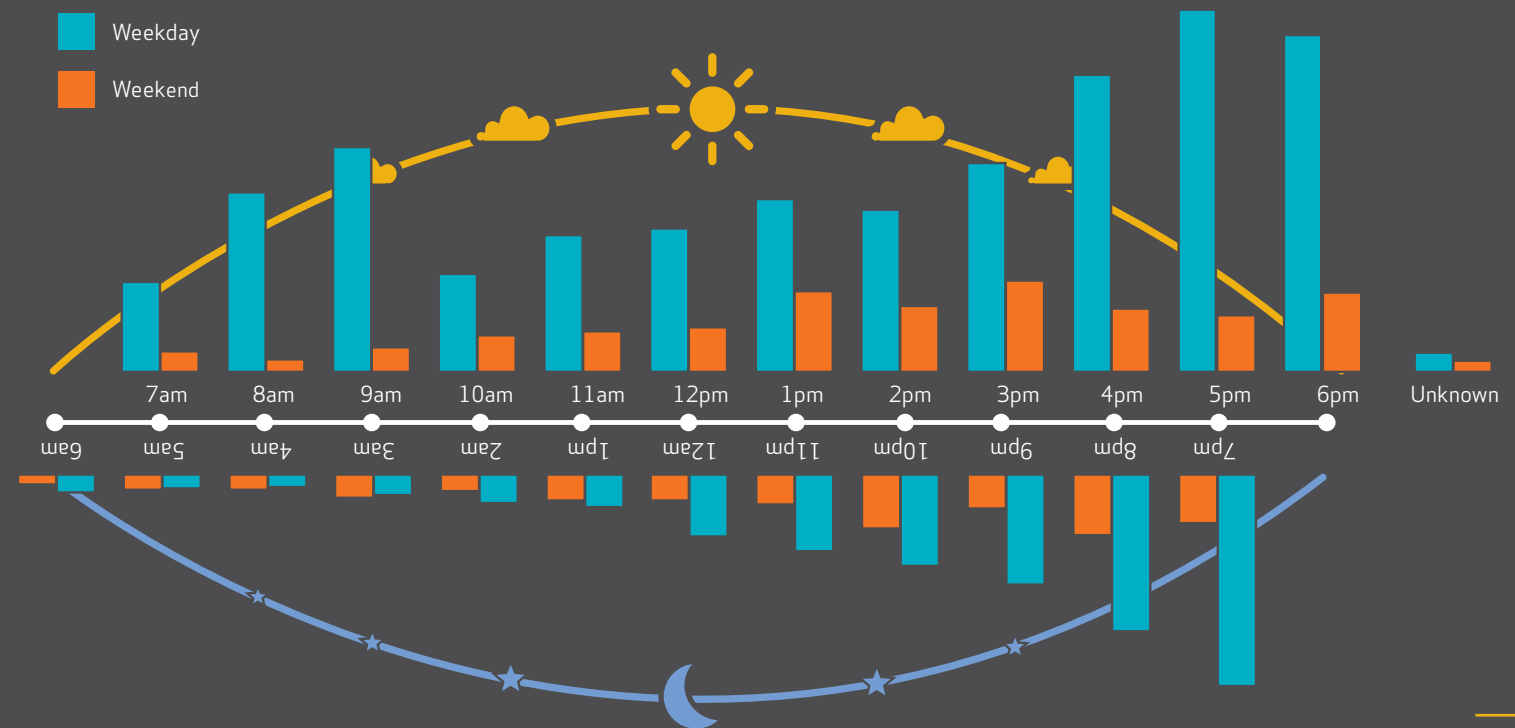


— with Friday being significantly higher — and a decrease on the weekends. The pattern in terms of percentages of fatal and injury collisions of the overall collisions for each particular weekday told a different story however; the total percentage of collisions that involve a fatality or injury out of

overall collisions is lower on Wednesday (11.5%) compared to other days of the week, and 12.6% of the collisions occurring on Sunday involved a fatality or injury even though Sunday saw the lowest number of fatal and injury collisions compared to other days of the week. (Figure 13)

FIGURE 14:

FATAL AND INJURY COLLISIONS BY HOUR OF DAY



The profile of fatal and injury collisions by hour of day is similar to the profile of overall collisions. On weekdays the same morning and evening spikes occurred with fatal and injury collisions; collisions during the morning peak (6:00 to 9:00 a.m.) accounted for 15.1% (361) of all fatal and injury collisions on weekdays, while the evening peak (3:00 to 6:00 p.m.) accounted for 31.0% (739) of all fatal and injury collisions. (Figure 14)

The profile of fatal and injury collisions on weekends was generally the same as the profile of overall collisions, with a gradual increase during the daytime and a peak between 2:00 and 3:00 p.m.

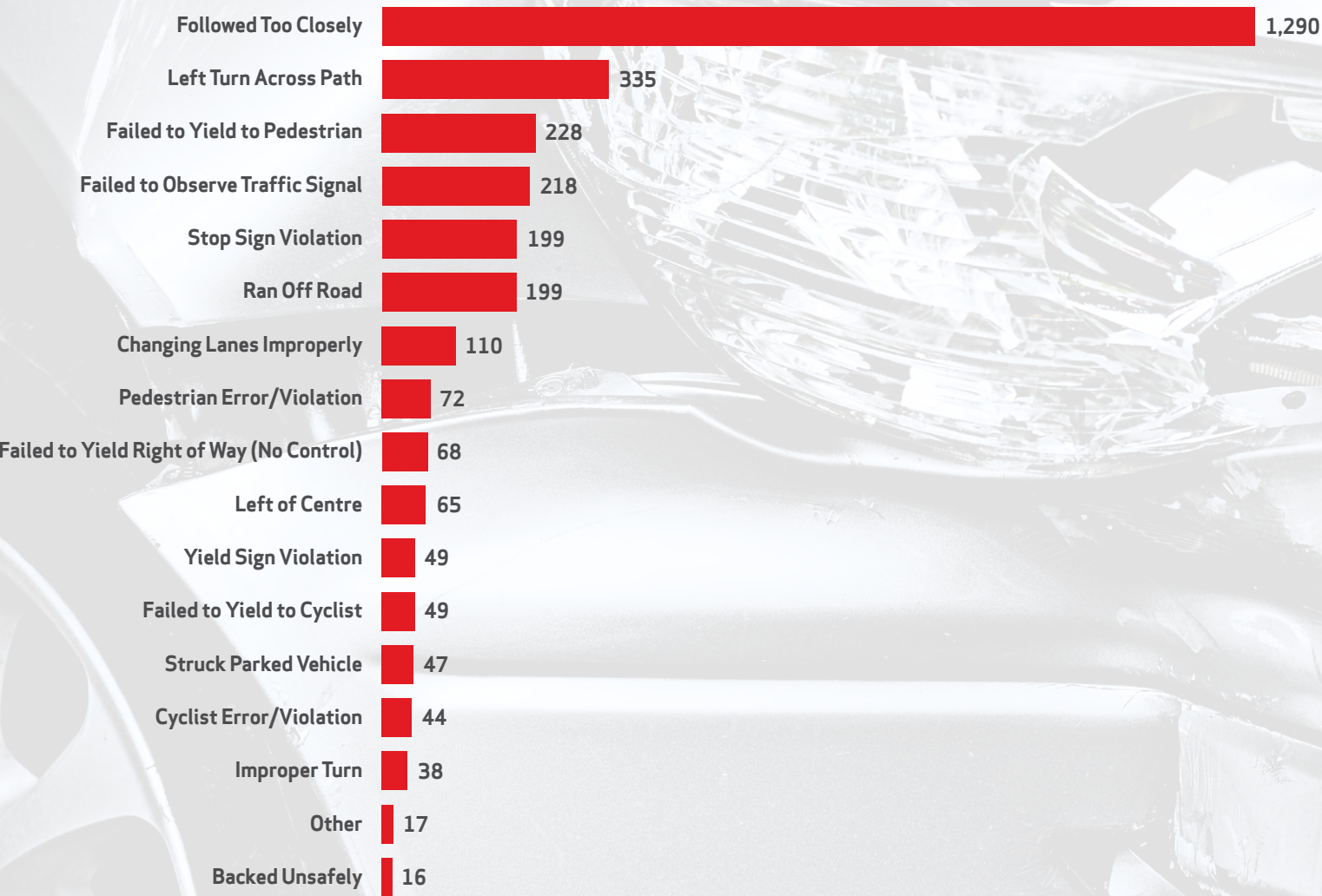
Fatal and injury collisions from Noon to 6:00 p.m. made up 46.1% (313) of all weekend fatal and injury collisions.

The most fatal and injury collisions occurred in the early evening hours. Collisions between Midnight and 5:00 a.m. accounted for 3.7% of all collisions in 2015, and accounted for 4.2% of all injury and fatal collisions. Of the 129 fatal or injury collisions that occurred between Midnight and 5:00 a.m., 60 (46.5%) occurred on Saturday or Sunday. Those 60 collisions represent 8.8% of all fatal and injury collisions that occurred on weekends.

FIGURE 15:

FATAL AND INJURY COLLISIONS BY CAUSE

Collisions with the reported cause of followed too closely made up 42.1% (1,290) of all injury and fatal collisions. Other collision causes with significant injury/fatality counts included left turn across path (10.9%, 335), failed to yield to pedestrian (7.4%, 228), and failed to observe traffic signal (7.1%, 218).⁷ (Figure 15)



⁷ Other causes not listed on this chart are: improper passing (9 fatal or injury collisions), one-way violation (6), animal action (2), and opened door into traffic and driverless vehicle (1 collision each).

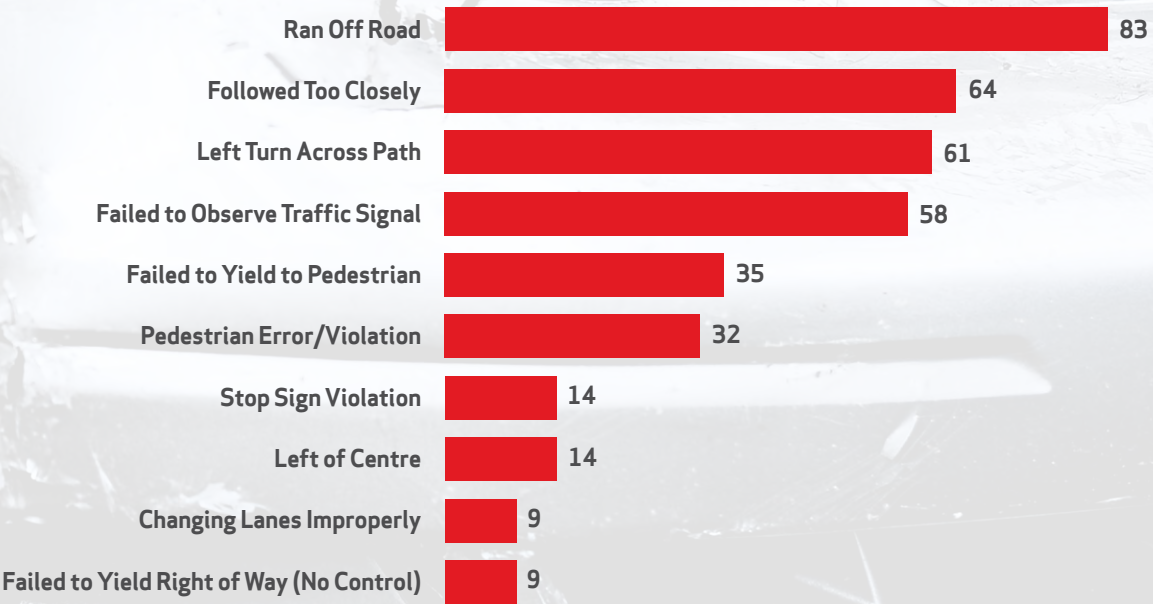


FOLLOWING TOO CLOSELY CAUSED AS MANY COLLISIONS AS THE NEXT 6 TOP CAUSES COMBINED

FIGURE 16:

FATALITIES AND MAJOR INJURIES BY CAUSE

A single collision can result in multiple injuries and/or fatalities. Injuries are classified as minor or major depending on the level of treatment required.⁸ Figure 16 displays the number of fatalities and major injuries for a number of collision causes. Ran off road collisions made up 20.0% (83) of all fatalities and major injuries. Other common collision causes of fatalities and major injuries included followed too closely (15.4%, 64), left turn across path (14.7%, 61), and failed to observe traffic signal (14.0%, 58).



⁸ For a definition of minor and major injuries, please refer to Appendix 1.

TABLE 3:








FATALITIES AND INJURIES BY MODE, SEVERITY, AND AGE GROUP

A summary of all fatalities and injuries is presented in Table 3, broken out by age group and injury class. The largest number of fatalities and injuries were sustained by vehicle drivers, followed by vehicle passengers.

Among vehicle drivers, there were 2,410 fatalities or injuries in 2015, a rate of 3.7 per 1,000 licensed drivers in Edmonton and 0.3 fatalities or major injuries per 1,000 licensed drivers. However, these

figures increase to 4.4 fatalities or injuries per 1,000 licensed drivers and 0.4 fatalities or major injuries per 1,000 licensed drivers for those aged 19 to 24. Among those drivers aged 75 and over, the 2.3 fatalities or injuries per 1,000 licensed drivers, and 0.6 fatalities or major injuries per 1,000 licensed drivers are lower than the overall rates respectively.

- Minor
- Major
- Fatal

	<14	14 – 15	16 – 18	19 – 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 74	75+	N/A	TOTAL
 VEHICLE DRIVER	0	0	67	256	586	442	384	295	122	46	10	2,208
	0	0	6	27	38	33	34	28	10	14	3	193
	0	0	0	1	4	1	2	0	0	1	0	9
 VEHICLE PASSENGER	120	20	54	99	140	80	74	56	37	21	23	724
	9	0	5	12	11	13	2	5	1	5	1	64
	0	0	0	2	1	0	1	1	0	0	0	5
 PEDESTRIAN	26	8	16	36	48	29	33	22	17	12	12	259
	10	0	3	6	4	6	8	14	3	3	1	58
	0	0	0	1	1	2	1	2	1	4	0	12
 CYCLIST	12	10	8	26	20	16	22	11	5	1	4	135
	1	1	1	6	1	8	5	0	0	0	0	23
	0	0	0	0	0	0	0	0	0	0	0	0
 MOTOR-CYCLIST	0	0	3	10	20	21	17	5	0	0	2	78
	0	0	0	4	16	6	8	8	1	0	0	43
	0	0	0	0	3	1	1	1	0	0	0	6
 UNKNOWN	5	0	2	0	1	1	1	3	0	1	2	16
	0	0	0	1	1	0	0	0	0	0	0	2
 OTHER ⁹	0	0	0	1	0	1	0	0	0	0	0	2
	0	0	0	0	0	0	0	0	0	0	0	0
ALL MODES	163	38	150	428	815	590	531	392	181	81	53	3,422
	20	1	15	56	71	66	57	55	15	22	5	383
	0	0	0	4	9	4	5	4	1	5	0	32








9 Other refers to two scooter operators who sustained minor injuries in 2015.

TABLE 4:

FATALITIES AND INJURIES BY MODE AND TRAFFIC CONTROL

Collisions where the traffic control was a signal light made up 43.0% (1,649) of all fatalities and injuries, followed by no control (34.3%, 1,317), which includes both intersections that have no

traffic control and midblock segments, and stop signs (8.1%, 310). Eleven injuries occurred at rail crossings. (Table 4)

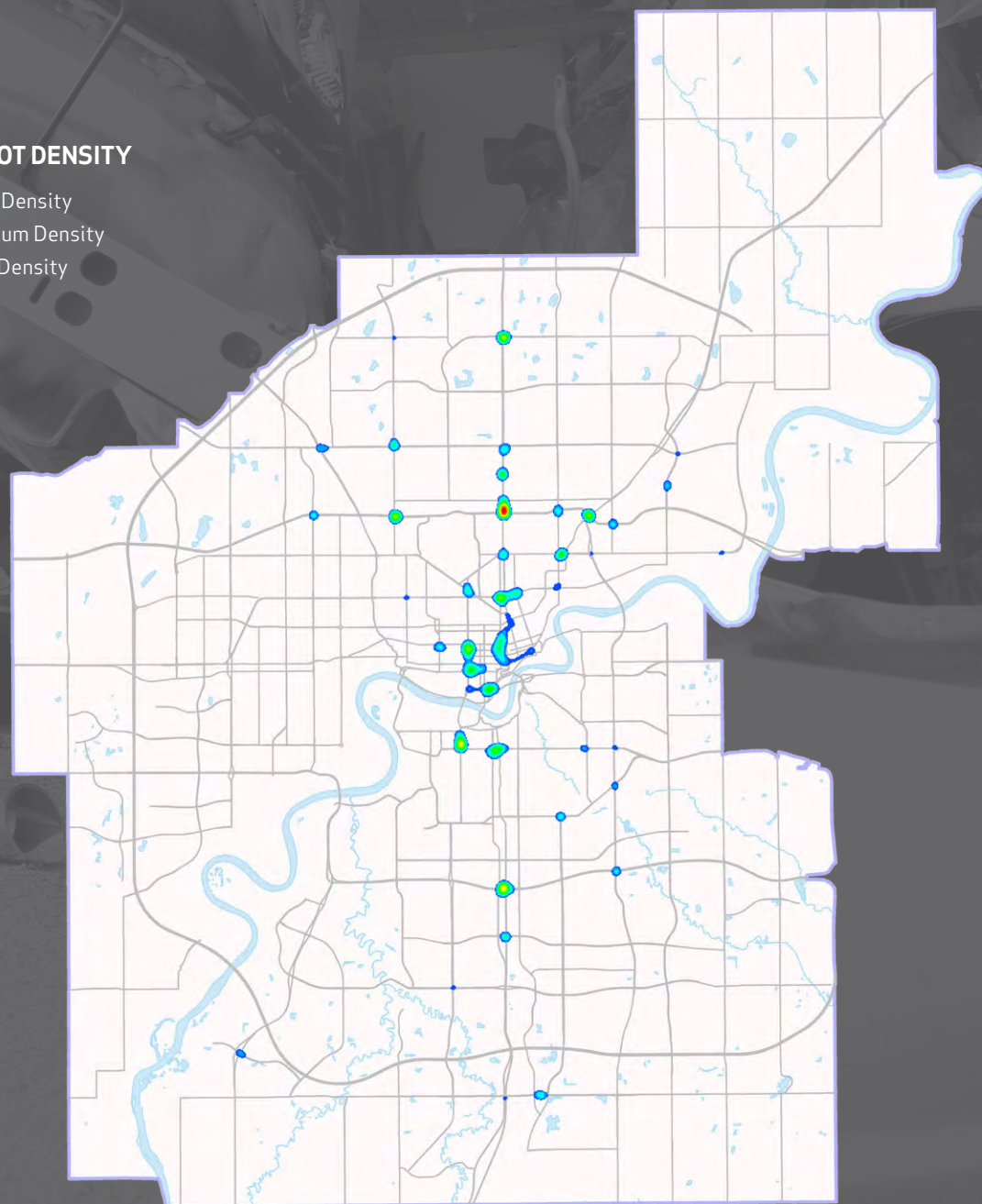
	 VEHICLE DRIVER	 VEHICLE PASSENGER	 PEDESTRIAN	 CYCLIST	 MOTOR-CYCLIST	 UNKNOWN	 OTHER	TOTAL
Signal Light	1052	386	113	50	35	13	0	1,649
No Control	828	254	105	57	68	3	2	1,317
Stop Sign	186	65	19	23	15	2	0	310
Yield Sign	212	56	10	7	7	1	0	293
Marked Pedestrian Crosswalk	51	10	52	12	1	0	0	126
Pedestrian-Actuated Signal	24	8	11	0	0	0	0	43
Pedestrian Amber Flasher	16	5	13	6	0	0	0	40
Construction	13	1	3	0	1	0	0	18
Rail Crossing	7	1	2	1	0	0	0	11
One Way Sign	6	2	0	2	0	0	0	10
Police Control	8	2	0	0	0	0	0	10
Warning/Advisory Light	4	1	0	0	0	0	0	5
Merge Sign	3	1						4
Flagman			1					1
Total	2,410	792	329	158	127	19	2	3,837

MAP 2:

DENSITY MAP OF FATAL AND INJURY COLLISIONS¹⁰

HOTSPOT DENSITY

- High Density
- Medium Density
- Low Density



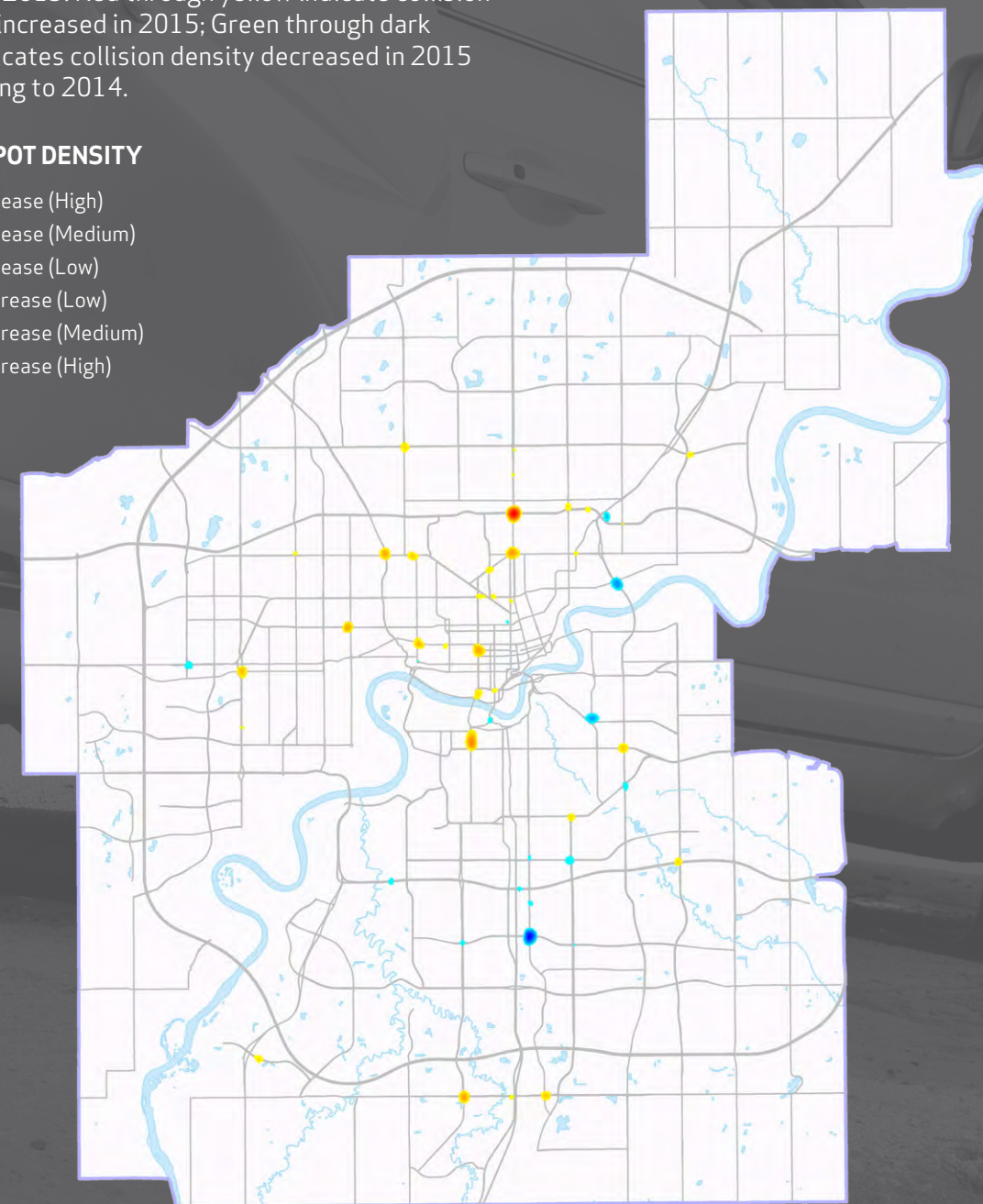
MAP 3:

DENSITY CHANGES IN FATAL AND INJURY COLLISIONS FROM 2014 TO 2015

Change map shows collision density difference from 2014 to 2015. Red through yellow indicate collision density increased in 2015; Green through dark blue indicates collision density decreased in 2015 comparing to 2014.

HOTSPOT DENSITY

- Increase (High)
- Increase (Medium)
- Increase (Low)
- Decrease (Low)
- Decrease (Medium)
- Decrease (High)



¹⁰ Density maps represent areas identified as having higher concentrations of injury and fatal collisions in 2015.



SECTION 9:

VULNERABLE ROAD USER COLLISIONS

The term “vulnerable road users” refers to those most at risk in traffic. Pedestrians, cyclists, and motorcycle riders are vulnerable because they are unprotected by seatbelts, airbags, and the shell and metal frame of four-wheeled vehicles.

Children may put themselves at risk because of inexperience. The elderly and those with mobility issues are especially vulnerable due to decreased ability to take evasive actions.

“Vulnerable road users such as pedestrians, cyclists, and motorcyclists are much more likely to be injured in collisions than drivers and passengers inside vehicles.”

SECTION 9.1: PEDESTRIAN COLLISIONS

In 2015 there were 316 collisions involving pedestrians, resulting in 12 pedestrian fatalities and 317 injuries.



FIGURE 17:

PEDESTRIAN FATAL AND INJURY COLLISIONS BY MONTH

Pedestrian collisions occurred throughout the year, with the highest number of collisions occurring in November (37) and the lowest in February (17).

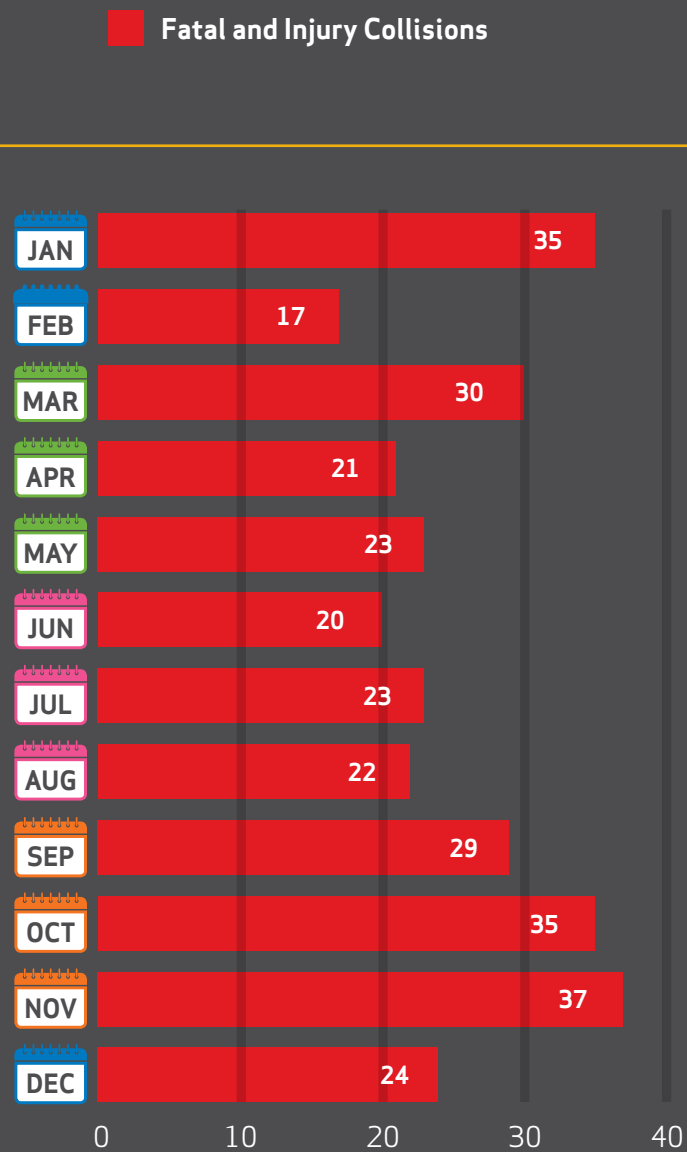


FIGURE 18:

PEDESTRIAN FATAL AND INJURY COLLISIONS BY DAY OF WEEK

Pedestrian collisions were slightly more likely to occur on Thursday, as shown in Figure 18 (18.7%, 59).

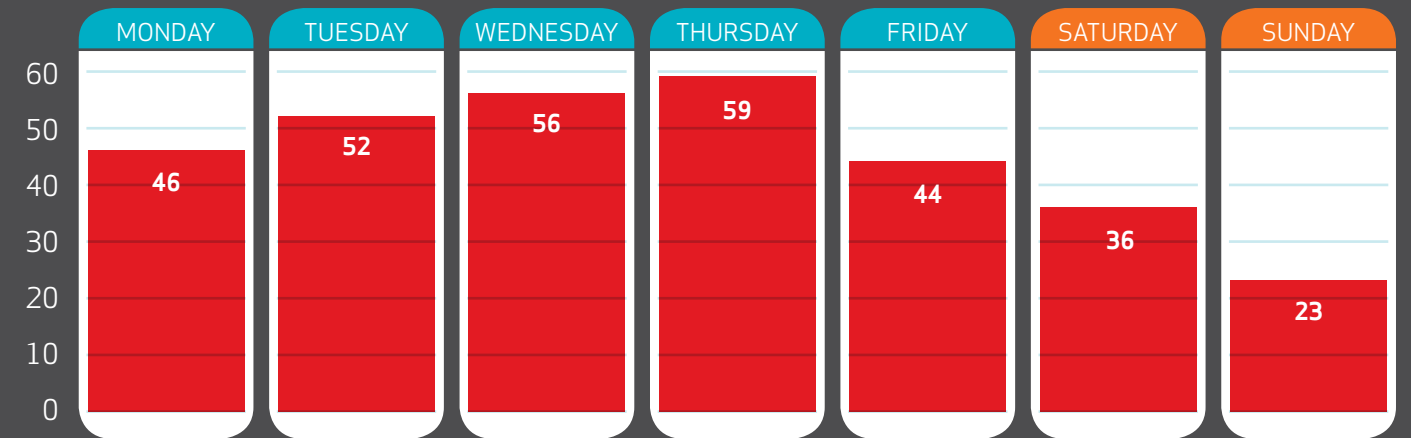


FIGURE 19:

PEDESTRIAN FATAL AND INJURY COLLISIONS BY HOUR OF DAY

Most pedestrian collisions occurred between 5:00 and 6:00 p.m. (9.2%, 29). (Figure 19)

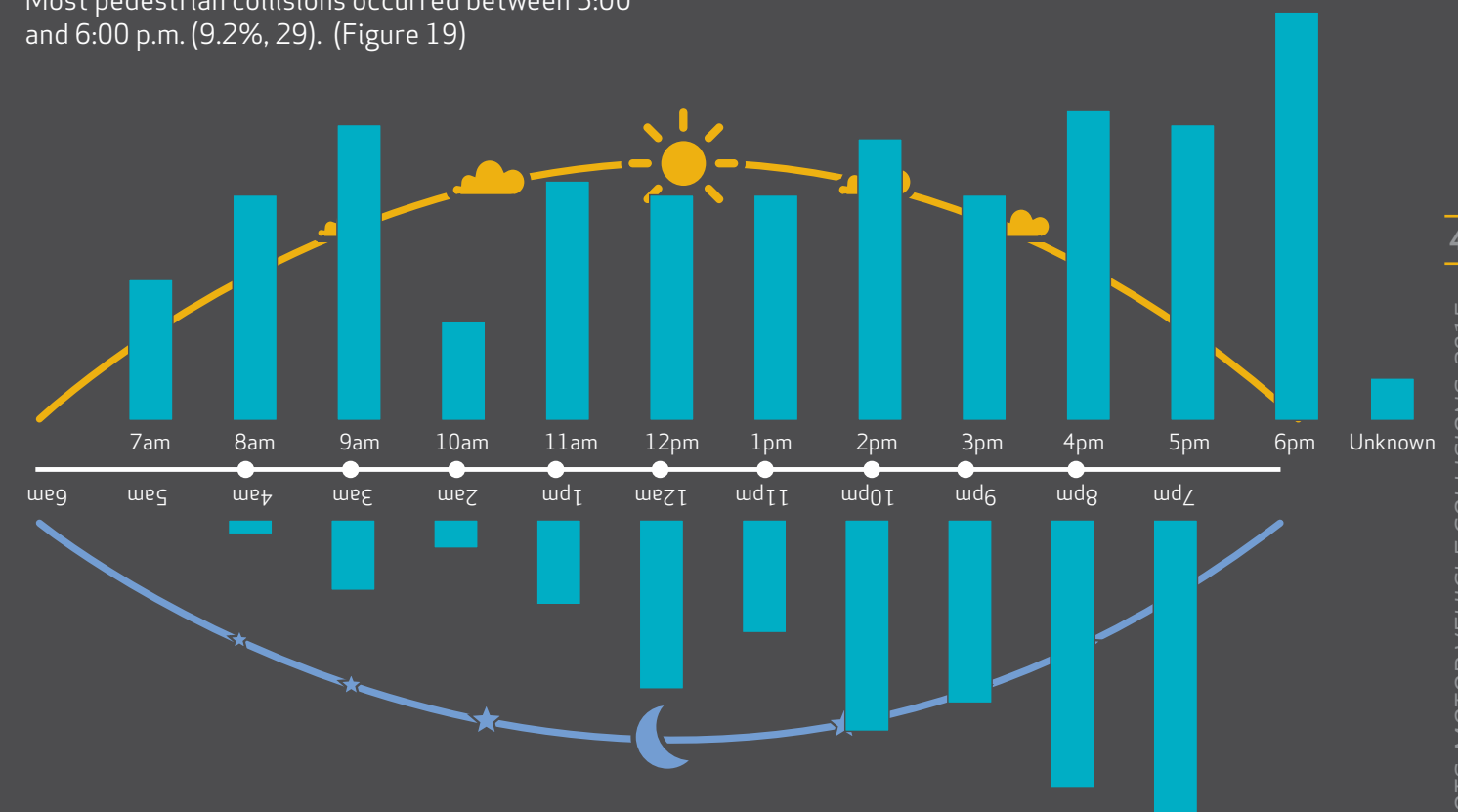


FIGURE 20:

ACTION OF PEDESTRIANS INVOLVED IN COLLISIONS

Pedestrians crossing the road with the right of way – either at a marked crosswalk, an unmarked crossing at an intersection, or at a signalized intersection with a walk sign – made up 68.4% (225) of all pedestrian fatalities and injuries. Pedestrians crossing without the right of way, either crossing at a midblock without a marked crosswalk or crossing against the flow of traffic at a signalized

intersection, accounted for 17.3% (57) of fatalities and injuries. Other actions – including entering or exiting vehicles, walking on the roadway, and running onto the roadway – made up 14.3% (47) of pedestrian fatalities and injuries. (Figure 20)

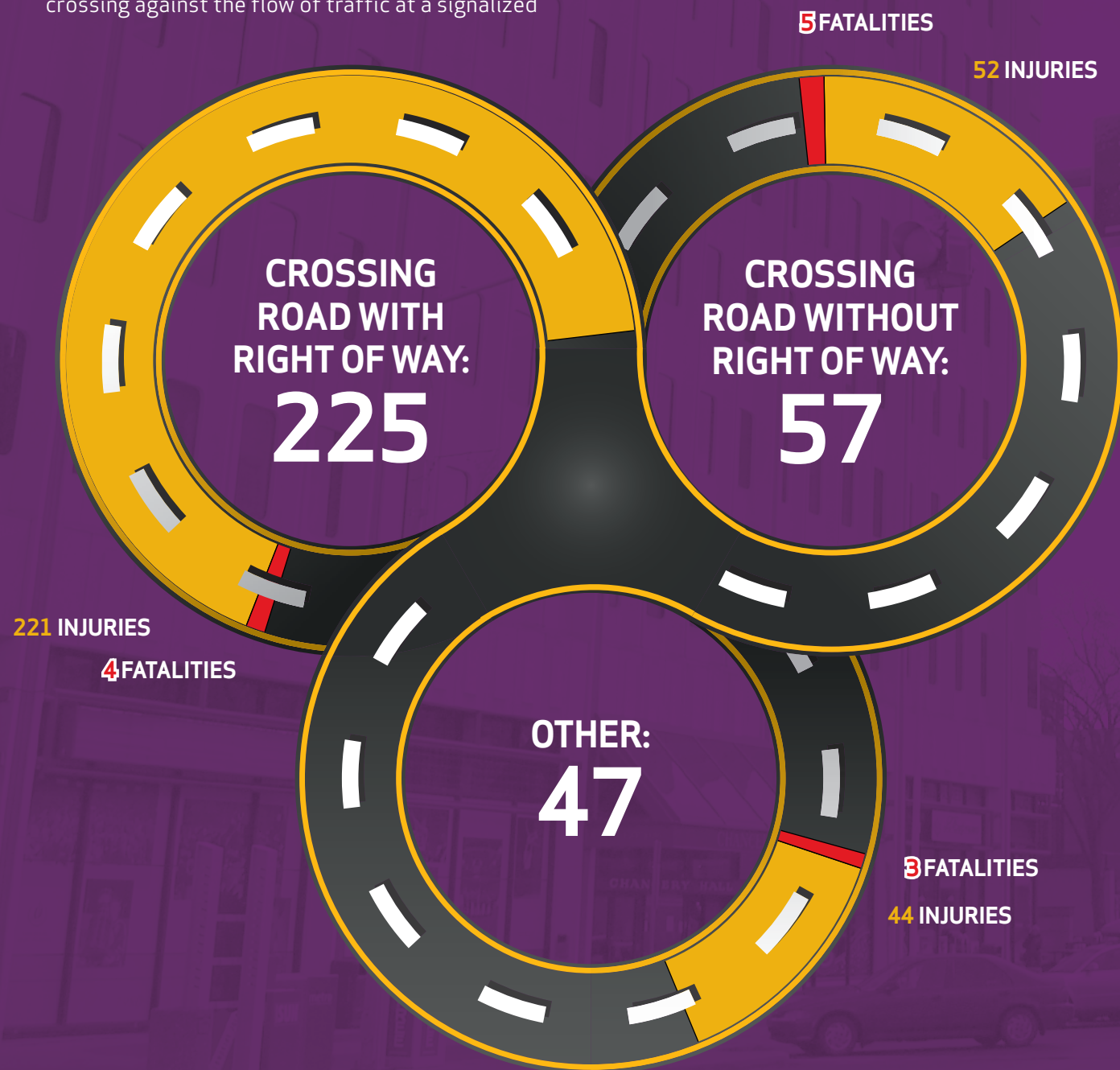


FIGURE 21:

PEDESTRIAN FATALITIES AND INJURIES BY AGE

16.1% (53) of pedestrians involved in injury and fatality collisions were between the ages of 25 and 34, with 13.1% (43) between 19 and 24. Children 18 and younger made up 19.1% (63) of pedestrians

involved in injury and fatality collisions while those aged 65 and older constituted 12.2% (40) of overall pedestrian fatalities and injuries. (Figure 21)

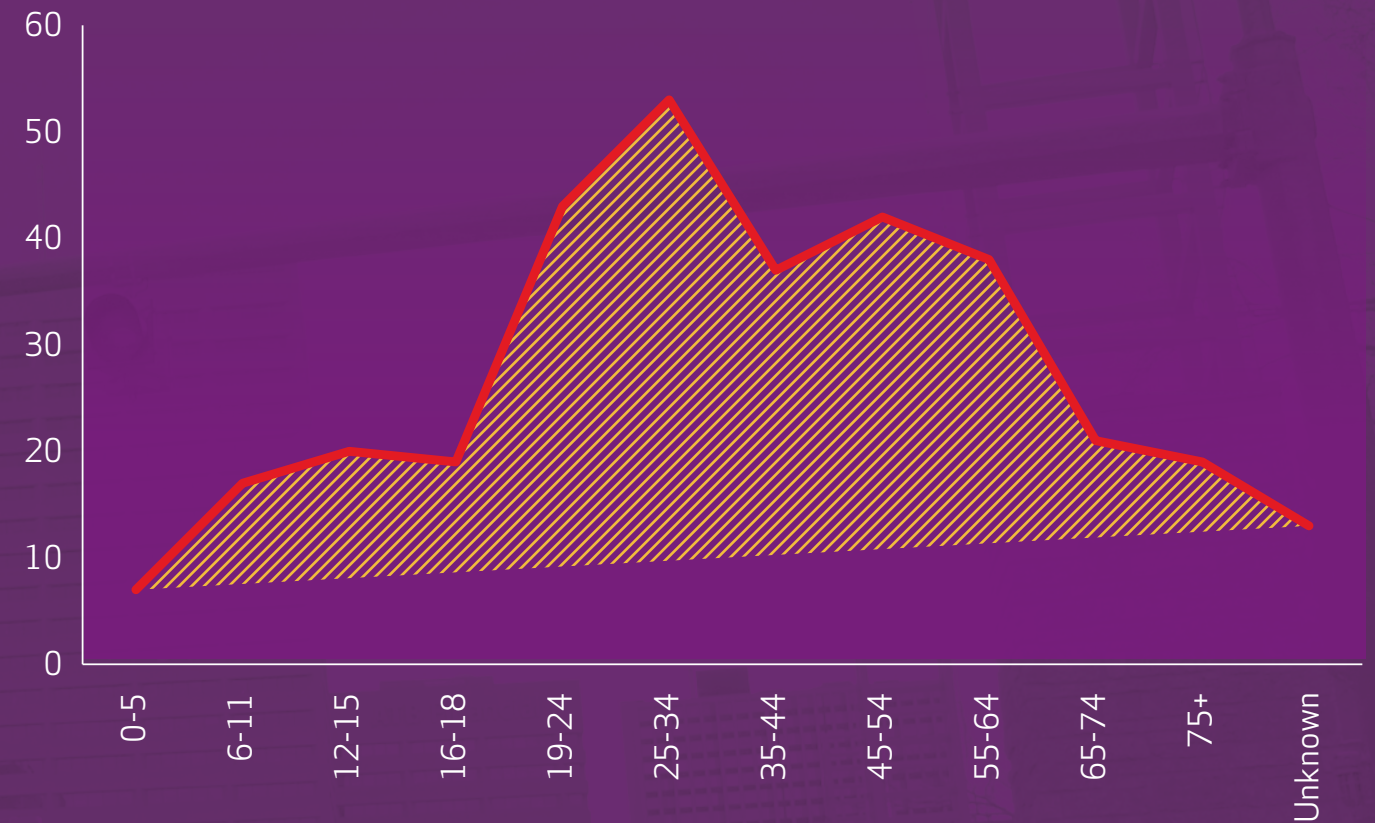
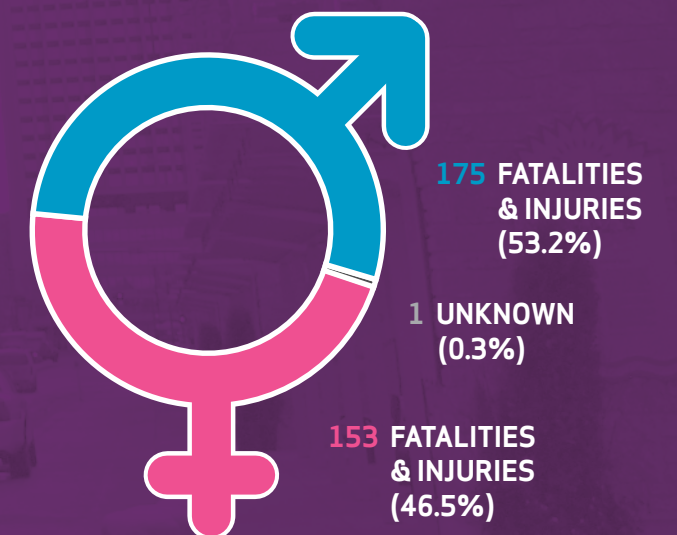


FIGURE 22:

PEDESTRIAN FATALITIES AND INJURIES BY GENDER

Male pedestrians have a slightly higher likelihood of being injured or killed compared with female pedestrians (53.2% vs. 46.5%). Of the pedestrian fatalities, eight were males and four were females. (Figure 22)



SECTION 9.2: CYCLIST COLLISIONS

In 2015 there were 178 collisions involving cyclists, which resulted in 158 injuries.



FIGURE 23:

CYCLIST COLLISIONS BY MONTH

In 2015 cyclist collisions occurred nearly every month of the year, with the most occurring in the summer months when more cyclists tend to be on the roads. The number of collisions peaked at 35 in July, compared to 0 collisions in January. (Figure 23)

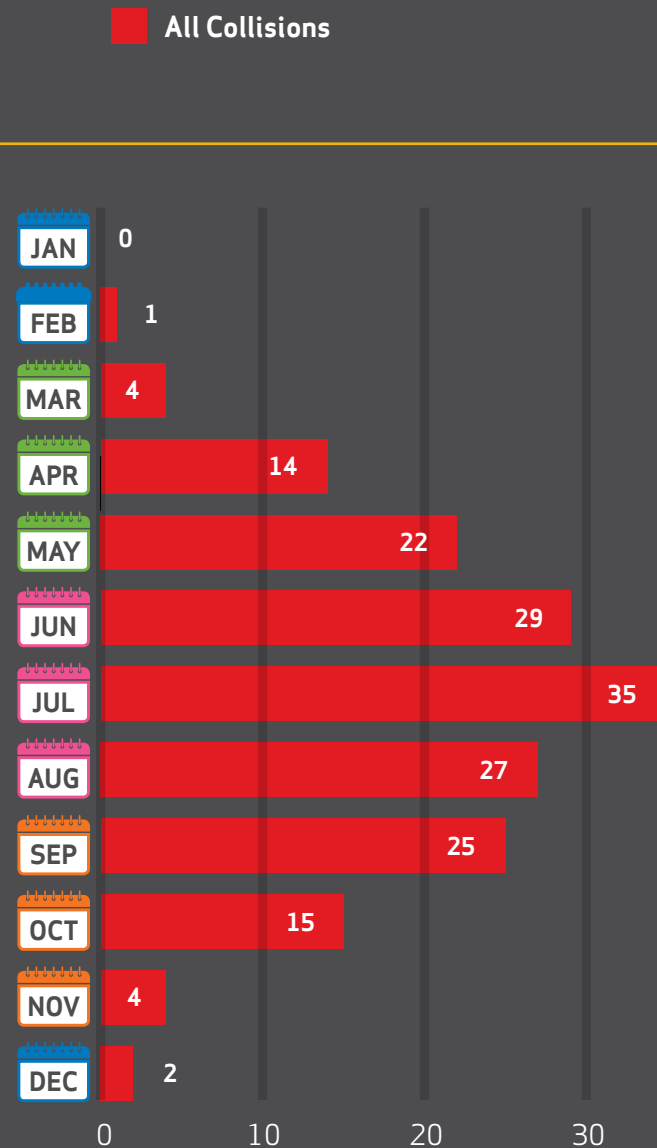


FIGURE 24:

CYCLIST COLLISIONS BY DAY OF WEEK

Cyclist collisions were more likely to occur on Thursday (18.5%, 33 collisions) and Wednesday

(16.3%, 29). Fewer cyclist collisions occurred on Sunday (8.4%, 15). (Figure 24)

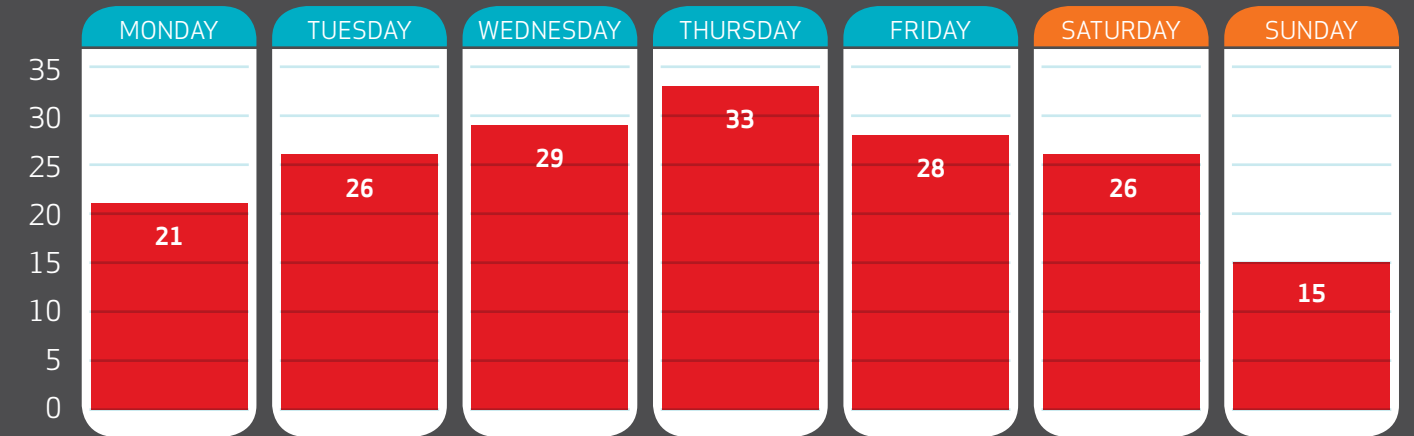


FIGURE 25:

CYCLIST COLLISIONS BY HOUR OF DAY

The highest number of cyclist collisions occurred between 4:00 and 7:00 p.m., with 18 cyclist

collisions each hour (10.1%), corresponding with the evening peak traffic hours. (Figure 25)

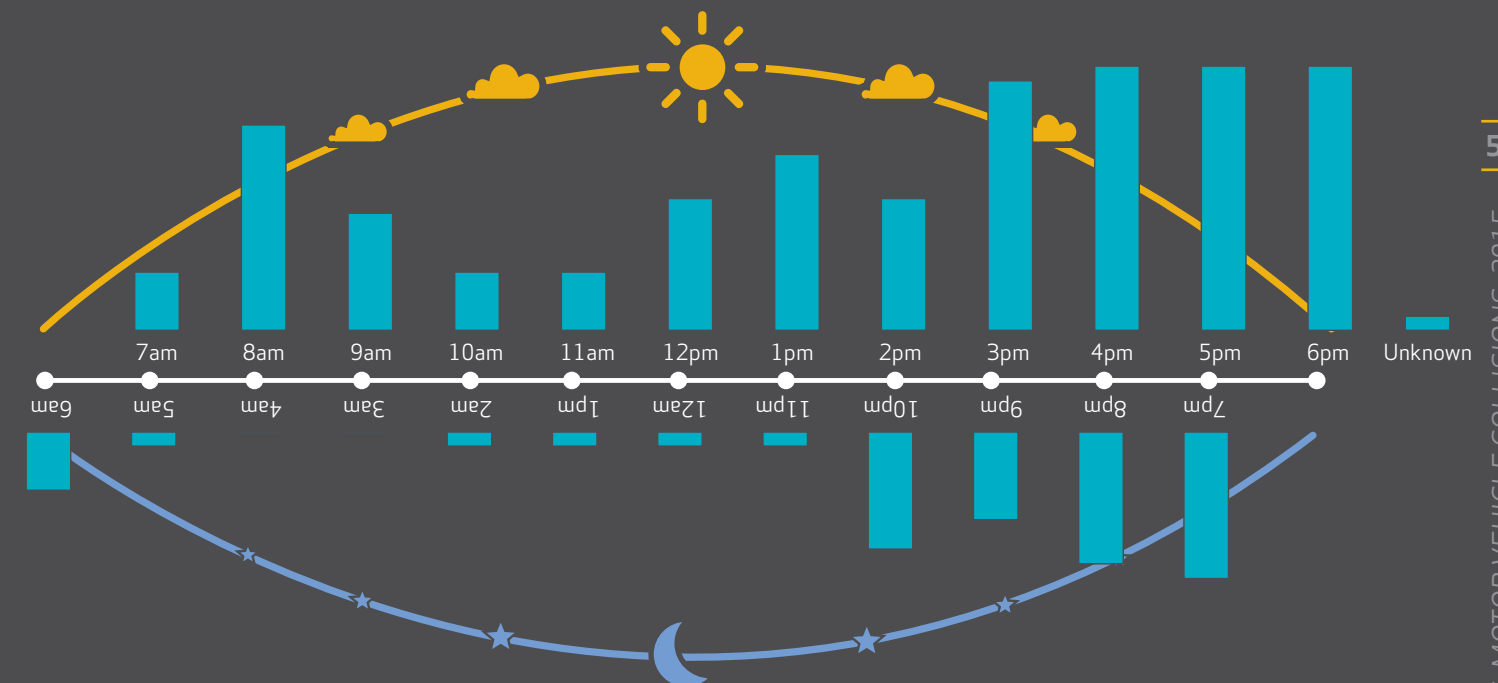


FIGURE 26:

ACTION OF CYCLISTS INVOLVED IN COLLISIONS

Of the 158 cyclists involved in an injury or fatality collision, 54.4% (86) were deemed to be not at fault in the collision. Cyclists who were deemed to have committed errors or violations made up the other 45.6% (72) of collisions. (Figure 26)



Out of 178 bicycle collisions in 2015, 34 cyclists wore helmets, 74 did not wear helmets, and 70 were unknown (not part of the police report).

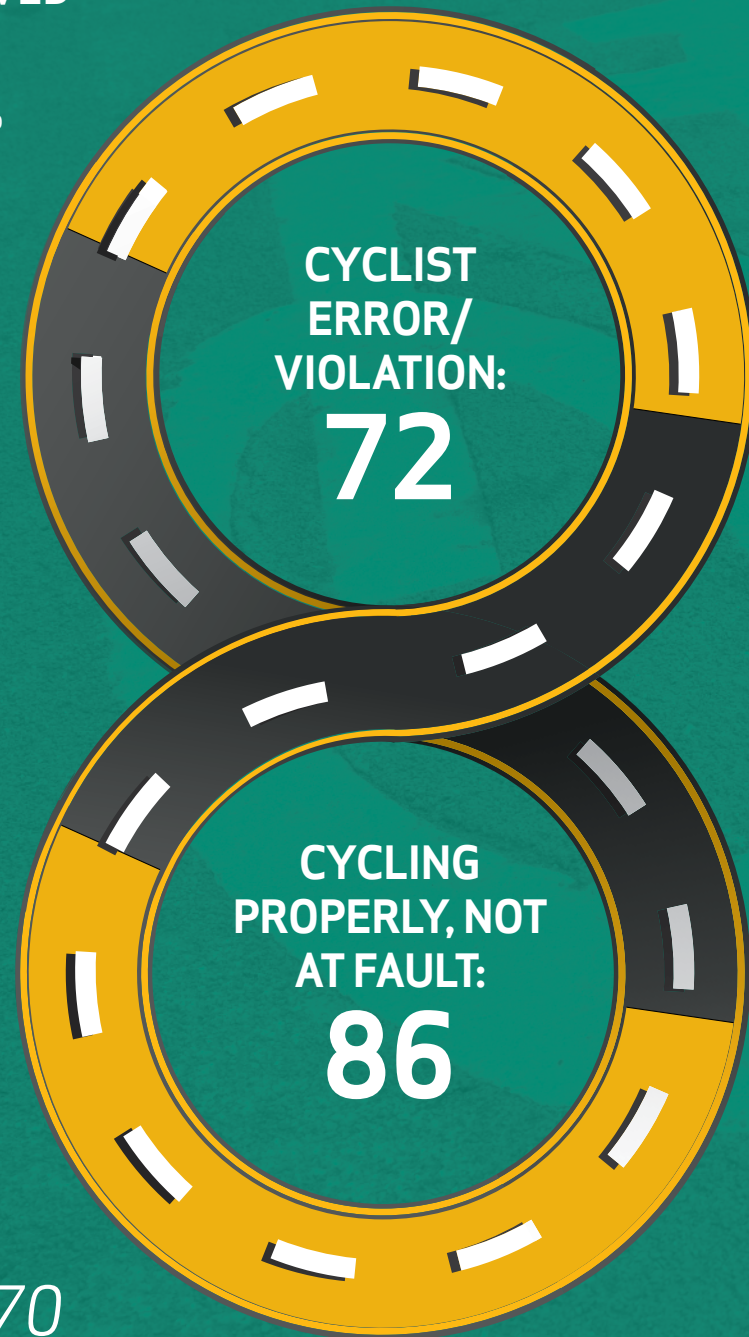


FIGURE 27:

CYCLIST FATALITIES AND INJURIES BY AGE

The age group with the highest number of cyclists involved in an injury or fatality collision was 19 to 24 (20.3%, 32). A total of 17.1% (27) of cyclists

involved in injury and fatality collisions were 45 to 54 years of age.

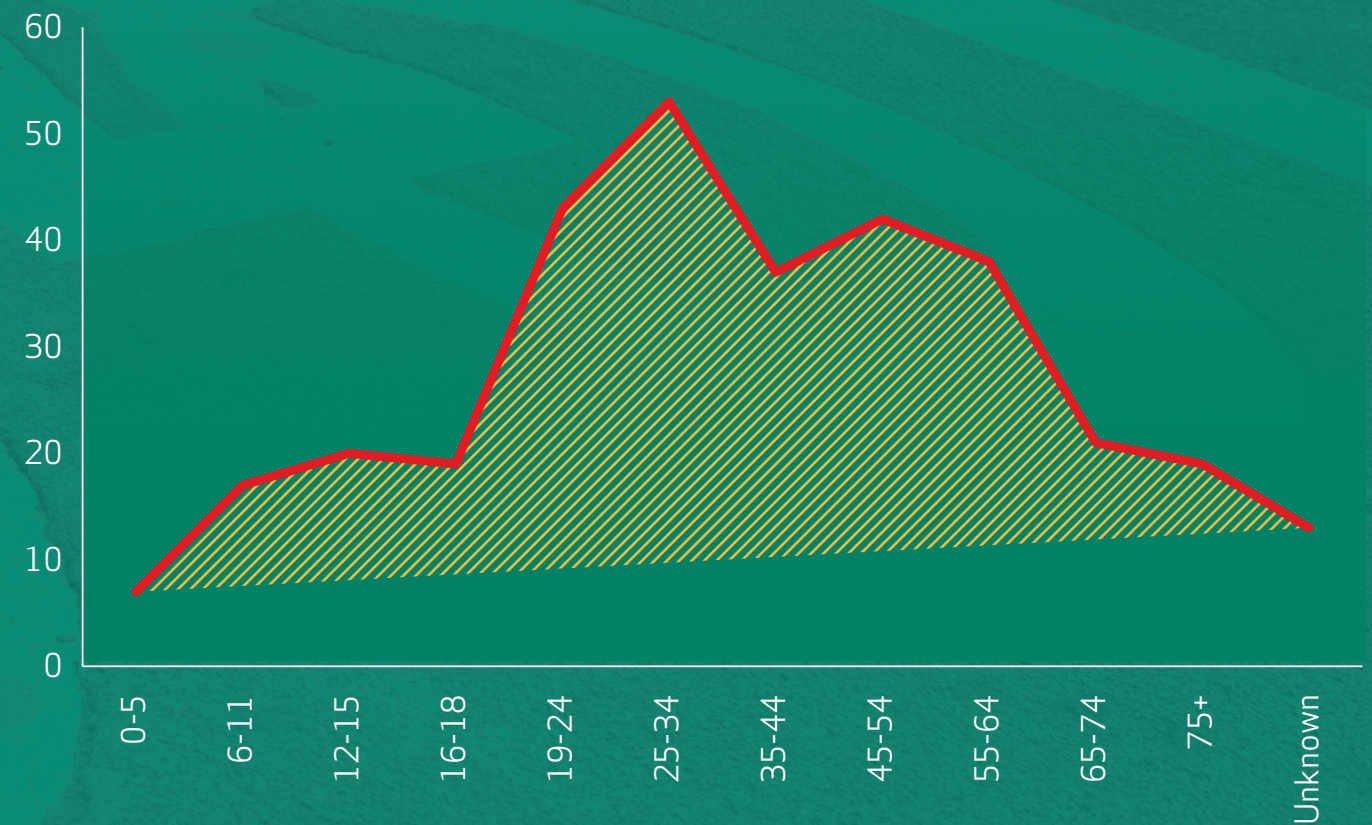
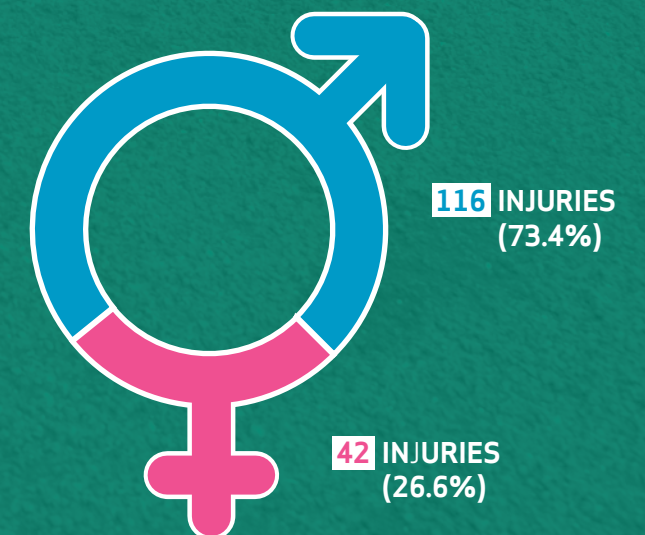


FIGURE 28:

CYCLIST FATALITIES AND INJURIES BY GENDER

Males are over-represented in cyclist collisions where the cyclist is injured or killed [male: 116 (73.4%) vs. female: 42 (26.6%)]. (Figure 28)



SECTION 9.3: MOTORCYCLIST COLLISIONS

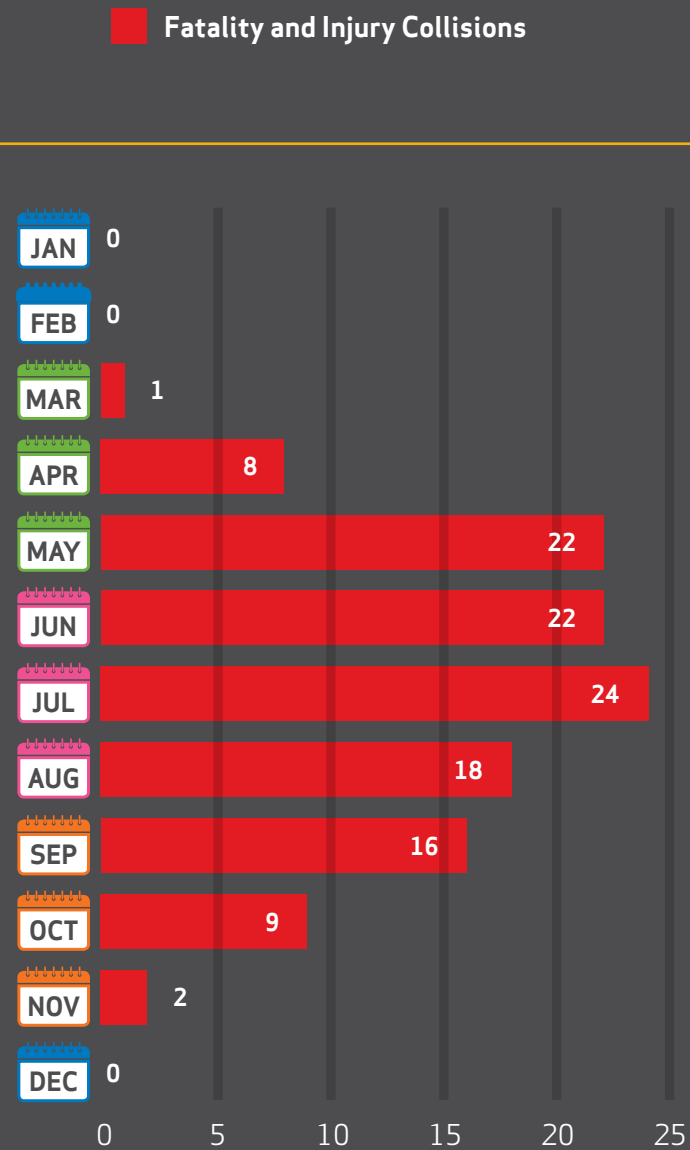
In 2015 there were 208 collisions involving motorcycles¹¹, resulting in 6 fatalities and 121 injuries. The following information relates to the 122 collisions in which motorcyclists were injured or killed.



FIGURE 29:

MOTORCYCLIST FATAL AND INJURY COLLISIONS BY MONTH

There were no motorcyclist collisions resulting in a fatality or injury in January, February, or December. The most common months for fatal or injury collisions is May through to July, with the highest month being July (19.7%, 24 collisions). (Figure 29)



11 The figure of 208 collisions includes 14 collisions where the motorcycle was struck while legally parked and unattended.

FIGURE 30:

MOTORCYCLIST FATAL AND INJURY COLLISIONS BY DAY OF WEEK

A higher number of motorcyclist fatal and injury collisions occurred on Friday (20.5%, 25), followed

by Monday (17.2%, 21). (Figure 30)

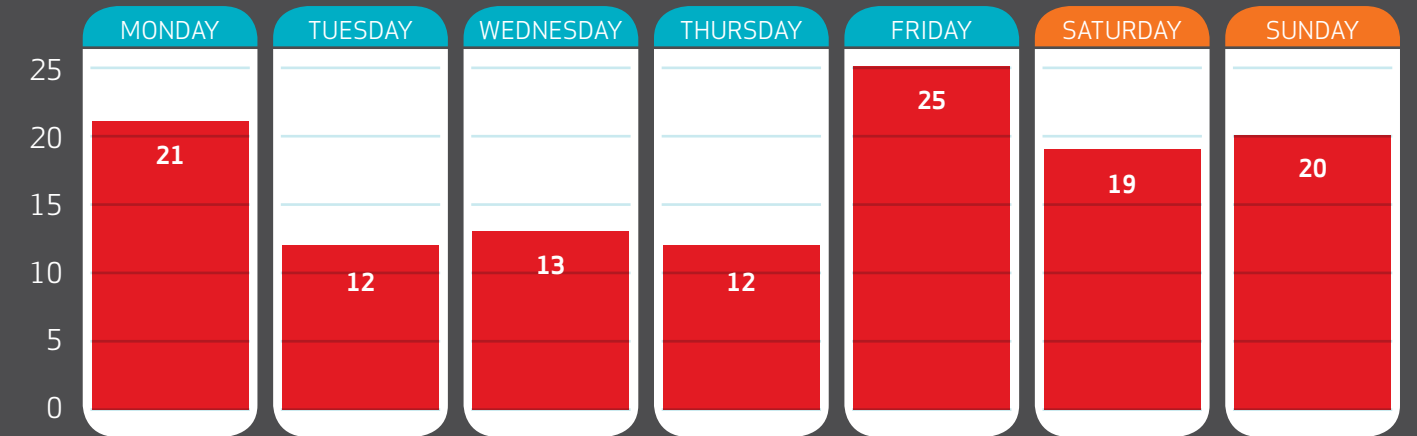


FIGURE 31:

MOTORCYCLIST FATAL AND INJURY COLLISIONS BY HOUR OF DAY

More motorcyclist fatal and injury collisions occurred between 5:00 and 7:00 p.m., with 14 fatal or injury motorcyclist collisions each hour (11.5%, 14). (Figure 31)

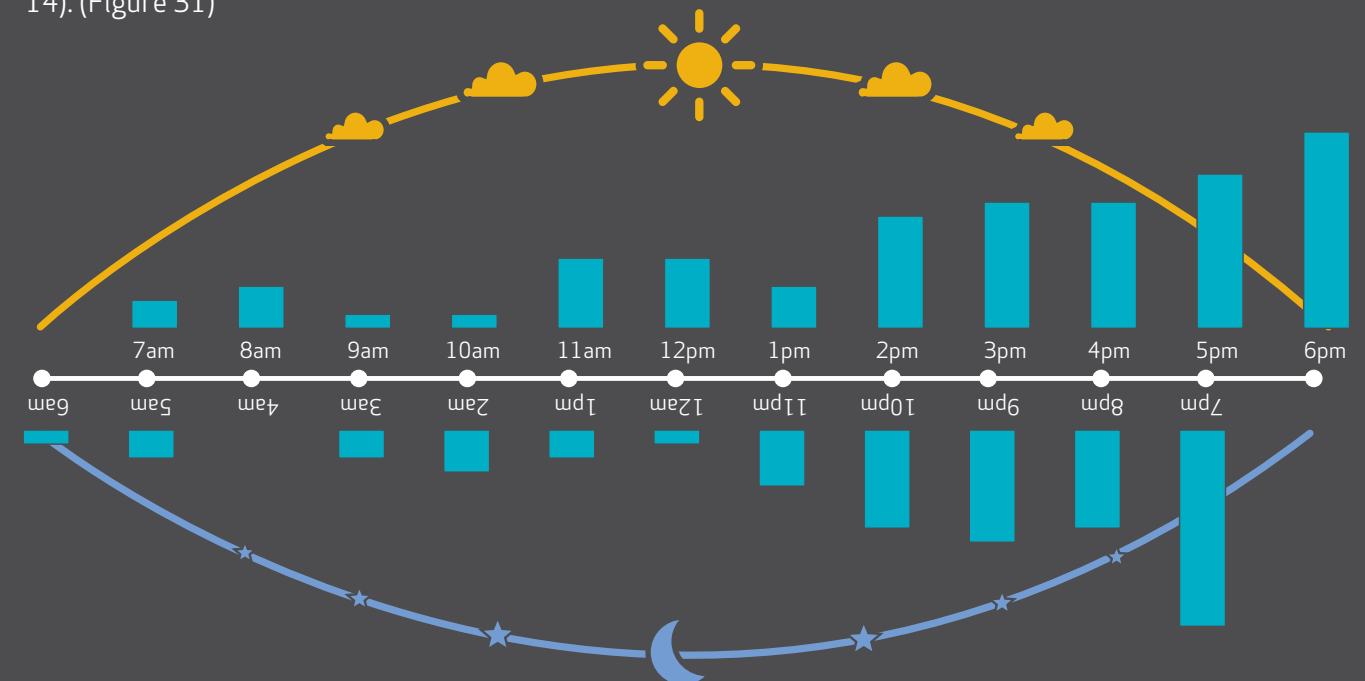


FIGURE 32:

ACTION OF MOTORCYCLIST FATALITIES AND INJURIES IN COLLISIONS

Motorcyclists who were driving properly and deemed not at fault made up 48.0% (61) of motorcyclist fatalities or injuries. The remaining 52.0% (66) of fatalities and injuries occurred in collisions where the motorcyclist was deemed to be at fault.

Among these at-fault collisions, the most common collision cause was ran off road, which was the reported cause for 26.0% (33) of all motorcyclist fatalities and injuries. (Figure 32)

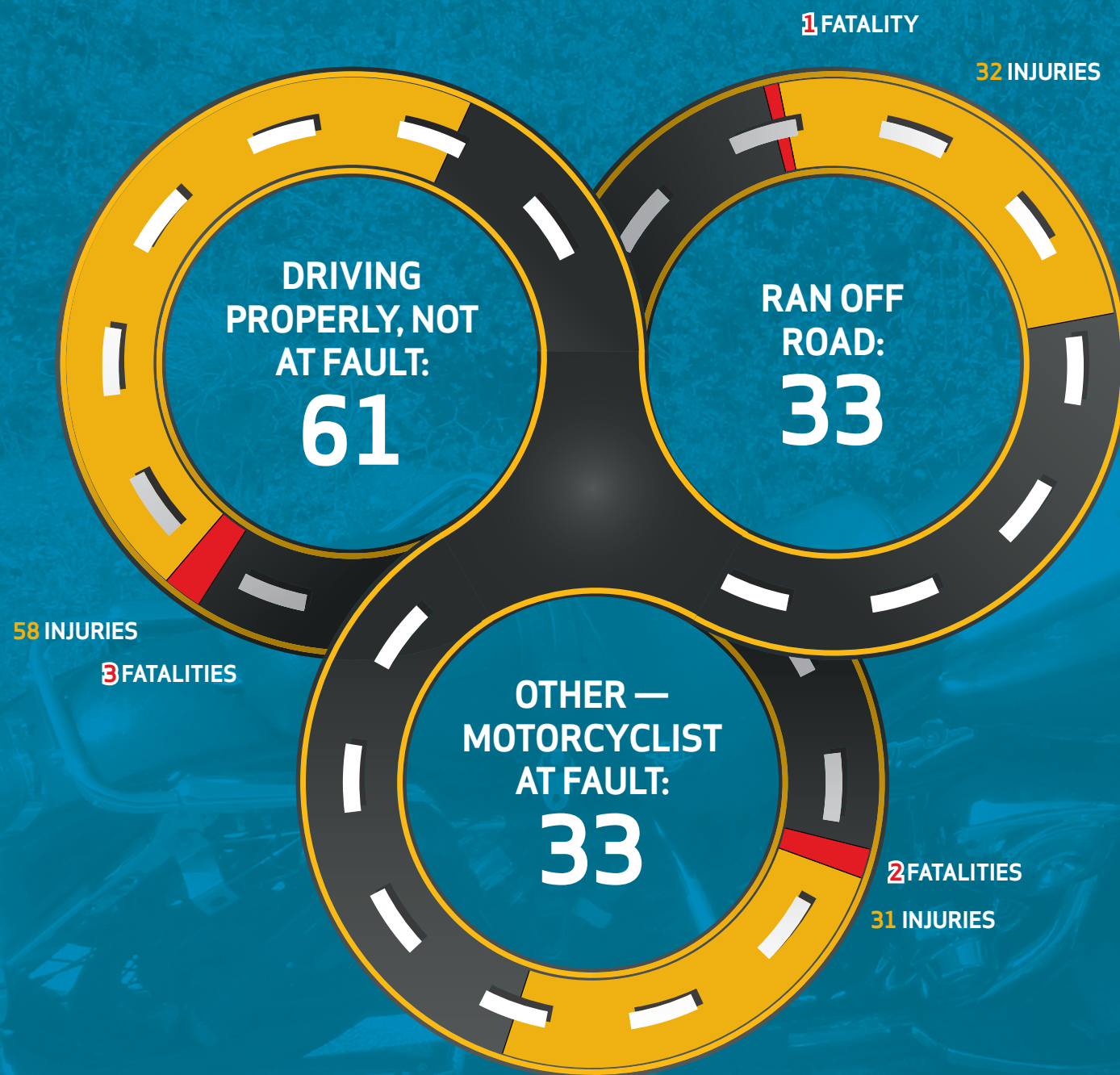


FIGURE 33:

MOTORCYCLIST FATALITIES AND INJURIES BY AGE

Riders aged 25 to 34 made up 30.7% (39) of all motorcyclist injuries and fatalities in 2015, followed by riders in the 35 to 44 age group (22.0%, 28).

There were 6 motorcyclist fatalities in 2015. (Figure 33)

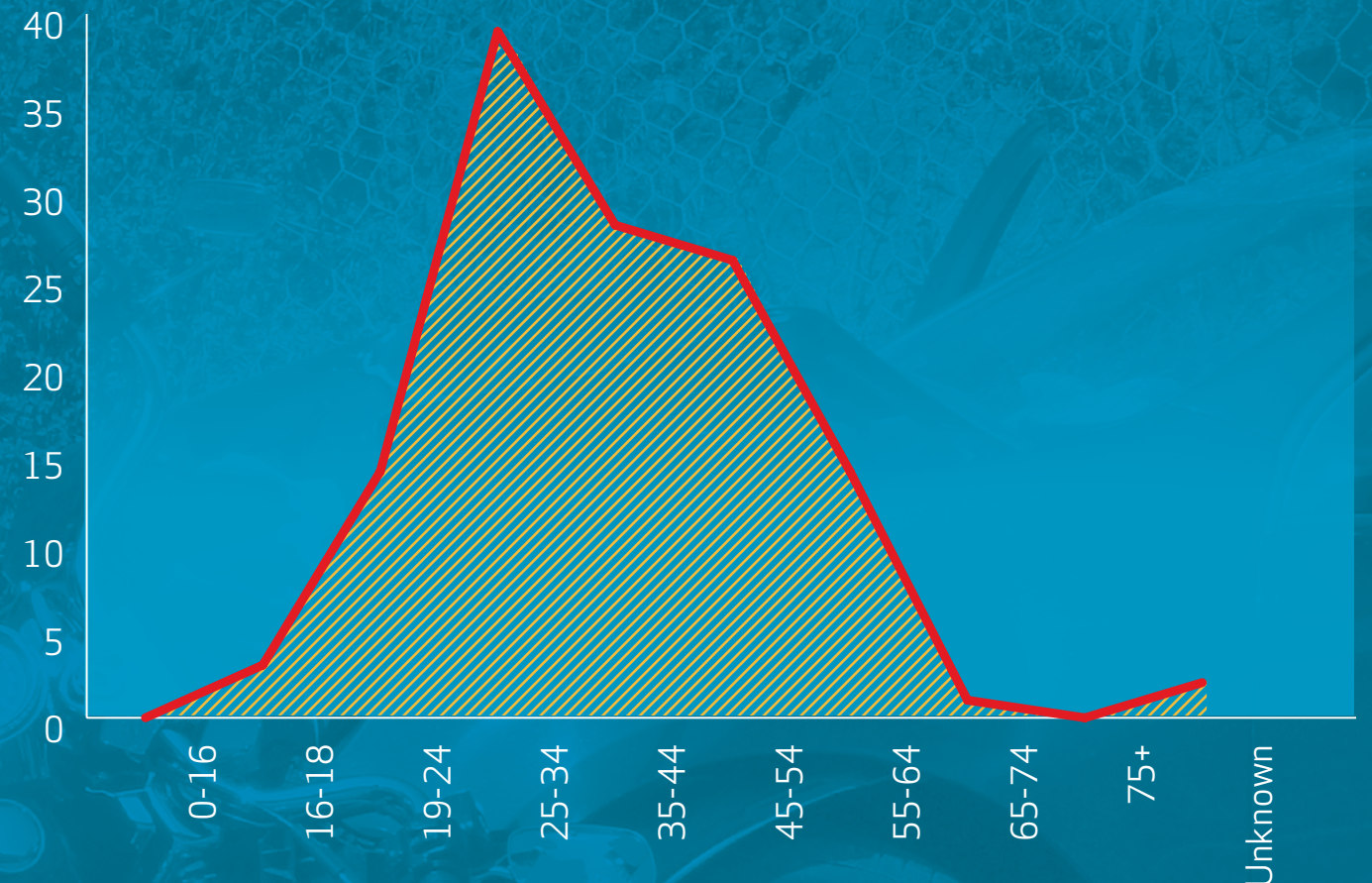
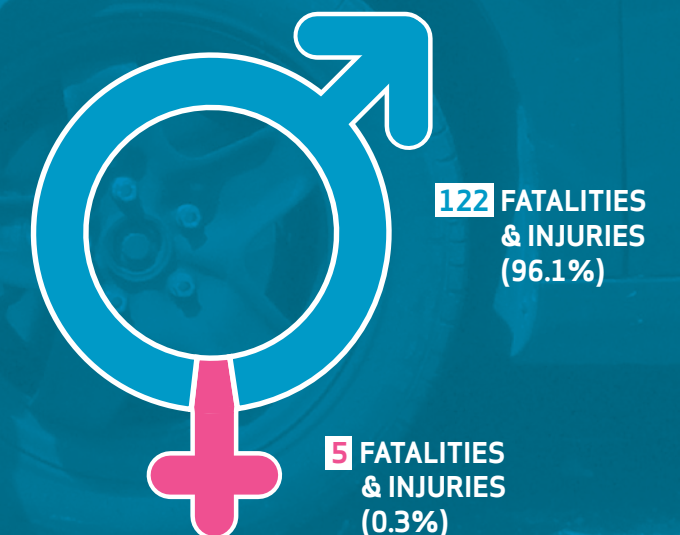


FIGURE 34:

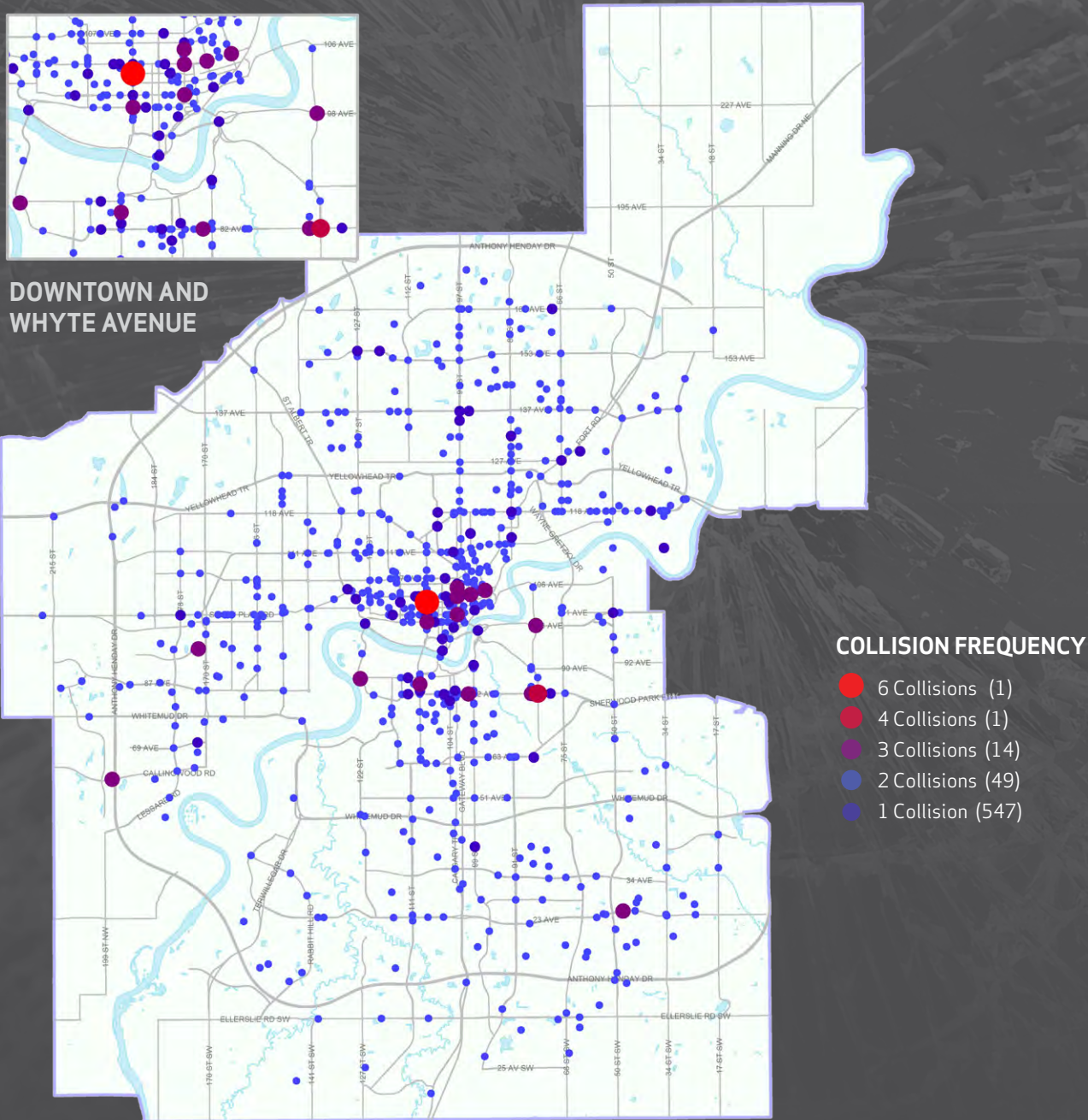
MOTORCYCLIST FATALITIES AND INJURIES BY GENDER

Males are highly over-represented in motorcyclist fatalities and injuries [male: 122 (96.1%) vs. female: 5 (3.9%)]. (Figure 34)



MAP 4:

VULNERABLE ROAD USER (PEDESTRIAN, CYCLIST, MOTORCYCLIST) COLLISION LOCATIONS



APPENDIX 1:
GLOSSARY OF TERMS

The following terms are used throughout this report.

COLLISION	Police-reported collisions occurring on public roadways in the City of Edmonton which result in a minimum of \$2,000 property damage or which result in fatality or injury. The collision must include at least one (1) motor vehicle. This report includes all collisions where data was received by the Office of Traffic Safety from the Edmonton Police Service as of February 27, 2015. Non-vehicular collisions and collisions on private roadways are not included in this report.
INJURY	Injuries noted by police on the collision report form. Injuries are classified as minor (treated but not admitted to hospital – may include treatment at an emergency department) or major (result in admission to hospital).
FATALITY	On-scene fatalities, as well as any fatalities occurring within 30 days of and which are related to the collision.
AUTOMOBILE	Cars, pickup trucks, SUVs, and vans under 4,500 kg.
TRUCK	Tractor-trailers, trucks, and vans 4,500 kg and over.
INTERSECTION	Defined as extending 10 m past the legally defined limits of the outer crosswalk lines of an intersecting roadway.
MIDBLOCK	A section of roadway between two intersections. Bridges are also included as midblock segments.
BRIDGE	One of the 10 vehicle bridges over the North Saskatchewan River: Beverly, Capilano, Dawson, Low Level, James MacDonald, Walterdale, High Level, Groat, Quesnell, and Anthony Henday.

APPENDIX 2:
GLOSSARY OF COLLISION CAUSES

The collision causes used throughout this report are derived from the provincial Collision Report Form. The following table provides an explanation of each of these causes.

FOLLOWED TOO CLOSELY	A vehicle rear-ends another vehicle due to a number of possible reasons, such as driver inattention, failure to maintain a safe distance between the vehicle and the one ahead, or failing to account for road conditions.
STRUCK PARKED VEHICLE	A moving vehicle collides with a legally parked or unattended vehicle.
RAN OFF ROAD	The vehicle leaves the roadway.
CHANGING LANES IMPROPERLY	A vehicle is involved in a collision while changing lanes.
LEFT TURN ACROSS PATH	A driver makes a left turn and is struck by an oncoming vehicle with the right of way.
FAILED TO OBSERVE TRAFFIC SIGNAL	At a signalized intersection, the driver fails to obey a signal and collides with another vehicle with the right of way.
STOP SIGN VIOLATION	A driver fails to stop at a stop sign, or fails to proceed safely after stopping, and collides with a vehicle with the right of way.
BACKED UNSAFELY	A driver strikes another vehicle while backing.
FAILED TO YIELD RIGHT OF WAY (ROW) (NO CONTROL)	A driver fails to yield the right of way at an uncontrolled intersection, striking or being struck by another vehicle.
IMPROPER TURN	A vehicle either turns from or to an incorrect lane (for example, turning from the inside lane to an outside lane) and causes a collision.
LEFT OF CENTRE	A vehicle driving left of the centre line on a roadway collides with another vehicle.

YIELD SIGN VIOLATION	A driver fails to stop at a yield sign and strikes a vehicle with the right of way.
FAILED TO YIELD TO PEDESTRIAN	A vehicle fails to yield to a pedestrian who has the right of way.
ANIMAL ACTION	An animal on the roadway causes a collision with a vehicle.
PEDESTRIAN ERROR / VIOLATION	A pedestrian is involved in a collision after failing to cross at an intersection or marked crosswalk, or after crossing against a “don’t walk” sign.
IMPROPER PASSING	A driver causes a collision while attempting to pass another vehicle.
FAILED TO YIELD TO CYCLIST	A vehicle fails to yield to a cyclist.
CYCLIST ERROR / VIOLATION	A cyclist commits an error or violation and is struck. (This code is typically used for cyclist actions such as entering the road improperly; collisions involving cyclists which can be classified as a vehicle-related cause are also used.)
DRIVERLESS VEHICLE	A vehicle not being controlled by a driver causes a collision.
SIGNED FORCED TURN VIOLATION	A vehicle in a lane signed for specific turns disobeys the sign and causes a collision.
IMPROPER LOADING	An improperly-secured or unstable load causes a collision.
ONE WAY VIOLATION	A vehicle causes a collision by driving the wrong way down a one-way street.
OVERSIZE VEHICLE	A vehicle causes a collision after entering a roadway and exceeding posted height restriction.

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