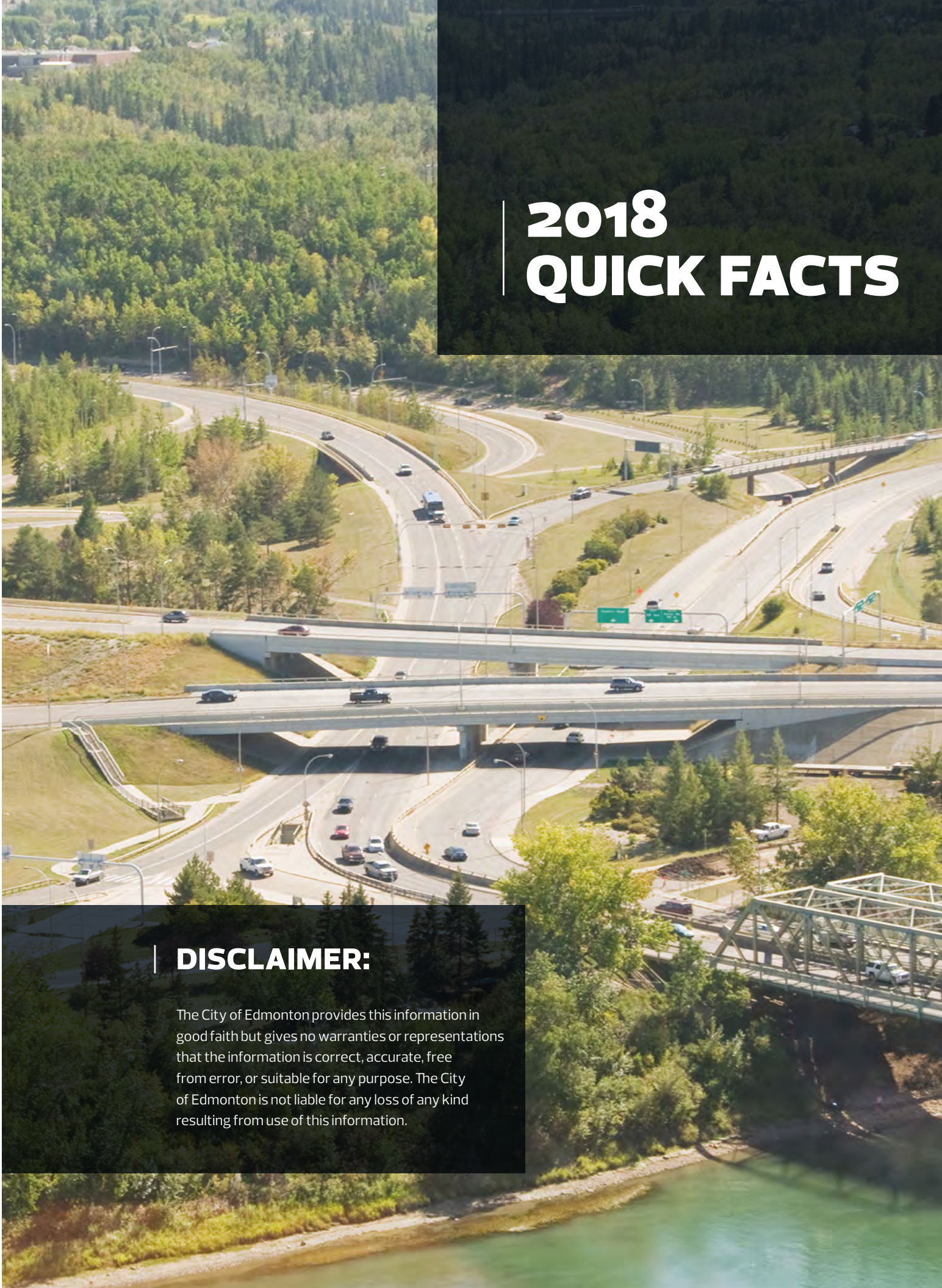
2018 MOTOR VEHICLE COLLISIONS

CITY OPERATIONS DEPARTMENT | PARKS AND ROADS SERVICES BRANCH | TRAFFIC SAFETY SECTION



2018 QUICK FACTS

DISCLAIMER:

The City of Edmonton provides this information in good faith but gives no warranties or representations that the information is correct, accurate, free from error, or suitable for any purpose. The City of Edmonton is not liable for any loss of any kind resulting from use of this information.

STATISTICS	2017	2018	% CHANGE
Total Collisions	23,905	24,003	0.4
Fatal Collisions	26	19	-26.9
Injury Collisions	2,710	2,610	-3.7
Fatal and Injury Collisions	2,736	2,629	-3.9
Property Damage Only (PDO) Collisions	21,169	21,374	1.0
Intersection Collisions	13,920	13,587	-2.4
Number of Fatalities	27	19	-29.6
Number of Serious Injuries	341	319	-6.5
Number of Minor Injuries	3,048	2,988	-2.0
Number of Serious and Minor Injuries	3,389	3,307	-2.4
Number of Fatalities and Serious Injuries	368	338	-8.2
Pedestrian Collisions	270	250	-7.4
Number of Pedestrian Minor Injuries	215	188	-12.6
Number of Pedestrian Serious Injuries	60	63	5.0
Number of Pedestrian Fatalities	9	6	-33.3
Number of Pedestrian Fatalities and Injuries	284	257	-9.5
Bicycle Collisions	143	130	-9.1
Number of Cyclist Minor Injuries	98	92	-6.1
Number of Cyclist Serious Injuries	22	20	-9.1
Number of Cyclist Fatalities	1	0	-100.0
Number of Cyclist Fatalities and Injuries	121	112	-7.4
Motorcycle Collisions	154	143	-7.1
Number of Motorcyclist Minor Injuries	60	56	-6.7
Number of Motorcyclist Serious Injuries	31	33	6.5
Number of Motorcyclist Fatalities	4	4	0.0
Number of Motorcyclist Fatalities and Injuries	95	93	-2.1
Population	934,000	977,600	4.7
Private Passenger Vehicles[1]	593,430	661,483	11.5
Private Motorcycles	16,093	14,693	-8.7
Collisions per 1,000 Population	25.6	24.6	-4.1
Intersection Collisions per 1,000 Population	14.9	13.9	-6.7
Number of Injuries per 1,000 Population	3.6	3.4	-6.8
Number of Fatalities and Injuries per 1,000 Population	3.7	3.4	-7.0
Collisions per 1,000 Vehicles[2]	39.2	35.5	-9.5
Intersection Collisions per 1,000 Vehicles	22.8	20.1	-12.0
Number of Fatalities and Injuries per 1,000 Vehicles	5.6	4.9	-12.2

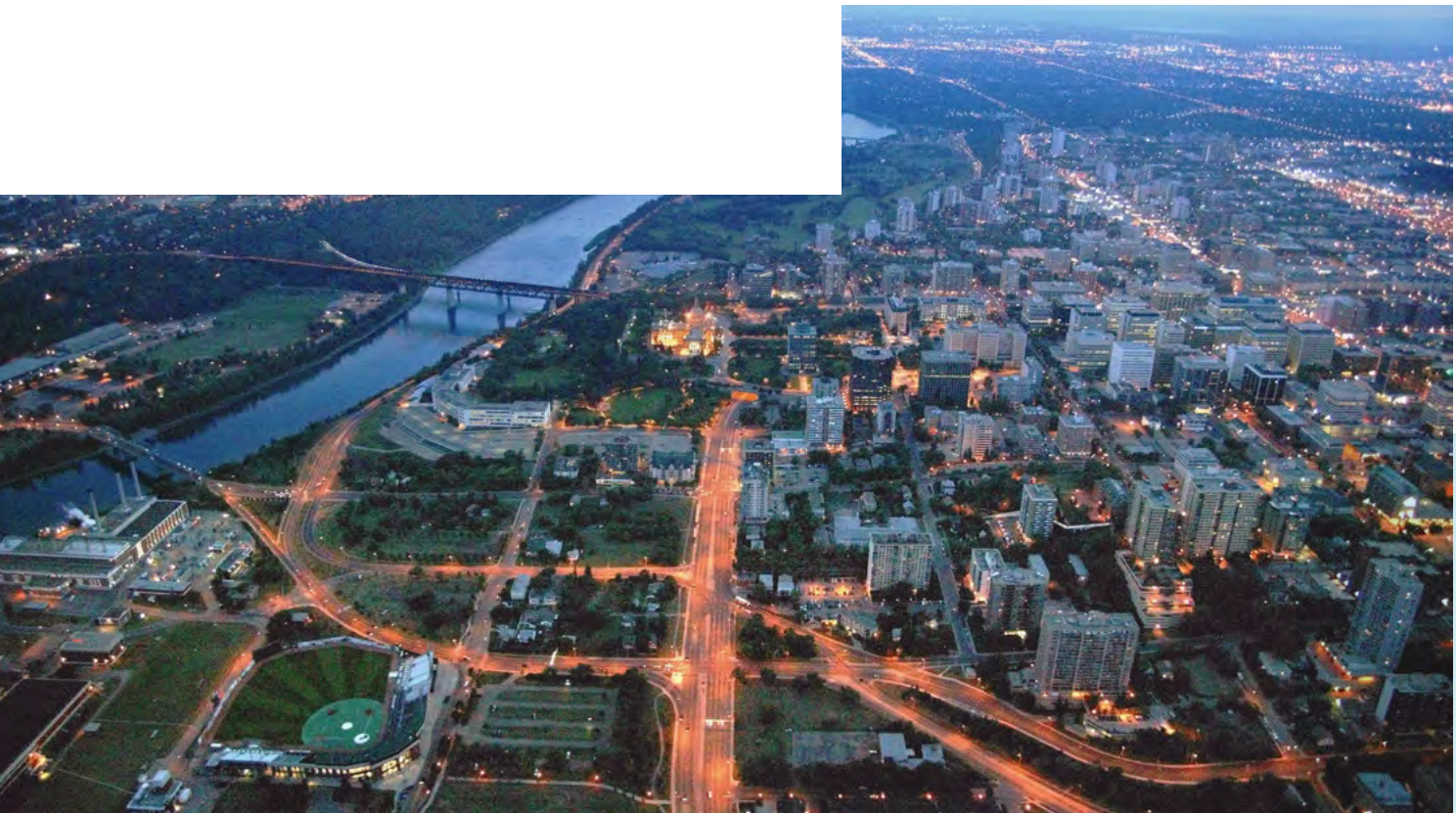
[1] Private passenger vehicles in 2018 includes vans. These were not included in the 2017 number.

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

CONTENTS

List of Tables

List of Maps



List of Figures

2018 Edmonton Summary

- There were 24,003 collisions in Edmonton in 2018. This figure represents an increase of 0.4% from 2017.
- The number of collisions per capita decreased 4.1% from 2017 levels (25.6), to 24.6 collisions per 1,000 population.
- In 2018 there were 2,629 collisions that resulted in injury or fatality, a decrease of 3.9% from 2017. These injury and fatal collisions resulted in 2,988 minor injuries, 319 serious injuries, and 19 fatalities.[3]
- The 19 fatalities in 2018 included 9 vehicle occupants (9 drivers) and 10 vulnerable road users: 6 pedestrians and 4 motorcyclists.
- Collisions at intersections made up 56.6% (13,587) of the collision total and resulted in 69.6% (2,302) of total injuries and 42.1% (8) of the fatalities sustained in 2018. Compared to 2017, the number of intersection collisions per 1,000 population decreased by 6.7%.
- The most common collision causes were following too closely (38.6%, 9,254 collisions); struck parked vehicle (13.6%, 3,253); changing lanes improperly (11.2%, 2,692); and ran off road (7.0%, 1,684).
- The collision causes most likely to result in injury or fatality were following too closely (43.0%, 1,131 collisions); left turn across path (11.3%, 296); failed to observe traffic signal (7.3%, 192); and ran off road (6.5%, 172).
- There were 250 pedestrian-involved collisions in 2018, resulting in 251 pedestrian injuries (a decrease of 8.7% over 2017), and there were 6 fatalities in 2018 compared to 9 fatalities in 2017. Of the 251 pedestrian injuries, 188 were minor and 63 were serious (compared to 215 minor and 60 serious injuries in 2017).
- Of the pedestrian collisions, 160 injuries (126 minor and 34 serious) and 3 fatalities occurred when pedestrians were crossing with the right of way and 48 injuries (34 minor and 14 serious) and 2 fatalities occurred when pedestrians were crossing without the right of way (jaywalking). One pedestrian fatality could not be classified as crossing with the right of way or crossing without the right of way and the collision cause was coded as 'Other'.

[3] For classifications of fatality, serious, and minor injury, please refer to Appendix 1 at the end of this document.

- The number of cyclists injured or killed decreased 7.4% from 2017, with 130 cyclist collisions resulting in 112 injuries (92 minor and 20 serious) and no fatalities. The cyclist was deemed not at fault in 60.7% (68) of these injury collisions.

- The number of collisions involving motorcyclists in 2018 decreased 7.1% to 143 collisions compared to 154 collisions in 2017. The number of motorcyclists injured decreased by 2.2% to 89, with 56 minor injuries and 33 serious injuries. There were 4 motorcyclist fatalities in 2018, the same number of fatalities as in 2017.

- Ranked by the total number of collisions, the top 3 high-collision intersections were: 107 Avenue NW and 142 Street NW (93 collisions, 6 injuries); Yellowhead Trail NW and 149 Street NW (74 collisions, 8 injuries); and Yellowhead Trail NW and 97 Street NW (73 collisions, 12 injuries).

- The top 3 high-collision midblock segments were: Whitemud Drive from north of Quesnell Bridge to 149 Street NW (24 collisions, 6 injuries); Yellowhead Trail NW between 107 Street NW and 121 Street NW (24 collisions, 4 injuries), and Gateway Boulevard NW between 34 Avenue NW and G.A. McDonald Avenue NW (23 collisions, no injuries).

SECTION 1: INTRODUCTION

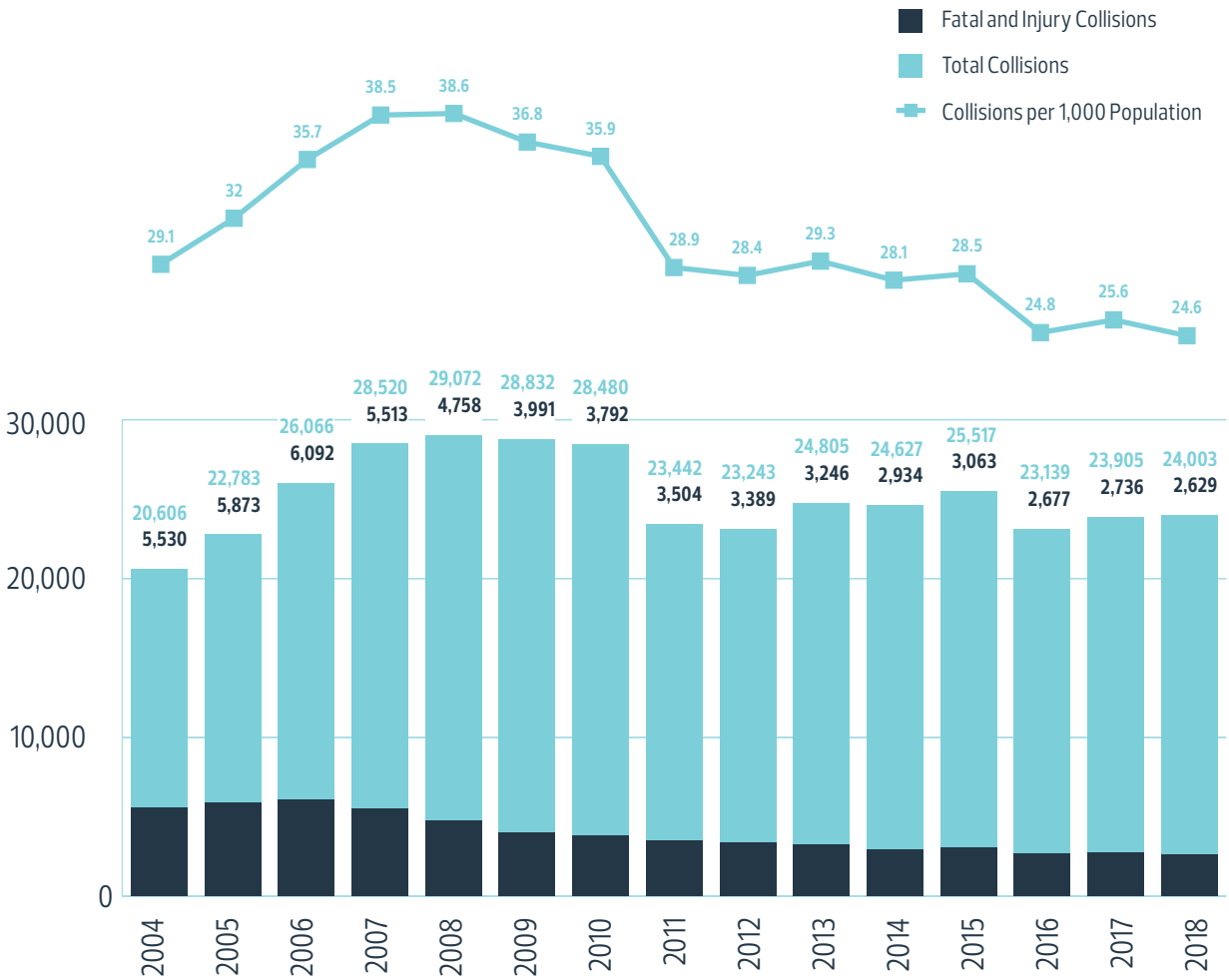
The City of Edmonton's Traffic Safety Section maintains the Motor Vehicle Collision Information System (MVCIS), a database of motor vehicle collisions that occur on public roads in the City of Edmonton. The information in the database is collected from the provincial Collision Report Form, which is completed by members of the Edmonton Police Service either at the scene of the collision or 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 serious 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, 2018, based on causes, temporal information, high collision locations and injury severity. The report also provides information on collisions involving pedestrians, cyclists, and motorcyclists.

FIGURE 1:

Historical Collision Statistics from 2004 to 2018



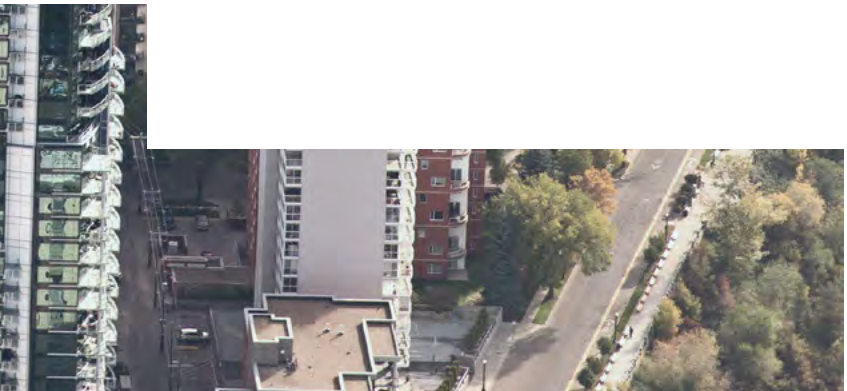


TABLE 1: PART 1
Summary of Selected Collision Statistics from 2004 to 2011

	2004	2005	2006	2007	2008	2009	2010	2011
Total Collisions	20,606	22,783	26,066	28,520	29,072	28,832	28,480	23,442
Injury Collisions	5,530	5,847	6,067	5,482	4,730	3,962	3,768	3,482
Injuries	7,686	8,006	8,221	7,445	6,270	5,203	4,910	4,446
Fatal Collisions	34	26	25	31	28	29	24	22
Fatalities	37	27	25	32	29	32	27	22
Pedestrian Collisions	296	333	347	366	395	347	306	316
Pedestrian Minor Injuries	249	274	297	283	307	269	245	239
Pedestrian Serious Injuries	59	72	67	89	88	88	81	85
Pedestrian Fatalities	10	4	0	13	9	9	4	8
Bicycle Collisions	196	221	199	184	235	220	182	190
Cyclist Minor Injuries	173	192	175	165	204	192	160	165
Cyclist Serious Injuries	22	29	23	16	30	26	22	23
Cyclist Fatalities	2	1	0	4	2	2	2	1
Motorcycle Collisions	161	177	177	213	255	201	211	199
Motorcyclist Minor Injuries	112	128	120	123	140	108	100	107
Motorcyclist Serious Injuries	25	34	24	37	46	44	35	32
Motorcyclist Fatalities	9	2	1	4	7	2	4	4
Population	707,271	712,391	730,372	741,392	752,412	782,439	793,000	812,201
Private Pass. Vehicles	381,456	389,471	407,732	431,425	452,101	470,602	479,194	491,789
Private Motorcycles	8,278	8,586	9,236	10,152	12,686	14,378	15,605	14,087
Collisions/1000 Pop.	29.1	32.0	35.7	38.5	38.6	36.8	35.9	28.9
Intersection Collisions/1000 Pop.	15.0	15.4	18.2	19.2	18.2	16.8	17.0	15.28
Injuries/1000 Pop.	10.9	11.2	11.3	10.0	8.3	6.6	6.2	5.5
Collisions/1000 Veh.	52.9	57.2	62.5	64.6	62.5	59.4	57.6	46.3
Injuries and Fatalities/1000 Pop.	10.9	11.3	11.3	10.1	8.4	6.7	6.2	5.5

TABLE 1: PART 2
Summary of Selected Collision Statistics from 2012 to 2018

	2012	2013	2014	2015	2016	2017	2018	% CHANGE†
Total Collisions	23,243	24,805	24,627	25,517	23,139	23,905	24,003	0.4%
Injury Collisions	3,363	3,223	2,912	3,033	2,656	2,710	2,610	-3.7%
Injuries	4,338	4,123	3,660	3,805	3,305	3,389	3,307	-2.4%
Fatal Collisions	26	23	22	30	21	26	19	-26.9%
Fatalities	27	23	23	32	22	27	19	-29.6%
Pedestrian Collisions	296	298	319	316	292	270	250	-7.4%
Pedestrian Minor Injuries	216	234	253	259	242	215	188	-12.6%
Pedestrian Serious Injuries	86	77	83	58	55	60	63	5.0%
Pedestrian Fatalities	8	6	9	12	10	9	6	-33.3%
Bicycle Collisions	177	177	177	178	171	143	130	-9.1%
Cyclist Minor Injuries	145	152	148	135	127	98	92	-6.1%
Cyclist Serious Injuries	31	24	29	23	18	22	20	-9.1%
Cyclist Fatalities	1	1	1	0	0	1	0	-100.0%
Motorcycle Collisions	157	172	163	208	191	154	143	-7.1%
Motorcyclist Minor Injuries	86	100	79	78	84	60	56	-6.7%
Motorcyclist Serious Injuries	40	31	35	43	40	31	33	6.5%
Motorcyclist Fatalities	4	2	0	6	3	4	4	0.0%
Population	817,498	847,712	877,926	895,000	932,546	934,000	977,600	4.7%
Private Pass. Vehicles	509,655	536,737	563,829	591,595	602,330	593,430	661,483	11.5%
Private Motorcycles	14,945	14,311	16,003	17,415	18,424	16,093	14,693	-8.7%
Collisions/1000 Pop.	28.4	29.3	28.1	28.5	24.8	25.6	24.6	-4.1%
Intersection Collisions/1000 Pop.	15.5	16.1	15.4	16.2	14.4	14.9	13.9	-6.7%
Injuries/1000 Pop.	5.3	4.9	4.2	4.3	3.5	3.6	3.4	-5.6%
Collisions/1000 Veh.	44.3	45.0	42.5	41.9	37.3	39.2	35.5	-9.4%
Injuries and Fatalities/1000 Pop.	5.3	4.9	4.2	4.3	3.6	3.7	3.4	-7.0%

† % Change from 2017 to 2018

The population figure for 2018 is based on an estimate provided by the Chief Economist for the City of Edmonton. 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 (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 31st of each year.

SECTION 2:
VISION ZERO EDMONTON

The Vision Zero approach to road safety can be summarized in one sentence: no loss of life is acceptable. The long-term goal of Vision Zero is zero traffic fatalities and serious injuries. The City of Edmonton moves towards this goal by using a Safe Systems approach that includes engineering, education, enforcement, evaluation, and engagement.

Humans have limited tolerance to violent forces so 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. Everyone has a part in reaching our goal. By obeying the traffic rules and thinking about the safety of others, you prevent tragic deaths and serious injuries. Figure 2 shows the number of fatalities and serious injuries from 2004 to 2018.

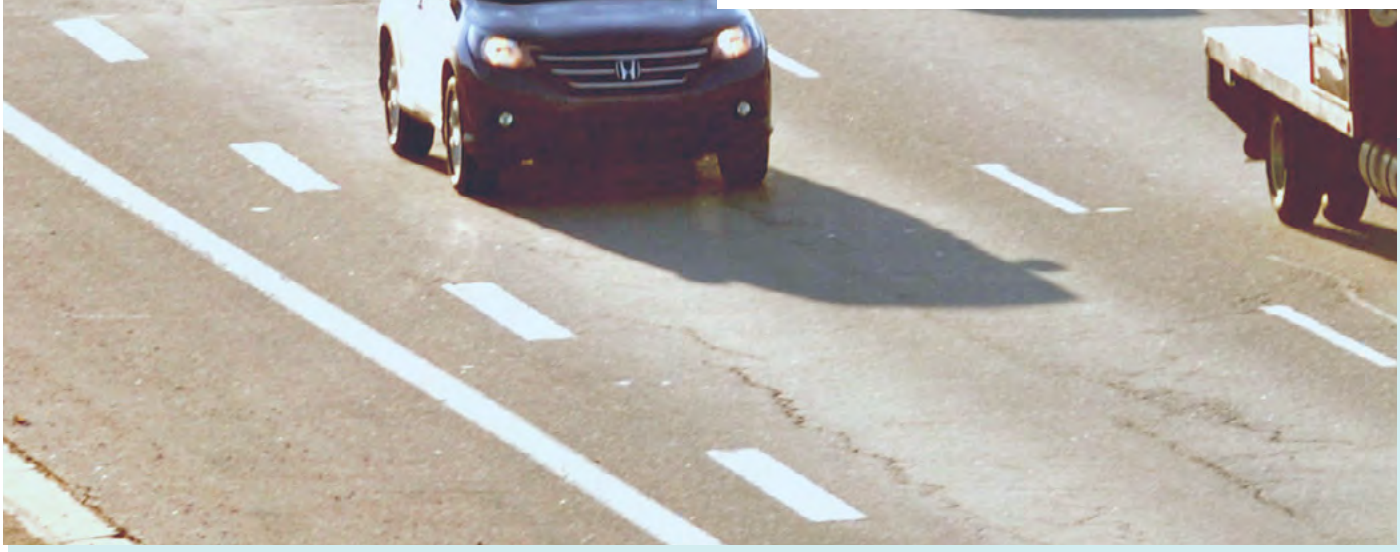
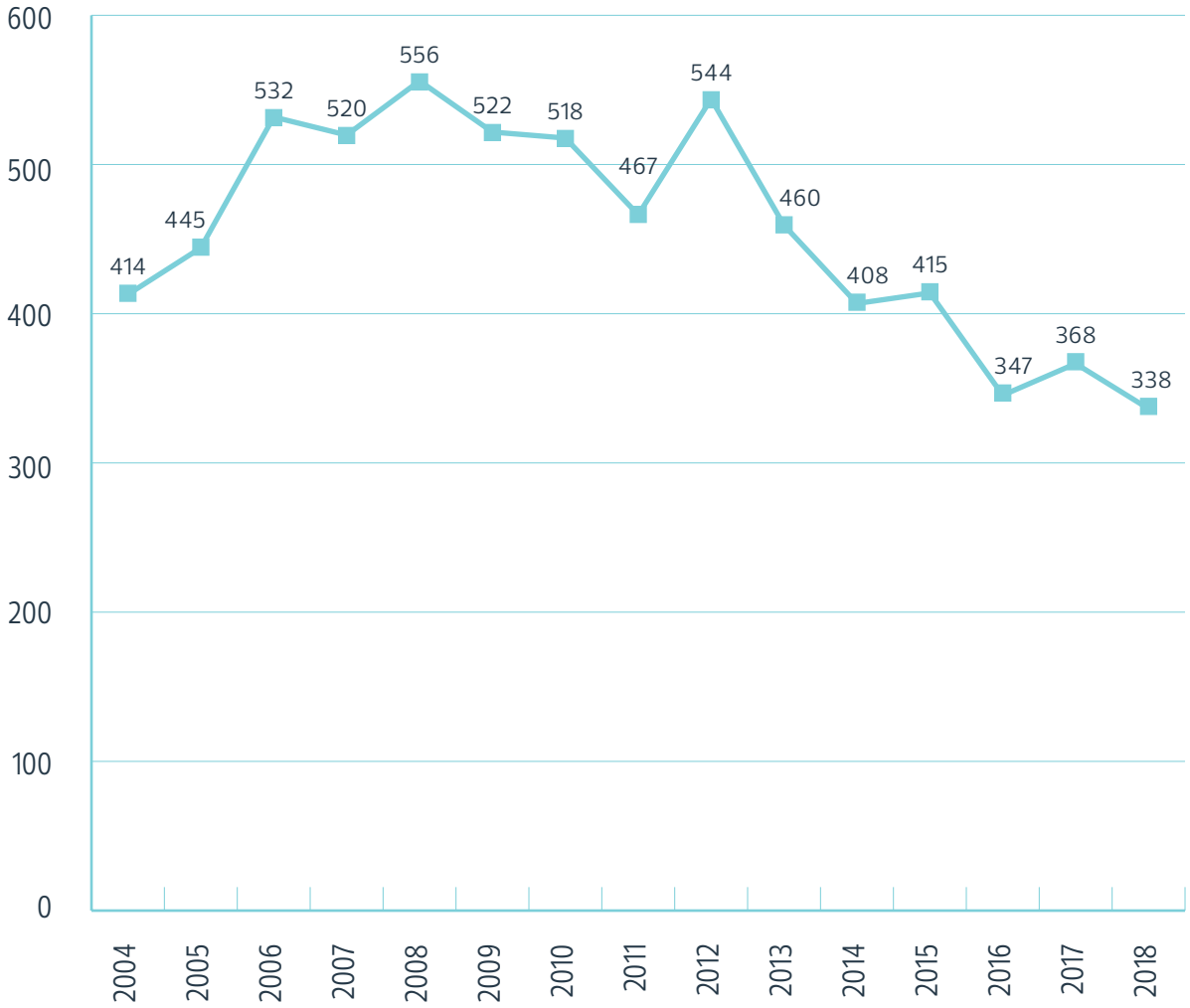


FIGURE 2:
Historical Collision Fatalities and Serious Injuries from 2004 to 2018



"THESE ARE OUR MOTHERS, FATHERS, WIVES, HUSBANDS, CHILDREN, FRIENDS... ANY LOSS OF LIFE ON OUR ROADS IS UNACCEPTABLE."

–Mayor Don Iveson

SECTION 3: OVERVIEW

The total number of reported collisions increased 0.4% between 2017 and 2018; however, collisions resulting in injury and the number of people injured decreased 3.7% and 2.4% respectively. Since the establishment of the City of Edmonton's Traffic Safety Section in late October 2006, overall there has been a 57.0% decrease in injury collisions from 2006 (6,067) to 2018 (2,610) and a 59.8% decrease in the number of people injured from 2006 (8,221) to 2018 (3,307).

Collisions resulting in fatalities decreased from 26 in 2017 to 19 in 2018, with the number of fatalities also decreasing from 27 to 19. Serious injuries decreased by 6.5% in 2018 (319) from 2017 (341).

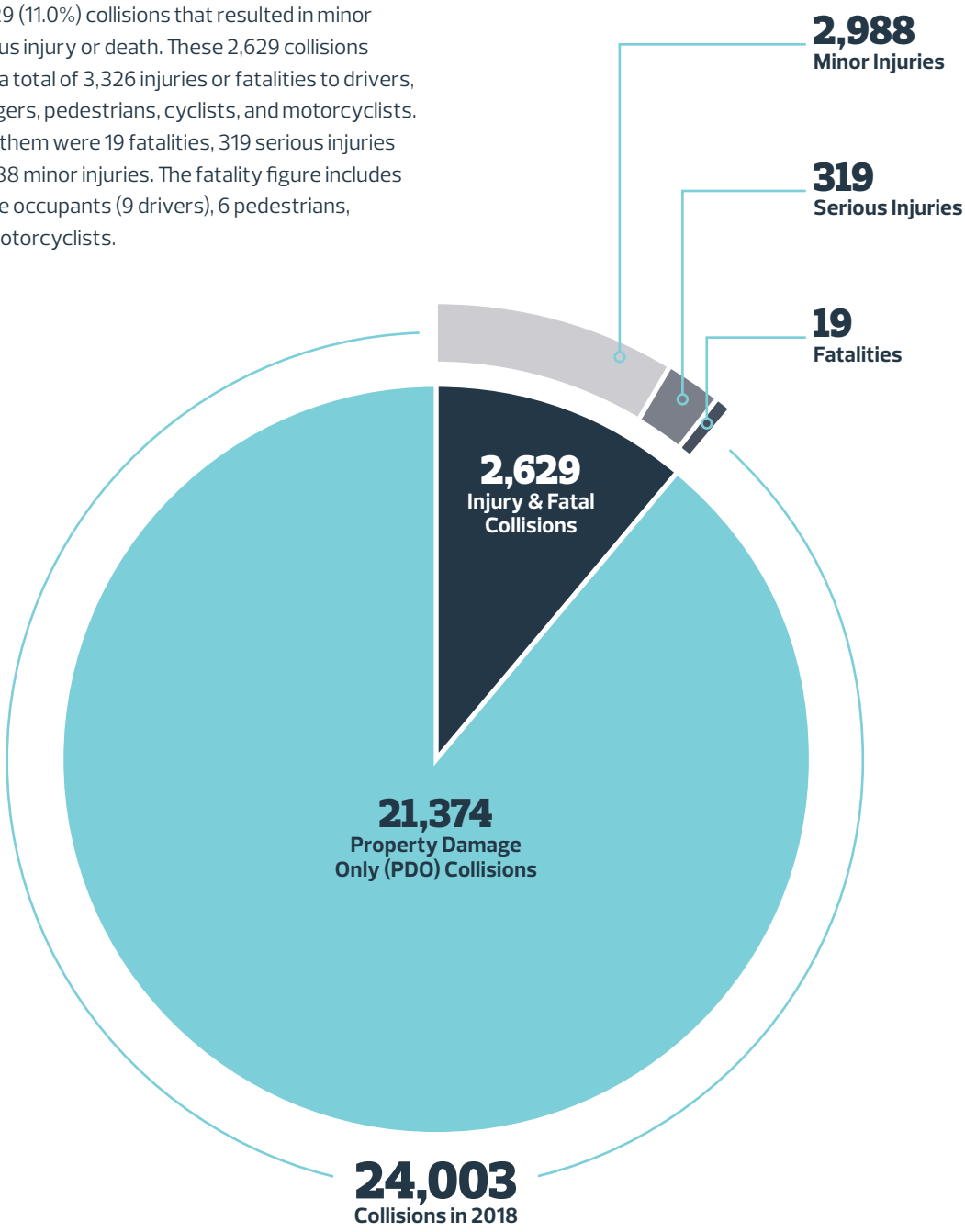
Injuries involving vulnerable road users – pedestrians, cyclists, and motorcyclists – all decreased in 2018 compared to 2017 (pedestrians 8.7%, 251 injuries; cyclists 6.7%, 112 injuries; and motorcyclists 2.2%, 89 injuries). Overall pedestrian collisions decreased from 270 in 2017 to 250 in 2018 (7.4%), and pedestrian fatalities decreased 33.3% from 2017 (9) to 2018 (6). Cyclist collisions decreased from 143 in 2017 to 130 in 2018 (9.1%) with no cyclist fatalities in 2018 compared to 1 in 2017. Collisions involving motorcyclists decreased 7.1% (143 from 154 in 2017). There were 4 motorcycle fatalities in 2018, the same number of fatalities as in 2017.

Overall total collisions per 1,000 population decreased by 4.1% from 2017 to 2018, and fatalities and injuries per 1,000 population decreased 7.0%.

FIGURE 3:

Collision Severity Distribution

As shown in Figure 3, included in the 24,003 reported motor vehicle collisions on Edmonton streets in 2018 are 2,629 (11.0%) collisions that resulted in minor or serious injury or death. These 2,629 collisions caused a total of 3,326 injuries or fatalities to drivers, passengers, pedestrians, cyclists, and motorcyclists. Among them were 19 fatalities, 319 serious injuries and 2,988 minor injuries. The fatality figure includes 9 vehicle occupants (9 drivers), 6 pedestrians, and 4 motorcyclists.



SECTION 4:
COLLISION CAUSES

The most common collision cause reported was following too closely, which was indicated in 38.6% (9,254) of all collisions. Other common collision causes included: struck parked vehicle (13.6%, 3,253); changing lanes improperly (11.2%, 2,692); and ran off road (7.0%, 1,684).[4]

The collision causes that accounted for the highest number of injuries or fatalities were following too closely (43.0%, 1,131); left turn across path (11.3%, 296); failed to observe traffic signal (7.3%, 192), and ran off road (6.5%, 172). Others were: failed to yield to pedestrian (6.5%, 170); and stop sign violation (5.9%, 154).

“IF THERE IS ONE THING I WOULD SAY ABOUT TRAFFIC SAFETY... PLEASE DON’T DRINK AND DRIVE. THERE ARE OTHER WAYS TO GET AROUND.”

–Elaine Arnold, collision survivor

FIGURE 4:
Collision Causes at Intersections and Midblock Segments

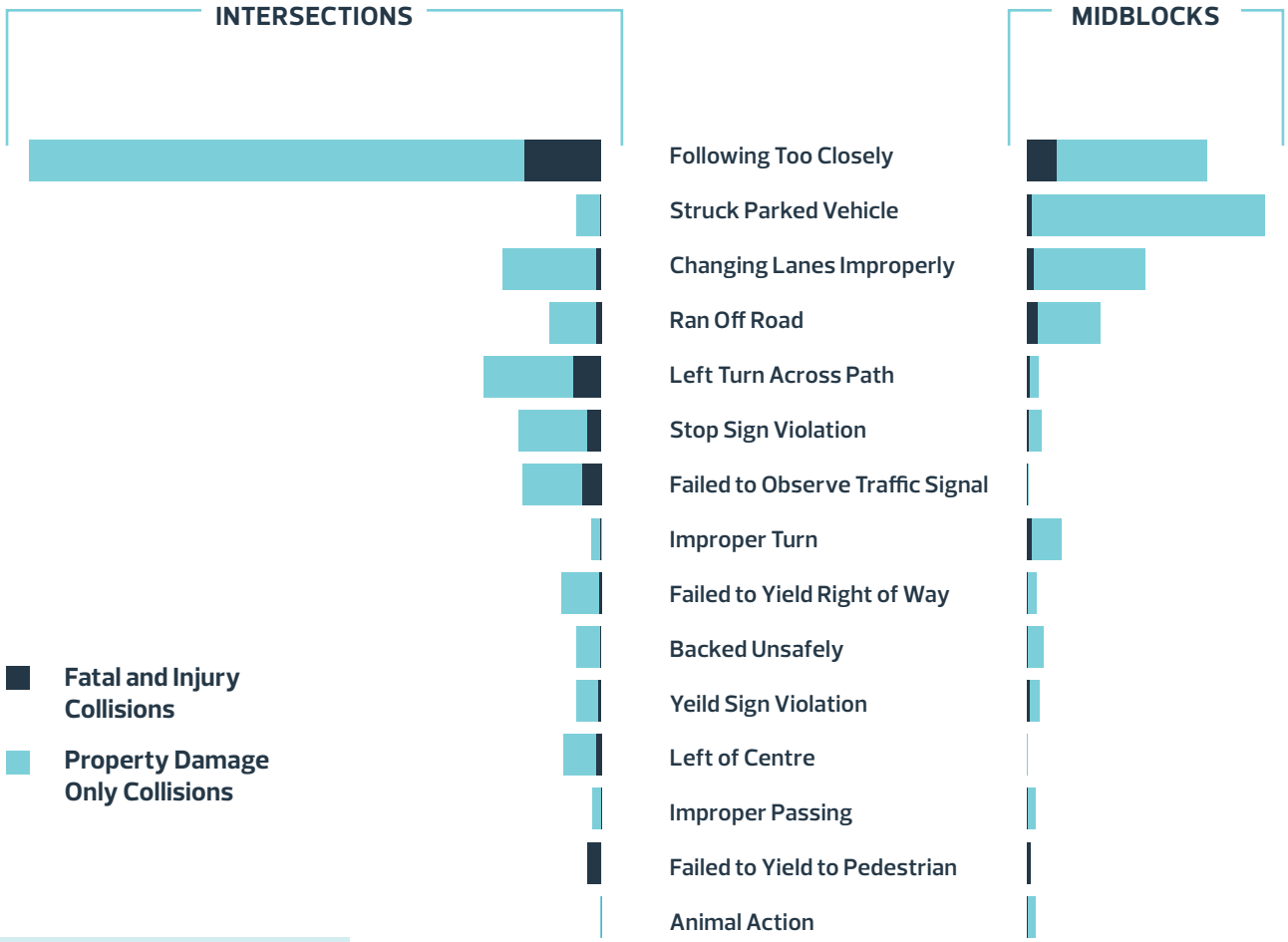


Figure 4 shows the considerable differences in the profile of collision causes at intersections versus midblock segments.[5] At intersections, following too closely was the reported cause in 47.7% (6,482) of all 13,587 intersection collisions; by comparison, following too closely was the reported cause in 25.9% (2,091) of all 8,069 collisions along midblocks. Of the 1,684 ran off road collisions in 2018, 33.8% (570) occurred at intersections, versus 50.1% (843) along midblocks. On the other hand, of the 1,601 left turn across path collisions, 90.4% (1,447) occurred at intersections, versus 8.8% (141) 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 (170) and pedestrian error / violation (66).

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

[5] The remaining 2,347 collisions occurred either on service roads, in alleys, or did not specifically report a location.

FIGURE 5:
Collision Severity by Selected Causes

Figure 5 shows other causes ranked by the severity of outcome (severity causes with 100% injury/fatality were not included in this Figure). Proportionally, failed to yield to cyclist resulted in the most injuries; however, the frequency was low (27 of 29).

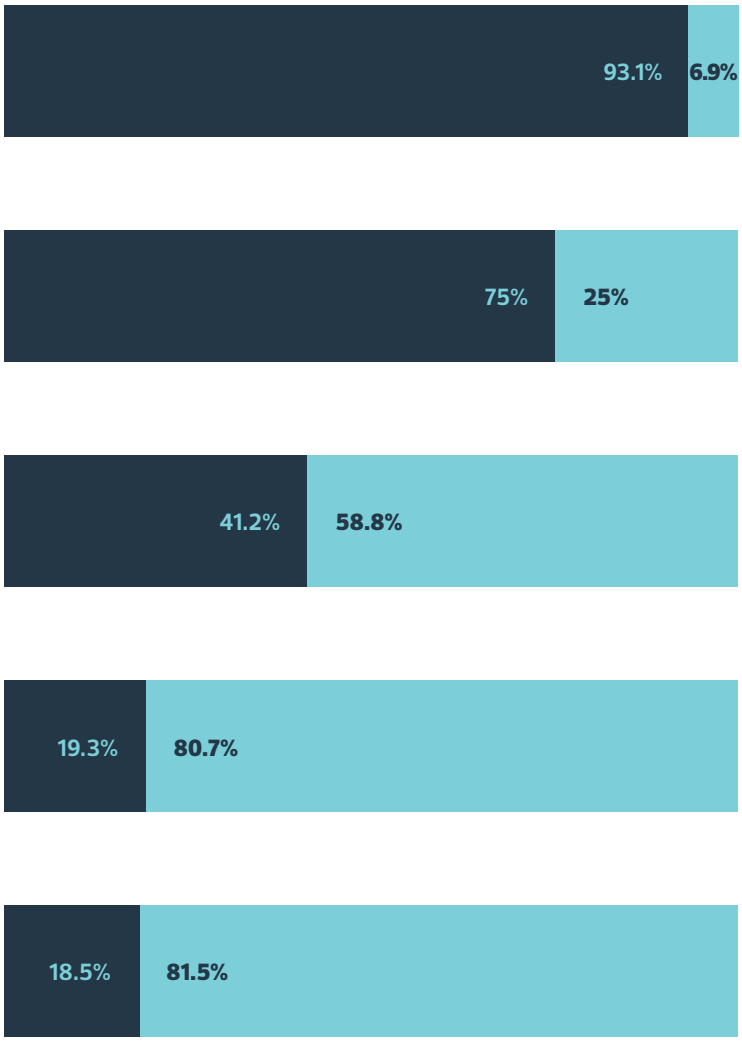
29
Failed to Yield to Cyclist

16
Cyclist Error/Violation

17
One Way Violation

995
Failed to Observe Traffic Signal

1,601
Left Turn Across Path



SECTION 5:
TEMPORAL ANALYSIS

The profile of collisions in Edmonton by month of year, day of week, and hour of day are fairly 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 2018.

"IF THERE IS ONE THING I WOULD SAY ABOUT TRAFFIC SAFETY...DON'T MIX CHEMICALS AND DRIVING BECAUSE THE OUTCOME IS NOT GOOD, I GUARANTEE THAT."

–Reagan Lissack, collision survivor

FIGURE 6:
Collisions by Month

Figure 6 shows the breakdown of collisions by month, which in 2018 varied from a low of 1,491 collisions in April to 2,821 collisions in January. Overall, 59.1% (14,196) 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 2018 were January, February, and November.

Fatal and injury collisions ranged from 150 in April to 270 in January. The proportion of collisions that result in fatality or injury is slightly higher in the spring and summer (April–September); while fatal and injury collisions made up 9.9% of all fall and winter collisions, they constituted 12.5% of all spring and summer collisions.

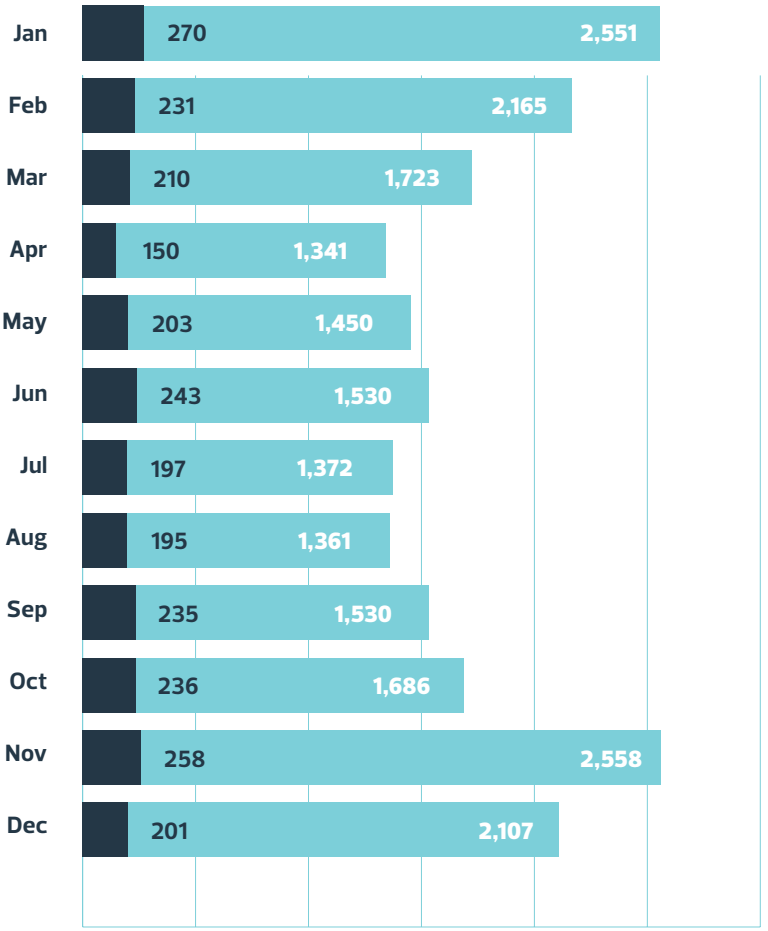


FIGURE 7:
Collisions by Day of Week

As shown in Figure 7 and similar to previous years, Friday was the most common day of the week for collisions in 2018, accounting for 19.2% (4,611) of collisions.

Least common was Sunday, with 9.6% (2,307) of all collisions. As in previous years, there were fewer collisions on weekends than on weekdays.

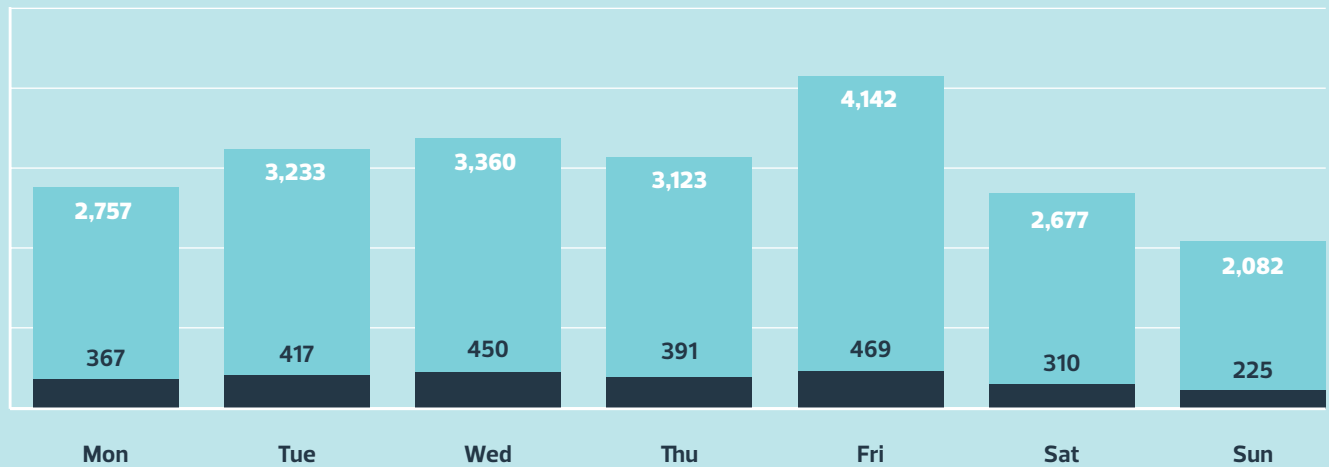
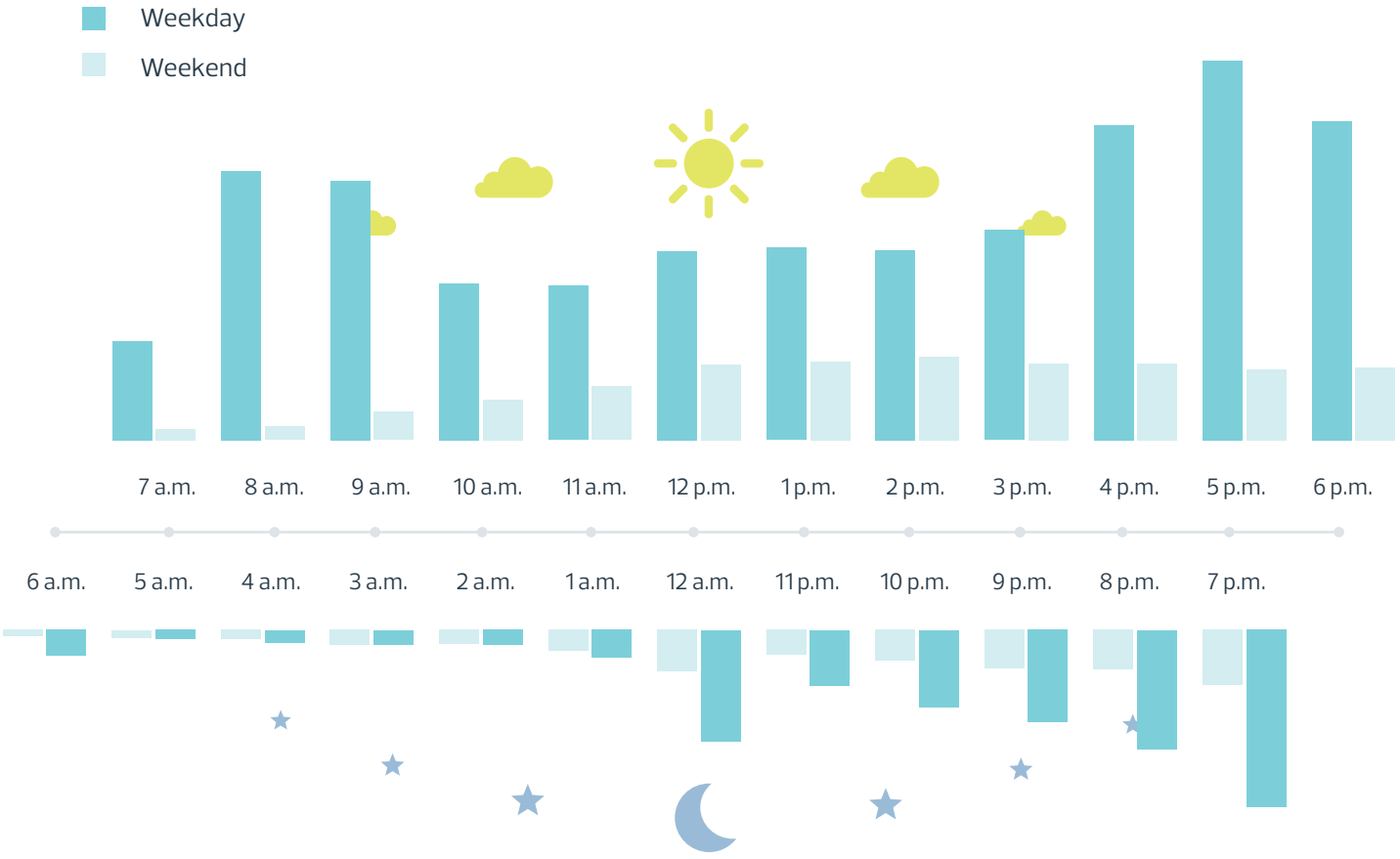


FIGURE 8:
Collisions by Hour of Day[6] (Weekday vs. Weekend)

Figure 8 breaks down collisions by hour of day, for both weekdays (Monday through Friday) and weekends (Saturday and Sunday). During the weekdays, peak collision times match peak travel times; the morning peak period of 6:00 to 9:00 a.m. accounted for 18.1% (3,381) of all weekday collisions, while collisions during the p.m. peak of 3:00 to 6:00 p.m. made up 29.2% (5,464) of all weekday collisions.

On weekends, collision patterns shifted in line with traffic patterns, with the number of collisions peaking between 1:00 and 2:00 p.m. Collisions from noon to 6:00 p.m. made up 46.6% (2,466) of weekend collisions. Collisions during the overnight hours were also more prevalent during the weekends; there were 359 collisions from midnight to 5:00 a.m. on weekends, representing 6.8% of all weekend collisions. By comparison, in the same time period there were 427 collisions over the five weekdays, representing only 2.3% of all weekday collisions.



[6] Hour name corresponds to 'hour ending' in MVCIS, e.g., 6 a.m. refers to 5 a.m. to 6 a.m. inclusive

SECTION 6:

INTERSECTION AND MIDBLOCK COLLISION HOT SPOTS

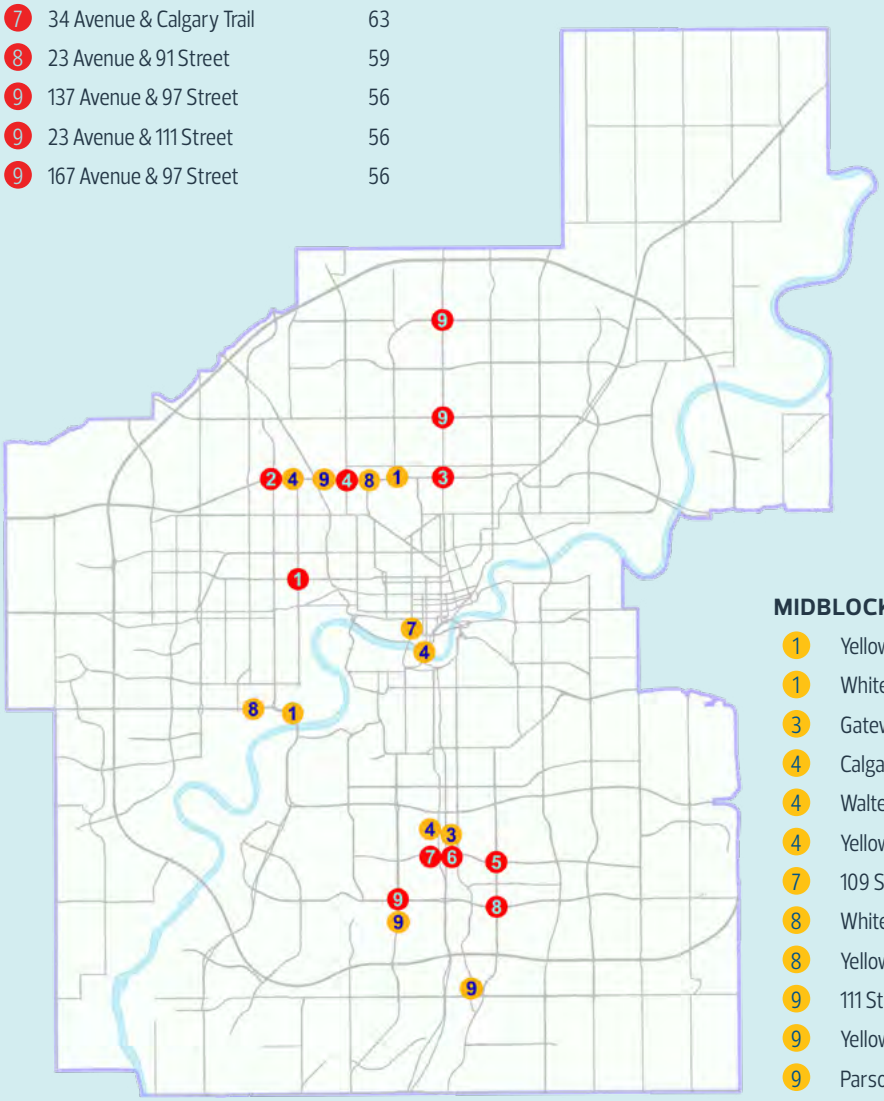
“IF THERE IS ONE THING I WOULD SAY ABOUT TRAFFIC SAFETY... I DON’T WANT WHAT HAPPENED TO ME TO HAPPEN TO ANYONE ELSE.”

–Renaye Wade, collision survivor

MAP 1:
Top Intersections and Midblock Segments by Number of Collisions

Map 1 illustrates the top intersections and midblock segments with the highest numbers of collisions in the city for 2018. A high collision location is also called a "hot spot."

INTERSECTIONS		COUNT
1	107 Avenue & 142 Street	93
2	Yellowhead Trail & 149 Street	74
3	Yellowhead Trail & 97 Street	73
4	Yellowhead Trail & 127 Street	70
5	34 Avenue & 91 Street	69
6	34 Avenue & Gateway Boulevard	64
7	34 Avenue & Calgary Trail	63
8	23 Avenue & 91 Street	59
9	137 Avenue & 97 Street	56
9	23 Avenue & 111 Street	56
9	167 Avenue & 97 Street	56



MIDBLOCKS		COUNT
1	Yellowhead Tr btw 107 St & 121 St	24
1	Whitemud Dr btw N of Quesnell Brdg & 149 St	24
3	Gateway Blvd btw 34 Av & 39A Av	23
4	Calgary Tr btw 39A Av & 34 Av	18
4	Walterdale Bridge	18
4	Yellowhead Tr btw 143 St & 149 St	18
7	109 St btw 97 Av & 99 Av	17
8	Whitemud Dr btw 149 St & 159 St	16
8	Yellowhead Tr btw 121 St & 124 St	16
9	111 St btw 19 Av & 23 Av	15
9	Yellowhead Tr EB btw St Albert Tr & 127 St	15
9	Parsons Rd btw Ellerslie Rd & Elwood Dr	15

TABLE 2:
Top Intersections and Midblock Segments by Number of Collisions

Table 2 shows that some intersections and midblock segments were also hot spots in 2017 while others were new hot spots for 2018.

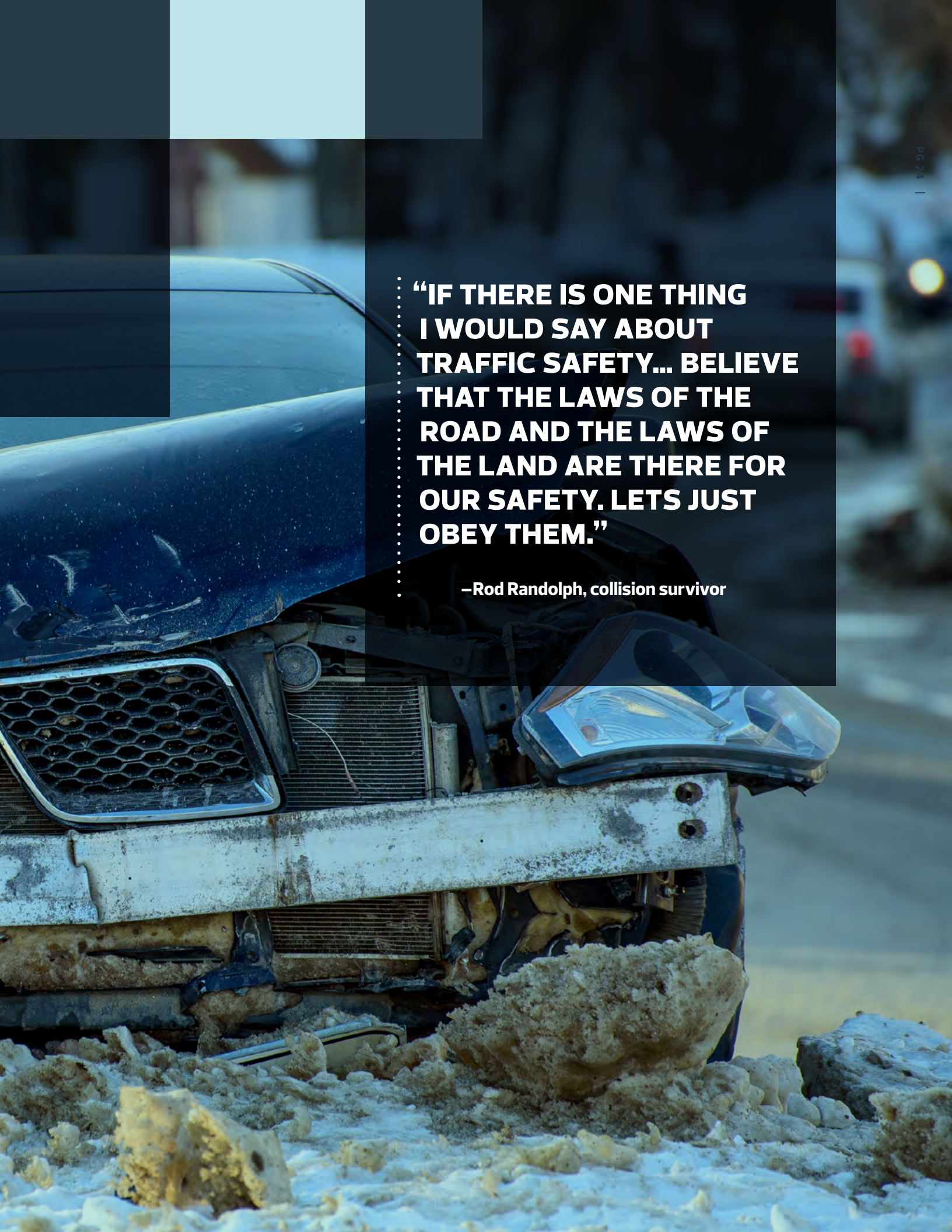
	LOCATION NAME	2018 RANK	2018 COLLISIONS	2017 RANK	2017 COLLISIONS
INTERSECTIONS	107 Avenue NW & 142 Street NW	1	93	1	89
	Yellowhead Trail & 149 Street NW	2	74	2	81
	Yellowhead Trail & 97 Street NW	3	73	5	61
	Yellowhead Trail & 127 Street NW	4	70	10	55
	34 Avenue NW & 91 Street NW	5	69	4	65
	34 Avenue NW & Gateway Blvd	6	64	7	56
	34 Avenue NW & Calgary Trail NW	7	63	N/A[7]	53
	23 Avenue NW & 91 Street NW	8	59	3	68
	137 Avenue NW & 97 Street NW	9	56	7	56
	167 Avenue NW & 97 Street NW	9	56	6	60
	23 Avenue NW & 111 Street NW	9	56	N/A	51
MIDBLOCKS	Whitemud Dr btw N of Quesnell Brdg & 149 St	1	24	3	20
	Yellowhead Trail NW btw 107 St & 121 St	1	24	N/A	10
	Gateway Blvd btw 34 Ave & 39A Ave	3	23	N/A	13
	Calgary Tr btw 39A Ave & 34 Ave	4	18	2	24
	Walterdale Bridge	4	18	4	17
	Yellowhead Trail NW btw 143 St & 149 St	4	18	N/A	6
	109 Street NW btw 97 Ave & 99 Ave	7	17	N/A	7
	Whitemud Dr btw 149 St & 159 St	8	16	N/A	14
	Yellowhead Trail btw 121 St & 124 St	8	16	N/A	12
	111 Street btw 19 Ave & 23 Ave	10	15	N/A	7
	Parsons Road SW btw Ellerslie Rd SW & Ellwood Dr SW	10	15	N/A	10
	Yellowhead Trl EB btw 127 St & St Albert Trail	10	15	N/A	11

[7] N/A Ranks denote collision locations that were not in the top 10 in 2017.

SECTION 7:

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 2018 involved two motor vehicles, or a single vehicle and a fixed object.



“IF THERE IS ONE THING I WOULD SAY ABOUT TRAFFIC SAFETY... BELIEVE THAT THE LAWS OF THE ROAD AND THE LAWS OF THE LAND ARE THERE FOR OUR SAFETY. LETS JUST OBEY THEM.”

–Rod Randolph, collision survivor

TABLE 3:
Objects Involved in Collisions

OBJECT TYPE	NUMBER OF OBJECTS	NUMBER OF COLLISIONS
Automobile	46,069	23,869
Fixed Object	2,059	2,029
Truck	830	805
Pedestrian	257	250
ETS Bus	226	226
Motorcycle	146	143
School Bus	146	142
Animal	144	144
Bicycle	130	130
Other Vehicle	63	63
Emergency Vehicle	62	60
Roadway	24	24
Rollover	23	23
Other Bus	22	22
Culvert	1	1

Table 3 summarizes the types of objects involved in collisions in 2018. Automobiles – a category that includes passenger vehicles, pickup trucks, vans, and SUVs, but excludes large trucks over 4,500 kg[8] and buses – were involved in 99.4% (23,869) of all 24,003 collisions in 2018.

Fixed objects were involved in 8.5% (2,029) of all collisions. Other object types included trucks greater than 4,500 kg (3.4%, 805 collisions), pedestrians (1.0%, 250 collisions), ETS buses (0.9%, 226 collisions), and motorcycles (0.6%, 143 collisions). One collision in 2018 involved a culvert.

Fixed objects are routinely involved in collisions, and Table 4 summarizes the type and number of these objects for 2018. The most common fixed objects involved in collisions were posts, signs, or parking meters. In 2018, 336 posts, signs, or parking meters – close to one a day on average – were struck. The second most common fixed object involved in collisions was pole (328) followed by other fixed object (320), and restraining barrier (298).

Some other fixed objects frequently involved in collisions included 250 curbs, 156 trees, brushes or hedges, and 133 fences. Except for the above mentioned, other objects listed in Table 4 were less frequently involved.

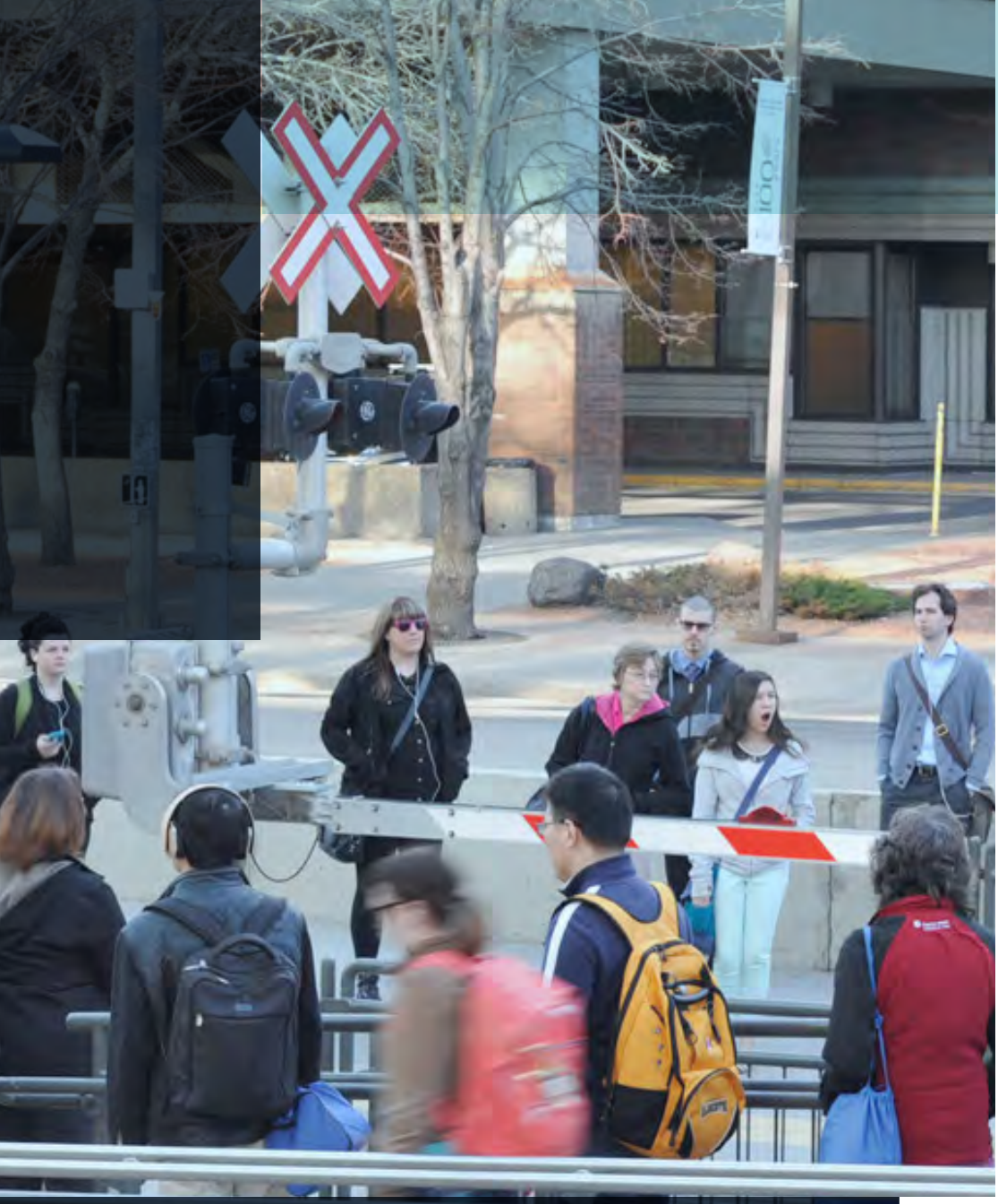
[8] In previous years, pick-up trucks, vans, and SUVs may have been included in the 'trucks' category due to coding variations.

TABLE 4:
Fixed Objects Involved in Collisions

FIXED OBJECT TYPE	NUMBER OF OBJECTS	PERCENT
Post, Sign, Parking Meter	336	16.3%
Pole	328	15.9%
Other Fixed Object	320	15.5%
Restraining Barrier	298	14.5%
Curb	250	12.2%
Tree, Brush, Hedge	156	7.6%
Fence	133	6.5%
Ditch	59	2.9%
Snowbank/Drift	47	2.3%
Fire Hydrant	42	2.0%
Utility Box	42	2.0%
Building	27	1.3%
Bus Shelter	17	0.8%
Bridge Support	4	0.2%
Total	**2,059**	100.0%

SECTION 8:

DEMOGRAPHIC ANALYSIS



“IF THERE IS ONE THING I WOULD SAY ABOUT TRAFFIC SAFETY… EVERYONE NEEDS TO LOOK OUT FOR EACH OTHER AND WORRY MORE ABOUT WHAT CAN I DO TO CONTRIBUTE TO SAFER STREETS.”

–Pam Hyntka, collision survivor

FIGURE 9:
Age and Gender Breakdown of Licensed Drivers

The demographic makeup of licensed drivers (as of March 31, 2018) in Edmonton is shown in Figure 9. The graph shows that there are slightly more licensed male drivers than female drivers across all age groups, with a general decrease in the number of drivers after the 30 to 34 age group.

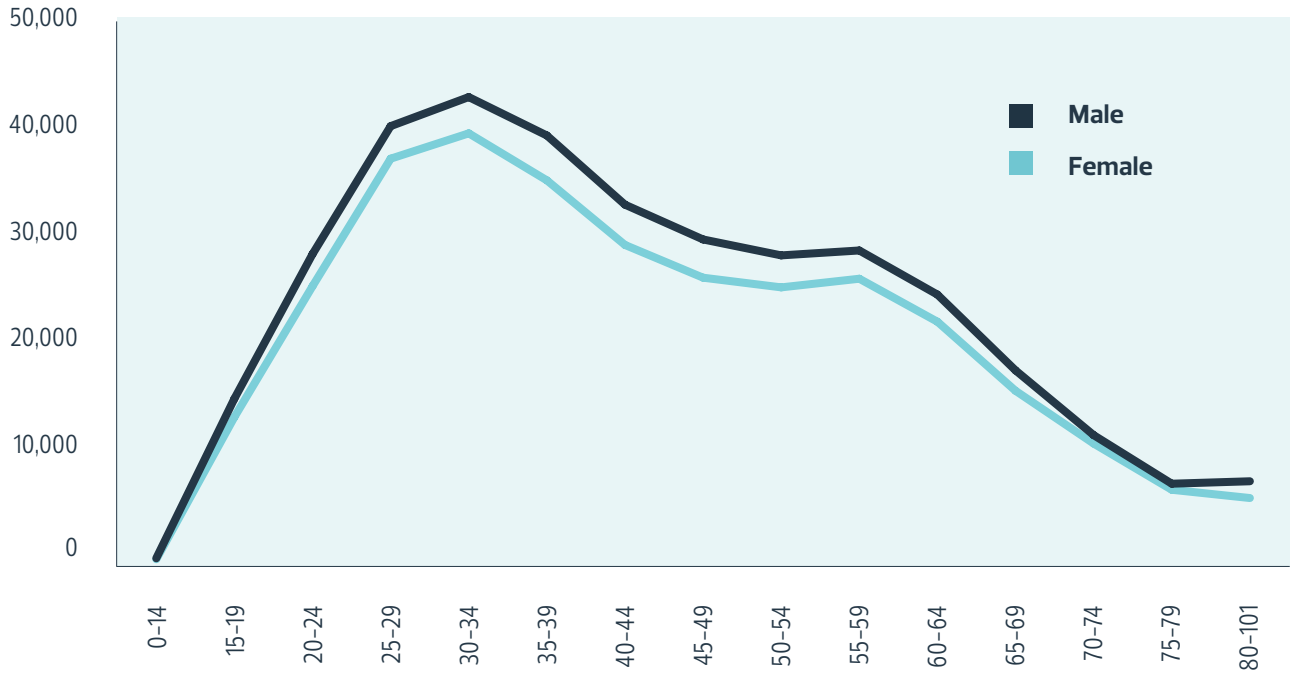


FIGURE 10:

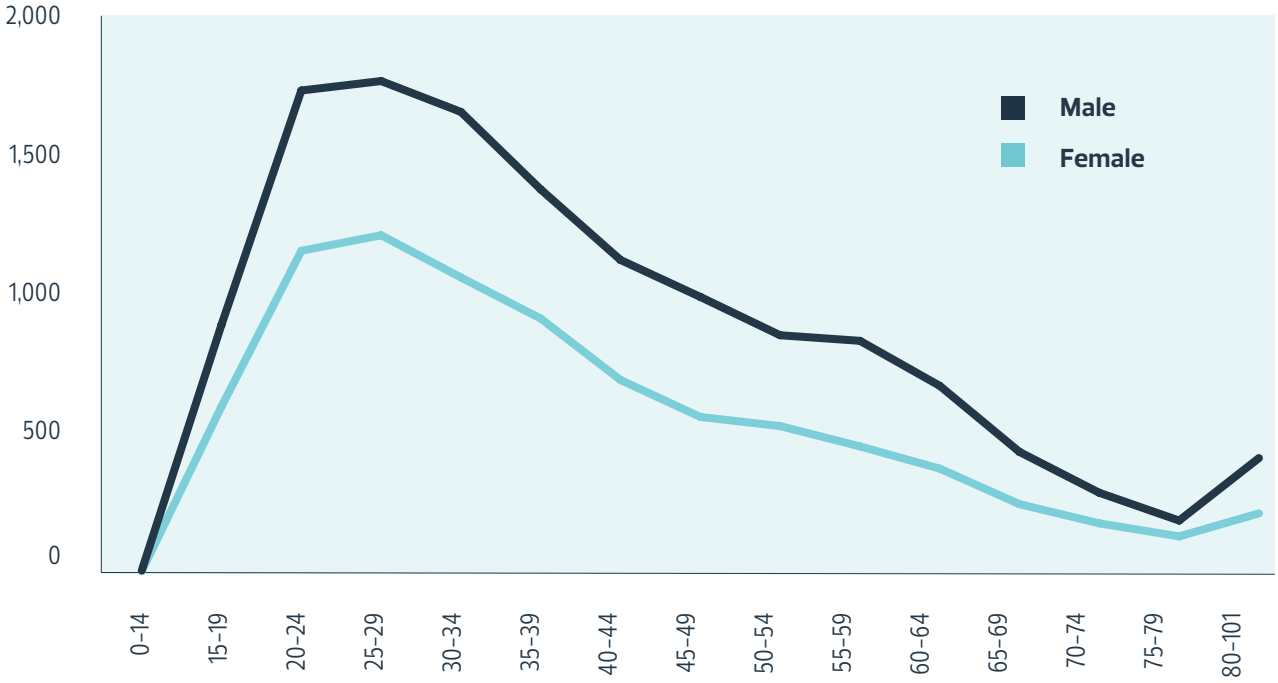
Age and Gender Breakdown of At-Fault Drivers

The demographic profile of drivers deemed at fault in a collision, as shown in Figure 10, 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 12.2% of Edmonton's licensed drivers in 2018, but were responsible for 20.3% of collisions. By comparison, drivers aged 25 to 34 constituted 23.6% 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 52.6% of licensed drivers in Edmonton in 2018, they were deemed at fault in 61.4% of collisions.

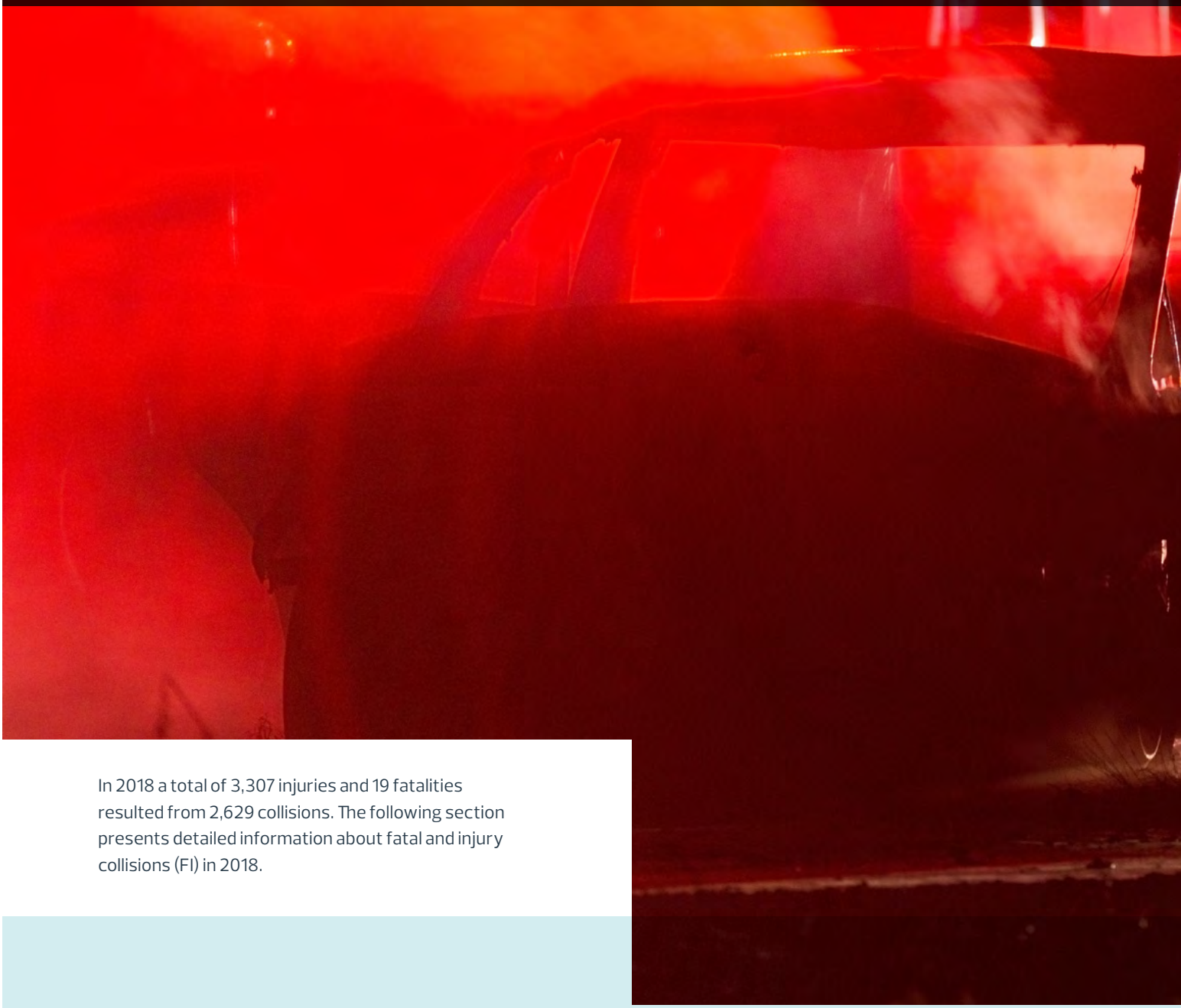
Comparing different age/gender groups revealed differences between the driving population and the population of at-fault drivers. Males aged 15 to 19 made up 2.3% of licensed drivers in Edmonton, but accounted for 4.1% of all at-fault drivers in 2018. Expanding the size of the group, males aged 15 to 24 make up 6.5% of the licensed driving population but 12.2% of at-fault drivers. In comparison, females aged 15 to 24 make up 5.8% of the licensed driving population and 8.1% of at-fault drivers.

The demographic breakdown of collision figures and at-fault drivers reveals that approximately 1 in 16.5 licensed males aged 20 to 24 were involved in a collision for which they were deemed at fault in 2018. By comparison, 1 in 22.2 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 31.7.

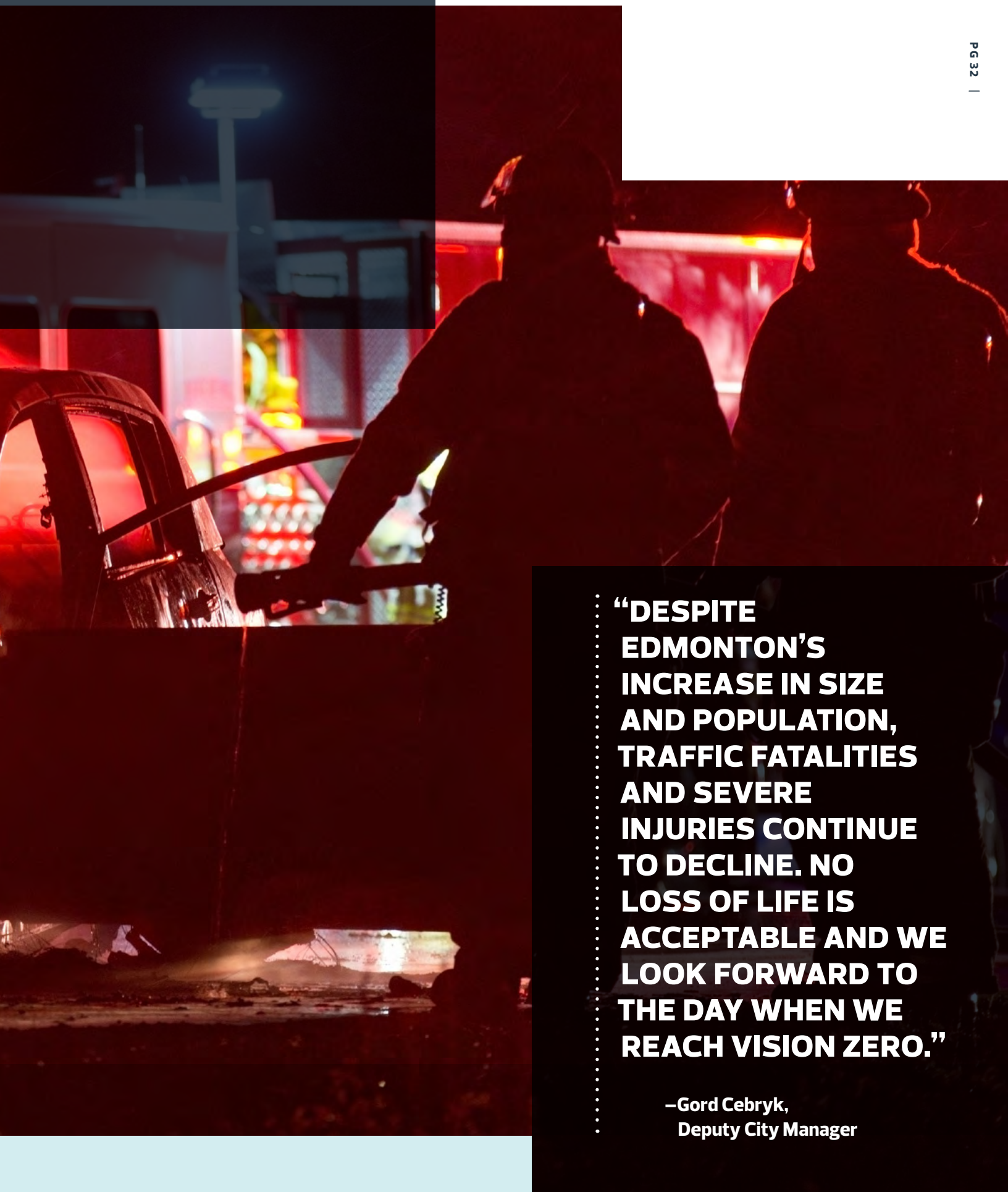


SECTION 9:

FATAL AND INJURY COLLISIONS



In 2018 a total of 3,307 injuries and 19 fatalities resulted from 2,629 collisions. The following section presents detailed information about fatal and injury collisions (FI) in 2018.



“DESPITE EDMONTON’S INCREASE IN SIZE AND POPULATION, TRAFFIC FATALITIES AND SEVERE INJURIES CONTINUE TO DECLINE. NO LOSS OF LIFE IS ACCEPTABLE AND WE LOOK FORWARD TO THE DAY WHEN WE REACH VISION ZERO.”

–Gord Cebryk,
Deputy City Manager

FIGURE 11:
Fatal and Injury Collisions by Month

The number of fatal and injury collisions by month varied from a low of 150 collisions in April to a high of 270 collisions in January. The pattern of fatal and injury collisions did not follow that of collisions overall. Figure 11 indicates that through the winter and spring months (January to April and November to December), the proportion of fatal and injury collisions is lower than the rest of the year. The average percentage of fatal and injury collisions through the summer and fall months (May to October) is 12.8% compared to 9.6% during the winter and spring months.

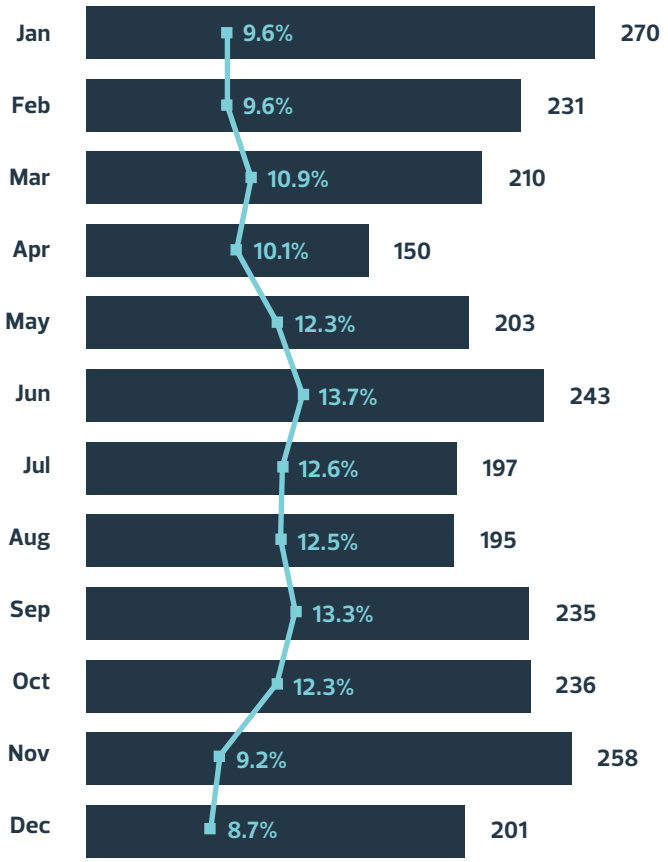
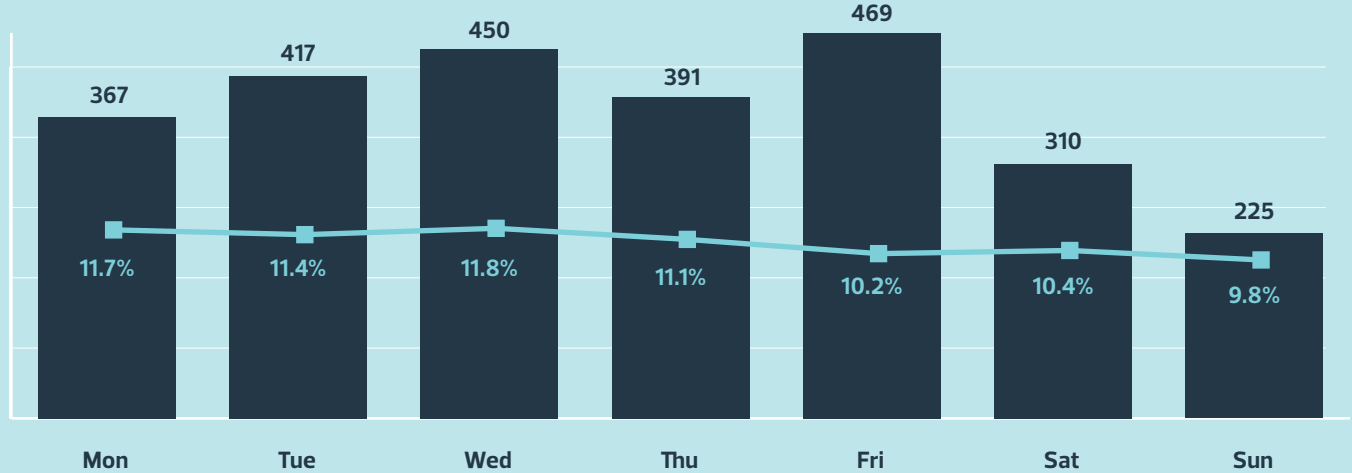


FIGURE 12:
Fatal and Injury Collisions by Day of Week

Figure 12 indicates that Friday had the highest number of fatal and injury collisions with 469, followed by Wednesday and Tuesday (450 collisions and 417 collisions, respectively). The pattern in terms of raw numbers of fatal and injury collisions by day of week generally follows that of overall collisions, with a higher number of collisions occurring on weekdays and a decrease on the weekends. Though Friday had



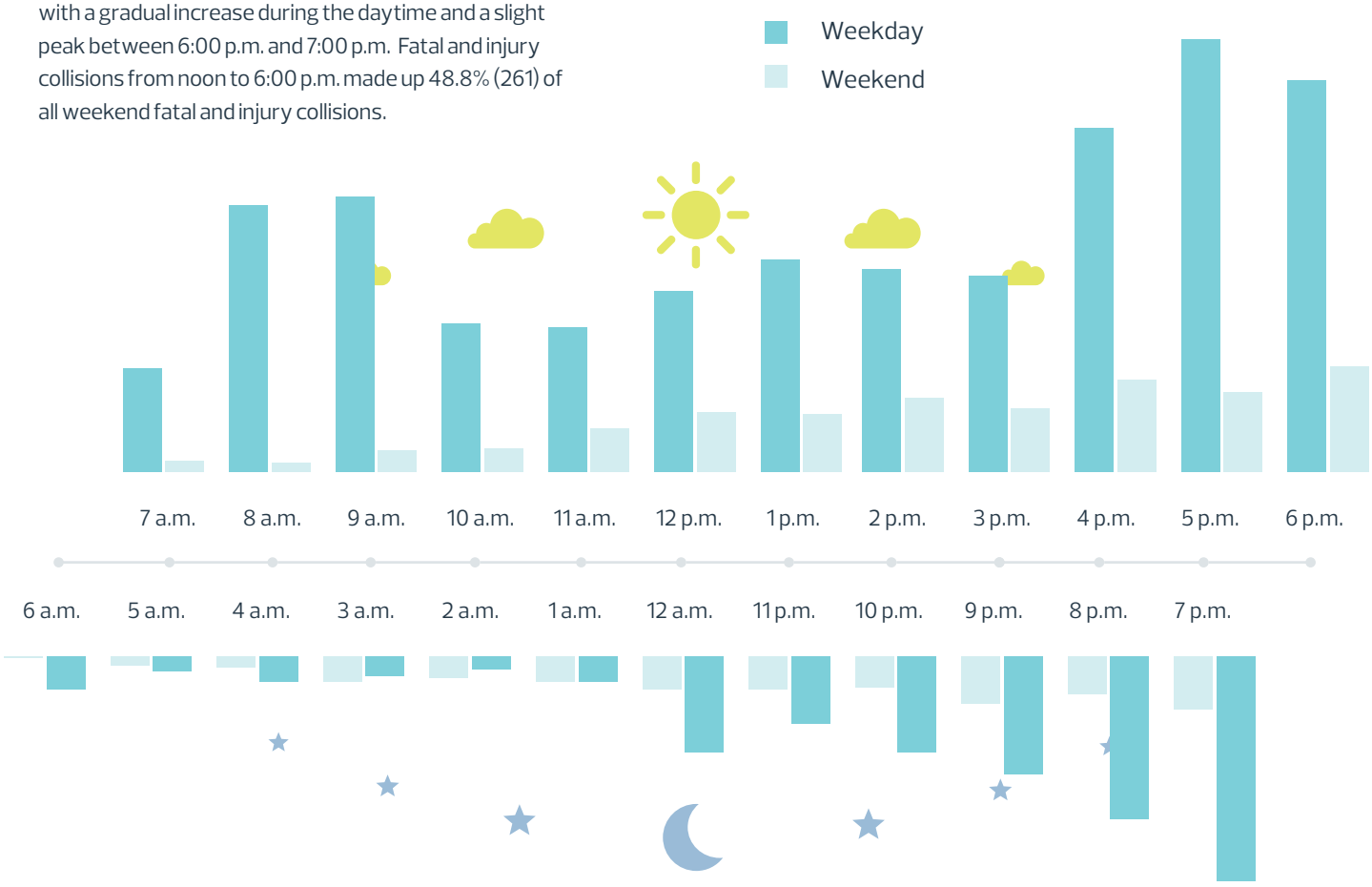
the highest number of fatal and injury collisions, the total percentage of those collisions that involved a fatality or injury was slightly lower on Friday (10.2%) compared to other days of the week. Sunday saw the lowest number of fatal or injury collisions (225), with a lower percentage (9.8%) of those collisions resulting in a fatality or injury compared to other days of the week.

FIGURE 13:
Fatal and Injury Collisions by Hour of Day[9] (Weekday vs. Weekend)

Figure 13 shows the profile of fatal and injury collisions by hour of day and 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 17.0% (356) of all fatal and injury collisions on weekdays, while the evening peak (3:00 to 6:00 p.m.) accounted for 30.8% (645) of all fatal and injury collisions.

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 slight peak between 6:00 p.m. and 7:00 p.m. Fatal and injury collisions from noon to 6:00 p.m. made up 48.8% (261) of all weekend fatal and injury collisions.

Overall, the most fatal and injury collisions occurred in the early evening hours (4:00 p.m.–6:00 p.m.). Collisions between Midnight and 5:00 a.m. accounted for 3.3% of all collisions in 2018, and fatal and injury collisions during the same time period accounted for 4.0% of all injury and fatal collisions. Of the 105 fatal or injury collisions that occurred between Midnight and 5:00 a.m., 51 (48.6%) occurred on Saturday or Sunday. Those 51 collisions represent 9.5% of all fatal and injury collisions that occurred on weekends.



[9] Hour name corresponds to 'hour ending' in MVCIS, e.g., 6 a.m. refers to 5 a.m. to 6 a.m. inclusive

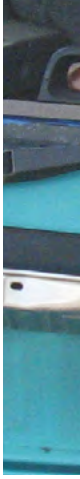
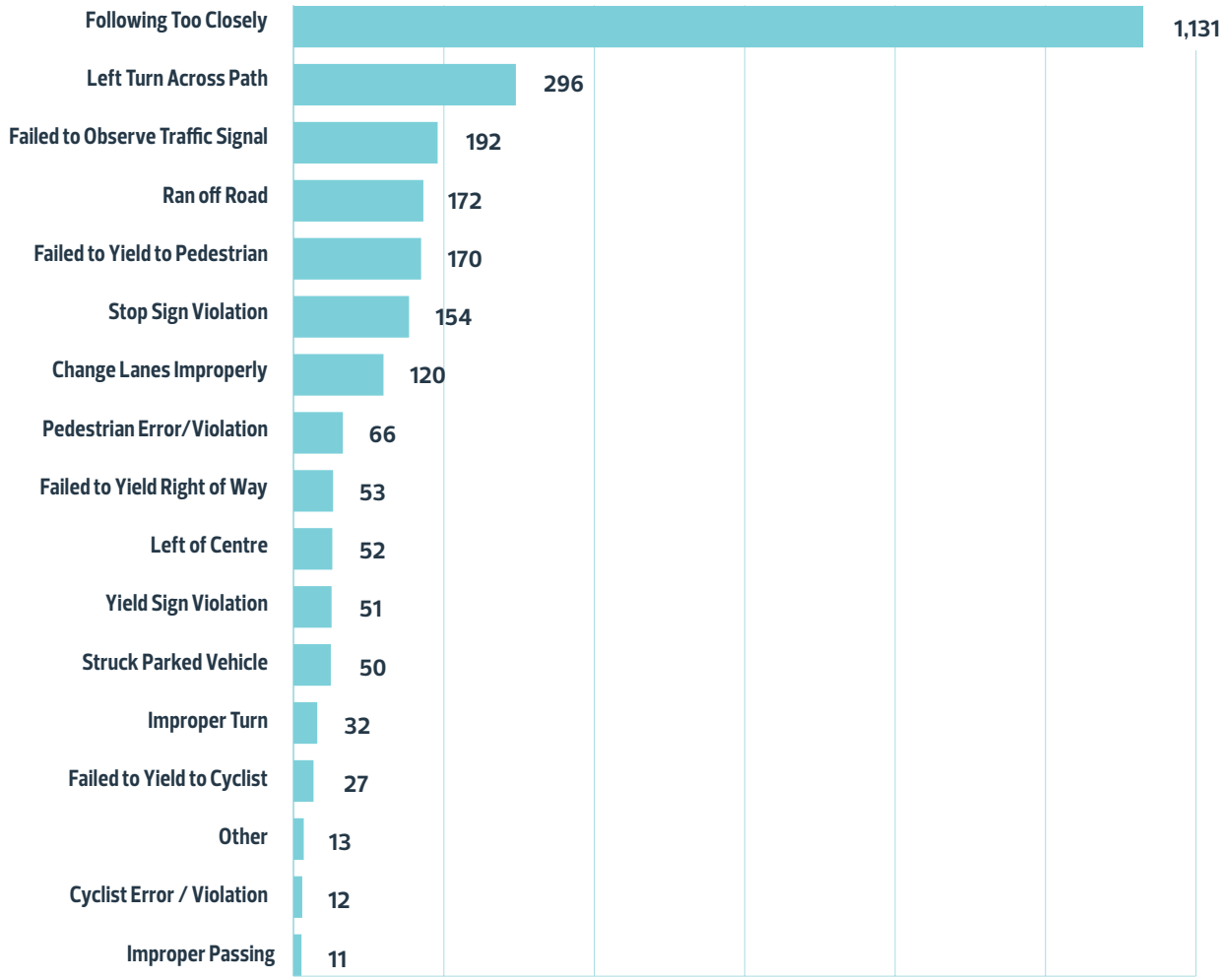


FIGURE 14:
Fatal and Injury Collisions by Cause

As shown in Figure 14, collisions with the reported cause of following too closely made up 43.0% (1,131) of all injury and fatal collisions. Other collision causes with significant injury/fatality counts included left turn across path (11.3%, 296); failed to observe traffic signal (7.3%, 192); and ran off road (6.5%, 172).[10]

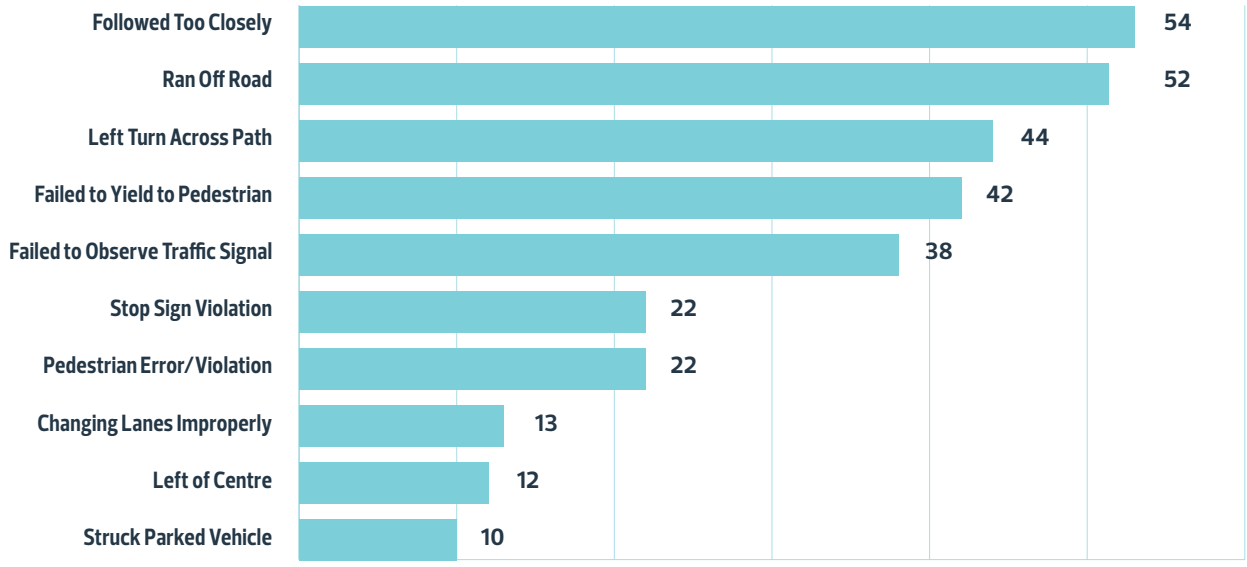


[10] Other causes not listed on this chart are: backed unsafely (11), one way violation (7), animal action (6), unknown (1), improper loading (1), and driverless vehicle (1). For a glossary of collision causes, please refer to Appendix 2 at the end of this document.

FIGURE 15:
Fatalities and Serious Injuries by Cause

A single collision can result in multiple injuries and/or fatalities. Injuries are classified as minor or serious depending on the level of treatment required.[11] Figure 15 displays the number of fatalities and serious injuries for a number of collision causes.

Following too closely made up 16.0% (54) of all fatalities and serious injuries. Other common collision causes of fatalities and serious injuries included ran off road (15.4%, 52); left turn across path (13.0%, 44); failed to yield to pedestrian (12.4%, 42); and failed to observe traffic signal (11.2%, 38).



[11] For a definition of minor and serious injuries, please refer to Appendix 1.

TABLE 5:
Fatalities and Injuries by Mode, Severity, and Age Group

A summary of all fatalities and injuries is presented in Table 5, broken down by age group and injury severity. The largest number of fatalities and injuries were sustained by vehicle drivers, followed by vehicle passengers.

Among vehicle drivers, there were 2,161 fatalities or injuries in 2018, a rate of 3.2 per 1,000 licensed drivers in Edmonton and 0.2 fatalities or serious injuries per 1,000 licensed drivers. However, these figures increase to 4.3 fatalities or injuries per 1,000 licensed drivers and 0.4 fatalities or serious injuries per 1,000 licensed drivers for those aged 19 to 24. Among those drivers aged 75 and over, the 1.8 fatalities or injuries per 1,000 licensed drivers and 0.2 fatalities or serious injuries per 1,000 licensed drivers are lower than the overall rates respectively.

		<14	14–15	16–18	19–24	25–34	35–44	45–54	55–64	65–74	75+	N/A	TOTAL
	Vehicle Driver	0	4	39	244	541	390	344	267	114	46	7	**1,996**
		0	0	9	21	46	29	23	14	9	5	0	**156**
		0	0	0	2	2	1	1	1	1	1	0	**9**
	Vehicle Passenger	107	23	45	92	110	72	51	50	24	7	52	**633**
		1	1	4	6	10	4	6	7	2	0	2	**43**
		0	0	0	0	0	0	0	0	0	0	0	**0**
	Pedestrian	18	7	17	25	32	26	15	26	7	4	11	**188**
		3	4	2	4	18	4	8	9	7	4	0	**63**
		0	0	2	1	0	1	0	0	0	2	0	**6**
	Cyclist	12	3	4	8	26	12	9	13	0	2	3	**92**
		1	0	0	1	4	5	5	2	1	1	0	**20**
		0	0	0	0	0	0	0	0	0	0	0	**0**
	Motorcyclist	0	2	4	4	19	11	12	3	0	1	0	**56**
		1	0	0	7	12	4	4	5	0	0	0	**33**
		0	0	0	0	1	2	0	1	0	0	0	**4**
	Unknown	8	2	1	3	4	2	0	0	2	0	0	**22**
		0	0	1	0	0	1	0	0	2	0	0	**4**
		0	0	0	0	0	0	0	0	0	0	0	**0**
	Other[12]	0	0	0	0	0	0	1	0	0	0	0	**1**
	All Modes	145	41	110	376	732	513	432	359	147	60	73	**2,988**
		6	5	16	39	90	47	46	37	21	10	2	**319**
		0	0	2	3	3	4	1	2	1	3	0	**19**

Minor
Serious
Fatal

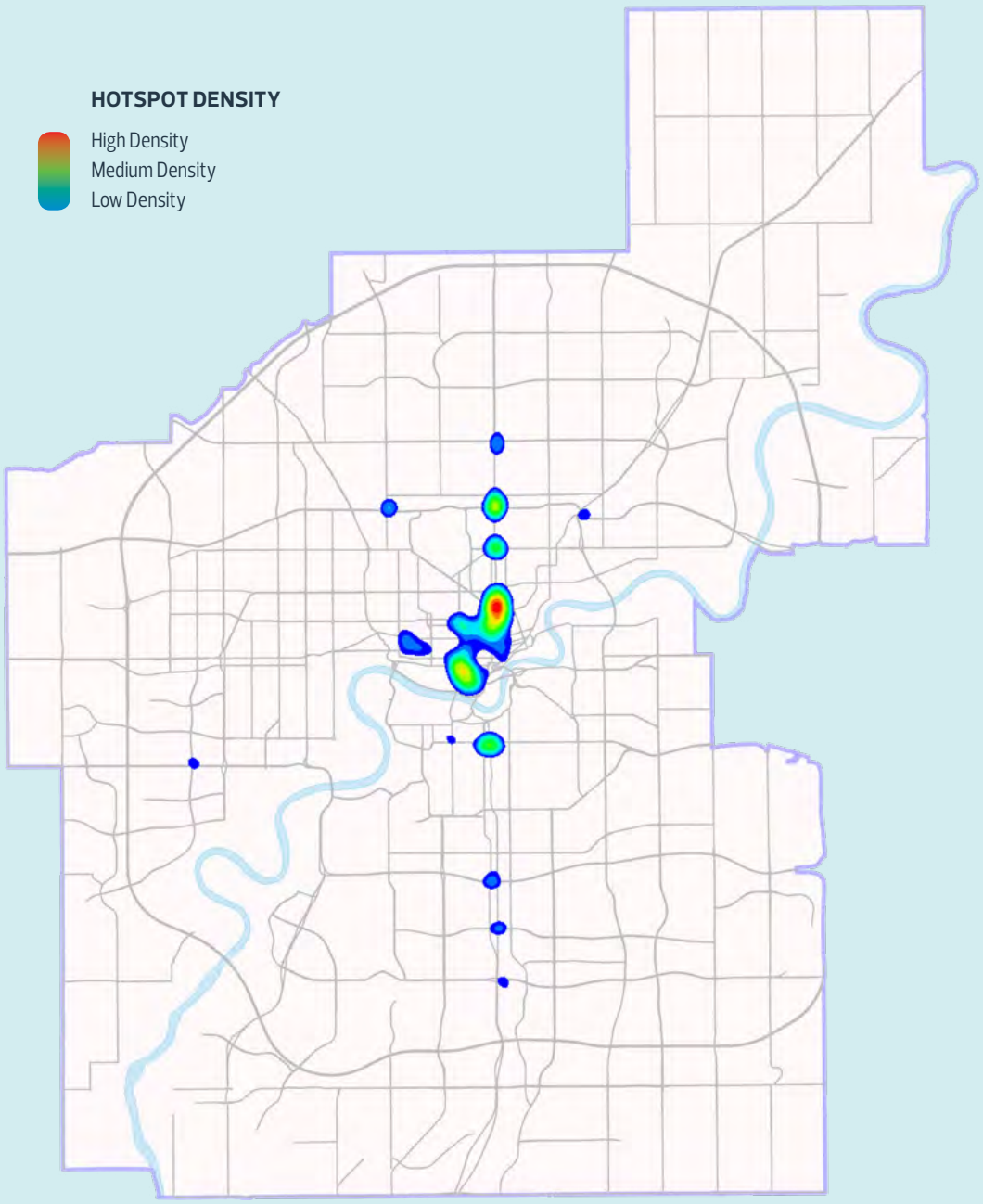
[12]Other refers to one scooter operator who sustained a minor injury in 2018.

TABLE 6:
Fatalities and Injuries by Mode and Traffic Control

Table 6 breaks down fatalities and injuries by the type of traffic control present. Collisions where the traffic control was a signal light made up 42.1% (1,399) of all fatalities and injuries, followed by no control (35.3%, 1,174), which includes both intersections that have no traffic control and midblock segments, and yield signs (9.7%, 321). Seven injuries occurred at rail crossings.

	 Vehicle Driver	 Vehicle Passenger	 Pedestrian	 Cyclist	 Motorcyclist	 Unknown	 Other	Total
Signal Light	896	323	101	42	26	11	0	1,399
No Control	774	213	87	36	56	7	1	1,174
Yield Sign	233	70	7	6	4	1	0	321
Stop Sign	168	40	18	23	6	5	0	260
Marked Pedestrian Crosswalk	25	6	29	2	0	0	0	62
Pedestrian-Actuated Signal	28	5	6	1	0	0	0	40
Pedestrian Amber Flasher	8	2	4	0	0	0	0	14
Construction	7	2	3	0	1	0	0	13
Merge Sign	7	4	0	0	0	2	0	13
One Way Sign	5	1	0	2	0	0	0	8
Police Control	3	3	1	0	0	0	0	7
Rail Crossing	3	4	0	0	0	0	0	7
Warning/Advisory Light	4	3	0	0	0	0	0	7
Rectangular Rapid Flashing Beacon	0	0	1	0	0	0	0	1
Total	**2,161**	**676**	**257**	**112**	**93**	**26**	**1**	**3,326**

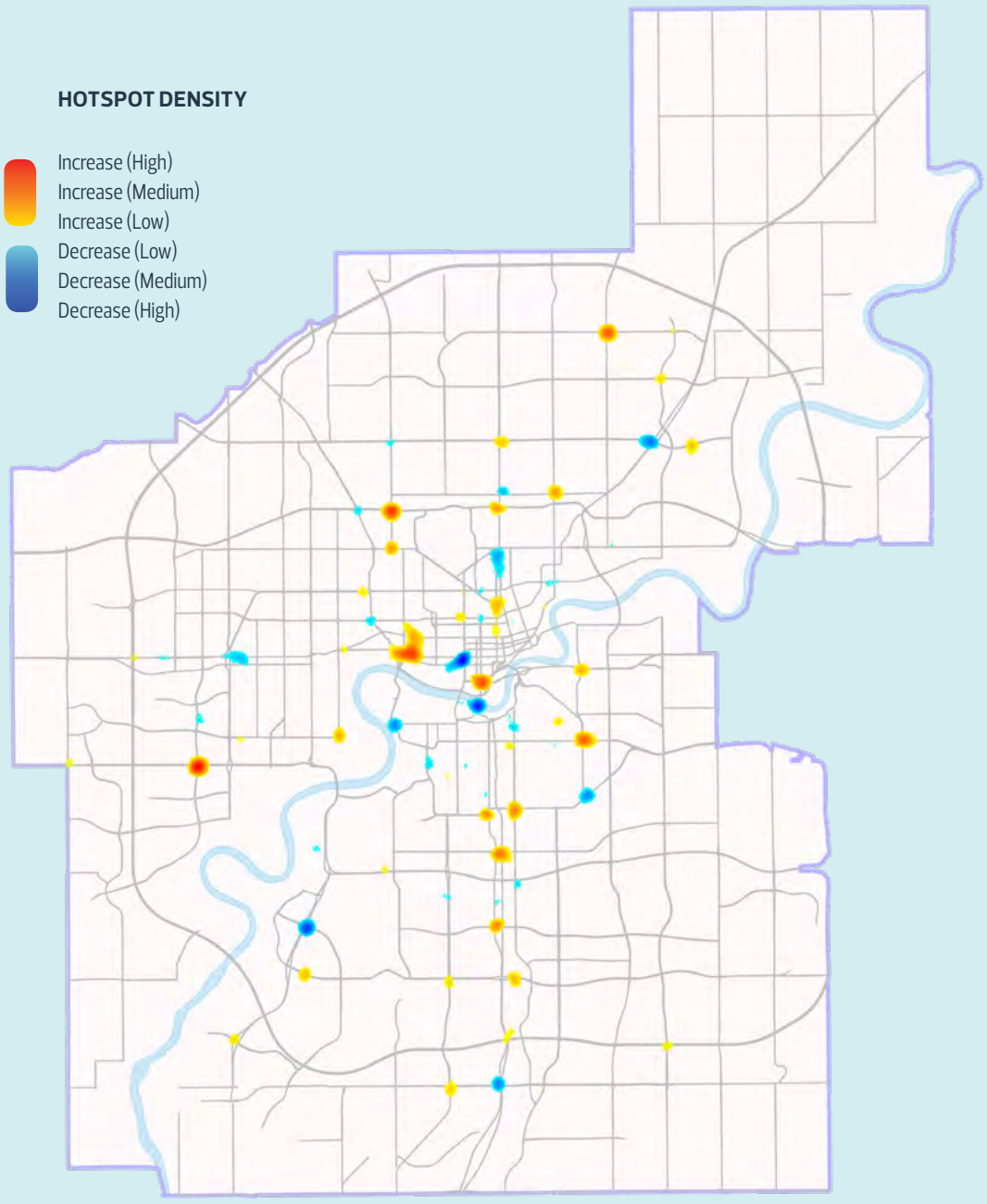
MAP 2:
Density Map of Fatal and Injury Collisions[13]



[13] Density maps represent areas in 2018 as having higher concentrations of injury and fatal collisions.

MAP 3:
Density Changes in Fatal and Injury Collisions from 2017 to 2018

The change map shows collision density difference from 2017 to 2018. Red through yellow indicate collision density increased in 2018; blue indicates collision density decreased in 2018 compared to 2017.

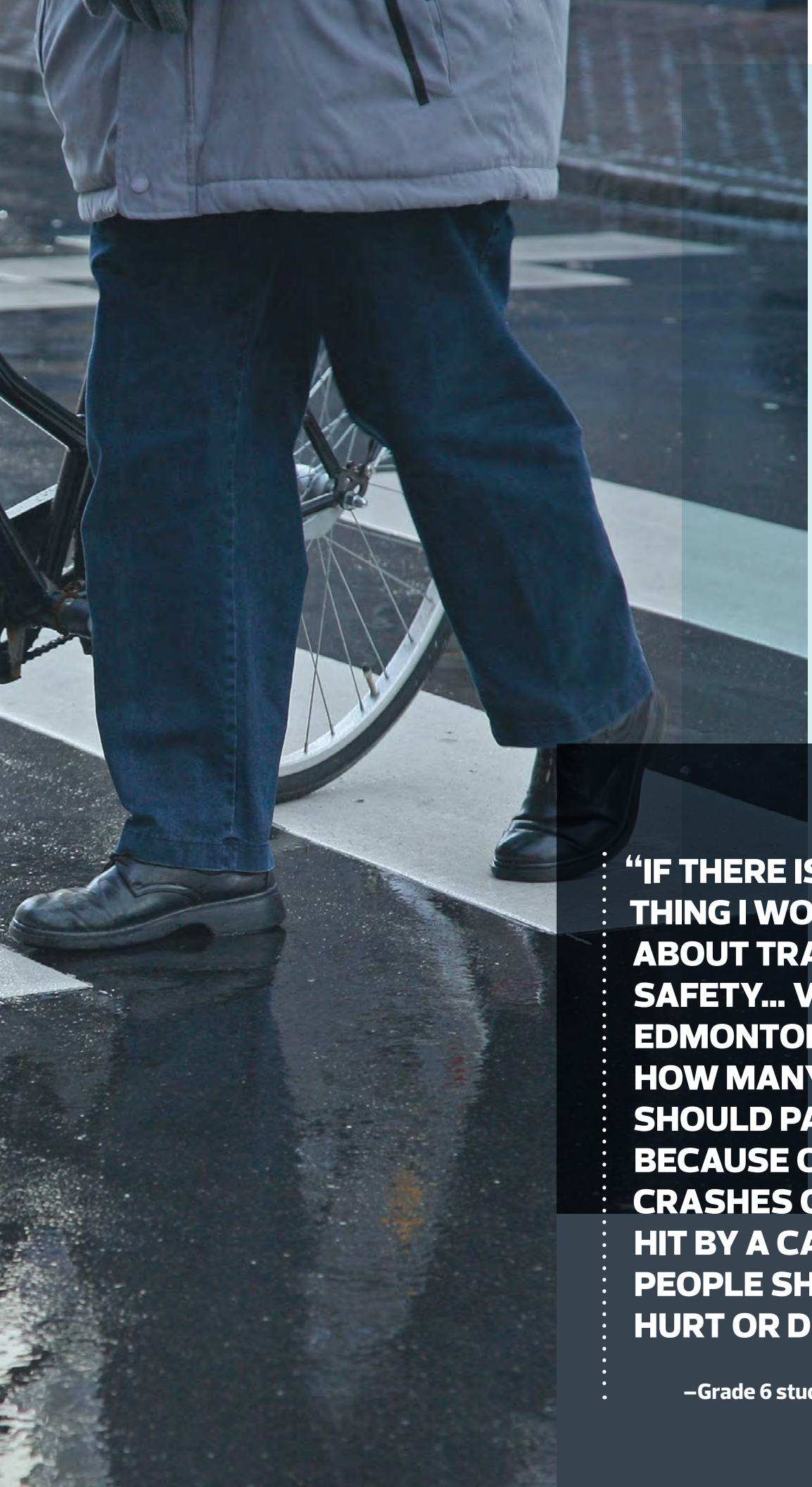


SECTION 10:

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.



“IF THERE IS ONE THING I WOULD SAY ABOUT TRAFFIC SAFETY... VISION ZERO EDMONTON IS ABOUT HOW MANY PEOPLE SHOULD PASS AWAY BECAUSE OF CAR CRASHES OR BEING HIT BY A CAR. ZERO PEOPLE SHOULD BE HURT OR DIE.”

–Grade 6 student

SECTION 10.1:

PEDESTRIAN COLLISIONS

In 2018 there were 250 collisions involving pedestrians, resulting in 6 pedestrian fatalities and 251 injuries (188 minor and 63 serious).

FIGURE 16:

Pedestrian Fatal and Injury Collisions by Month

Pedestrian fatal and injury collisions occurred throughout the year, with the highest number of these collisions occurring in November (37) and the lowest in May (11).

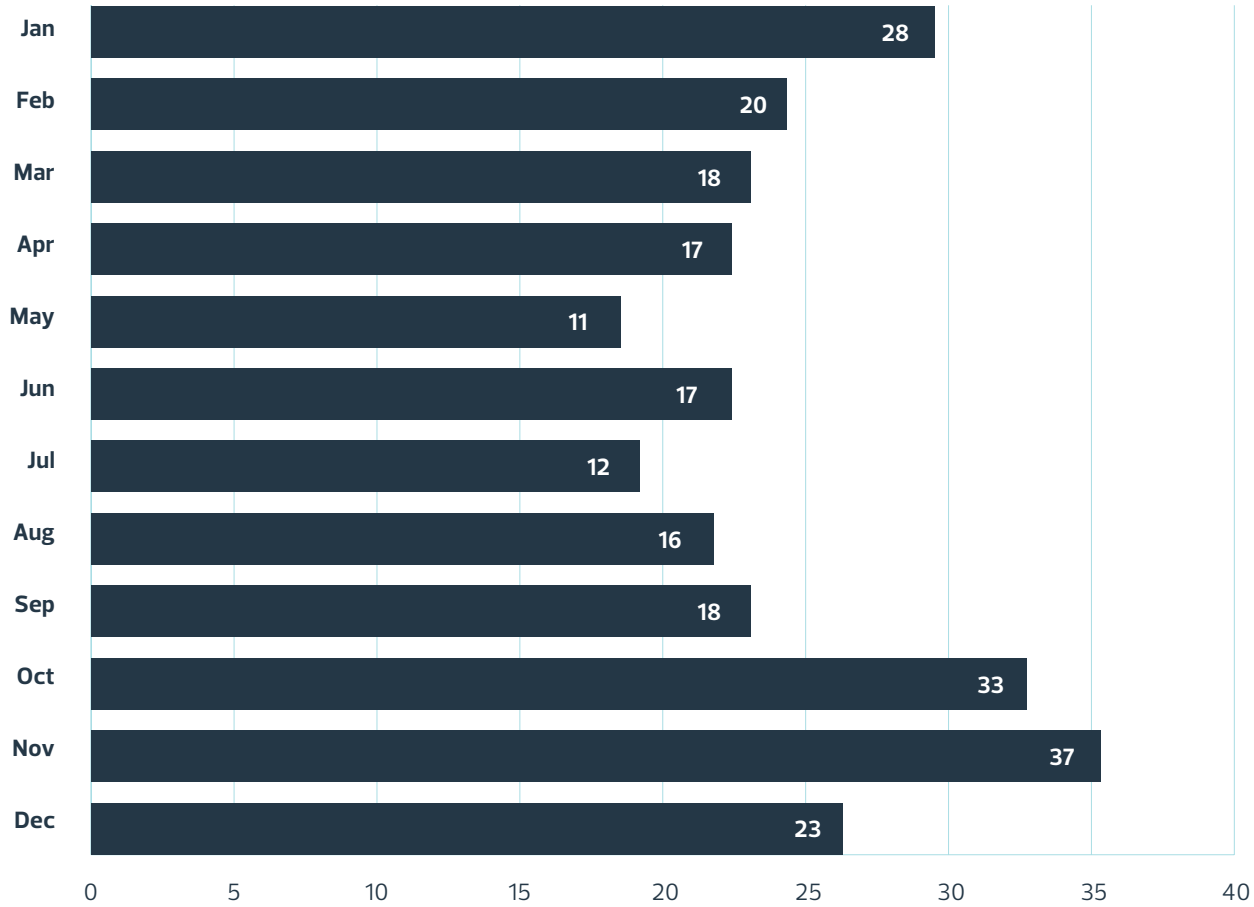


FIGURE 17:

Pedestrian Fatal and Injury Collisions by Day of Week

Pedestrian fatal and injury collisions were slightly more likely to occur on Tuesday and Wednesday, as shown in Figure 17 (18.8%, 47 each day).

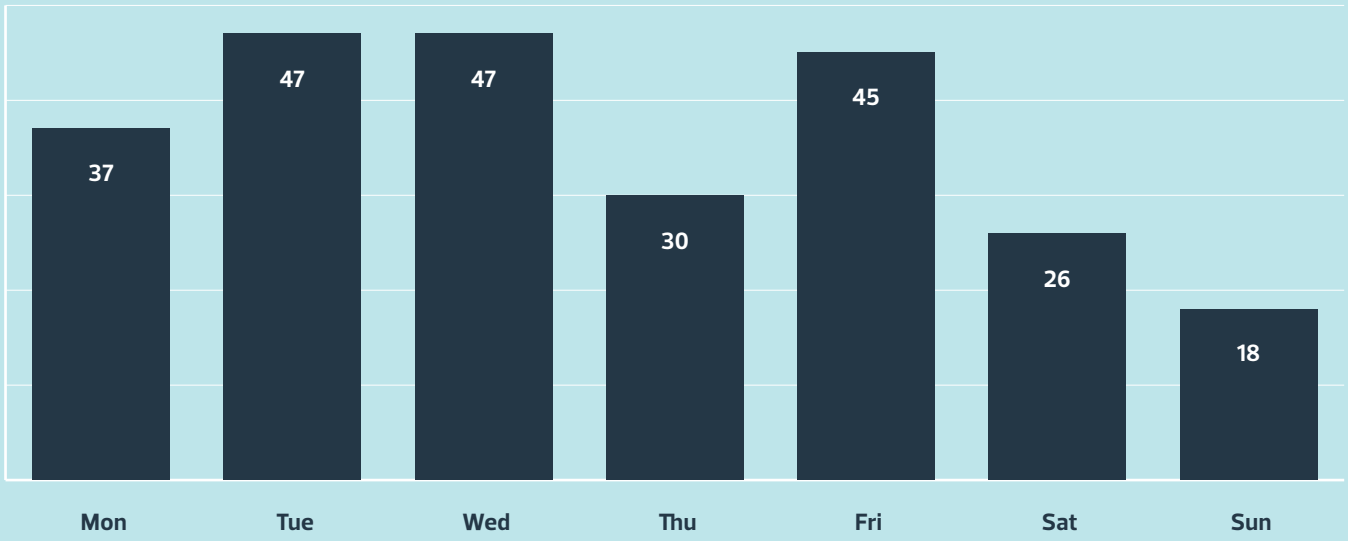


FIGURE 18:

Pedestrian Fatal and Injury Collisions by Hour of Day

Figure 18 reveals the highest number of pedestrian fatal and injury collisions occurred between 7:00 and 8:00 a.m. (9.2%, 23).

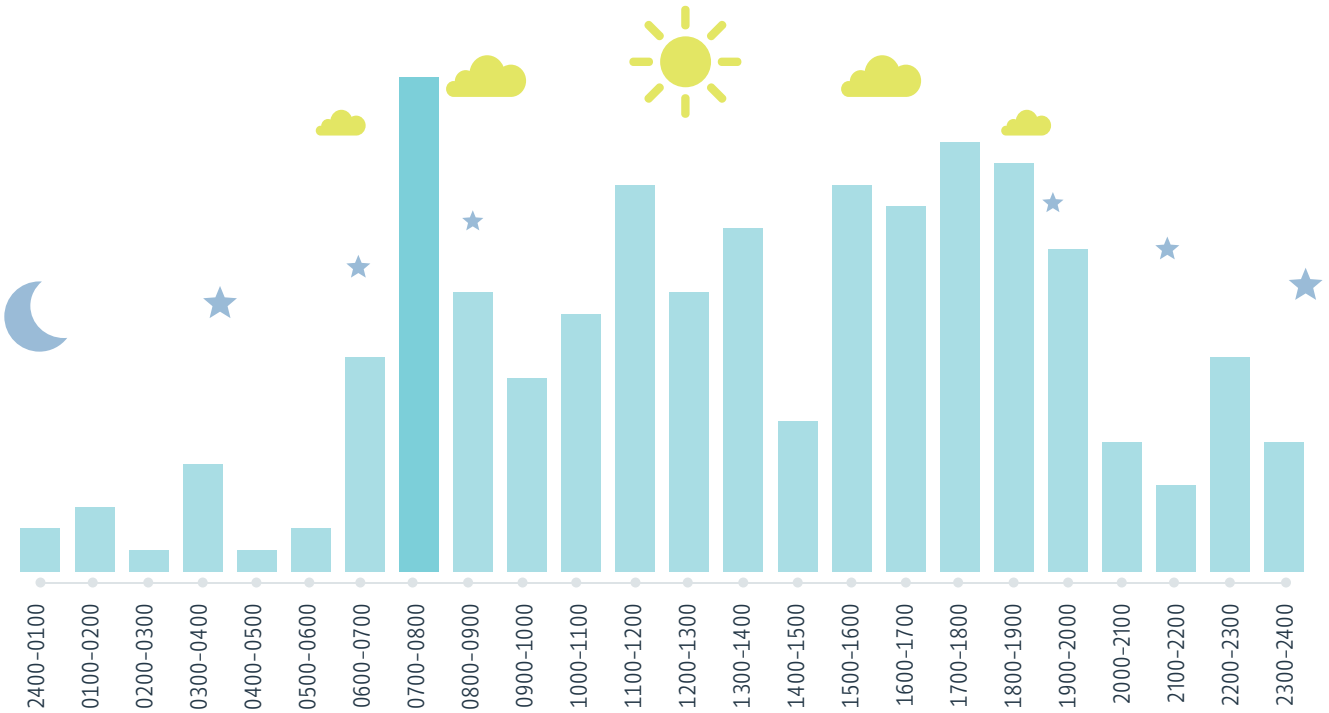


FIGURE 19:
Actions of Pedestrians Killed or Injured in Collisions

As shown in Figure 19, 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 63.4% (163) 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 19.5% (50) of fatalities and injuries. Other actions – including entering or exiting vehicles, walking on the roadway, and running onto the roadway – made up 17.1% (44) of pedestrian fatalities and injuries.

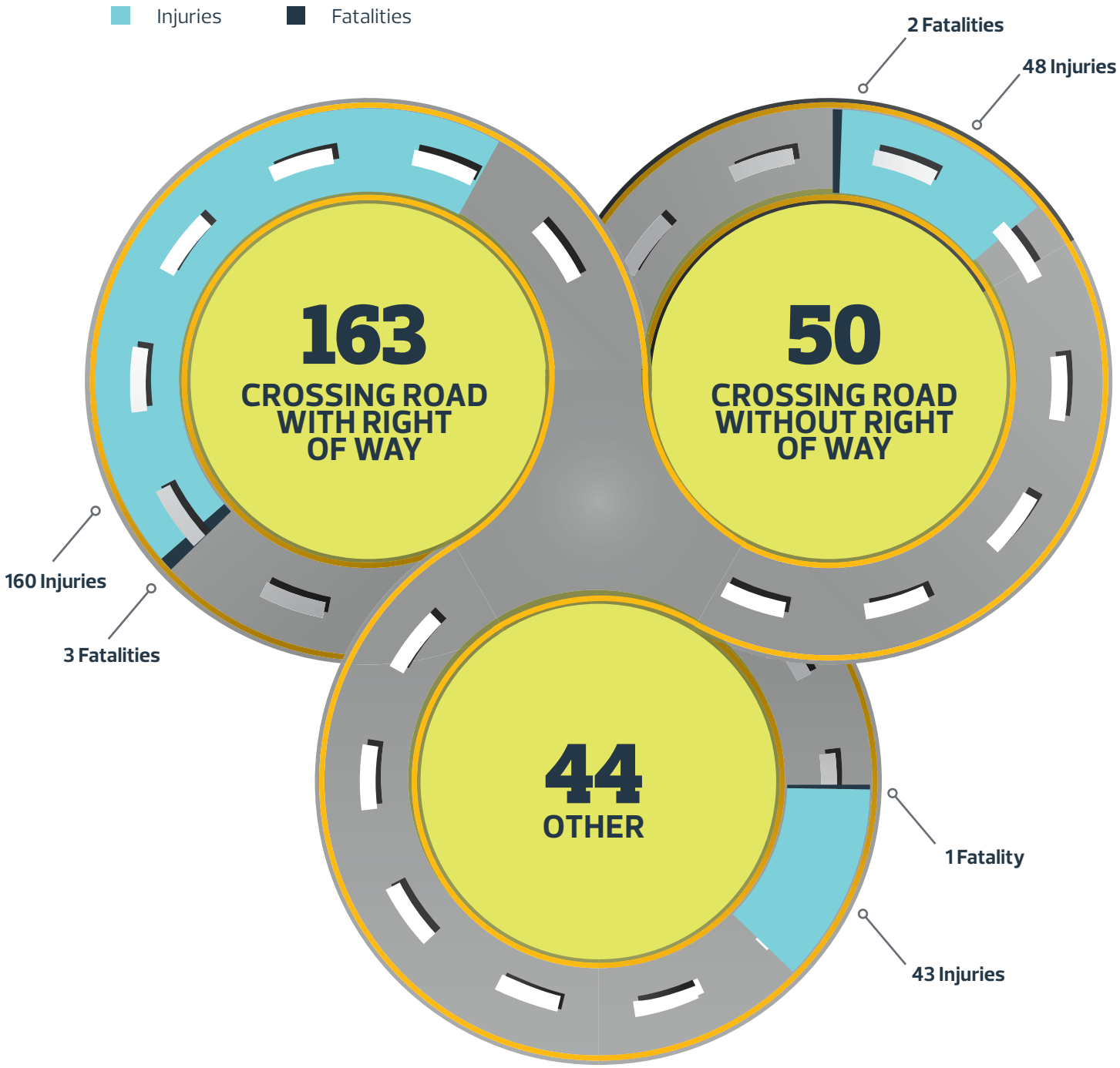


FIGURE 20:
Pedestrian Fatalities and Injuries by Age

Figure 20 shows 19.5% (50) of pedestrians involved in injury and fatality collisions were between the ages of 25 and 34, with 13.6% (35) between 55 and 64. Pedestrians aged 18 and younger made up 20.6% (53) of pedestrians involved in injury and fatality collisions while those aged 65 and older constituted 9.3% (24) of overall pedestrian fatalities and injuries.

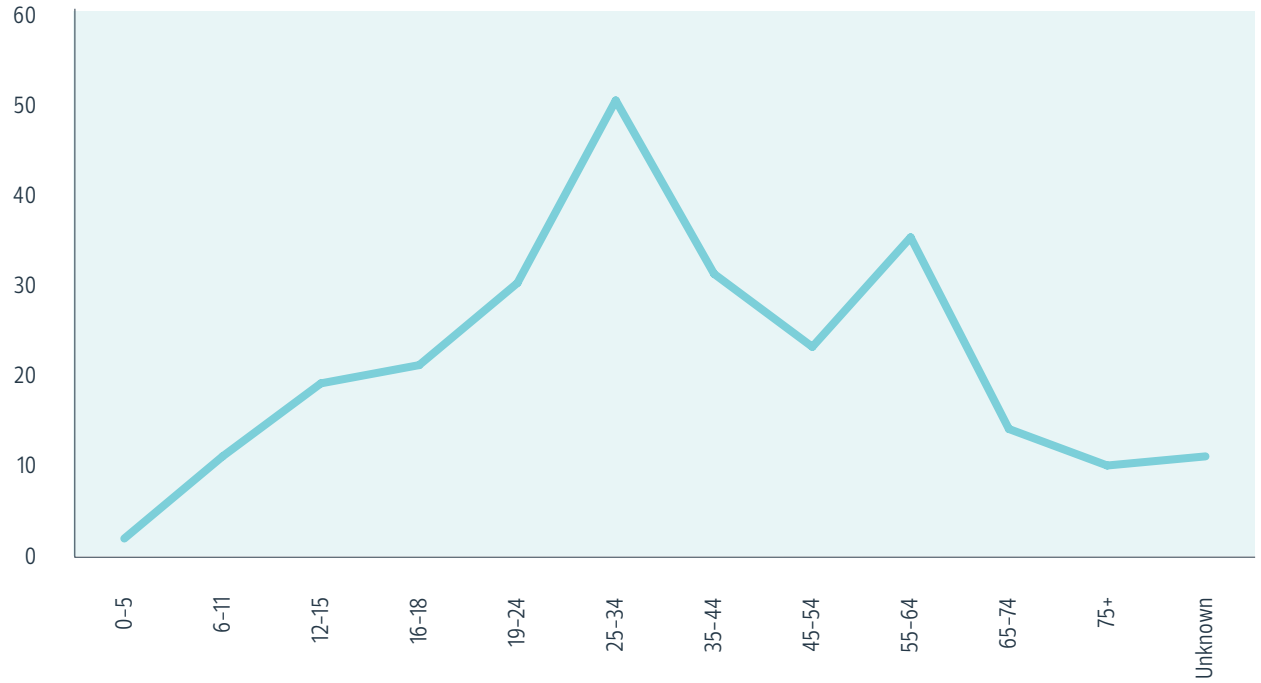
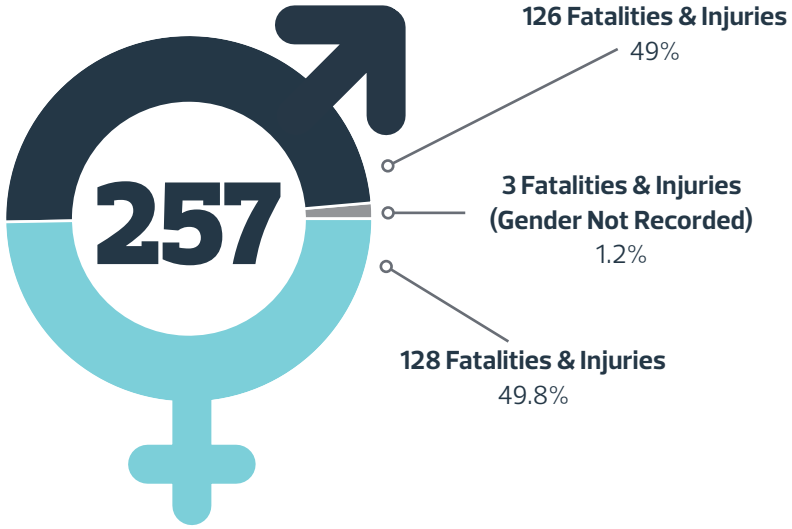


FIGURE 21:
Pedestrian Fatalities and Injuries by Gender

In 2018, slightly more female pedestrians were injured or killed compared with male pedestrians (49.8% vs. 49.0%) as shown in Figure 21. Of the pedestrian fatalities in 2018, four were females and two were males.



SECTION 10.2:

CYCLIST COLLISIONS

In 2018 there were 130 collisions involving cyclists, which resulted in 112 injuries (92 minor and 20 serious) and no fatalities.

FIGURE 22:
Cyclist Injury Collisions by Month

As illustrated in Figure 22, in 2018 cyclist injury collisions occurred every month of the year, with the most occurring in the late spring and summer months and early fall (May to September) when more cyclists tend to be on the roads. The number of injury collisions peaked at 24 in May, compared to one injury collision in both January and February.

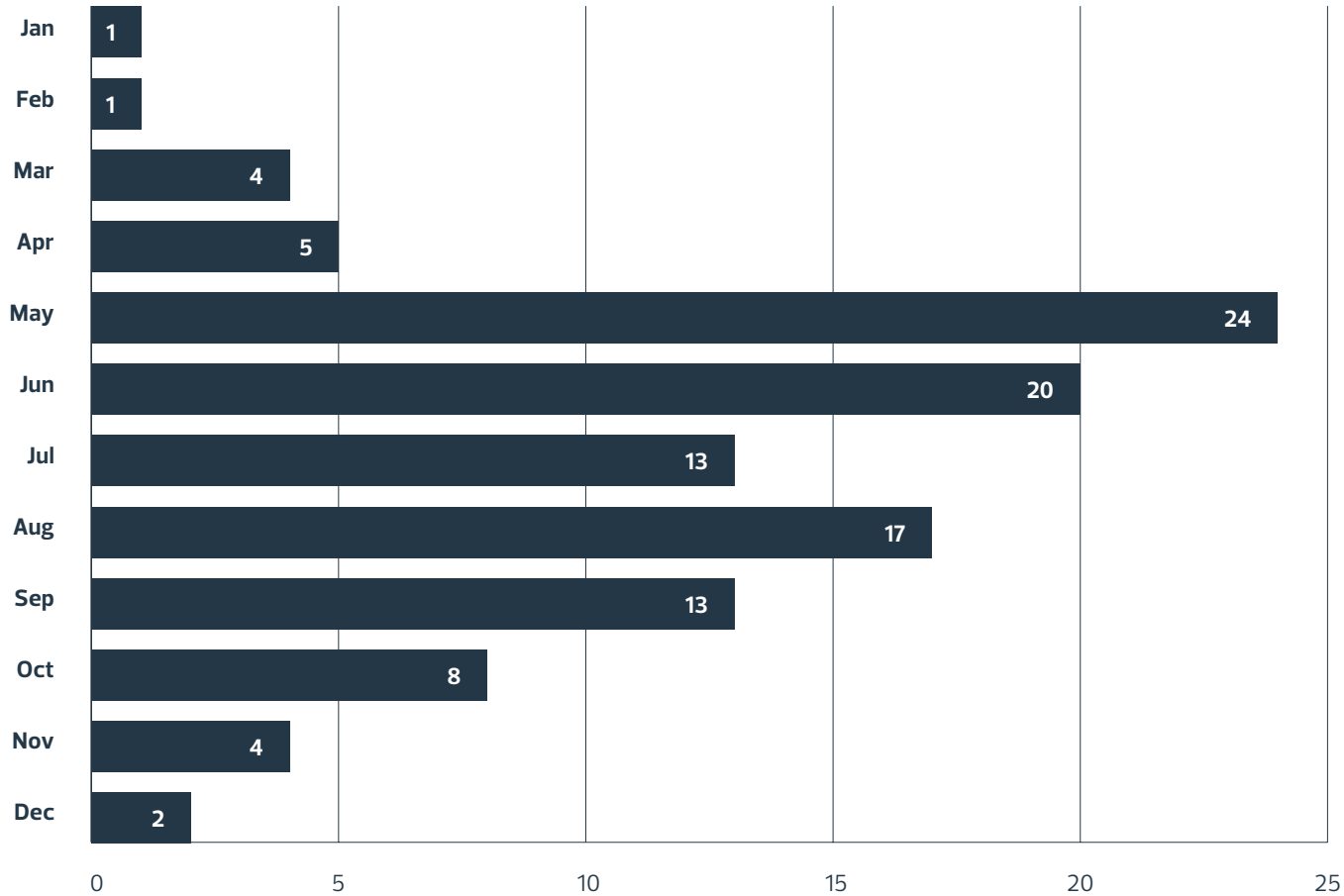


FIGURE 23:
Cyclist Injury Collisions by Day of Week

Figure 23 indicates cyclist injury collisions were more likely to occur on Friday (19.6%, 22 collisions) and Thursday (17.9%, 20). The fewest cyclist injury collisions occurred on Saturday (5.4%, 6).

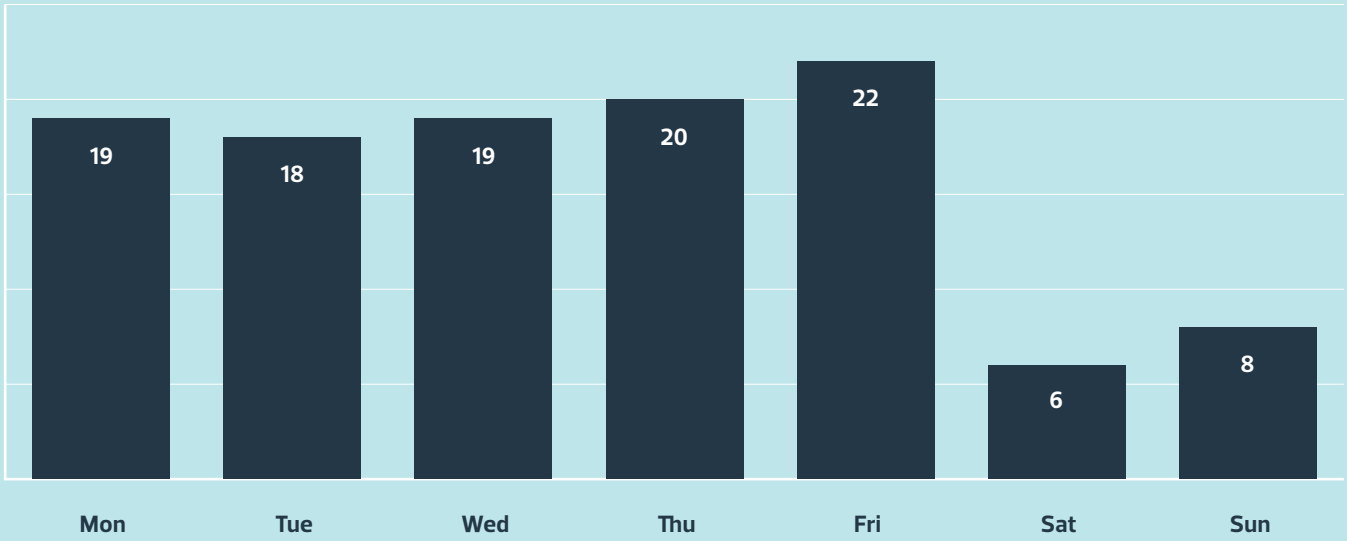


FIGURE 24:
Cyclist Injury Collisions by Hour of Day

Figure 24 shows the highest number of cyclist collisions occurred between 4:00 and 5:00 p.m., with 13 cyclist injury collisions (11.6%), corresponding with the evening peak traffic hours.

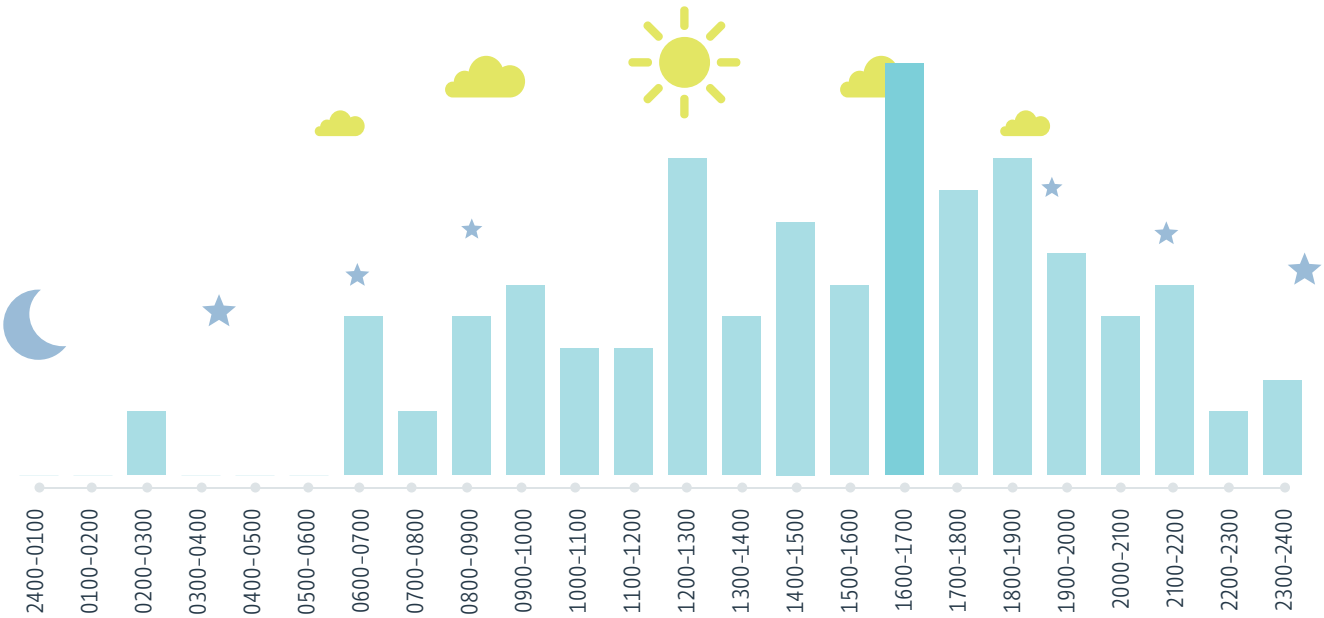


FIGURE 25:

Actions of Cyclists Injured in Collisions

Of the 112 cyclists involved in an injury collision, as shown in Figure 25, 60.7% (68) were deemed to be not at fault. Cyclists who were deemed to have committed errors or violations made up the other 39.3% (44).

Injuries

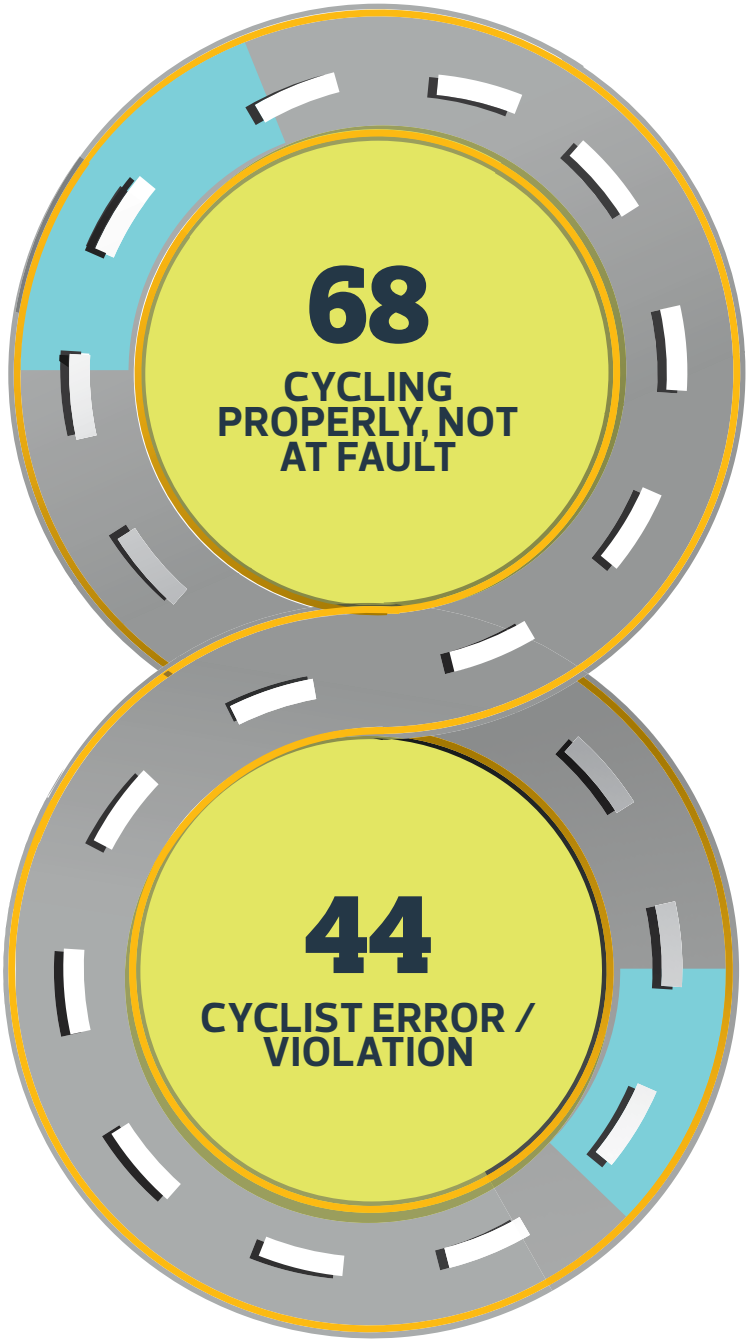


FIGURE 26:
Cyclist Injuries by Age

The age group with the highest number of cyclists involved in an injury collision was 25 to 34 (26.8%, 30). A total of 15.2% (17) of cyclists involved in injury collisions were 35 to 44 years of age.

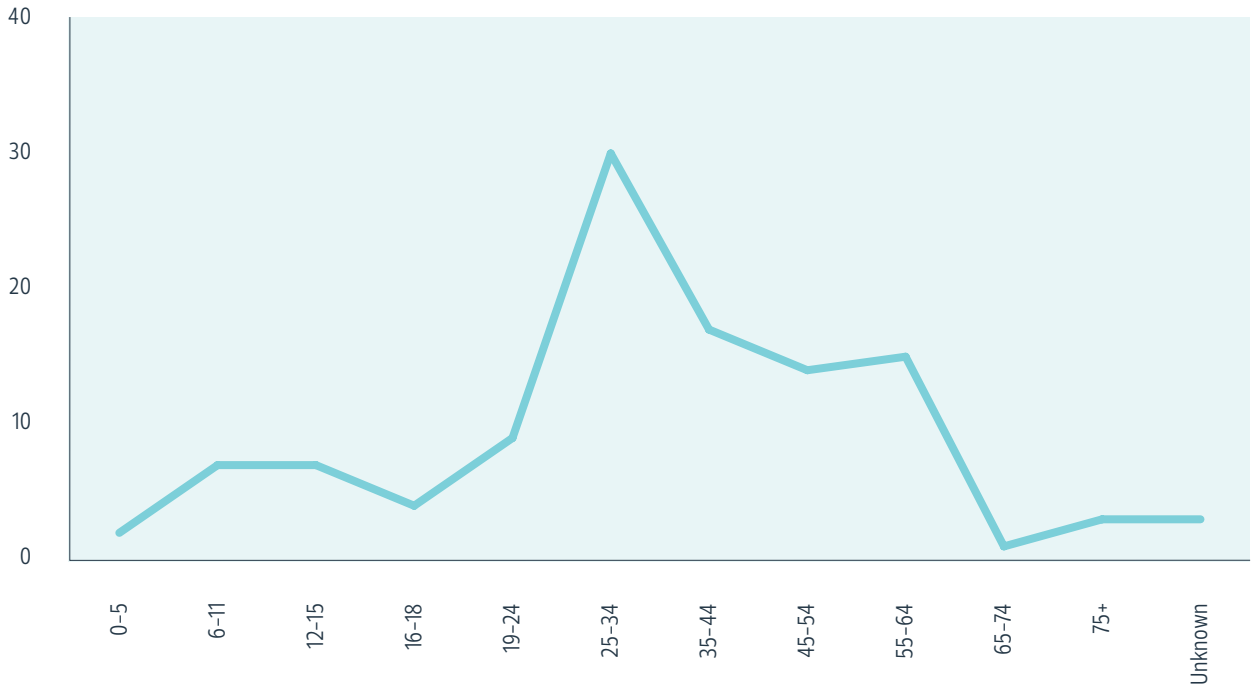
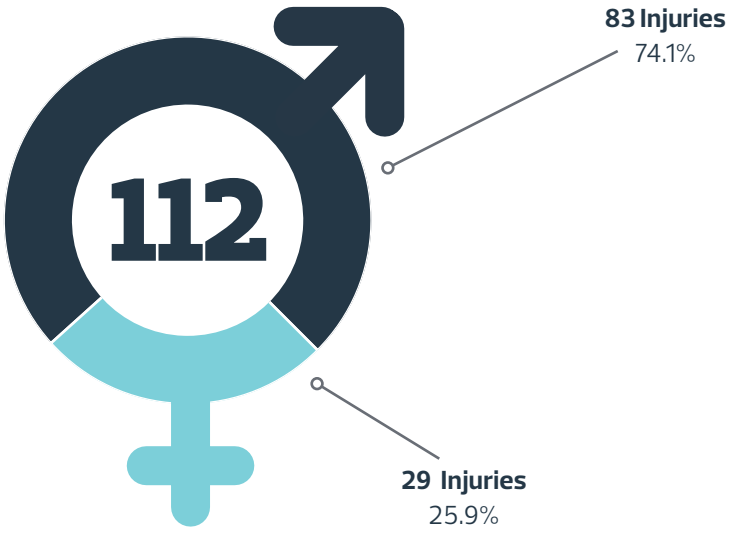


FIGURE 27:
Cyclist Injuries by Gender

Figure 27 shows that males are over-represented in cyclist collisions where the cyclist is injured [male: 83 (74.1%) vs. female: 29 (25.9%)].



SECTION 10.3:

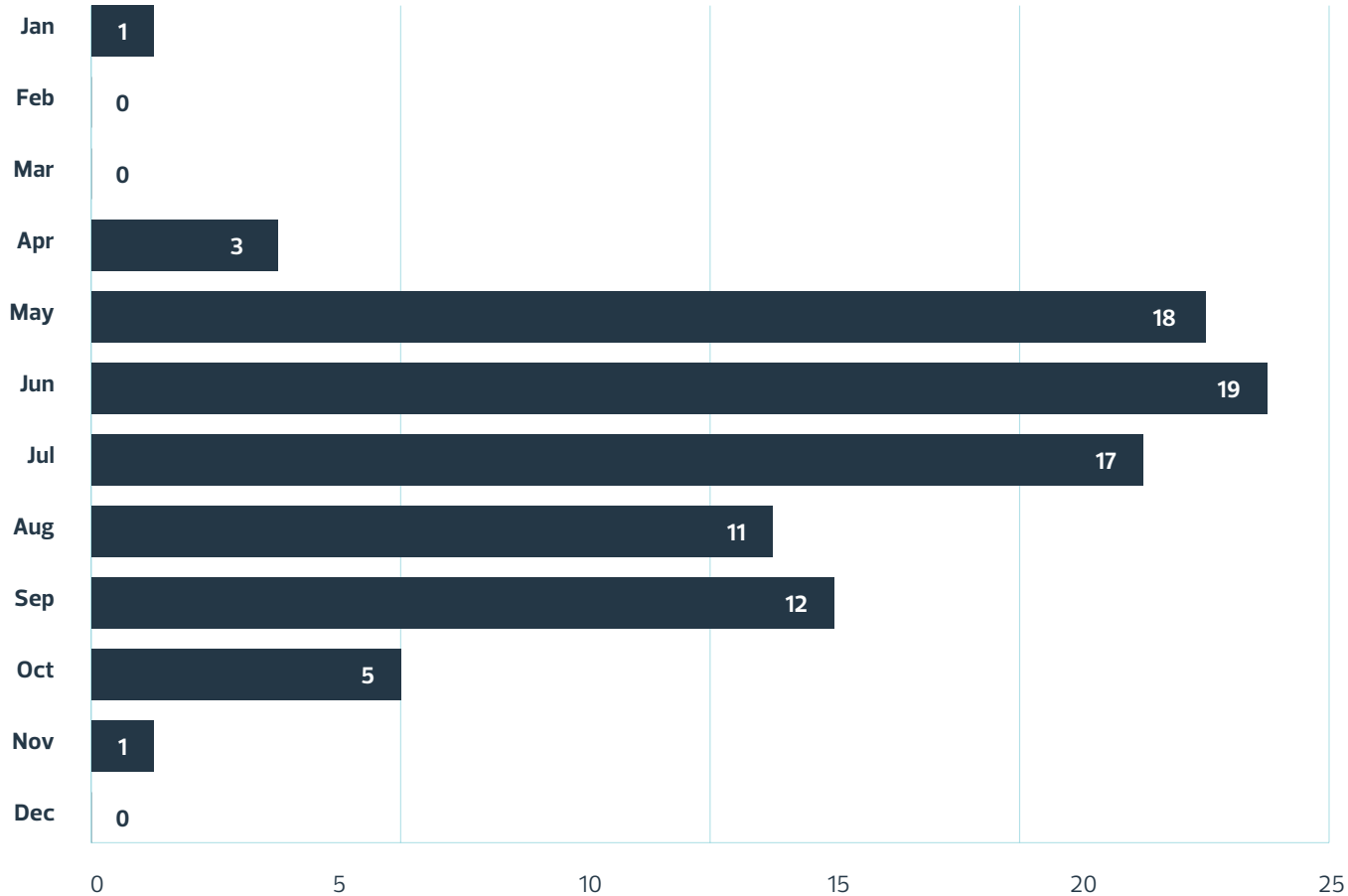
MOTORCYCLIST COLLISIONS

In 2018 there were 143 collisions involving motorcycles[14], resulting in 4 motorcyclist fatalities and 89 injuries (56 minor and 33 serious).

The following information relates to the 87 collisions in which motorcyclists were injured or killed.

FIGURE 28:
Motorcyclist Fatal and Injury Collisions by Month

Figure 28 reveals that there were no motorcyclist collisions resulting in a fatality or injury in February, March, or December. The highest month for fatal or injury collisions is June (21.8%, 19 collisions).



[14] The figure of 143 collisions includes 5 collisions where the motorcycle was struck while legally parked and unattended.

FIGURE 29:
Motorcyclist Fatal and Injury Collisions by Day of Week

Figure 29 shows that a higher number of motorcyclist fatal and injury collisions occurred on Tuesday and Friday (20.7%, 18 each day), followed by Monday, Wednesday, and Saturday (13.8%, 12 each day).

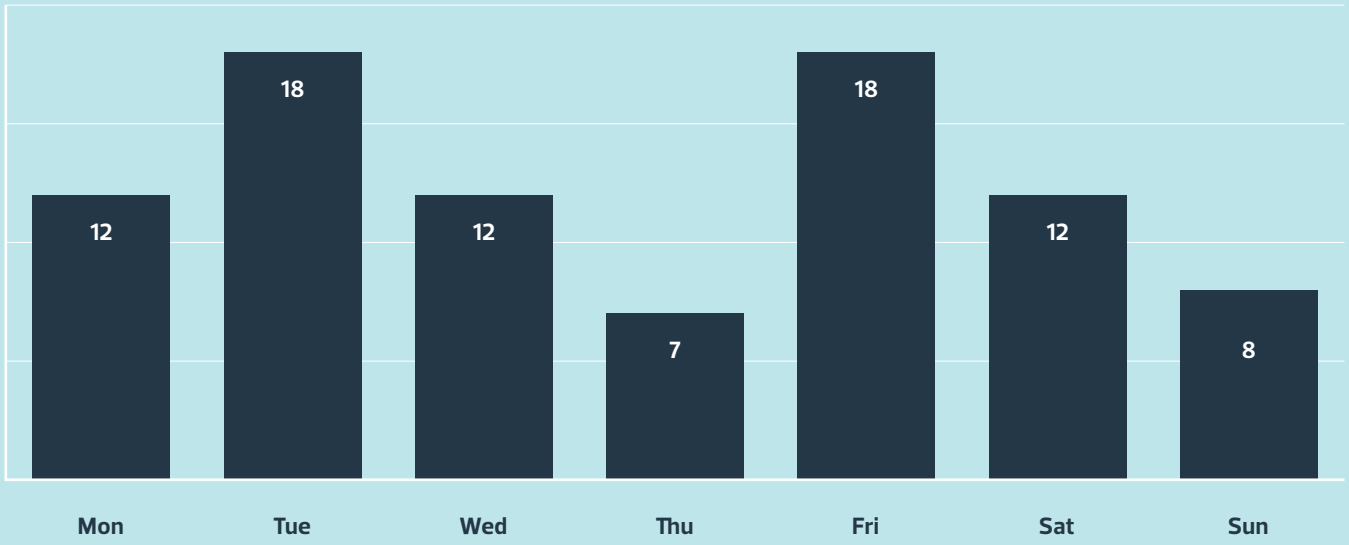


FIGURE 30:
Motorcyclist Fatal and Injury Collisions by Hour of Day

Figure 30 shows that slightly more motorcyclist fatal and injury collisions occurred between 6:00 and 7:00 p.m. with 9 fatal or injury motorcyclist collisions (10.3%).

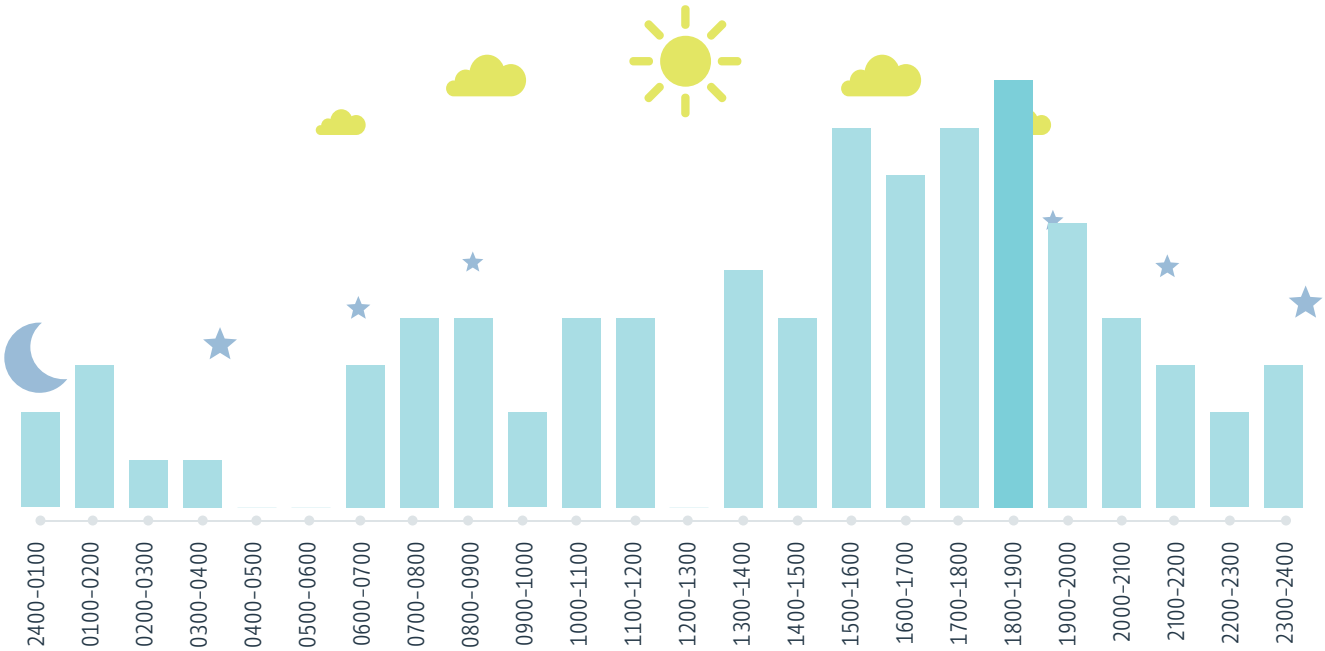
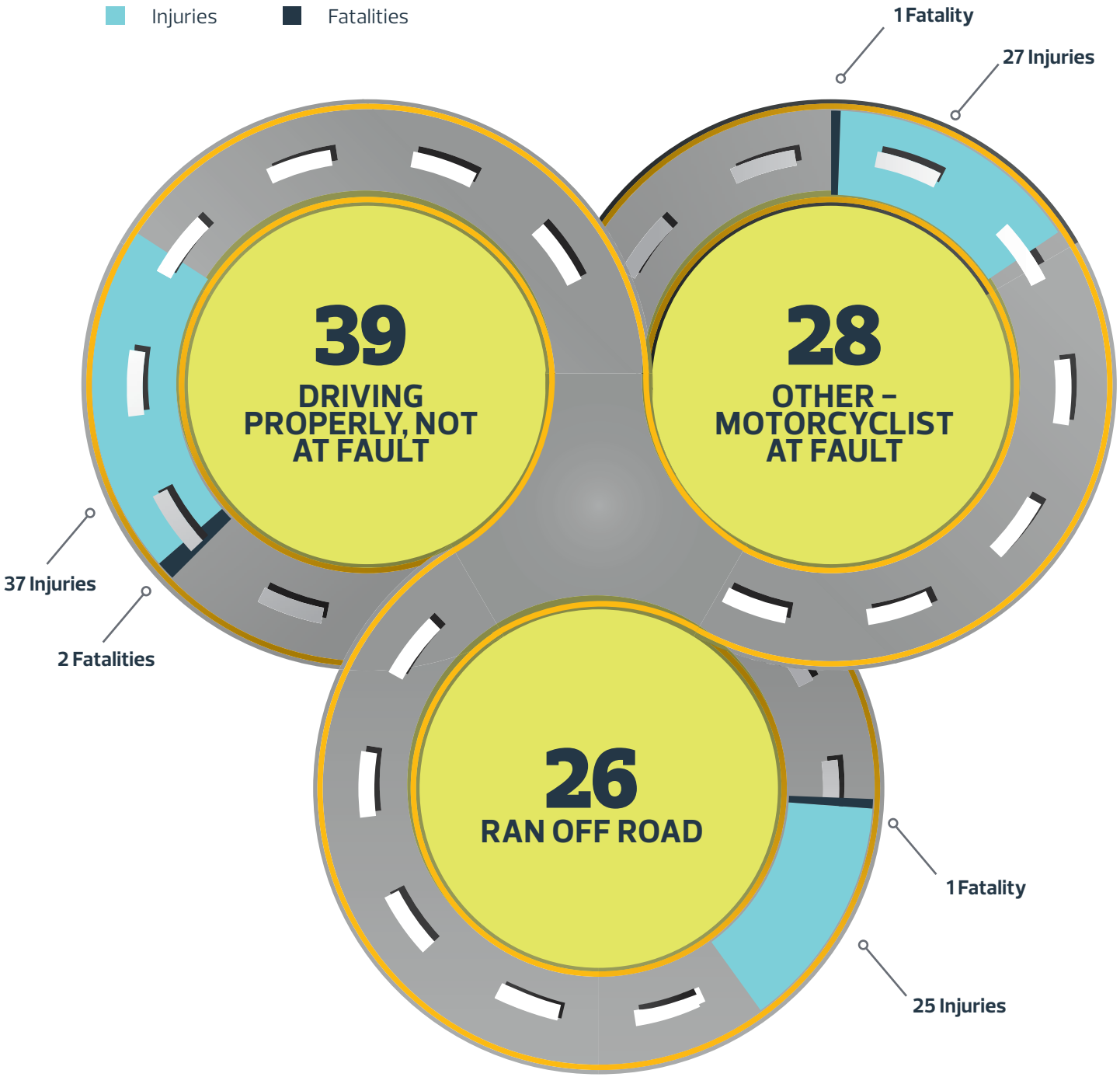


FIGURE 31:
Actions of Motorcyclists Killed or Injured in Collisions

Figure 31 reveals motorcyclists who were driving properly and deemed not at fault made up 41.9% (39) of motorcyclist fatalities or injuries. The remaining 58.1% (54) of fatalities and injuries occurred in collisions where the motorcyclist was deemed to be at fault, including ran off road collisions which resulted in 28.0% (26) of all motorcyclist fatalities and injuries.[15]



[15] Other collision causes where the motorcyclist was at fault were following too closely, changing lanes improperly, left turn across path, other (not able to be categorized), struck parked vehicle, left of centre, fail to observe traffic signal, stop sign violation, and yield sign violation.

FIGURE 32:
Motorcyclist Fatalities and Injuries by Age

Figure 32 reveals that riders aged 25 to 34 made up 34.4% (32) of all motorcyclist injuries and fatalities in 2018, followed by riders in the 35 to 44 age group (18.3%, 17).

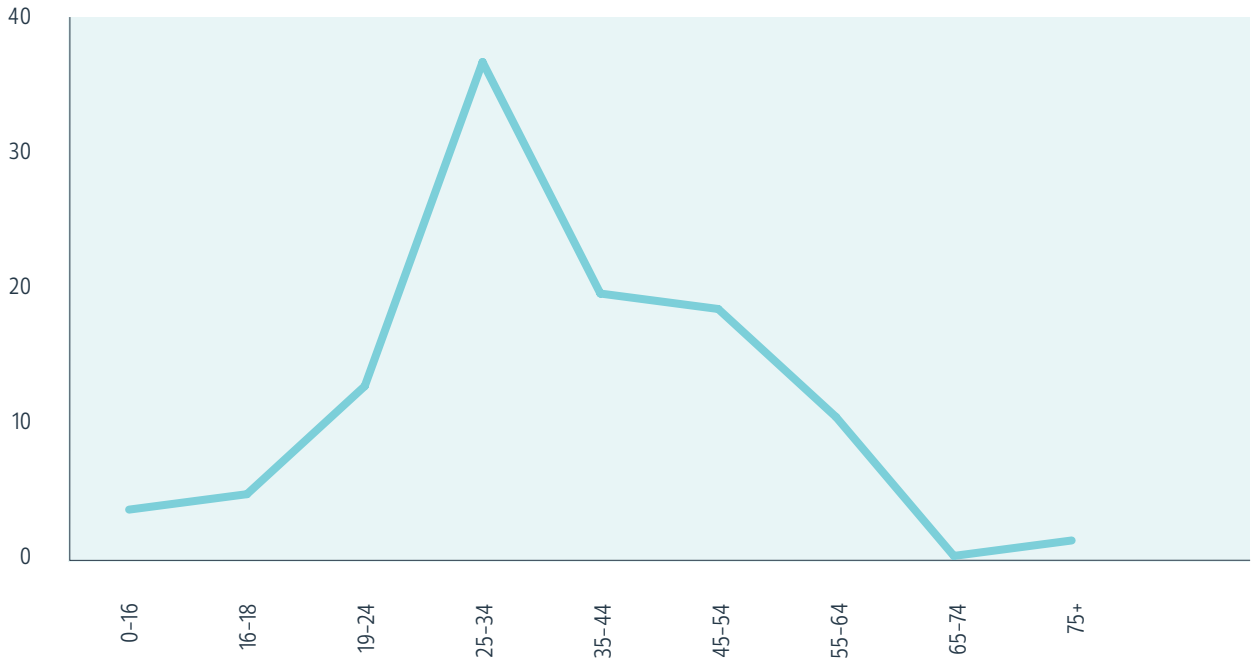
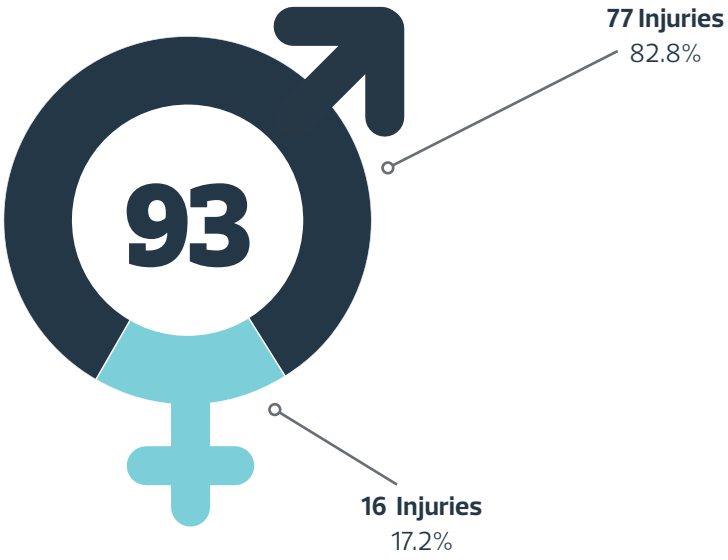


FIGURE 33:
Motorcyclist Fatalities and Injuries by Gender

As is clearly indicated by Figure 33, males are highly over-represented in motorcyclist fatalities and injuries [male: 77 (82.8%) vs. female: 16 (17.2%)].



APPENDICES

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 28, 2018. 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 serious (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.
PEDESTRIAN	A person on foot or a person in or on a mobility aid. [16]
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 11 vehicle bridges over the North Saskatchewan River: Beverly, Capilano, Dawson, Low Level, James MacDonald, Walterdale, High Level, Groat, Quesnell, Anthony Henday South, and Anthony Henday North.

[16] Definition of 'pedestrian' from the Province of Alberta Traffic Safety Act, 1 Interpretation (1)(gg)

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. used throughout this report.

FOLLOWING 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 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.

CONTACT INFORMATION

Shea Wang, PhD
Traffic Safety Analyst

City of Edmonton Traffic Safety Section
Suite 200, 9304 – 41 Avenue NW
Edmonton, Alberta T6E 6G8
Phone: 780-495-9906
Fax: 780-495-0383
Email: shea.wang@edmonton.ca

ACKNOWLEDGMENTS

The author gratefully acknowledges the following individuals who contributed time and expertise to this report:

Elizabeth Cayen

Deborah Lakusta

Dae-Won Kwon, PhD

Laura Thue, PhD

Stevanus Tjandra, PhD