2017

St. Albert Traffic Collision Statistics



Transportation Branch
Engineering Services
City of St. Albert

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GLOSSARY OF TERMS

At-fault Driver	A driver who is responsible for a collision due to faulty driver action including following too closely, improper lane change, speeding, careless driving, failing to yield right of way (ROW), sign/signal violation, distracted driving.
Backing	Any multi-vehicle collision where at least one vehicle was in the act of backing up.
Collision	A motor vehicle collision occurs when a vehicle, as defined by the Alberta Traffic Safety Act, comes in contact or collides with another vehicle, pedestrian, cyclist, animal, road infrastructure or debris. Royal Canadian Mounted Police (RCMP) report on collisions occurring on public roadways, alleys, private and public parking lots within the City of St. Albert's jurisdiction. Current legislation in Alberta requires a traffic collision be immediately reported to the police if it results in death, injury or property damage of $2,000 or more.
Collision Severity	A classification of a collision based on the most severe result of the collision, i.e., whether someone was killed (fatal), injured (injury) or the vehicle received property damage (PDO).
Collision Type	The collision type refers to the object struck by a motor vehicle during a collision (e.g., pedestrian, motorcycle, bicycle, animal, fixed object); or what happened to the vehicle in a single vehicle collision (e.g., ran off road, struck object) or what occurred between two vehicles in a multi-vehicle collision (e.g., rear end, left turn across path, head on, right angle).
Driver Action	A category of contributing factors attributed to actions taken or performed by a driver immediately prior to a collision occurring.
Fatal Collision	A vehicle collision which resulted in a fatality.
Fatality	A fatality is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.
Injury Collision	A vehicle collision which resulted in either a major or minor injury.
Intersection	An intersection is defined as extending 10 metres past the legally defined limits of the outer crosswalk lines of an intersecting roadway.
Left Turn Across Path	A driver makes a left turn and is struck by an oncoming vehicle with the right of way.
Major Injury	Persons with injuries or complaints of pain who went to a hospital and were subsequently admitted, even if for observation only.

Midblock	A section of roadway between two intersections.
Minor Injury	Persons with injuries or complaints of pain who went to a hospital and were treated in emergency (or refused treatment) but were not admitted to the hospital. This also includes people who indicated that they would seek medical treatment.
Property Damage Only (PDO) Collision	A vehicle collision which resulted in property damage exceeding CAD $2,000.
Public Roadways	For the purposes of reportable collisions, a roadway means any primary highway, secondary highway, rural road, street, avenue, parkway, alley, bridge where the public is ordinarily permitted to drive or park a vehicle (with certain rules and restrictions). Roadways are inclusive of sidewalks, boulevards and districts adjacent to and parallel with the roadway.
Rear End Collision	When a vehicle collides with another vehicle in the rear side due to many possible reasons (e.g., following too closely, failure to maintain proper safe distance between two vehicles, driver inattention, failing to account for road conditions).
Reportable Collision	A vehicle collision that occurs on a public roadway or private parking lot and results in death, injury and/or property damage exceeding CAD $2,000.
Sideswipe Opposite Direction	Two vehicles approaching opposite directions and intending to continue in opposite directions collide in a sideswiping manner due to one or both vehicles crossing the painted or unpainted centerline or divided median of the roadway.
Sideswipe Same Direction	Two vehicles travelling in the same direction that are moving alongside each other and collide, resulting in at least one of the vehicles being struck on the side.
Struck Object	A collision in which the primary collision involved a single vehicle and a fixed object.
Vehicle Wildlife Collision	A collision involving a vehicle striking any wildlife.
Vulnerable Road User	Road users who are in an unprotected state or have less external protection, i.e., pedestrian, motorcyclist or bicyclist.
Vulnerable Road User Collision	A collision involving a vehicle that collides with either a pedestrian, motorcyclist or bicyclist.

2017 COLLISION QUICK FACTS

2017 General Collision Statistics

- 1,001 collisions occurred on public roadways (incidents within private parking lots excluded)
- 564 collisions (56% of total collisions) occurred at intersections
- 437 collisions (44% of total collisions) occurred at midblock locations
- 1 fatal collision occurred on public roadways
- 211 injury collisions occurred on public roadways
- The 211 injury collisions resulted in 8 major injuries and 271 minor injuries to road users
- 27 vulnerable road user collisions resulted in 1 fatality and 16 injuries
- 12 pedestrian collisions resulted in 1 major and 7 minor injuries
- 10 bicycle collisions resulted in 1 fatality and 5 minor injuries
- 9 collisions occurred within school zones, with one resulting in an injury
- The highest number of collision occurrences within neighbourhoods occurred in Lacombe Park, where 14% of total collisions occurred
- Of at-fault drivers: 55% were male and 45% were female
- Both male and female drivers within 16-20 years of age are the highest at-fault drivers
- 58% of at-fault drivers were residents of St. Albert; 42% of at-fault drivers are non-residents
- Following too closely was the most common faulty maneuver
- 55% of speeding and red-light violations were issued to non-residents

General Collision Comparisons from 2016 to 2017

- 4% increase in total collisions
- 3% increase of collisions per 1,000 licensed drivers
- 14% increase of PDO collisions
- 21% decrease of injury collisions
- 33% decrease of bicycle collisions
- 40% decrease of school zone collisions

2017 Intersection Collision Statistics

- 56% of the total collisions on public roadways occurred at intersections
- 74% of injury collisions occurred at an intersection location

- The intersection of St. Albert Trail & St. Anne Street/Sturgeon Road has the highest number of total collisions
- The intersection of Ray Gibbon Drive and LeClair Way has the highest number of injury collisions
- Approximately 45% of all intersection collisions involved rear end collisions:
  - 33% of those rear end collisions resulted in injuries
- 78% of intersection collisions occurred on weekdays
- 30% of all intersection collisions occurred during winter months (December, January and February)

  21% of intersection collisions occurred between the times of 16:00 - 18:00.

2017 Midblock Collision Statistics

- 19% of midblock collisions were struck object collisions
- 16% of midblock collisions were rear end collisions
- Ran off road collisions almost doubled from last year
- 41% of midblock collisions involved a vehicle colliding with a parked car
- 71% of midblock collisions occurred on weekdays
- 34% of midblock collisions occurred during winter months (December, January and February)

2017 Collision Statistics Summary

Statistics	2016	2017	Percentage	Change
Total Collisions	961	1001	4%	↑
Fatal Collisions	0	1	--	↑
Injury Collisions	267	211	-21%	↓
Major Injuries	24	8	-67%	↓
Minor Injuries	380	271	-29%	↓
PDO Collisions	694	789	14%	↑
Intersection Collisions	562	564	--	↑
Midblock Collisions	399	437	10%	↑
Rear End Collisions	336	320	-5%	↓
Left Turn Across Path Collisions	72	80	11%	↑
Pedestrian Collisions	11	12	9%	↑
Bicycle Collisions	15	10	-33%	↓
Motorcycle Collisions	5	5	--	
Vehicle Wildlife Collisions	3	6	100%	↑
School Zone Collisions	15	9	-40%	↓

Note: Statistics of Collisions which occurred on public roadways
% not identified for values >100% increase
"-" indicates decrease "+" indicates increase

CHAPTER 1: INTRODUCTION

Background

This report provides a summary of motor vehicle collision incidents that were reported to have occurred from January 1, 2017 to December 31, 2017 within St. Albert. The City of St. Albert maintains a data file which contains all reportable collisions that occur on roadways (both public and private roadways). The information is collected from the provincial report form, which is completed by members of the Royal Canadian Mounted Police (RCMP) 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 results in property damage of CAD $2,000 or greater, as well as any collision that results in a major or minor injury or fatality. The information presented in this report is based upon reportable incidents provided by Alberta Transportation at the time of printing. Due to continuing police investigations, some numbers presented in this report may be subject to revision.

Structure of the Report

Chapter 1 provides the background information and structure of the report.

Chapter 2 discusses historical collision statistics and trends that represent all collision occurrences within the city on public roadways (i.e., at the intersection and midblock).

Chapter 3 describes 2017 collision statistics and trends from incidents on public roadways only. Private roadway (parking lot) collisions have not been included in the report. Overall statistics on collisions are identified inclusive of: types and severities, highest collision intersections, temporal distribution of collisions, collisions by neighbourhoods, vulnerable road user incidents, school zone collisions and vehicle wildlife collisions.

Chapter 4 represents the information about the identified “at-fault” drivers, including age, sex and driver actions. Manned and mobile photo enforcement statistics are also provided in this chapter.

CHAPTER 2: HISTORICAL COLLISION STATISTICS

Collision Trends (Public Roads)

Figures 1, 2 and 3 illustrate the city-wide total collision frequency and percentages of collision frequency change from 2012 to 2017. City-wide collision frequency includes collisions that occurred on public roadways (i.e. intersection and midblock). From 2012 to 2017 the highest number of collisions was reported in 2017 (1,001 collisions), while the lowest number occurred in 2014 (739 reported collisions). Over the past six years, the highest increase of collisions took place from 2014 to 2015 when there was a 17% increase in reported collisions (Figure 3).

In 2017,

4%

Increase in Collisions compared to 2016

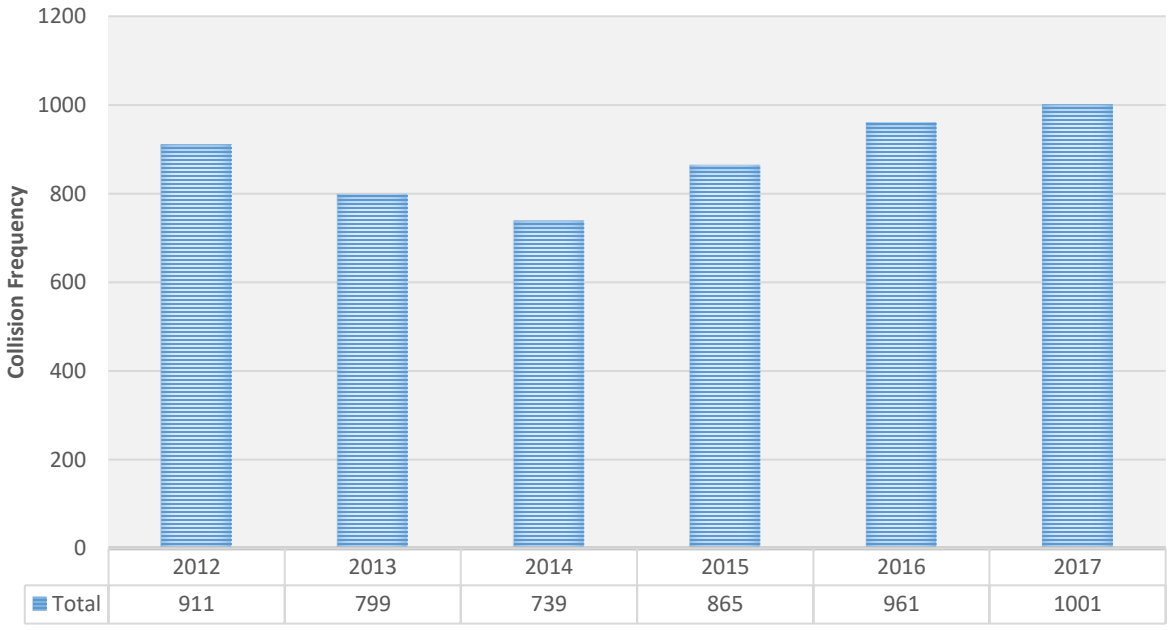
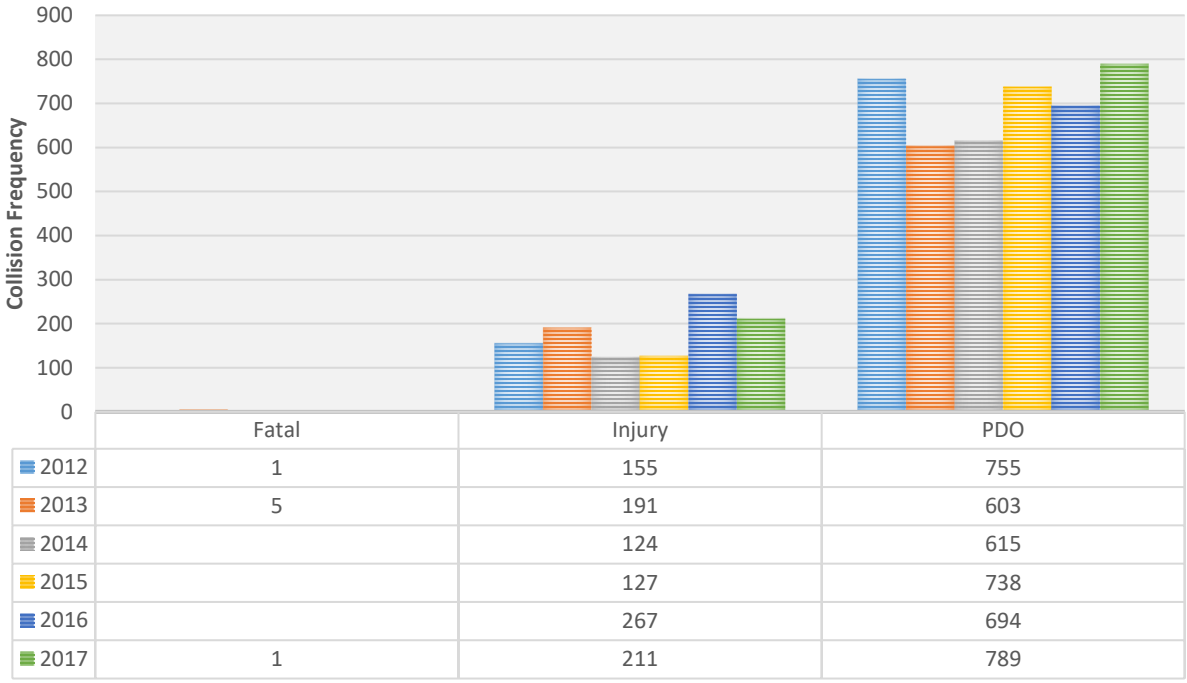
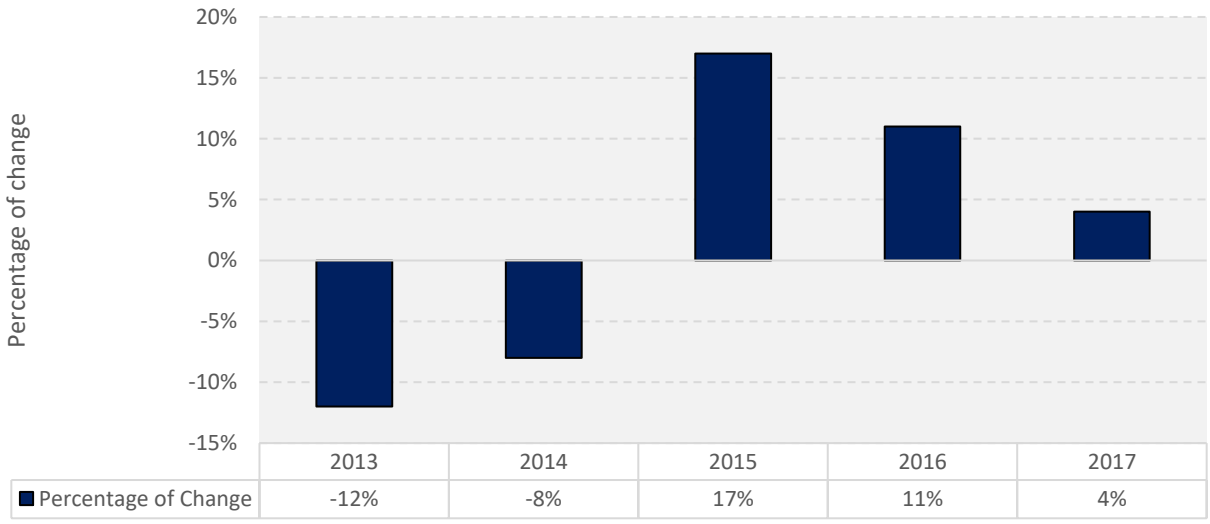


Figure 1: Historical Collision Incidents Reported on Public Roadways (2012 - 2017)



	Fatal	Injury	PDO
2012	1	155	755
2013	5	191	603
2014		124	615
2015		127	738
2016		267	694
2017	1	211	789

Figure 2: Historical Collision Incidents (2012 - 2017) with Collision Severity



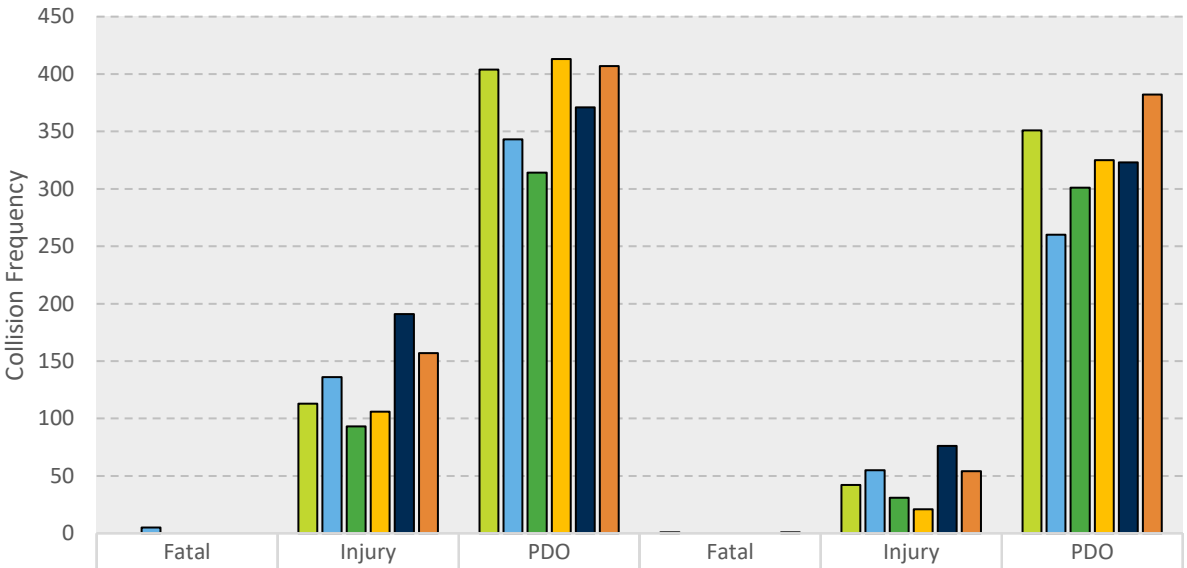
	2013	2014	2015	2016	2017
Percentage of Change	-12%	-8%	17%	11%	4%

Figure 3: Percentage Variance of Annual Reported Collisions

** Change identified for the year is in comparison to the previous year*

Figure 4 represents the annual collision frequency (number of occurrences) and severity at intersections and midblock locations from 2012 to 2017. Intersection collisions were quite high compared to midblock collisions for both injury and PDO collisions. In 2017, injury collisions decreased from 2016 in both intersection and midblock locations. After

maintaining zero fatalitys for three years (2014, 2015 and 2016), a fatal collision occurred in 2017 on public roadways (Figure 4).



	Intersection			Midblock		
	Fatal	Injury	PDO	Fatal	Injury	PDO
2012		113	404	1	42	351
2013	5	136	343		55	260
2014		93	314		31	301
2015		106	413		21	325
2016		191	371		76	323
2017		157	407	1	54	382

Figure 4: 2012 - 2017 Collision Incidents by Location Type and Severity

For a better understanding of city-wide collision trends, it is important to consider city population or registered vehicles or licensed drivers as a proxy for exposure or risk of collision occurrence. This is achieved by considering the collision occurrences per 1,000 licensed drivers, rather than focusing on simple collision frequency.

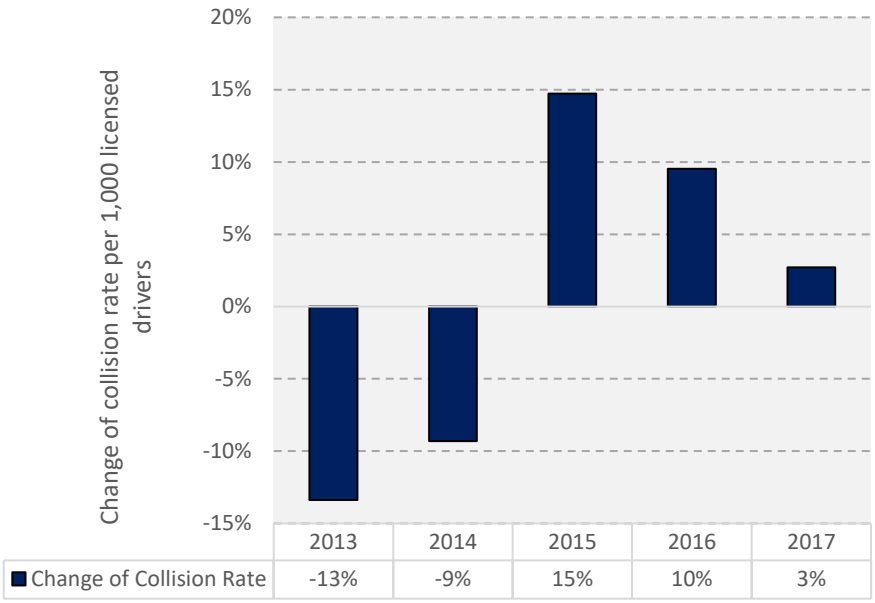
2017 reported a

18%

Decrease

of Intersection Injury Collisions from 2016

Figure 5 identifies the annual collision rates per 1,000 licensed drivers in St. Albert from 2012 to 2017. It also illustrates the decreasing trend in overall collision rates per 1,000 licensed drivers in recent years in St. Albert.



3%

Increase of Collisions per 1,000 Licensed drivers from 2016 to 2017

Figure 5: Collisions per 1,000 Licensed Drivers

CHAPTER 3: 2017 COLLISION STATISTICS ON PUBLIC ROADWAYS

Overview

In 2017, there were 1,001 total collisions that occurred on public roadways (private parking lot incidents excluded). Based on the location of the collisions, public roadways can be divided into two locations:

i) intersection locations
ii) midblock locations

Figure 6 represents the 2017 collisions by location type with identification of resulting severity. Approximately 56% of total collisions occurred at intersections, whereas 44% occurred at midblock locations.

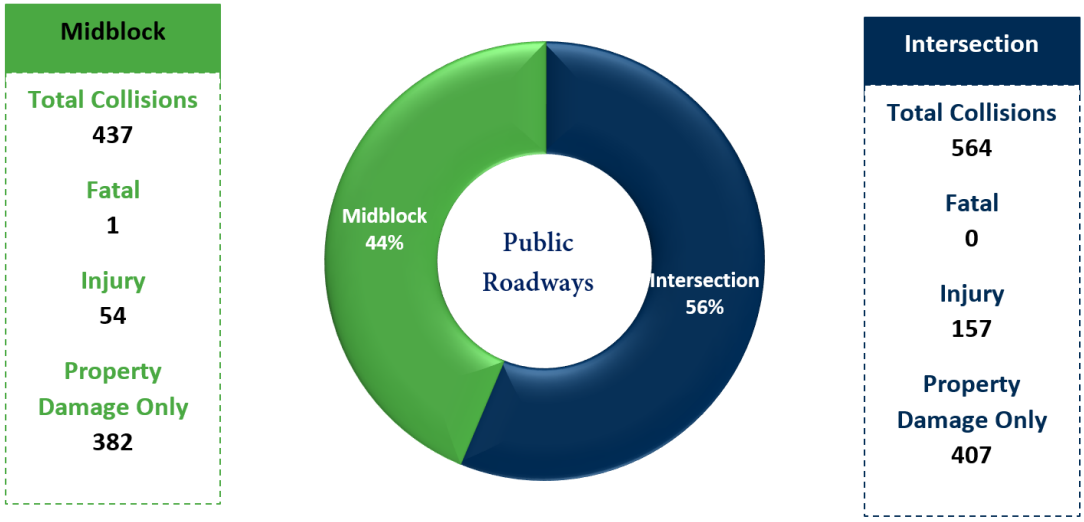


Figure 6: Distribution of Collisions by Location Type and Severity

There was one fatality resulting from collisions in 2017.

There were 211 total injury collisions reported:

- 54 occurrences at midblock locations
- 157 occurrences at intersection locations.

Of these 211 collisions that resulted in injuries:

- A total of 279 injuries were reported
- 8 reported major injuries
- 271 reported minor injuries

One
Fatal Collision
on public roadways

74% Injury Collisions occurred at Intersections

211 Injury Collisions resulted in 8 Major Injuries and 271 Minor Injuries to road users

Intersection Collisions

Intersections are the most collision prone locations in the road network due to the interaction of multiple road users and the various directions for vehicles and pedestrians that result in conflict. For example, in a 4-leg intersection there are 32 conflict points and in a 3-leg intersection (T-intersection) there are 9 conflicts points.

In 2017:

- 56% of the total collisions on public roadways occurred at intersections.
- In terms of severity, 74% of injury collisions occurred at intersections which is a slight increase from 72% in 2016.

Figure 7 illustrates the density, or “hot spots”, of intersection collision incidents. It clearly identifies that most reported collisions occurred along the St. Albert Trail and Boudreau Road corridors.

Figure 8 demonstrates the density of intersection injury collisions, which is similar to the intersection collision density map as it identifies that most reported injury collisions occurred along St. Albert Trail.

St. Albert Trail and Boudreau Road are the two major arterials where traffic volume is significantly higher compared to other arterials within the city.

Previous traffic safety research has shown that there is a relationship between collision occurrence and traffic volume – as traffic volumes increase; vehicle collision frequency also typically increases.

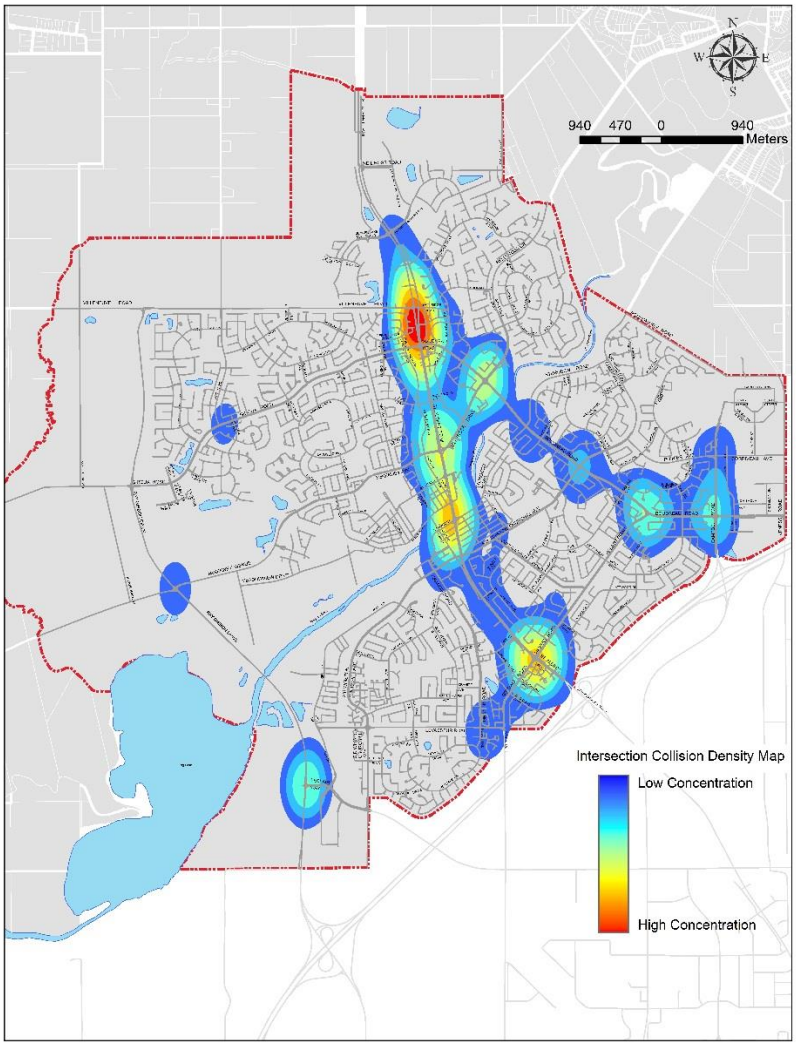


Figure 7: 2017 Intersection Collision Density

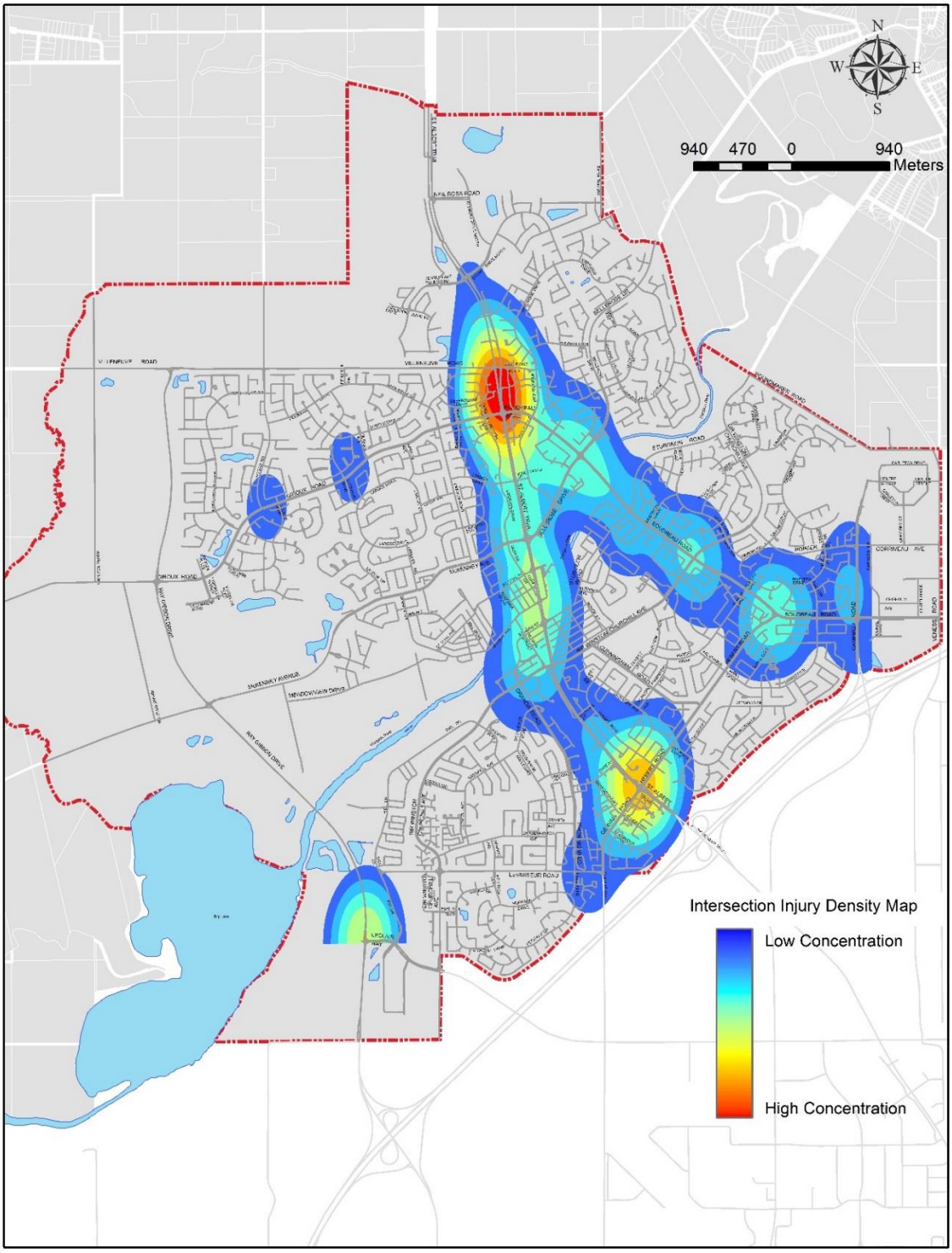


Figure 8: 2017 Intersection Injury Collision Density

Table 1 and Figure 9 identify the 10 highest collision intersections based on total collisions in 2017. For an annual comparison, Table 2 identifies the 10 highest collision intersections

based on 6 years (2012-2017) of collision data. Six out of the top 10 identified intersections are located on the St. Albert Trail corridor.

For 2017, the intersection of St. Albert Trail and St. Anne Street/Sturgeon Road was ranked the highest in collision frequency with 28 collisions (20 out of 28 collisions were rear end collisions). St. Albert Trail and Giroux Road/Boudreau Road ranked second. This location had been the highest collision location for the previous consecutive four years (2013-2016).

Table 3 shows the high injury collision intersections. Although St. Albert Trail and St. Anne Street ranked first for high collision frequency, Ray Gibbon Drive & LeClair Way was first in terms of collision severity.

St. Albert Trail & St. Anne Street/Sturgeon Road
#1
Collision Location based on collision frequency in 2017

Table 1: 2017 Top Ten Collision Intersections

Rank	Intersection Name	Collision Frequency
1	St. Albert Trail & St. Anne Street/Sturgeon Road	28
2	St. Albert Trail & Giroux Road/Boudreau Road	27
3	Boudreau Road & Bellerose Drive	24
4	Ray Gibbon Drive & LeClair Way	23
5	Hebert Road & Boudreau Road	21
6	St. Albert Trail & Villeneuve/Erin Ridge Road	19
6	St. Albert Trail & Hebert Road/Gervais Road	19
7	Campbell Road & Boudreau Road	18
8	St. Albert Trail & Superstore Intersection	13
9	Villeneuve Road & Walmart Exit (E)	12
9	Boudreau Road & Sir Winston Churchill Avenue	12
10	St. Albert Trail & St. Vital Avenue/Rivercrest Crescent	11

Table 2: Top Ten High Collision Intersections (2012- 2017)

Rank	Intersection Name	2012	2013	2014	2015	2016	2017	Total Collision Frequency
1	St. Albert Trail & Giroux Rd./Boudreau Rd.	35	43	24	32	35	27	196
2	St. Albert Trail & Hebert Rd./Gervais Rd.	44	37	19	24	18	19	161
3	Boudreau Rd. & Bellerose Dr.	16	18	23	21	29	24	131
4	St. Albert Trail & McKenney Ave./Bellerose Dr.	18	17	26	26	29	10	126
5	Campbell Rd. & Boudreau Rd.	21	18	14	22	22	18	115
6	St. Albert Trail & Villeneuve/Erin Ridge Rd.	17	19	19	25	14	19	113
7	St. Albert Trail & St. Anne St./Sturgeon Rd.	17	15	13	13	15	28	101
8	St. Albert Trail & St. Vital Ave./Rivercrest Cres.	26	22	9	14	10	11	92
9	Ray Gibbon Dr. & LeClair Way	7	6	11	16	22	23	85
10	St. Albert Trail & Superstore Intersection	16	13	9	4	16	13	71

Table 3: High Injury Collision Intersections in 2012- 2017

Rank	Intersection Name	2012	2013	2014	2015	2016	2017	Total Injury Collision Frequency
1	St. Albert Trail & Giroux Rd./Boudreau Rd.	14	13	4	2	12	8	53
2	St. Albert Trail & Hebert Rd./Gervais Rd.	13	14	3	1	8	7	46
3	Boudreau Rd. & Bellerose Dr.	5	6	7	4	11	8	41
4	St. Albert Trail & Villeneuve/Erin Ridge Rd.	4	9	7	5	6	7	38
5	Campbell Rd. & Boudreau Rd.	4	4	5	7	9	3	32
6	St. Albert Trail & McKenney Ave./Bellerose Dr.	3	6	6	2	10	1	28
7	Ray Gibbon Dr. & LeClair Way	1	1	2	4	6	11	25
8	St. Albert Trail & St. Anne St./Sturgeon Rd.	4	5	2	4	4	5	24
8	St. Albert Trail & Superstore Intersection	6	5	2		9	2	24
9	St. Albert Trail & Lennox Dr./Inglewood Dr.	3	6	4	1	6	3	23
9	St. Albert Trail & St. Vital Ave./Rivercrest Cres.	4	7	2	3	4	3	23

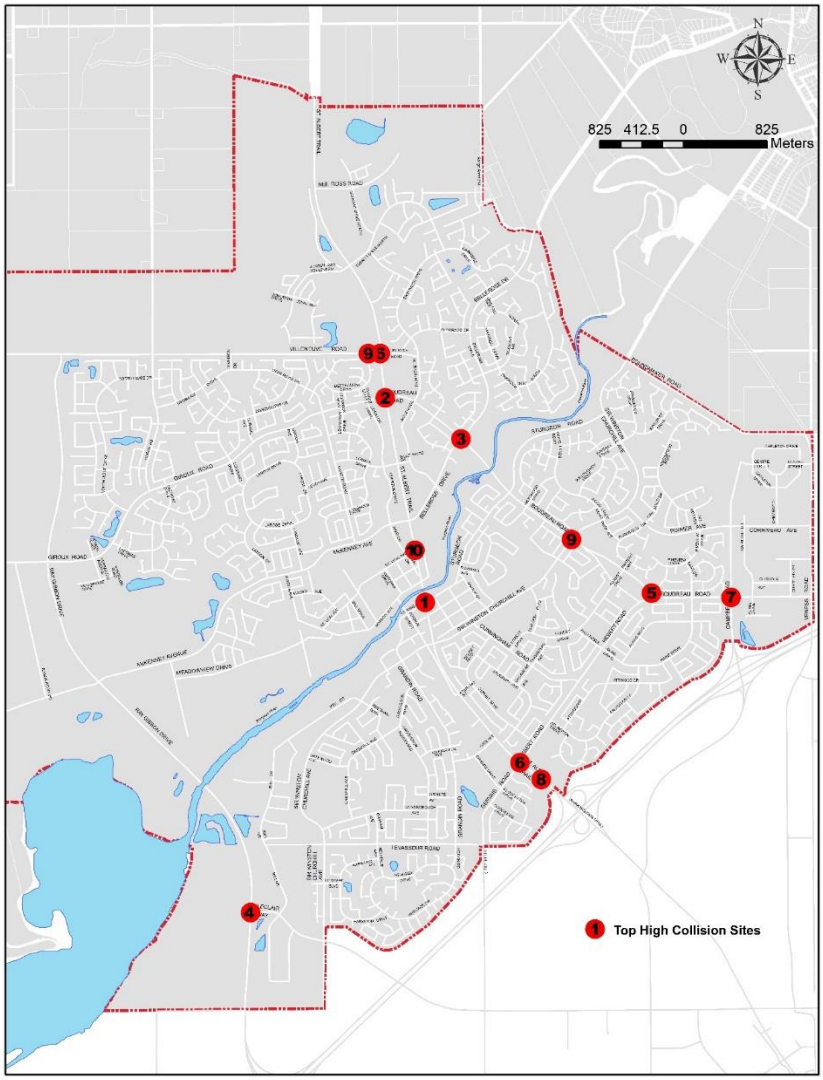


Figure 9: 2017 Top Ten Collision Intersections for Number of Collisions

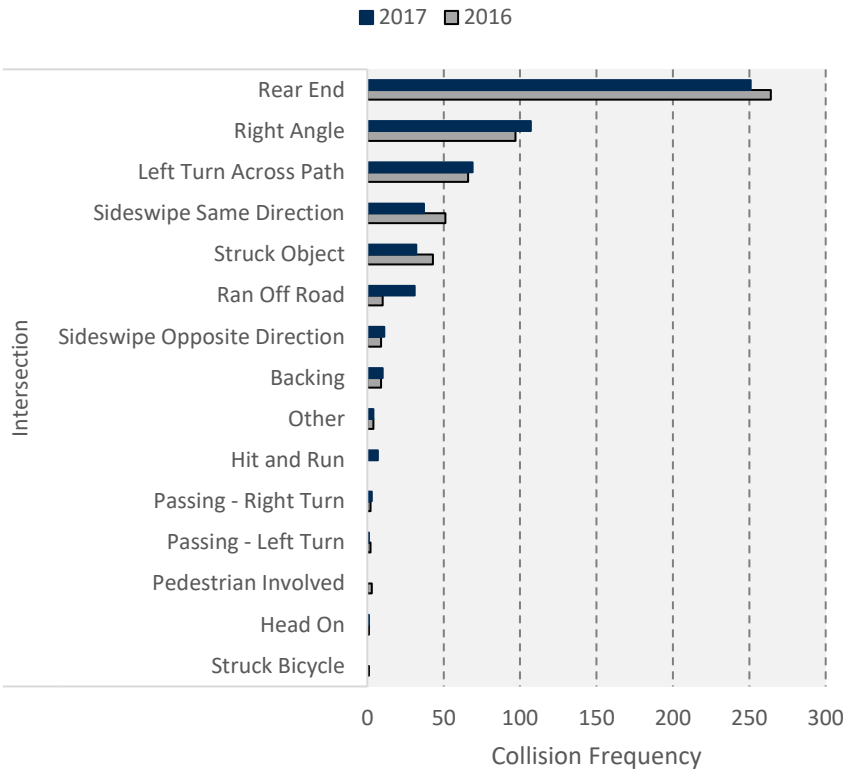
Table 4 represents the ranking of intersections for different collision types based on the collision frequency. Intersection collision details:

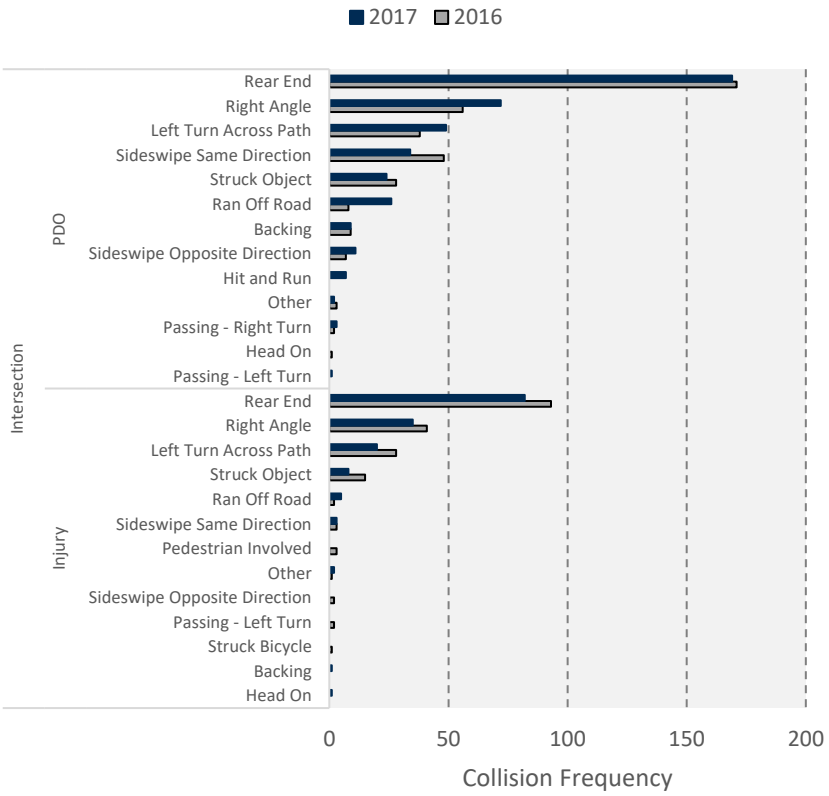
1) Although there is a protected only left turn at the intersection of St. Albert Trail and Giroux Road/Boudreau Road for the north and southbound directions of travel, 9 left turn collisions occurred at this location. All those incidents involved left turns in the east or west travel directions (left turns from Giroux Road or Boudreau Road on to St. Albert Trail), which operate as protected and then permissive left turns (advance left turn arrows that are followed by a yield to oncoming traffic).
2) The intersection of Boudreau Road and Bellerose Drive operates with protected/permissive left turn signal phases. There were 4 incidents in 2017.

3) Of the highest volumes of rear end incidents, 6 out of 10 intersections are along the St. Albert Trail corridor. High traffic volume, speeding, following too closely and distracted driving may be some of the contributing factors of these rear end collisions.
4) Nine right angle collisions occurred at the Villeneuve Rd and East Commercial access/exit, which is a stopped controlled T-intersection.
5) Six right angle collisions also occurred at Liberton Drive and Lennox Drive, which is a two-way stop-controlled intersection.

Table 4: High Collision Intersections by Collision Types

Rank	Intersection Name	Collision Frequency
Rear End		
1	St. Albert Trail & St. Anne St./Sturgeon Rd.	20
2	Ray Gibbon Dr. & LeClair Way	18
3	Hebert Rd. & Boudreau Rd.	17
3	St. Albert Trail & Hebert Rd./Gervais Rd.	17
4	Boudreau Rd. & Bellerose Dr.	16
5	St. Albert Trail & Villeneuve/Erin Ridge Rd.	14
6	St. Albert Trail & Giroux Rd./Boudreau Rd.	11
7	Campbell Rd. & Boudreau Rd.	10
8	St. Albert Trail & Superstore Intersection	8
8	St. Albert Trail & Gate Ave.	8
Right Angle		
1	Villeneuve Rd. & Walmart Exit (E)	9
2	Liberton Dr. & Lennox Dr.	6
3	St. Albert Trail & Villeneuve/Erin Ridge Rd.	4
3	St. Albert Trail & Walmart Exit	4
4	St. Albert Trail & St. Vital Ave./Rivercrest Cres.	3
4	Boudreau Rd. & Sturgeon Rd.	3
4	Giroux Rd. & Lacombe Dr. (E)/Dunfield Cres.	3
4	Giroux Rd. & Dunbar St./Liberton Dr.	3
4	McKenney Ave. & Muir Dr./Liberton Dr.	3
4	Bellerose Dr. & Canadian Tire/St. Albert Centre Exit	3
Left Turn Across Path		
1	St. Albert Trail & Giroux Rd./Boudreau Rd.	9
2	Boudreau Rd. & Bellerose Dr.	4
3	St. Albert Trail & St. Anne St./Sturgeon Rd.	3
3	Levasseur Rd. & Grandin Rd./Hudson Rd.	3
3	Boudreau Rd. & Sir Winston Churchill Ave.	3
3	Villeneuve Rd. & East Commercial Access/Exit	3





45% of Intersection Collisions involved **Rear End** Collisions (2% less than 2016)

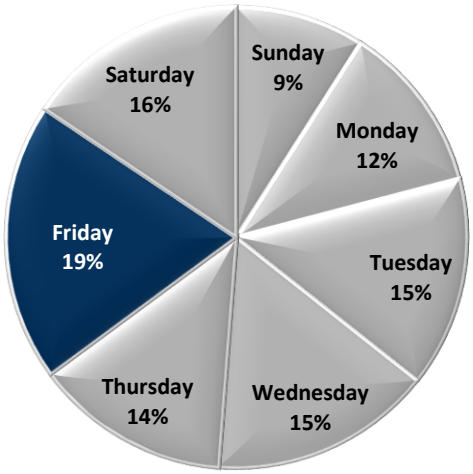
33% of **Rear End** Collisions resulted in **Injuries**

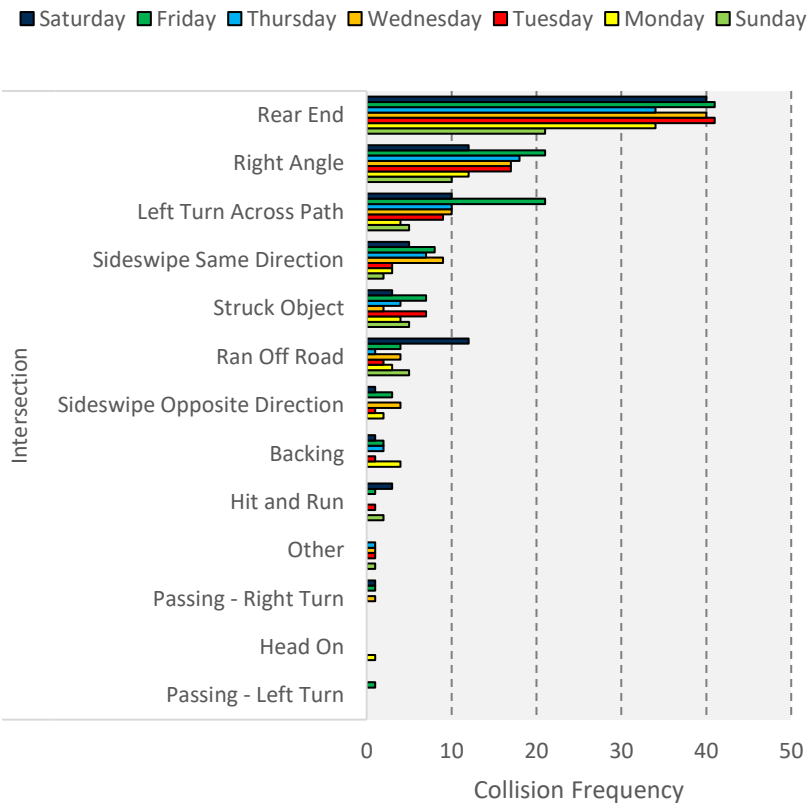
Left Turn Across Path Collisions Increased by **5%**

Right Angle Collisions Increased by **10%** from 2016

Figure 10: Intersection Collisions by Severities and Types for 2016 and 2017

Temporal Distribution of Intersection Collision Occurrences



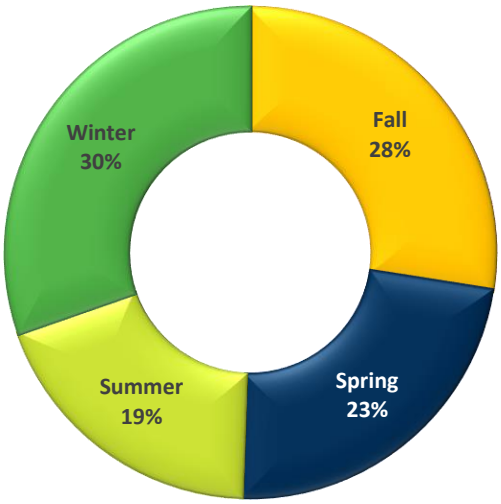


19%
of Intersection Collisions occurred on Fridays

78% of Rear End Collisions occurred on Weekdays

30% of Left Turn Across Path Collisions occurred on Fridays

Figure 11: Intersection Collisions by Day of the Week and Types



Highest frequency of Intersection Collisions occurred during **Winter Months (December/January/February)**

41% of Intersection Collisions in Winter occurred in **January**

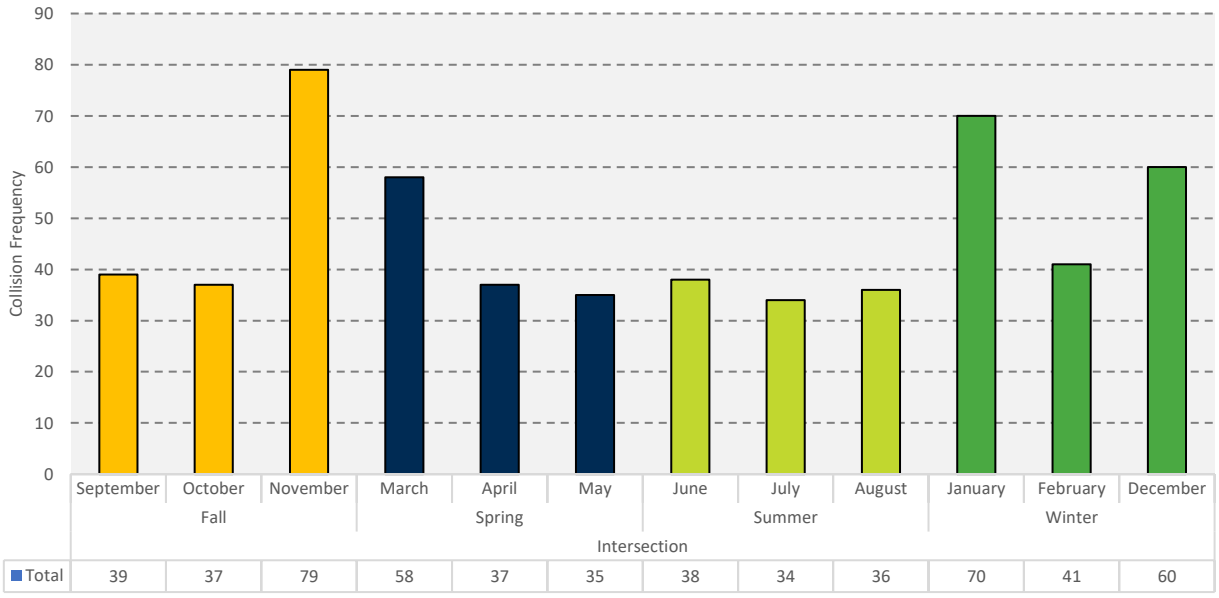


Figure 12: Intersection Collisions by Month and Season

Figure 12 represents intersection collisions by month and season throughout 2017. It shows approximately 30% of the annual collisions occurred during winter (December/January/February). From the 2017 monthly collision distribution, it also shows that 14% of total intersection collisions occurred in November alone. This may be caused

by a change in road conditions due to weather. Previous research has also shown that the onset of snow correlates with the number of collisions[1].

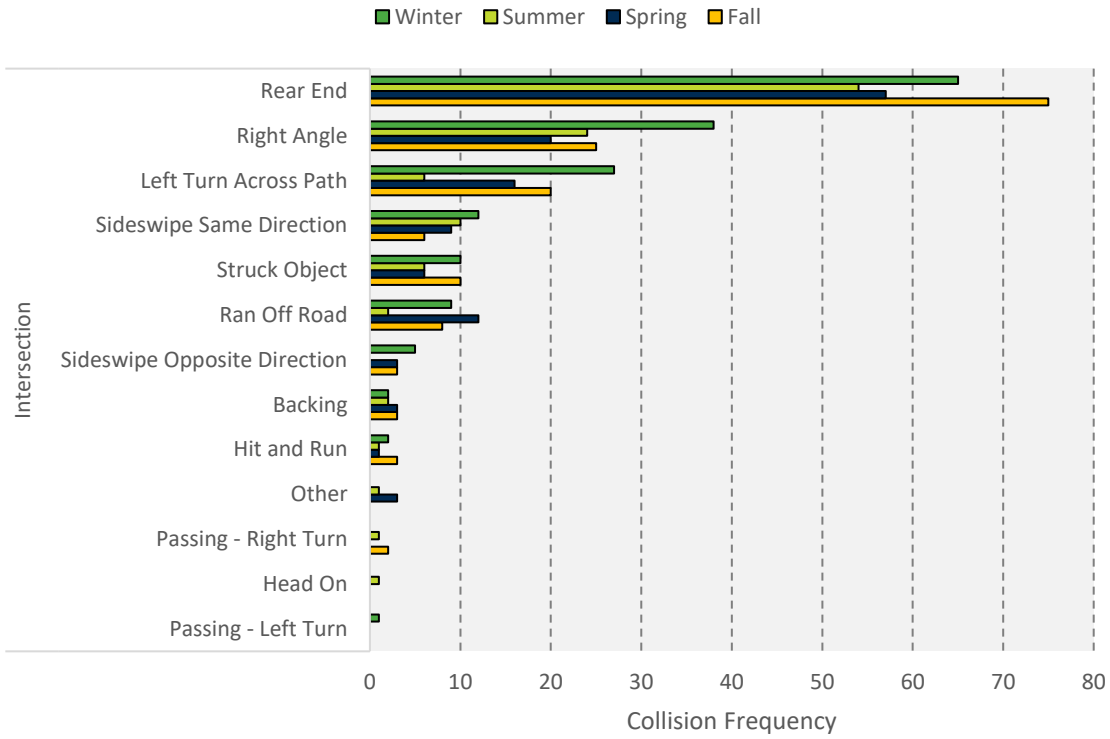


Figure 13: Intersection Collisions by Collision Type and Season

Figure 13 illustrates intersection collisions by collision type and season. Approximately 30% of rear end collisions at intersections occurred during fall, specifically in November, which may reflect when road conditions (weather related) change. This trend is in line with previous research findings. Previous research has also shown that major snow events following dry weather increases the number of rear end collisions[2].

30% of Rear End Collisions occurred during Fall

[1] El-Basyouny,K., Barua, S., & Islam, T., (2014), *Investigation of time and weather effects on crash types using full Bayesian multivariate Poisson lognormal models*, Accident Analysis and Prevention, Vol. 73, pp. 91-99.

[2] El-Basyouny, K., Barua, S., Islam, T., & Li, R, (2014), *Assessing the effect of weather states on crash severity and type by use of Full Bayesian multivariate safety models*, Transportation Research Record: Journal of Transportation Research Board, No. 2432, pp. 65-73.

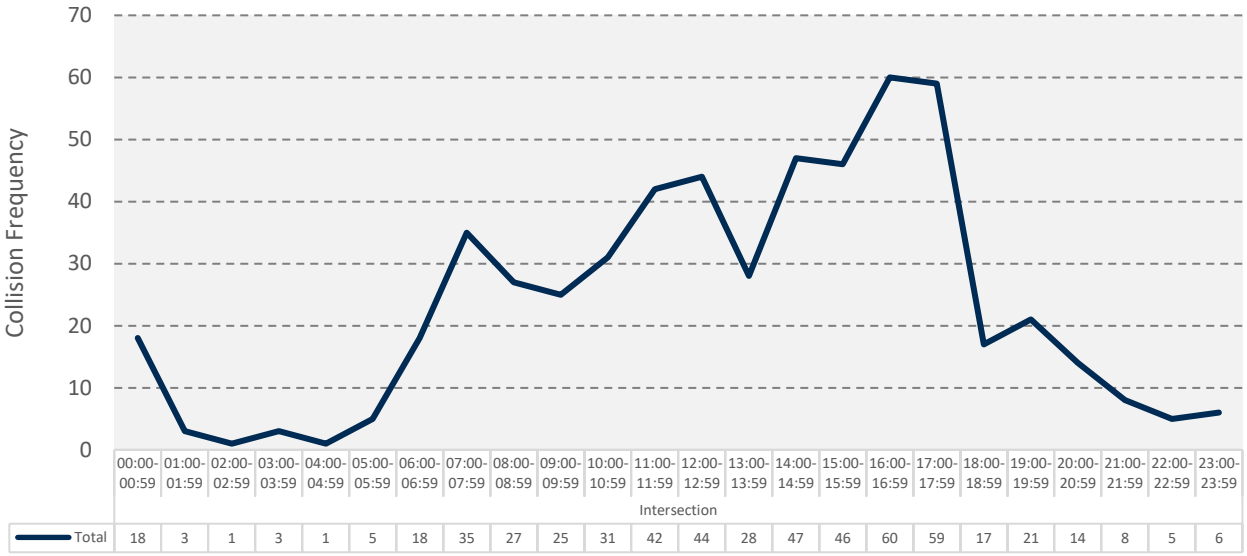


Figure 14: Intersection Collisions by Time of Day

Figure 14 illustrates intersection collisions by time of day. Similar to 2013 through 2016, the afternoon rush hour period from 16:00 to 18:00 accounted for the highest proportion (31%) of intersection collisions in 2017. The least collision occurrences occurred in the early morning (01:00 - 06:00).

21% of Intersection Collisions occurred from 16:00 - 18:00

Midblock Collisions

In 2017, 44% of the total collisions occurred at midblock locations. Figure 15 and Figure 16 illustrate the density of midblock collisions and injury collisions respectively in which the majority occurred along the St. Albert Trail corridor. Due to high traffic volumes and the high number of access and exit points onto the roadway, collision densities along St. Albert Trail are substantially high.

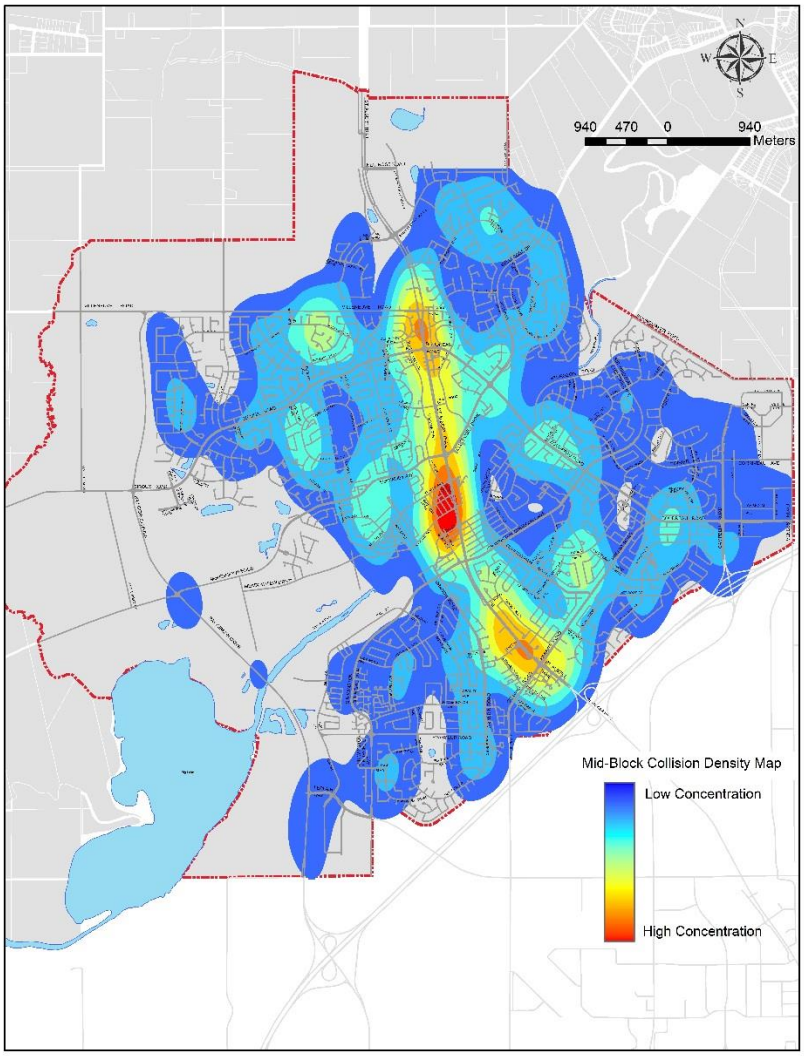


Figure 15 : Midblock Collision Density (2017)

Figure 15 also shows a high concentration of midblock collisions in the downtown area. It should be noted that the density distribution and identification of “hot spots” is relative to the overall distribution of occurrences throughout the city. 2017 collision statistics identified 8 midblock collisions on St. Thomas Street and St. Michael Street; however, as those 8 collisions occurred within a very small road segment, the density becomes high compared to other road segments where the collisions were very segregated. Unlike past years, midblock collisions on Perron Street decreased from previous years. There was only one midblock collision that occurred on Perron street in 2017.

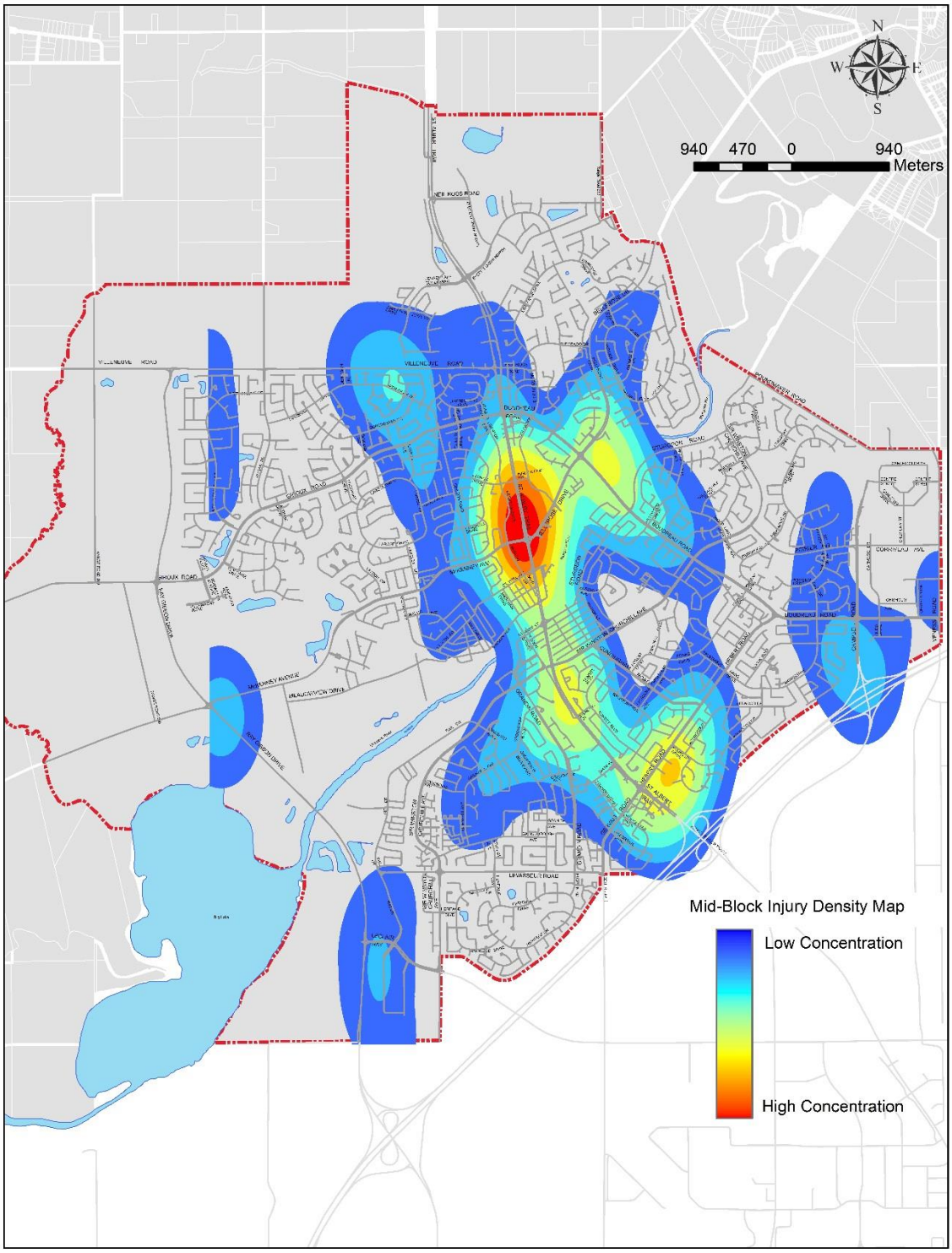
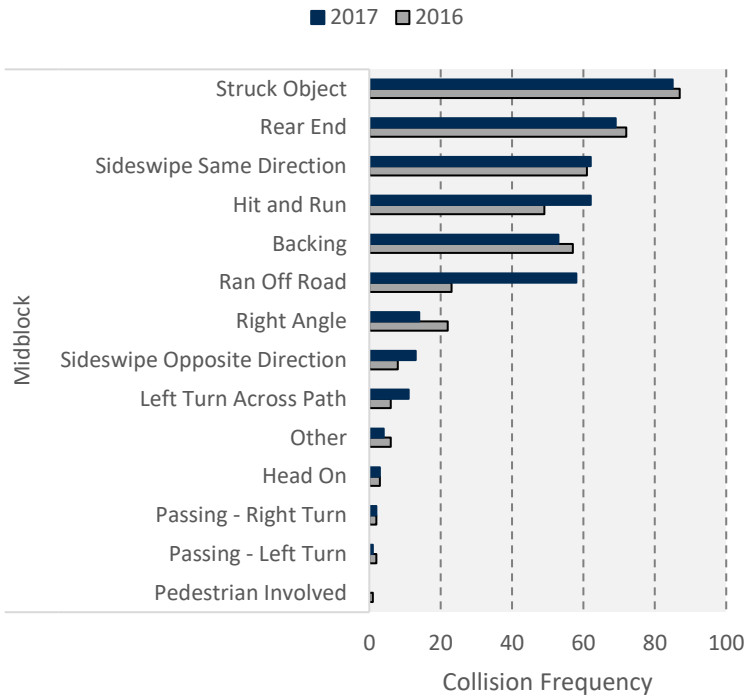
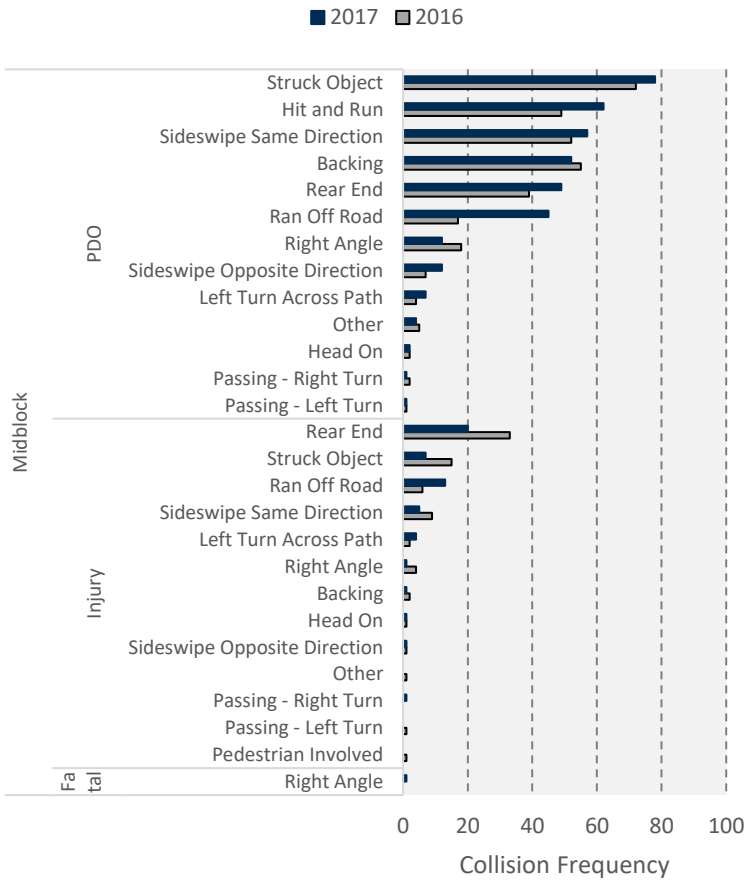


Figure 16: Midblock Injury Collision Density (2017)





19% of Midblock Collisions were caused by **Striking an Object**

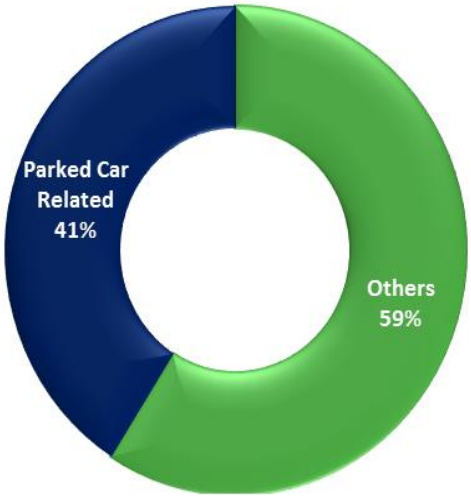
16% of Midblock Collisions were **Rear End**

Ran off Road collisions almost **doubled** from last year

Injury Collisions **Reduced by 29%** from 2016

A midblock **Fatal** Collision occurred from a **Right Angle** Collision

Figure 17: Midblock Collisions by Severity and Type



41% of Midblock Collisions involved a parked car being hit

14% of Midblock Collisions involving a parked car occurred in Lacombe Park

Figure 18: Midblock Collision Distribution related to Parked Cars in 2017

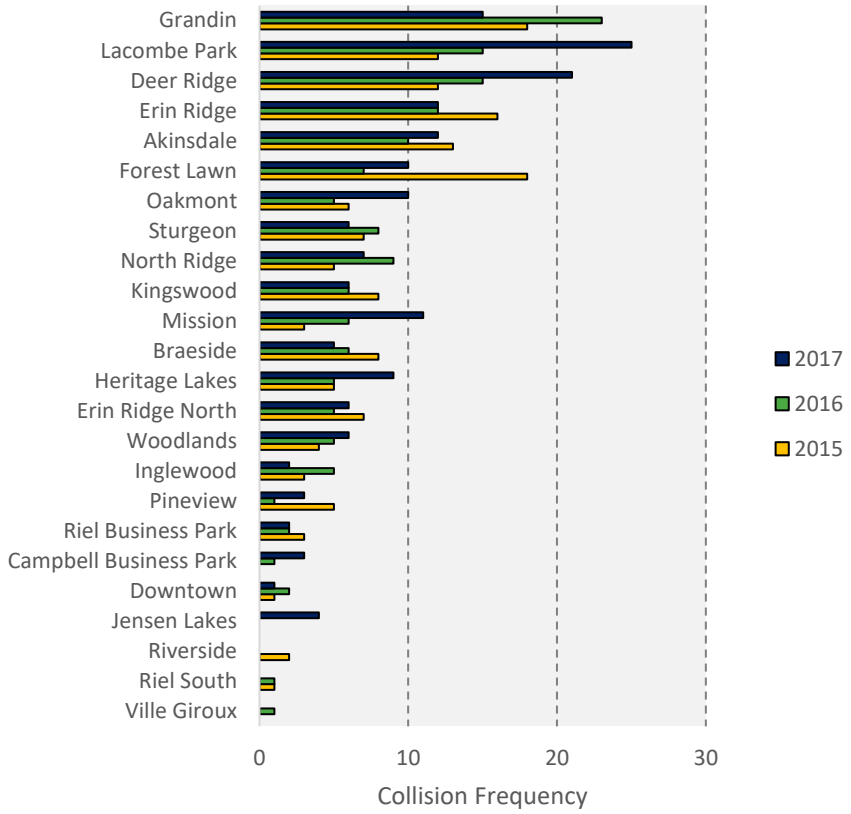
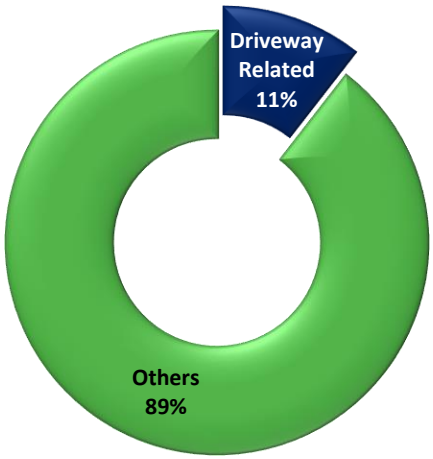


Figure 19: Neighbourhoods with Frequent Parked Car Related Collisions

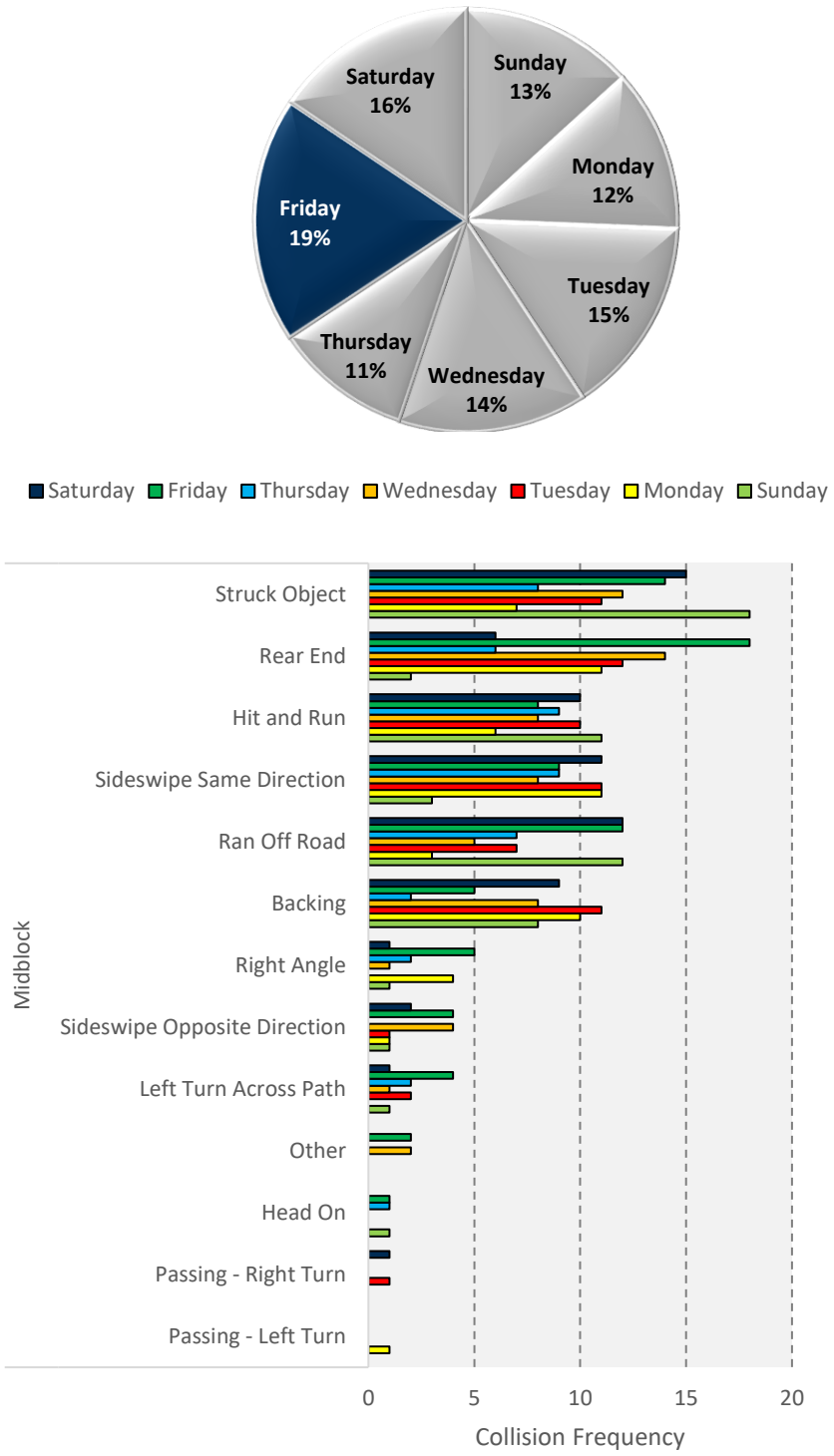


11% of Midblock Collisions occurred were Residential Driveway related

Figure 20: Midblock Collision Distribution Related to Residential Driveways

Figure 20 represents the midblock collisions related to residential driveways. Approximately 11% of midblock collisions occurred near driveways and were caused by drivers backing up unsafely.

Temporal Distribution of Midblock Collision Occurrences



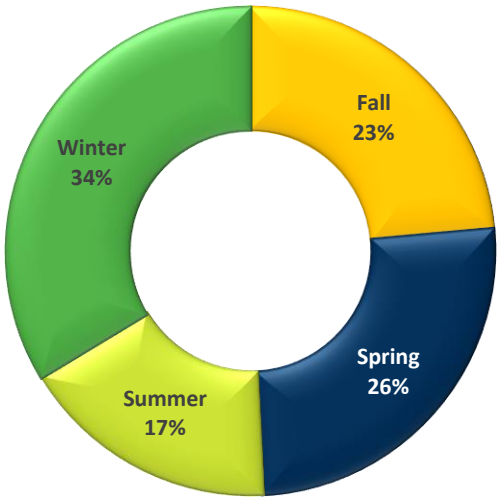
71% of Midblock Collisions occurred on Weekdays

19% of Midblock Collisions occurred on Fridays

22% of Struck Object Collisions occurred on Sundays

26% of Rear End Collisions occurred on Fridays

Figure 21: Midblock Collisions by Type and Day of the Week



34% of
Midblock Collisions occurred during
Winter
(December/January/February)

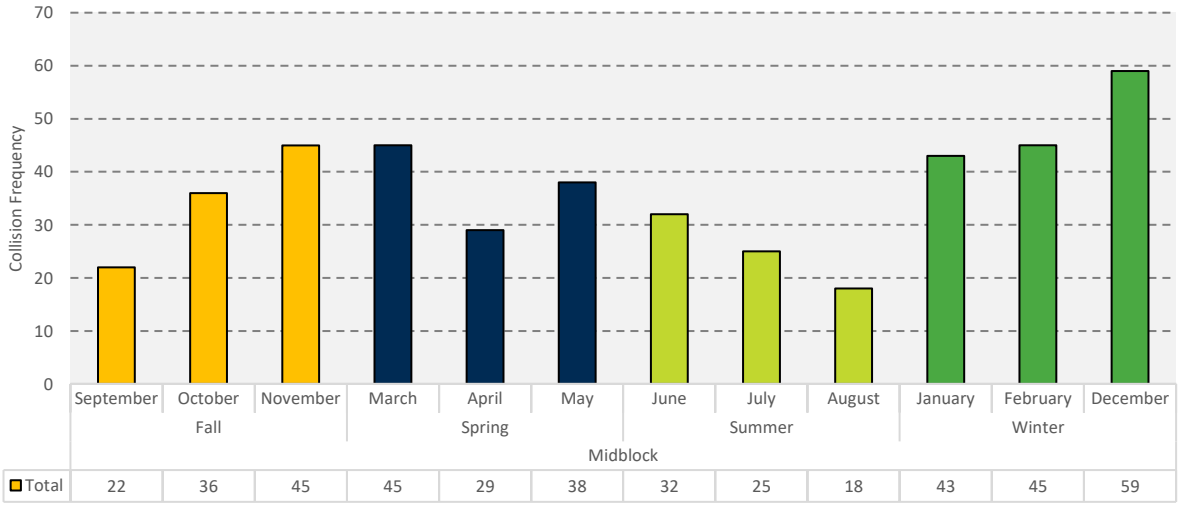


Figure 22: Midblock Collisions by Month and Season

Figure 22 represents midblock collisions by month and season. Approximately 34% of collisions occurred during winter. Further, about 40% of all collisions that occurred during winter took place in December. Heavy snowfall, extreme weather conditions and slippery road surface conditions may be some of the contributing factors of these collisions.

40% of
of Midblock Collisions in Winter took place in
December

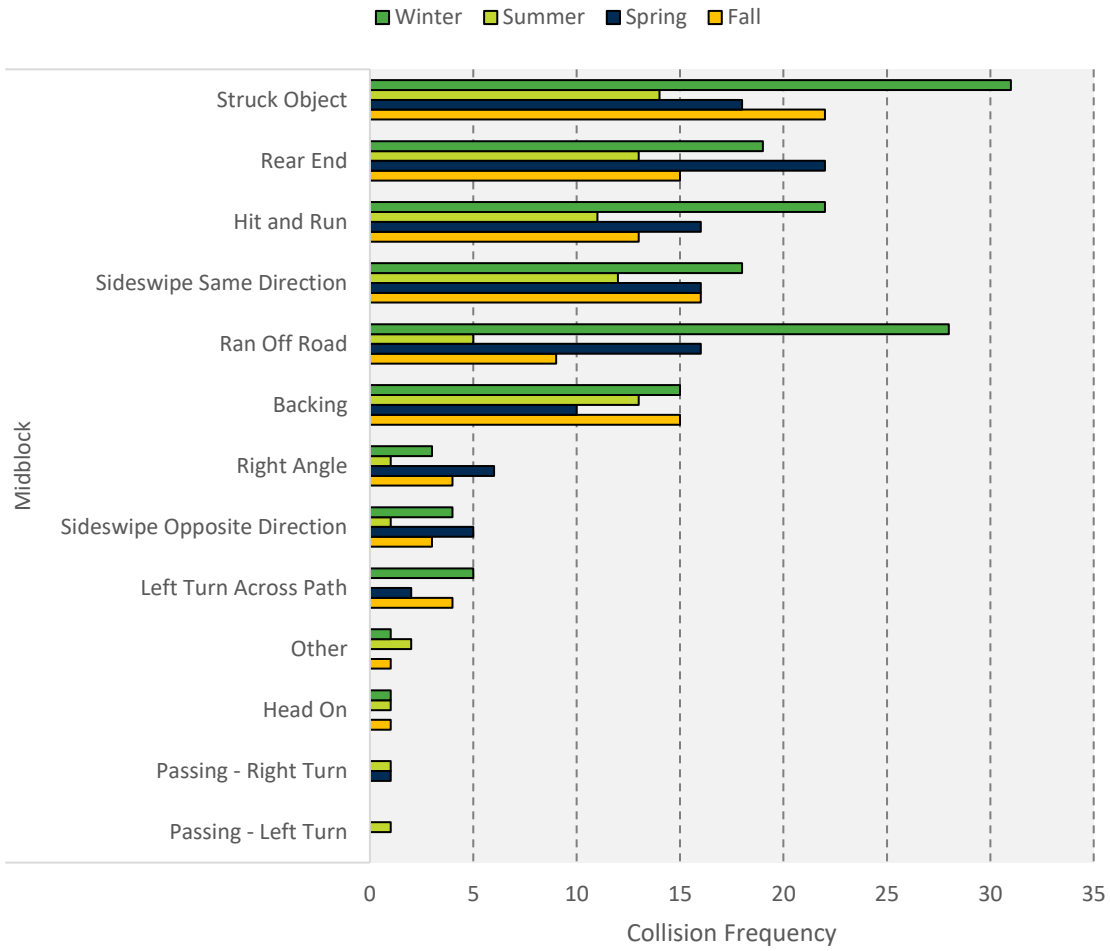


Figure 23: Midblock Collisions by Collision Type and Season

Figure 34 illustrates midblock collisions by collision type and season. Previous research has shown that major snow events, following dry weather, increases the number of struck parked vehicle collisions[3] (Figure 34). A high proportion of struck object collisions occurred in December and January when typically heavier snowfalls occur, creating icy or slippery conditions.

31%
of Struck Object Collisions occurred in November & December when heavier snowfalls occur

[3] El-Basyouny, K., Barua, S., Islam, T., & Li, R, (2014), *Assessing the effect of weather states on crash severity and type by use of Full Bayesian multivariate safety models*, Transportation Research Record: Journal of Transportation Research Board, No. 2432, pp. 65-73.

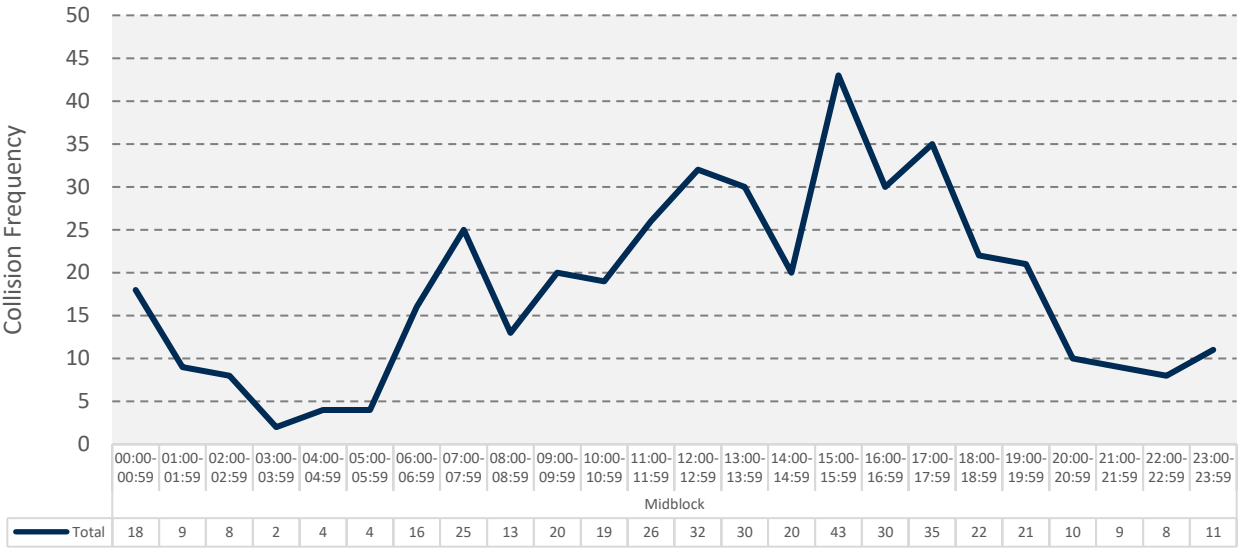


Figure 24: Midblock Collisions by Time of Day

Figure 24 illustrates midblock collisions by time of day. Similar to intersection collisions, the afternoon rush hour period from 15:00 to 17:00 (reaching a peak collision period around 15:00 - 17:59) accounted for the highest proportion (25%) of midblock collisions. The least collisions occurred in the early morning (03:00 - 06:00).

10%
of Midblock Collisions occurred from
15:00 - 16:00

Collision by Neighbourhoods

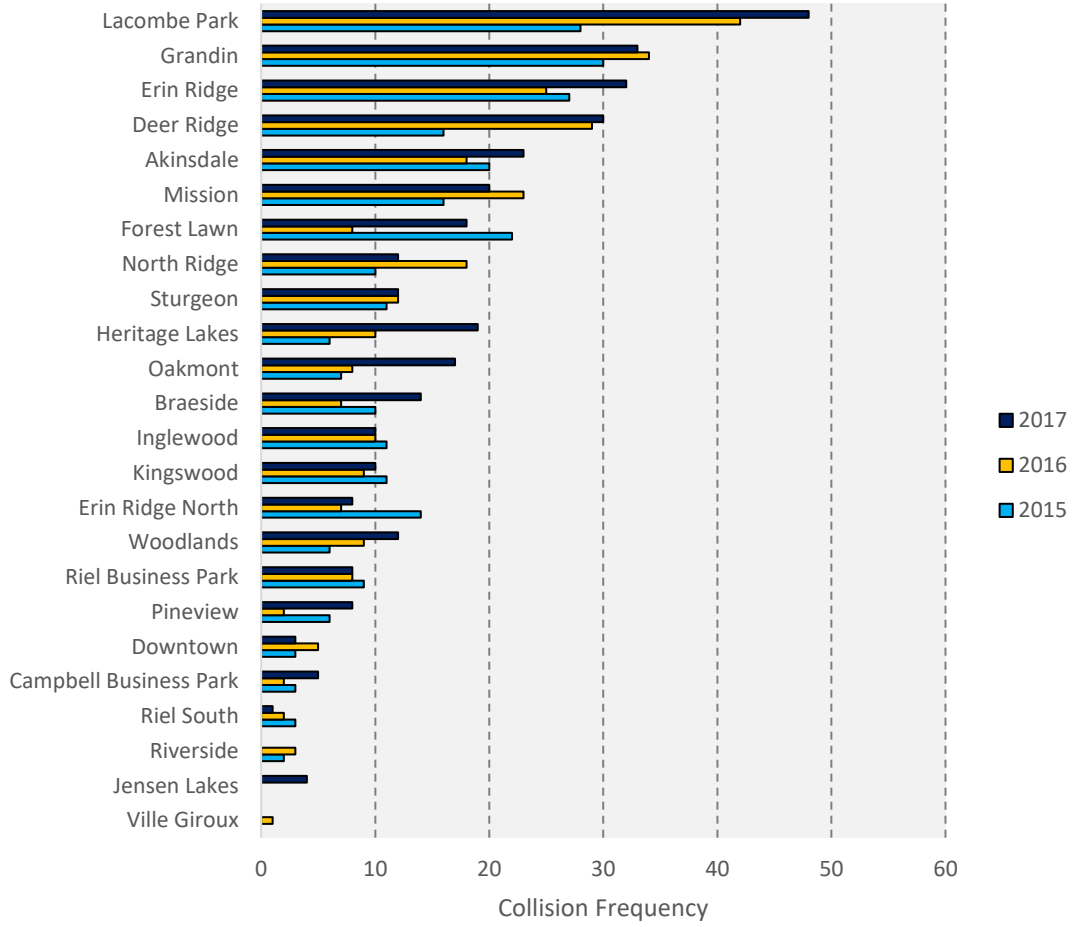


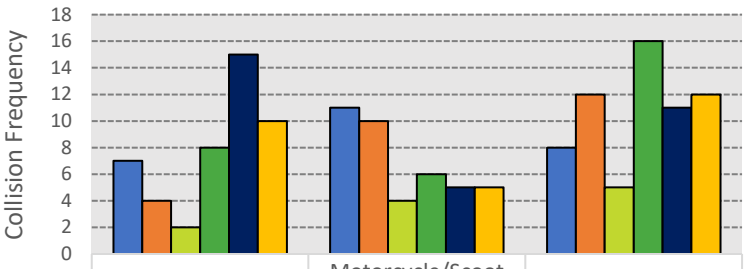
Figure 25: Collision Frequency by Neighbourhoods

Figure 25 illustrates collisions by neighbourhoods. In 2017, the highest volume of collisions occurred in Lacombe Park (14%) followed by Grandin and Erin Ridge. These results are intuitive as Lacombe Park and Grandin are the most populated neighbourhoods and the higher population increases the potential risk of collisions.

14%
of Total Collisions occurred in
Lacombe Park
in 2017

Vulnerable Road User Collisions

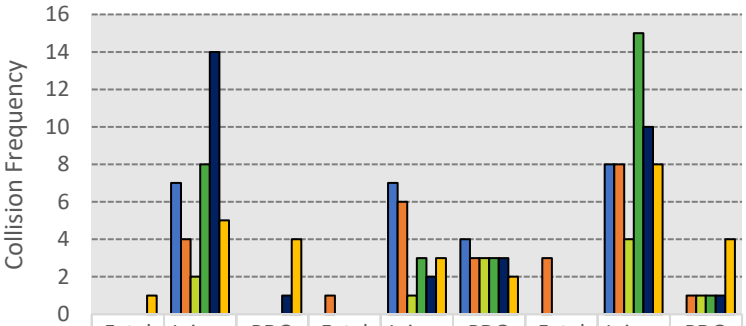
Road users who are in an unprotected state or have less external protection, (i.e., pedestrians, motorcyclists or bicyclists), are defined as vulnerable road users. Figure 26 exhibits the 2012 to 2017 vulnerable road user collisions and resulting severity on public roadways.



	Bicycle	Motorcycle/Scooter	Pedestrian
2012	7	11	8
2013	4	10	12
2014	2	4	5
2015	8	6	16
2016	15	5	11
2017	10	5	12

Although in 2017, there was a decrease of bicycle collisions compared to 2016, a fatal bicycle collision occurred.

Figure 27 shows the location of vulnerable road user collisions in 2016.



	Bicycle			Motorcycle/Scooter			Pedestrian		
	Fatal	Injury	PDO	Fatal	Injury	PDO	Fatal	Injury	PDO
2012		7			7	4		8	
2013		4		1	6	3	3	8	1
2014		2			1	3		4	1
2015		8			3	3		15	1
2016		14	1		2	3		10	1
2017	1	5	4		3	2		8	4

Decrease of Bicycle Collisions & Increase of Pedestrian Collisions from 2016

Figure 26: 2012- 2017 Vulnerable Road User Collisions with Severity

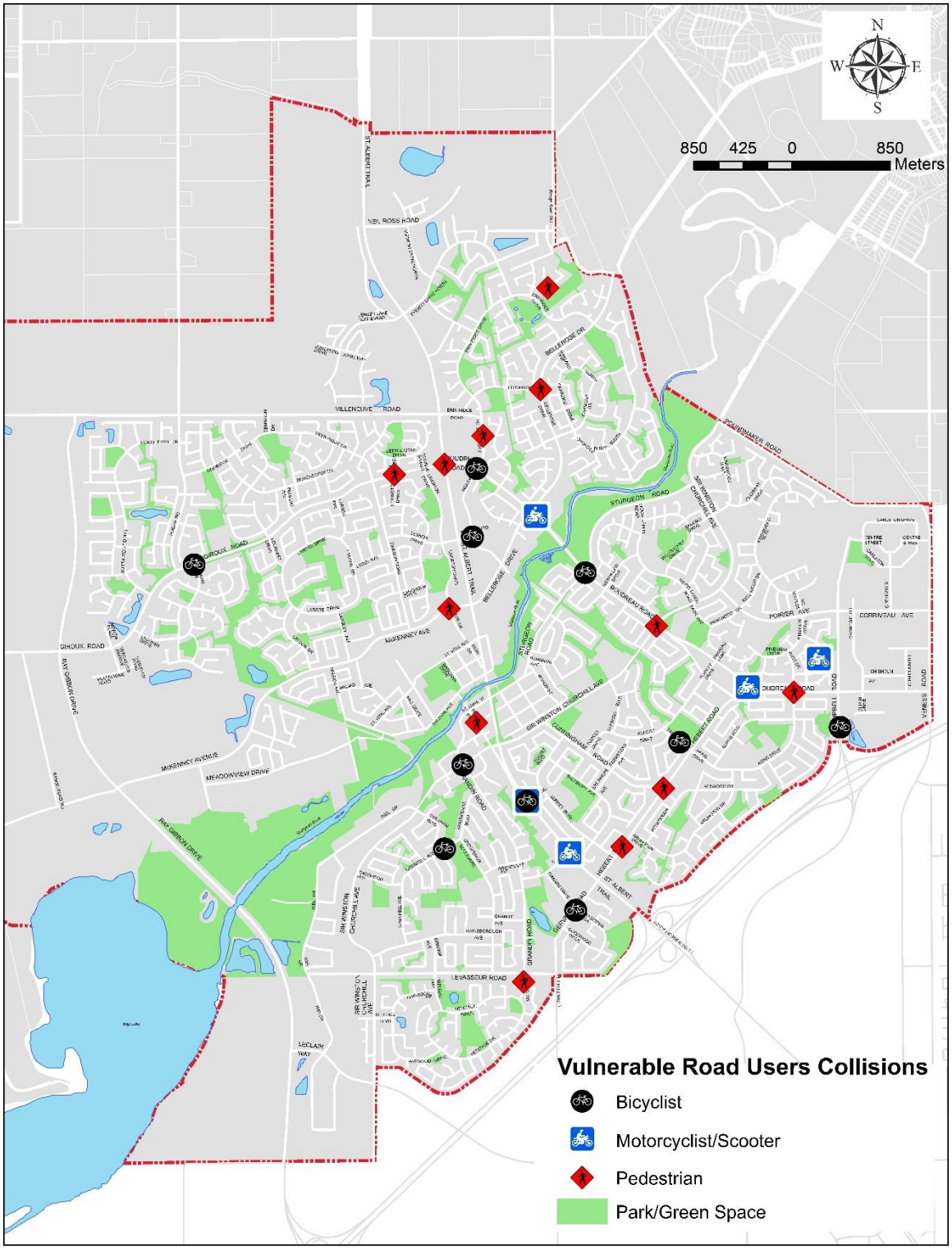


Figure 27: Vulnerable Road User Collision Locations in 2017

Pedestrian Collisions

Figure 28 illustrates the pedestrian collisions that have occurred from 2012 to 2017.

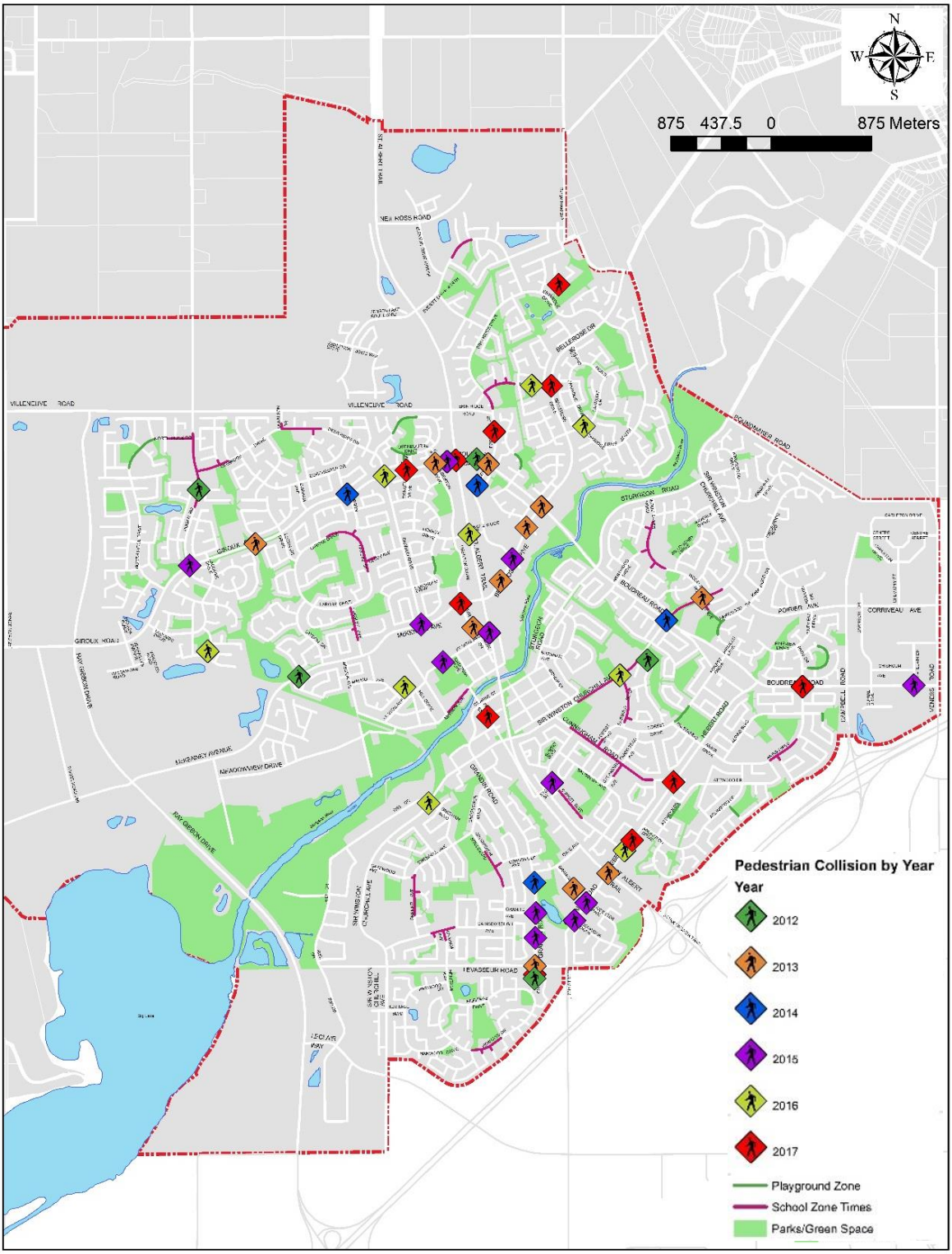
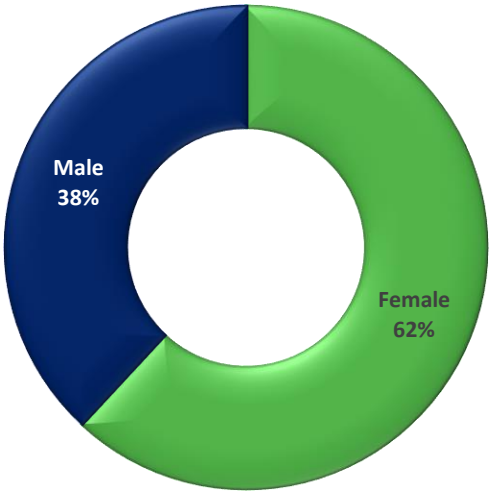
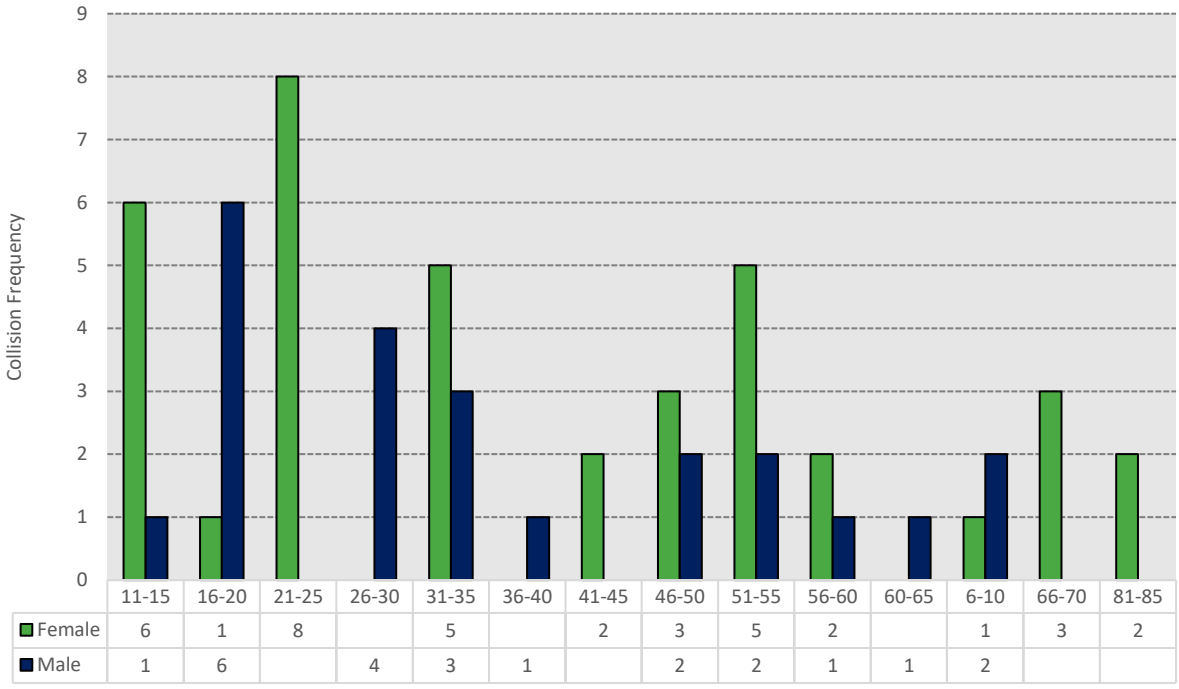


Figure 28: Pedestrian Collision Locations from 2012-2017

Since 2012, 64 pedestrian collisions occurred in St. Albert. Among the 64 collisions:



- Female pedestrians were involved in 40 incidents (62%), and male pedestrians were involved in 24 incidents (38%).
- 64 pedestrian collisions resulted in 3 fatal, 53 injury and 8 PDO collisions
- 53 injury collisions resulted in 14 major and 37 minor injuries
- 50 collisions occurred at an intersection (37 at signalized and 13 at stop/yield controlled intersections)
- 19 collisions occurred due to vehicles turning left and 10 occurred due to vehicles turning right
- 50 collisions occurred on arterial roadways
- 8 collisions occurred in school/playground zones
- 16 collisions occurred in between 07:00 to 09:00



	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	60-65	6-10	66-70	81-85
Female	6	1	8		5		2	3	5	2		1	3	2
Male	1	6		4	3	1		2	2	1	1	2		

Figure 29: Demographics of Pedestrians involved in Pedestrian Collisions in 2012-2017

Bicycle Collisions

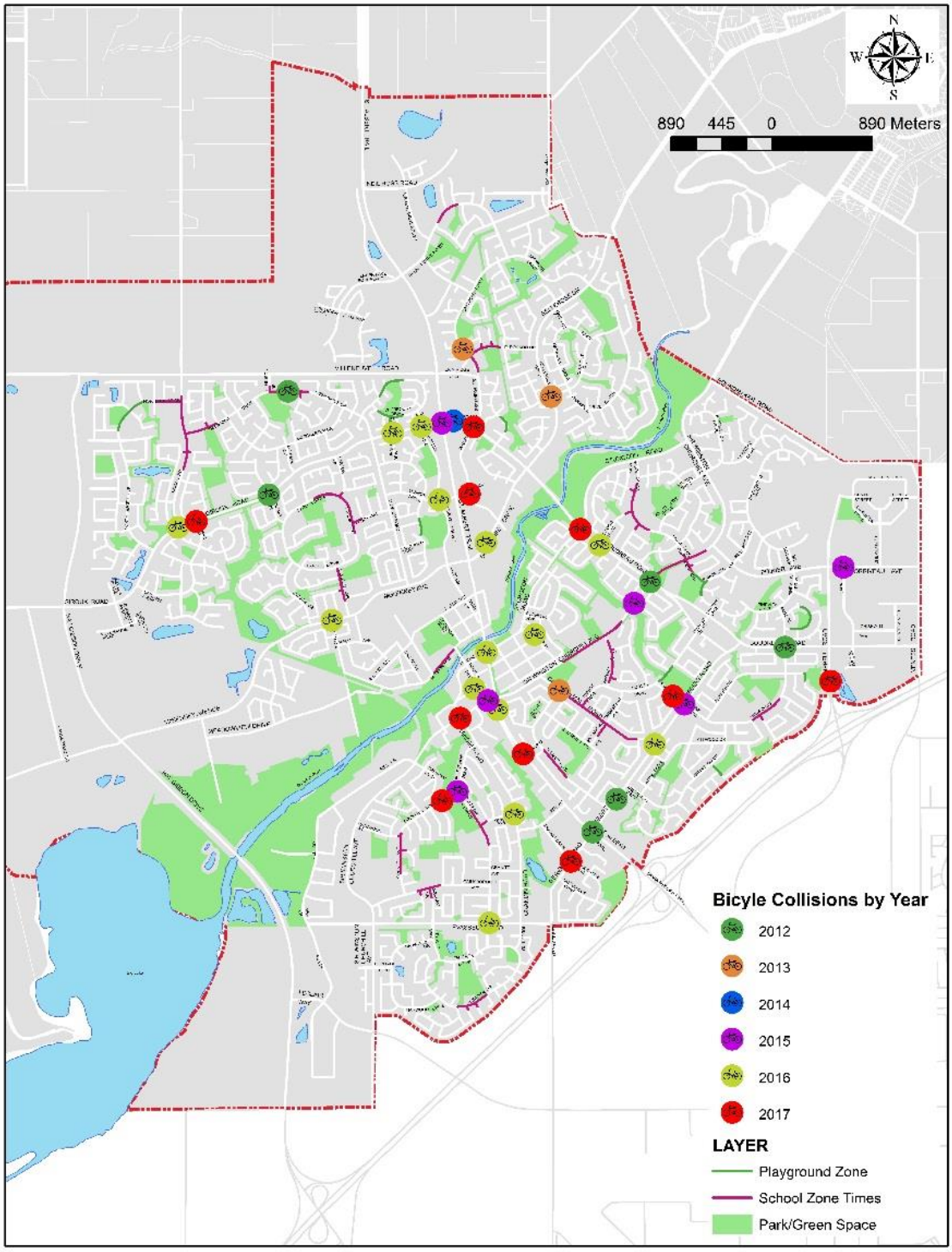


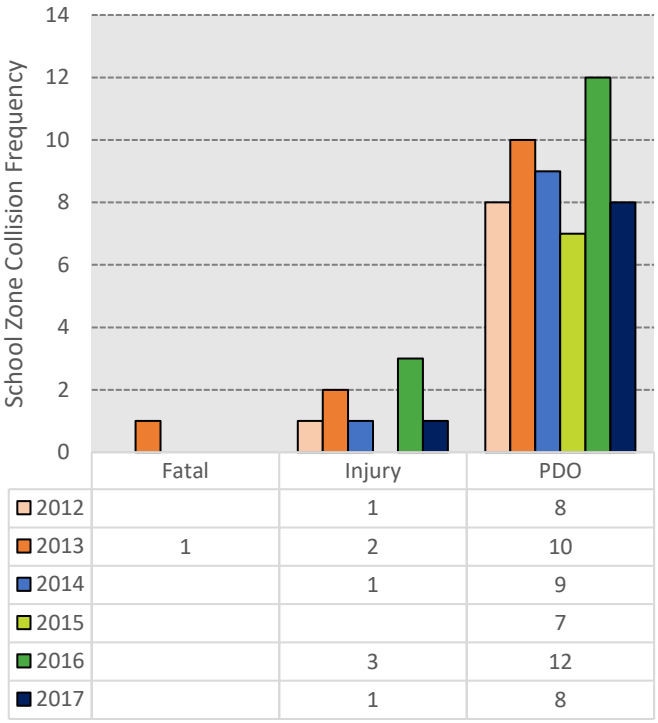
Figure 30: Bicycle Collision Locations in 2012- 2017

Bicycle incidents decreased from 2016, with 10 bicycle collisions occurring in 2017. Among those 10 incidents:

- 1 fatality occurred in a midblock crosswalk
- 7 incidents occurred on arterial roadways
- 7 incidents occurred at an intersection

School Zone Collision Statistics

In 2017, there were 19 collisions that occurred within school zones on St. Albert public roadways, excluding collisions in parking lots or private driveways. A school zone is in effect between 08:00 and 16:00 on school days. Among the 19 collisions, 9 occurred during school hours; thus, they are called school zone collisions. The remaining 10 collisions occurred outside school hours and are excluded from school zone collisions.

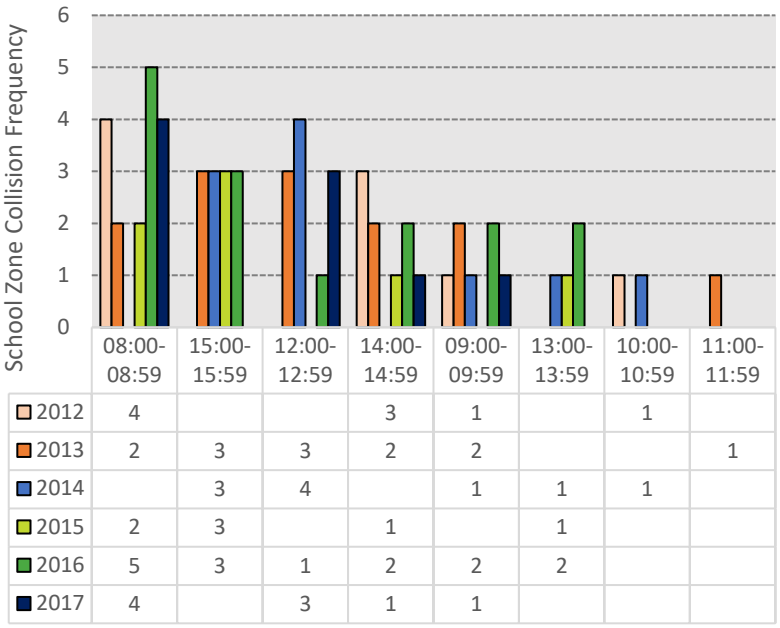


	Fatal	Injury	PDO
2012		1	8
2013	1	2	10
2014		1	9
2015			7
2016		3	12
2017		1	8

School Zone
Incidents
Decreased
from 2016

Only One Injury
Collision Occurred in a School Zone in 2017

Figure 31: School Zone Collisions with Severity (2012-2017)



	08:00-08:59	15:00-15:59	12:00-12:59	14:00-14:59	09:00-09:59	13:00-13:59	10:00-10:59	11:00-11:59
2012	4			3	1		1	
2013	2	3	3	2	2			1
2014		3	4		1	1	1	
2015	2	3		1		1		
2016	5	3	1	2	2	2		
2017	4		3	1	1			

From 2012 to 2017, over 76% of school zone collisions occurred on a Monday, Wednesday and Friday, with the highest frequency happening on Mondays.

School zones are in effect between 08:00 and 16:00 on school days in St. Albert.

Most collisions occurred in the morning - between 08:00 and 08:59.

Figure 32: School Zone Collisions by Time of Day in 2012-2017

Table 5 and Figure 33 depict the number of school zone collisions in terms of the proximity to school. In 2017, 3 school zone collisions occurred in Muriel Martin and 2 school zone collisions occurred near the school zone of Leo Nickerson and Paul Kane High School.

Table 5: School Zone Collisions (2015-2017) by School

School Name	Collision Frequency		
	2015	2016	2017
Muriel Martin	1	0	3
Leo Nickerson And Paul Kane High	0	6	2
École Father Jan	0	1	1
École La Mission	0	1	1
Sir George Simpson	0	0	1
École Secondaire Sainte Marguerite d'Youville And Ecole Marie Poburan	0	0	1
Elmer S. Gish School	0	3	0
J.J. Nearing School	2	2	0
Sir Alexander Mackenzie and Richard S. Fowler Schools	1	1	0
Bertha Kennedy and W.D. Cuts School	1	1	0
Neil M. Ross School	1	0	0

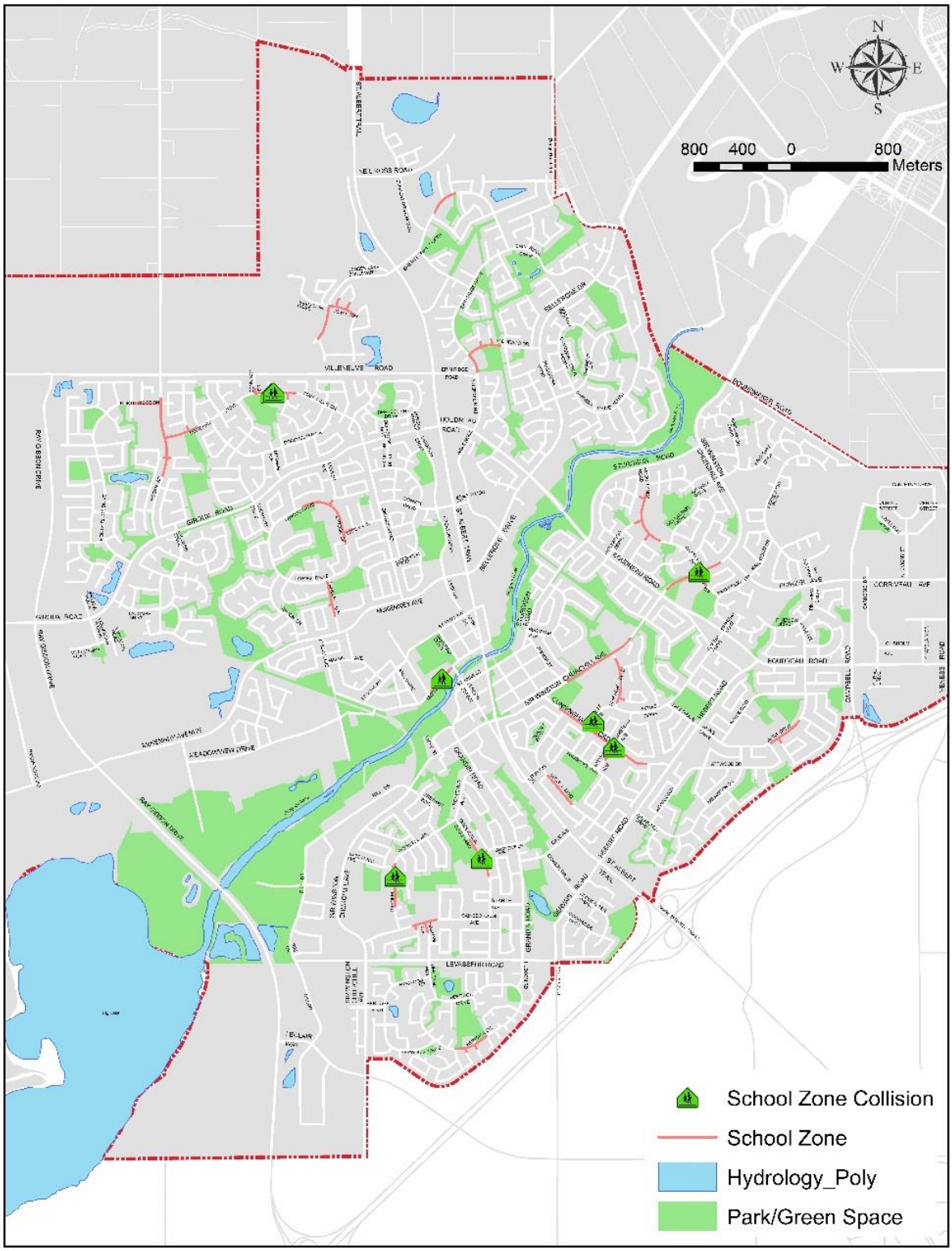


Figure 33: School Zone Collisions Locations in 2017

Vehicle Wildlife Collisions

In 2017 six motor vehicle collisions involved wildlife (five involved deer and one involved a moose), which is double than the previous year (Figure 34). All the incidents involved a vehicle striking the animal with no major and minor injuries to the drivers and passengers.

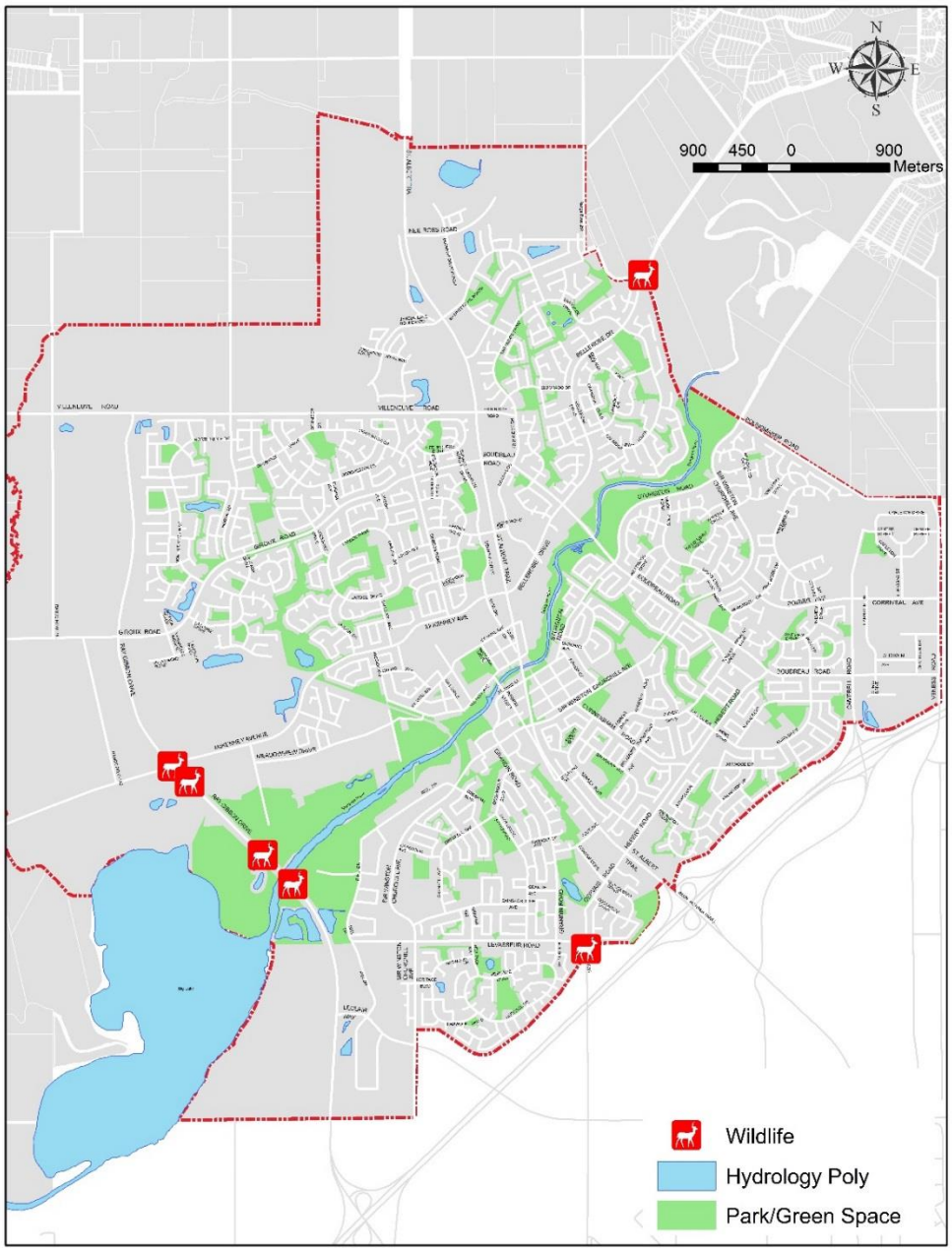
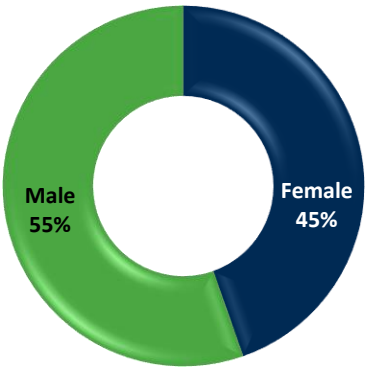


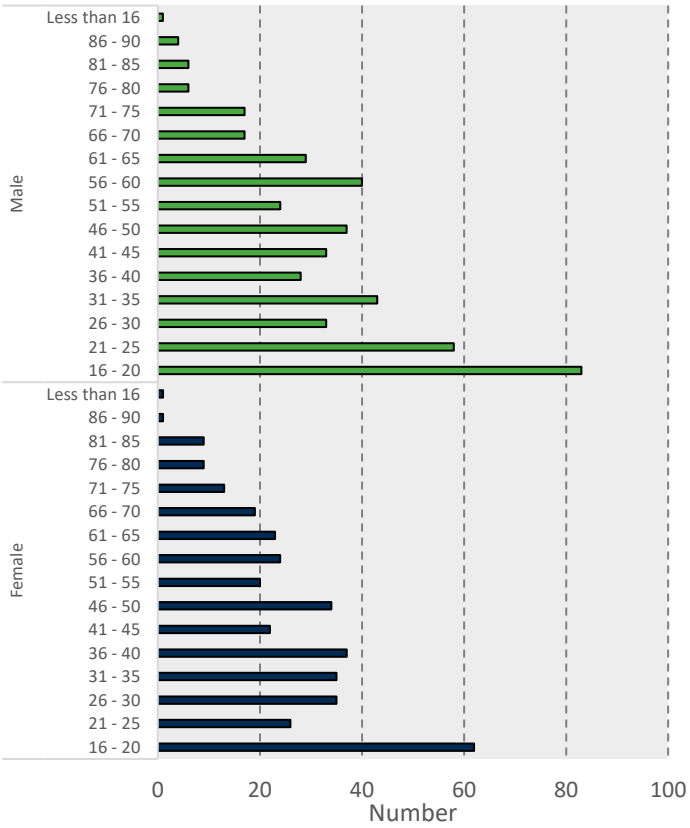
Figure 34: Vehicle Wildlife Collision Locations

CHAPTER 4: AT-FAULT DRIVERS & ENFORCEMENT STATISTICS

At-fault Driver's Information

At-fault drivers can be defined as a driver who is responsible for a collision due to faulty driver action including following too closely, improper lane change, speeding, careless driving, failing to yield right of way (ROW), sign/signal violation, and/or distracted driving.



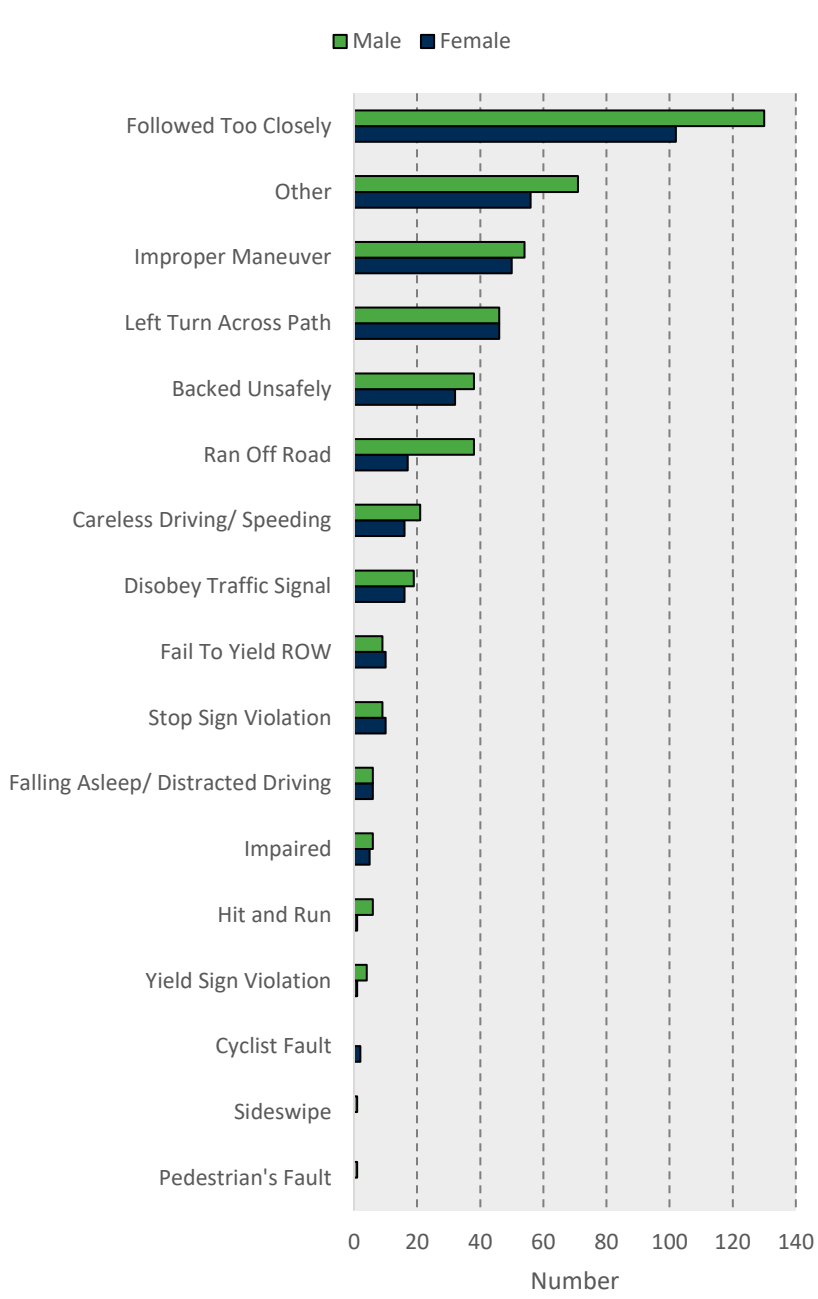


55% of At-fault Drivers are Male

Male & Female Drivers (16-20 years) are the Most At-fault Drivers

Drivers aged 16 – 20 represent only 7% of the Licensed Drivers

Figure 35: Age and Gender Distribution of At-fault Drivers in St. Albert



Actions of
At-fault
Drivers are similar
for
Males & Females

Most Collisions
occurred due to
Following
Too Closely

Figure 36: Driver Action of At-Fault Drivers by Gender in St. Albert

Figure 37 demonstrates the at-fault drivers' residence by neighbourhoods. It shows that most of the at-fault drivers reside in Grandin, Lacombe Park, North Ridge and Deer Ridge.

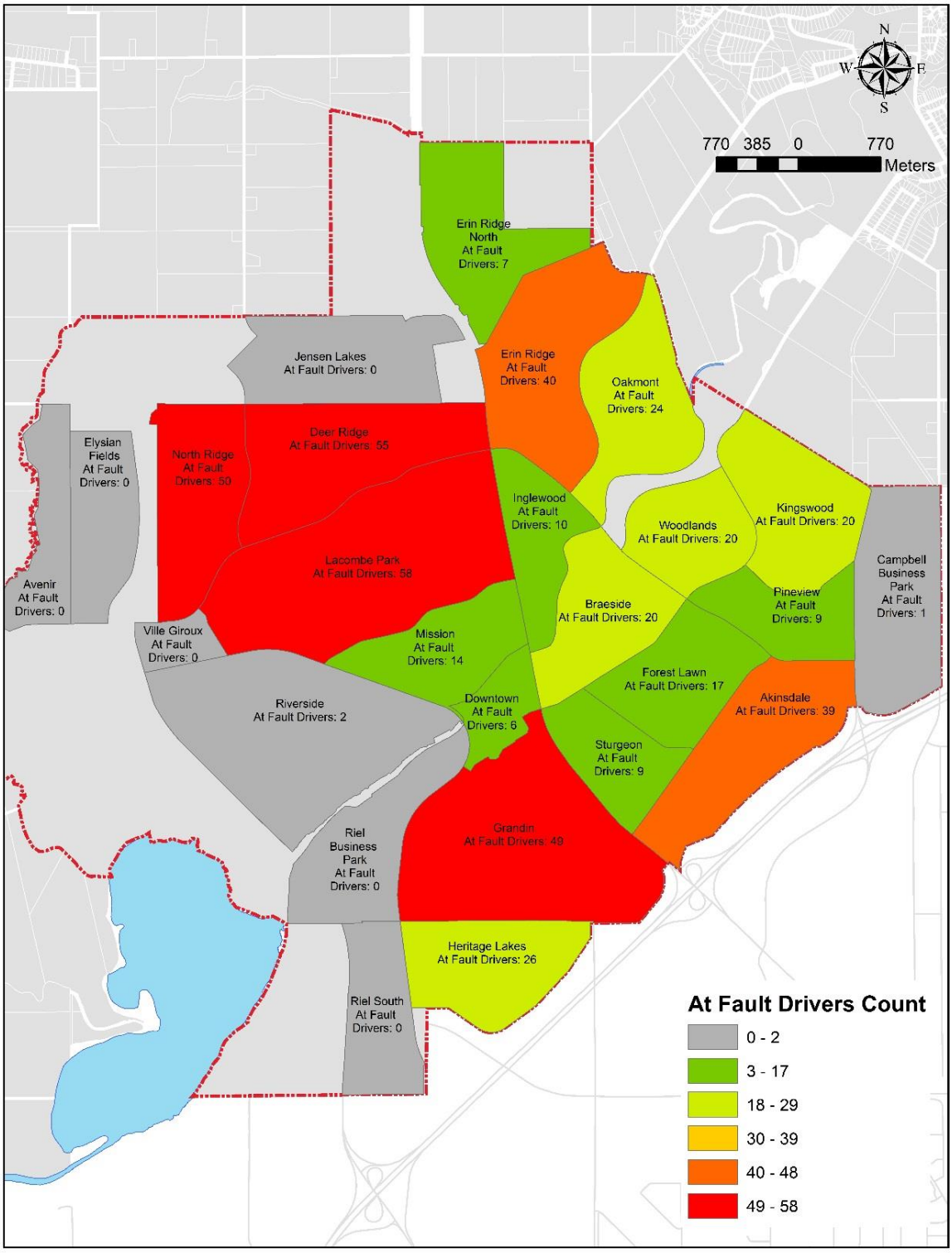
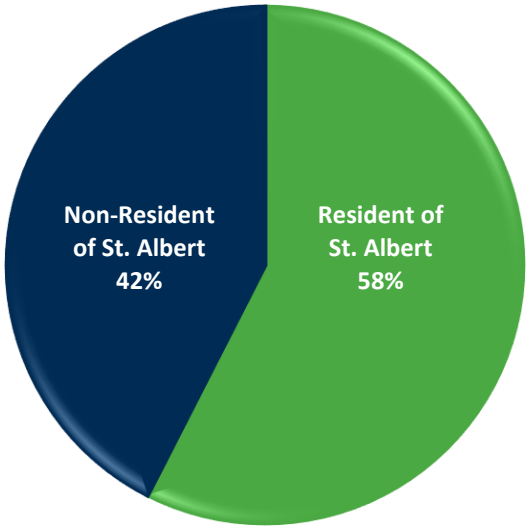
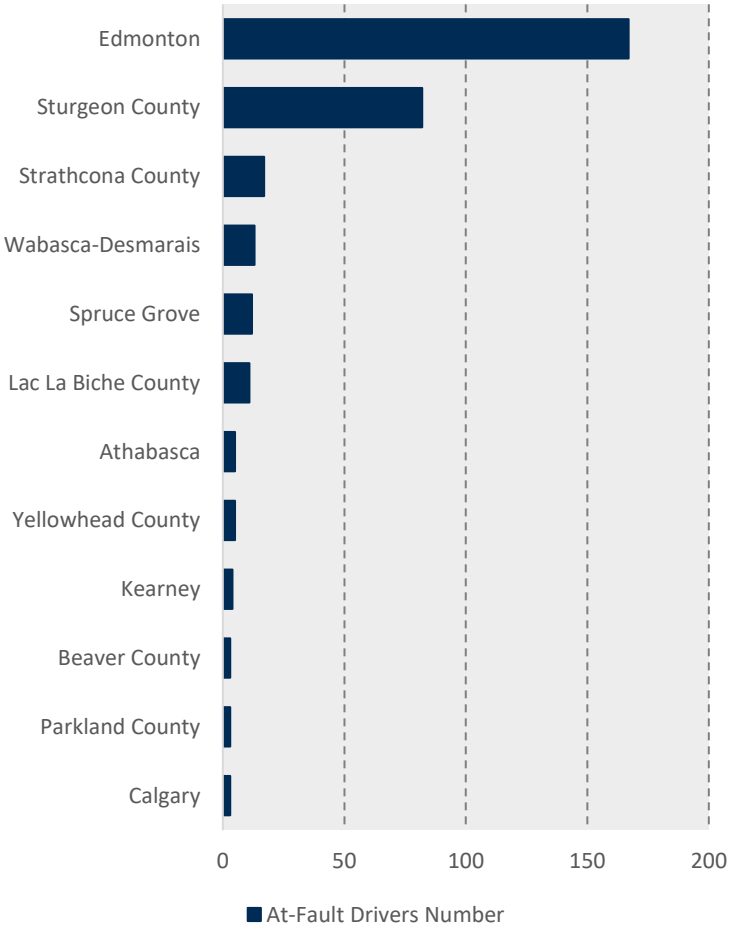


Figure 37: At-Fault Drivers' Residence by Neighbourhoods in St. Albert





58% of At-Fault Drivers are Residents of St. Albert

Highest Non-Resident At-fault Drivers are from Edmonton

Figure 38: At-Fault Drivers' Residence by City/County/Town

Enforcement Statistics

The City of St. Albert utilizes both standard “manned” enforcement as well as photo enforcement (mobile photo enforcement and intersection safety cameras). Approved photo enforcement locations are identified in Figure 39.

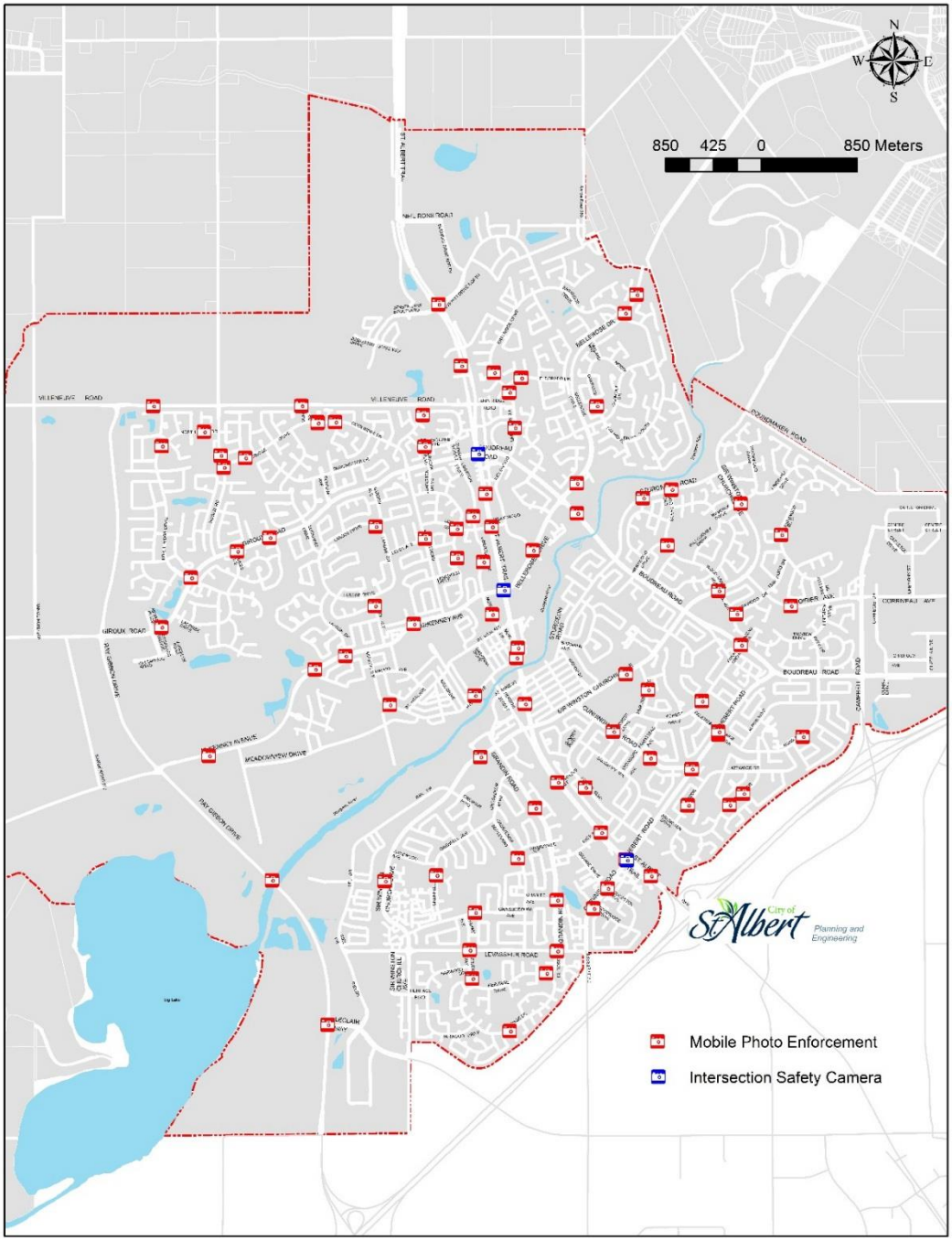
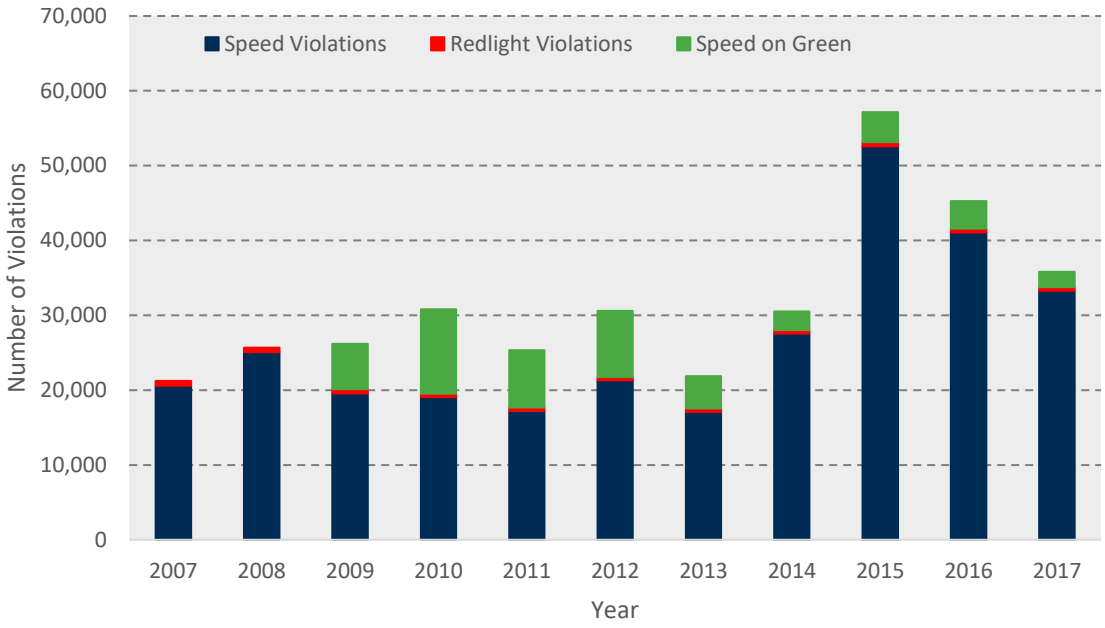


Figure 39: Approved Locations of Intersection Safety Camera and Mobile Photo Enforcement

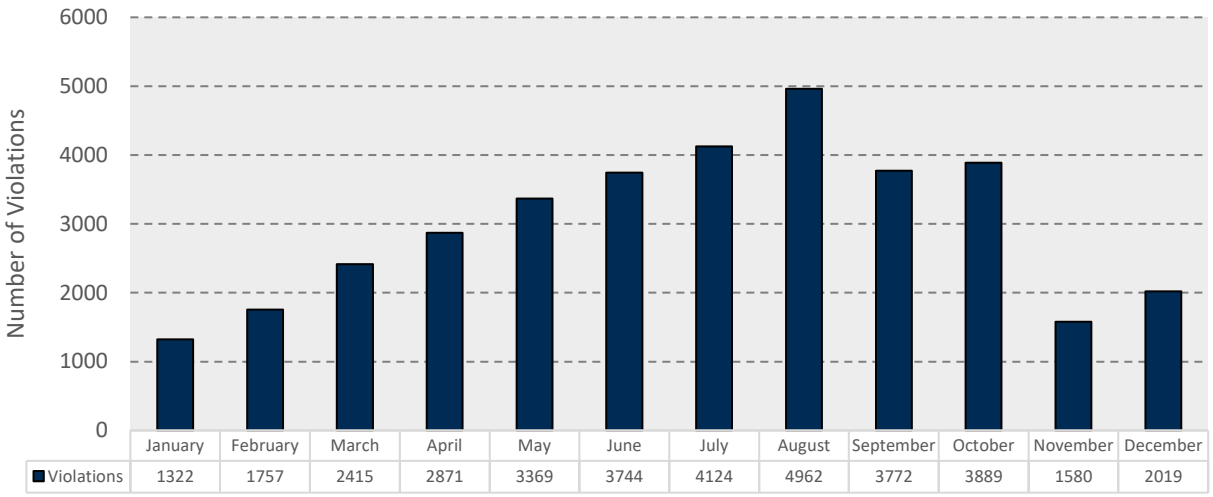
Automated Enforcement



Year	Speed Violations	Red light Violations	Speed on Green	Total
2007	20,591	651	-	21,242
2008	25,077	618	-	25,695
2009	19,571	568	6,050	26,189
2010	19,043	463	11,285	30,791
2011	17,214	475	7,626	25,315
2012	21,308	417	8,887	30,612
2013	17,062	470	4,322	21,854
2014	27,575	440	2,486	30,501
2015	52,582	538	4,049	57,169
2016	41,057	542	3,650	45,249
2017	33,272	478	2,074	35,824

Figure 40: Yearly Trend (2007-2017) of Traffic Violations (Automated Enforcement)

Figure 40 demonstrates the annual trend of traffic violations issued in St. Albert from 2007 to 2017. Since the St. Albert Automated Traffic Enforcement (ATE) program has moved to the use of laser speed cameras (in 2015), the number of speed violations issued increased substantially; however, since 2015, speed violations are on a downward trend as identified with a further reduction of 21% from 2016 to 2017.

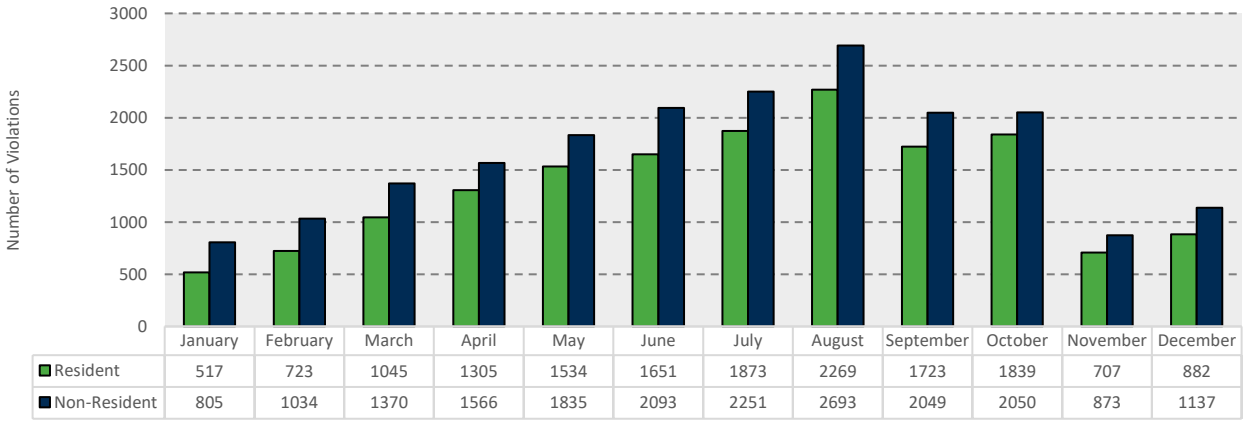


Month	Mobile Photo Radar	Intersection Safety Device (ISD)		Total
	Speed Violation	Speed on Green	Red Light Violations	
January	1196	91	35	**1322**
February	1574	151	32	**1757**
March	2226	158	31	**2415**
April	2572	266	33	**2871**
May	3174	167	28	**3369**
June	3541	162	41	**3744**
July	3881	198	45	**4124**
August	4627	287	48	**4962**
September	3497	225	50	**3772**
October	3645	207	37	**3889**
November	1463	71	46	**1580**
December	1876	91	52	**2019**
Total	**33,272**	**2074**	**478**	**35,824**

Figure 41: Monthly Speeding and Red Light Violations (2017)

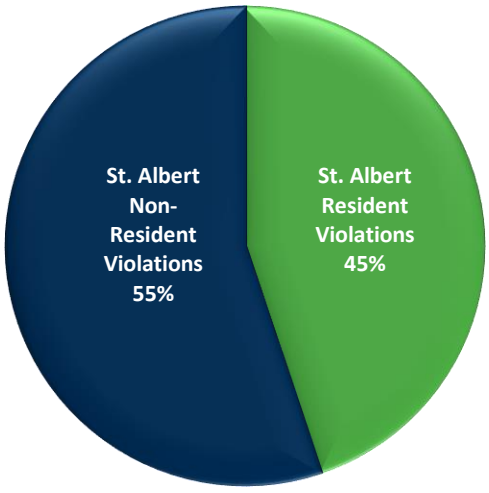
Figure 41 exhibits the speeding and red light violations issued monthly in 2017. Violations increased in May to October when the road conditions and weather typically improved.

During winter (December, January, February), speeding violations decreased substantially which is intuitive as drivers generally slow down in those months due to bad weather and slippery road conditions.



	January	February	March	April	May	June	July	August	September	October	November	December
Resident	517	723	1045	1305	1534	1651	1873	2269	1723	1839	707	882
Non-Resident	805	1034	1370	1566	1835	2093	2251	2693	2049	2050	873	1137

Figure 42: Monthly Speeding and Red Light Violations (2017) Resident vs. Non-Resident



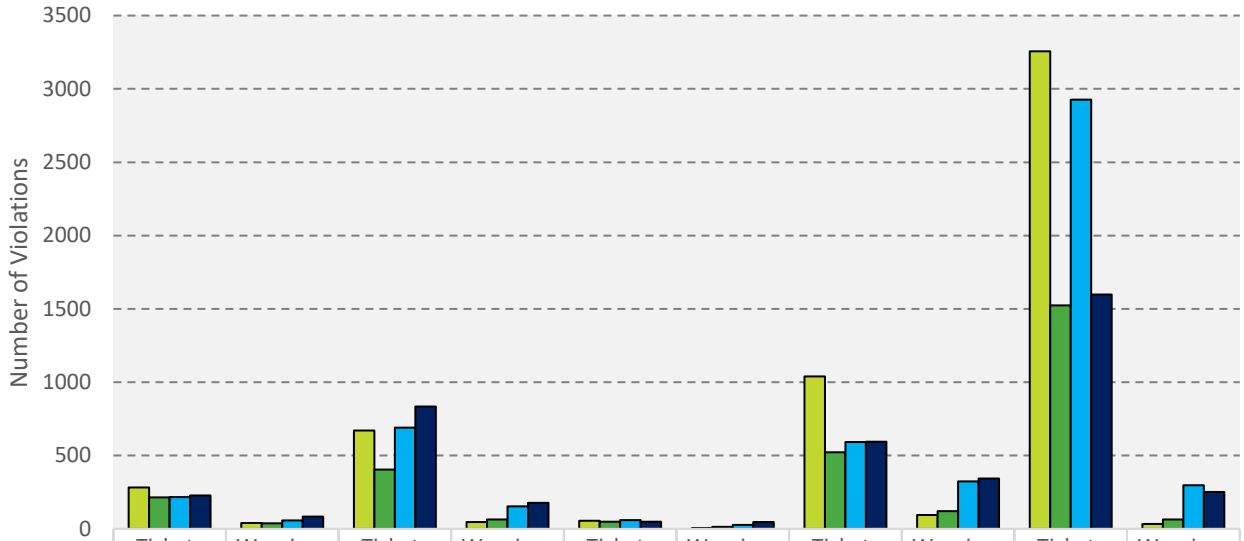
55%

Violations issued to Non-Residents

Figure 43: Resident vs Non-Resident Violations Issued (2017)

Figure 43 represents the violations issued in 2017 to residents and non-residents of St. Albert. Non-residents received 55% of the traffic violations.

Manned Enforcement



	Additional Violations		Distracted Driving		Failed to Yield Pedestrian		Sign/ Signal Violations		Speeding	
	Tickets	Warnings	Tickets	Warnings	Tickets	Warnings	Tickets	Warnings	Tickets	Warnings
2014	283	40	670	46	55	5	1040	94	3257	33
2015	214	38	405	65	49	15	522	122	1524	64
2016	217	58	690	153	59	27	592	324	2927	298
2017	228	85	834	178	50	46	595	343	1597	251

Figure 44: Yearly Trend (2007-2017) of Traffic Violations (Manned Enforcement)

Figure 44 exhibits the yearly trend of traffic violations through manned enforcement by the RCMP. Similar to automated enforcement, manned enforcement speeding violations decreased in 2017. Conversely, distracted driving tickets increased from 2016.

Contacting the City

For questions regarding motor vehicle collision statistics, process or details, or to report concerns related to traffic safety within the City of St. Albert:

Phone: Engineering Services: 780-459-1654
Email: trafficsafety@stalbert.ca