



STRATHCONA  
COUNTY

# Traffic Collision Statistics Report

---

## 2017

Prepared by  
Tahir Hameed, M.Eng, P.Eng, PTOE  
Traffic Safety Engineer

Transportation Planning and Engineering Department  
Strathcona County

---

## Table of Contents

|  |    |
|--|----|
| 2017 Collision Quick Facts.....                            | 3  |
| Section 1: Introduction.....                               | 4  |
| 1.1 About this report .....                                | 4  |
| 1.2 About Strathcona County.....                           | 4  |
| Section 2: Historical collision statistics.....            | 9  |
| 2.1 Overall: all roads within County borders .....         | 9  |
| 2.2 County roads only (excluding Provincial highways)..... | 11 |
| 2.3 County owned rural vs urban collision trends .....     | 13 |
| 2.4 Provincial Highways collision trends .....             | 15 |
| Section 3: 2017 Collision statistics and trends .....      | 16 |
| 3.1 Overview .....   | 16 |
| 3.2 Cost of Collisions .....                               | 17 |
| 3.3 Major and fatal collisions .....                       | 17 |
| 3.4 Driver's prior action .....                            | 21 |
| 3.5 Temporal analysis.....                                 | 22 |
| 3.6 Intersection-related collisions.....                   | 27 |
| 3.7 Neighbourhood collisions .....                         | 29 |
| 3.8 Animal collisions .....                                | 30 |
| 3.9 Demographics .....                                     | 30 |
| 3.10 Vulnerable road user collisions.....                  | 31 |
| 3.10.1 Pedestrian collisions.....                          | 31 |
| 3.10.2 Bicycle collisions.....                             | 33 |
| 3.10.3 Motorcyclists.....                                  | 38 |
| 3.11 Commercial vehicle collisions.....                    | 38 |
| 3.12 Impaired Driving.....                                 | 39 |
| 4.0 Appendix- Glossary of Terms .....                      | 40 |

## As a Result of Collisions in 2017:

6  
People  
Lost Their Lives



2 Driver

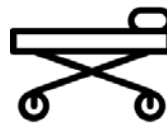


1 Motorcyclists



3 Pedestrian

60  
People Sustained Major  
Injuries Requiring Hospitalization



37 Drivers



12  
Passengers



8 Motorcyclists



2 Pedestrians



1 Cyclist

650  
people sustained minor  
injuries



The estimated direct cost of collisions in 2017 in Strathcona County was

\$54 Million

## 2017 Collision Quick Facts

- 2,168 collisions occurred on public roadways; 33% of these collisions happened on provincial highways.
- six fatal collisions occurred on public roads;
- 516 injury collisions occurred on public roadways; these resulted in 60 major injuries requiring hospitalization and 650 minor injuries to road users
- individuals aged 25-44 were the most likely to be injured in a collision.
- no major injury collision reported in 2017 on residential roads
- 47% of all collisions occurred at intersections
- rear end was the most common type of collision in 2017
- the highest number of fatal, injury and property damage only collisions took place in November.
- collision primetime is Friday between 5:00 and 6:00 pm.
- 15.5% of all reported collisions were animal related.

### Collision comparisons from 2016 to 2017

| Statistic                                  | 2016  | 2017  | % Change |
|--|-------|-------|----------|
| <b>All roads within County</b>             |       |       |          |
| ➤ total collisions                         | 2178  | 2168  | -0.46    |
| ➤ fatal collisions                         | 5     | 6     | +20.00   |
| ➤ major injury collisions                  | 60    | 49    | -18.33   |
| ➤ minor injury collisions                  | 498   | 467   | +6.22    |
| ➤ PDO collisions                           | 1615  | 1646  | +1.92    |
| ➤ collisions per 1,000 population          | 25.22 | 22.07 | -12.50   |
| ➤ injury collisions* per 1,000 population  | 5.74  | 5.32  | -7.32    |
| ➤ collision Injuries*                      | 779   | 710   | -8.86    |
| ➤ collision injuries* per 1,000 population | 7.95  | 7.23  | -9.06    |
| ➤ pedestrian collisions                    | 16    | 25    | N/A**    |
| ➤ fatal and major pedestrian injuries      | 6     | 6     | 0.00     |
| ➤ bicycle collisions                       | 9     | 11    | +22.22   |
| ➤ fatal and major cyclist injuries         | 3     | 1     | -66.67   |
| ➤ motorcycle collisions                    | 20    | 24    | 20.00    |
| ➤ fatal and major motorcyclist injuries    | 8     | 12    | +50.00   |
| ➤ intersection collisions                  | 1187  | 1030  | -13.23   |
| ➤ animal collisions                        | 316   | 337   | +6.65    |
| ➤ alcohol related collisions               | 34    | 73    | +114.70  |
| ➤ commercial vehicle collisions            | 197   | 124   | -37.06   |
| <b>County Owned Roads</b>                  |       |       |          |
| ➤ total collisions                         | 1412  | 1460  | +3.40    |
| ➤ fatal collisions                         | 1     | 2     | +100     |
| ➤ major injury collisions                  | 36    | 26    | -27.78   |
| ➤ minor injury collisions                  | 329   | 333   | +1.22    |
| ➤ PDO collisions                           | 1046  | 1099  | +5.07    |
| ➤ injury collisions* per 1,000 population  | 3.73  | 3.68  | -1.34    |

\*Includes Fatal, Major Injury and Minor Injury \*\*not calculated due to methodology change

## Section 1: Introduction

### 1.1 About this report

This report provides a summary of motor vehicle collisions reported from January 1, 2017 to December 31, 2017 within Strathcona County. Strathcona County maintains a database, Traffic Crash Location System (TCLS), which contains all reportable collisions that occur on public roadways within County boundaries (both County-owned and Provincial).

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 the detachment. The database reflects all reported collisions on public roadways that results in property damage of CAD \$2,000 or greater since 2011, and CAD \$1000 prior to 2011, 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 at the time of printing. Due to continuing police investigations, some numbers presented in this report may be subject to revision.

#### *Significance of collisions statistics*

At the heart of the safe system approach is the need to make data driven decisions to improve road safety. Collision data is used to develop, establish, and implement initiatives using all of the 5 E's of traffic safety: engineering, enforcement, education, evaluation and engagement. Some of the major tasks are:

- developing road safety projects and programs such as education, enforcement, and communication campaigns;
- identifying and investigating high risk road safety situations and establishing countermeasures and priorities to correct the identified hazards or potential hazards;
- identifying safety and communication needs of special user groups, such as older drivers, pedestrians, bicyclists, motorcyclists, and commercial vehicles;
- facilitating budget planning;
- determining collision reduction targets and monitoring our progress towards these targets.

### 1.2 About Strathcona County

Set in the centre of Alberta's energy and agricultural heartland, Strathcona County is a thriving community of more than 98,000 residents. Strathcona County is made up of the urban area of Sherwood Park and a large rural area of farms, acreages and eight smaller hamlets.

Strathcona County is a large municipality, covering 1,262 km<sup>2</sup>, with a variety of land uses.

Table 1: Land use by area in Strathcona County

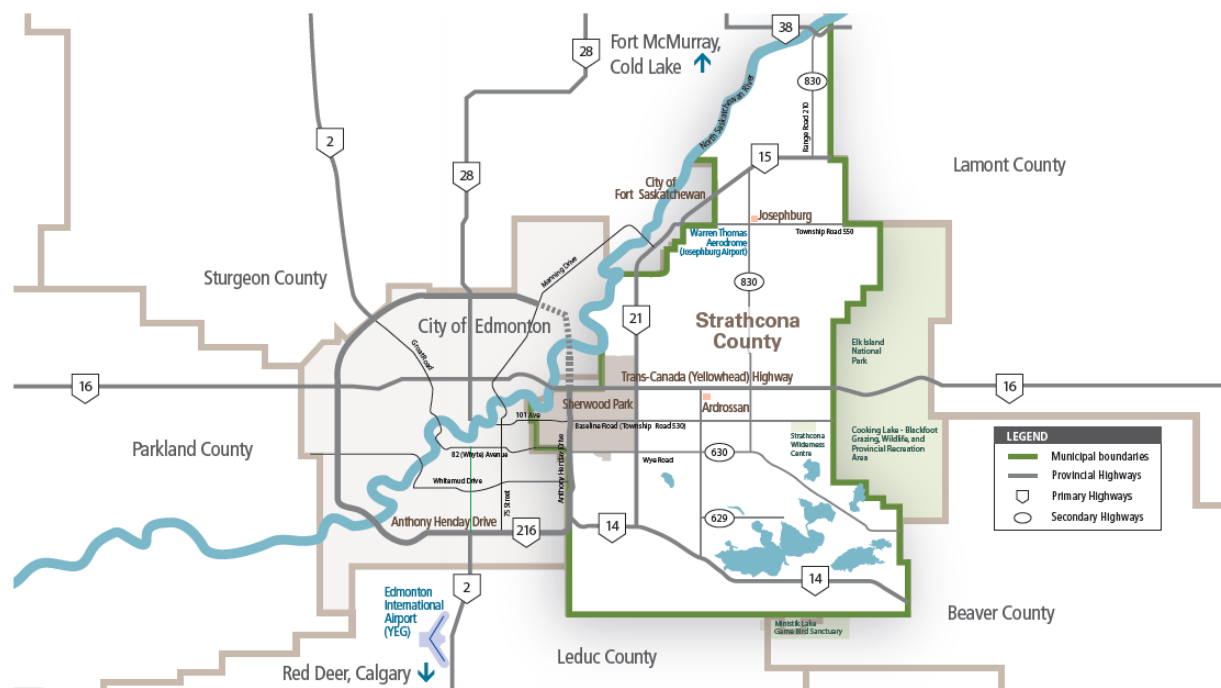
|  |                 |
|--|-----------------|
| Agricultural   | 87,502 hectares |
| Industrial   | 9,052 hectares  |
| Commercial   | 2,078 hectares  |
| Residential  | 18,542 hectares |
| Urban village*   | 66 hectares     |
| Park/recreation/natural                                  | 3,701 hectares  |
| Other: airports, water bodies, roads, road rights-of-way | 5,679 hectares  |

\* New zoning type added for 2016 – includes mix of residential and commercial

### 1.2.1 Geographical Location

Strathcona County lies to the east of the City of Edmonton, Alberta, Canada, and is part of the Edmonton Metropolitan Region.

Figure 1: The Edmonton Metropolitan Region



### 1.2.2 Roadway network

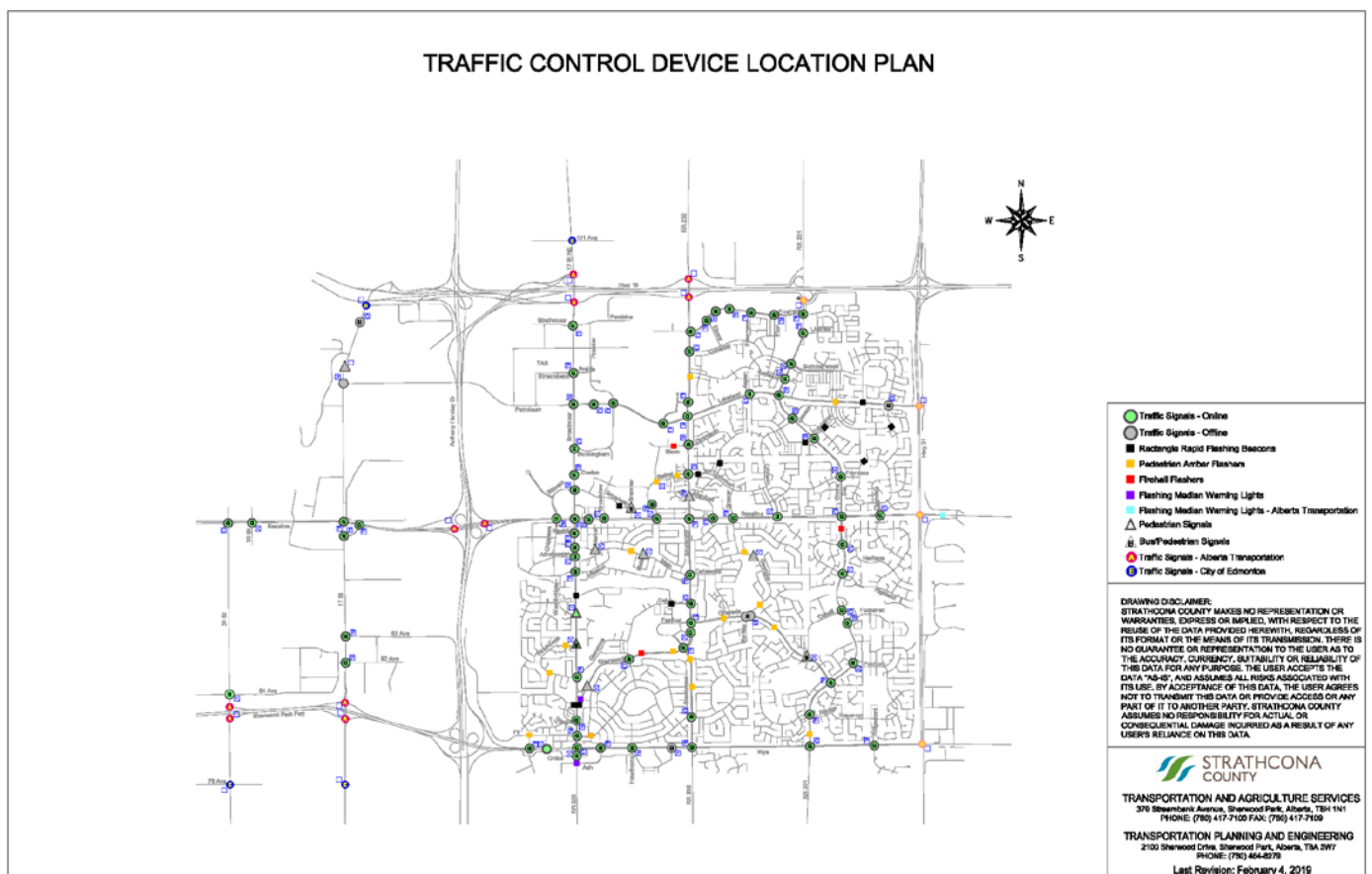
There are 1,943 km of public roadways in Strathcona County, including:

- 232 km of Provincially-maintained highways;
- 403 km of County-maintained urban roads;
- 1,308 km County-maintained rural roads.

### 1.2.3 Traffic Signals

Strathcona County operates approximately 115 signalized devices. There are also four signals operated by the City of Edmonton on our western border. In addition, signals on provincial highways are operated by Alberta Transportation.

Figure 2: Urban traffic signal locations



### 1.2.4 Demographic Information

#### Population

Strathcona County is a fast growing community, experiencing an 19.2% population increase between 2006 and 2018. The majority of this growth has taken place in Sherwood Park, which has grown by 25% during this timeframe.

Table 2: Strathcona County population (2006-2018)

| Year  | Sherwood Park | **Rural Strathcona | Total Strathcona County |
|-------|---------------|--------------------|-------------------------|
| *2006 | 56,845        | 25,666             | 82,511                  |
| 2008  | 59,409        | 26,112             | 85,521                  |
| 2009  | 61,660        | 26,338             | 87,998                  |
| *2011 | 64,733        | 27,757             | 92,490                  |
| 2012  | 65,465        | 26,938             | 92,403                  |
| 2015  | 68,782        | 26,815             | 95,597                  |
| *2016 | 70,618        | 27,426             | 98,044                  |
| 2018  | 71,332        | 27,049             | 98,381                  |

\*Census of Canada \*\* acreages, farms, rural hamlets

#### Age

According to the 2018 Strathcona County Census, the average age of urban service area residents is 39.8, and rural service area is 41.3 years. These averages are higher than Alberta average of 37.8, but lower than the Canadian average of 41.0.

Table 3: Strathcona County population breakdown by age (from 2018 Strathcona County Census data)

| Age Group                   | Percent of Population |
|-----------------------------|-----------------------|
| 14 and under                | 17.7                  |
| 15-19                       | 7.1                   |
| 20-34                       | 16.1                  |
| 35-44                       | 13.5                  |
| 45-64                       | 29.5                  |
| 65 and older                | 16.1                  |
| Total Population (All Ages) | 100                   |

Strathcona County has 1% fewer seniors and 1.5% more children under 15 than the Canadian average.

#### Travel habits

Residents of Strathcona County are heavily dependent on personal vehicles for travel. Use of personal vehicles for the journey to work is much higher in the County than the provincial and national average.



Table 4: Mode of commuting for County residents vs Alberta and Canada

| Main Mode of Commuting        | Strathcona County* | Alberta* | Canada* |
|-------------------------------|--------------------|----------|---------|
| Car, truck, van- as driver    | 87.5               | 77.7     | 74.0    |
| Car, truck, van- as passenger | 4.0                | 5.2      | 5.5     |
| Public Transit                | 4.5                | 10.0     | 12.4    |
| Walk                          | 2.0                | 4.5      | 5.5     |
| Bicycle                       | 0.4                | 1.1      | 1.4     |
| Other method                  | 1.6                | 1.5      | 1.2     |

\*as a percentage of the employed labour force aged 15 and over (from 2016 Canadian Census data)

### *Registered vehicles and licensed drivers*

According to Alberta Transportation, Sherwood Park had 70,778<sup>1</sup> licensed drivers in 2017. No data is available for Strathcona County, but given that this number exceeds the population of Sherwood Park, it likely reflects all or most of the County.

Similarly, Alberta Transportation reports there are 83,463<sup>2</sup> motorized vehicles for highway use registered in Sherwood Park. This amounts to 1.2 vehicles per licensed driver, again reflecting the vehicle-dependent nature of Strathcona County.

### *1.2.5 School zones/playground zones/residential speed limits*

Strathcona County utilizes both school zones/areas and playground zones/areas. All playground zones utilizes default playground zone effective times established by the province under Alberta's Use of Highways and Rules of the Road Regulation.



School and playground areas are indicated by advisory signs only without a black and white speed sign. They are warnings to alert drivers to be cautious of children, but the speed limit does not change from the previously posted limit.



A playground zone has a black and white 30 km/h sign below the yellow sign. Playground zone times are in effect starting at 8:30 a.m. and ending one hour after sunset daily.



A school zone has a black and white 30 km/h sign attached below the green school sign. As of September 2018, the school zone speed limit is 30 km/h and is in effect from 7:30am to 4:30pm on school days. Prior to September 2018, school zones were in effect as per the Alberta Traffic Safety Act.

<sup>1</sup> <https://www.transportation.alberta.ca/Content/docType47/Production/Drivers2017.pdf>

<sup>2</sup> <https://www.transportation.alberta.ca/Content/docType47/Production/VehReg2017.pdf>

With the exception of school and playground zones (during specified times), all collector and local roads within the County operate at 50 km/h unless otherwise posted.

## Section 2: Historical collision statistics

### 2.1 Overall: all roads within County borders

Over the last 10 years, total reported collisions in the County have dropped slightly despite significant population growth. Total collision rate and property damage only (PDO) collision rate are down significantly between 2008-2017 (28% and 31% respectively). In 2011, the minimum for collision reporting increased from \$1000 to \$2000, which likely accounts for at least part of this decrease.

In the last 10 years the rate of minor injury collisions has also decreased 19%; however, rates recorded from 2010 through 2013 were significantly lower. The frequency of major injury collisions has increased in 2015 and 2016 but dropped in 2017. Fatal collision rates are very low, and do not lend themselves to comparison.

Table 5: All collisions by consequence within County Borders 2008-2017

| Year | Fatal | Major* | Minor** | PDO*** | Total |
|------|-------|--------|---------|--------|-------|
| 2008 | 9     | 27     | 501     | 2073   | 2610  |
| 2009 | 5     | 44     | 448     | 1972   | 2469  |
| 2010 | 3     | 26     | 390     | 1830   | 2249  |
| 2011 | 8     | 32     | 418     | 1667   | 2125  |
| 2012 | 7     | 34     | 367     | 1746   | 2154  |
| 2013 | 5     | 27     | 425     | 1766   | 2223  |
| 2014 | 5     | 33     | 443     | 1843   | 2323  |
| 2015 | 5     | 59     | 537     | 1808   | 2409  |
| 2016 | 5     | 60     | 498     | 1615   | 2178  |
| 2017 | 6     | 49     | 467     | 1646   | 2168  |

\*One or more persons required hospitalization \*\*One or more persons injured \*\*\*Property Damage Only

Table 6: Collision rates per 100,000 population on all roads within the County

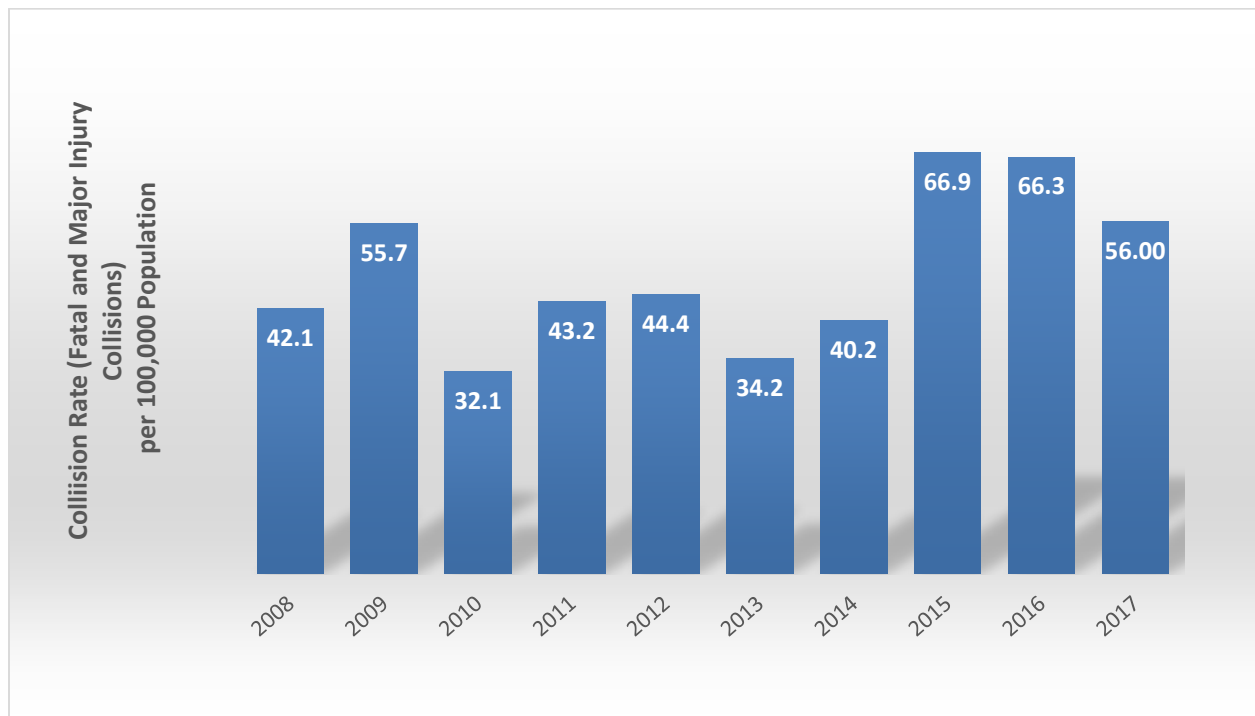
| Year | Fatal | Major* | Minor** | PDO*** | Total  |
|------|-------|--------|---------|--------|--------|
| 2008 | 10.52 | 31.6   | 585.8   | 2424.0 | 3051.9 |
| 2009 | 5.68  | 50.0   | 509.1   | 2241.0 | 2805.7 |
| 2010 | 3.32  | 28.8   | 432.2   | 2027.8 | 2492.1 |
| 2011 | 8.65  | 34.6   | 451.9   | 1802.4 | 2297.5 |
| 2012 | 7.58  | 36.8   | 397.2   | 1889.5 | 2331.1 |
| 2013 | 5.35  | 28.9   | 454.7   | 1889.4 | 2378.4 |
| 2014 | 5.29  | 34.9   | 468.6   | 1948.5 | 2457.4 |

|             |      |      |       |        |        |
|-------------|------|------|-------|--------|--------|
| <b>2015</b> | 5.23 | 61.7 | 561.7 | 1891.3 | 2522.0 |
| <b>2016</b> | 5.10 | 61.2 | 507.9 | 1647.2 | 2221.5 |
| <b>2017</b> | 6.11 | 49.9 | 475.5 | 1676.0 | 2207.5 |

\*One or more persons required hospitalization \*\*One or more persons injured \*\*\*Property Damage Only

Figure 3 combines fatal and injury collision statistics in order to better assess the incidence of our most serious collisions.

Figure 3: Collision rates for fatal/major injuries combined—all roads Within County



## 2.2 County roads only (excluding Provincial highways)

Similar collision trends can be seen when Provincial highways are excluded from the analysis.

Table 7: All collisions by consequence on County Roads (excluding Provincial Hwys)

| Year | Fatal | Major* | Minor** | PDO*** | Total |
|------|-------|--------|---------|--------|-------|
| 2008 | 4     | 12     | 346     | 1320   | 1682  |
| 2009 | 2     | 18     | 314     | 1336   | 1670  |
| 2010 | 0     | 13     | 260     | 1260   | 1533  |
| 2011 | 1     | 10     | 267     | 1096   | 1374  |
| 2012 | 1     | 14     | 228     | 1115   | 1358  |
| 2013 | 3     | 9      | 262     | 1115   | 1389  |
| 2014 | 1     | 16     | 266     | 1189   | 1472  |
| 2015 | 2     | 32     | 359     | 1148   | 1541  |
| 2016 | 1     | 36     | 329     | 1046   | 1412  |
| 2017 | 2     | 26     | 333     | 1099   | 1460  |

\*One or more persons required hospitalization \*\*One or more persons injured \*\*\*Property Damage Only

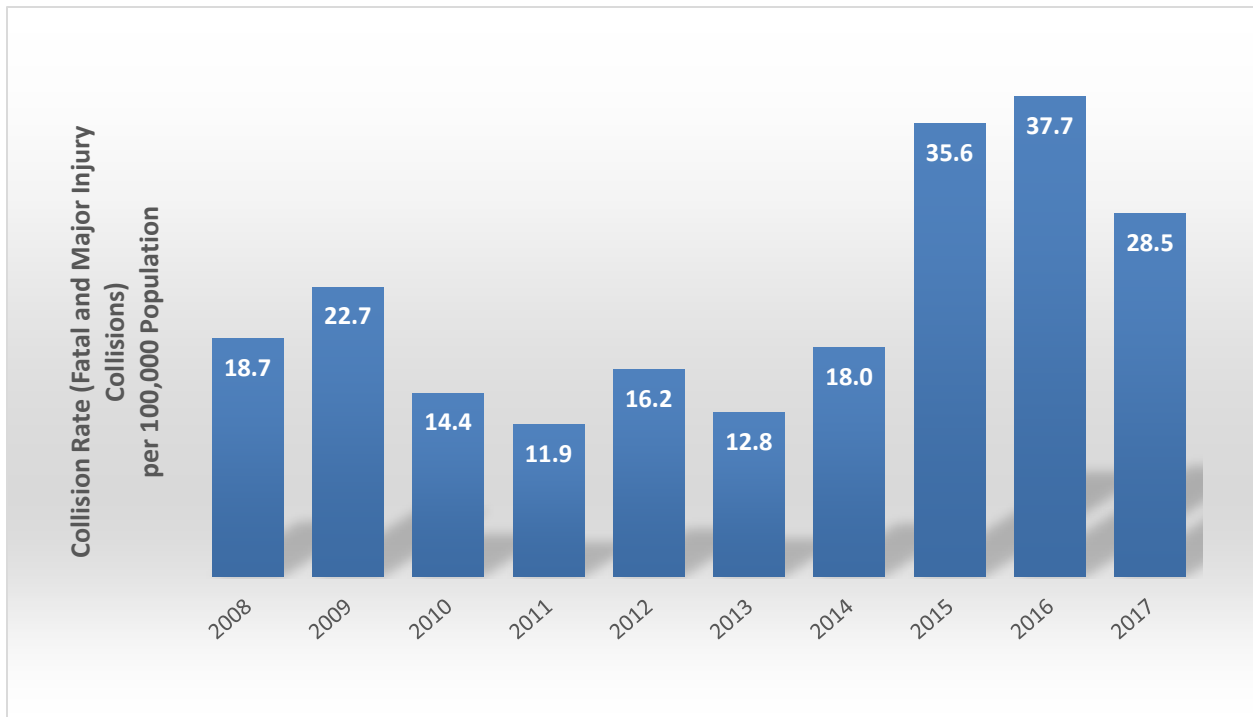
Despite decreasing collision rates for minor injury, PDO and total collisions, the major injury collision rate on County owned roads has increased by 89% between 2008 and 2017.

Table 8: Collision rates per 100,000 population on County roads only

| Year | Fatal | Major* | Minor** | PDO*** | Total  |
|------|-------|--------|---------|--------|--------|
| 2008 | 4.7   | 14.0   | 404.6   | 1543.5 | 1966.8 |
| 2009 | 2.3   | 20.5   | 356.8   | 1518.2 | 1897.8 |
| 2010 | 0.0   | 14.4   | 288.1   | 1396.2 | 1698.7 |
| 2011 | 1.1   | 10.8   | 288.7   | 1185.0 | 1485.6 |
| 2012 | 1.1   | 15.2   | 246.7   | 1206.7 | 1469.6 |
| 2013 | 3.2   | 9.6    | 280.3   | 1192.9 | 1486.1 |
| 2014 | 1.1   | 16.9   | 281.4   | 1257.8 | 1557.1 |
| 2015 | 2.1   | 33.5   | 375.5   | 1200.9 | 1612.0 |
| 2016 | 1.0   | 36.7   | 335.6   | 1066.9 | 1440.2 |
| 2017 | 2.0   | 26.5   | 339.1   | 1119.0 | 1486.6 |

\*One or more persons required hospitalization \*\*One or more persons injured \*\*\*Property Damage Only

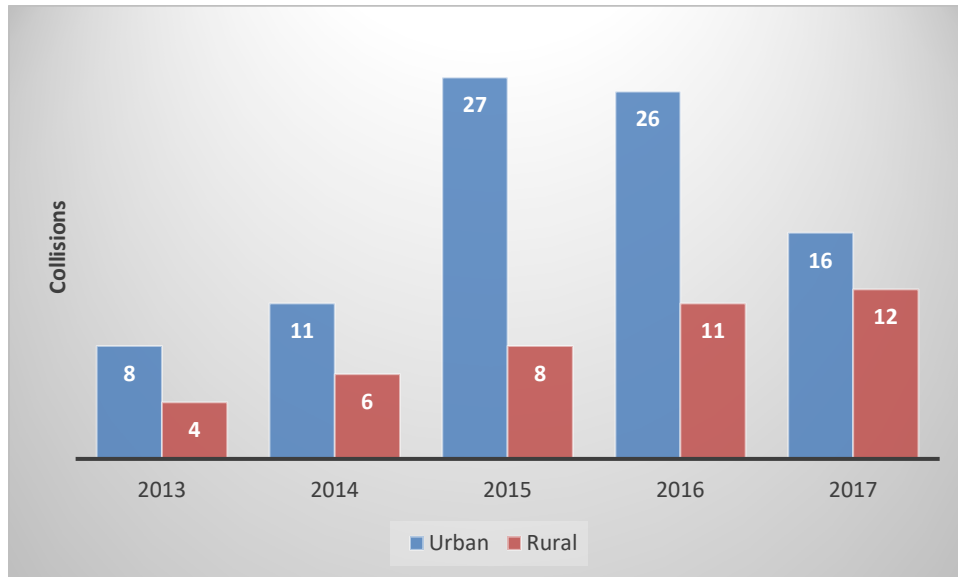
Figure 4: Collision rates for fatal/major injuries combined—County owned roads



### 2.3 County owned rural vs urban collision trends

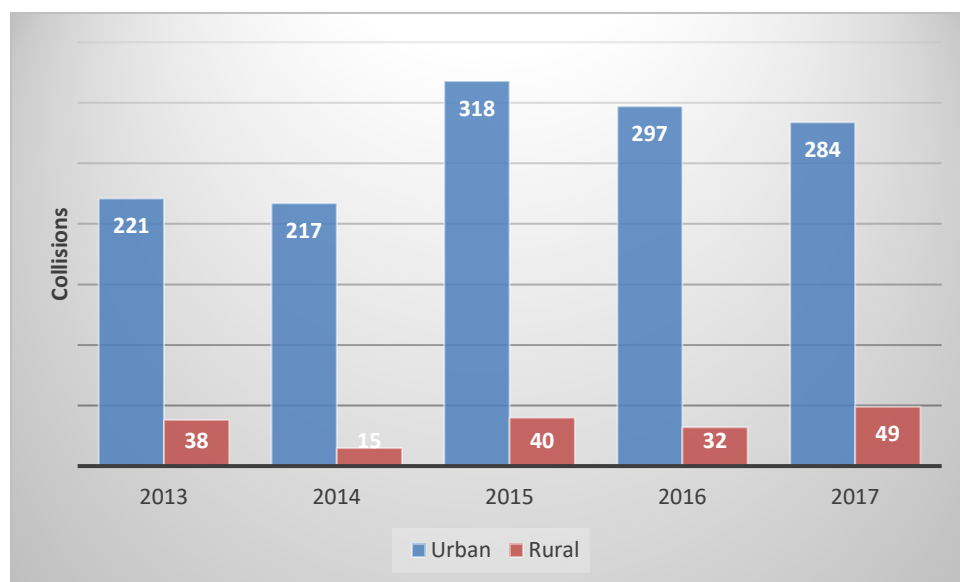
Looking at the data from 2013-2017 from an urban vs rural perspective, we can see that the collision trends have not been the same across the County. There has been a steady increase in fatal and major injury collisions in rural area over the five years. In the urban area serious injuries increased sharply between 2014 and 2015 but dropped in 2017.

Figure 5: Fatal/major collisions urban vs rural County owned roads (2013-2017)



Minor injury collisions have remained fairly constant over the last 5 years in the rural areas. In the urban area, similar to serious collisions, there was a significant increase (24%) in minor injury collisions between 2014 and 2015, with a decreasing trend in last two years.

Figure 6: Minor injury collisions urban vs rural County owned roads (2013-2017)



Property damage only collisions have dropped substantially in the urban area since 2013 with a slight increase in 2017. Contrary to urban area, rural area PDO collisions had an increasing trend from 2013 to 2016 and dropped slightly in 2017.

Figure 7: PDO collisions urban roads (2013-2017)

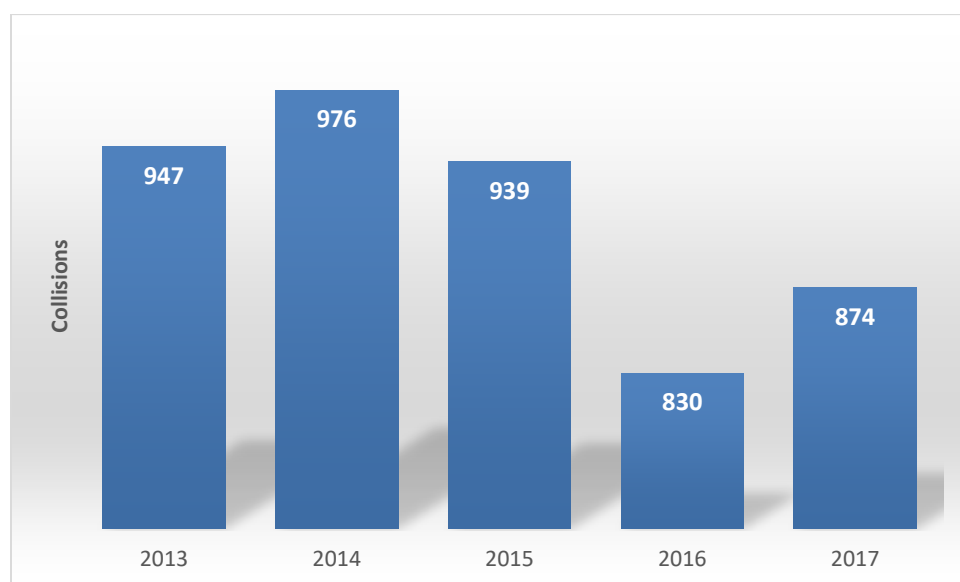
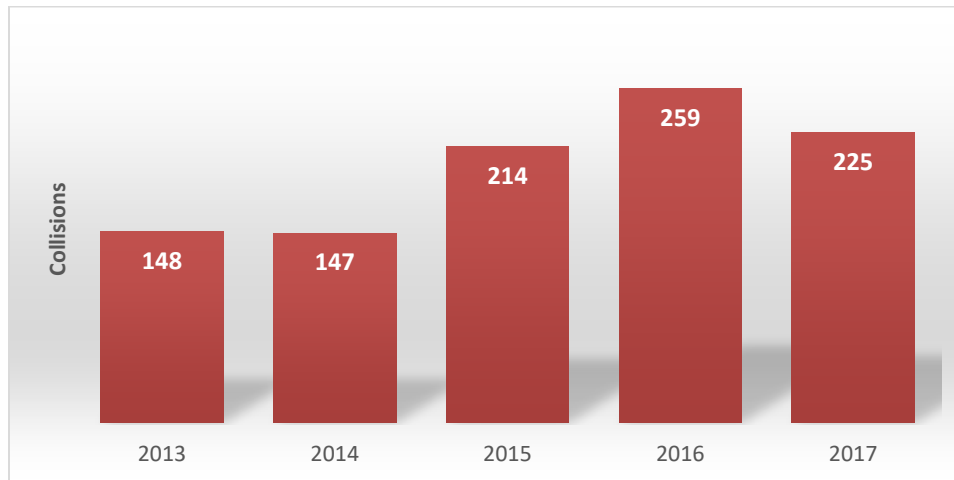


Figure 8: PDO collisions rural County owned roads (2013-2017)



## 2.4 Provincial Highways collision trends

Collision occurring on roads maintained by Alberta Transportation such as highways interchanges, overpasses, and ramp terminals are included in this section.

Historically, the majority of fatal collisions in the County take place on provincial highways. This is not surprising given these are the highest speed roads in the County. This was also the case in 2017 with four of six fatal collisions happening on highways.

Table 9: Provincial highways collision trends

| Year | Fatal | Major Injury | Minor Injury | PDO | Total |
|------|-------|--------------|--------------|-----|-------|
| 2015 | 3     | 26           | 179          | 662 | 870   |
| 2016 | 4     | 24           | 167          | 569 | 764   |
| 2017 | 4     | 23           | 134          | 547 | 708   |

A significant number of major injury collisions also tend to take place on the highways. The number of non-fatal injury, and property damage only collisions have a decreasing trend from 2015 to 2017. The proportion of major injury collisions increased from 44% to 47% between 2015 and 2017.

Table 10: Provincial Highway collisions as a percentage of total County collisions

| Year | Fatal | Major Injury | Minor Injury | PDO | Total |
|------|-------|--------------|--------------|-----|-------|
| 2015 | 60%   | 44%          | 33%          | 37% | 36%   |
| 2016 | 80%   | 40%          | 34%          | 35% | 35%   |
| 2017 | 67%   | 47%          | 29%          | 33% | 33%   |



## Section 3: 2017 Collision statistics and trends

Section 3 provides a deeper analysis of 2017 collision statistics and trends.

### 3.1 Overview

As a result of traffic collisions in Strathcona County in 2017:

6  
People  
Lost Their Lives



2 Drivers

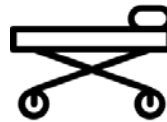


1 Motorcyclist



3 Pedestrians

60  
People Sustained Major  
Injuries Requiring Hospitalization



37 Drivers



12  
Passengers



8 Motorcyclists



2 Pedestrians



1 Cyclist

650  
people sustained minor  
injuries



### 3.2 Cost of Collisions

The 2018 collision cost study<sup>3</sup> quantifies the costs that are associated with motor vehicle collisions within the Capital Region using local data. It is estimated that collisions in 2017 in Strathcona County cost taxpayers over \$54 million. This estimate considers only direct costs, not including “human” costs, such as pain, suffering and grief.

Table 11: Direct cost of collisions in Strathcona County 2017

| Level of Injury  | Estimated Cost per Collision | Number of Victims | Total Cost of Collisions |
|--|------------------------------|-------------------|--------------------------|
| Fatality   | \$209,828                    | 6                 | \$1,258,968              |
| Major Injury   | \$122,115                    | 60                | \$7,326,900              |
| Minor Injury   | \$33,987                     | 650               | \$22,091,550             |
| Property Damage Only   | \$14,391                     | 1646              | \$23,687,586             |
| <b>Total Direct Cost of Collisions in Strathcona County*</b> |                              |                   | <b>\$54,365,004</b>      |

\*Direct costs include costs for property damage, emergency response, health care services, travel delay, legal costs and short-term productivity loss. They do not include any costs for discounted future earnings, pain, suffering or grief.

### 3.3 Major and fatal collisions

In keeping with Strathcona County’s Traffic Safety Strategic Plan (TSSP), our goal is to specifically reduce the kind of collisions that cause serious injury and death.

The following two maps illustrate the location of fatal and major injury collisions in Strathcona County as a whole, and specifically in the Urban Service Area.

Detailed analysis of these collisions is included throughout the report, as a deeper understanding of the events and conditions that resulted in these failures of our safe system is important to help determine the most appropriate engineering, education, enforcement or engagement related countermeasure to reduce the probability of another similar collision.

---

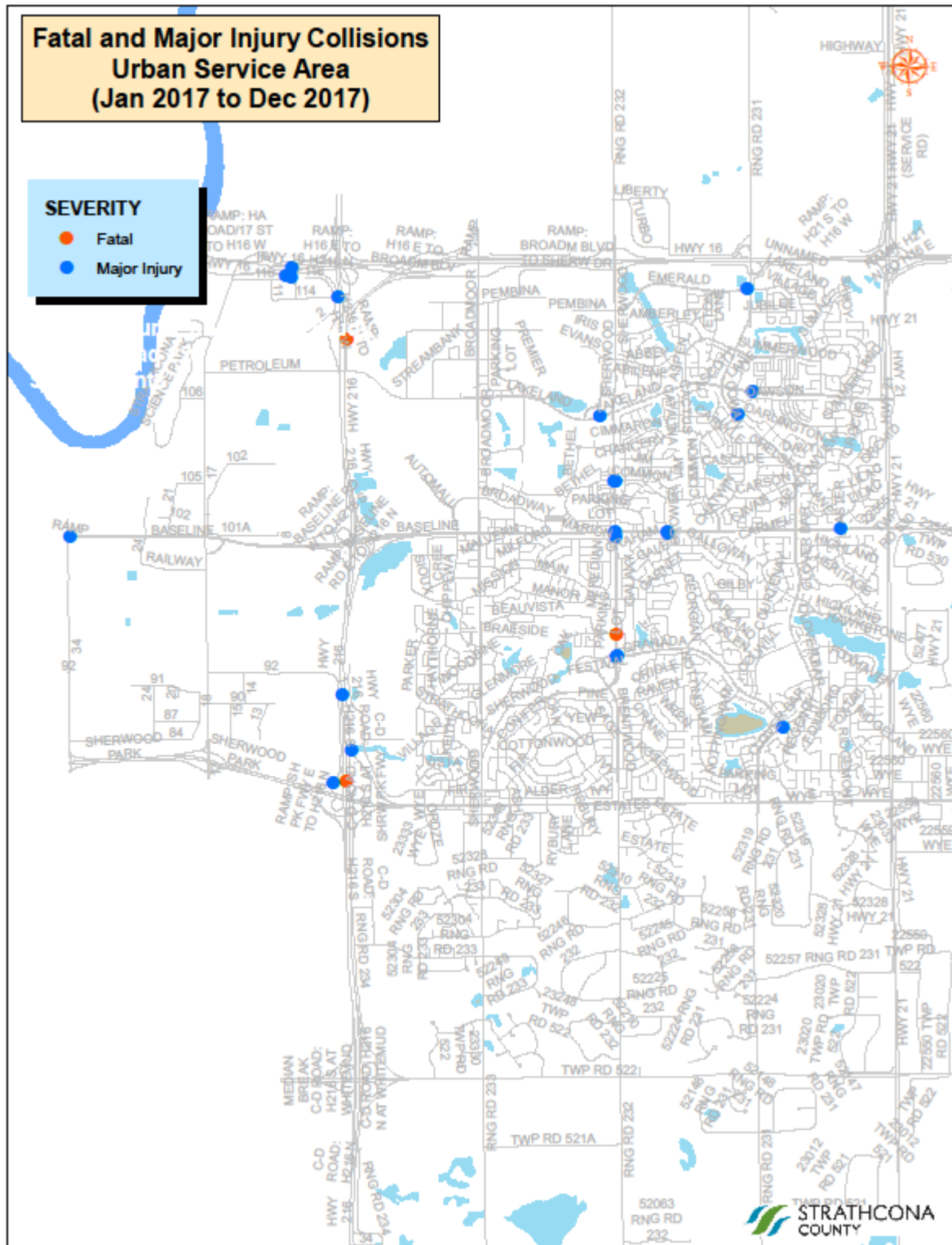
<sup>3</sup> Collision Cost Study Update, 2018, Paul de Leur



# **Fatal and Major Injury Collisions Urban Service Area (Jan 2017 to Dec 2017)**

## **SEVERITY**

- Fatal
- Major Injury



### 3.4 Driver's prior action

Followed too closely was the most common prior action of drivers involved in collisions in 2017.

For fatal and injury (including major and minor injury) the top eight driver actions were:

1. followed too closely/rear-ended
2. left turn across path
3. ran-off-road
4. stop sign violation
5. disobey traffic signal
6. animal strike
7. improper lane change
8. improper turn

For collisions that involved only property damage, the top eight driver actions were:

1. followed too closely/rear-ended
2. animal strike
3. ran-off-road
4. back unsafely
5. left turn across path
6. improper lane change
7. improper turn
8. stop sign violation

Side Impact (T-Bone, left turn across path, right angle) collisions are the most dangerous kind of collision for vehicle occupants, as serious injury or death is increasingly likely for speeds greater than 50 km/h. Not surprisingly, the causes of injury collisions were more likely to be the kind of collision that results in a 90 degree side impact than those recorded in PDO collisions.

### 3.5 Temporal analysis

#### Month

The highest number of fatal and injury collisions took place in November 2017. Generally, the most serious collisions occurred from May to July as well as in December and January. PDO collisions were most common in November 2017. Generally, PDO collisions were high in the winter months and lowest in the summer.

Figure 9: Fatal and injury collisions by Month 2017

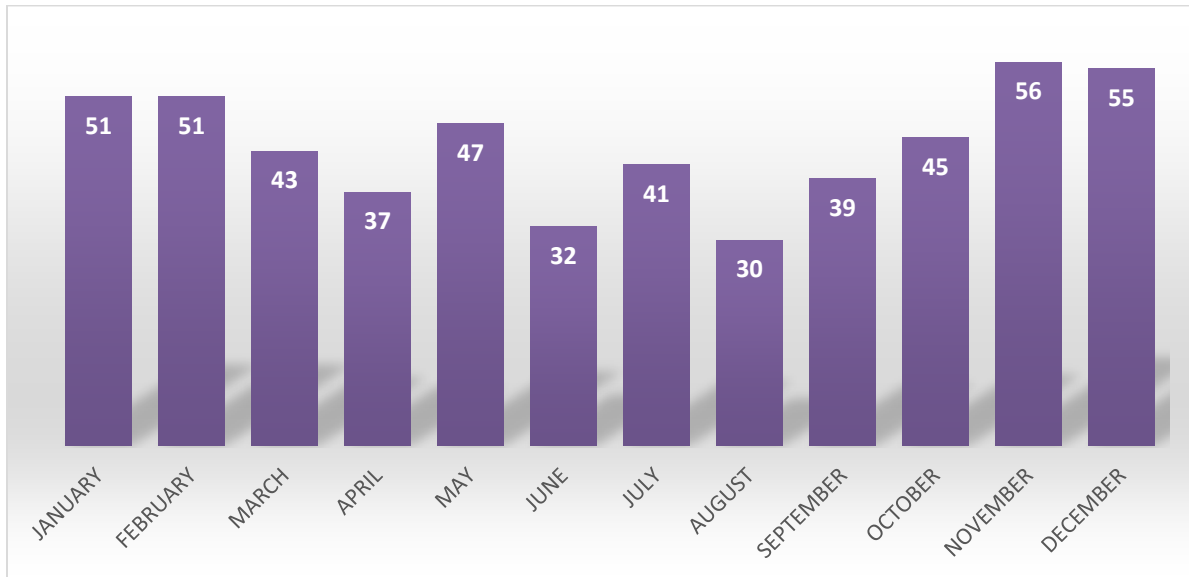
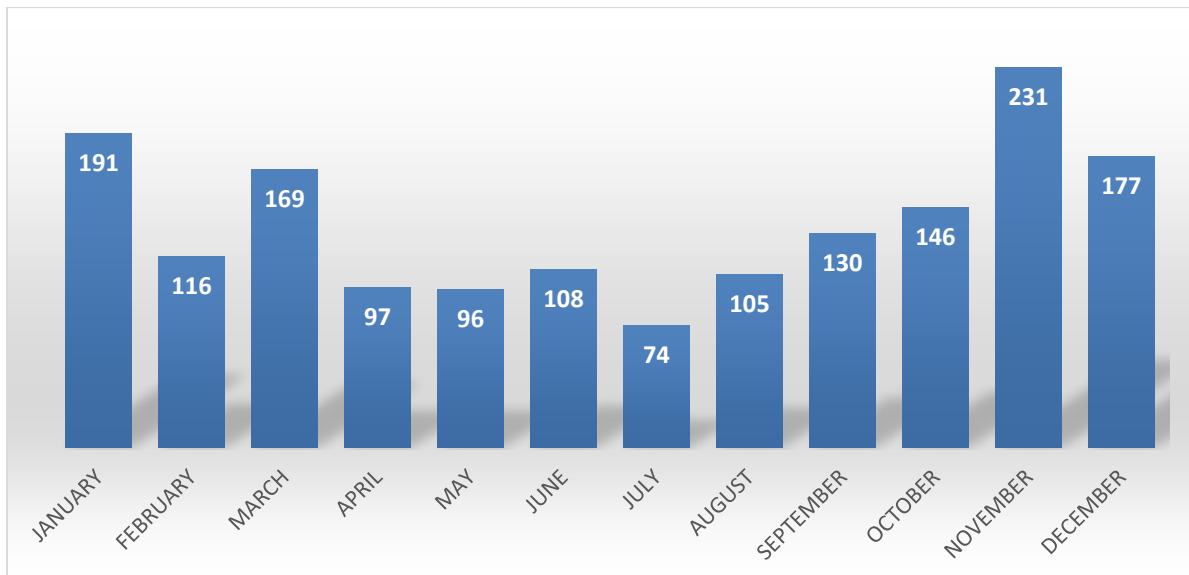


Figure 10: Property damage only (PDO) collisions by Month 2017



### *Day of the Week*

Wednesday was the most common day of the week for all kinds of collisions in 2017.

Figure 11: Fatal and injury collisions by day of the week 2017

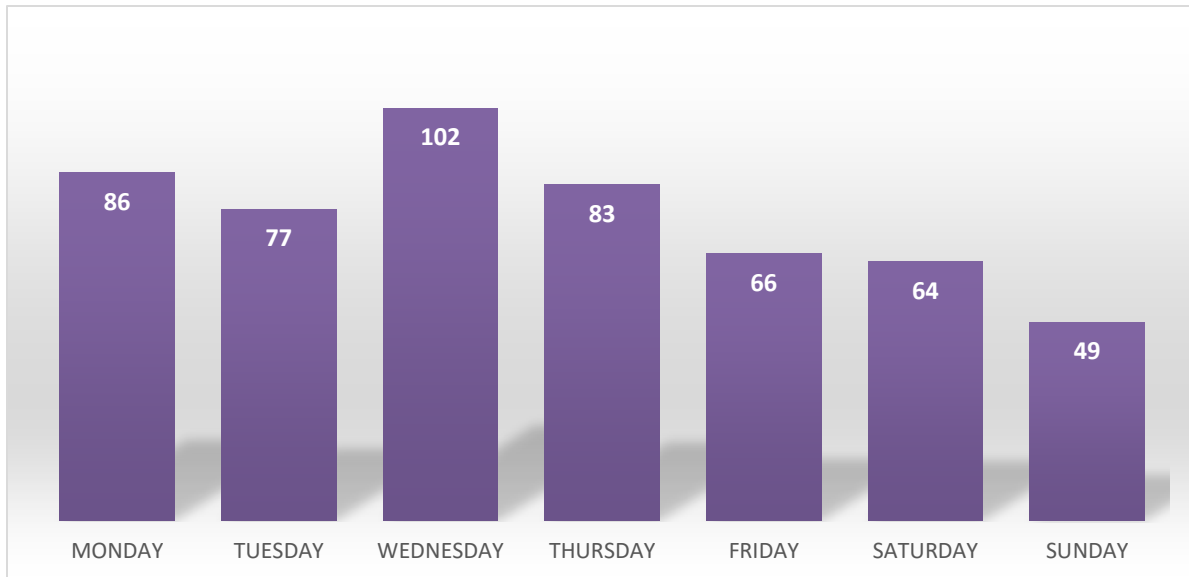
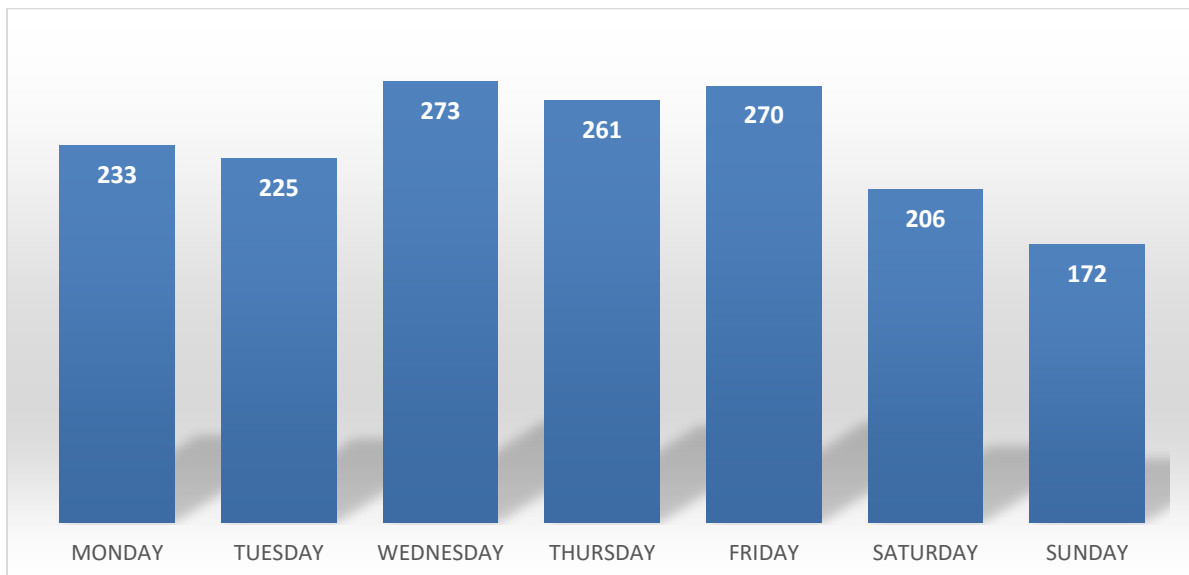


Figure 12: Property damage only (PDO) collisions by day of the week 2017



### *Time of Day*

On weekdays, all types of collisions were most likely between 5:00 and 6:00 pm. Generally, weekday collisions are highest in the afternoon peak time, with a less marked increase during the morning peak hours.

Figure 13: Fatal and injury collisions by time of day 2017- weekdays

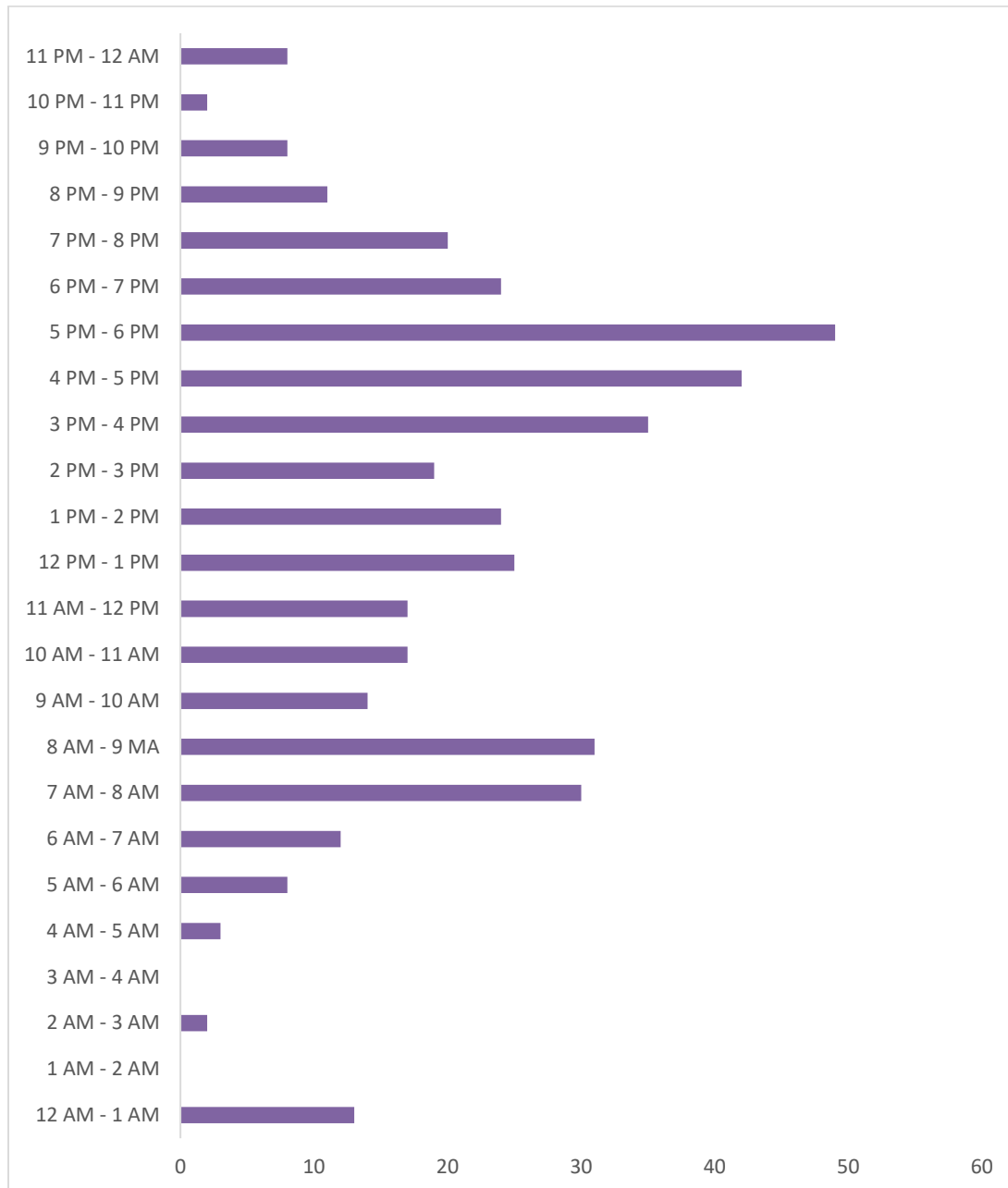
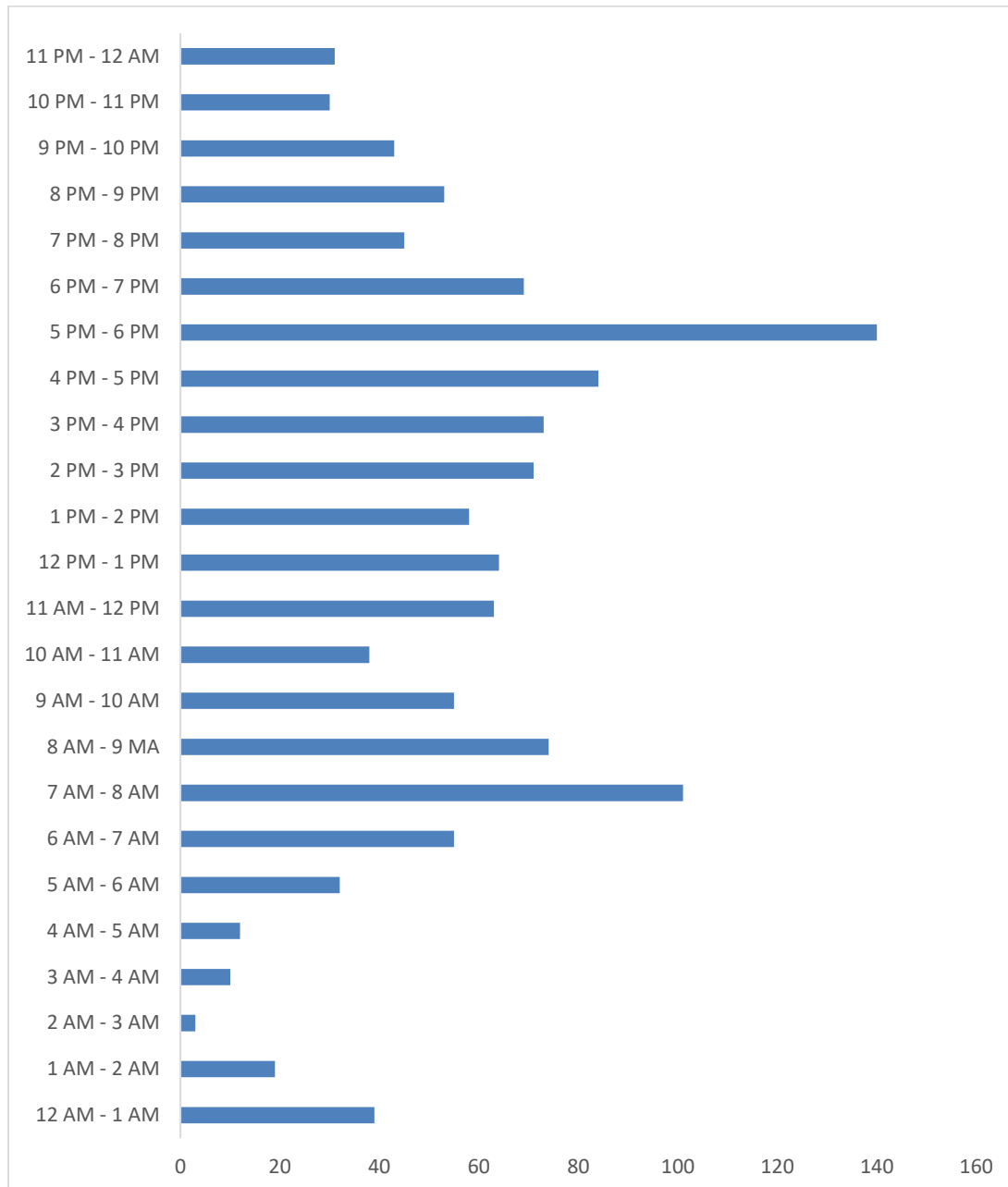




Figure 14: Property damage only collisions by time of day 2017- weekdays



On weekends, collisions generally peak in the early afternoon. This is most marked with fatal and injury collisions, which are most likely to happen between 7:00 and 8:00 pm.

Figure 15: Fatal and injury collisions by time of day 2017- weekends

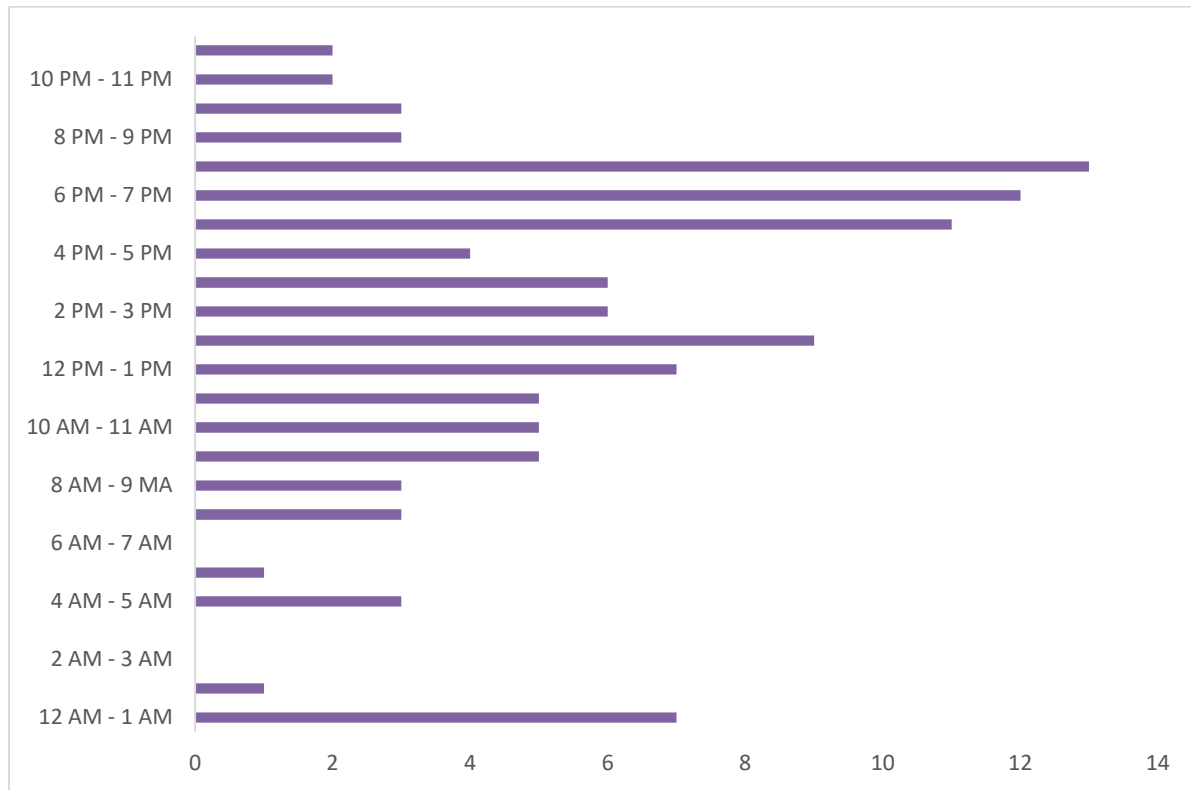
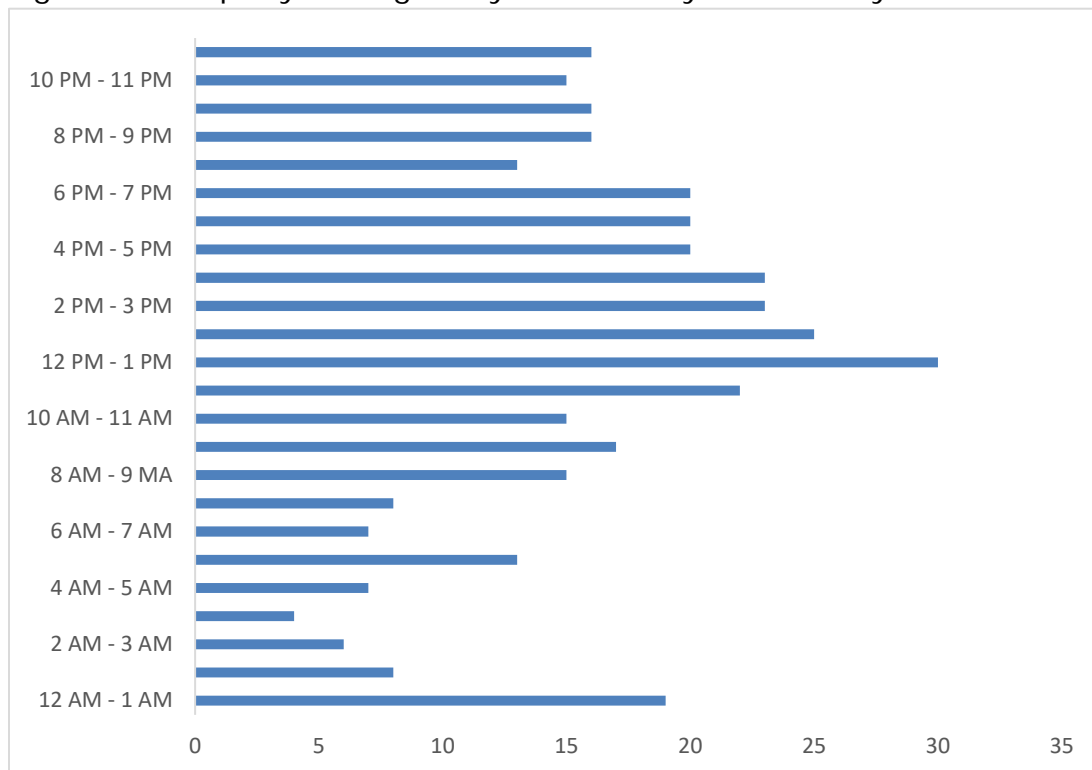


Figure 16: Property Damage Only Collisions by Time of Day 2017- Weekends



### 3.6 Intersection-related collisions

In 2017, almost half of all collisions in Strathcona County were intersection-related. About 2/3 of injury collisions happened at intersections. Only one of six fatal collisions occurred at an intersection. 2017 saw a decreasing trend in intersection-related collisions over 2016.

Table 12: Intersection-related collisions as a percentage of total collisions

|                | 2016  | 2017  | % change |
|----------------|-------|-------|----------|
| All Collisions | 49.27 | 47.51 | -3.57    |
| PDO            | 43.42 | 42.65 | -1.77    |
| Minor Injury   | 67.04 | 64.03 | -4.49    |
| Major Injury   | 66.10 | 57.14 | -13.56   |
| Fatal          | 60.00 | 16.67 | -72.22   |

The top three intersections for collision frequency are the highest volume intersections in Sherwood Park. Five of the top collision frequency locations are on Sherwood Drive, and four are on Baseline Road.

Table 13: Top ten intersections for collision frequency 2017

| Rank | Intersection   |                | Fatal | Major | Minor | PDO | Total |
|------|----------------|----------------|-------|-------|-------|-----|-------|
| 1    | Baseline Rd    | Sherwood Dr    | 0     | 2     | 13    | 27  | 42    |
| 2    | Baseline Rd    | Broadmoor Blvd | 0     | 0     | 10    | 26  | 37    |
| 3    | Baseline Rd    | Clover Bar Rd  | 0     | 0     | 8     | 19  | 27    |
| 4    | Sherwood Dr    | Broadmoor Blvd | 0     | 0     | 10    | 16  | 26    |
| 5    | Fir St         | Sherwood Dr    | 0     | 0     | 10    | 13  | 23    |
| 6    | Hwy 16 EB Ramp | Broadmoor Blvd | 0     | 0     | 4     | 17  | 21    |
| 7    | Lakeland Dr    | Sherwood Dr    | 0     | 0     | 6     | 14  | 20    |
| 8    | Main Blvd      | Sherwood Dr    | 0     | 0     | 7     | 10  | 17    |
| 9    | Sherwood Dr    | Brentwood Blvd | 0     | 0     | 5     | 11  | 16    |
| 10   | Baseline Rd    | Shivam Blvd    | 0     | 0     | 3     | 13  | 16    |

Intersections with four or more fatal/major injury collisions are listed in Table 14 based on 10 year collision history. Three of the top 12 intersections for fatal/major injury collision are located on Baseline Road and three are on Wye Road.

Table 14: Top intersections for frequency of fatal/major injury collisions (2008-17)

| Rank | Intersection |                | Fatal | Major | Total |
|------|--------------|----------------|-------|-------|-------|
| 1    | Wye Rd       | Highway 21     | 1     | 5     | 6     |
| 2    | Highway 14   | Rng Rd 232     | 0     | 5     | 5     |
| 3    | Wye Rd       | Brentwood Blvd | 0     | 5     | 5     |
| 4    | Highway 15   | Highway 830    | 0     | 5     | 5     |
| 5    | Baseline Rd  | Glenbrook Blvd | 1     | 3     | 4     |
| 6    | Highway 16   | Highway 830    | 1     | 3     | 4     |
| 7    | Baseline Rd  | 17 St          | 0     | 4     | 4     |
| 8    | Wye Rd       | Ash St         | 0     | 4     | 4     |
| 9    | Fir St       | Sherwood Dr    | 0     | 4     | 4     |
| 10   | Lakeland Dr  | Broadmoor Blvd | 0     | 4     | 4     |
| 11   | Baseline Rd  | Sherwood Dr    | 0     | 4     | 4     |
| 12   | Highway 628  | Rng Rd 231     | 0     | 4     | 4     |

The top three intersections for frequency of rear-end collisions are the highest volume intersections in Sherwood Park. Four of the top collision frequency locations are on Sherwood Drive and four are on Baseline Road.

Table 15: Top 10 intersections for rear end collisions 2017

| Rank | Intersection   |                | Collisions |
|------|----------------|----------------|------------|
| 1    | Baseline Rd    | Sherwood Dr    | 28         |
| 2    | Baseline Rd    | Broadmoor Blvd | 23         |
| 3    | Sherwood Dr    | Broadmoor Blvd | 15         |
| 4    | Baseline Rd    | Clover Bar Rd  | 13         |
| 5    | Lakeland Dr    | Sherwood Dr    | 13         |
| 6    | Hwy 16 EB Ramp | Broadmoor Blvd | 11         |
| 7    | Main Blvd      | Sherwood Dr    | 11         |
| 8    | Wye Rd         | Clover Bar Rd  | 10         |
| 9    | Sherwood Dr    | Brentwood Blvd | 9          |
| 10   | Baseline Rd    | Shivam Blvd    | 9          |

The top three intersections for side impact collisions are lower volume intersections.

Table 16: Top 10 intersections for left-turn across Path (LTXP)/right angle collisions 2017

| Rank | Intersection  |                | Collisions |
|------|---------------|----------------|------------|
| 1    | Fir St        | Sherwood Dr    | 14         |
| 2    | Wye Rd        | Hwy 21         | 13         |
| 3    | Wye Rd        | Ash St         | 11         |
| 4    | Jim Common Dr | Sherwood Dr    | 10         |
| 5    | Baseline Rd   | Broadmoor Blvd | 9          |
| 6    | Baseline Rd   | Clover Bar Rd  | 9          |
| 7    | Wye Rd        | Ordze Dr       | 8          |
| 8    | Baseline Rd   | Glenbrook Blvd | 8          |
| 9    | Baseline Rd   | Sherwood Dr    | 7          |
| 10   | Sherwood Dr   | Brentwood Blvd | 6          |

### 3.7 Neighbourhood collisions

There were no major injury collisions reported on residential collector roads in 2017. No fatal collisions occurred in residential areas in the County.

Table 17: Residential collisions as a percentage of major injury and fatal collisions

|                   | Major Injury Collisions |         | Fatal Collisions |      |
|-------------------|-------------------------|---------|------------------|------|
|                   | 2016                    | 2017    | 2016             | 2017 |
| Collectors/Locals | 11.66%                  | 2.40%   | 0%               | 0%   |
| Arterials/Highway | 88.34%                  | 100.00% | 100%             | 100% |

Table 18: Major injury and fatal collisions 2016/2017 by location

|                       | 2016  |       | 2017  |       |
|-----------------------|-------|-------|-------|-------|
|                       | Fatal | Major | Fatal | Major |
| Urban Collector/Local | 0     | 5     | 0     | 0     |
| Rural Collector/Local | 0     | 2     | 0     | 0     |
| Arterials             | 1     | 32    | 2     | 29    |
| Highways              | 4     | 21    | 4     | 20    |

### 3.8 Animal collisions

In 2017, 15.5% of all reported collisions were animal related. With the exception of one fatal collision involving a motorcycle, most animal collisions were not serious for vehicle occupants, with 92% of those reported causing only property damage. Overall, there was a 6.65% increase in the number of animal collisions from 2016 to 2017.

Table 19: 2016/2017 animal collisions in Strathcona County

| <b>Severity</b> | <b>2016</b> | <b>2017</b> | <b>% Change</b> |
|-----------------|-------------|-------------|-----------------|
| Fatal           | 0           | 1           | N/A             |
| Major Injury    | 3           | 0           | -100.00%        |
| Minor Injury    | 19          | 26          | 36.84%          |
| PDO             | 294         | 310         | 5.44%           |
| Total           | 316         | 337         | 6.65%           |

### 3.9 Demographics

Individuals aged 25-44 were the most likely to be injured in a motor vehicle collision in 2017. Five fatalities were male and one was female.

Table 20: Fatalities and injuries as a result of 2017 collisions by age

| <b>Age Group</b> | <b>Fatal</b> | <b>Major</b> | <b>Minor</b> | <b>Total</b> |
|------------------|--------------|--------------|--------------|--------------|
| 0-5              | 0            | 0            | 6            | 6            |
| 6-11             | 0            | 0            | 18           | 18           |
| 12-15            | 0            | 2            | 30           | 32           |
| 16-18            | 0            | 1            | 48           | 49           |
| 19-24            | 1            | 7            | 82           | 90           |
| 25-34            | 1            | 12           | 131          | 144          |
| 35-44            | 3            | 11           | 108          | 122          |
| 45-54            | 0            | 10           | 114          | 124          |
| 55-64            | 0            | 11           | 79           | 90           |
| 65-74            | 0            | 2            | 42           | 44           |
| 75+              | 1            | 6            | 26           | 33           |
| Unknown          | 0            | 0            | 7            | 7            |

All three individuals under 18 years who sustained major injuries were passengers, two were females and one was male.

Table 21: Fatalities and injuries as a result of 2017 collisions by gender

| <b>Gender</b> | <b>Fatal</b> | <b>Major</b> | <b>Minor</b> | <b>Total</b> |
|---------------|--------------|--------------|--------------|--------------|
| Female        | 1            | 30           | 411          | 442          |
| Male          | 5            | 32           | 278          | 315          |

### 3.10 Vulnerable road user collisions

#### 3.10.1 Pedestrian collisions

There were a total of 25 pedestrian collisions in Strathcona County in 2017. Three of them resulted fatalities and three sustained major injuries. The large increase in pedestrian collisions in 2017 can largely be attributed to the inclusion of parking lot data in the statistics.

Table 22: Pedestrian collisions 2016/2017 by severity

| <b>Severity</b> | <b>2016</b> | <b>2017</b> | <b>% Change</b> |
|-----------------|-------------|-------------|-----------------|
| Fatal           | 1           | 3           | 200.00          |
| Major           | 5           | 3           | -40.00          |
| Minor           | 7           | 18          | 157.14          |
| PDO             | 3           | 1           | -66.67          |
| Total           | 16          | 25          | 56.25           |

11 pedestrian collisions took place on the County's arterial roads, and two happened in a residential area.

Table 23: Location of pedestrian collisions 2017

| <b>Severity</b> | <b>Arterial</b> | <b>Highway</b> | <b>Parking Lot</b> | <b>Residential</b> |
|-----------------|-----------------|----------------|--------------------|--------------------|
| Fatal           | 1               | 2              | 0                  | 0                  |
| Major           | 1               | 1              | 1                  | 0                  |
| Minor           | 9               | 0              | 8                  | 1                  |
| PDO             | 0               | 0              | 0                  | 1                  |
| Total           | 11              | 3              | 9                  | 2                  |

46% of pedestrians involved in collisions were females. Six pedestrians were under 18 years of age and three were seniors.

Table 24: Fatalities and injuries as a result of 2017 pedestrian collisions by age and gender

| Number | Age | Gender | Severity | Location    |
|--------|-----|--------|----------|-------------|
| 1      | 11  | M      | Minor    | Collector   |
| 2      | 14  | M      | Minor    | Arterial    |
| 3      | 15  | M      | Minor    | Arterial    |
| 4      | 17  | F      | Minor    | Arterial    |
| 5      | 17  | F      | Minor    | Arterial    |
| 6      | 17  | M      | Minor    | Arterial    |
| 7      | 19  | M      | Minor    | Arterial    |
| 8      | 20  | F      | Minor    | Parking Lot |
| 9      | 20  | F      | Minor    | Parking Lot |
| 10     | 24  | F      | Minor    | Arterial    |
| 11     | 24  | M      | Minor    | Arterial    |
| 12     | 26  | M      | Fatal    | Highway     |
| 13     | 26  | M      | Major    | Highway     |
| 14     | 29  | F      | Minor    | Parking Lot |
| 15     | 30  | F      | Minor    | Parking Lot |
| 16     | 30  | M      | None     | Local       |
| 17     | 32  | F      | Major    | Parking Lot |
| 18     | 33  | F      | Minor    | Arterial    |
| 19     | 37  | M      | Fatal    | Highway     |
| 20     | 47  | F      | Minor    | Parking Lot |
| 21     | 60  | M      | Minor    | Arterial    |
| 22     | 61  | M      | Minor    | Parking Lot |
| 23     | 79  | M      | Fatal    | Arterial    |
| 24     | 83  | F      | Minor    | Parking Lot |
| 25     | 85  | F      | Major    | Arterial    |

It is important to note that both fatal/major injury pedestrian collisions that took place on an arterial road occurred on Sherwood Drive. Both were senior pedestrians accessing the Sherwood Park Mall.



Table 25: Drivers' prior actions – 2017 pedestrian collisions

| <b>Prior Action</b>            | <b>Fatal</b> | <b>Major</b> | <b>Minor</b> | <b>PDO</b> | <b>Total</b> |
|--------------------------------|--------------|--------------|--------------|------------|--------------|
| Driving Properly               | 2            | 0            | 1            | 0          | 2            |
| Stop Sign Violation            | 0            | 0            | 1            | 0          | 1            |
| Failed to Yield Pedestrian ROW | 0            | 0            | 5            | 0          | 5            |
| Backed Unsafely                | 0            | 0            | 2            | 0          | 2            |
| Left Turn Across Path          | 0            | 0            | 1            | 0          | 1            |
| Disobey Traffic Signal         | 1            | 0            | 0            | 0          | 1            |
| Improper Turn                  | 0            | 0            | 1            | 0          | 1            |
| Improper Passing               | 0            | 0            | 1            | 0          | 1            |
| Parked Vehicle                 | 0            | 0            | 0            | 0          | 1            |
| Unknown                        | 0            | 1            | 8            | 1          | 10           |

### 3.10.2 Bicycle collisions

There was a total of 11 bicycle collisions in Strathcona County in 2017 resulting in one major and nine minor injuries.

Table 26: Bicycle collisions 2016/2017 by severity

| <b>Severity</b> | <b>2016</b> | <b>2017</b> | <b>% Change</b> |
|-----------------|-------------|-------------|-----------------|
| Fatal           | 1           | 0           | -100.00         |
| Major           | 2           | 1           | -50.00          |
| Minor           | 5           | 9           | 80.00           |
| PDO             | 1           | 1           | 0.00            |
| Total           | 9           | 11          | 22.22           |

Ten bicycle collisions took place on the County's arterial roads, and one happened in a parking lot. Cyclist collisions involved seven males and four females. Five cyclists were 18 years old and under. All others were between the age of 21 and 38.

Table 27: Location of bicycle collisions 2017

| <b>Severity</b> | <b>Arterial</b> | <b>Highway</b> | <b>Parking Lot</b> | <b>Residential</b> |
|-----------------|-----------------|----------------|--------------------|--------------------|
| Fatal           | 0               | 0              | 0                  | 0                  |
| Major           | 1               | 0              | 0                  | 0                  |
| Minor           | 8               | 0              | 1                  | 0                  |
| PDO             | 1               | 0              | 0                  | 0                  |
| Total           | 10              | 0              | 1                  | 0                  |

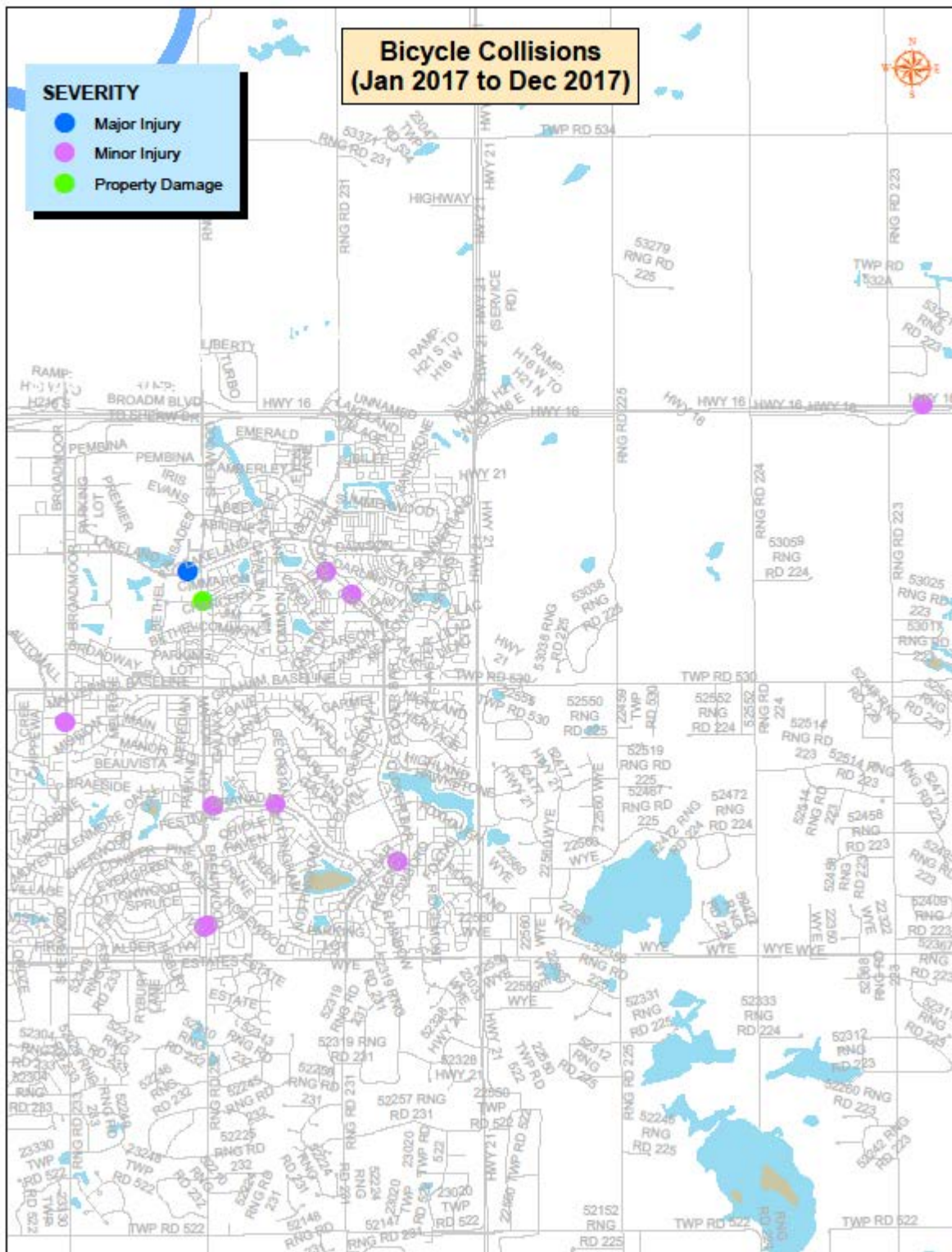
Table 28: Drivers' prior actions – 2017 bicycle collisions

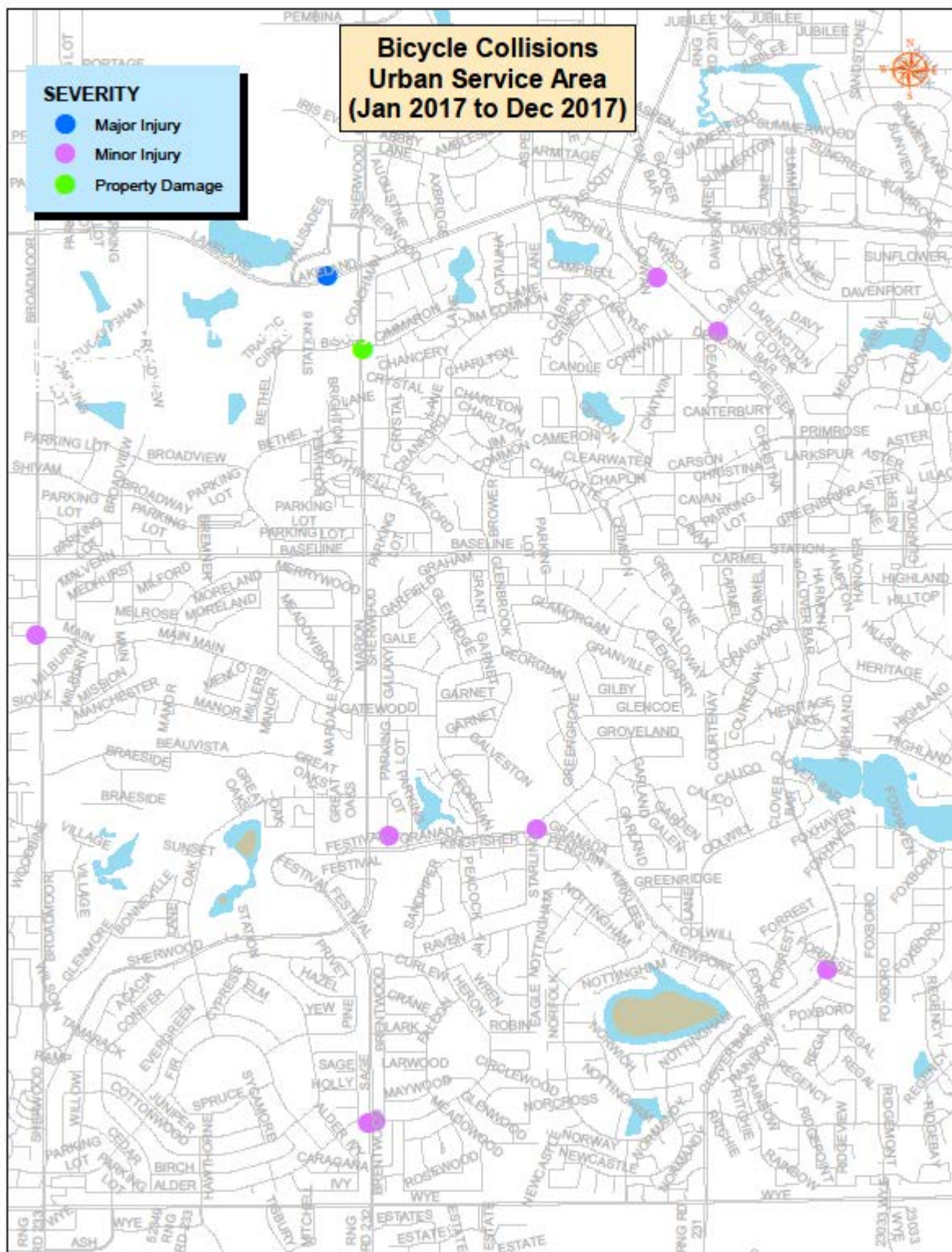
| <b>Prior Action</b>         | <b>Fatal</b> | <b>Major</b> | <b>Minor</b> | <b>PDO</b> | <b>Total</b> |
|-----------------------------|--------------|--------------|--------------|------------|--------------|
| Driving Properly            | 0            | 1            | 2            | 0          | 3            |
| Stop Sign Violation         | 0            | 0            | 2            | 0          | 2            |
| Failed to Yield Bicycle ROW | 0            | 0            | 2            | 0          | 2            |
| Left Turn Across Path       | 0            | 0            | 1            | 1          | 2            |
| Improper Turn               | 0            | 0            | 2            | 0          | 2            |

Table 29: Major and minor injuries as a result of 2017 bicycle collisions by age and gender

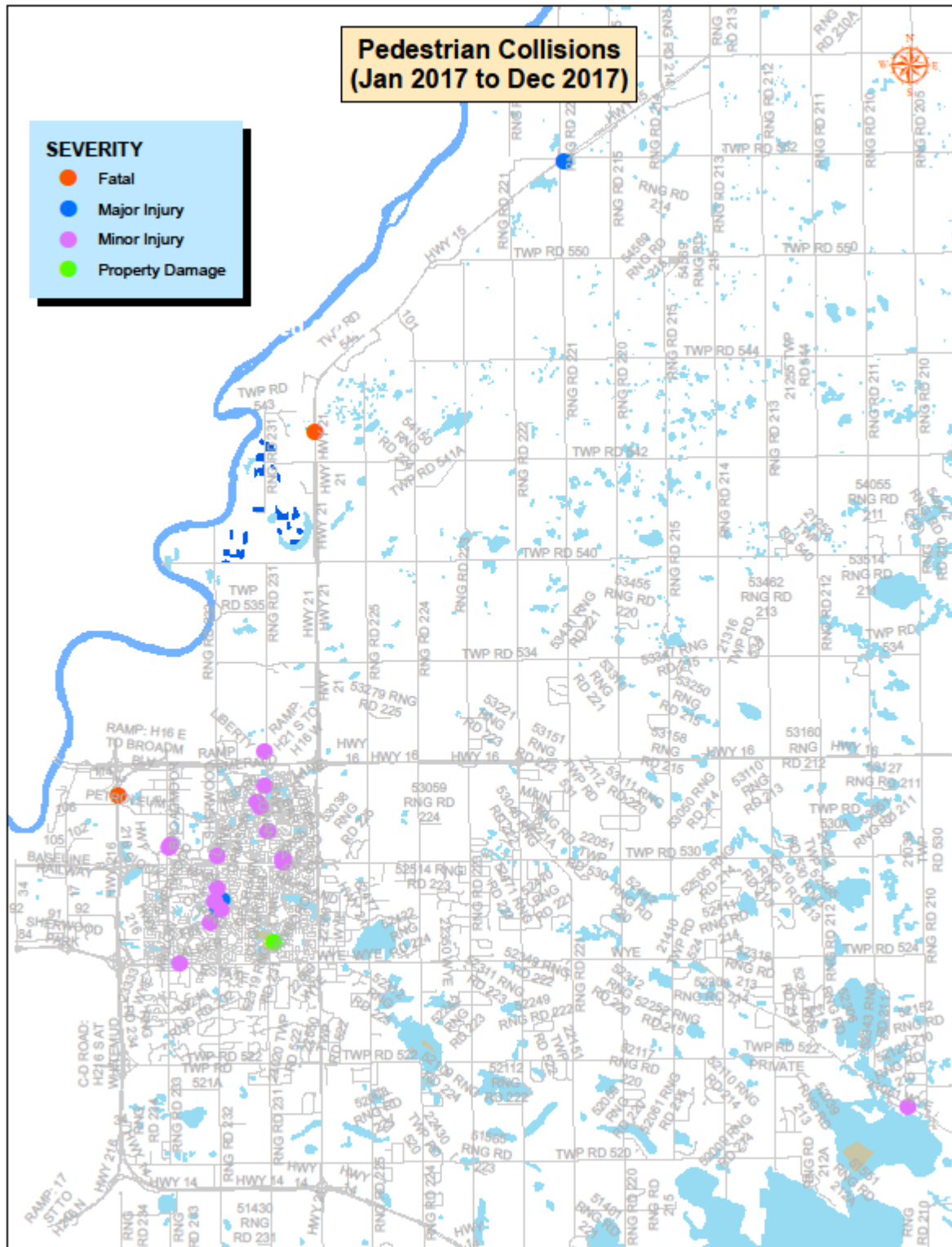
| <b>Number</b> | <b>Age</b> | <b>Gender</b> | <b>Severity</b> |
|---------------|------------|---------------|-----------------|
| 1             | 10         | M             | Minor           |
| 2             | 12         | M             | Minor           |
| 3             | 13         | F             | Minor           |
| 4             | 13         | M             | Minor           |
| 5             | 15         | F             | Minor           |
| 6             | 21         | M             | Major           |
| 7             | 24         | F             | Minor           |
| 8             | 26         | M             | Minor           |
| 9             | 32         | F             | Minor           |
| 10            | 34         | M             | Minor           |
| 11            | 38         | M             | None            |

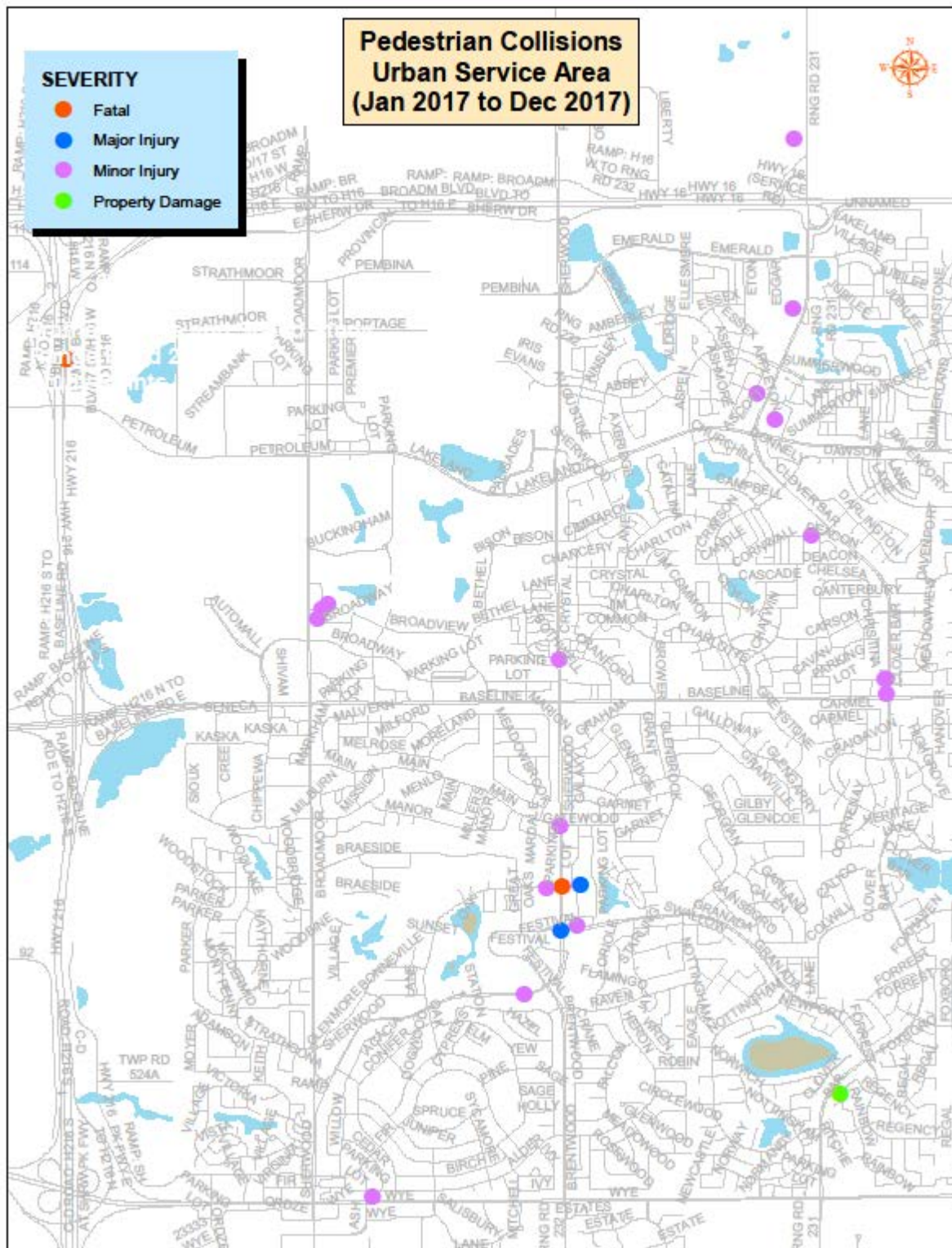
The following maps illustrates the locations of all pedestrian and bicycle related collisions in Strathcona County.











### 3.10.3 Motorcyclists

There was a total of 24 motorcycle collisions occurred in Strathcona County in 2017. One of these resulted in a fatality, and 9 involved major injuries.

Table 30: Motorcycle collisions 2016/2017 by severity

| <b>Severity</b> | <b>2016</b> | <b>2017</b> | <b>% Change</b> |
|-----------------|-------------|-------------|-----------------|
| Fatal           | 2           | 1           | -50.00          |
| Major           | 6           | 9           | 100.00          |
| Minor           | 11          | 11          | -18.18          |
| PDO             | 1           | 3           | 200.00          |
| Total           | 20          | 24          | 20.00           |

Table 31: Actions of motorcyclists killed or injured in collisions 2017

| <b>Prior Action</b>  | <b>Fatal</b> | <b>Major</b> | <b>Minor</b> | <b>PDO</b> | <b>Total</b> |
|----------------------|--------------|--------------|--------------|------------|--------------|
| Lost Control         | 0            | 5            | 3            | 2          | 10           |
| Ran-Off-Road         | 0            | 2            | 3            | 0          | 5            |
| Driving Properly     | 1            | 1            | 3            | 0          | 5            |
| Improper Lane Change | 0            | 1            | 1            | 0          | 2            |
| Parked Vehicle       | 0            | 0            | 0            | 1          | 1            |
| Followed Too Closely | 0            | 0            | 1            | 0          | 1            |

### 3.11 Commercial vehicle collisions

Commercial vehicles include trucks >4500 kg, buses and tractor trailers. Ten percent of major injury collisions, including one fatal collision, that occurred in 2017 involved a commercial vehicle.

Table 32: Commercial vehicle collisions 2016/2017 by severity

| <b>Severity</b> | <b>2016</b> | <b>2017</b> | <b>% Change</b> |
|-----------------|-------------|-------------|-----------------|
| Fatal           | 0           | 1           | N/A             |
| Major           | 7           | 5           | -28.57          |
| Minor           | 36          | 18          | -50.00          |
| PDO             | 154         | 100         | -35.06          |
| Total           | 197         | 124         | -37.06          |

### 3.12 Impaired Driving

Seventy-three collisions in 2017 involved an impaired road user, including one fatal and seven major injury collisions. This represents a very large increase in the number of major and minor injury collisions involving impairment.

Table 33: Alcohol related collisions 2016/2017 by severity

| <b>Severity</b> | <b>2016</b> | <b>2017</b> | <b>% Change</b> |
|-----------------|-------------|-------------|-----------------|
| <b>Fatal</b>    | 1           | 1           | 0.00            |
| <b>Major</b>    | 2           | 7           | 250.00          |
| <b>Minor</b>    | 9           | 16          | 77.77           |
| <b>PDO</b>      | 22          | 49          | 122.73          |
| <b>Total</b>    | 34          | 73          | 114.71          |



## 4.0 Appendix- Glossary of Terms

Definitions of terms used in this report:

### **Rear-end**

Two vehicles in a position of one behind the other and collide, regardless of what movement(s) either vehicle was in the process of making with the exception of one or both vehicles backing.

### **Sideswipe - same direction**

Two vehicles moving alongside each other and collide, with at least one of the vehicles being struck on the side. This type would include a collision resulting from one of the vehicles making an improper turn such as a left from the right lane or vice-versa or turning right from the appropriate outside lane and striking a vehicle passing on the right shoulder.

### **Right Angle**

Two vehicles approaching from non-opposing angular directions collide, typically resulting as one vehicle failed to either stop or yield right of way from a Stop or Yield sign, ran a red light, or was not cleared from the intersection upon the onset of the conflicting movement's green signal.

### **Head-on**

Two vehicles approaching opposite directions and intending to continue in opposite directions collide in a frontal or angular manner as a result of one or both vehicles crossing the painted or unpainted centerline or divided median of the roadway. This includes a collision resulting from one vehicle traveling the wrong way down a divided highway.

### **Sideswipe – opposite direction**

Two vehicles approaching opposite directions and intending to continue in opposite directions collide in a sideswiping manner as a result of one or both vehicles crossing the painted or unpainted centerline or divided median of the roadway. This also includes a collision resulting from one vehicle traveling the wrong way down a divided highway.

### **Left Turn Across Path**

Two vehicles approaching from opposite directions collide as a result of at least one vehicle attempting to make a left or U turn in front of the opposing vehicle.

**Backing**

Any multi-vehicle collision when at least one vehicle was in the act of backing.

**Rollover**

A collision in which a vehicle rolls over on or off the roadway without first having been involved in some other type single or multiple vehicle collision. This includes motorcycle collision in which the operator loses control of and drops bike, but had not initially struck another motor vehicle, fixed or non-fixed object, animal, pedacyclist or pedestrian.

**Struck Object**

A collision in which the primary collision involved a single vehicle and a fixed object.

**Animal**

A collision involving a vehicle striking any animal, including a deer.

**Pedestrian**

A collision involving a vehicle and pedestrian in which the collision between the two is the primary event and also took place within the road proper. This type includes a vehicle colliding with someone walking their bicycle in the roadway.

**Bicyclist**

A collision involving a vehicle and a bicycle that is in the act of being ridden or stopped in the roadway, but currently mounted by the cyclist.

**Minor injury**

Any injuries such as bruises, abrasions, limping, etc., whether visible or self-reported.

**Major injury**

A person(s) was admitted to the hospital as a result of injuries sustained in the collision.

**Fatal collision**

A traffic collision that results in one or more fatalities within thirty days of the collision.

**PDO**

Property damage only collision.

**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.