

Traffic Collision Statistics Report 2020



**STRATHCONA
COUNTY**



Prepared by:

Tahir Hameed, M.Eng., P.Eng., P.E., PTOE

Transportation Planning and Engineering

Table of Contents

2020 Collision Quick Facts	2
Section 1: Introduction	4
1.1 About This Report	4
1.2 About Strathcona County	5
Section 2: Historical Collision Statistics	10
2.1 Overall: All Roads within County Borders	10
2.2 County Roads Only (Excluding Provincial Highways)	12
2.3 County Owned Rural vs Urban Collision Rates	13
2.4 Provincial Highway Collisions	14
3.1 Major and Fatal Collisions	16
3.2 Drivers' Prior Action	20
3.3 Temporal Analysis	21
3.4 Intersection-Related Collisions	25
3.4.1 Intersection Rankings by Frequency	26
3.5 Neighbourhood Collisions	31
3.6 Animal Collisions	31
3.7 Demographics	32
3.8 Vulnerable Road User Collisions	33
3.8.1 Pedestrian Collisions	33
3.8.2 Bicycle Collisions	39
3.8.3 Motorcyclist Collisions	42
3.9 Commercial Vehicle Collisions	42
3.10 Impaired Driving Collisions	43
3.11 Private Property Collisions	43
4.0 Appendix- Glossary of Terms	44

2020 Collision Quick Facts

- 1,394 collisions occurred on public roadways; 34% of these collisions occurred on Provincial Highways.
- Four out of six fatal collisions occurred on Provincial Highways.
- 73% of collisions in Strathcona County are property damage only (PDO).
- 365 injury collisions (26%) occurred on public roadways; most injury collisions were classified as 'minor', 9 collisions required hospitalization representing 0.6% of all injury collisions.
- Individuals aged 25-34 were the most likely to be injured in a collision.
- One major injury collision occurred on residential roads in 2020.
- 42% of all collisions occurred at intersections and 22% of these occurred at Provincial Highway intersections.
- 60% of fatal and major injury collisions took place on a Provincial Highway.
- Following too closely was the most common type of driver action related to a collision in 2020.
- The highest number of collisions took place in January.
- 8% of all collisions took place between 4:00 pm and 5:00 pm.
- 14% of all collisions were animal related.
- An additional 454 collisions took place on private property, typically parking lots.
- Pedestrian collisions are more common on private property than on public roads.

Collision Comparison 2019 to 2020

Collision Statistics	2019	2020	Change
All Roads Within County			
Total Collisions	1783	1394	▼
Fatal Collisions	7	6	▼
Fatalities	8	7	▼
Major Injury Collisions	21	9	▼
Major Injuries	31	14	▼
Minor Injury Collisions	474	356	▼
Minor Injuries	667	499	▼
PDO Collisions	1281	1024	▼
Collisions per 1,000 population	17.9	13.9	▼
Injury Collisions* per 1,000 population	5.1	3.7	▼
Collision Injuries* per 1,000 population	7.6	5.2	▼
Pedestrian Collisions	10	7	▼
Fatal and Major Pedestrian Injuries	0	1	▲
Bicycle Collisions	7	5	▼
Fatal and Major Cyclist Injuries	1	1	–
Motorcycle Collisions	18	6	▼
Fatal and Major Motorcyclist Injuries	8	0	▼
Intersection Collisions	689	579	▼
Animal Collisions	284	192	▼
Alcohol Related Collisions	49	55	▲
Commercial Vehicle Collisions	115	79	▼
County Owned Roads			
Total Collisions	1090	922	▼
Fatal Collisions	1	2	▲
Major Injury Collisions	5	4	▼
Minor Injury Collisions	289	208	▼
PDO Collisions	795	708	▼
Injury Collisions* per 1,000 population	2.97	2.13	▼

*Includes Fatal, Major Injury and Minor Injury

Section 1: Introduction

1.1 About This Report

This report provides a summary of motor vehicle collisions reported from January 1, 2020 to December 31, 2020 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 result in property damage of CAD \$2,000 or greater since 2011, and CAD \$1,000 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 reported incidents at the time of printing. Due to ongoing police investigations, some data presented in this report may be subject to revision.

Significance of Collisions Statistics

Strathcona County endorses the Safe System approach philosophy in the implementation of its transportation network operations and maintenance to support the goal that no one is seriously injured or killed. 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 include:

- 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, medically at-risk drivers, pedestrians, bicyclists, motorcyclists, and commercial vehicles;
- Managing and supporting budget planning for annual and capital improvement programs;
- Defining collision reduction targets and monitoring progress towards achieving 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 km², with a variety of land uses.

Table 1: Land use by area in Strathcona County

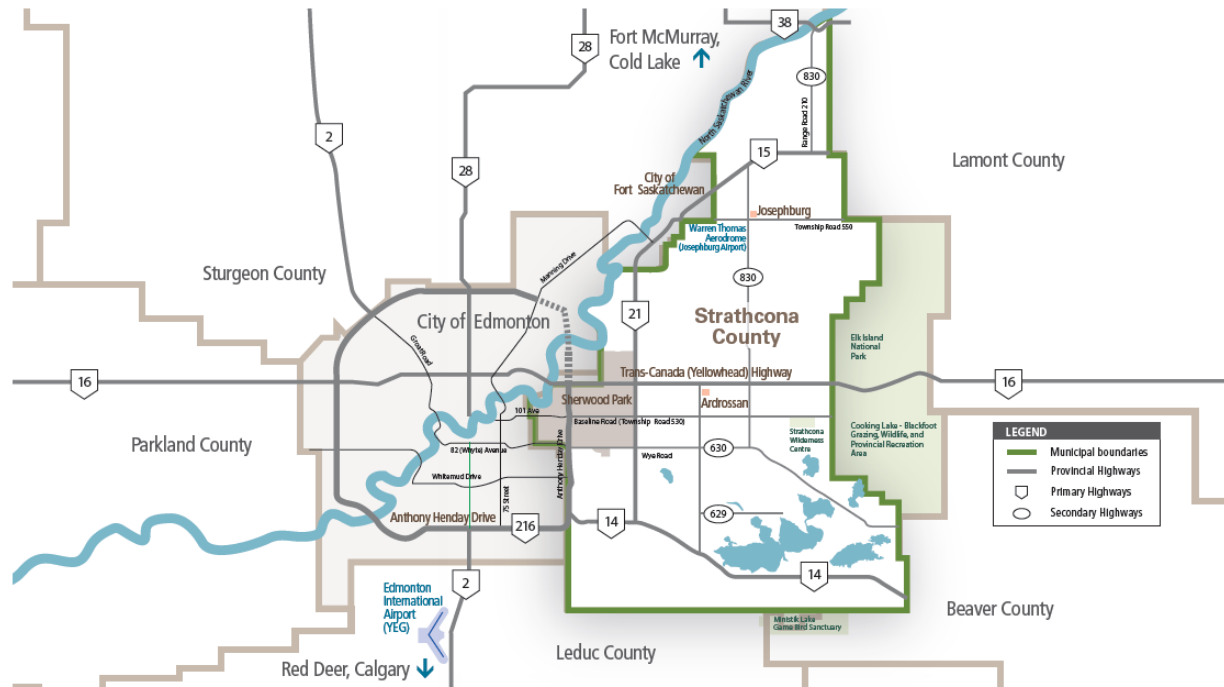
Agricultural	87,502 hectares
Industrial	9,052 hectares
Commercial	2,078 hectares
Residential	18,542 hectares
Urban village*	66 hectares
Park/recreation/natural	3,701 hectares
Other: airports, water bodies, roads, road rights-of-way	5,679 hectares

* 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

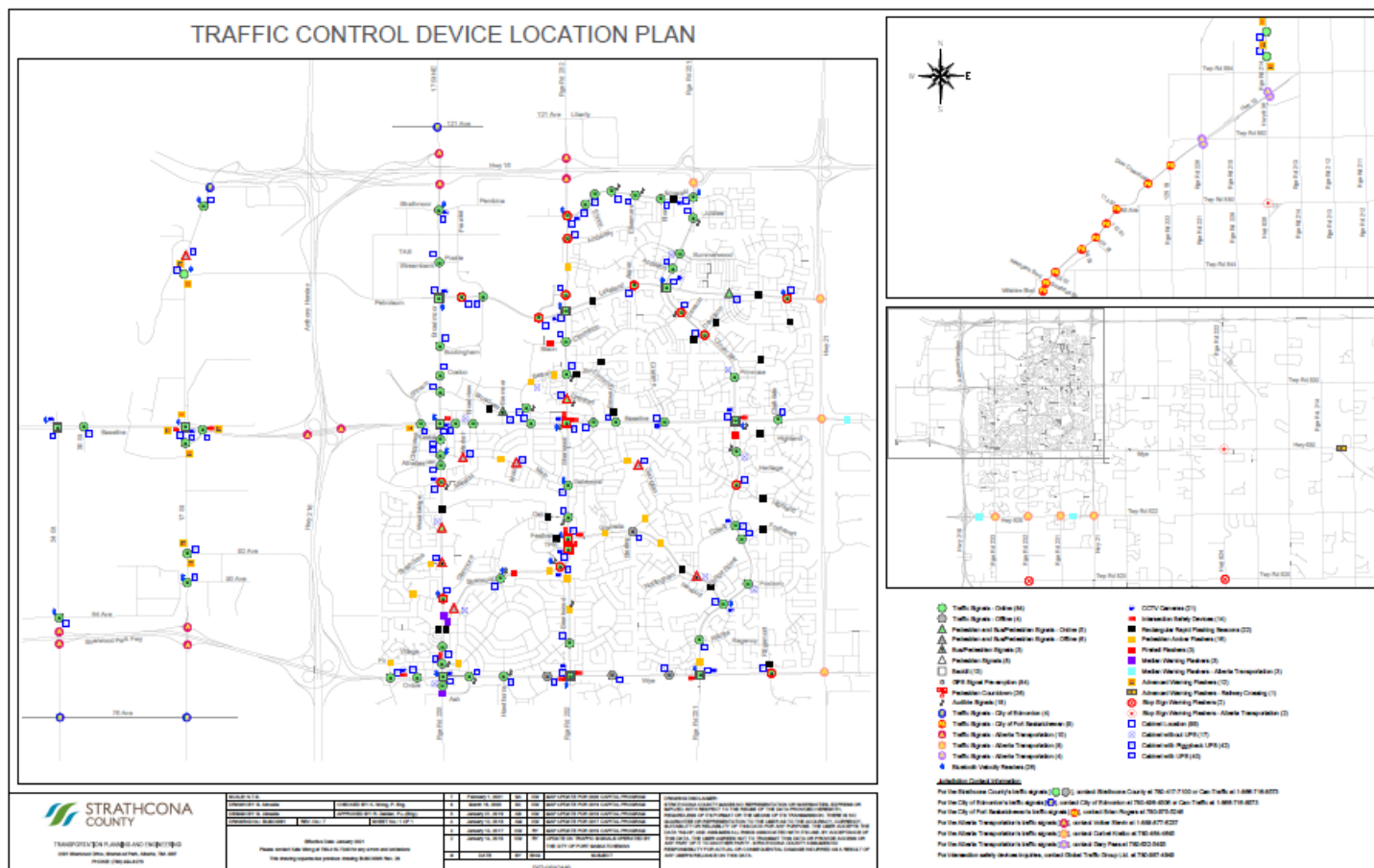


There are 1,955 km of public roadways in Strathcona County, including:

- 225 km of Provincially-maintained highways;
- 416 km of County-maintained urban roads;
- 1,314 km County-maintained rural roads.

Strathcona County operates approximately 112 signalized devices. There are also four signals operated by the City of Edmonton on the western border and nine signals by Fort Saskatchewan. 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	Percentage 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% less 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 Residents of the County, 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 71,364¹ licensed drivers in 2018. 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 83,827² 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 utilize 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. The school zone speed limit is 30 km/h and is in effect from 7:30 am to 4:30 pm on school days.

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

¹ <https://www.transportation.alberta.ca/Content/docType47/Production/Drivers2018.pdf>

² <https://www.transportation.alberta.ca/Content/docType47/Production/VehReg2018.pdf>

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 despite population growth. Both the Property Damage Only (PDO) and Total collision rates are down significantly between 2011-2020, 43% and 39%, respectively. In 2011, the minimum for collision reporting increased from \$1000 to \$2000, which likely accounts for at least part of this decrease.

Over the last 10 years, the rate of minor injury collisions has been dropping since 2017. The frequency of major injury collisions rose sharply in 2015-2017 but dropped significantly since 2018. Fatal collision rates are very low, and do not lend themselves to meaningful trend analysis.

Table 5: All Collisions by Consequence within County Borders 2010-2019

Year	Fatal	Major*	Minor**	PDO***	Total
2011	8	32	418	1667	2125
2012	7	34	367	1746	2154
2013	5	27	425	1766	2223
2014	5	33	443	1842	2323
2015	5	59	537	1808	2410
2016	5	60	498	1615	2178
2017	6	49	467	1646	2168
2018	5	21	508	1379	1913
2019	7	21	474	1281	1783
2020	6	9	356	1024	1395

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

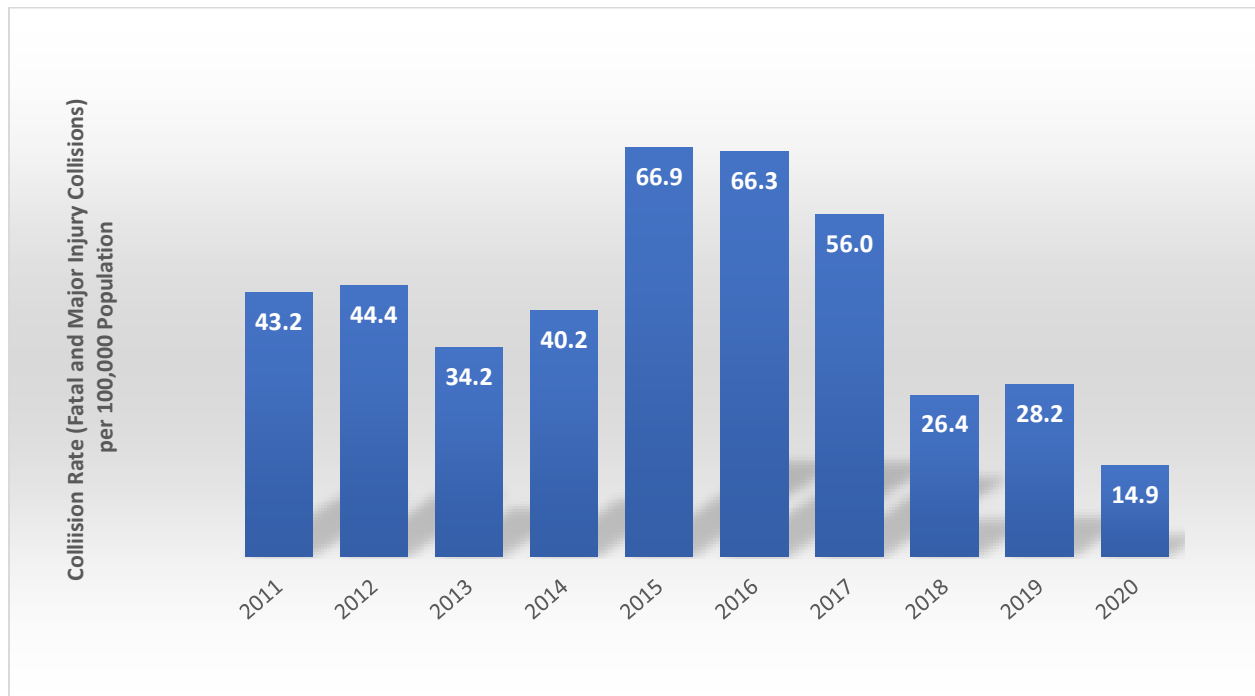
Table 6: Collision Rates per 100,000 Population on All Roads Within the County

Year	Fatal	Major*	Minor**	PDO***	Total
2011	8.6	34.6	451.9	1802.4	2297.5
2012	7.6	36.8	397.2	1889.5	2331.1
2013	5.3	28.9	454.7	1889.4	2378.4
2014	5.3	34.9	468.6	1948.5	2457.4
2015	5.2	61.7	561.7	1891.3	2521.0
2016	5.1	61.2	507.9	1647.2	2221.5
2017	6.1	49.9	475.5	1676.0	2207.5
2018	5.1	21.3	516.4	1401.7	1944.5
2019	7.0	21.1	477.0	1289.2	1794.4
2020	6.0	9.0	354.8	1020.5	1390.2

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

Figure 3 combines fatal and major injury collision statistics in order to better assess any trends of our most serious collisions. The downward trend since 2016 is continuing. A special focus on collisions at County intersections may be responsible for this downward trend, although most of these collisions tend to occur on non-County roads.

Figure 3: Collision Rates for Fatal/Major Injuries Combined–All Roads Within County (2011-2020)



2.2 County Roads Only (Excluding Provincial Highways)

Although most serious collisions occur on Provincial Highways in the County, most collisions in the County are minor injury and PDO and these occur primarily on County roads. Similar collision trends in the fatal and major injury collisions can be seen when Provincial Highways are excluded from the analysis.

Table 7: All Collisions by Consequence on County Roads (Excluding Provincial Highways)

Year	Fatal	Major*	Minor**	PDO***	Total
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
2018	0	10	343	906	1259
2019	1	5	289	795	1090
2020	2	4	208	708	922

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

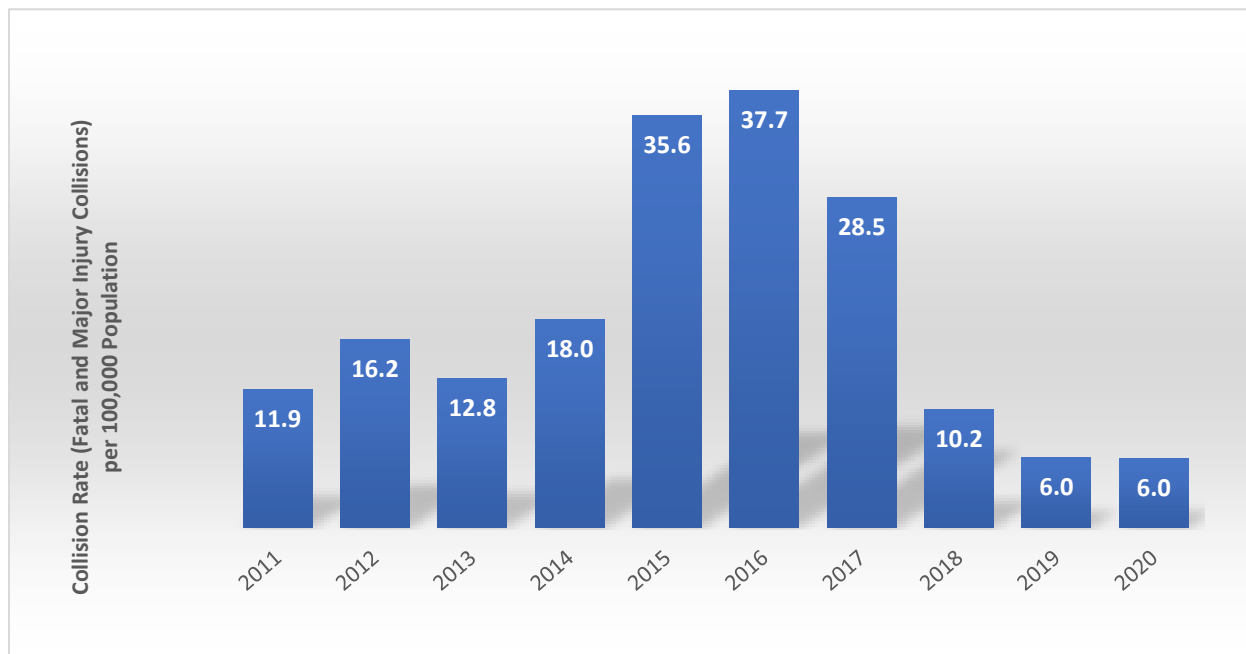
Collision rates in all categories show a decreasing trend between 2011 to 2020 on County maintained roads. The major injury collision rate rose sharply in 2015, peaked in 2016, and has declined to date, with 2020 reporting the lowest major injury collision rate in at least 10 years.

Table 8: Collision Rates per 100,000 Population on County Roads Only

Year	Fatal	Major*	Minor**	PDO***	Total
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
2018	0.0	10.2	348.6	920.9	1279.7
2019	1.0	5.0	290.8	800.1	1097.0
2020	2.0	4.0	207.3	705.3	918.8

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

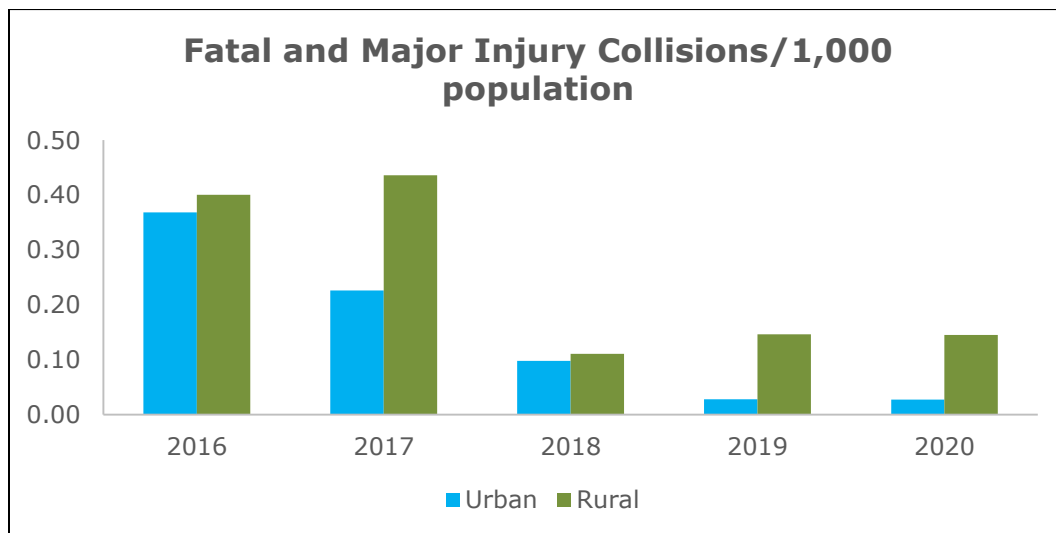
Figure 4: Collision Rates for Fatal/Major Injuries Combined–County Owned Roads (2011-2020)



2.3 County Owned Rural vs Urban Collision Rates

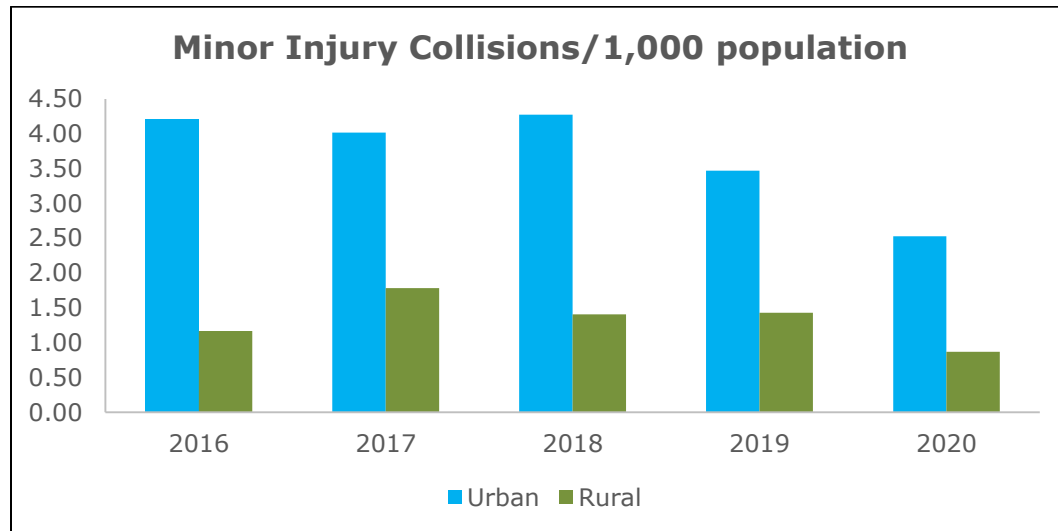
Over the last five years, the collision rates for fatal and major injury collisions declined in urban area. Rural area collision rates were lowest in 2018 but slightly increased in last two years.

Figure 5: Fatal and Major Collisions Urban vs Rural County Owned Roads (2016-2020)



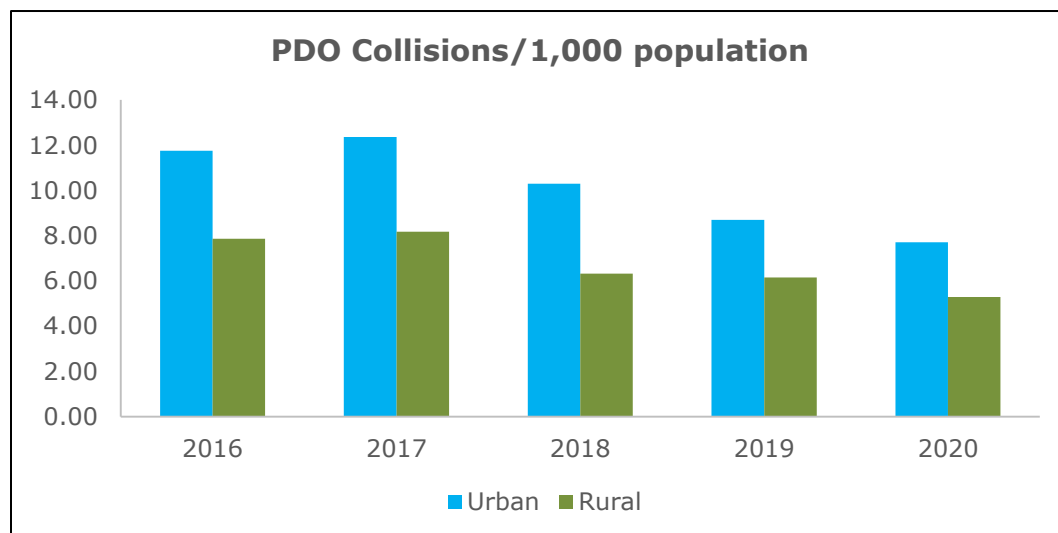
Minor injury collision rates have remained relatively constant until 2018 and dropped since then; both urban and rural area collisions were reduced significantly in 2020 compared to last four years.

Figure 6: Minor Injury Collisions Urban vs Rural County Owned Roads (2016-2020)



There was a slight increase in the PDO collision rates from 2016 to 2017 in urban area. Rural area collision rates are consistently dropping in last five years.

Figure 7: PDO Collisions Urban vs Rural County Owned Roads (2016-2020)



2.4 Provincial Highway Collisions

Alberta Transportation operates 225 kilometres of Provincial Highways within Strathcona County. Many of these Provincial Highways are freeways, which tend to

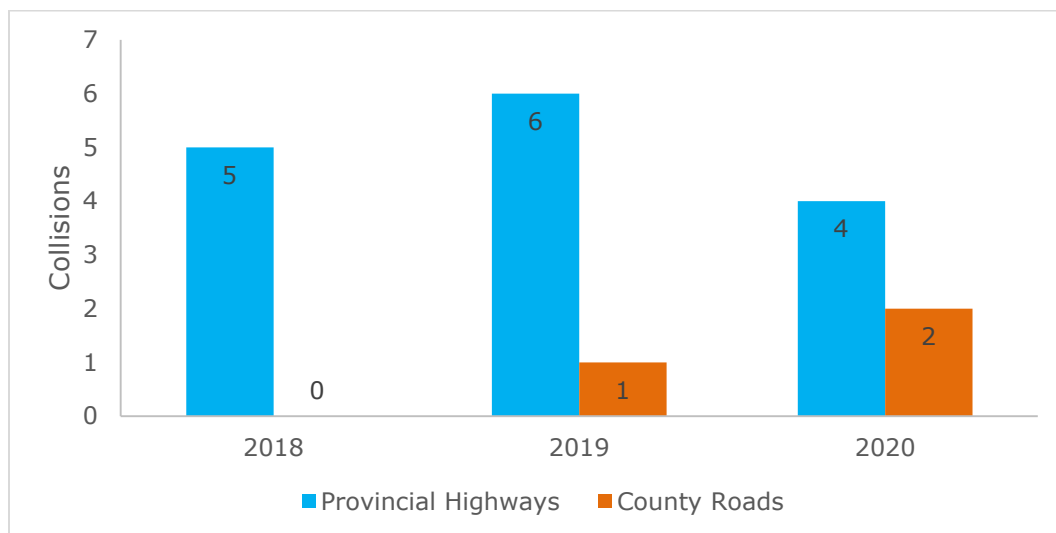
have the lowest collision rate of any transportation facility. However, because of the high speeds that freeways are operated at, any collisions that occur on a freeway tend to be serious. This section focuses on the collisions that occur on Provincial Highways within Strathcona County. As previously indicated, most fatal collisions in the County have occurred on Provincial Highways, generally the highest speed roads in the County and collision severity is correlated to speed. In 2020, four out of the six fatal collisions occurred on highways, resulting in 7 fatalities.

Table 9: Provincial Highway collisions (2018-2020)

Year	Fatal	Major	Minor	PDO	Total
2018	5	11	165	473	654
2019	6	16	185	486	693
2020	4	5	148	316	473

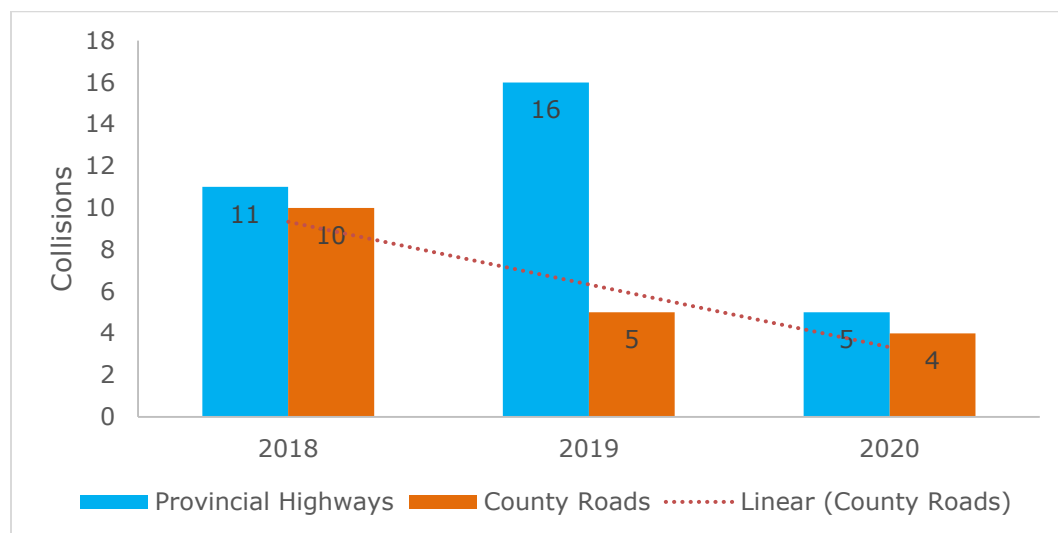
A significant number of major injury collisions also tend to take place on the highways. On Provincial Highways in the County, up to 30% of all serious collisions will result in a fatality. Figures 8 and 9 shows comparison of fatal and major injury collisions on Provincial Highways vs county roads. Collision severity is higher for highway related collisions in fatal and major injury collisions as speed causes severe injuries.

Figure 8: Fatal collisions – Provincial Highways vs County Roads (2018-2020)



There is a consistent downward trend of frequency of major injury collisions for the last three years for County owned roads shown in Figure 9. During the same time period, major injury collisions on highways increased in 2019 and dropped in 2020.

Figure 9: Major Injury collisions – Provincial Highways vs County Roads (2018-2020)



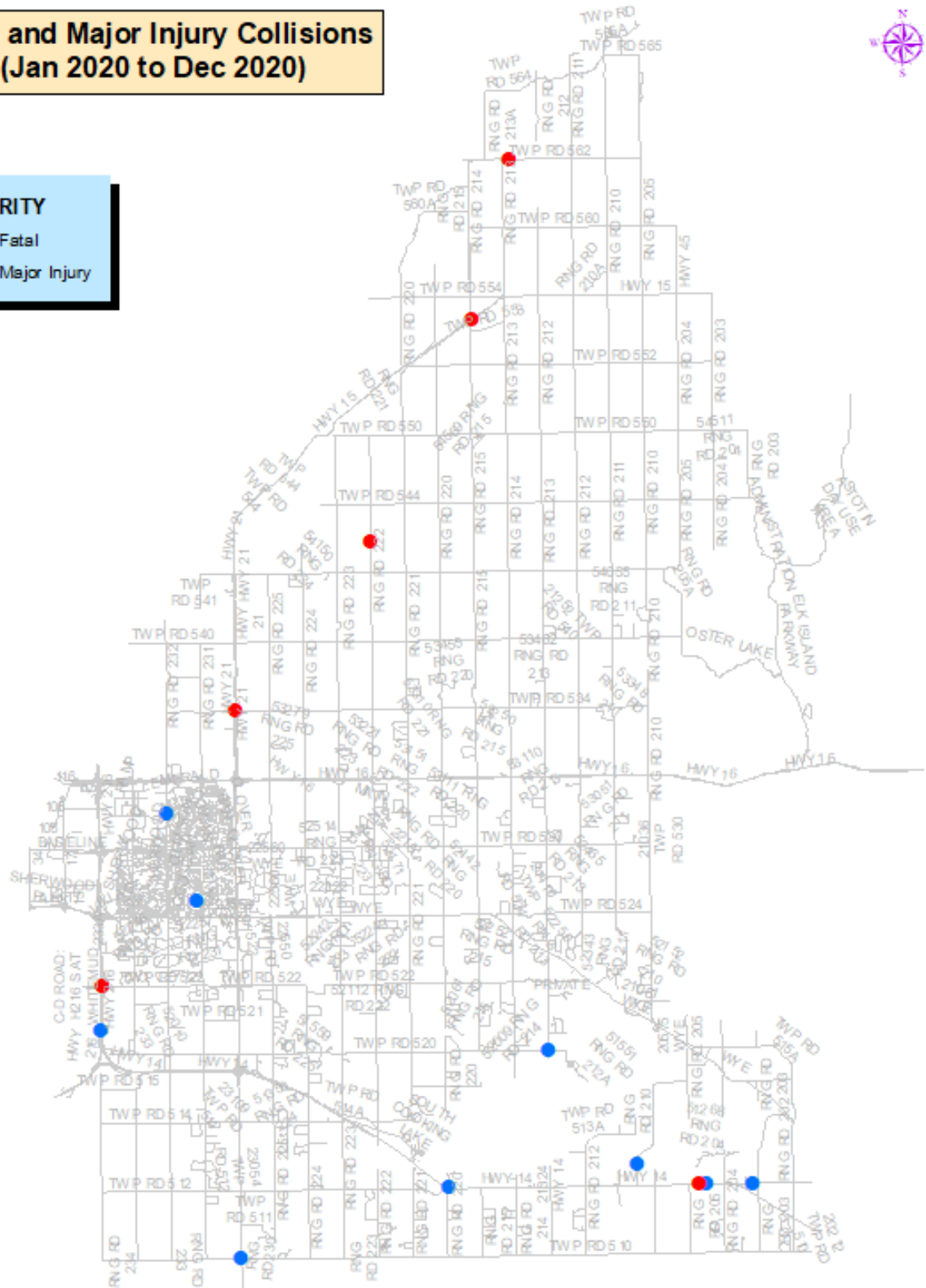
3.1 Major and Fatal Collisions

In keeping with Strathcona County's Traffic Safety Strategic Plan (TSSP), our goal is to specifically reduce collisions that cause serious injury and death. There were six fatal and nine major injury collisions occurred in Strathcona County in 2020.

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. Collisions are scattered across the County and there are no hot spots locations indicated by the 2020 data. However, there seem to be some specific collision types that are represented in the set of serious collisions. Lane departure collisions, which include run-off-road (right and left) and head-on collisions, accounted for six out of fifteen combined fatal and injury collisions. Slippery road surface conditions due to snow/slush, driving at a higher speed and lost control were the contributing factors for some of those collisions.

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

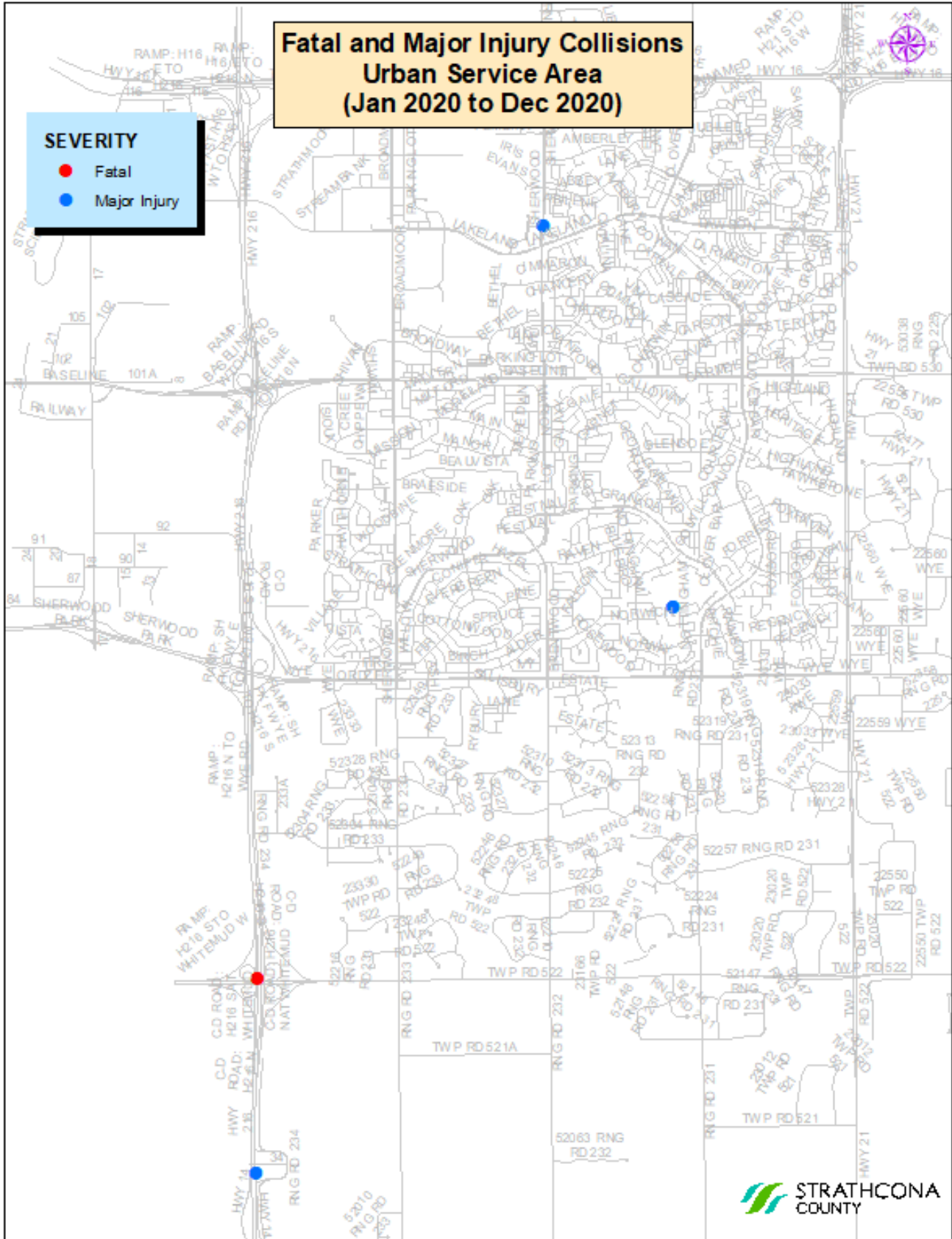
- Fatal
- Major Injury



Fatal and Major Injury Collisions Urban Service Area (Jan 2020 to Dec 2020)

SEVERITY

- Fatal
- Major Injury



3.2 Drivers' Prior Action

Followed Too Closely was the most common prior action of drivers involved in collisions in 2020.

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. Disobey Traffic Signal
5. Stop Sign Violation
6. Improper Turn
7. Struck Parked Vehicle
8. Improper Lane Change

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

1. Struck Parked Vehicles
2. Followed Too Closely/Rear-Ended
3. Ran off Road
4. Backed Unsafely
5. Improper Turn
6. Left Turn Across Path
7. Improper Lane Change
8. Improper Passing

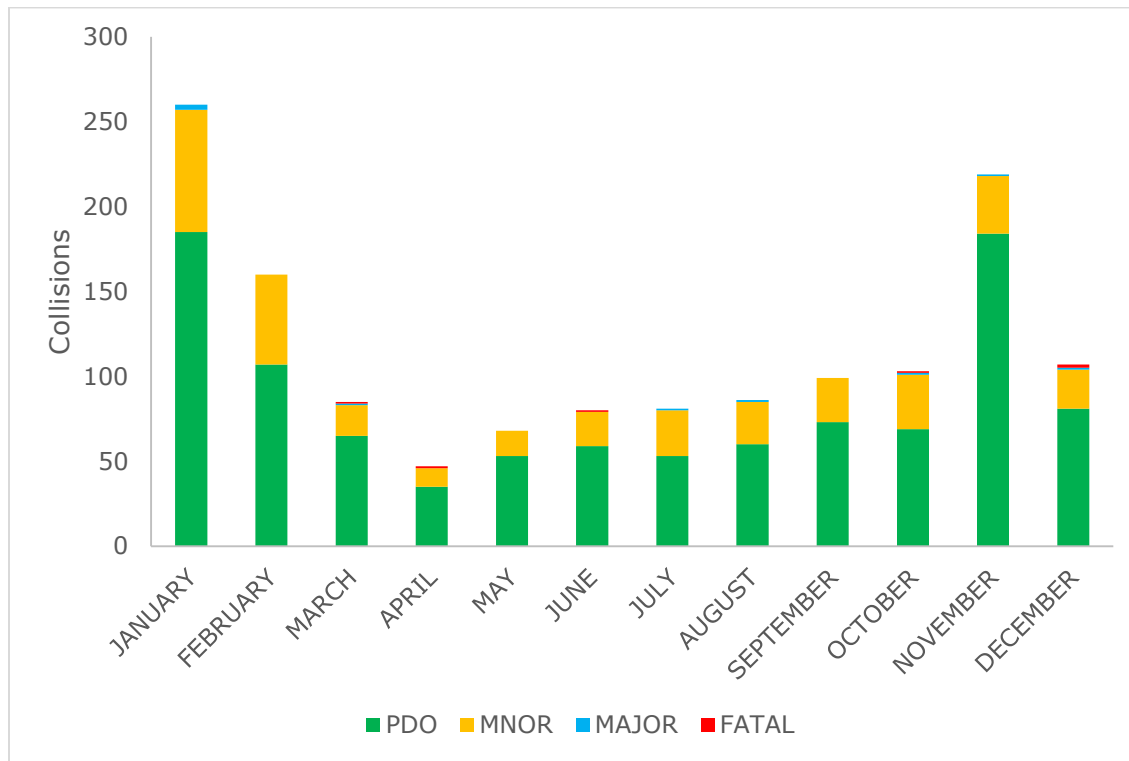
Side Impact (T-Bone, left turn across path, right angle) collisions are the most serious collision type for vehicle occupants, as major injury or death is increasingly likely for speeds greater than 50 km/h. Not surprisingly, the causes of injury collisions were more likely to be 90-degree side impact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

3.3 Temporal Analysis

Month

The highest number of fatal and major injury collisions occurred in December and January; three in each month. Minor injury and PDO collisions were most common in January. Generally, PDO collisions were high in the winter months and lowest in the summer.

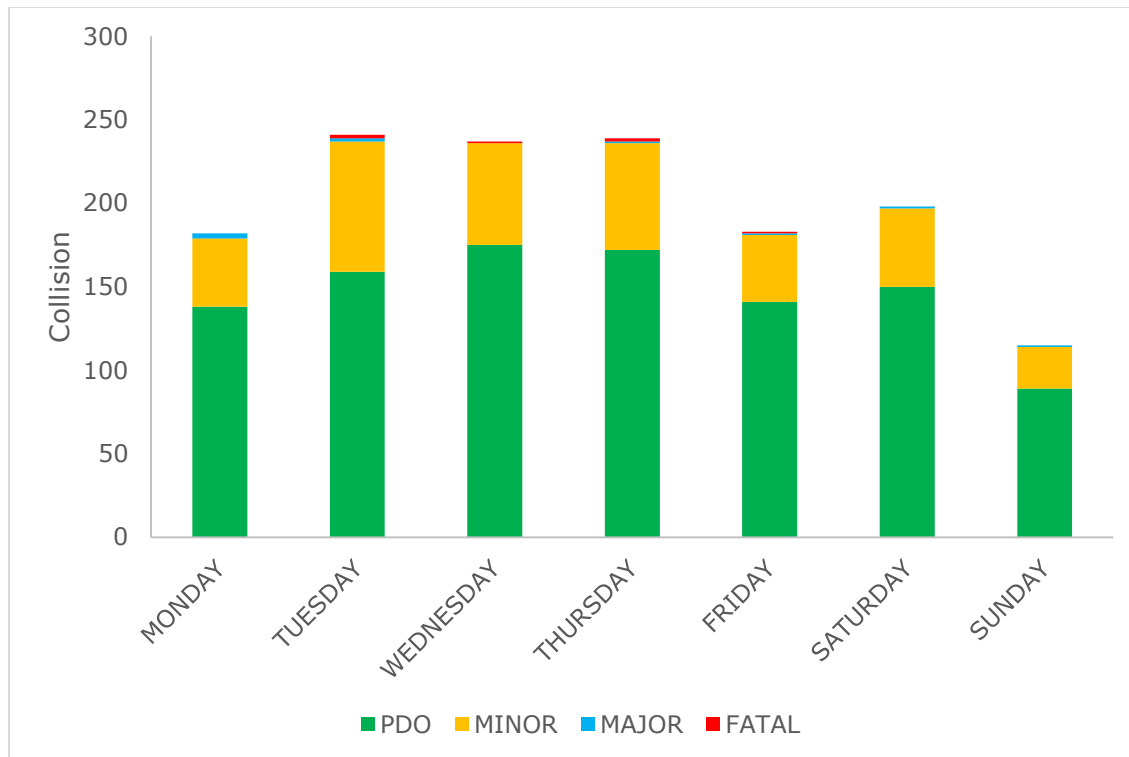
Figure 10: Collisions Severity by Month - 2020



Day of the Week

Tuesday was the most common day of the week for fatal and major injury collisions in 2020. Highest number of minor injury and PDO collisions occurred during midweek days; Monday, Tuesday and Thursday.

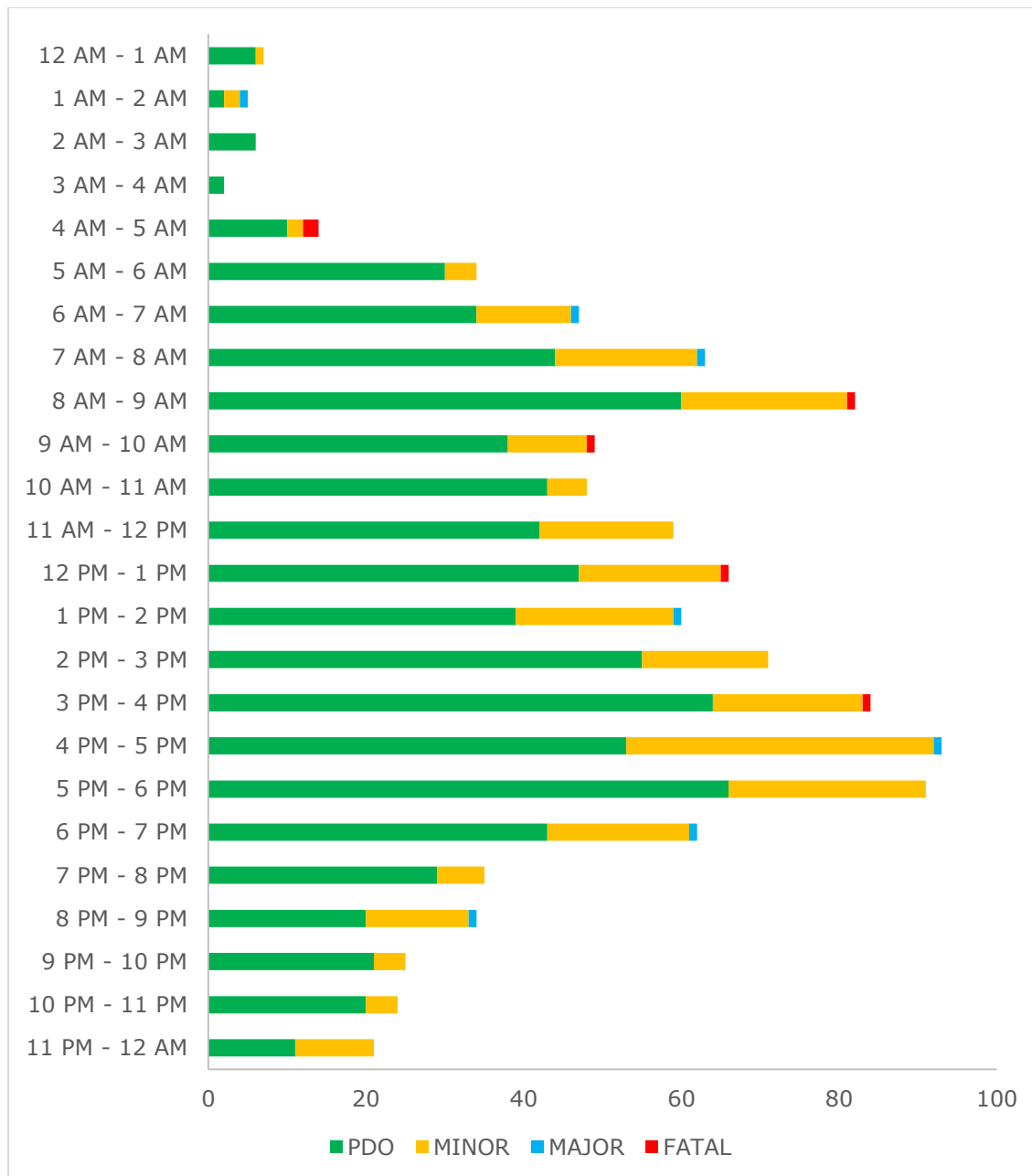
Figure 11: Collision Severity by Day of the Week - 2020



Time of Day

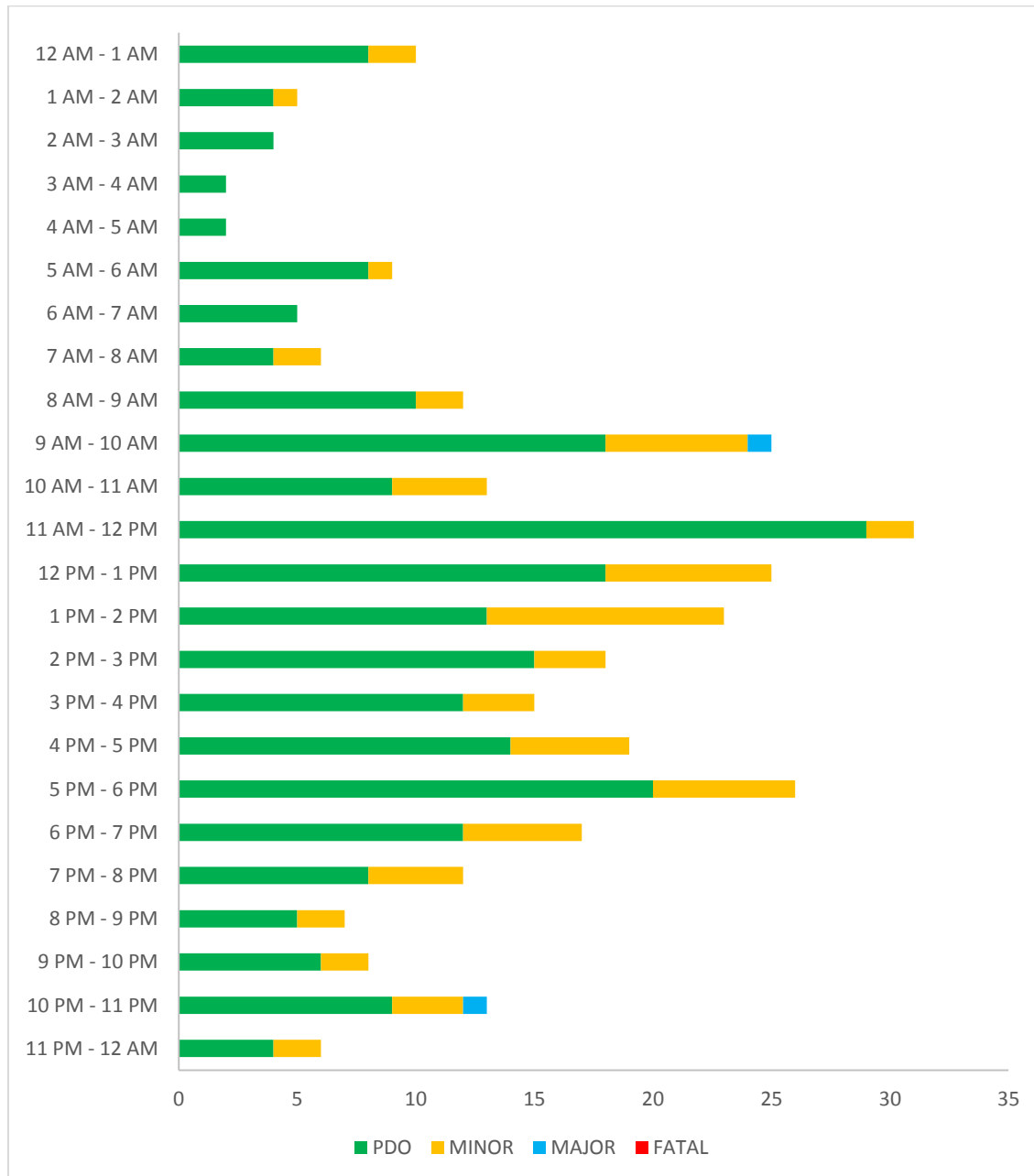
On weekdays, fatal and major injury collisions happened randomly throughout the time of the day and show no significant trend. Minor injury and PDO collisions were highest in the afternoon peak, with a less marked increase during the morning peak hours.

Figure 12: Collisions by Time of Day – 2020 (Weekdays)



On weekends, collisions generally peak around noon and early afternoon. This is most marked with injury collisions, which are most likely to occur between 1:00 pm and 2:00 pm.

Figure 13: Collisions by Time of Day – 2020 (Weekends)



3.4 Intersection-Related Collisions

In 2020, 42% of the collisions in Strathcona County were intersection-related. Intersection-related collisions were less severe than non-intersection collisions in 2020 in fatal and major injury collisions. In minor injury category, there were more collisions occurred at intersections.

Figure 14: Fatal and Major injury collisions - 2020

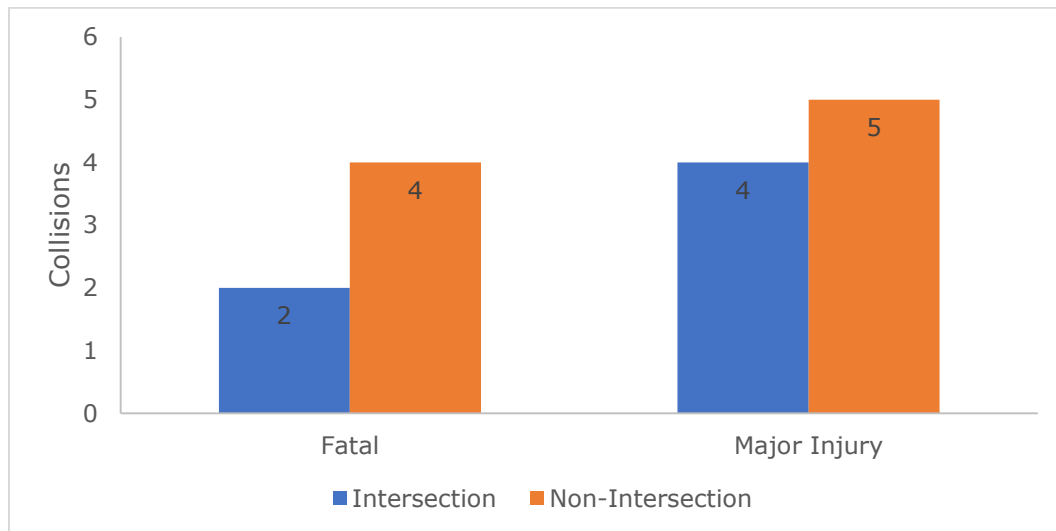
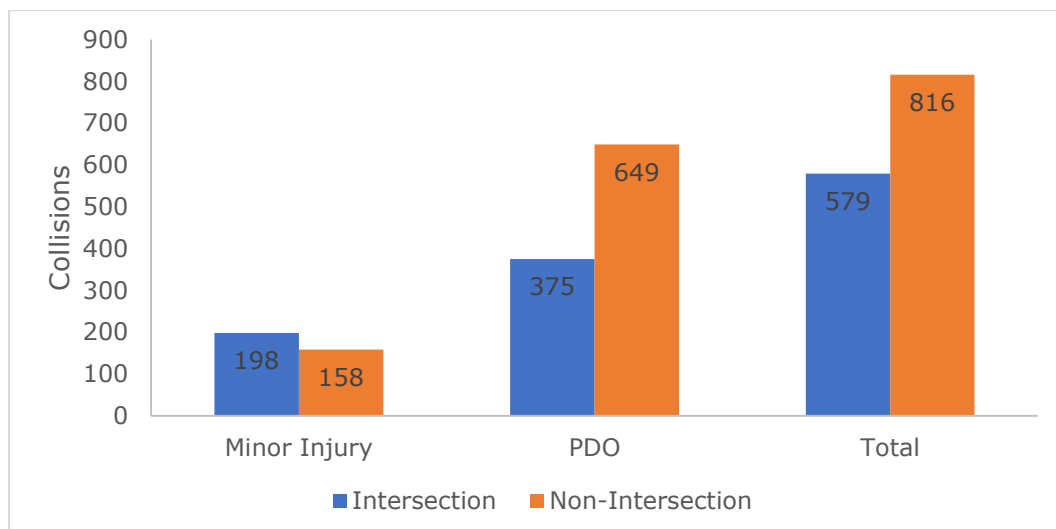


Figure 15: Minor Injury, PDO and Total Collisions - 2020



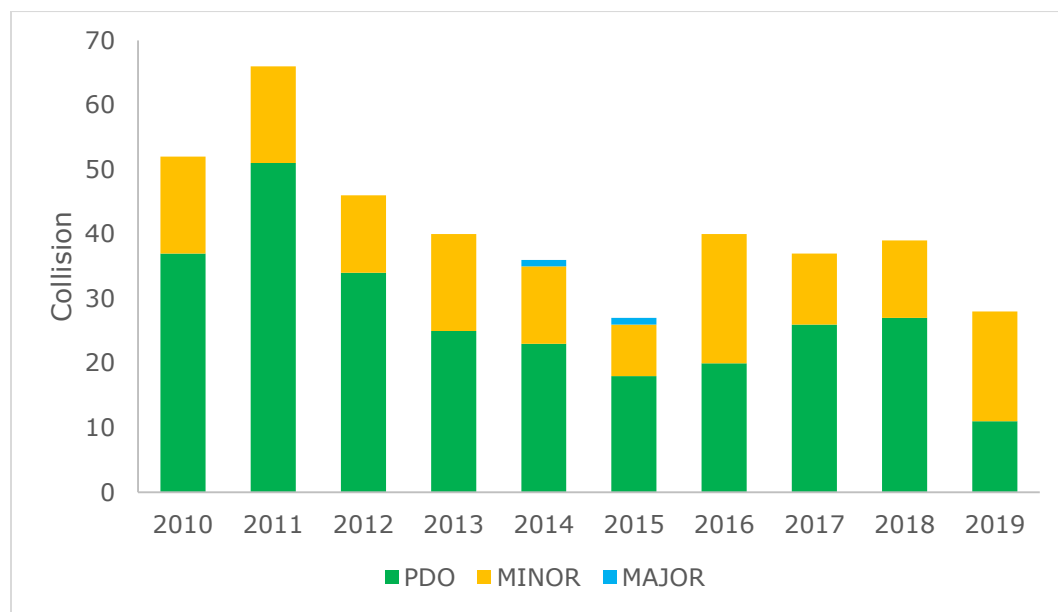
3.4.1 Intersection Rankings by Frequency

Intersections were ranked based on the greatest number of total collisions in last 10 years (2011-2020) collision data. The collisions within 50m of the intersection are considered as intersection-related collisions. The top five intersections in the County are discussed in detail. These intersections also have the highest volumes among other intersections, which is typical for high collision locations.

Rank 1: Baseline Road and Broadmoor Boulevard

This intersection has experienced 381 collisions in last 10 years. There were two major injury collisions (four major injuries), 129 minor injury collisions (181 minor injuries) and 250 property damage only collisions. The majority of the collisions were rear end, averaging 72% of the total collisions. The over-representation of rear-end collisions may be attributed to slippery road surface conditions, followed to closely and drivers' failure to drive according to the road conditions.

Figure 16: Baseline Road/Broadmoor Boulevard Collision history (2011-2020)



This intersection has the highest traffic volume with 66,200 vehicles per day (average weekday traffic) according to 2018 traffic counts. Figure 16 shows downward collision trend over the last 10 years. No major injury collisions have been reported since 2016, while minor injury collisions are consistent and showed no significant change during the same time period.

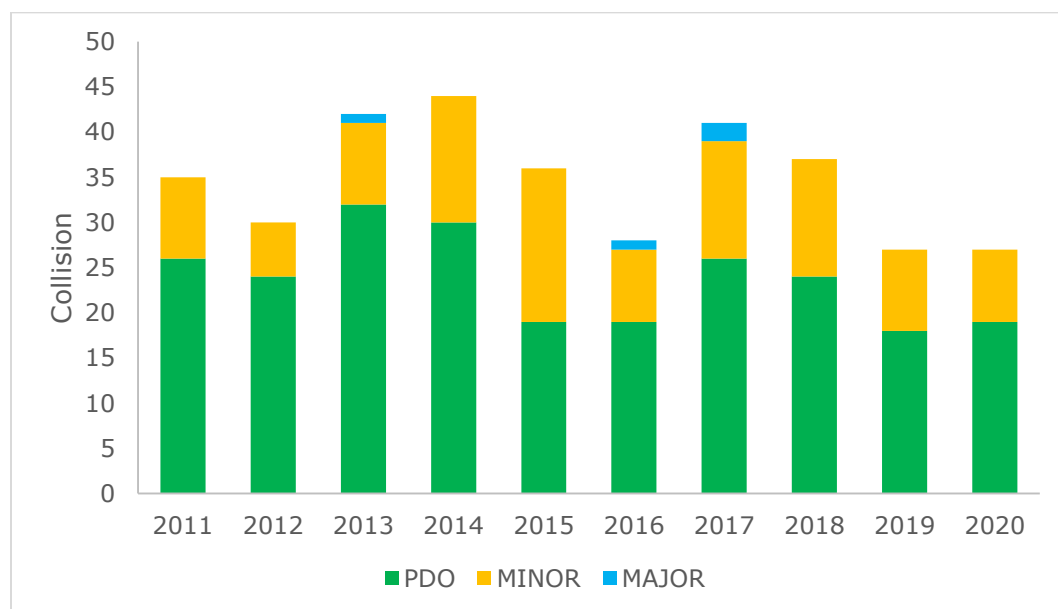
Collision data by type shows a significant decrease is in the rear end incidents. This may be due to better road maintenance, improved traffic signal coordination and newer vehicle technologies such as collision avoidance system. Left turn across path (LTXP) were 10% and sideswipe same direction were 9% of the total collisions

being the second and third highest collision type. Unlike rear ends, there is no significant decrease in LTXP until 2019, however there was no LTXP collisions reported in 2020. Other collision types include sideswipe opposite direction, struck object, and backing; these collisions were low in number and occurred randomly.

Rank 2: Baseline Road and Sherwood Drive

This intersection has experienced 347 collisions in last 10 years. There were four major injury collisions (four major injuries), 106 minor injury collisions (146 minor injuries) and 237 property damage only collisions. Similar to the Baseline Road and Broadmoor Boulevard intersection, the majority of the collisions were rear end, averaging at 75% of the total collisions. The over-representation of rear-end collisions may be attributed to slippery road surface conditions, followed to closely and drivers' failure to drive according to the road conditions.

Figure 17: Baseline Road/Sherwood Drive Collision history (2011-2020)

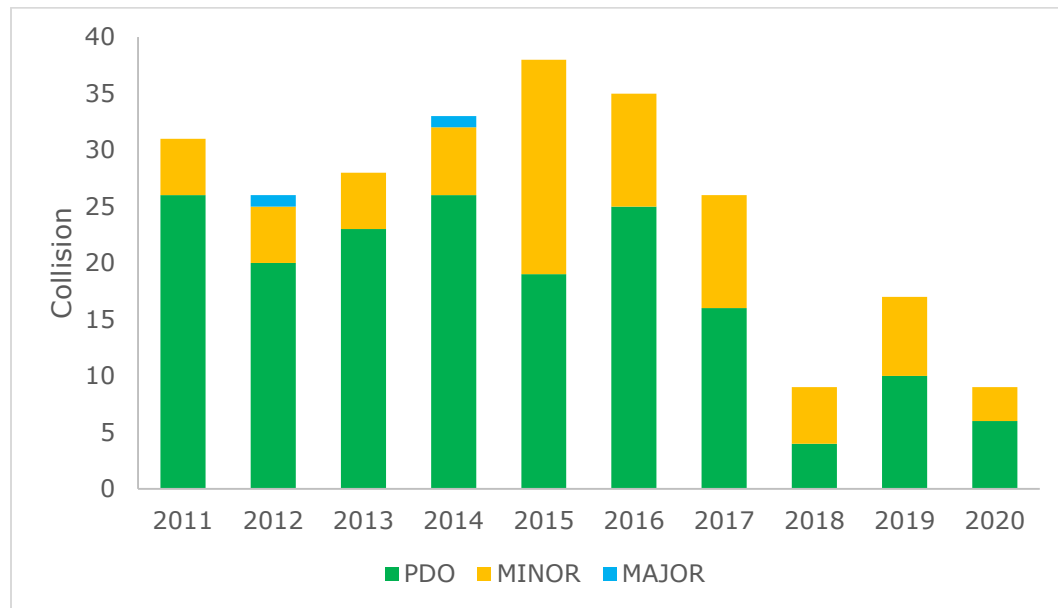


This intersection is the second highest volume location in the County with an average weekday traffic count of 64,200 vehicles per day (2018). From Figure 17, there is significant decrease in the collision frequency mainly in the rear end and LTXP collisions. Minor injury collisions frequency varies up to 2018 but dropped in last two years.

Rank 3: Sherwood Drive and Broadmoor Boulevard (Traffic Circle)

This intersection has experienced 252 collisions in last 10 years. There were two major injury collisions (two major injuries), 75 minor injury collisions (104 minor injuries) and 175 property damage only collisions. Rear end collision average was 50% and sideswipe same direction were 38% of the total collisions.

Figure 18: Sherwood Drive/Broadmoor Boulevard Collision history (2011-2020)



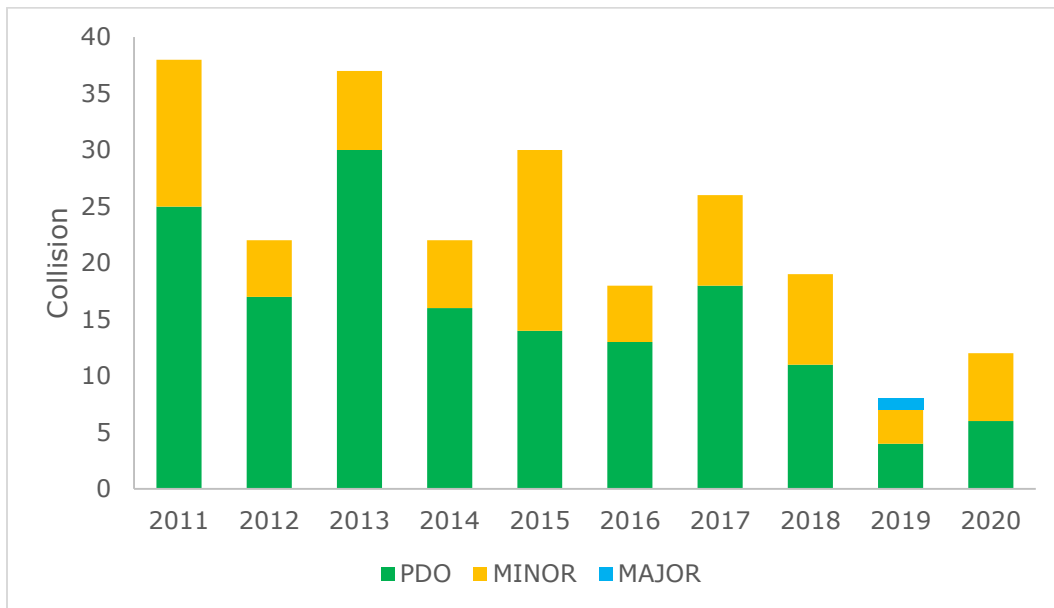
Average weekday traffic is 28,400 vehicles per day. Figure 18 shows a decreasing trend in the frequency of overall collisions. There have been no major injury collisions at this location since 2014. Property damage only collisions have dropped significantly with the implementation of geometric changes, but the frequency of minor injury collisions is unchanged over the same time period.

The frequency of sideswipe same direction collisions has dropped significantly since the changes were made to the traffic circle in 2016. Rear end collisions at the roundabout entry points are the most common cause of collision at this location, with followed too closely as the contributing factor to many collisions.

Rank 4: Baseline Road and Clover Bar Road

This intersection has experienced 232 collisions in last 10 years. There was one major injury collision (one major injury) at this location in 2019, 77 minor injury collisions (99 minor injuries) and 154 property damage only collisions. Rear end collisions account for an average of 69% and LTXP for 23% of the total collisions.

Figure 19: Baseline Road/Clover Bar Road Collision history (2011-2020)



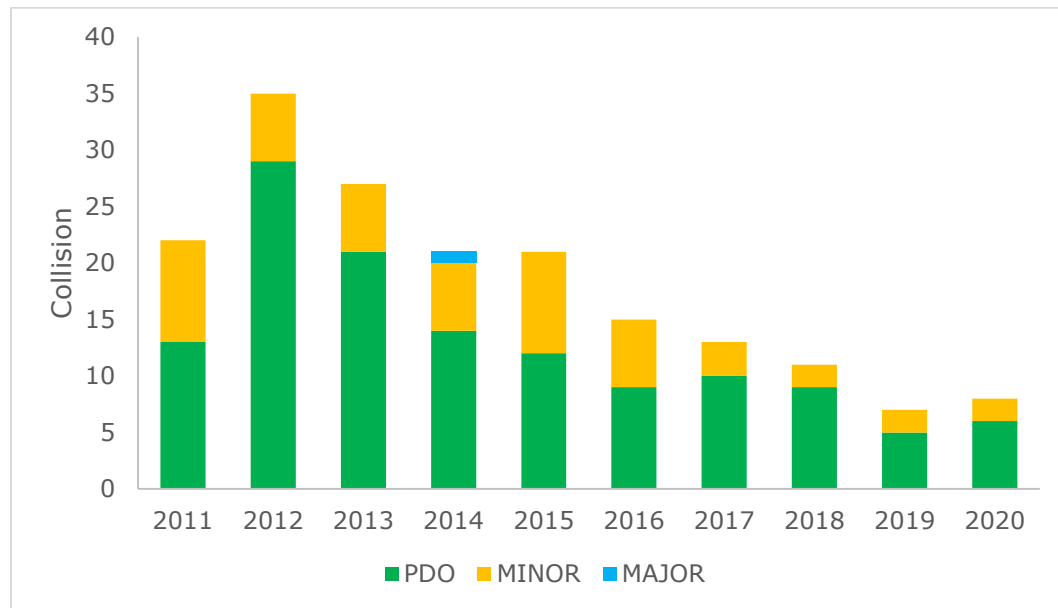
This intersection is also the fourth highest traffic volume location in the County with average weekday traffic of 47,200 vehicles per day (2018). Figure 19 shows a decreasing trend in the frequency of overall collisions. Both the minor injury and property damage only collision dropped recent years.

The decrease in overall collision frequency is due to a decrease in rear end and LTXP collisions as a result of traffic signal phase changes and intersection upgrades with improved left turn lanes.

Rank 5: Wye Road and Sherwood Drive

This intersection has experienced 180 collisions in last 10 years. There was one major injury collision (one major injury) at this location in 2014, 51 minor injury collisions (75 minor injuries) and 128 property damage only collisions. Rear end collisions account for an average of 37% and LTXP for 34% of the total collisions.

Figure 20: Wye Road/Sherwood Drive Collision history (2011-2020)



This intersection is the third highest traffic volume location in the County with average weekday traffic of 50,300 vehicles per day (2018). Figure 20 shows a decreasing trend in the frequency of overall collisions. Both the minor injury and property damage only collision have dropped in recent years.

The overrepresentation of LTXP collisions was mainly due the unprotected left turn movement for the westbound traffic and drivers' misjudgment of safe gaps. Left turn across path have dropped significantly since 2012 when the traffic signal phase changes were made. Rear end collisions also see a decreasing trend since 2013.

3.5 Neighbourhood Collisions

Neighbourhoods comprised of residential areas of Sherwood Park, rural hamlets, and country residential. According to the County's street network, collector and local roads serve neighbourhoods. There is no fatal and major injury collision in 2019 but there is one major injury collision occurred on local road in 2020. Struck object and backing were the main collision types occurred on neighbourhood roads. Struck object includes drivers' failure to drive to the road conditions, losing control, and collided with parked vehicle, other road objects such as curbs, medians, corner islands, etc.

Table 10 shows the location of fatal and major injury collisions. Majority of the collisions were on highways in both 2019 and 2020.

Table 10: Major Injury and Fatal Collisions 2019/2020 by location

Road Type	2019		2020	
	Fatal	Major	Fatal	Major
Residential Collectors/Locals	0	0	0	1
Arterials	1	5	2	3
Highways	6	16	4	5

3.6 Animal Collisions

In 2020, 14% of all reported collisions were animal related. Most animal collisions are not serious for vehicle occupants, with 85% of those reported causing only property damage. Overall, there was a 32% increase in the number of animal collisions from 2019 to 2020.

Table 11: 2019/2020 Animal Collisions in Strathcona County

Severity	2019	2020	Change
Fatal	1	0	1 ▼
Major Injury	0	0	-
Minor Injury	24	29	5 ▲
PDO	258	163	95 ▼
Total	284	192	92 ▼

3.7 Demographics

Individuals aged 25-34 were the most likely to be injured in a motor vehicle collision in 2020. Of the seven fatalities, three were 70 years or older drivers, two were passengers, two were unknown.

Table 12: Fatalities and Injuries as a Result of 2020 Collisions by Age

Age Group	Fatal	Major	Minor	Total
0-5	0	0	0	0
6-11	0	0	1	1
12-15	0	0	0	0
16-18	0	1	22	23
19-24	0	3	53	56
25-34	1	2	87	90
35-44	0	0	69	69
45-54	1	1	64	66
55-64	0	3	48	51
65-74	2	1	34	37
75+	1	0	9	10
Unknown	2	3	112	117
Total	7	14	499	520

Seven fatalities include five male drivers, and two male passengers.

Table 13: Fatalities and Injuries as a Result of 2020 Collisions by Gender

Gender	Fatal	Major	Minor	Total
Female	0	4	271	275
Male	7	10	227	244
Unknown	0	0	1	1

3.8 Vulnerable Road User Collisions

3.8.1 Pedestrian Collisions

There was a total of seven pedestrian collisions in Strathcona County in 2020, resulting in six minor injuries and one major injury. Five collisions occurred at intersection locations and two were at midblock locations. There is a 30% reduction in collision frequency from 2019 to 2020.

Table 14: Pedestrian Collisions 2019 and 2020 by Severity

Severity	2019	2020	Change
Fatal	0	0	-
Major	0	1	1 ▲
Minor	10	6	4 ▼
PDO	0	0	-
Total	10	7	3 ▼

Three pedestrian collisions took place on the highways and three were on residential collectors and one was on non-residential collector.

Table 15: Location of Pedestrian Collisions – 2020

Severity	Highway	Arterial	Collector/Local	
			Residential	Non-Residential
Fatal	0	0	0	0
Major	1	0	0	0
Minor	2	0	3	1
PDO	0	0	0	0
Total	3	0	3	1

Five out of seven pedestrians were male, and one was female under 18 years of age, and one was a senior.

Table 16: Minor injuries as a Result Pedestrian Collisions by Age and Gender – 2020

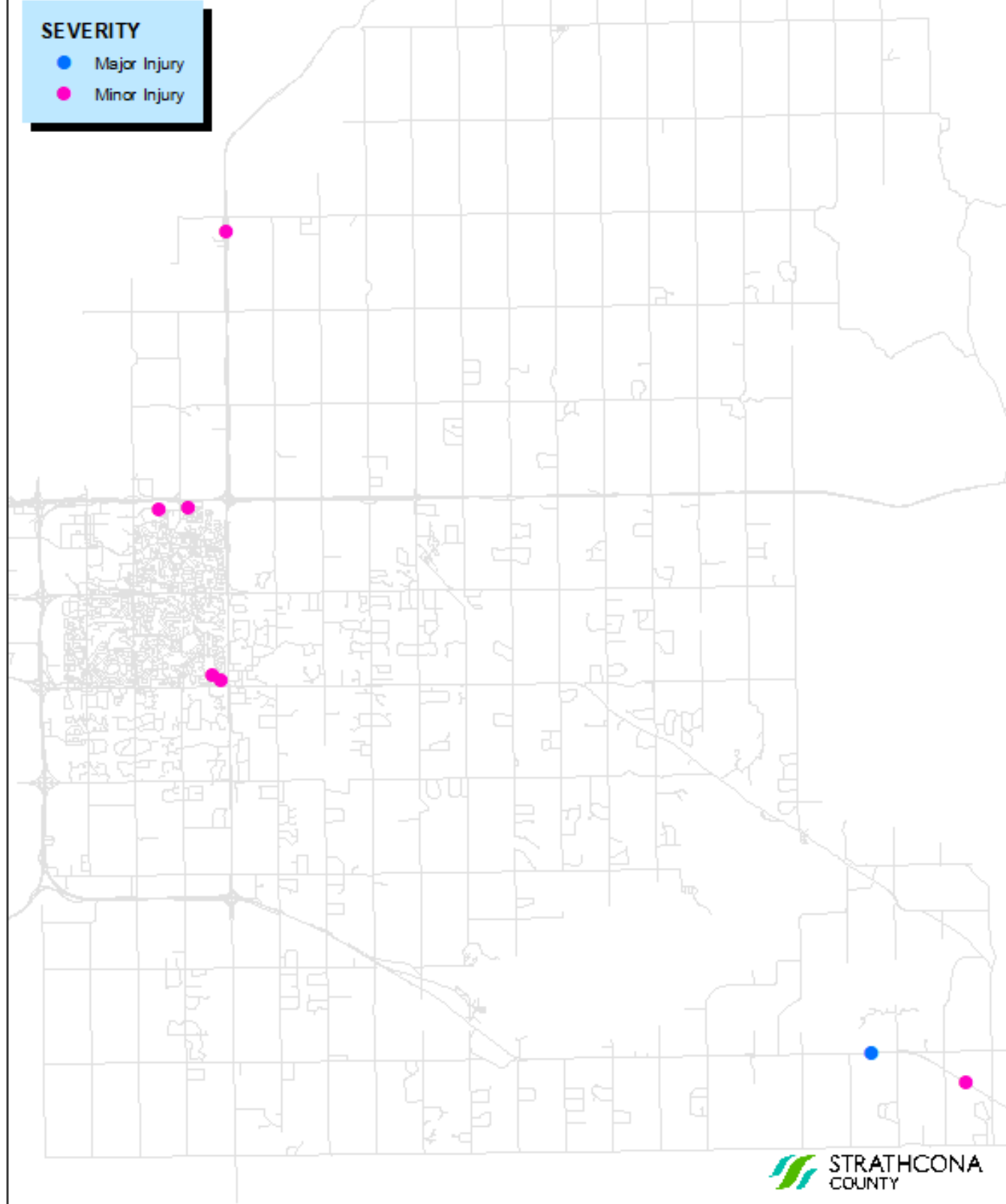
Number	Age	Gender	Severity	Location
1	17	F	Minor	Collector
2	21	M	Minor	Local
3	27	M	Minor	Collector
4	36	F	Minor	Collector
5	37	M	Minor	Highway
6	48	M	Major	Highway
7	68	M	Minor	Highway

Out of seven pedestrian collisions, two drivers were at fault when one driver failed to yield to the pedestrian in a crosswalk and the other one injured due to unsafe backing. Driver's prior action was unknown for three collisions. The following table describe the driver actions that caused the collision.

Table 17: Drivers' Prior Actions – 2020 Pedestrian Collisions

Prior Action	Major	Minor	PDO	Total
Driving Properly (not at fault)	1	1	0	2
Failed to Yield Pedestrian ROW	0	1	0	1
Backed Unsafely	0	1	0	1
Unknown	0	3	0	3

- Major Injury
- Minor Injury



3.8.2 Bicycle Collisions

There was a total of five bicycle collisions in Strathcona County in 2020, resulting in one major and five minor injuries.

Table 18: Bicycle Collisions 2019/2020 by Severity

Severity	2019	2020	Change
Fatal	0	0	-
Major	1	1	-
Minor	5	3	2 ▼
PDO	1	1	-
Total	7	5	2 ▼

One bicycle collision took place on the County's arterial roads, one on non-residential collector, two were on residential collectors and one was on local road. The collision occurred on local road sustained major injury.

Table 19: Location of Bicycle Collisions - 2020

Severity	Arterial	Non-Residential Collector	Residential Collector/Local
Fatal	0	0	0
Major	0	0	1
Minor	0	1	2
PDO	1	0	0
Total	1	1	3

All bicycle collisions occurred in 2020 were on urban area roads. Out of five collisions, four happened due to driver mistakes. Failed to yield caused three collisions resulting in one major and one minor injury. The drivers' actions prior to the collision are summarized in Table 22.

Table 20: Motor Vehicle Drivers' Prior Actions – 2020 Bicycle Collisions

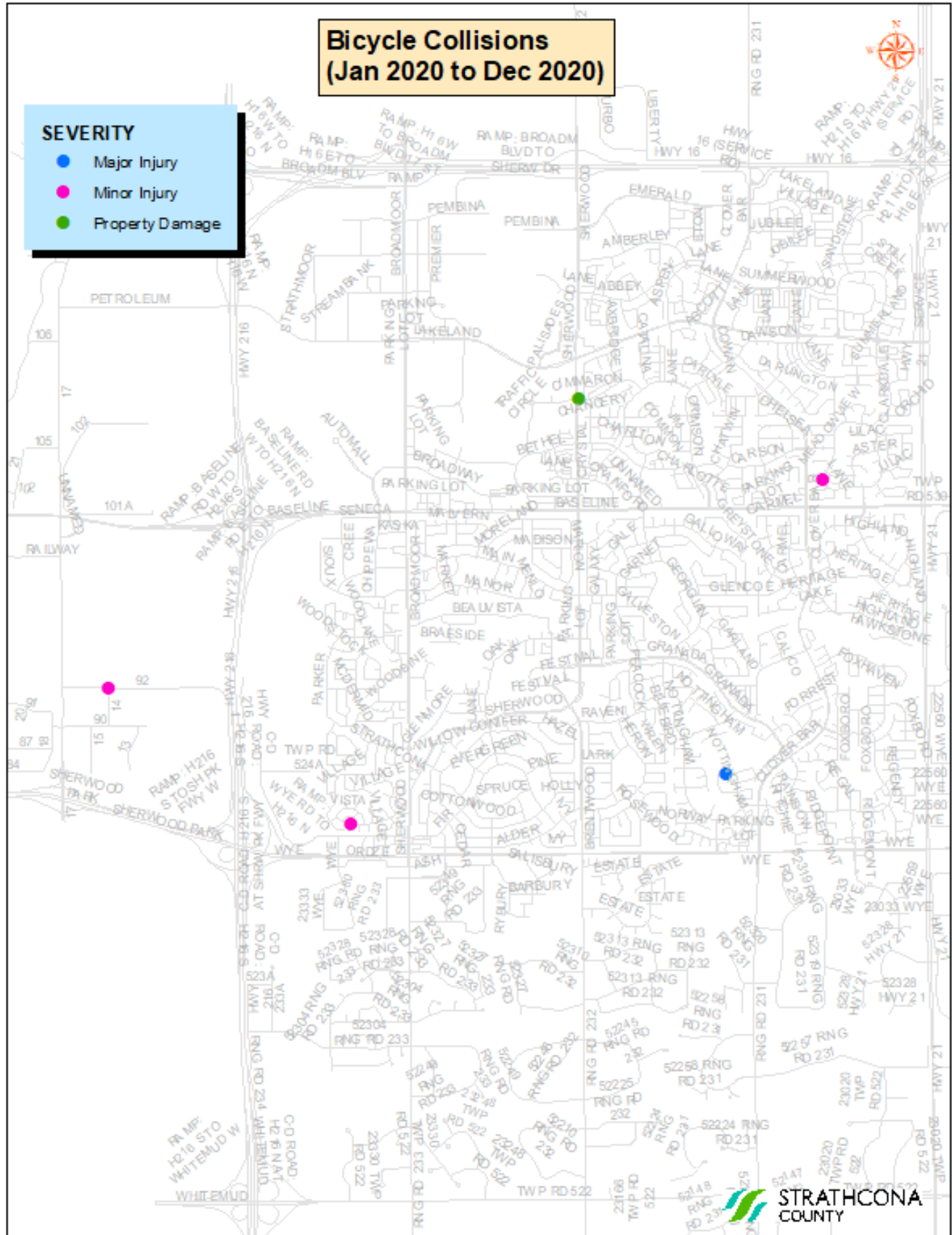
Prior Action	Major	Minor	PDO	Total
Failed to Yield	1	1	1	3
Stop Sign Violation	0	1	0	1
Unknown	0	1	0	1

Cyclist collisions involved three males and two females. Two were 18 years of age or under, and other cyclists were adults

Table 21: Major and Minor injuries as a Result of 2020 Bicycle Collisions by Age and Gender

Number	Age	Gender	Severity	Location
1	11	M	Minor	Collector
2	18	M	Minor	Arterial
3	21	M	Major	Local
4	44	F	Minor	Collector
5	68	F	Minor	Collector

- Major Injury
- Minor Injury
- Property Damage



3.8.3 Motorcyclist Collisions

There was a total of 6 motorcycle collisions in Strathcona County in 2020, resulting in four minor injuries. There is no fatal or major injury collision reported in 2020.

Table 22: Motorcycle Collisions 2019/2020 by Severity

Severity	2019	2020	Change
Fatal	1	0	1 ▼
Major	7	0	7 ▼
Minor	5	4	1 ▼
PDO	5	2	3 ▼
Total	18	6	12 ▼

Of the six motorcycle collisions in 2020, four were deemed to have been precipitated by some action that the motorcyclist took, as summarized in Table 23.

Table 23: Prior actions of Motorcyclist contributing to collisions – 2020

Prior Action	Fatal	Major	Minor	PDO	Total
No Action	0	0	1	1	2
Followed Too Closely	0	0	1	0	1
Ran-Off-Road	0	0	1	0	1
Left Turn Across Path	0	0	0	1	1
Improper Turn	0	0	1	0	1

3.9 Commercial Vehicle Collisions

Commercial vehicles include trucks >4500 kg, buses and tractor trailers. Two out of six fatal collisions involved a commercial vehicle.

Table 24: Commercial Vehicle Collisions 2019/2020 by Severity

Severity	2019	2020	Change
Fatal	3	2	1 ▼
Major	2	0	2 ▼
Minor	36	27	9 ▼
PDO	74	50	24 ▼
Total	115	79	36 ▼

3.10 Impaired Driving Collisions

Alcohol was involved in 55 collisions in 2020, including three major and 17 minor injury collisions. Overall, the number of collisions involving an impaired road user were increased by 12%.

Table 27: Alcohol related collisions 2019/2020 by Severity

Severity	2019	2020	Change
Fatal	0	0	-
Major	2	3	1 ▲
Minor	18	17	1 ▼
PDO	29	35	6 ▲
Total	49	55	6 ▲

3.11 Private Property Collisions

So far, the analysis has only considered collisions on public roads. However, about 25% of total collisions are on private property, including parking lots. There were 454 collisions in 2020, including two major and 34 minor injury collisions on private property. Most private property collisions were PDO, suggesting that they occurred at low speeds. Of note, pedestrian collisions occurred on public roads are lower than the parking lot collisions. This statistic suggests the need for improved standards for pedestrian facilities for parking lots in development areas. The majority of the collisions were due to unsafe backing of the vehicles.

Table 28: Private property collisions 2019/2020

Severity	2019	2020	Change
Fatal	0	0	-
Major	1	2	1 ▲
Minor	39	34	5 ▼
PDO	598	418	180 ▼
Total	638	454	184 ▼
Pedestrian	7	11	4 ▲

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 except for 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, cyclist or pedestrian.

Struck Object

A single vehicle in collision with a fixed or moveable object on the road surface. i.e. rocks, animals, pedestrians, powerlines or overpass structure. This configuration can also be used for non-collision events such as fires/explosions and rollovers where the vehicle did not leave the road surface.

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 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.