

Traffic Collision Statistics Report 2021



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Table of Contents

2021 Collisions 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 Strathcona County borders	10
2.2 Strathcona County-owned roads only (excluding provincial highways)	12
2.3 Strathcona County-owned rural vs urban collision trends	14
2.4 Provincial Highway collisions	16
3.3 Major and fatal collisions.....	17
3.4 Drivers' prior action.....	19
3.5 Temporal analysis	20
3.6 Intersection-related collisions	24
3.6.1 Intersection rankings by frequency.....	25
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.....	35
3.10.3 Motorcyclist collisions.....	38
3.11 Commercial vehicle collisions.....	38
3.12 Impaired driving collisions	39
3.13 Private property collisions	39
4.0 Appendix- Glossary of Terms	40

2021 Collisions quick facts

- 1,226 collisions were reported on public roads in Strathcona County; 36% of these collisions occurred on Provincial Highways.
- Three out of four fatal collisions occurred on Provincial Highways.
- 72% of collisions in Strathcona County were reported as property damage only (PDO) collisions.
- 341 injury collisions (28%) were reported on public roadways; the majority of injury collisions were classified as 'minor injury' collisions, 10 collisions required hospitalization, representing 3% of all injury collisions.
- Individuals aged 35-44 were the most likely to be injured in a collision.
- One major injury collision occurred on residential roads.
- 38% of all collisions occurred at intersections and 23% of these were reported on Provincial Highway intersections.
- 50% of fatal and major injury collisions took place on Provincial Highways.
- The most common cause or driver action related to the collision was reported as "Following too closely".
- The highest number of collisions were reported in December.
- 10% of all collisions occurred between 5pm and 6pm.
- 16% of all collisions involved an animal.
- An additional 428 collisions occurred on private property, typically parking lots and are not included in this report.
- Pedestrian collisions were found to be more common on private property, such as parking lots, than on public roads.

Collision comparison 2020 to 2021

All Roads Within Strathcona County	2020	2021	Change
Total Collisions	1394	1226	▼
Fatal Collisions	6	4	▼
Fatalities	7	5	▼
Major Injury Collisions	9	10	▲
Major Injuries*	14	12	▼
Minor Injury Collisions	356	331	▼
Minor Injuries	499	466	▼
PDO Collisions	1024	881	▼
Collisions per 1,000 population	14.1	12.4	▼
Injury Collisions** per 1,000 population	3.8	3.5	▼
Collision Injuries** per 1,000 population	5.2	4.9	▼
Pedestrian Collisions	7	9	▲
Fatal and Major Pedestrian Injuries	1	1	–
Bicycle Collisions	5	10	▲
Fatal and Major Cyclist Injuries	1	0	–
Motorcycle Collisions	6	7	▲
Fatal and Major Motorcyclist Injuries	0	1	▲
Intersection Collisions	579	470	▼
Animal Collisions	192	200	▲
Alcohol Related Collisions	55	39	▼
Commercial Vehicle Collisions	79	66	▼
Strathcona County Owned Roads			
Total Collisions	922	779	▼
Fatal Collisions	2	1	▼
Major Injury Collisions	4	6	▲
Minor Injury Collisions	208	205	▼
PDO Collisions	708	567	▼
Injury Collisions* per 1,000 population	2.13	2.14	▼

*more than one individual can be injured or killed in a collision

**Includes Fatal, Major Injury and Minor Injury

Section 1: Introduction

1.1 About this report

This report provides a summary of reported motor vehicle collisions within Strathcona County from January 1, 2021 to December 31, 2021. Strathcona County maintains a database, Traffic Crash Location System (TCLS), which contains all reported collisions on public roadways within Strathcona County boundaries (both Strathcona County-owned and Provincial Highways).

Collision data is obtained in electronic format through Government of Alberta's E-Collision system, which is produced by Royal Canadian Mounted Police (RCMP) and maintained by Strathcona County. There are many collisions that go unreported for a variety of reasons and therefore are not included in this data. Also, there are many collisions that may have data deficiencies that are inherent in collecting data and maintaining large databases. The database reflects all reported collisions on public roads 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 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 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 road safety situations to establish countermeasures and priorities to correct the identified hazards;
- Identifying safety and communication needs of special user groups, such as new drivers, seniors, 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.

- Evaluating the implementation of safety features, infrastructure, and strategies to improve safety and operations.

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 99,000 residents. Strathcona County is made up of the urban area of Sherwood Park and a large rural area of farms, acreages, commercial and industrial areas, 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

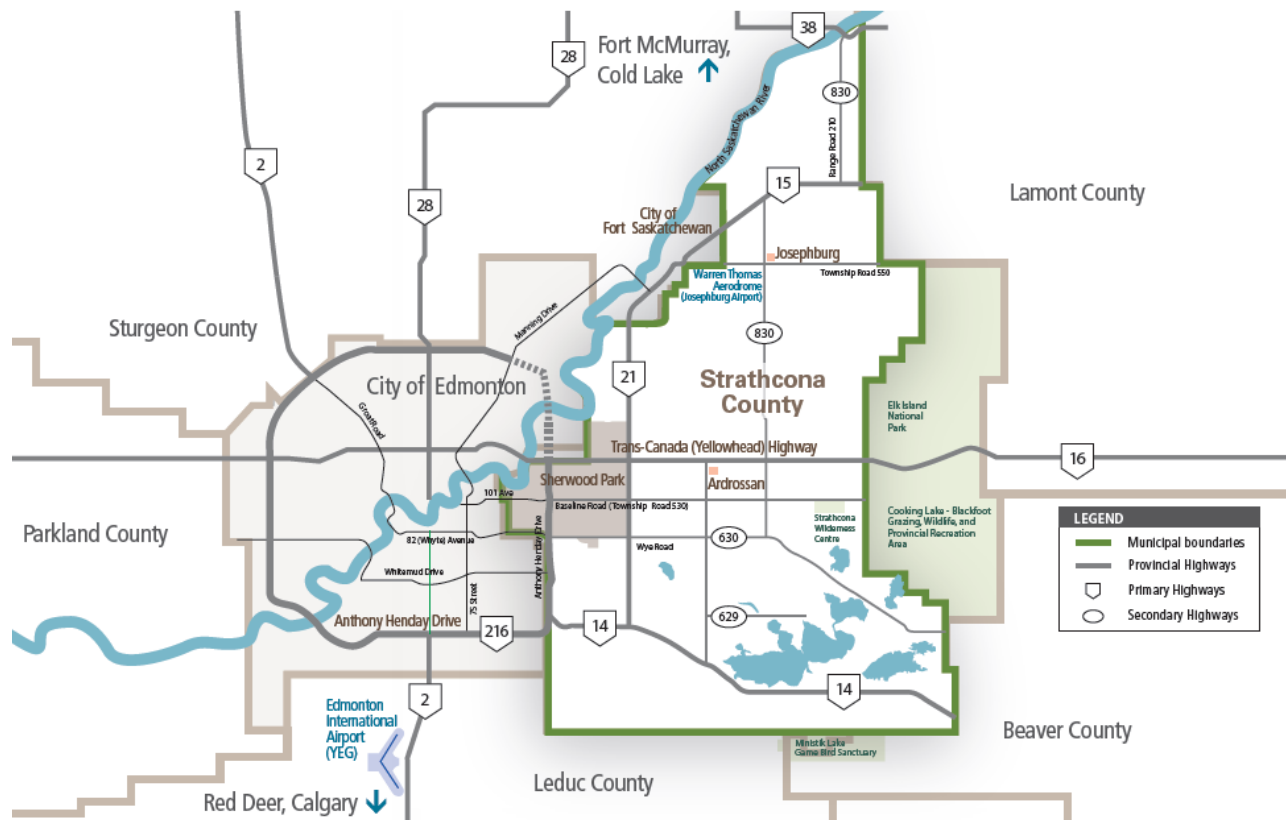
Agricultural	87,502 hectares
Industrial	9,052 hectares
Commercial	2,078 hectares
Residential	18,542 hectares
Urban village*	66 hectares
Park/recreation/natural	3,701 hectares
Other: airports, water bodies, roads, road rights-of-way	5,679 hectares

* 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

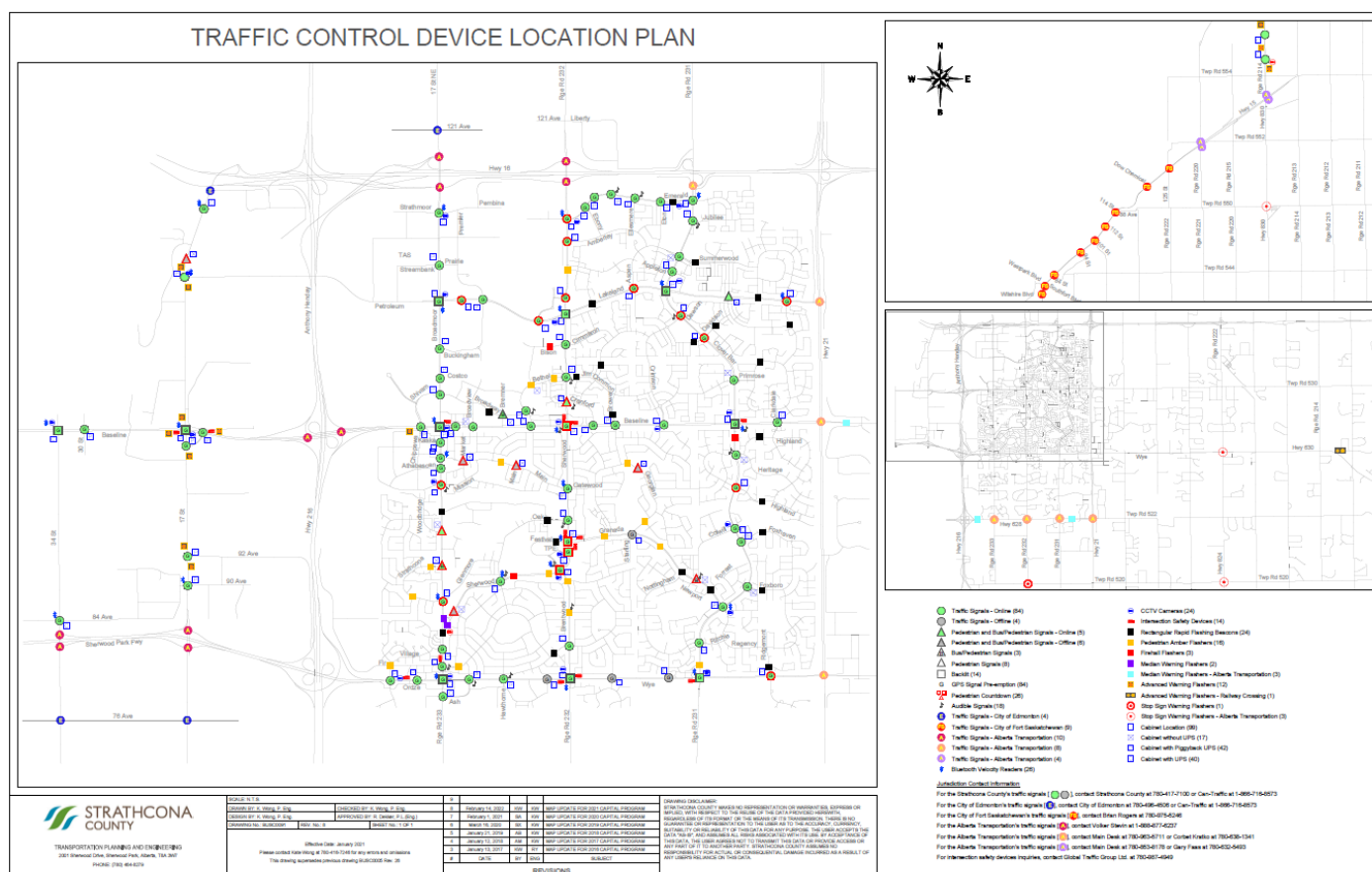


There are 1,955 km of public roadways in Strathcona County, including:

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

Strathcona County operates approximately 118 signalized traffic control devices. There are also four traffic signals operated by the City of Edmonton on the western border and nine traffic signals near Fort Saskatchewan. In addition, traffic signals on Provincial Highways 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 20.3% population increase between 2006 and 2021. The population growth has primarily taken place in Sherwood Park, which has grown by 27% during this timeframe.

Table 2: Strathcona County population (2006-2021)

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
*2021	72,017	27,208	99,225

*Federal 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 the 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 Strathcona County than the Provincial and National averages.

Table 4: Mode of commuting for residents of Strathcona 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 72,700 licensed drivers in 2021. 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 Strathcona County.

Similarly, Alberta Transportation reports there are 83,777 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 7:30am to 4:30pm 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.

Section 2: Historical collision statistics

2.1 Overall: all roads within Strathcona 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 2012-2021, 53% and 47%, respectively.

Over the last 10 years, the rate of minor injury collisions has been dropping since 2018. 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 Strathcona County Borders 2012-2021

Year	Fatal	Major Injury*	Minor Injury**	PDO***	Total
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
2021	4	10	331	881	1226

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

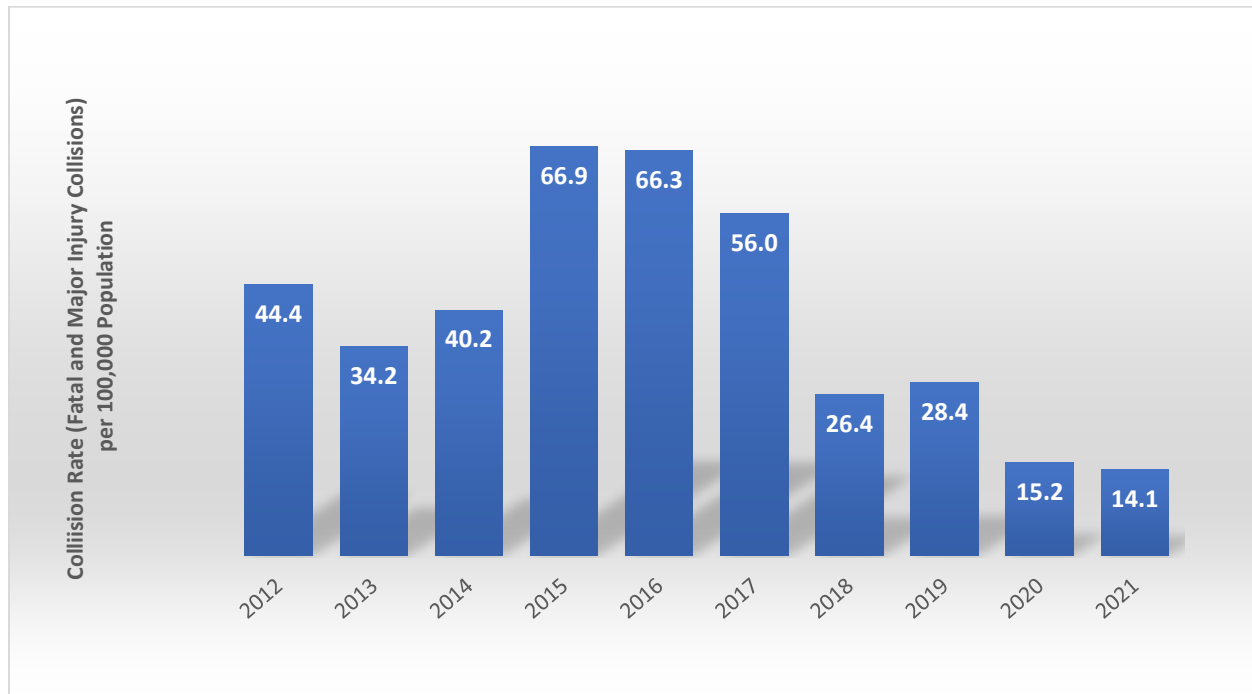
Table 6: Collision rates per 100,000 population on all roads within Strathcona County

Year	Fatal	Major Injury*	Minor Injury**	PDO***	Total
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	7.1	21.3	480.4	1298.4	1807.2
2020	6.1	9.1	359.8	1034.9	1409.9
2021	4.0	10.1	333.6	887.9	1235.6

*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 evaluate trends in the most serious collisions. As shown, the downward trend since 2016 is continuing in 2021. 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-owned roads and are predominantly reported on Provincial highways.

Figure 3: Fatal/major injury collision rates for all Strathcona County roads (2012-2021)



2.2 Strathcona County-owned roads only (excluding provincial highways)

Strathcona County roads had 779 total collisions reported. There is a 43% reduction in overall collisions over the last 10 years, and 16% reduction over 2020. There was one fatal collision and 6 major injury collisions reported in 2021. Most of the collisions on County-owned roads were minor injury and property damage only (PDO) collisions. Serious injury collisions were higher during the period from 2015 to 2017 however, have a continuous downward trend since then.

Table 7: All collisions by consequence on Strathcona County-owned roads
(excluding provincial highways)

Year	Fatal	Major Injury*	Minor Injury**	PDO***	Total
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
2021	1	6	205	567	779

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

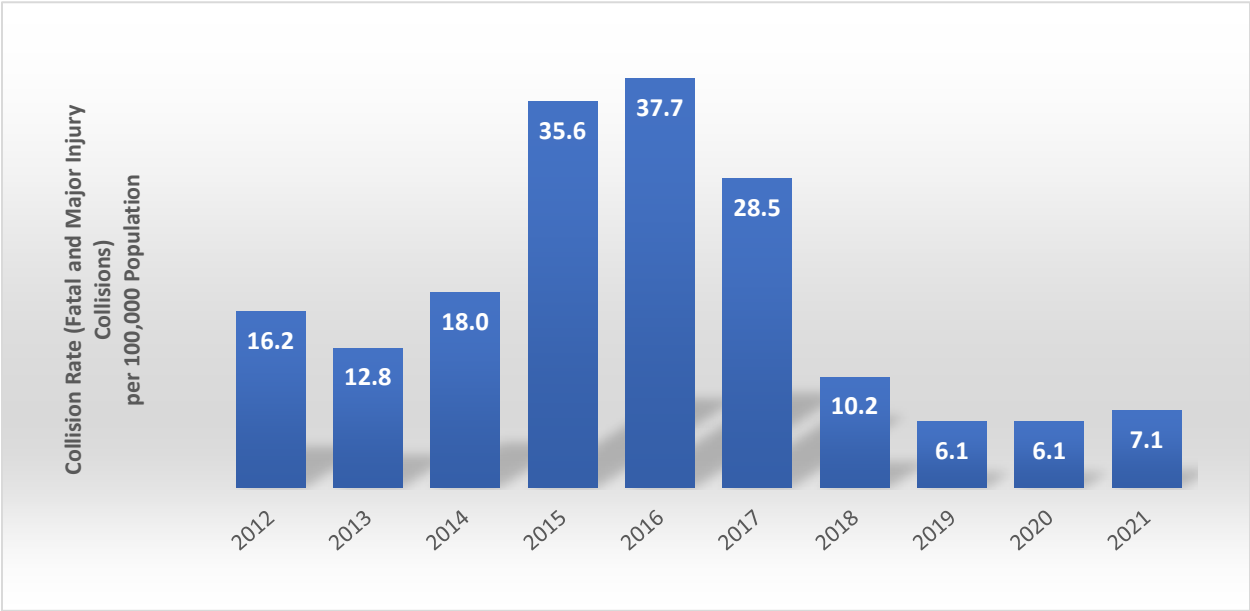
Collision rates in all categories show a decreasing trend between 2012 to 2021 on County-owned roads. The major injury collision rate rose sharply in 2015 and 2016, however, has continued to decline to 2021, reporting the lowest minor injury and property damage only collision rates in at least 10 years.

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

Year	Fatal	Major Injury*	Minor Injury**	PDO***	Total
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
2021	1.0	6.0	206.6	571.4	785.1

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

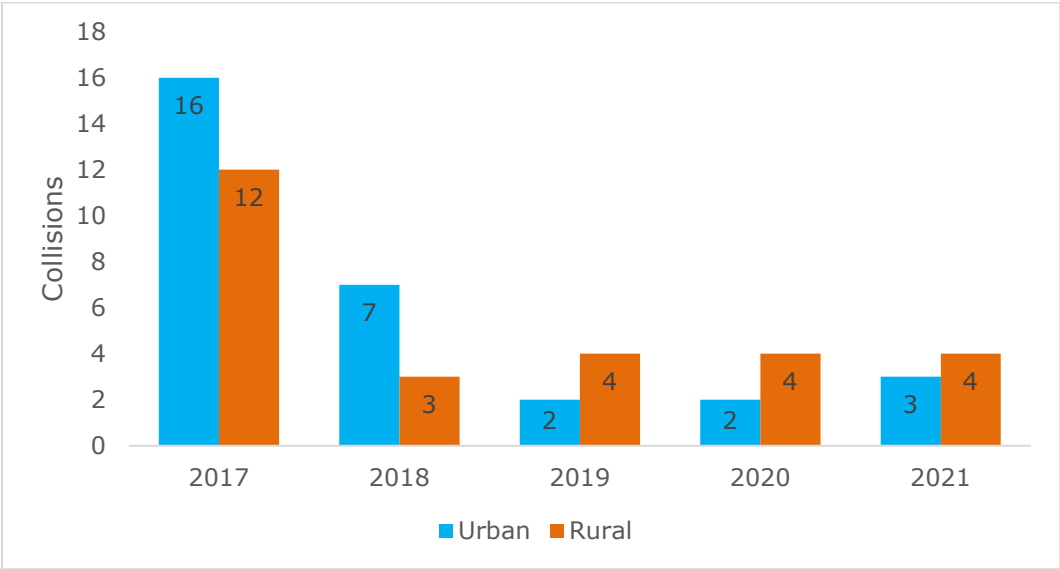
Figure 4: Collision rates for fatal/major injuries combined – Strathcona County-owned roads (2012-2021)



2.3 Strathcona County-owned rural vs urban collision trends

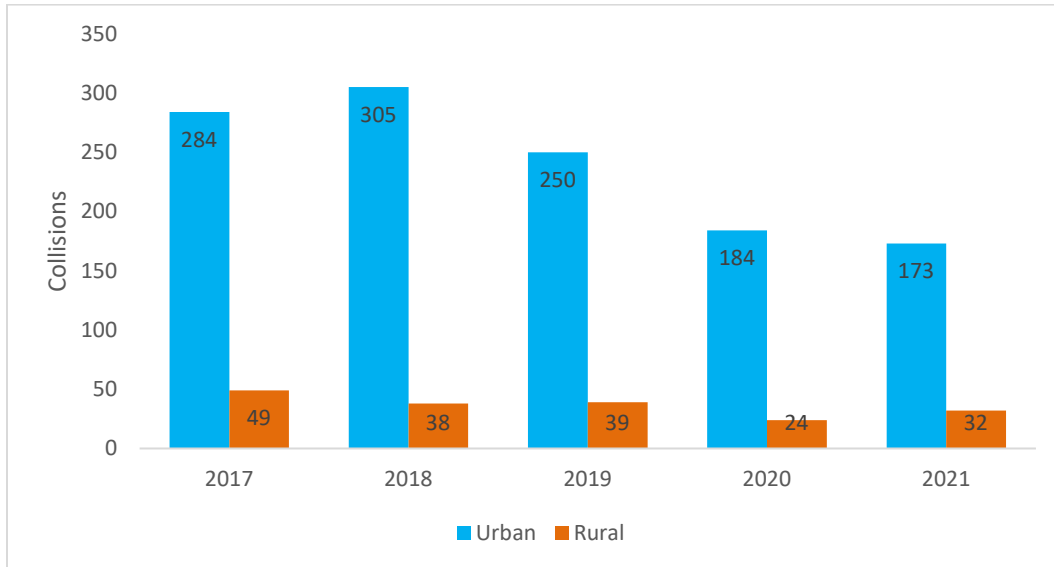
Over the last five years, the frequency of fatal and major injury collisions has declined consistently in the urban area, accounting for the majority of the collision reduction. Fatal and major injury collisions in the rural area has remained consistent over the last three years.

Figure 5: Fatal and major injury collisions urban vs rural – Strathcona County-owned roads (2017-2021)



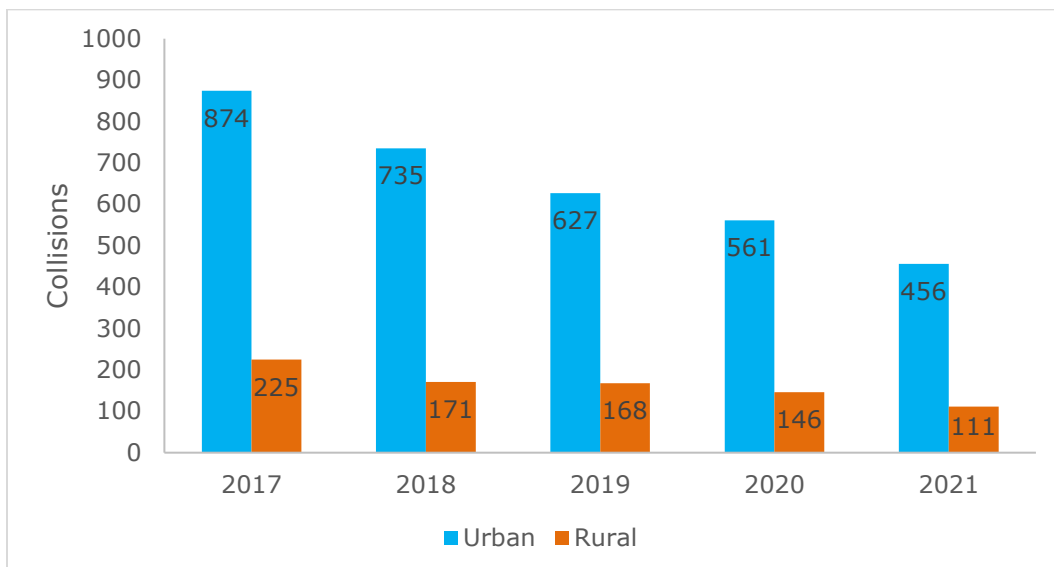
Minor injury collisions rose in 2018, with a decreasing trend since then. Both the urban and rural collisions were reduced in 2021 compared to the last four years.

Figure 6: Minor injury collisions urban vs rural Strathcona County-owned roads (2017-2021)



Property damage only collisions have seen a continuous decreasing trend since 2018 in both urban and rural areas.

Figure 7: PDO collisions urban vs rural Strathcona County-owned roads (2017-2021)



2.4 Provincial Highway collisions

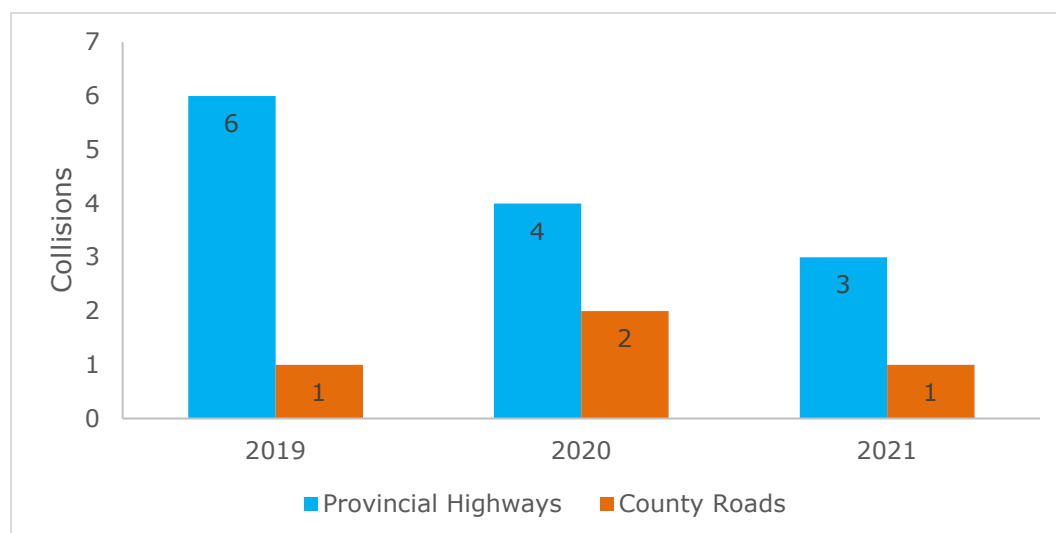
Alberta Transportation operates 225 kilometres of Provincial Highways within Strathcona County. Many of these Provincial Highways are freeways, which tend to have the lowest collision rate of any transportation facility. However, because of the high speeds that freeways operated, any collisions that occurs tends to be serious. This section focuses on Provincial Highways collisions that occur within Strathcona County. As previously indicated, most fatal collisions in the County occurred on Provincial Highways, generally the highest speed roads in the County, where collision severity is specifically corelated to speed. In 2021, three of the four fatal collisions occurred on provincial highways, resulting in 5 fatalities.

Table 9: Provincial Highway collisions (2019-2021)

Year	Fatal	Major Injury	Minor Injury	PDO	Total
2019	6	16	185	486	693
2020	4	5	148	316	473
2021	3	4	126	314	447

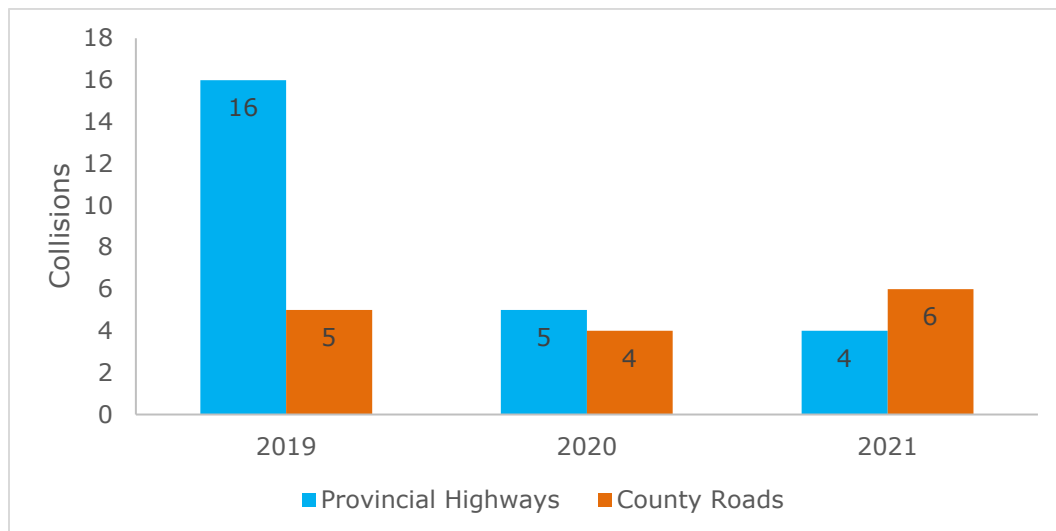
A significant number of major injury collisions also tend to occur on provincial highways. Provincial Highways in the County represent up to 34% of all serious collisions resulting in a fatality. Figure 8 and 9 shows comparison of fatal and major injury collisions on Provincial Highways vs County-owned roads. Collision severity is higher for highway collisions in fatal and major injury collisions as speed is exponentially correlated with the forces in a collision.

Figure 8: Fatal collisions – Provincial Highways vs Strathcona County Roads (2019-2021)



There is a downward trend for fatal collisions on provincial highways over the last three years, with the number remaining consistent on County roads. Similar trends have been observed in major injury collisions, where 16 major injury collisions were reported in 2019 and 6 collisions in 2021, results are shown in figure 9. Major injury collisions on county roads were consistent over the last three years.

Figure 9: Major injury collisions – Provincial Highways vs Strathcona County Roads (2019-2021)



3.3 Major and fatal collisions

In keeping with Strathcona County's Traffic Safety Strategic Plan (TSSP), our goal is to specifically reduce collisions causing serious injury and death. There were 4 fatal and 10 major injury collisions reported in 2021 in Strathcona County.

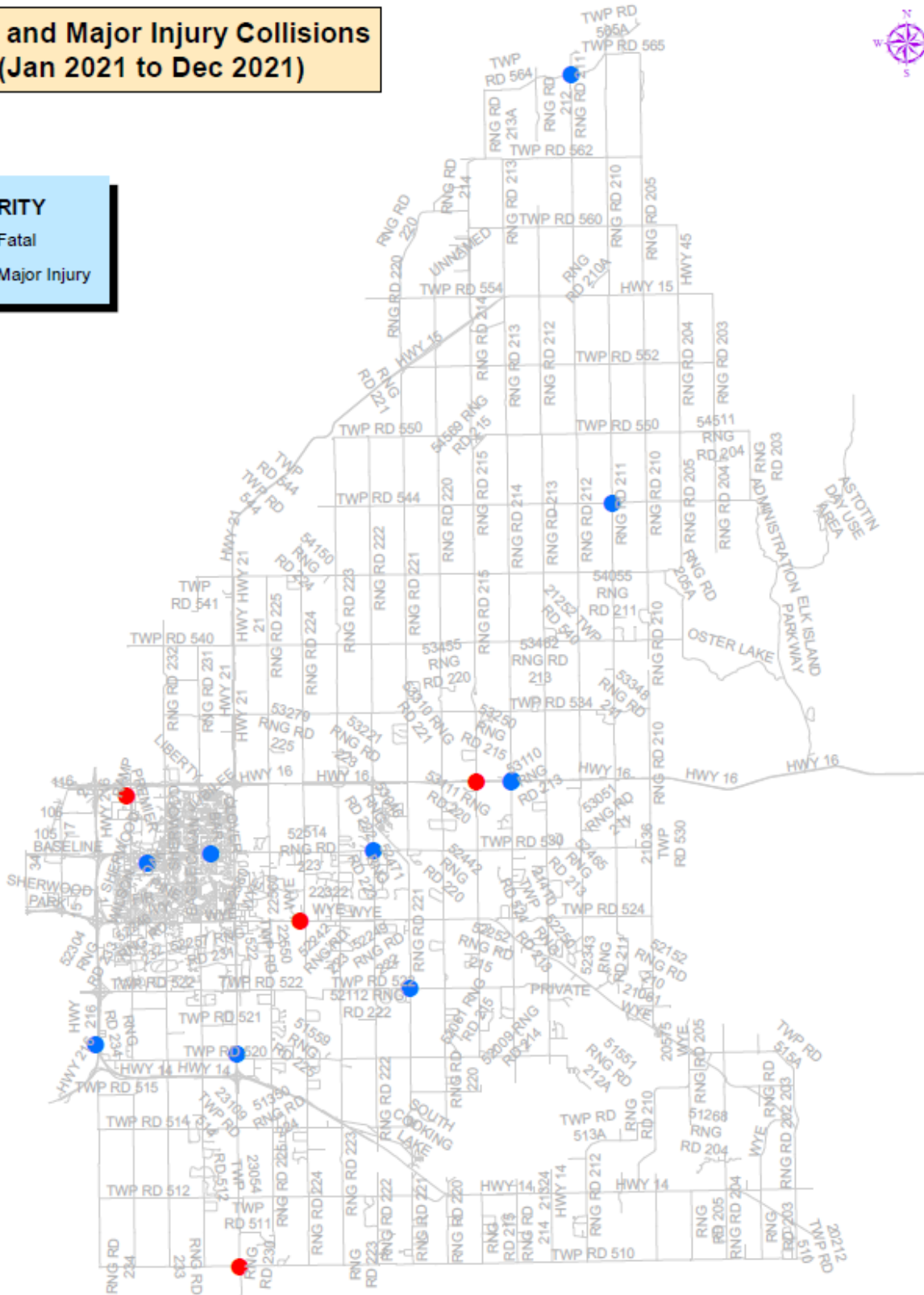
The following two maps illustrate the locations of fatal and major injury collisions in Strathcona County. Collisions are scattered across the County and do not represent any hot spot locations; however, there are specific collision types that are overrepresented in serious collisions. Right angle collisions accounted for 8 out of 14 combined fatal and injury collisions and four were run-off-road collisions. Slippery road surface conditions due to snow/slush/ice, driving at a highway speed and lost control were the contributing factors for several of these collisions.

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

Fatal and Major Injury Collisions (Jan 2021 to Dec 2021)

SEVERITY

- Fatal
- Major Injury



3.4 Drivers' prior action

Followed too closely was the most common prior action of drivers involved in collisions in 2021.

For fatal and injury (including major and minor injury) collisions 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 lane change
7. Failed to yield ROW – uncontrolled
8. Left of centre

Collisions involving property damage only, the top eight driver actions were:

1. Struck parked vehicle
2. Followed too closely/rear-ended
3. Ran off road
4. Backed unsafely
5. Left turn across path
6. Improper lane change
7. Improper turn
8. Disobey traffic signal

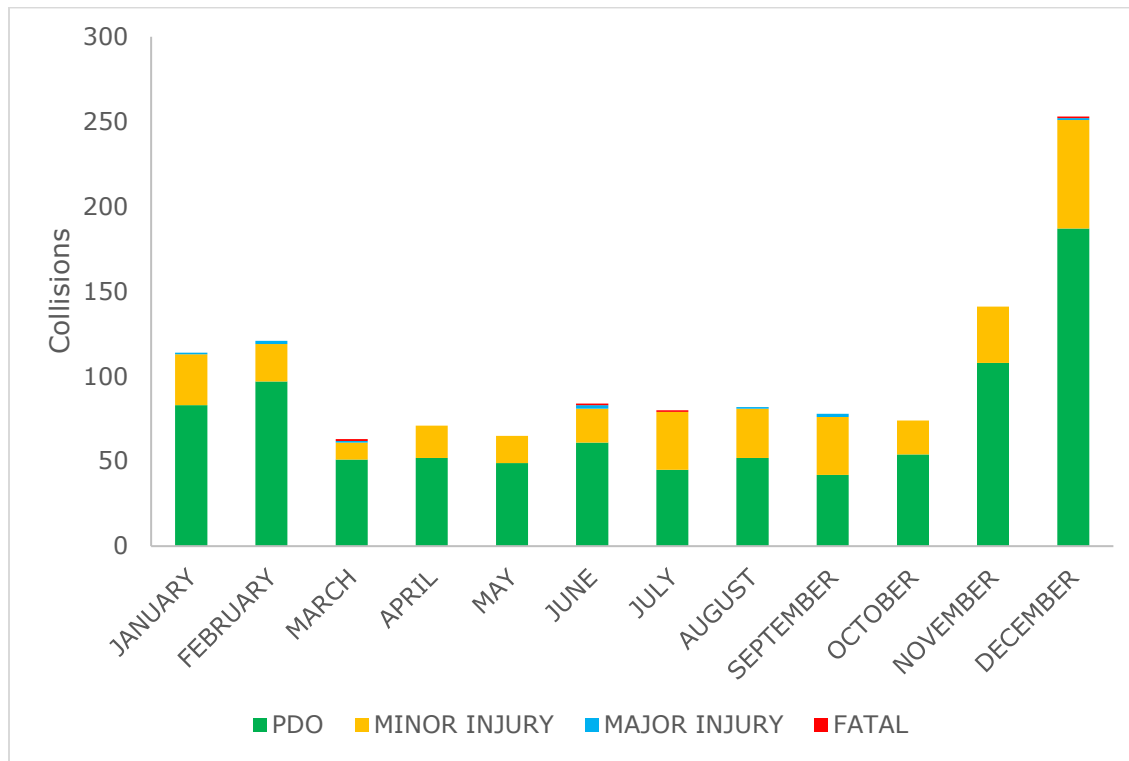
Side impact (T-Bone, left turn across path, right angle) collisions are the most serious collision type for vehicle occupants, major injury or death is increasingly likely for speeds greater than 50 km/h. Not surprisingly, the causes of injury collisions were more likely to be 90-degree side impact collisions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

3.5 Temporal analysis

Monthly analysis

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

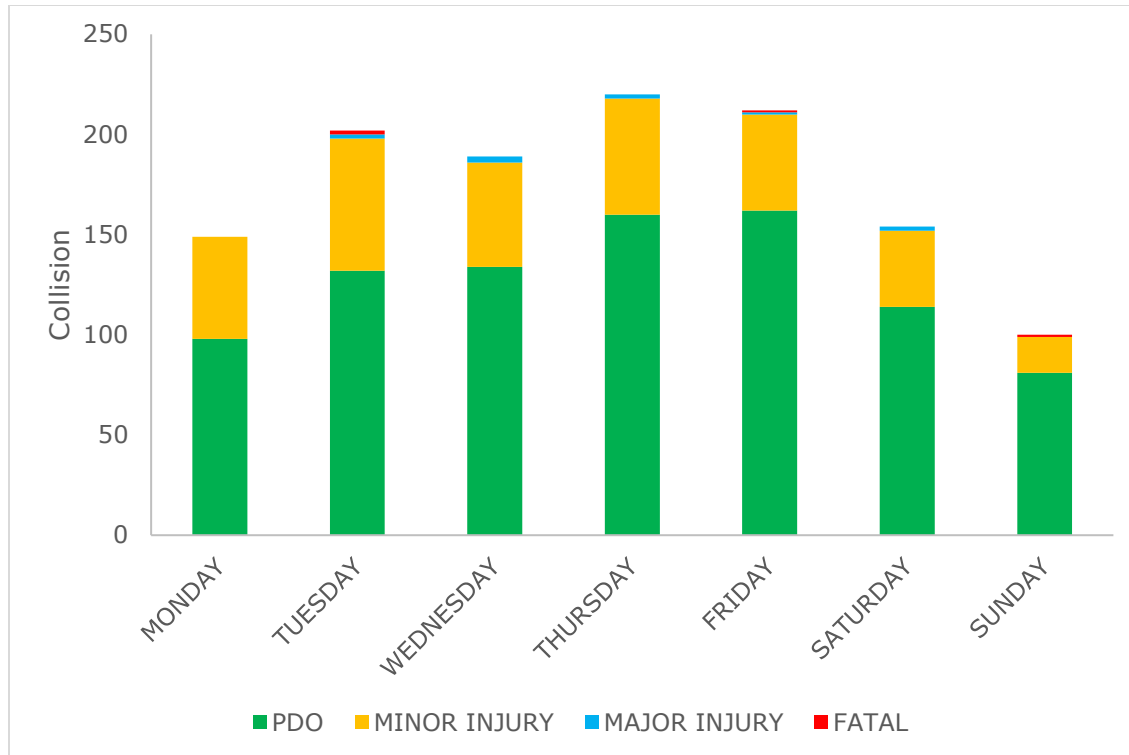
Figure 10: Collisions severity by Month – 2021



Day of the Week

Tuesday was the most common day of the week for fatal and major injury collisions in 2021. The highest number of minor injury and PDO collisions occurred on Thursdays and Fridays.

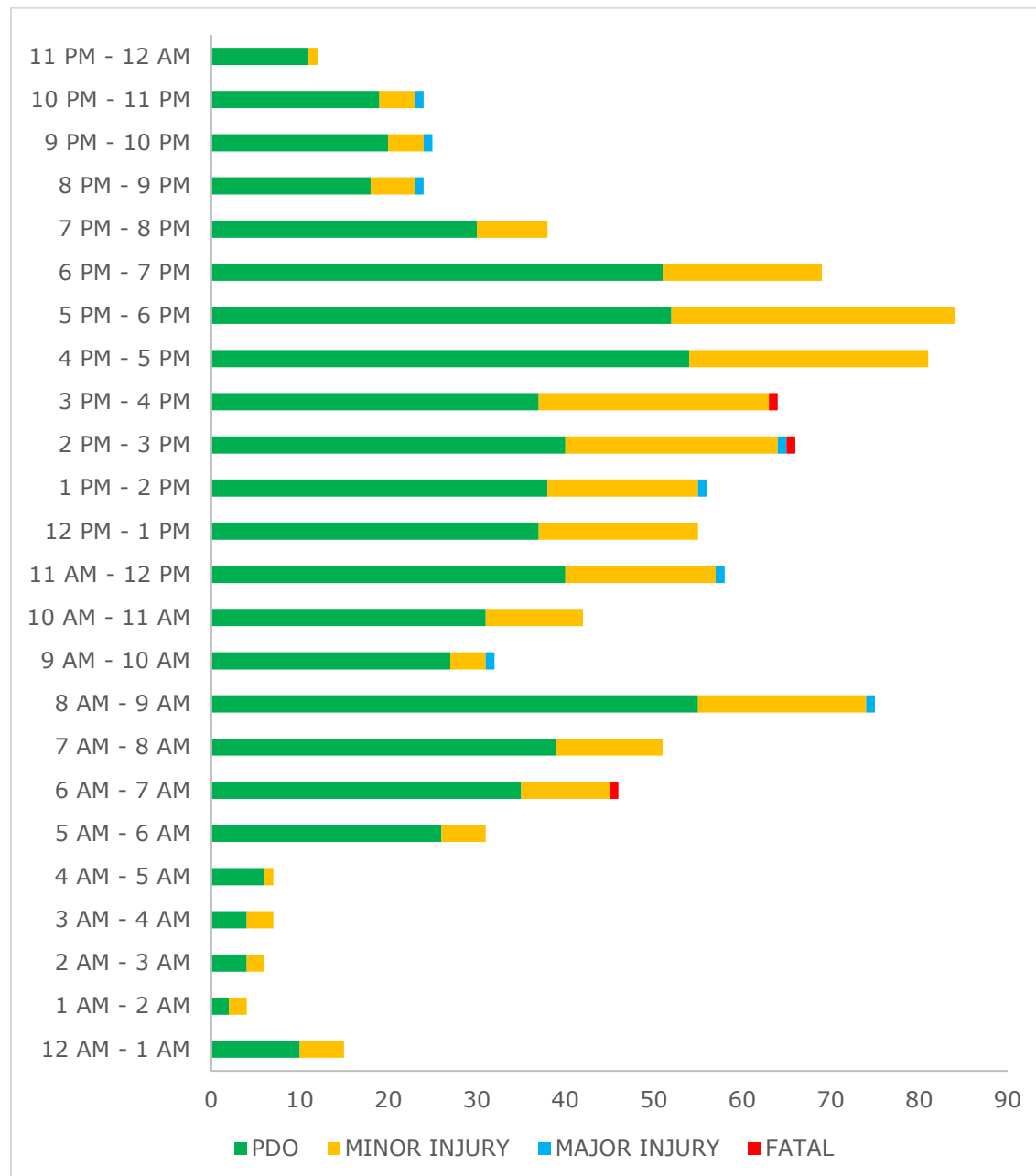
Figure 11: Collision severity by day of the week - 2021



Time of Day

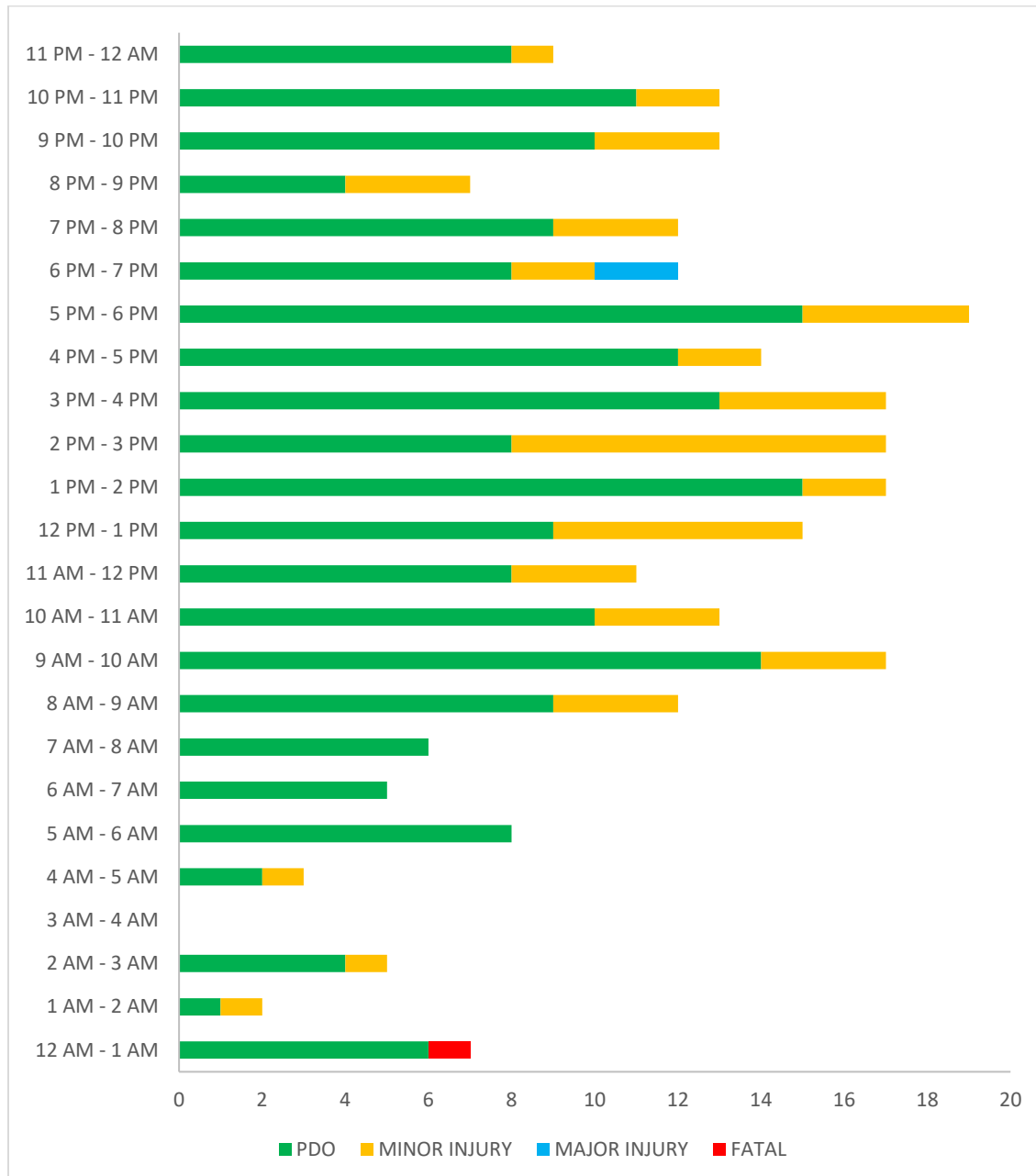
On weekdays, fatal and major injury collisions occurred randomly throughout the day with no trend. Minor injury and PDO collisions were highest in the afternoon peak, with an observable increase during the morning peak hours.

Figure 12: Collisions by time of day – 2021 (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 2:00pm and 3:00pm.

Figure 13: Collisions by time of day – 2021 (weekends)



3.6 Intersection-related collisions

In 2021, 38% of Strathcona County collisions were intersection-related. There is no difference between severity when comparing the fatal and major injury collisions at intersection vs non-intersection related collisions. In minor injury category, there were more collisions at intersections, while property damage only collisions occurred mostly at non-intersection locations.

Figure 14: Fatal and major injury collisions - 2021

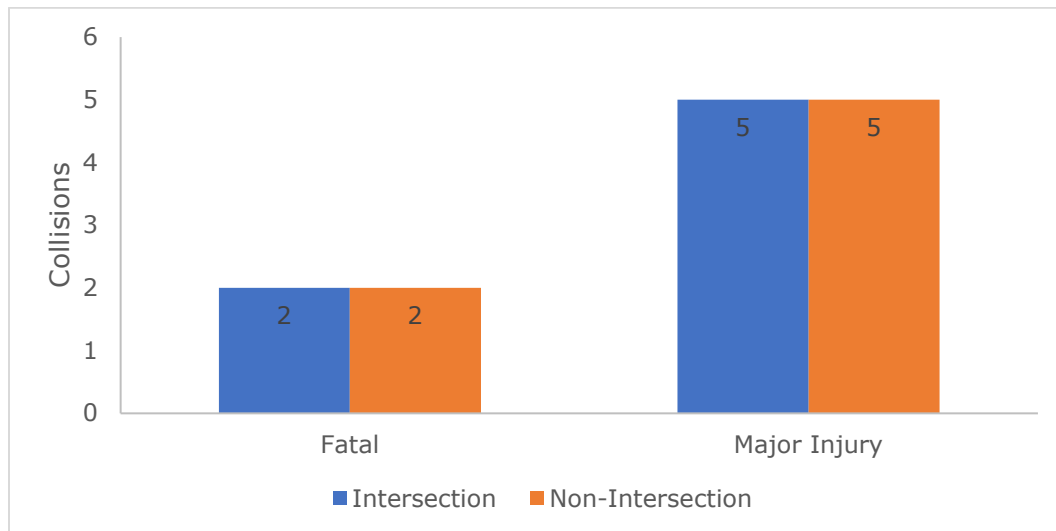
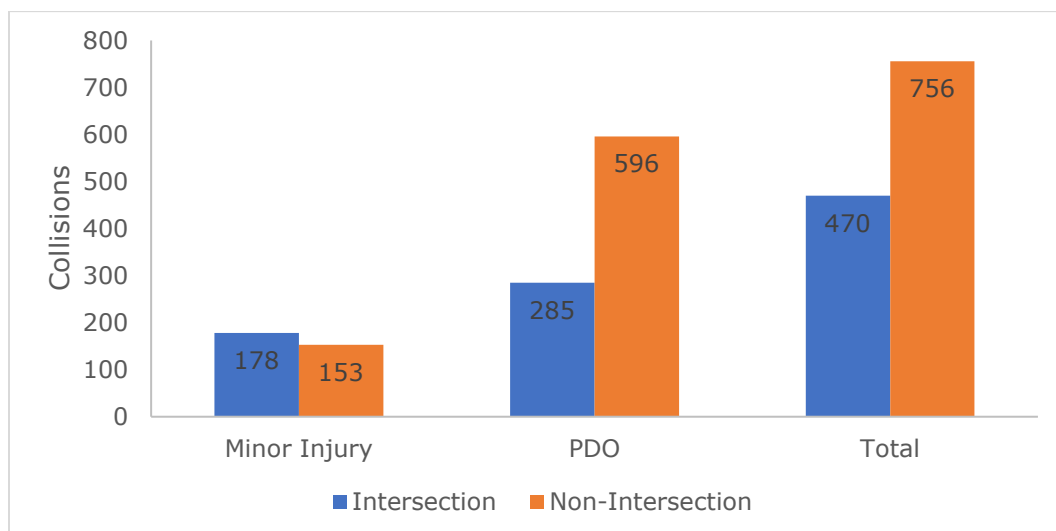


Figure 15: Minor injury, PDO and total collisions - 2021



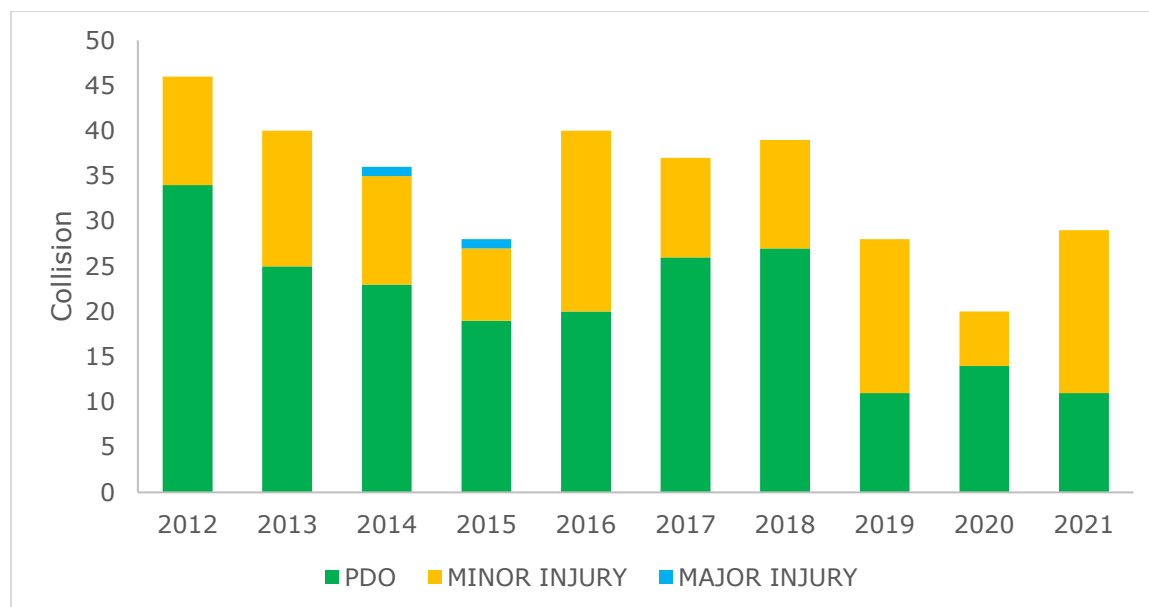
3.6.1 Intersection rankings by frequency

Intersections were ranked based on the greatest number of total collisions over the last 10 years (2012-2021). The collisions within 50m of an intersection are considered as intersection-related collisions. The top five intersections in the County are discussed in detail below. 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 experienced 343 collisions over the last 10 years. There were two major injury collisions (four major injuries), 124 minor injury collisions (177 minor injuries) and 217 property damage only collisions. Most of the collisions were rear-end, averaging 69% of the total collisions. The over-representation of rear-end collisions may be attributed to slippery road surface conditions, following too closely, and drivers' failure to drive according to the road conditions.

Figure 16: Baseline Road/Broadmoor Boulevard collision history (2012-2021)



This intersection has the County's highest traffic volume with 66,200 vehicles per day (average weekday traffic) according to 2018 traffic counts. Figure 16 shows a downward collision trend over the last 10 years. No major injury collisions have been reported since 2016, while minor injury collisions showed no significant change during the same time period, with an increase in 2021 when compared with 2020.

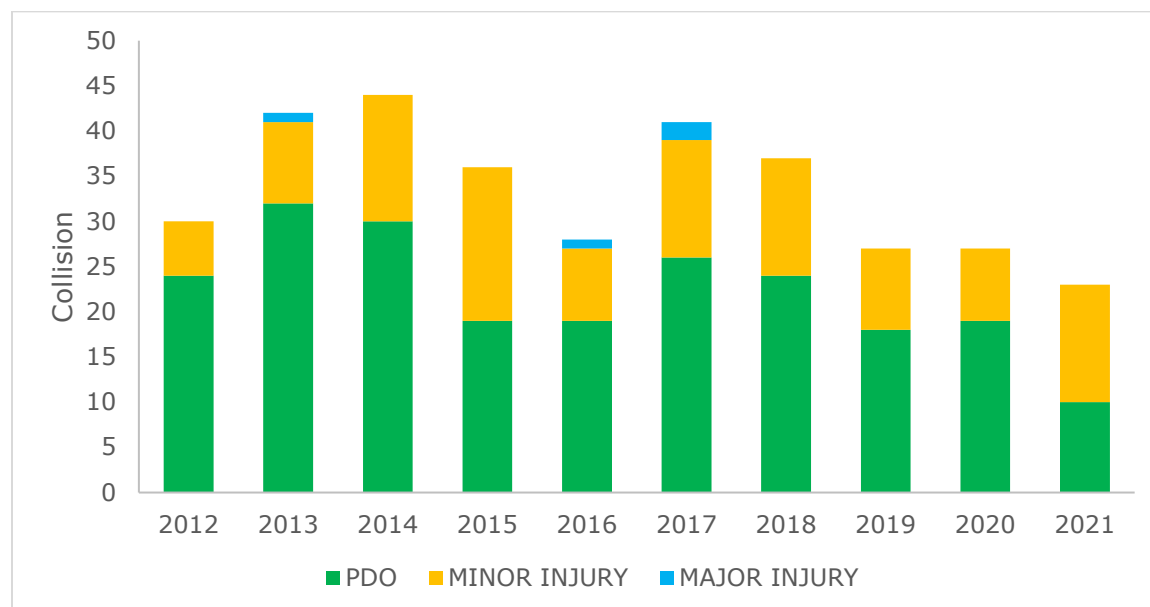
Collision data by type shows a significant decrease in rear-end collisions until 2020 and there is an increase in 2021, slippery road surface conditions was a contributor

to some collisions. Left turn across path (LTXP) were 11% of all collisions and sideswipes in the same direction accounted for 10% of the total collisions and were the second and third highest collision type respectively. Unlike rear-ends, there is no significant decrease in LTXP until 2019, no LTXP collisions were reported in 2020 and two LTXP collisions were reported in 2021. Other collision types reported at the intersection included struck object and backing; these collisions were low in number and occurred randomly.

Rank 2: Baseline Road and Sherwood Drive

This intersection experienced 336 collisions over the last 10 years. There were four major injury collisions (four major injuries), 110 minor injury collisions (154 minor injuries) and 223 property damage only collisions. Like the Baseline Road and Broadmoor Boulevard intersection, most collisions were rear-end collisions, averaging 75% of the total reported collisions. The over-representation of rear-end collisions may be attributed to slippery road surface conditions, following too closely, and drivers' failure to drive according to the road conditions.

Figure 17: Baseline Road/Sherwood Drive collision history (2012-2021)

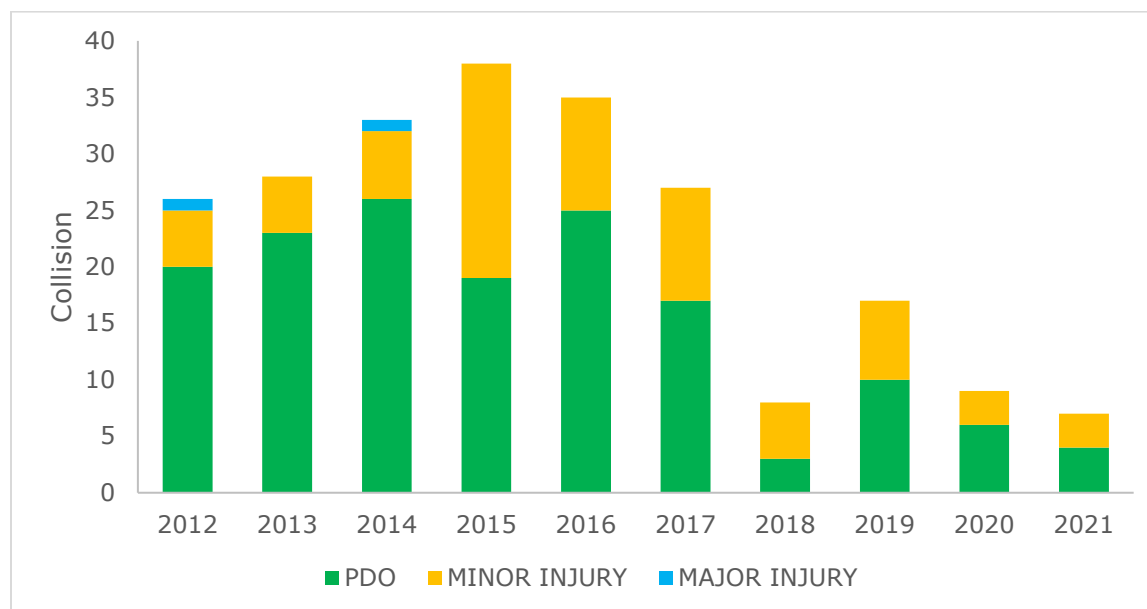


This intersection is the second highest volume intersection in the County with an average weekday traffic volume of 64,200 vehicles per day (2018). As shown in Figure 17, there is a significant decrease in the collision frequency attributed to rear-end and LTXP collisions. Minor injury collision frequency varies up to 2018 and dropped in 2019 and have been consistent since then.

Rank 3: Sherwood Drive and Broadmoor Boulevard (traffic circle)

This intersection has experienced 228 collisions in last 10 years. There were two major injury collisions (two major injuries), 73 minor injury collisions (103 minor injuries) and 154 property damage only collisions. Rear-end collision average was 50% and sideswipe same direction represented 38% of the total collisions.

Figure 18: Sherwood Drive/Broadmoor Boulevard collision history (2012-2021)



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 and injury collisions have dropped significantly with the implementation of geometric changes and remain low over the past two years.

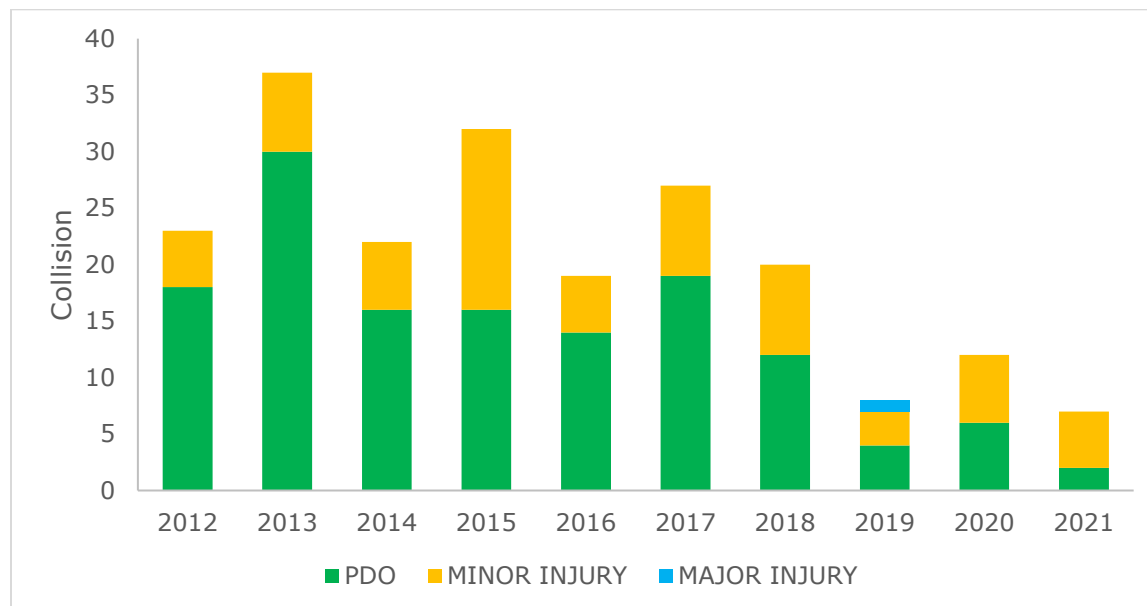
The frequency of sideswipe same direction collisions has dropped significantly since the changes were made to the traffic circle in 2016. Rear-end collisions at the roundabout entry points are now the most common cause of collision at this location, with followed too closely as the contributing factor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

Rank 4: Baseline Road and Clover Bar Road

This intersection has experienced 207 collisions in last 10 years. There was one major injury collision (one major injury) at this location in 2019, 68 minor injury collisions (89 minor injuries) and 137 property damage only collisions.

Rear-end collisions account for an average of 61%, LTXP represent 14% of collisions, and right-angle collision were 7% of total collisions.

Figure 19: Baseline Road/Clover Bar Road collision history (2012-2021)



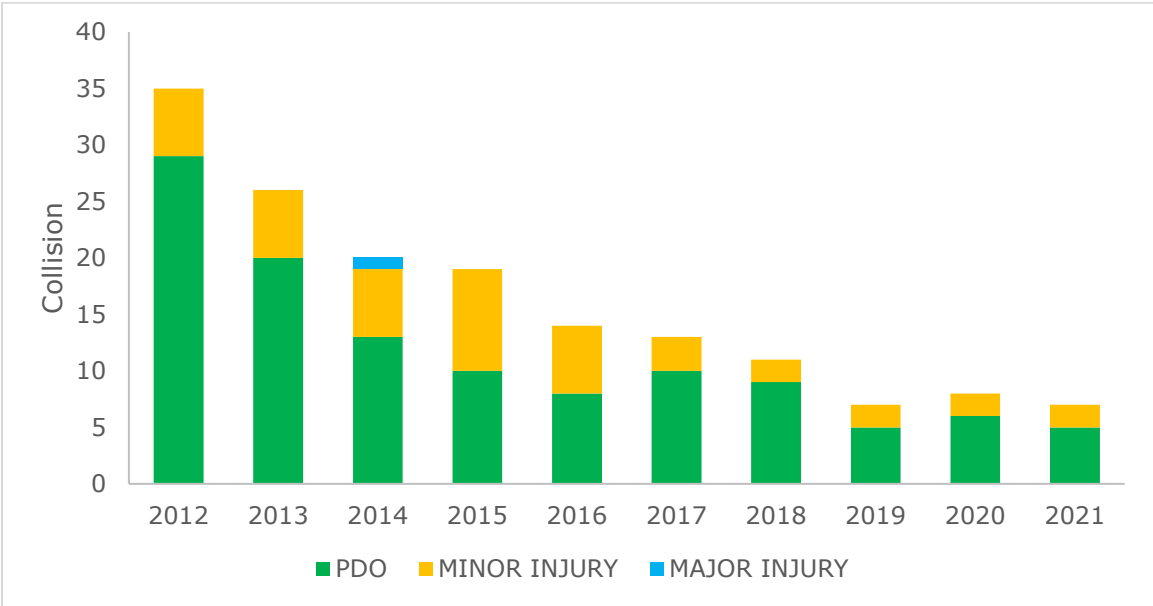
This intersection is also the fourth highest traffic volume location in the County with average weekday traffic volumes of 47,200 vehicles per day (2018). Figure 19 shows a decreasing trend in the frequency of overall collisions. Both the minor injury and property damage only collisions have dropped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

The decrease in overall collision frequency is reflected in a decrease in rear-end and LTXP collisions as a result of traffic signal phase changes and intersection upgrades with improved left turn lane design.

Rank 5: Wye Road and Sherwood Drive

This intersection has experienced 160 collisions in last 10 years. There was one major injury collision (one major injury) at this location in 2014, 44 minor injury collisions (67 minor injuries) and 115 property damage only collisions. Rear-end collisions account for an average of 38% and LTXP for 33% of the total collisions.

Figure 20: Wye Road/Sherwood Drive collision history (2012-2021)



This intersection is the third highest traffic volume location in the County with average weekday traffic volumes 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 collisions have dropped in recent years.

The overrepresentation of LTXP collisions was mainly due the unprotected left turn movement for westbound traffic where drivers’ misjudged safe gaps in oncoming traffic. Left turn across path collisions have dropped significantly since 2012 when the traffic signal phase changes were made and in last three years there was no reported LTXP collisions. Rear-end collisions have also realized a consistent decreasing trend since 2013.

3.7 Neighbourhood collisions

Neighbourhoods comprised of residential areas of Sherwood Park, rural hamlets, and country residential subdivisions. According to the County’s street network, collector and local roads serve neighbourhoods. There were no fatal collisions, however, one major injury collision in 2020 with the same outcome in 2021. The main collision types on neighbourhood roads were struck object and backing unsafely. Struck object collisions include drivers’ failure to drive according to the road conditions, losing control, colliding with a parked vehicle, other colliding with road objects such as curbs, medians, and corner islands, etc.

Table 10 shows the location of fatal and major injury collisions. Most of the collisions were on highways in both 2020 and 2021.

Table 10: Major injury and fatal collisions 2020/2021 by location

Road Type	2020		2021	
	Fatal	Major Injury	Fatal	Major Injury
Residential Collectors/Locals	0	1	0	1
Arterials	2	3	0	5
Highways	4	5	3	4

3.8 Animal collisions

In 2021, 16% of all reported collisions were animal related. Most animal collisions are not serious for vehicle occupants, with 89% of those reported causing property damage only. Overall, there was a 4% decrease in the number of animal collisions from 2020 to 2021. One major injury collision occurred when a driver struck moose. Deer related collisions accounted for 73% of total animal related collisions, followed by 23% moose related collisions and 4% other.

Table 11: 2020/2021 Animal collisions in Strathcona County

Severity	2020	2021	Change
Fatal	0	0	-
Major Injury	0	1	1 ▲
Minor Injury	29	21	8 ▼
PDO	163	178	15 ▲
Total	192	200	8 ▼

3.9 Demographics

Individuals aged 35-44 were the most likely to be injured in a motor vehicle collision in 2021. Of the five fatalities, two were 65 years or older.

Table 12: Fatalities and injuries from 2021 collisions by age

Age Group	Fatality	Major Injuries	Minor Injuries	Total
0-5	0	0	0	0
6-11	0	0	3	3
12-15	0	0	12	12
16-18	0	0	29	29
19-24	0	1	43	44
25-34	2	0	73	75
35-44	0	0	81	81
45-54	0	4	61	65
55-64	0	0	49	49
65-74	1	2	15	18
75+	1	0	13	14
Unknown	1	5	95	101
Total	5	12	474	491

Four fatalities included three male identified drivers, one male identified pedestrian and one female identified passenger.

Table 13: Fatalities and injuries from 2021 collisions by sex

Sex	Fatality	Major Injuries	Minor Injuries	Total
Female	1	5	259	265
Male	4	7	214	225
Unknown	0	0	1	1

3.10 Vulnerable road user collisions

3.10.1 Pedestrian collisions

There was a total of 9 pedestrian collisions in Strathcona County in 2021, resulting in 10 minor injuries and one fatality. Seven collisions occurred at intersection locations and two were at midblock locations. There is a 29% increase in collision frequency from 2020 to 2021.

Table 14: Pedestrian collisions 2020 and 2021 by severity

Severity	2020	2021	Change
Fatal	0	1	1 ▲
Major injury	1	0	1 ▼
Minor injury	6	8	2 ▲
PDO	0	0	-
Total	7	9	2 ▲

Fatality took place on a provincial highway, 6 major injury collisions were at urban arterial intersections, one major injury collision was at collector intersection and another major injury collision was on rural arterial.

Table 15: Location of pedestrian collisions – 2021

Severity	Highway	Arterial	Collector/Local	
			Residential	Non-Residential
Fatal	1	0	0	0
Major Injury	0	0	0	0
Minor Injury	0	7	1	0
Total	1	7	1	0

Five out of nine pedestrians identified as male and four identified as female. Five were under 18 years of age and one was 64-years-old.

Table 16: Minor injuries from pedestrian collisions by age and sex – 2021

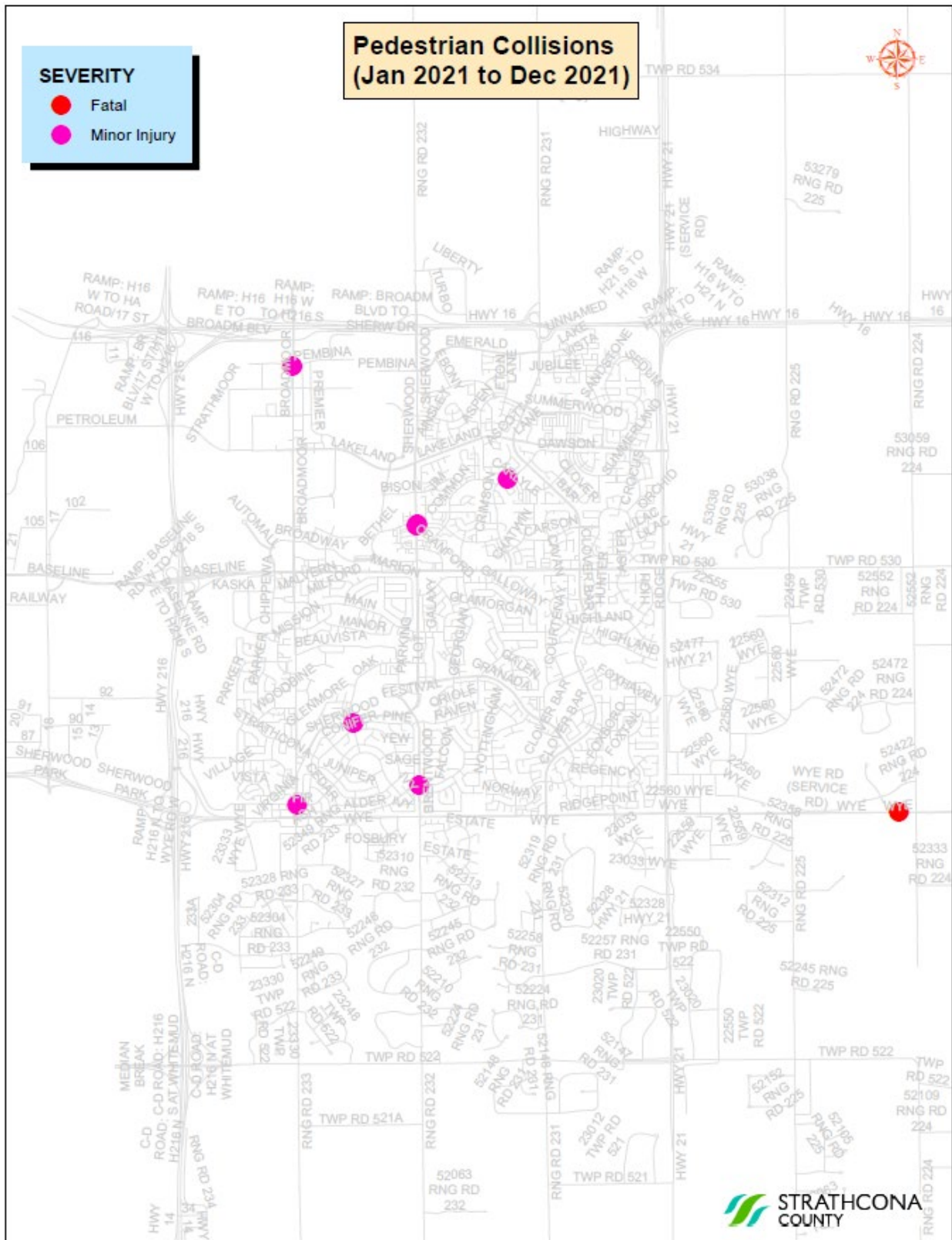
Number	Age	Sex	Severity	Location
1	11	M	Minor injury	Collector
2	12	M	Minor injury	Arterial
3	13	M	Minor injury	Arterial
4	13	F	Minor injury	Arterial
5	14	F	Minor injury	Arterial
6	31	M	Fatal	Highway
7	38	F	Minor injury	Arterial
8	48	F	Minor injury	Arterial
9	64	M	Minor injury	Arterial

Out of nine pedestrian collisions, six drivers were at fault when the driver failed to yield to the pedestrian in a crosswalk, and the Driver's prior action was unknown for one collision. The following table describes the driver actions that caused the collision.

Table 17: Drivers' prior actions – 2021 pedestrian collisions

Prior Action	Fatal	Major injury	Minor injury	Total
Driving Properly (not at fault)	1	0	1	2
Failed to Yield Pedestrian ROW*	0	0	6	6
Unknown	0	0	1	1

* Right of Way



3.10.2 Bicycle collisions

There was a total of 10 collisions involving bicycles in Strathcona County in 2021, these collisions resulted in 9 minor injuries. An increase of five additional bicycle collisions occurred in 2021 compared with 2020. There were no fatal or major injury collision in 2021.

Table 18: Bicycle collisions 2020/2021 by severity

Severity	2020	2021	Change
Fatal	0	0	-
Major injury	1	0	1 ▼
Minor injury	3	9	6 ▲
PDO	1	1	-
Total	5	10	5 ▲

Seven bicycle collision took place on arterial roads, one on a non-residential collector, and one was on a local road.

Table 19: Location of bicycle collisions – 2021

Severity	Arterial	Non-Residential Collector	Residential Collector/Local
Fatal	0	0	0
Major injury	0	0	0
Minor injury	7	1	1
PDO	1	0	0
Total	8	1	1

All bicycle collisions in 2021 were on urban area roads. Out of 10 collisions, three happened due to drivers' "failure to yield" and resulted in three minor injuries. The drivers' actions prior to the collision are summarized in Table 20 below.

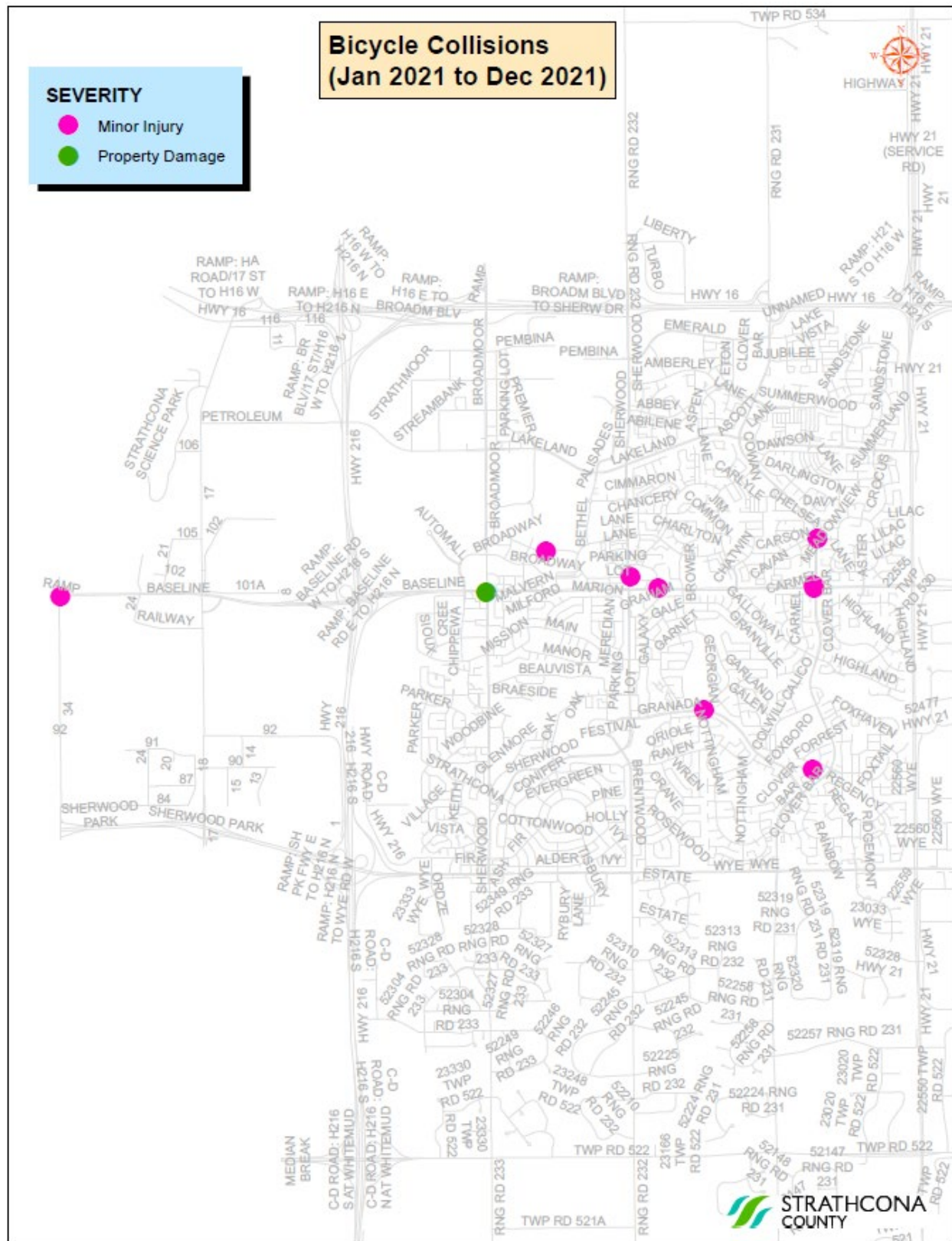
Table 20: Motor vehicle drivers' prior actions – 2021 bicycle collisions

Prior Action	Major injury	Minor injury	PDO	Total
Driving Properly (not at fault)	0	5	1	6
Failed to Yield	0	3	0	3
Unknown	0	1	0	1

Cyclist collisions involved 9 identified as males and one identified as female. 6 out of 10 were 18 years of age or under.

Table 21: Major and minor injury – 2021 bicycle collisions by age and sex

Number	Age	Sex	Severity	Location
1	6	M	Minor injury	Local
2	14	M	Minor injury	Collector
3	15	M	Minor injury	Arterial
4	15	F	Minor injury	Arterial
5	15	M	Minor injury	Arterial
6	17	M	Minor injury	Arterial
7	28	M	Minor injury	Arterial
8	42	M	Minor injury	Arterial
9	52	M	Minor injury	Arterial
10	Unknown	Unknown	Property Damage	Arterial



3.10.3 Motorcyclist collisions

There was a total of 7 motorcycle collisions in Strathcona County in 2021, resulting one major and five minor injuries. There was no fatal collisions reported in 2021.

Table 22: Motorcycle collisions 2020/2021 by severity

Severity	2020	2021	Change
Fatal	0	0	-
Major injury	0	1	1 ▲
Minor injury	4	5	1 ▲
PDO	2	1	1 ▼
Total	6	7	1 ▲

Based upon collision history, there does not appear to be any collisions contributed to by the motorcyclist prior actions. Four out of 7 were riding properly and no action was cited and in the other three collisions, no prior action is known. See table 23 below for a summary of prior actions of motorcyclists in collisions.

Table 23: Prior actions of motorcyclist contributing to collisions – 2021

Prior Action	Fatal	Major injury	Minor injury	PDO	Total
No Action	0	1	2	1	4
Unknown	0	0	3	0	3

3.11 Commercial vehicle collisions

Commercial vehicles include trucks >4500 kg, buses and tractor trailers. One out of four fatal collisions involved a commercial vehicle. Overall, the number of collisions involving a commercial vehicle decreased by 16%.

Table 24: Commercial vehicle collisions 2020/2021 by severity

Severity	2020	2021	Change
Fatal	2	1	1 ▼
Major injury	0	1	1 ▲
Minor injury	27	19	8 ▼
PDO	50	45	5 ▼
Total	79	66	13 ▼

3.12 Impaired driving collisions

Alcohol was involved in 39 collisions in 2021, including one major and 14 minor injury collisions. Overall, the number of collisions involving an impaired road user have decreased by 29%.

Table 27: Alcohol related collisions 2020/2021 by severity

Severity	2020	2021	Change
Fatal	0	0	-
Major injury	3	1	2 ▼
Minor injury	17	14	3 ▼
PDO	35	24	11 ▼
Total	55	39	16 ▼

3.13 Private property collisions

To date, the analysis conducted in the County has only considered collisions on public roads. However, approximately 26% of total reported collisions occurred on private property, including parking lots. There were 428 collisions private property collisions in 2021, including one major and 22 minor injury collisions. Most private property collisions were PDO, suggesting that they occurred at low speeds as expected in a parking lot. Of note, pedestrian collisions reported on public roads are comparable to private property collisions. This statistic suggests the need for improved pedestrian facilities for parking lots in development areas. Most of the collisions were due to unsafe backing of vehicles.

Table 28: Private property collisions 2020/2021

Severity	2020	2021	Change
Fatal	0	0	-
Major injury	2	1	1 ▼
Minor injury	34	22	12 ▼
PDO	418	405	13 ▼
Total	454	428	26 ▼
Pedestrian	11	8	3 ▼

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.