

Traffic Collision Statistics Report 2019



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**Transportation Planning and Engineering
Strathcona County**

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2019 Collision Quick Facts

- 1,783 collisions occurred on public roadways; 39% of these collisions occurred on provincial highways
- six out of seven fatal collisions occurred on provincial highways
- most collisions in Strathcona County (72%) are Property Damage Only (PDO)
- 495 injury collisions (21%) occurred on public roadways; most injury collisions were classified as 'minor', 4% of all injury collisions or 21 collisions required hospitalization
- individuals aged 25-35 were the most likely to be injured in a collision
- no major injury collision occurred on residential roads in 2019
- 39% of all collisions occurred at intersections and 8% of these occurred at a provincial highway intersection
- most (79%) fatal and major injury collisions took place on a provincial highway facility.
- Follow to closely was the most common type of driver action in 2019.
- The highest number of collisions took place in November.
- 10% of all collisions took place on a Friday between 5pm and 6pm.
- 16% of all collisions were animal related.
- An additional 638 collisions took place on private property, typically parking lots.
- As many pedestrian collisions occurred on public roads as on private property.

Collision Comparison 2018 to 2019

Collision Statistics	2018	2019	Change
All Roads Within County			
Total Collisions	1913	1783	▼
Fatal Collisions	5	7	▲
Fatalities	6	8	▲
Major Injury Collisions	21	21	-
Major Injuries	33	31	▼
Minor Injury Collisions	508	474	▼
Minor Injuries	719	667	▼
PDO Collisions	1379	1281	▼
Collisions per 1,000 population	19.45	17.94	▼
Injury Collisions* per 1,000 population	5.43	5.05	▼
Collision Injuries* per 1,000 population	7.7	7.12	▼
Pedestrian Collisions	12	10	▼
Fatal and Major Pedestrian Injuries	0	0	-
Bicycle Collisions	7	7	-
Fatal and Major Cyclist Injuries	3	1	▼
Motorcycle Collisions	22	18	▼
Fatal and Major Motorcyclist Injuries	6	8	▲
Intersection Collisions	779	689	▼
Animal Collisions	269	284	▲
Alcohol Related Collisions	55	49	▼
Commercial Vehicle Collisions	136	115	▼
County Owned Roads			
Total Collisions	1259	1090	▼
Fatal Collisions	0	1	▲
Major Injury Collisions	10	5	▼
Minor Injury Collisions	343	289	▼
PDO Collisions	906	795	▼
Injury Collisions* per 1,000 population	3.59	2.97	▼

*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, 2019 to December 31, 2019 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

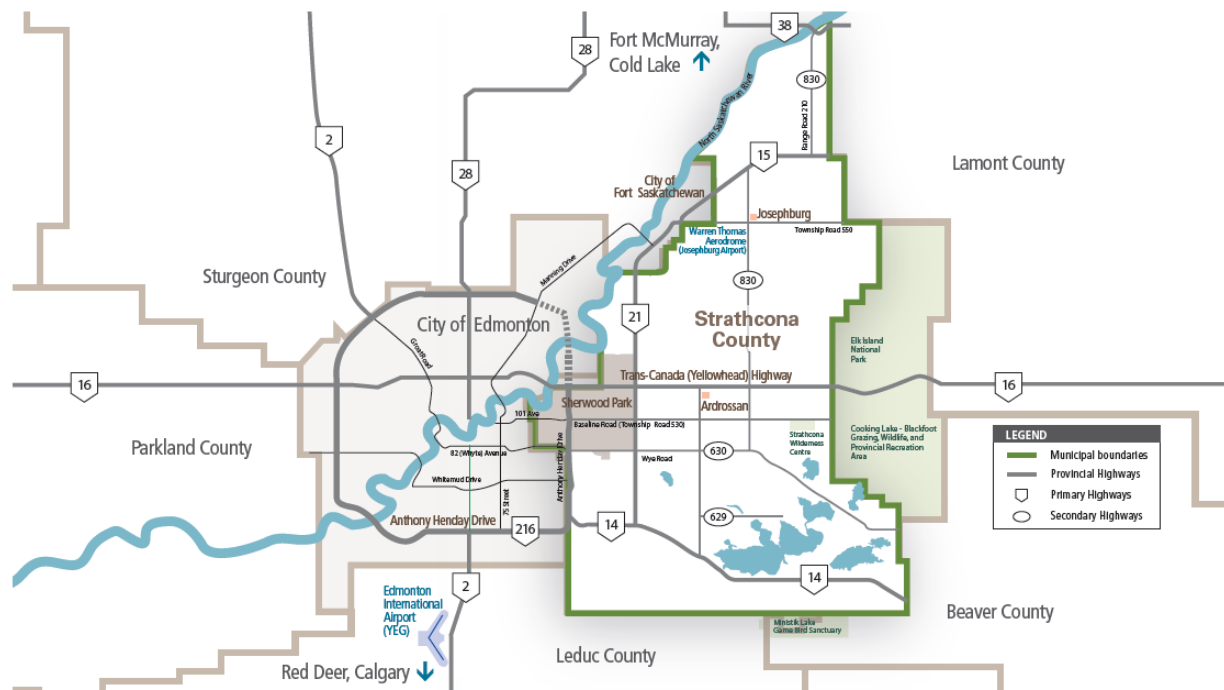
Agricultural	87,502 hectares
Industrial	9,052 hectares
Commercial	2,078 hectares
Residential	18,542 hectares
Urban village*	66 hectares
Park/recreation/natural	3,701 hectares
Other: airports, water bodies, roads, road rights-of-way	5,679 hectares

* 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



1.2.2 Roadway Network

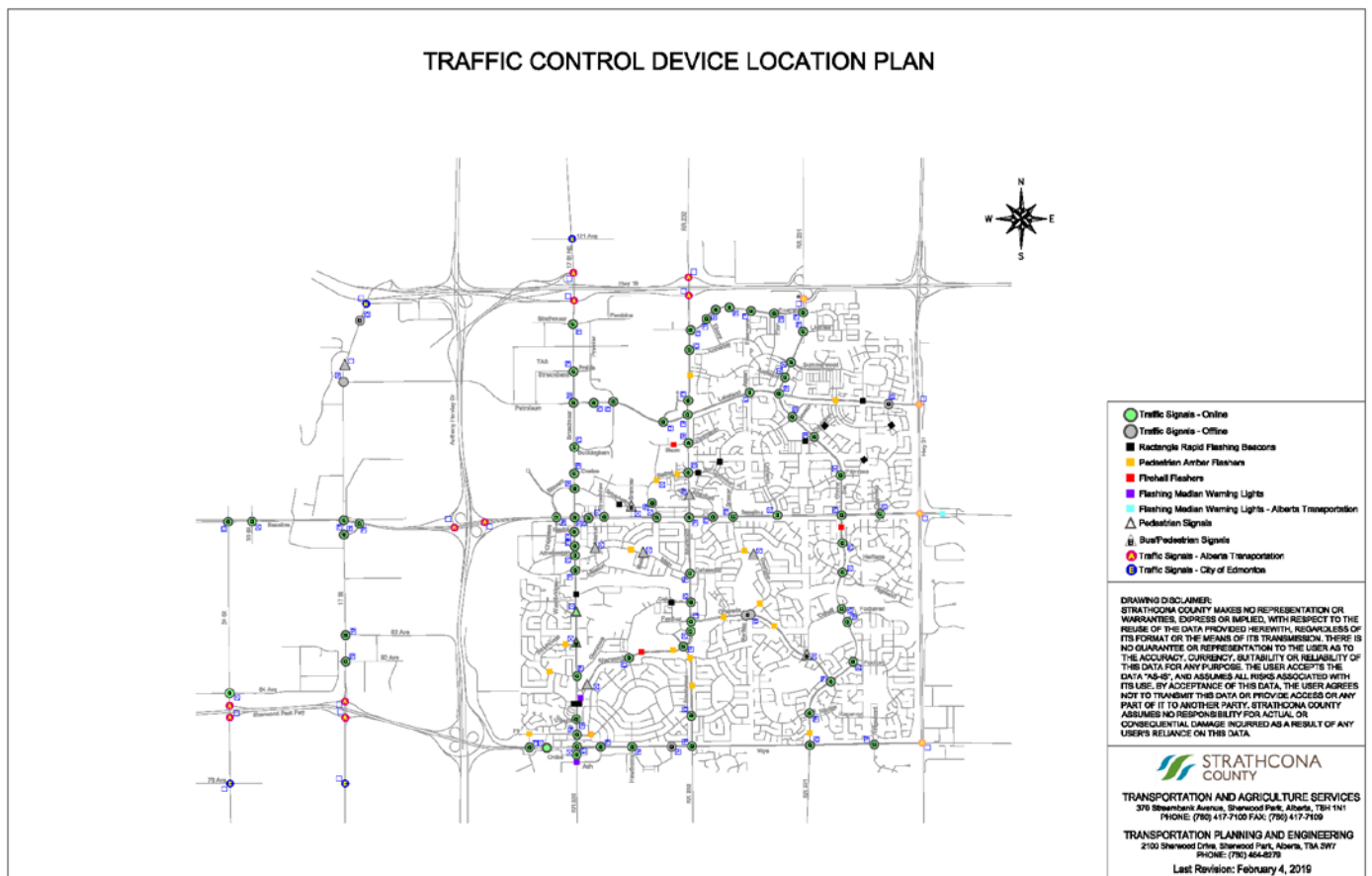
There are 1,955 km of public roadways in Strathcona County, including:

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

1.2.3 Traffic Signals

Strathcona County operates approximately 115 signalized devices. There are also four signals operated by the City of Edmonton on the 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% 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 7:30am 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.

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 2010-2019, 36% and 27%, 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 fluctuated slightly each year with a slowly increasing trend over time. The frequency of major injury collisions rose sharply in 2015-2017 but dropped significantly in 2018 and remained low in 2019. 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
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	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

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

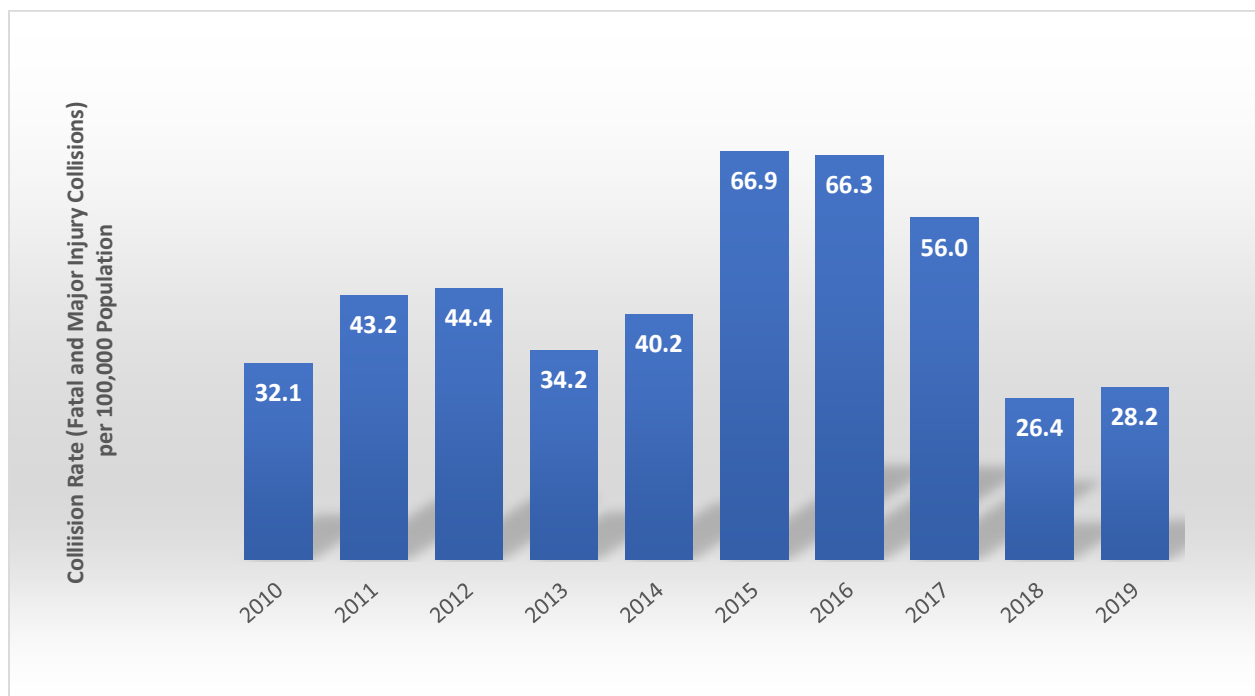
Table 6: Collision Rates per 100,000 Population on All Roads Within the County

Year	Fatal	Major*	Minor**	PDO***	Total
2010	3.3	28.8	432.2	2027.8	2492.1
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

*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 (2010-2019)



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
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
2018	0	10	343	906	1259
2019	1	5	289	795	1090

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

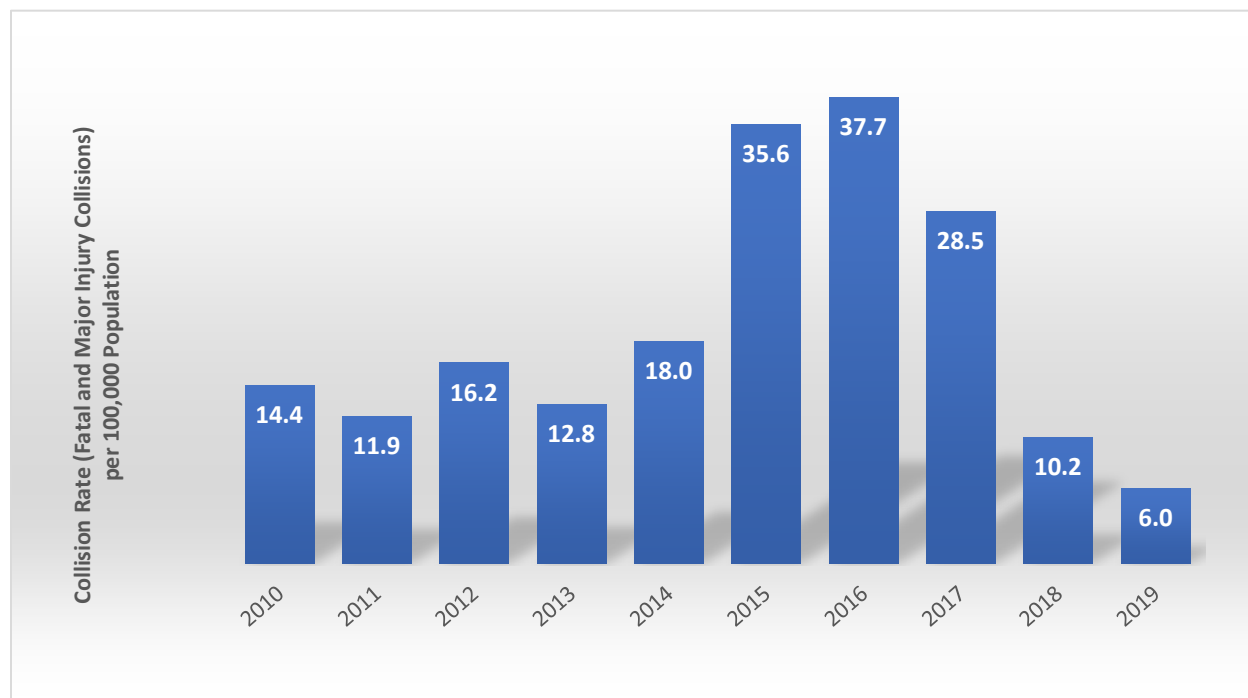
Collision rates in all categories show a decreasing trend between 2010 to 2019 on County maintained roads. The major injury collision rate rose sharply in 2015, peaked in 2016, and has declined to date, with 2019 reporting the lowest major injury collision rate in at least 10 years.

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

Year	Fatal	Major*	Minor**	PDO***	Total
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
2018	0.0	10.2	348.6	920.9	1279.7
2019	1.0	5.0	290.8	800.1	1097.0

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

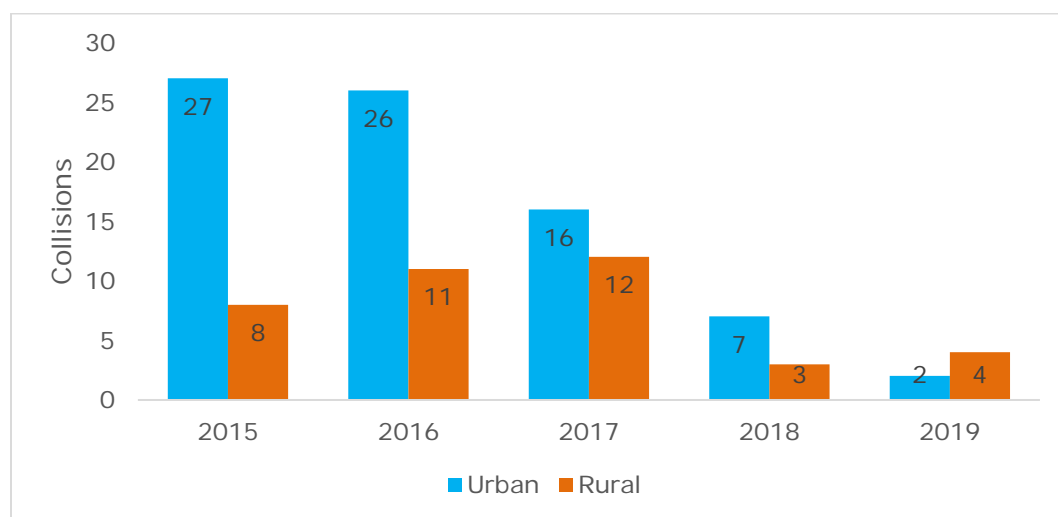
Figure 4: Collision Rates for Fatal/Major Injuries Combined–County Owned Roads (2010-2019)



2.3 County Owned Rural vs Urban Collision Trends

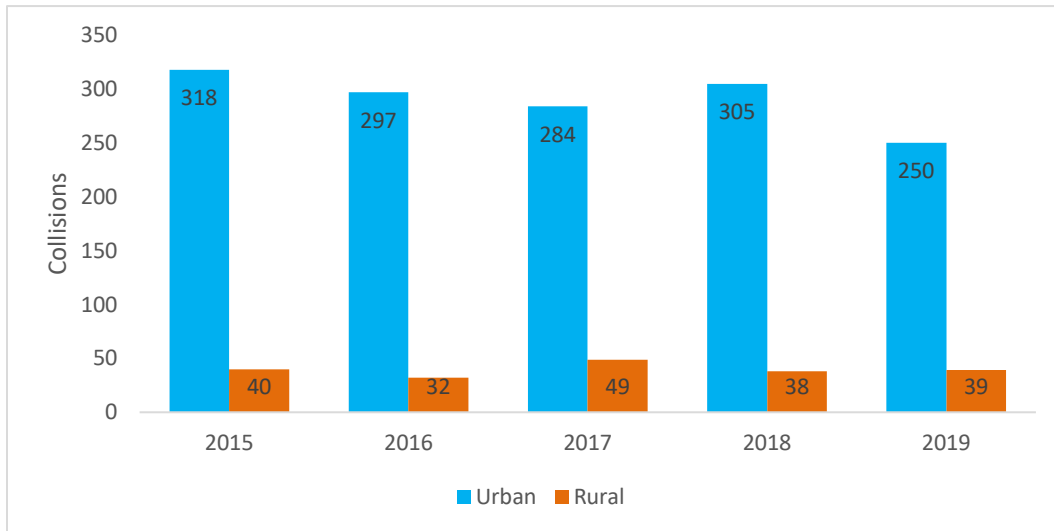
Over the last five years, the frequency of fatal and major injury collisions has declined consistently in the urban area, accounting for the majority of the collision reduction. Fatal and major injury collisions in the rural area have been decreasing for the past two years.

Figure 5: Fatal and Major Collisions Urban vs Rural County Owned Roads (2015-2019)



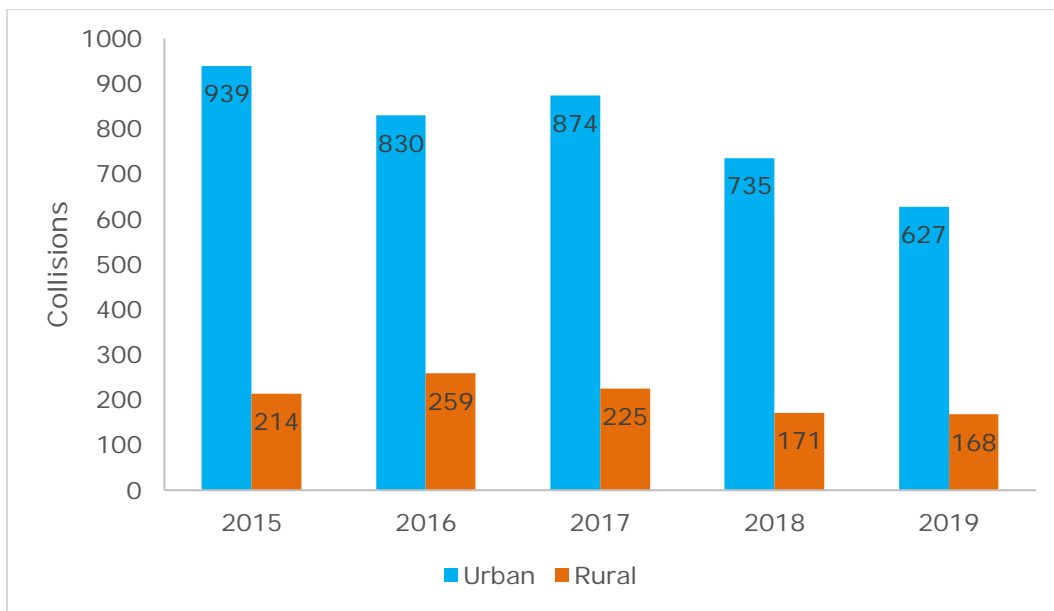
Minor injury collisions have remained relatively constant over the last 5 years in the rural area. Minor injury collisions in the urban area were reduced in 2019 compared to last four years.

Figure 6: Minor Injury Collisions Urban vs Rural County Owned Roads (2015-2019)



Since 2015, there has been a steady downward trend in PDO collisions, in the urban area, particularly in the past two years. Similarly, in the rural area, the past two years have seen a substantial drop in collisions compared to previous years.

Figure 7: PDO Collisions Urban vs Rural County Owned Roads (2015-2019)



2.4 Provincial Highway Collisions

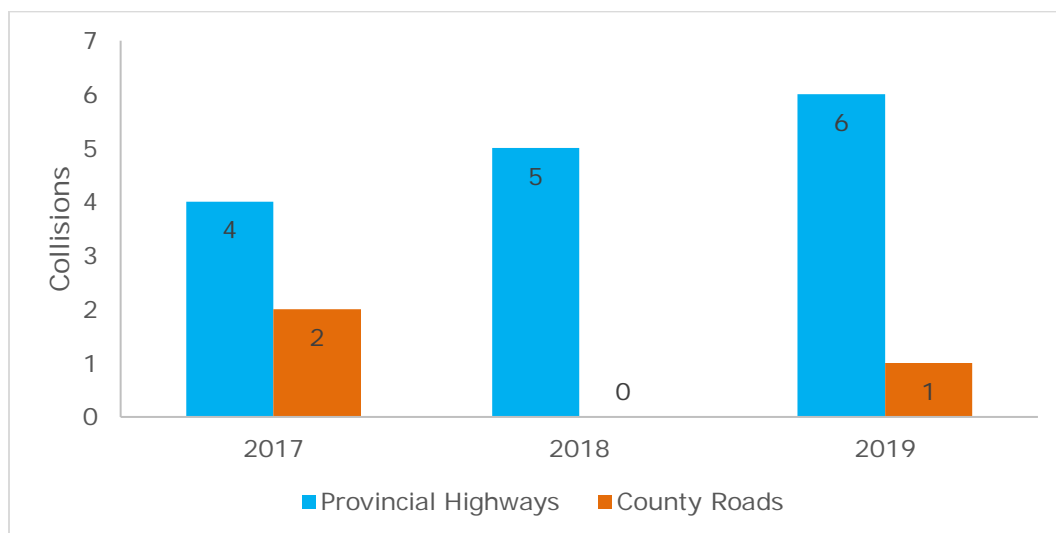
Alberta Transportation operates 225 kilometres of provincial highways within Strathcona County. Many of these provincial highways are freeways, which tend to have the lowest collision rate of any transportation facility. However, because of the high speeds that freeways are operated at, any collisions 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 2019, six out of the seven fatal collisions occurred on highways.

Table 9: Provincial Highway collisions (2017-2019)

Year	Fatal	Major	Minor	PDO	Total
2017	4	23	134	547	708
2018	5	11	165	473	654
2019	6	16	185	486	693

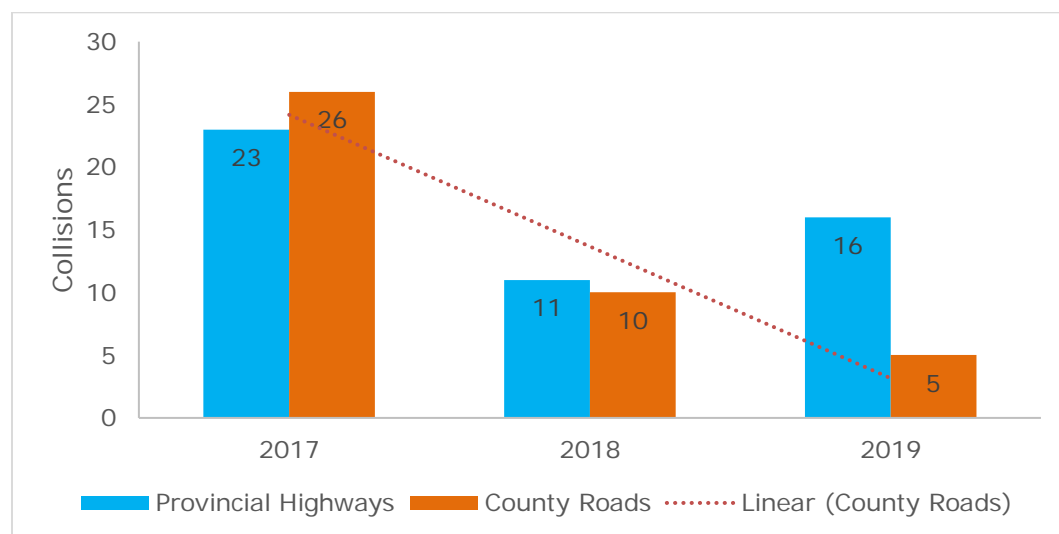
A significant number of major injury collisions also tend to take place on the highways. On provincial highways in the County, up to 30% of all serious collisions will result in a fatality. Figure 8 and 9 shows comparison of fatal and major injury collisions on provincial highways vs county roads. Collision 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 (2017-2019)



There is a consistent downward trend of frequency of major injury collisions for the last three years, shown in figure 9. During the same time period, major injury collisions on highways dropped in 2018 and increased in 2019.

Figure 9: Major Injury collisions – Provincial Highways vs County Roads (2017-2019)



3.3 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 seven fatal and 21 major injury collisions occurred in Strathcona County in 2019.

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 2019 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 12 out of 28 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.

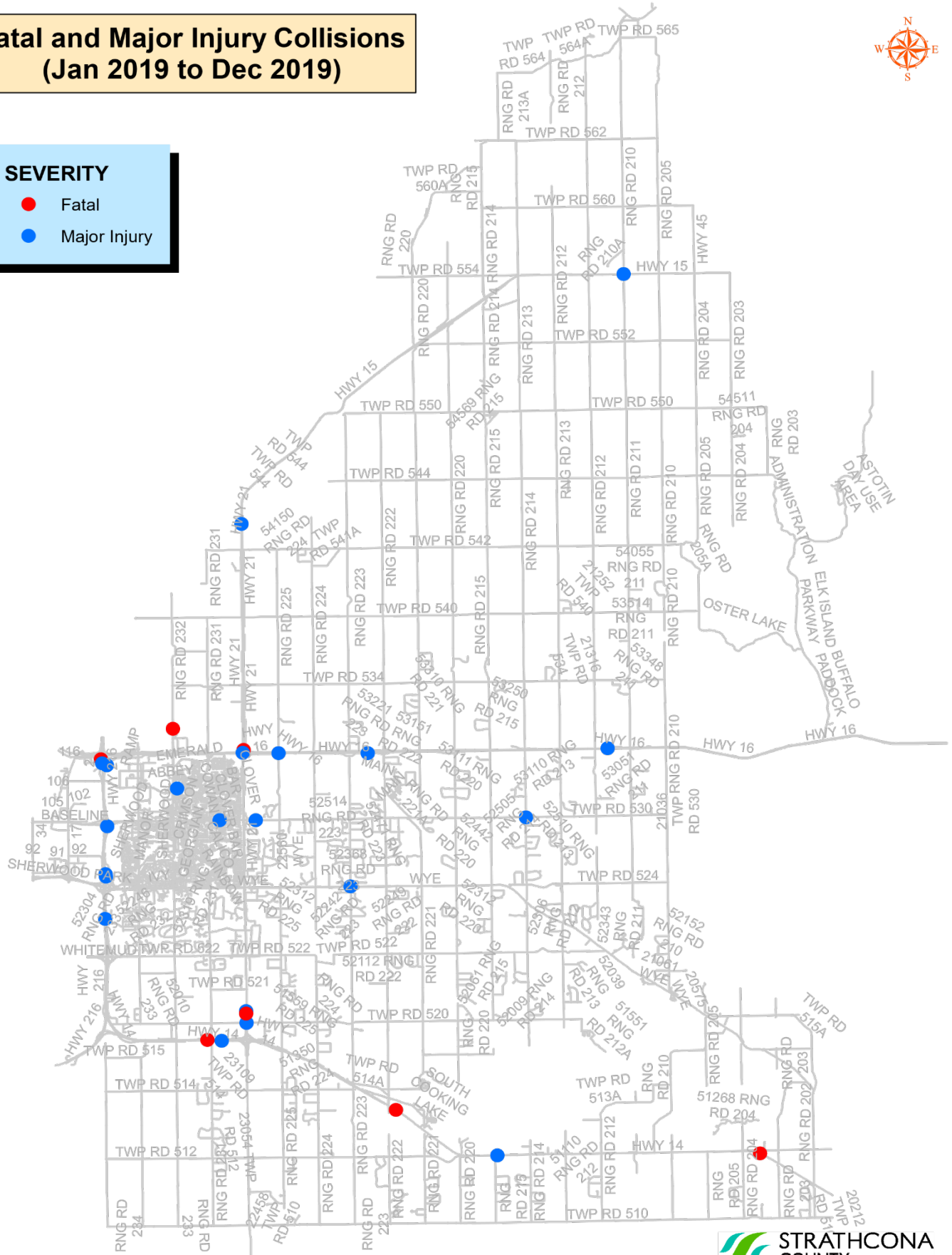
Detailed analysis of these collisions is included throughout the report, as a deeper understanding of the events and conditions that resulted in fatal and major injury collisions is important to help determine the most appropriate engineering, education, enforcement or engagement related countermeasure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

Fatal and Major Injury Collisions (Jan 2019 to Dec 2019)



SEVERITY

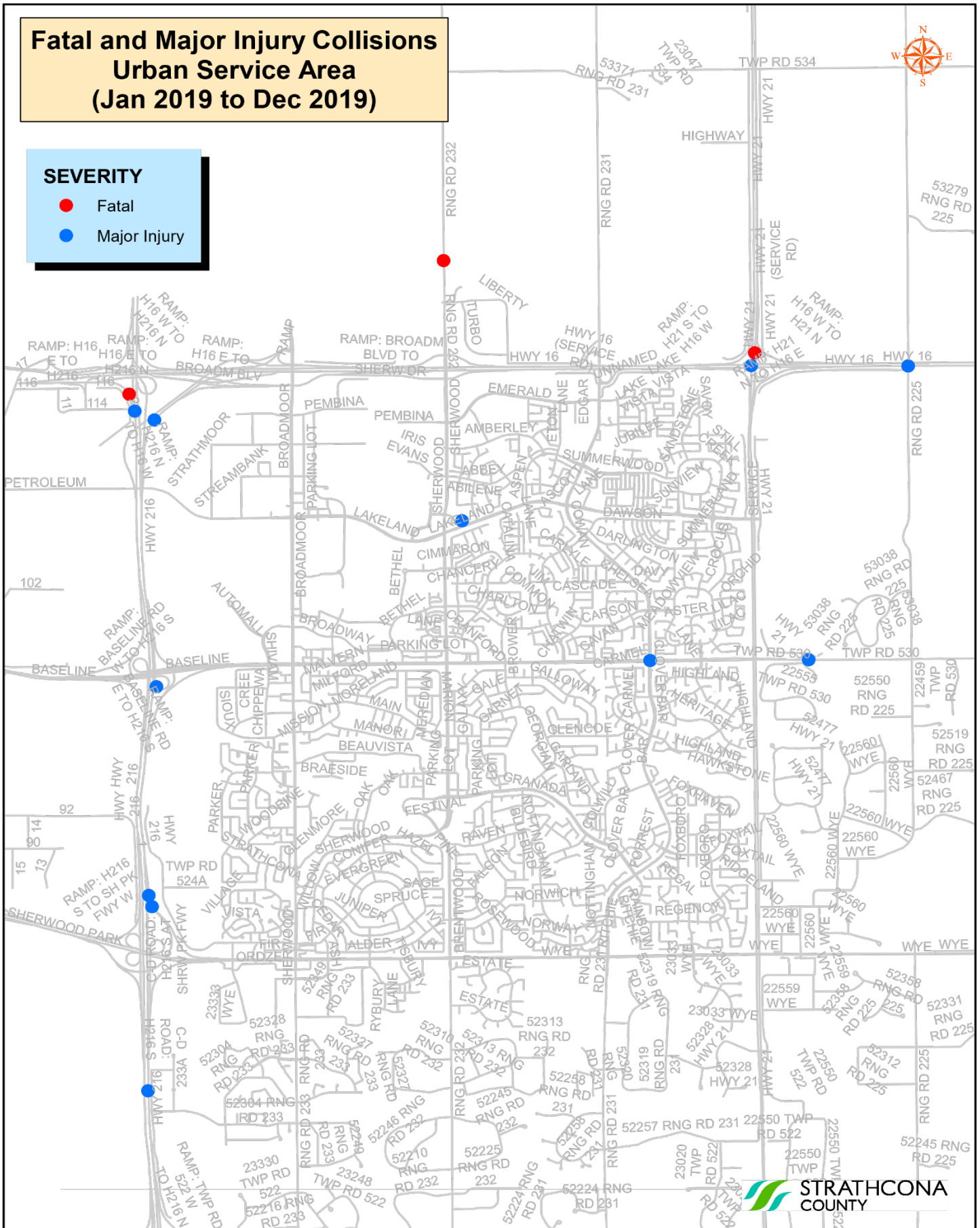
- Fatal
- Major Injury



Fatal and Major Injury Collisions Urban Service Area (Jan 2019 to Dec 2019)

SEVERITY

- Fatal
- Major Injury



3.4 Drivers' Prior Action

Followed Too Closely was the most common prior action of drivers involved in collisions in 2019.

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

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

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

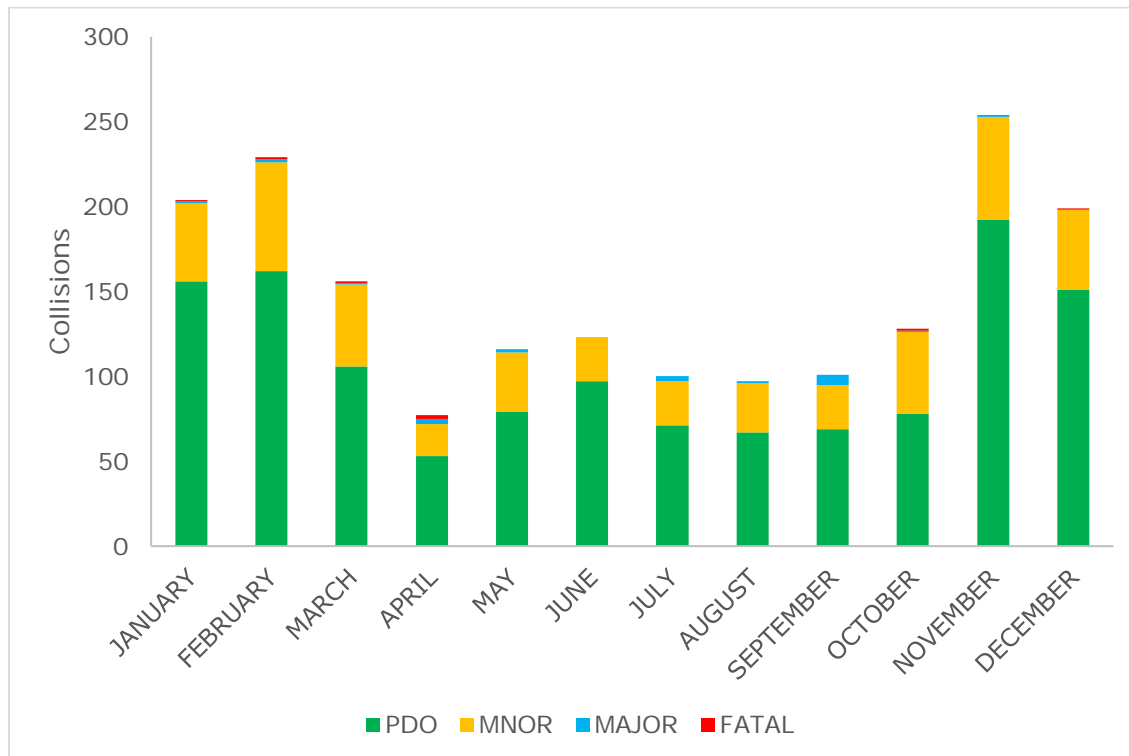
Side Impact (T-Bone, left turn across path, right angle) collisions are the most serious collision type for vehicle occupants, as major injury or death is increasingly likely for speeds greater than 50 km/h. Not surprisingly, the causes of injury collisions were more likely to be 90-degree side impact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

3.5 Temporal Analysis

Month

The highest number of fatal and major injury collisions occurred in September 2019. Minor injury and PDO collisions were most common in November 2019. Generally, PDO collisions were high in the winter months and lowest in the summer.

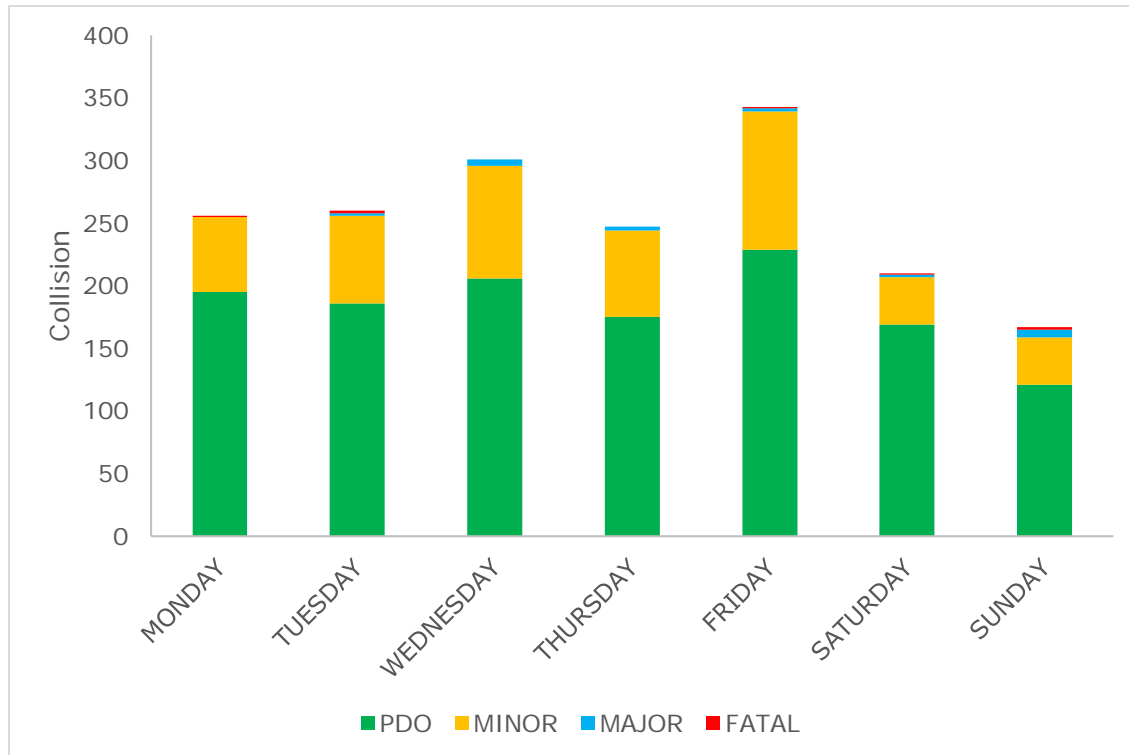
Figure 10: Collisions severity by Month - 2019



Day of the Week

Sunday was the most common day of the week for fatal and major injury collisions in 2019. Highest number of minor injury and PDO collisions occurred on Friday.

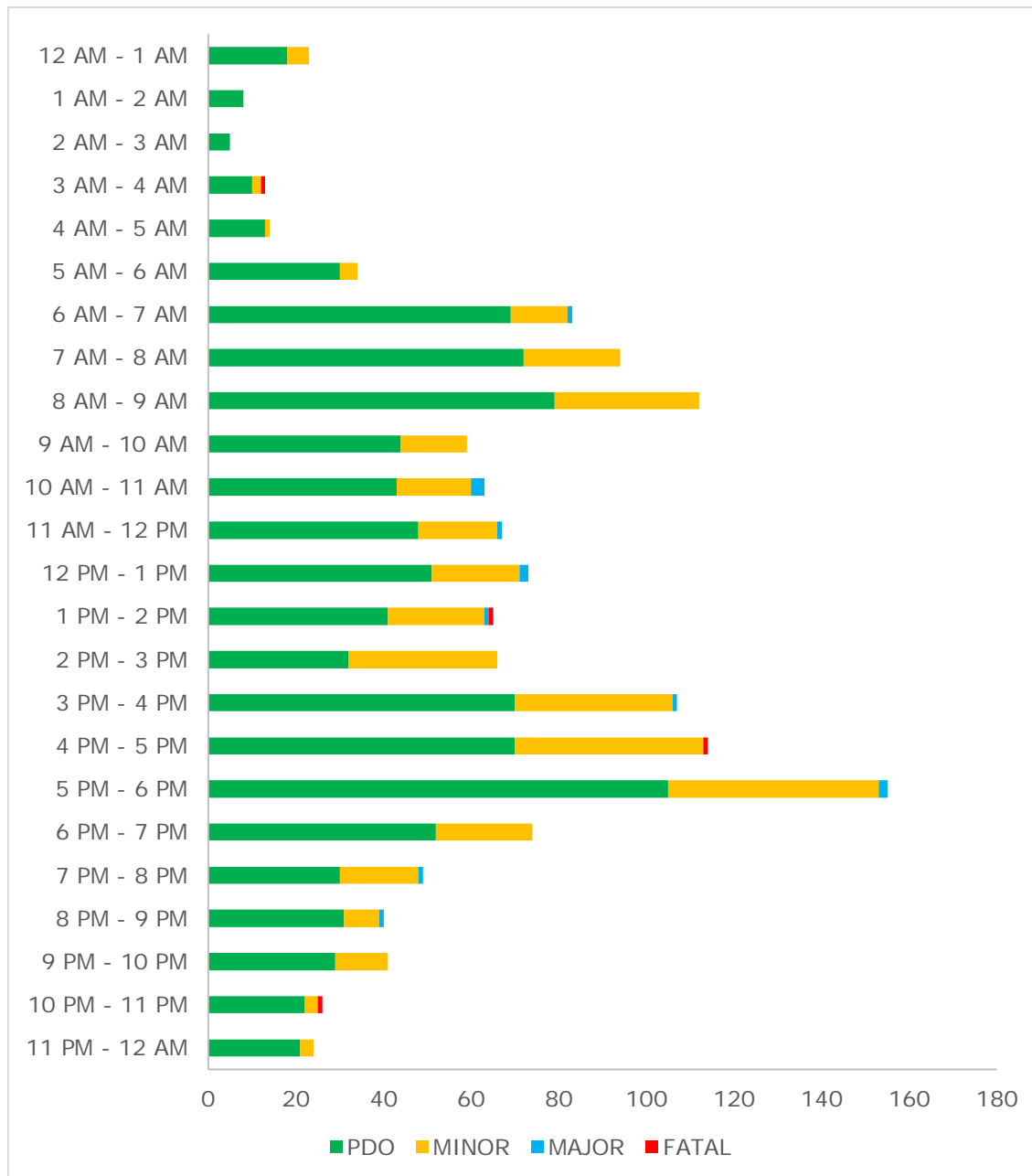
Figure 11: Fatal and Major Injury collisions by Day of the Week - 2019



Time of Day

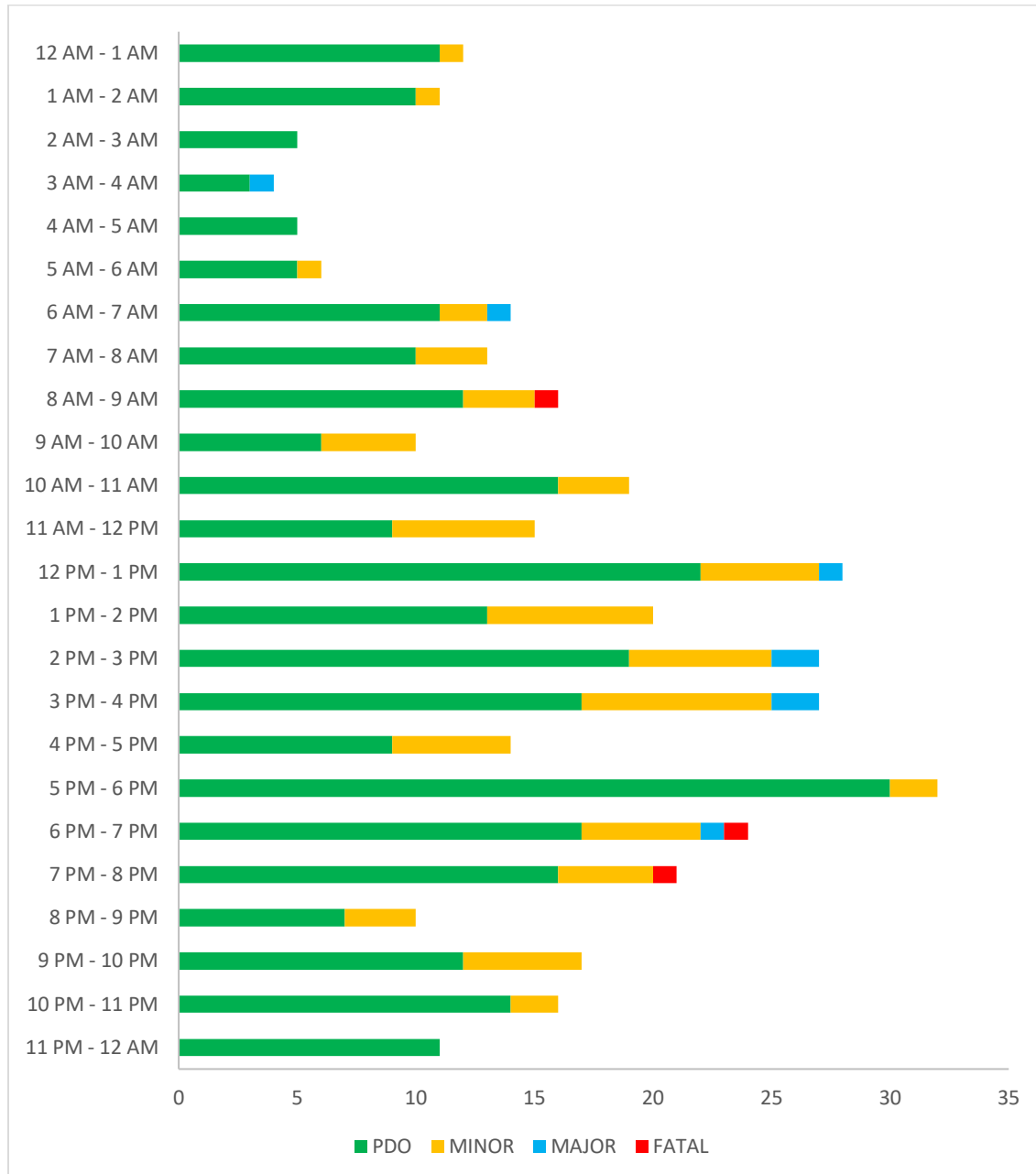
On weekdays, fatal and major injury collisions were mainly occurred around noon time, and during afternoon peak hours. Minor injury and PDO collisions were highest in the afternoon peak, with a less marked increase during the morning peak hours.

Figure 12: Collisions by Time of Day – 2019 (Weekdays)



On weekends, collisions generally peak in the early afternoon. This is most marked with injury collisions, which are most likely to occur between 3:00 and 4:00 pm.

Figure 13: Collisions by Time of Day – 2019 (Weekends)



3.6 Intersection-Related Collisions

In 2019, 39 percent of the collisions in Strathcona County were intersection-related. Generally, intersection-related collisions were less severe than non-intersection collisions in 2019.

Figure 14: Fatal and Major injury collisions - 2019

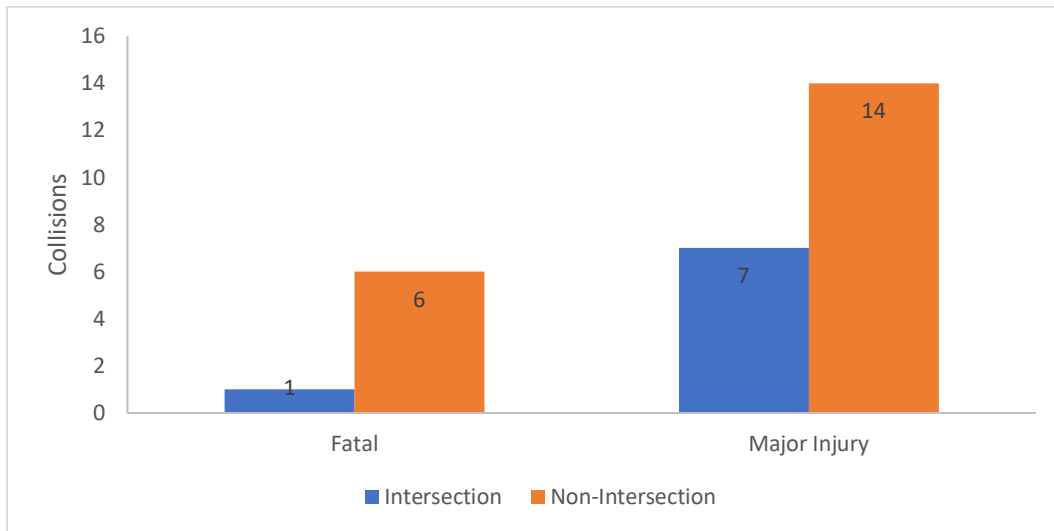
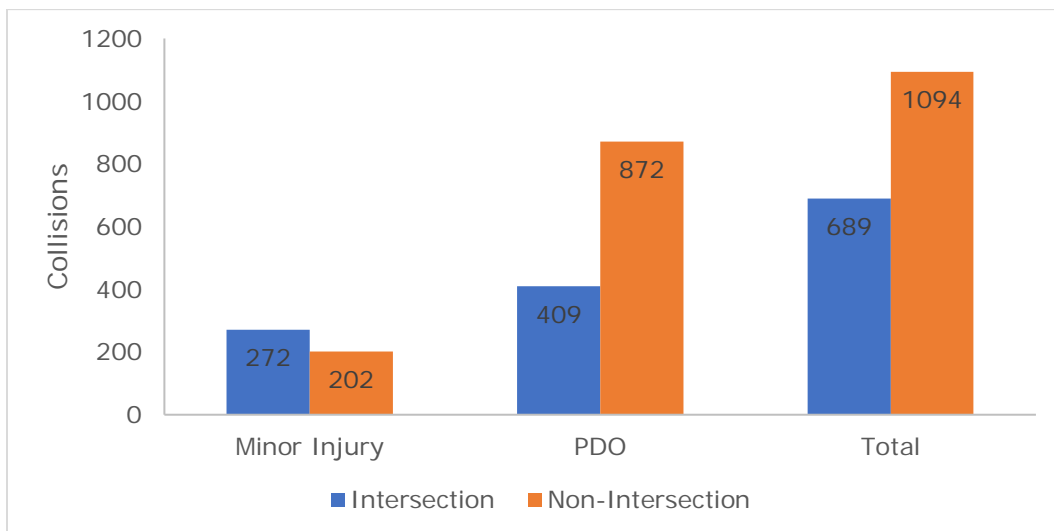


Figure 15: Minor Injury, PDO and Total Collisions - 2019



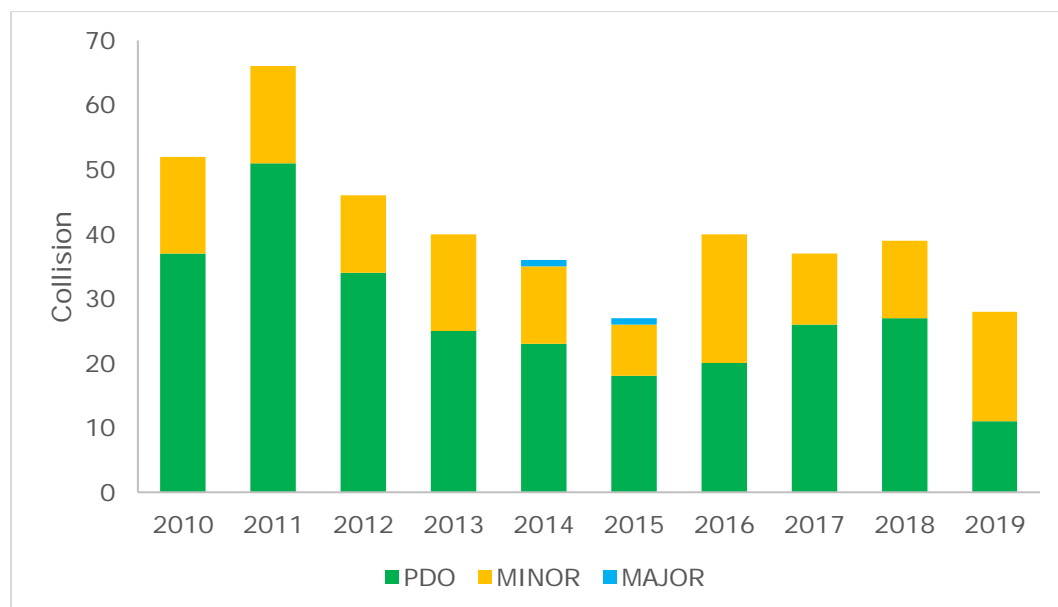
3.6.1 Intersection Rankings by Frequency

Intersections were ranked based on the greatest number of total collisions in last 10 years (2010-2019) 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 411 collisions in last 10 years. There were two major injury collisions (four major injuries), 137 minor injury collisions (188 minor injuries) and 272 property damage only collisions. The majority of the collisions were rear end, averaging 73 percent 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 (2010-2019)



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.

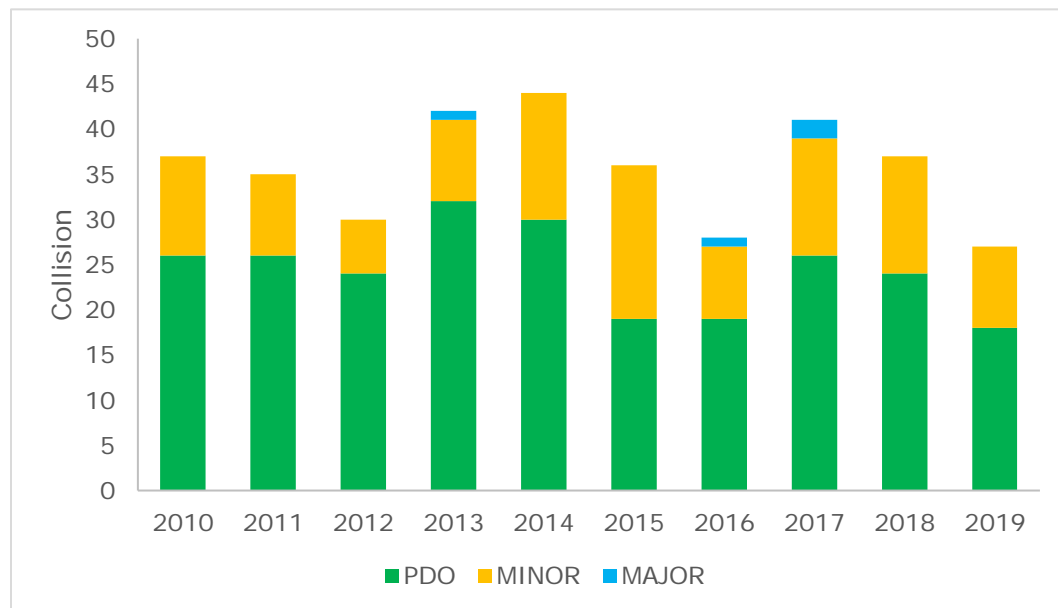
Collision data by type shows a significant decrease is in the rear end incidents. This may be due to better road maintenance, improved traffic signal coordination and newer vehicle technologies such as collision avoidance system.

Left turn across path (LTXP) were 11 percent and sideswipe same direction were 8 percent of the total collisions being the second and third highest collision type. Unlike rear ends, there is no significant decrease in LTXP and sideswipe same direction collisions during the same time period. 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 357 collisions in last 10 years. There were four major injury collisions (four major injuries), 109 minor injury collisions (144 minor injuries) and 244 property damage only collisions. Similar to the Baseline Road and Broadmoor Boulevard intersection, the majority of the collisions were rear end, averaging at 74 percent 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 (2010-2019)

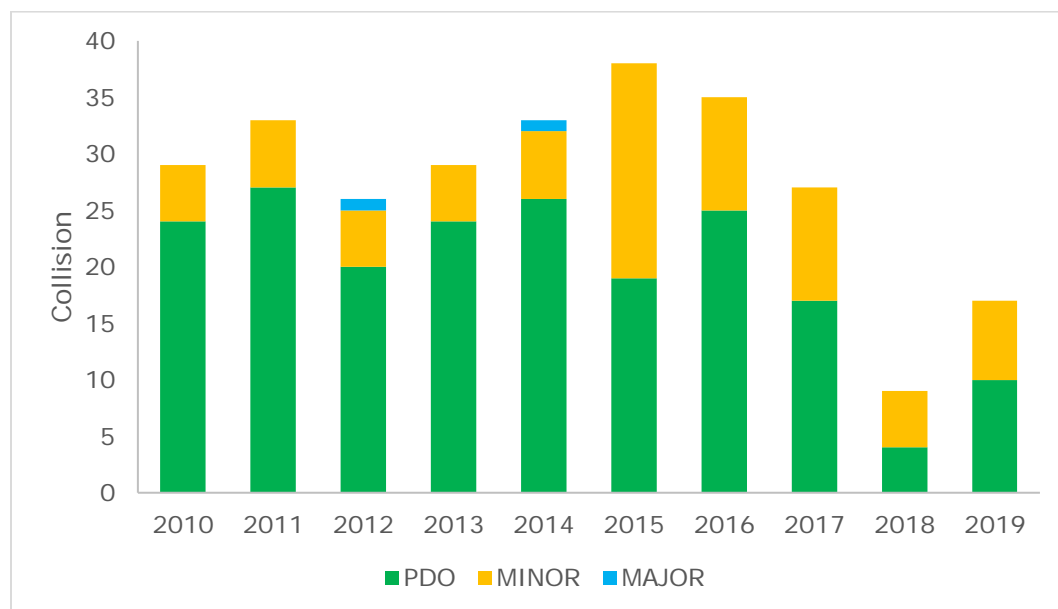


This intersection is the second highest volume location in the County with an average weekday traffic count of 64,200 vehicles per day (2018). From Figure 17, there is slight decrease in the collision frequency, mainly in the rear end and LTXP collisions. Minor injury collisions are consistent and show no significant change during the same time period.

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

This intersection has experienced 276 collisions in last 10 years. There were two major injury collisions (two major injuries), 78 minor injury collisions (106 minor injuries) and 196 property damage only collisions. Rear end collision average was 54 percent and sideswipe same direction were 34 percent of the total collisions.

Figure 18: Sherwood Drive/Broadmoor Boulevard Collision history (2010-2019)



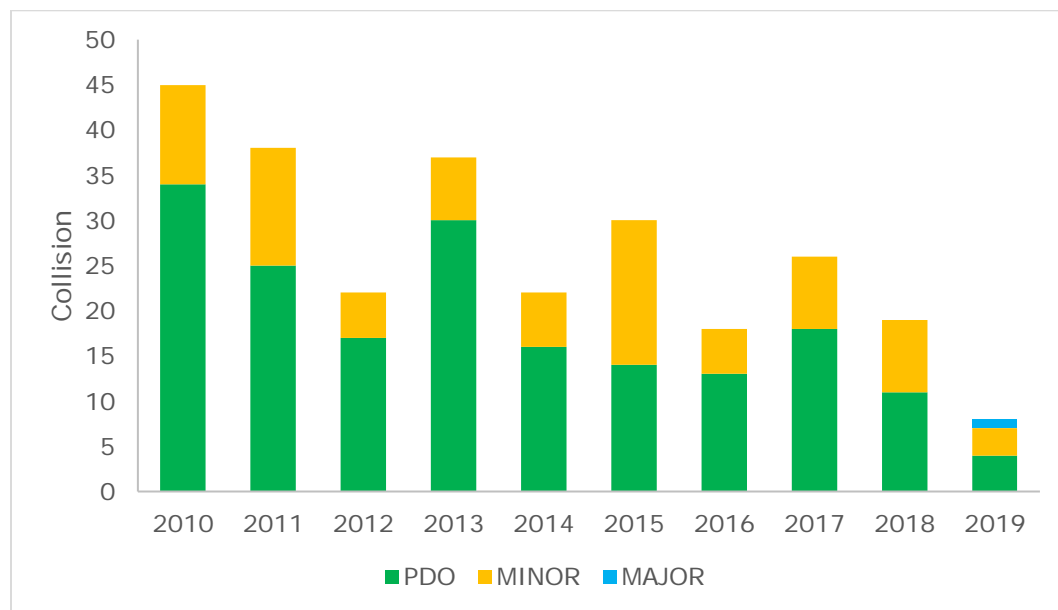
Average weekday traffic is 28,400 vehicles per day. Figure 18 shows a decreasing trend in the frequency of overall collisions. There have been no major injury collisions at this location since 2015. Property damage only collisions have dropped significantly, but the frequency of minor injury collisions 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 265 collisions in last 10 years. There was one major injury collision (one major injury) at this location in 2019, 82 minor injury collisions (106 minor injuries) and 182 property damage only collisions. Rear end collisions account for an average of 60 percent and LTXP for 17 percent of the total collisions.

Figure 19: Baseline Road/Clover Bar Road Collision history (2010-2019)



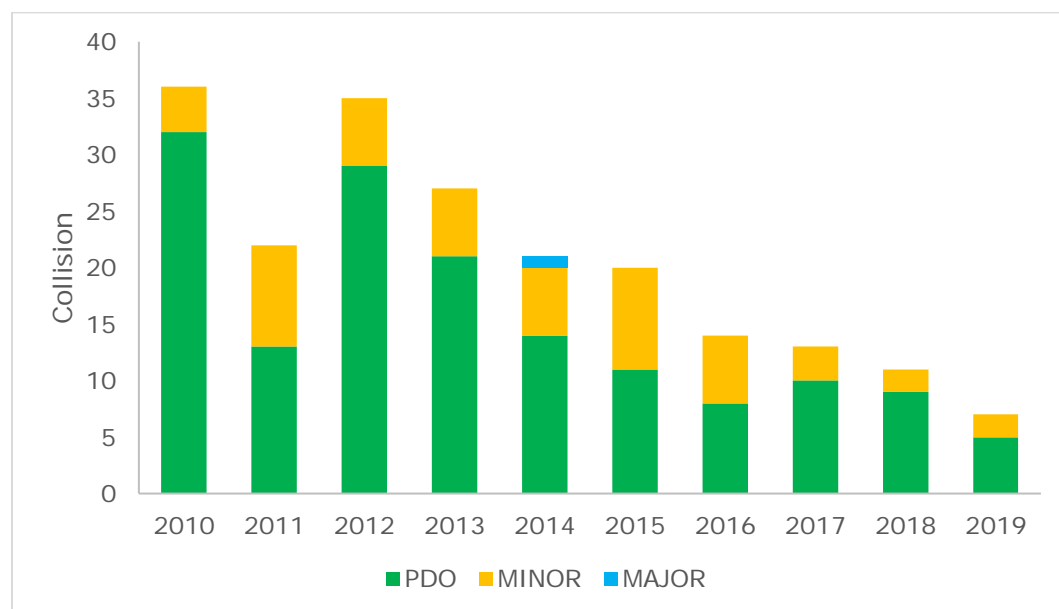
This intersection is also the fourth highest traffic volume location in the County with average weekday traffic of 47,200 vehicles per day (2018). Figure 19 shows a decreasing trend in the frequency of overall collisions. Both the minor injury and property damage only collision dropped recent years.

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 206 collisions in last 10 years. There was one major injury collision (one major injury) at this location in 2014, 53 minor injury collisions (77 minor injuries) and 152 property damage only collisions. Rear end collisions account for an average of 39 percent and LTXP for 30 percent of the total collisions.

Figure 20: Wye Road/Sherwood Drive Collision history (2010-2019)



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.

3.6.2 Intersection ranking by collision rates

Intersections were also ranked based on the collisions per million entering vehicles. Normalizing for traffic volumes reveals which intersections are experiencing collisions out of proportion to traffic volumes. In 2019, three out of the top ten intersections had at least one leg that was a provincial highway.

Table 11: Top 10 Intersections by collision rates of 1 Million entering vehicles 2019

Rank	Intersection		Collisions	Volume	Collision Rate/MEV
1	Hwy 16 EB Ramp	Broadmoor Boulevard	27	25,500	2.90
2	HWY 16 WB Ramp	Broadmoor Boulevard	9	15,000	1.64
3	Sherwood Drive	Broadmoor Boulevard	17	28,400	1.64
4	Highway 630	Highway 824	5	9,200	1.49
5	Fir Street	Sherwood Drive	19	37,400	1.39
6	Township Road 530	Range Road 222	3	6,100	1.35
7	Lakeland Drive	Premier Way	4	8,400	1.30
8	Baseline Road	Broadmoor Boulevard	28	66,200	1.16
9	Baseline Road	Sherwood Drive	27	64,600	1.15
10	Baseline Road	Shivam Boulevard	17	40,400	1.15

3.7 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 reported in last three years on neighbourhood roads. 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 12 shows the location of fatal and major injury collisions. Majority of the collisions were on highways in both 2018 and 2019.

Table 12: Major Injury and Fatal Collisions 2018/2019 by location

Road Type	2018		2019	
	Fatal	Major	Fatal	Major
Residential Collectors/Locals	0	0	0	0
Arterials	0	10	1	5
Highways	5	11	6	16

3.8 Animal Collisions

In 2019, 16% of all reported collisions were animal related. Most animal collisions are not serious for vehicle occupants, with 91% of those reported causing only property damage. Overall, there was a 6% increase in the number of animal collisions from 2018 to 2019.

Table 13: 2018/2019 Animal Collisions in Strathcona County

Severity	2018	2019	Change
Fatal	0	1	1 ▲
Major Injury	0	0	-
Minor Injury	26	24	2 ▼
PDO	243	258	15 ▲
Total	269	284	15 ▲

3.9 Demographics

Individuals aged 25-34 were the most likely to be injured in a motor vehicle collision in 2019. Of the five individuals sustaining major injuries who were 18 and under, three were passengers, one was driver and one was motorcyclist.

Table 14: Fatalities and Injuries as a Result of 2019 Collisions by Age

Age Group	Fatal	Major	Minor	Total
0-5	0	0	1	1
6-11	0	0	19	19
12-15	0	1	7	8
16-18	0	4	47	51
19-24	0	1	68	69
25-34	2	1	131	134
35-44	0	5	109	114
45-54	1	7	81	89
55-64	0	7	86	93
65-74	3	2	35	40
75+	0	1	9	10
Unknown	2	2	74	78
Total	8	31	667	706

Eight fatalities include three male drivers, one female driver, three female passengers, and one motorcyclist.

Table 15: Fatalities and Injuries as a Result of 2019 Collisions by Gender

Gender	Fatal	Major	Minor	Total
Female	4	11	378	393
Male	4	19	289	312
Unknown	0	1	0	1

3.10 Vulnerable Road User Collisions

3.10.1 Pedestrian Collisions

There was a total of 10 pedestrian collisions in Strathcona County in 2019, resulting in 12 minor injuries. Five collisions occurred at intersection locations and others were at midblock locations.

Table 16: Pedestrian Collisions 2018 and 2019 by Severity

Severity	2018	2019	Change
Fatal	0	0	-
Major	0	0	-
Minor	10	10	-
PDO	2	0	2 ▼
Total	12	10	2 ▼

Three pedestrian collisions took place on the County's arterial roads, and six happened on collector roads in residential area. There is one pedestrian collision reported on highways in 2019.

Table 17: Location of Pedestrian Collisions – 2019

Severity	Highway	Arterial	Collector	
			Residential	Non-Residential
Fatal	0	0	0	0
Major	0	0	0	0
Minor	1	3	4	2
PDO	0	0	0	0
Total	1	3	4	2

Seven out of 10 pedestrians were male, and five pedestrians were under 18 years of age and one was senior.

Table 18: Minor injuries as a Result Pedestrian Collisions by Age and Gender – 2019

Number	Age	Gender	Severity	Location
1	10	F	Minor	Collector
2	13	M	Minor	Collector
3	16	F	Minor	Arterial
4	17	F	Minor	Arterial
5	17	M	Minor	Collector
6	18	M	Minor	Arterial
7	19	M	Minor	Collector
8	26	M	Minor	Collector
9	51	M	Minor	Hwy
10	65	M	Minor	Collector

Majority of the pedestrian collisions occurred in 2019 were deemed to be the fault of drivers and three collisions occurred when pedestrians were crossing without road right of way and stuck by the vehicle. Following table describe the driver actions that caused the collision. Seventy percent of the pedestrian collisions were due to drivers' fault.

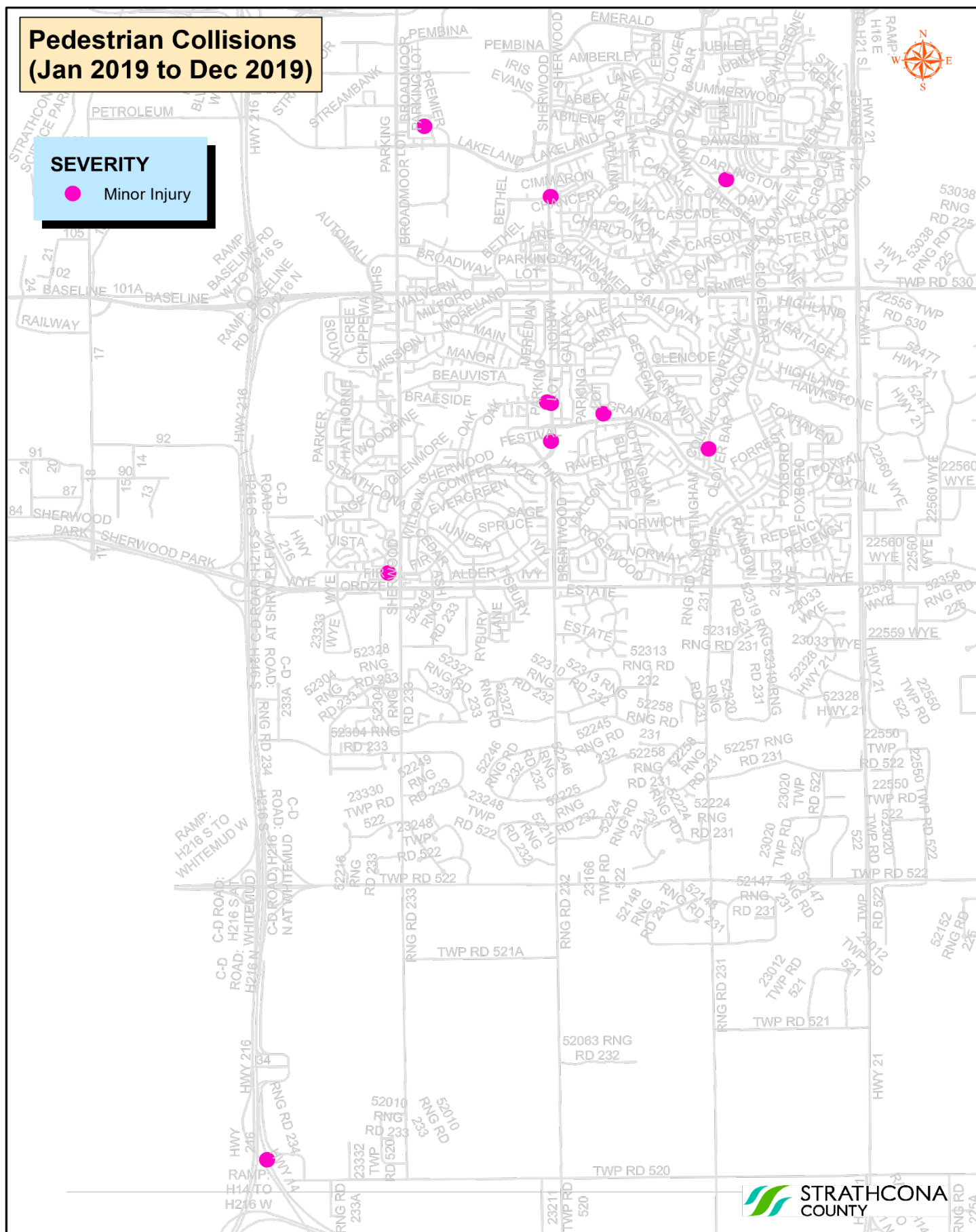
Table 19: Drivers' Prior Actions – 2019 Pedestrian Collisions

Prior Action	Major	Minor	PDO	Total
Driving Properly (not at fault)	0	3	0	3
Failed to Yield Pedestrian ROW	0	5	0	5
Run Off Road	0	1	0	1
Stop Sign Violation	0	1	0	1

Pedestrian Collisions (Jan 2019 to Dec 2019)

SEVERITY

Minor Injury



3.10.2 Bicycle Collisions

There was a total of seven bicycle collisions in Strathcona County in 2019, resulting in one major and five minor injuries.

Table 20: Bicycle Collisions 2018/2019 by Severity

Severity	2018	2019	Change
Fatal	0	0	-
Major	3	1	-
Minor	3	5	2 ▲
PDO	0	1	1 ▲
Total	6	7	1 ▲

Four bicycle collisions took place on the County's arterial roads, two on non-residential collectors and one on a residential local road. Cyclist collisions involved five males and two females. One seven-year-old was involved in a collision. All other cyclists involved in collisions were adults.

Table 21: Location of Bicycle Collisions - 2019

Severity	Arterial	Non-Residential Collector	Local
Fatal	0	0	0
Major	1	0	0
Minor	3	1	1
PDO	0	1	0
Total	4	2	1

Rural area road has one major injury collision, and all other bicycle collisions were on urban area roads. All bicycle collisions in 2019 were the fault of the motor vehicle driver; the drivers' actions prior to the collision and that contributed to the collision are summarized in Table 22.

Table 22: Motor Vehicle Drivers' Prior Actions – 2019 Bicycle Collisions

Prior Action	Major	Minor	PDO	Total
Failed to Yield	1	0	1	2
Followed Too Closely	0	1	0	1
Hit and Run	0	1	0	1
Stop Sign Violation	1	1	0	2
Yield Sign Violation	0	1	0	1

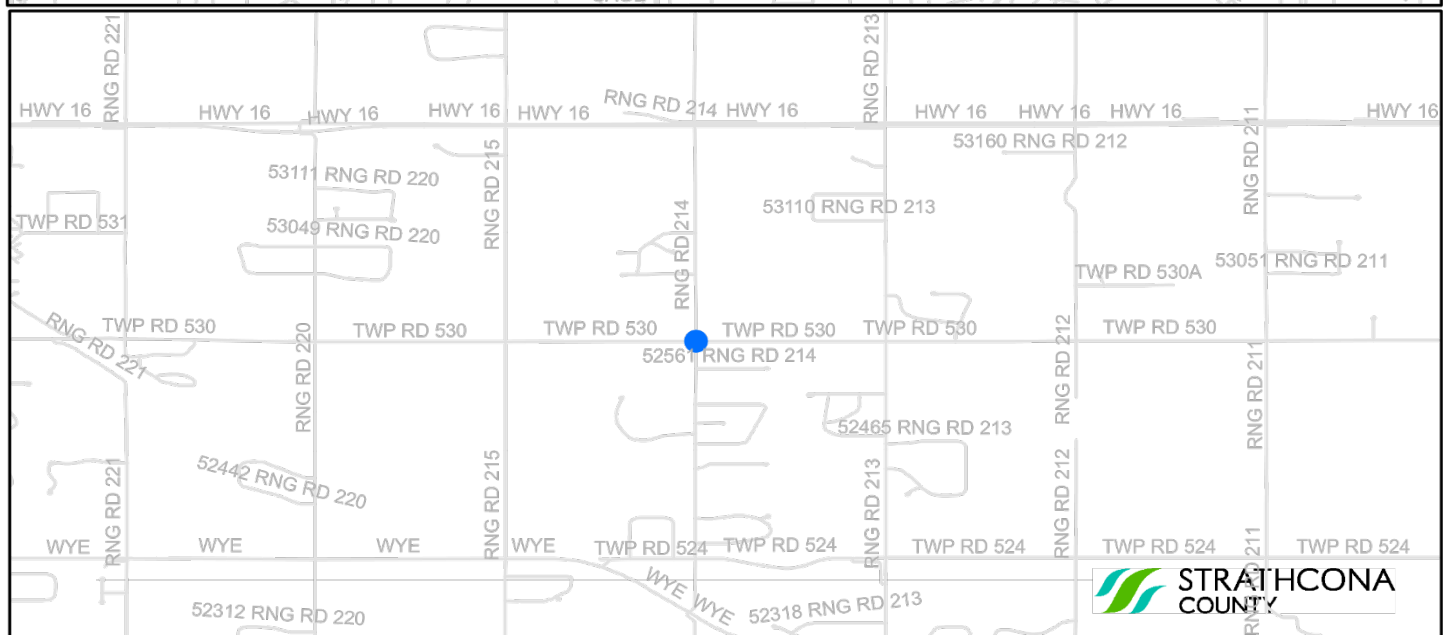
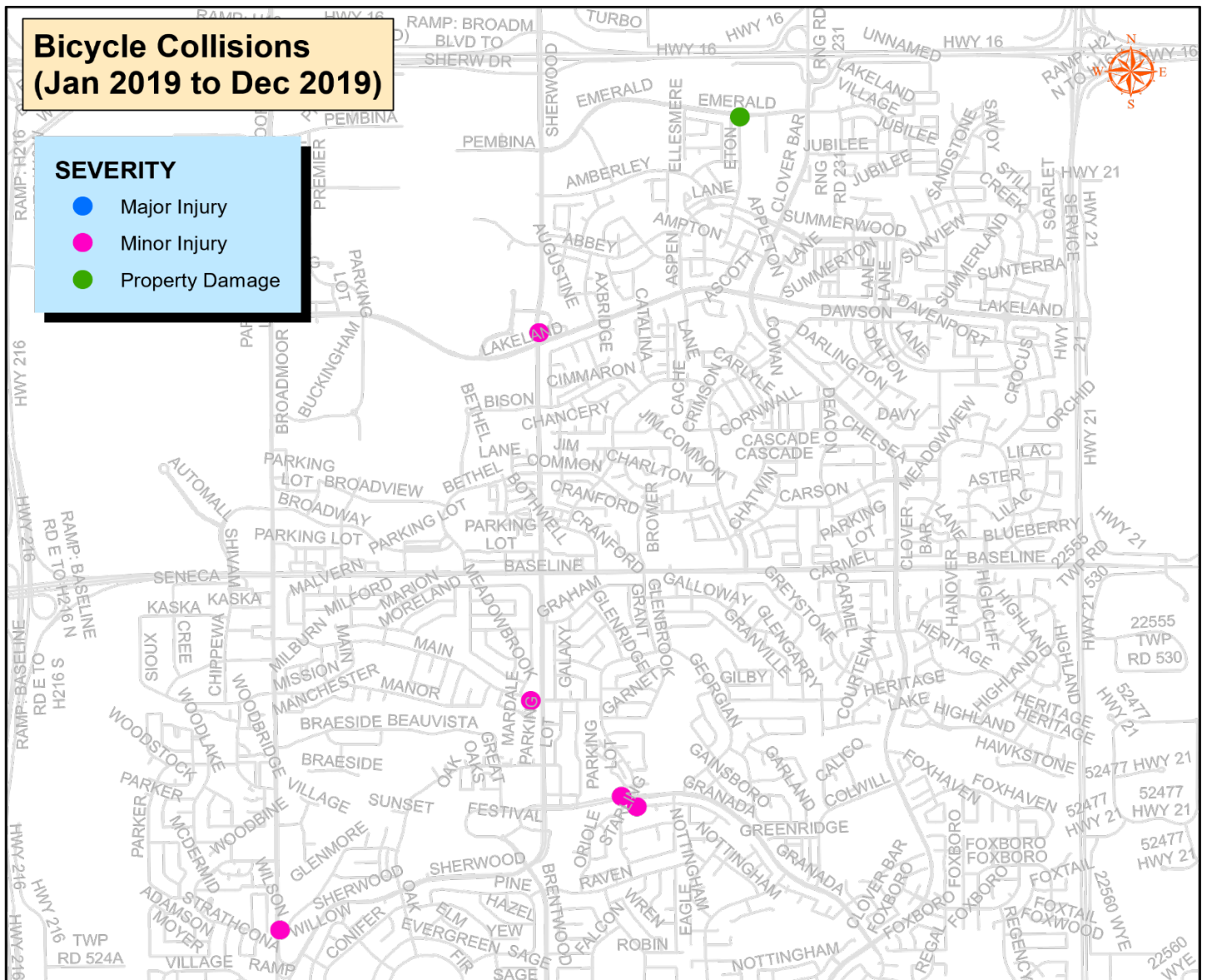
Table 23: Major and Minor injuries as a Result of 2019 Bicycle Collisions by Age and Gender

Number	Age	Gender	Severity	Location
1	7	M	Minor	Local
2	19	M	Minor	Arterial
3	21	M	Minor	Arterial
4	24	F	None	Collector
5	25	F	Minor	Collector
6	50	M	Minor	Arterial
7	53	M	Major	Arterial

Bicycle Collisions (Jan 2019 to Dec 2019)

SEVERITY

- Major Injury
- Minor Injury
- Property Damage



3.10.3 Motorcyclist Collisions

There was a total of 18 motorcycle collisions in Strathcona County in 2019, resulting in one fatality, seven major injuries and six minor injuries. Major injury collisions increased by 17 percent and overall collisions reduced by 18 percent in compared to 2018 data.

Table 24: Motorcycle Collisions 2018/2019 by Severity

Severity	2018	2019	Change
Fatal	0	1	1 ▲
Major	6	7	1 ▲
Minor	13	5	8 ▼
PDO	3	5	2 ▲
Total	22	18	4 ▼

Of the 18 motorcycle collisions in 2019, ten were deemed to have been precipitated by some action that the motorcyclist took, as summarized in Table 31.

Table 25: Prior actions of Motorcyclist contributing to collisions – 2019

Prior Action	Fatal	Major	Minor	PDO	Total
Driving Properly (not at fault)	0	3	3	2	8
Followed Too Closely	0	0	1	0	1
Ran-Off-Road	0	2	0	1	3
Lost Control	1	2	1	2	6

3.11 Commercial Vehicle Collisions

Commercial vehicles include trucks >4500 kg, buses and tractor trailers. Three out of seven fatal collisions, and two out of 21 major injury collisions involved a commercial vehicle.

Table 26: Commercial Vehicle Collisions 2018/2019 by Severity

Severity	2018	2019	Change
Fatal	2	3	1 ▲
Major	2	2	-
Minor	33	36	3 ▲
PDO	99	74	15 ▼
Total	136	115	21 ▼

3.12 Impaired Driving Collisions

Alcohol was involved in 49 collisions in 2019, including two major and 16 minor injury collisions. Overall, the number of collisions involving an impaired road user were reduced by 11%

Table 27: Alcohol related collisions 2018/2019 by Severity

Severity	2018	2019	Change
Fatal	0	0	-
Major	3	2	1 ▼
Minor	16	18	2 ▲
PDO	36	29	7 ▼
Total	55	49	6 ▼

3.13 Private Property Collisions

So far, the analysis has only considered collisions on public roads. However, a third as many collisions are on private property, including parking lots. There were 638 collisions in 2019, including one major and 39 minor injury collisions on private property. Most private property collisions were PDO, suggesting that they occurred at low speeds. Of note, almost as many pedestrian collisions occurred on private property as on public roads in the County in 2019. 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. Seven were pedestrian collisions, resulting in one major and five minor injury collisions.

Table 28: Private property collisions 2018/2019

Severity	2018	2019	Change
Fatal	0	0	-
Major	1	1	-
Minor	33	39	6 ▲
PDO	738	598	140 ▼
Total	772	638	134 ▼
Pedestrian	8	7	1 ▼

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.