



COLLISION STATISTICS 2016



2016 Red Deer Annual Motor Vehicle Collision Report

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LEGAL NOTE

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Glossary of Terms

Collisions	RCMP-reported collisions occurring on public roadways, alleys and public parking lots within the City of Red Deer’s jurisdiction. Only those collisions are reported by public which result in a minimum of \$2,000 property damage or which result in injury or fatality. The collision must include at least one (1) motor vehicle. Non-vehicular collisions are not included in this report.
Public Roadway Collisions	Include all collisions occurred on any road or street within the City of Red Deer jurisdiction
Parking Lots Collisions	Include all collisions occurred on parking lots only within the City of Red Deer jurisdiction
Injury	Injuries noted by police on the collision report form. Injuries are classified as minor (scrapes, bruises, complaint of pain) or major (result in admission to hospital).
Fatality	On-scene fatalities, as well as those fatalities occurring within 30 days and which are related to the collision.
Automobile	Cars, trucks, and vans under 4,500 kilograms.
Truck	Tractor-trailers, trucks, and vans 4,500 kilograms and over.
Intersection	Defined as extending 10 metres past the legally defined limits of the outer crosswalk lines of an intersecting roadway.
Midblock	A section of roadway between two intersections.

Introduction

Engineering Services Department maintains a database of motor vehicle collisions that occur on public roads, alleys, and public parking lots within the City of Red Deer's jurisdiction. The information contained in the database for collisions that occurred prior to January 1, 2012 are obtained from the provincial Collision Report Forms completed by members of The Red Deer RCMP Detachment, and reflects reported collisions that result in property damage as well as any collision resulting in a minor, major, or fatal injury. All reported collisions that occurred from January 1, 2012 onward are received digitally from the Province of Alberta and stored in the Engineering Services database of motor vehicle collisions,

This report presents summary data on collisions that occurred from January 1 to December 31, 2016. It also provides the historical collisions and general statistics of 2014 and 2015 for comparison purpose. The collisions data includes a variety of collisions characteristics such as top 10 locations with the most collisions, date and time, age, driver condition and safety equipment used, etc.

This report was prepared based on the collision data received by Engineering Services Department from Alberta Transportation as of April 20, 2017. Statistics in this report do not include collisions that occurred in public parking lots and Unknown locations.

Significance of Collisions Statistics

The collision data is used to develop, establish, and implement systems for managing road safety. There are many major road safety-related tasks which can not be initiated without collision data, such as:

- Developing road safety projects and programs such as education, enforcement, and communication campaigns;
- Identifying and investigating hazardous road safety situations and establishing counter-measures and priorities to correct the identified hazards or potential hazards;
- Identifying safety needs of special user groups, such as older drivers, pedestrians, bicyclists, motorcyclists, and commercial vehicles;
- Facilitating budget planning; and
- Determining collision reduction targets and hence developing road safety action plan targets.

Overview of Collision Statistics

Public Roadway Collisions: In 2016, there were 2,208 reported motor vehicle collisions on public roadways in Red Deer. This figure is lower than 2015 which has 2,309 reported collisions on public roadways.

While 2016 saw a population decrease of 0.97 percent over 2015, collisions per 1,000 population also decreased from 23 to 22.

In 2016, public roadway collisions per 1,000 registered vehicles have remained the same at 25 in comparison to 2015.

In 2016, public roadway collisions (Intersection, Midblock, and Alley) have decreased by 3.59 percent compared to 2015 figure.

In 2016, approximately 65.8 percent of the public roadway collisions occurred at intersections which is more than the percentage of public roadway collisions occurred at intersections in 2014 and 2015.

Injuries: In 2016 there were a total of 230 reported minor and major injuries; this is an approximate decrease of 5.74 percent over the 244 injuries reported in 2015. The 244 reported injuries in 2015 is an approximate decrease of 22.29 percent when compared to the 314 reported injuries reported in 2014.

Fatalities: There were two road fatalities in 2016, compared to two in 2015 and five in 2014.

Pedestrians: In 2016 there were 23 reported pedestrian collisions resulting in 17 injuries and 1 fatality. In 2015 there were 25 pedestrian collisions resulting in 22 injuries. In 2014 there were 31 reported pedestrian collisions resulting in 27 injuries. Of the 25 pedestrian collisions in 2016, 9 pedestrians were recorded as crossing the road with the right of way, and 6 pedestrians were recorded as crossing the road without the right of way.

Bicyclists: In 2016, bicycle collisions and bicycle injuries have increased. There were 14, 18, and 33 bicycle collisions in 2014, 2015 and 2016 respectively. These collisions resulted in 9, 11 and 25 bicyclist injuries recorded in 2014, 2015 and 2016 respectively.

Month: In 2016, January was the leading month with approximately 10 percent (223 in total) of public roadway collisions; while August experienced the least number approximately 6.5 percent (144 in total). See Figure 4.

Day: In 2016, Friday had the highest percentage of collisions with 17.88 percent, while Sunday was the lowest with about 9.05 percent. See Figure 5.

Hour: Each of the hours from 1601 to 1700 and 1701 to 1800 accounted for about 8.19 percent of all public roadway collisions, while the hour from 0301 to 0400 accounted for less than half percent. The periods of time with the highest number of collisions were from 1601 to 1700 on weekdays and 1401 to 1500 on weekends. See Figure 6 and Figure 7.

Types of Collisions: The most common collision type was “Rear-End” seen in 33.69 percent of all public roadway collisions. “Struck Object” were the second most common types with approximately 17.02 percent. The percentage of “Struck Object” collision has decreased in comparison to 2015. The percentage of “Rear-End” collision types have also decreased in comparison to 2015. The percentage of “Struck Object” and “Rear-End” collisions in 2015 were approximately 22.13 percent and 33.86 percent. The most frequently recorded improper driving actions in collisions occurring on public roadways in 2016 was “Followed Too Closely”

Road Surface: 25.4 percent collisions occurred when the road surface was covered with “Slush/Snow/Ice” and 66.98 percent collisions occurred when the road surface was dry.

Age: The age group with the highest number of collisions was “25-34” accounting for 19.99% of all 2016 collisions on public roadway. The same age group accounted for the highest percentage of collisions in 2014 and 2015. The second highest age group involved in a collision was “35-44” accounting for 16.32% in 2016. The “35-44” was also the second highest age group involved in collisions in 2014 and 2015.

Alcohol: In 2016, 48 drivers/pedestrians involved in collisions were impaired by alcohol while 43 drivers/pedestrians involved in collisions were impaired by alcohol in 2015. There were no injuries and fatalities due to alcohol-related collisions in 2016.

Restraint Usage: In 2016, there were 24 drivers and 3 passengers involved in public roadway collisions recorded without wearing restraining devices which resulted in five injuries.

Motor Vehicle Types: Passenger cars were involved in over 32 percent of public roadway collisions in 2016 while pick-up trucks represented 23.78 percent and minivans about 28.48 percent.

Parking lots and Unknown locations Collisions: in 2016, there were 1205 reported collisions occurred on parking lots and unknown locations. In 2015 and 2014, the number of reported collisions occurred on parking lots and unknown locations are 1307 and 1322 collisions.

Table 1: Public Roadway Collisions Statistics 2014-2016

Statistics	2014	2015	2016
Public Roadways Collisions	2667	2309	2208
Percentage Increase / Decrease	7.07%	-13.42%	-4.37%
Fatal Collisions	5	2	2
Injury Collisions	250	215	195
Fatal and Injury Collisions	270	217	197
Property Damage Only Collisions	2424	2084	2011
Number of Injuries	314	244	230
Number of Fatalities	5	2	2
Pedestrian Collisions	31	25	23
Number of Pedestrian Injuries	27	22	17
Number of Pedestrian Fatalities	-	-	1
Bicycle Collisions	14	18	33
Number of Bicyclists Injuries	9	11	25
Number of Bicyclists Fatalities	-	-	-
Red Deer Population	98,585	100,807	99,832
Motor vehicles Registered in Red Deer Civic Address	89,627	93,030	89,663
Public Roadway Collisions/1000 Population	28	23	22
Public Roadway Collisions/1000 Registered Vehicles in Red Deer Civic Address	30	25	25

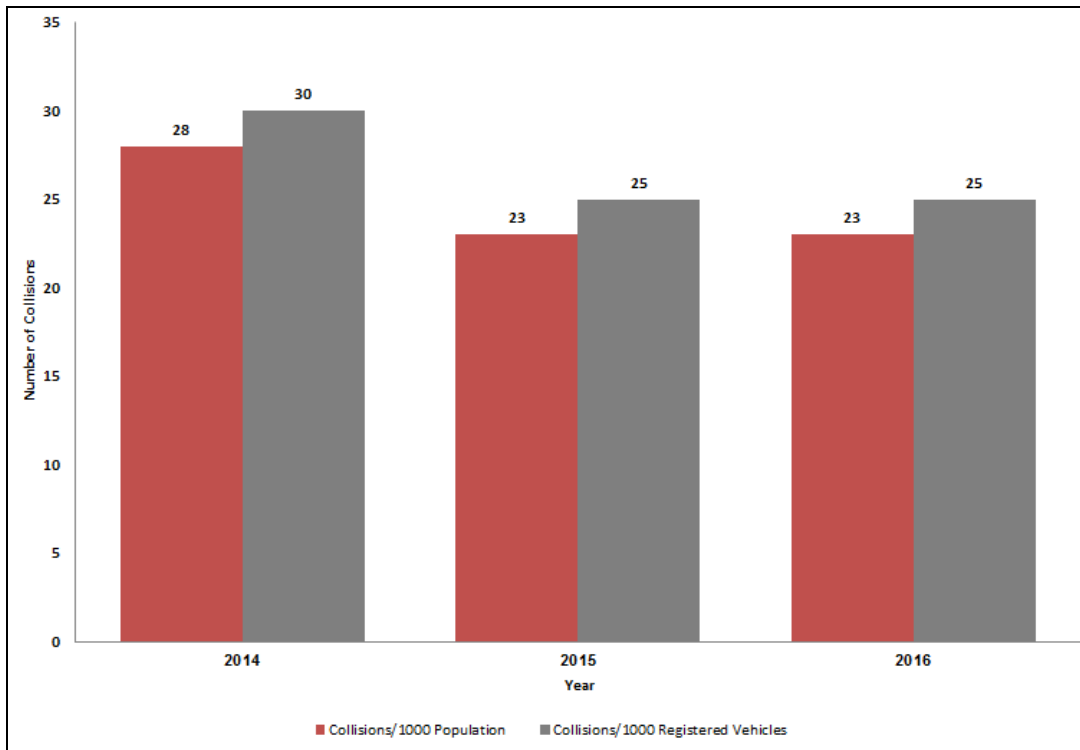


Figure 1: Public Roadway Collisions Rate Trend 2014-2016



Figure 2: Public Roadway Collisions Trend 2014-2016

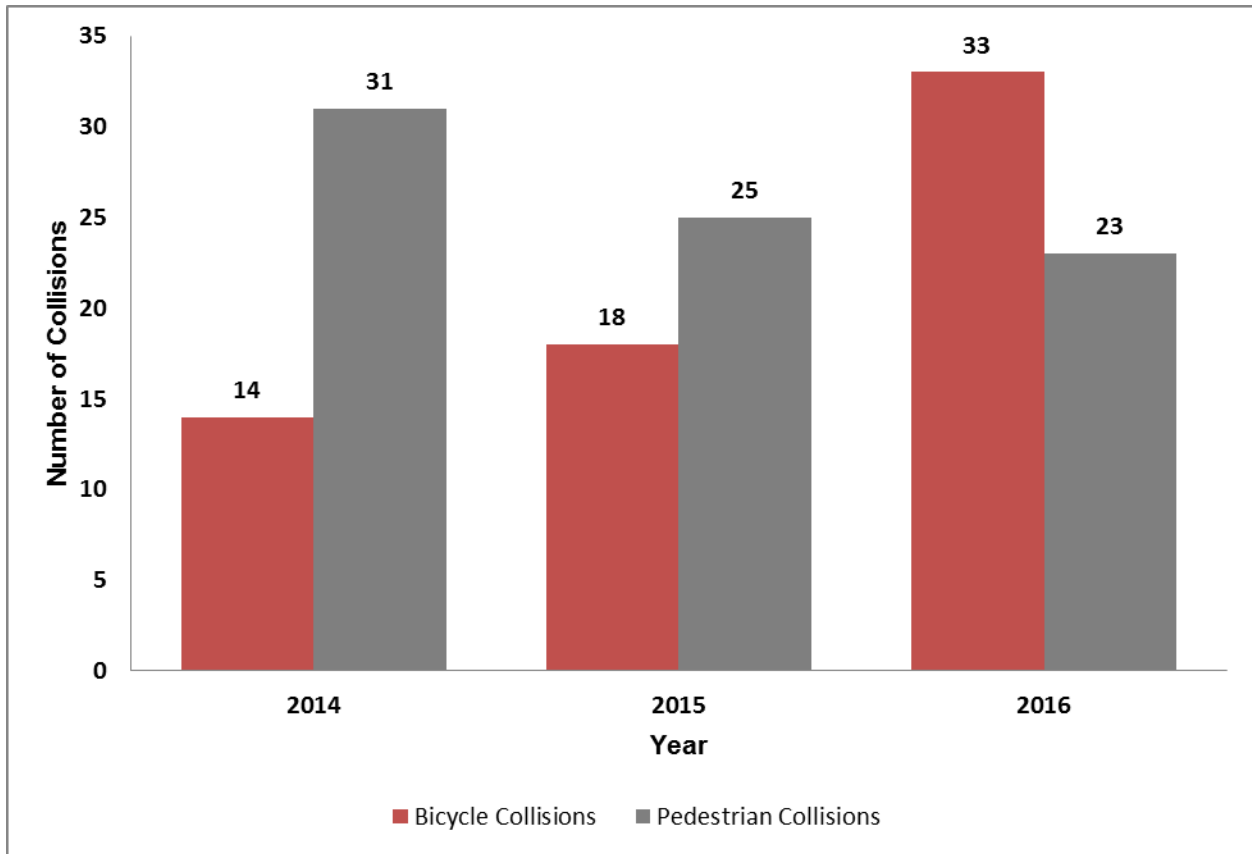


Figure 3: Pedestrian and Bicyclist Collisions on Public Roadways 2014-2016

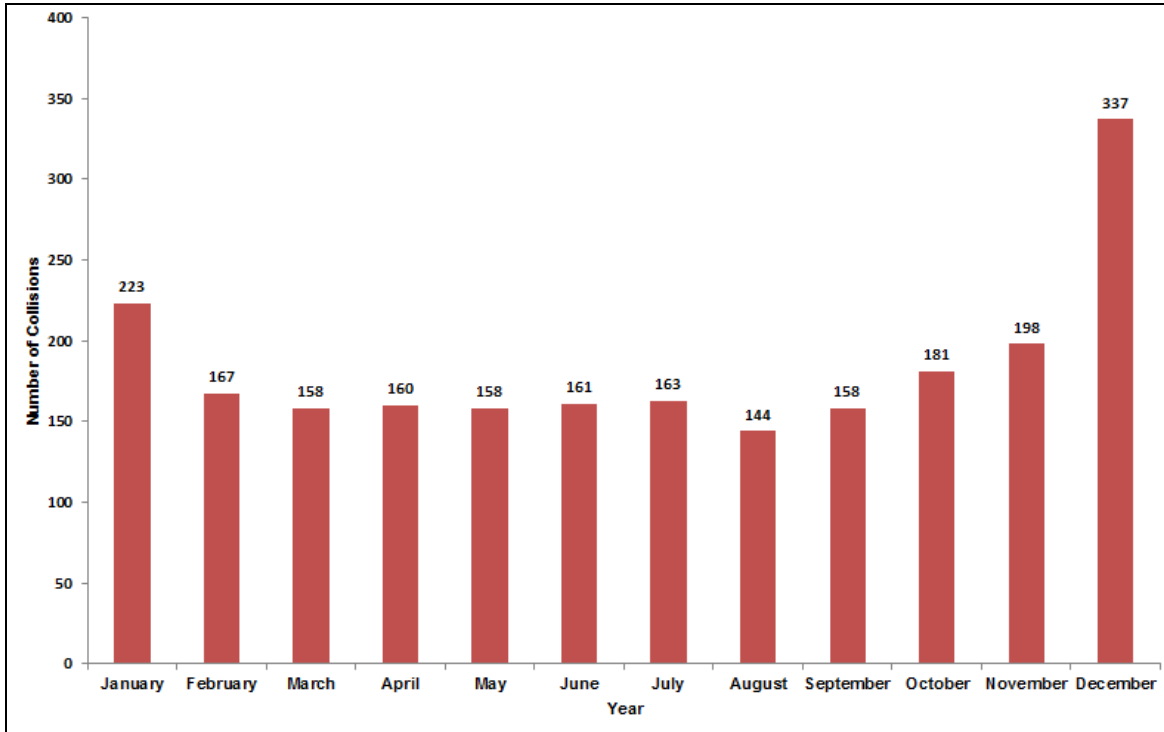


Figure 4 : 2016 Public Roadway Collisions by Month

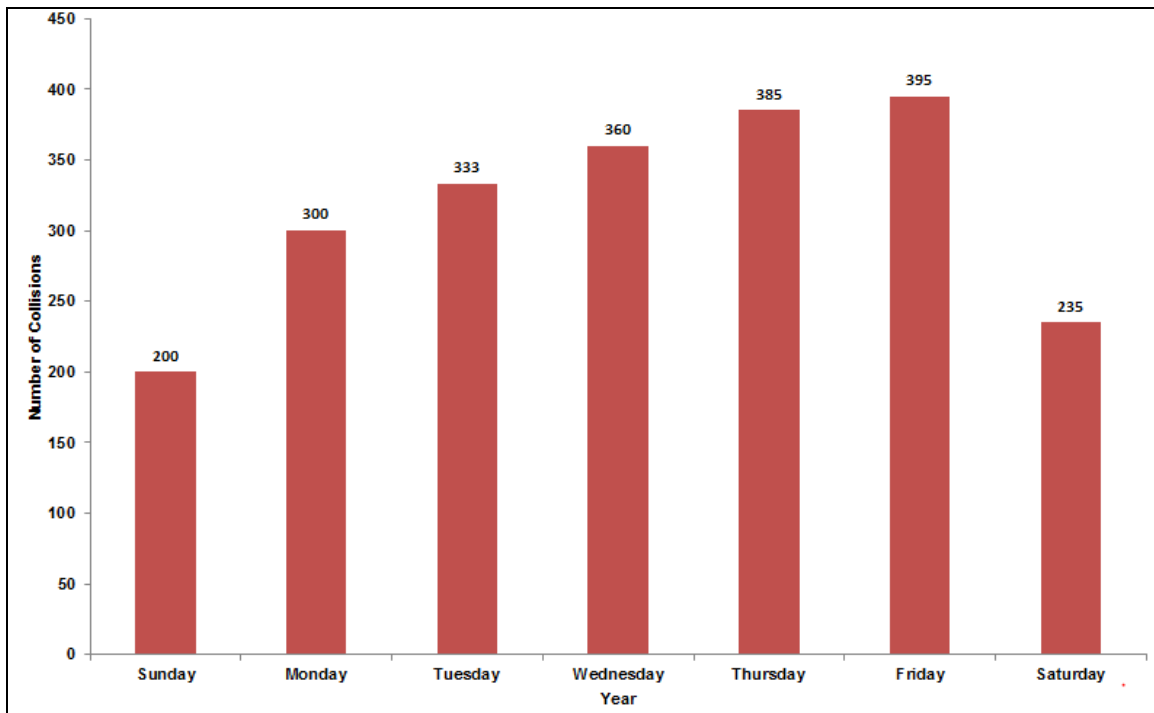


Figure 5: 2016 Public Roadway Collisions by Day of Week

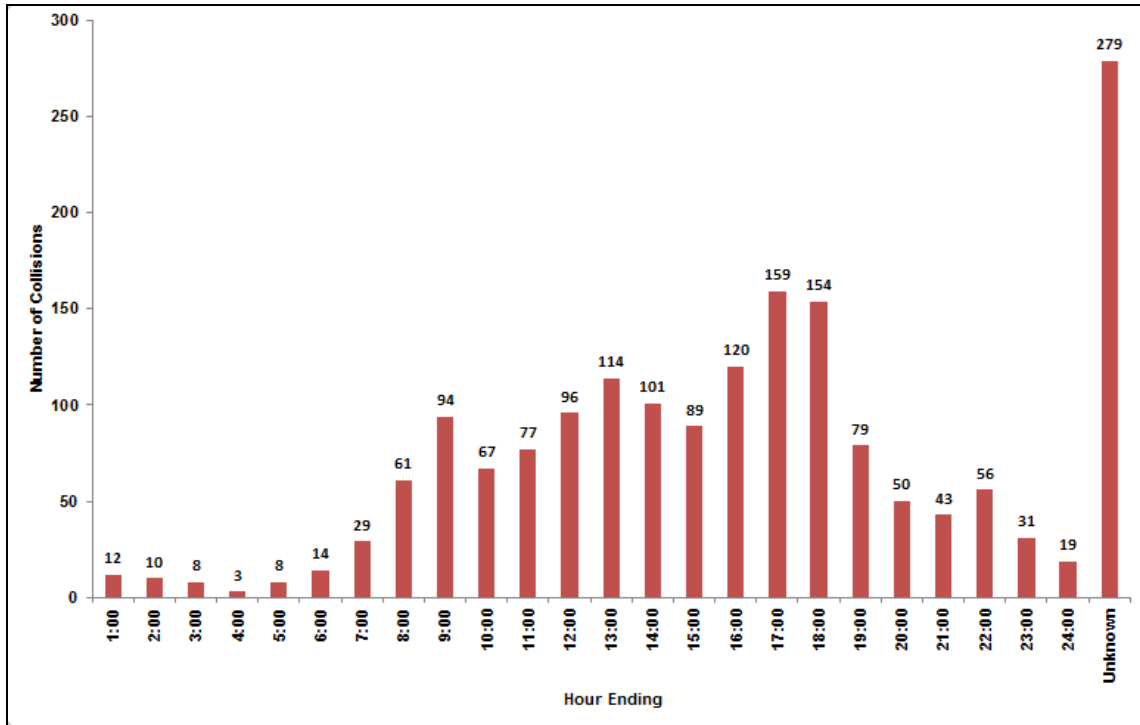


Figure 6: 2016 Public Roadway Collisions by Hour of Day (Weekdays)

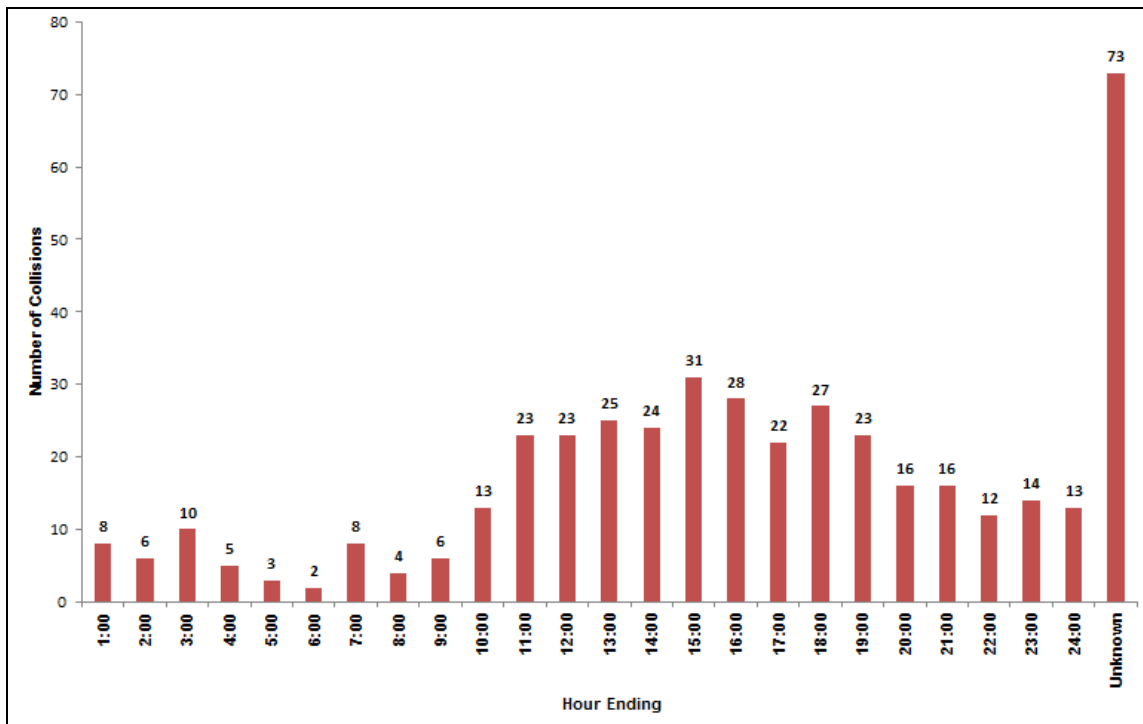


Figure 7: 2016 Public Roadway Collisions by Hour of Day (Weekends)

Public Roadway Collisions Summary 2016/01/01 TO 2016/12/31

Table 2 : Number of Collisions on Public Roadways in 2016

Statistics	2016
Motor Vehicle Collisions	2208
Motor Vehicles Involved	4343
Collisions Causing Fatalities	2
Fatalities Resulting	2
Collisions Causing Injury	195
Injuries Resulting	230
Property Damage Only Collisions	2011

Table 3: Fatalities and Injuries on Public Roadways in 2016

Travel Mode	Minor Injuries	Major Injuries	Fatal	Total
Vehicle Driver	123	16	1	140
Vehicle Passenger	42	3	-	45
Motorcyclist	2	1	-	3
Bicyclist	21	4	-	25
Pedestrian	15	1	1	17
Other, Unknown	-	-	-	-
Total	203	25	2	230

Roadway Summary

2016/01/01 TO 2016/12/31

Table 4: Top 10 Locations with the Most Collisions in 2016

Rank	Intersection Location	Number of Collisions	Control Type
1	67 Street - Taylor Drive	52	Signalized
2	67 Street - (Gaetz) 50 Avenue	51	Signalized
3	32 Street - Taylor Drive	43	Signalized
4	19 Street - (Gaetz) 50 Avenue	32	Signalized
5	32 Street - (Gaetz) 50 Avenue	31	Signalized
6	19 Street – Taylor Drive	31	Signalized
7	22 Street - (Gaetz) 50 Avenue	28	Signalized
8	67 Street - Johnstone Drive	28	Signalized
9	22 Street - Taylor Drive	24	Signalized
10	67 Street - 59 Avenue	22	Signalized

Table 5: 2016 Collisions by Roadway Portion

Cause	Intersection	Midblock	Alley	Unknown	Total
Struck Object	141	230	5	0	376
Off Road Left	6	10	0	1	17
Right Angle	220	24	1	2	247
Passing-Left Turn	24	6	0	0	30
Left Turn- Across Path	166	15	0	0	181
Sideswipe - Opposite Direction	16	11	0	0	27
Other	19	120	1	0	140
Rear End	635	107	0	2	744
Off Road Right	6	14	1	0	21
Head On	13	6	0	0	19
Passing-Right Turn	6	1	0	0	7
Sideswipe - Same Direction	164	90	0	0	254
Backing	38	101	2	0	141
Unknown	0	4	0	0	4
Total	1454	739	10	5	2208

Table 6: 2016 Public Roadway Collisions by Month and Road Surface Condition

Month	Dry	Wet	Slush/Snow/Ice	Loose Surface Material	Other/ Unknown	Total
January	70	8	144	1	0	223
February	78	17	68	0	4	167
March	126	8	18	1	5	158
April	154	2	2	0	2	160
May	143	14	1	0	0	158
June	154	4	0	1	2	161
July	139	19	0	0	5	163
August	119	20	0	0	5	144
September	141	15	0	0	2	158
October	136	16	28	0	1	181
November	150	5	41	0	2	198
December	69	4	259	0	5	337
Total	1479	132	561	3	33	2208

Day/Time Summary

2016/01/01 TO 2016/12/31

Table 7: 2016 Public Roadway Collisions by Hour of Day and Day of Week

Hour Ending	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
1:00	5	4	2	0	2	4	3	20
2:00	3	3	1	2	2	2	3	16
3:00	3	3	0	1	3	1	7	18
4:00	4	1	0	0	0	2	1	8
5:00	2	0	1	3	0	4	1	11
6:00	1	2	0	2	6	4	1	16
7:00	3	2	6	6	10	5	5	37
8:00	2	7	13	13	11	17	2	65
9:00	2	19	19	17	22	17	4	100
10:00	7	13	16	16	12	10	6	80
11:00	11	12	20	8	17	20	12	100
12:00	11	15	17	16	16	32	12	119
13:00	11	17	23	23	27	24	14	139
14:00	9	22	18	16	17	28	15	125
15:00	19	16	19	15	20	19	12	120
16:00	14	16	21	32	25	26	14	148
17:00	9	22	32	42	35	28	13	181
18:00	14	27	22	39	41	25	13	181
19:00	14	9	16	18	17	19	9	102
20:00	6	11	10	8	16	5	10	66
21:00	5	5	10	11	7	10	11	59
22:00	5	17	5	9	5	20	7	68
23:00	7	4	6	6	8	7	7	45
24:00	3	3	3	3	3	7	10	32
Unknown	30	50	53	54	63	59	43	352
Total	200	300	333	360	385	395	235	2208

Object Type Summary

2016/01/01 TO 2016/12/31

Table 8: Objects Involved in 2016 Motor Vehicle Collisions

Object Type	# Objects	Percentage
Passenger Car	1502	32.95%
Pick-Up/Van <4500kg	1084	23.78%
Mini-Van/MPV	1298	28.48%
Truck >4500kg	105	2.30%
Truck Tractor	24	0.53%
Motorcycle/Scooter	16	0.35%
Pedestrian	23	0.50%
Bicycle	33	0.72%
School Bus	10	0.22%
Transit Bus	8	0.18%
Intercity Bus	1	0.02%
Other Bus	2	0.04%
Fixed Object	134	2.94%
Train	0	0.00%
Animal	59	1.29%
Motorhome	2	0.04%
Construction Equipment	3	0.07%
Emergency Vehicle	8	0.18%
Farm Equipment	0	0.00%
Off-Highway Vehicle	0	0.00%
Motorized Snow Vehicle	0	0.00%
Moped	0	0.00%
Unknown	246	5.40%
Total	4558	100%

Drivers Summary

2016/01/01 TO 2016/12/31

Table 9: Age and Action of Drivers involved in 2016 Public Roadway Collisions

Driver Action	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+	Unknown	Total	% of Action
Driving Properly	3	85	259	409	381	317	304	103	55	32	1948	50.05
Stop Sign Violation	-	6	10	11	8	2	5	5	3	2	52	1.34
Yield Sign Violation	-	-	5	2	3	1	-	-	2	2	15	0.39
Fail To Yield Right of way at Uncontrolled Intersection	-	2	4	4	2	3	3	-	-	-	18	0.46
Fail To Yield Right of way to Pedestrian	-	-	1	3	2	1	2	2	-	-	11	0.28
Followed Too Closely	-	54	131	150	88	67	63	21	13	22	609	15.65
Parked Vehicle	-	-	-	-	-	-	-	-	-	-	-	0.00
Backed Unsafely	-	8	11	22	21	21	16	14	6	14	133	3.42
Left Turn Across Path	-	18	27	35	21	19	12	13	7	6	158	4.06
Improper Lane Change	-	10	20	16	24	10	19	13	7	13	132	3.39
Disobey Traffic Signal	1	9	16	22	15	18	15	11	5	7	119	3.06
Ran Off Road	-	4	6	11	10	7	4	4	2	4	52	1.34
Improper Passing	-	2	6	2	4	2	1	1	1	4	23	0.59
Left of Centre	-	-	3	4	2	1	4	2	1	2	19	0.49
Improper Turn	1	5	17	27	16	16	13	8	7	4	114	2.93
Other, Unknown	2	12	40	60	38	40	24	14	10	249	489	12.56
Total	7	215	556	778	635	525	485	211	119	361	3892	100.00
% of Age	0.18	5.52	14.29	19.99	16.32	13.49	12.46	5.42	3.06	9.28	100.00	

Condition/Safety Summary 2016/01/01 TO 2016/12/31

Table 10: Driver/Pedestrian Condition in 2016 Public Roadway Collisions

Driver/Pedestrian Condition	Drivers/Pedestrians #	Fatal Collisions	Injury Collisions	Property Damage Collisions
Had Been Drinking	22		-	22
Impaired by Alcohol	26	-	-	26
Impaired by Drugs	11	-	3	8
Fatigued/Asleep	3	-	1	2
Medical Defect	9	-	5	4
Unsafe Speed	85	-	10	75

Table 11: Safety Equipment Used in 2016 Public Roadway Collisions

Safety Equipment	Drivers #	Collision Severity				Passenger #	Collision Severity			
		None	Minor	Major	Fatal		None	Minor	Major	Fatal
Lap belt only	40	40	-	-	-	7	7	-	-	-
Lap/Shoulder belt assembly	3085	2991	86	7	1	572	542	29	1	-
Shoulder belt only	26	25	1	-	-	8	7	-	1	-
Lap/Shoulder with Air Bag	156	124	25	7	-	12	11	1	-	-
Airbag	8	7	1	-	-	-	-	-	-	-
None	24	22	2	-	-	3	1	2	-	-
Other/Specify	8	8	-	-	-	-	-	-	-	-
Unknown	545	535	8	2	-	12	1	10	1	-

Pedestrian Collisions 2016/01/01 TO 2016/12/31

Table 12: Pedestrian Collisions Summary in 2016 Public Roadways Collisions

Statistics	2016
Collisions Involving Pedestrian	23
Pedestrians Involved	23
Collisions resulting in Pedestrian Injury or Fatality	18
Pedestrian Injuries	17
Pedestrian Fatalities	1

Table 13: Age and Action of Pedestrians involved in 2016 Public Roadways Collisions

Pedestrian Action	0-5	6-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+	Unknown	Total	% of Action
Crossing with Right of Way	1	-	-	-	-	1	1	1	3	2	-	-	9	39.13
Crossing without Right of Way	2	-	1	-	-	-	-	-	1	1	1	-	6	26.09
Walking/Working on Roadway	1	-	-	-	-	-	-	2	-	-	-	-	3	13.04
Getting on/off vehicle	-	-	-	-	-	1	-	-	-	-	-	-	1	4.35
Other, Unknown	-	-	-	-	1	-	1	-	1	-	1	-	4	17.39
Total	4	0	1	0	1	2	2	3	5	3	2	0	23	100.00
% of Age	17.39	0.00	4.35	0.00	4.35	8.70	8.70	13.04	21.74	13.04	8.70	0.00	100.00	

Bicycle Collisions

2016/01/01 TO 2016/12/31

Table 14: Bicyclist Collisions Summary in 2016 Public Roadways Collisions

Statistics	2016
Bicyclist Collisions	33
Bicyclists Involved	33
Collisions resulting in Bicyclist Injury or Fatality	25
Bicyclist Injuries	25
Bicyclist Fatalities	-

Table 15: Age and Action of Bicyclists involved in 2016 Public Roadway Collisions

Bicyclist Action	0-5	6-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+	Unknown	Total	% of Action
Driving Properly	1	1	1	-	1	3	1	2	2	-	-	-	12	36.36
Stop Sign Violation	-	-	-	1	1	-	-	-	-	-	-	-	2	6.06
Yield Sign Violation	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Fail To Yield Right of Way at Uncontrolled Intersection	4	-	-	-	-	-	-	1	-	-	-	-	5	15.15
Fail To Yield Right of Way to Pedestrian	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Followed Too Closely	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Parked Vehicle	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Backed Unsafely	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Left Turn Across Path	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Improper Lane Change	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Disobey Traffic Signal	-	-	1	-	-	-	-	-	-	-	-	-	1	3.03
Ran Off Road	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Improper Passing	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Left of Centre	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
Improper Turn	1	-	-	-	-	-	-	-	1	-	-	-	2	6.06
Other, Unknown	4	-	1	-	2	1	-	2	1	-	-	-	11	33.33
Total	10	1	3	1	4	4	1	5	4	-	-	-	33	100.00
% of Age	30.30	3.03	9.09	3.03	12.12	12.12	3.03	15.15	12.12	0.00	0.00	0.00	100.00	