

2015-2019 Collision Report

Background

This report provides an overview of road safety in the City of Guelph using collision data from Guelph Police Services for the last 5 years (2015 – 2019). The analysis presented includes collisions that occurred on municipal roads (city streets and expressways) within the city limits. Collisions that occurred on county roads and provincial highways outside of the city limits are not included in this report. To ensure anonymity, no results with a cell size less than 5 will be included in this report.

All collisions are sent to the Ministry of Transportation (MTO) by Guelph Police Services. The Engineering and Transportation Services department at the City of Guelph accesses these collisions by downloading them from the Authorized Requestor Information System (ARIS). This agreement between the City and the MTO has been in place since February 2020. Collisions included in this report have been queried back to 2015.

Summary

The City of Guelph road network consists of 598 lane-km of urban and rural roads. There are approximately 2000 intersections in the City of which 7% (144) are controlled by traffic signals. Between 2015 and 2019, there were a total of 11,408 collisions in the City of Guelph. Reported collisions on private property are not included in this report. A total of 3.8% of collisions occurred on the Hanlon Expressway within the city limits of Guelph. On average, 2,281 collisions have occurred within Guelph annually over the past 5 years. Of these, 15% resulted in an injury. Although the total number of collisions increased in Guelph in 2019, injury-related collisions have decreased over time (see [Figure 1](#)).

On average, the societal cost of collisions in the City of Guelph amounted to \$103,579,992. Societal costs are estimated through Transport Canada's costs of collisions for various severity levels. Estimated costs of collisions for each severity level were calculated using values from the Bank of Canada. Direct costs include property damage, emergency response services, medical and insurance costs and traffic delays. Examples of indirect costs include disability and workdays lost by the victims, as well as pain and suffering.

In Guelph:

- 1 collision occurs every 230 minutes
- 1 person is injured in a collision every 9 hours
- 1 road fatality occurs every 130 days
- 1 pedestrian collision occurs every 10 days
- 1 cyclist collision occurs every 10 days

The goal of the Community Road Safety Strategy (CRSS) is to provide strategies that will improve road safety to benefit all users, whether you are walking, cycling,

riding transit, using a mobility device or driving. The focus of the CRSS is to reduce major and fatal injuries occurring on Guelph’s roads over time.

General Collision Trends

Over the past 5 years in the City of Guelph the total number of collisions has slightly increased from 2,314 in 2015 to 2,424 in 2019. However, the majority of these collisions involve property damage only (PDO) and injury-related collisions have decreased from 406 in 2015 to 322 in 2019.

Table 1: Total Collisions in Guelph by City Street vs. Expressway (2015 – 2019)

Location	Total Collisions
Guelph City Streets	10976
Hanlon Expressway	432
Collisions within Guelph’s City Limits	11408

Figure 1: Total Number of Collisions in Guelph (2015-2019)



Injury Severity

About one quarter of injury-related collisions occur at intersections (see [Table 2](#)). Between 2015 – 2019, a total of 4,709 individuals sustained a minimal (abrasions, bruises, complaint of pain, no emergency room visit), minor (injury required trip to hospital and treatment in the emergency room, no admittance), major (injuries required the person to be admitted to hospital) or fatal (death occurred as a result of injuries sustained within 30 days of the motor vehicle collision) injury (see [Table 3](#)).

Table 2: Percentage of injury related collisions at Intersection vs. Midblock locations

Location	Injury (%)	Property Damage Only (PDO)	Total
Intersection	1189 (24.0%)	3760 (76.0%)	4949
Midblock	565 (13.8%)	3526 (86.2%)	4091

Table 3: Injury Severity by Year

Year	Minimal/Minor Injury	Major/Fatal Injury	Total Injury
2015	1100 (97.0%)	35 (3.0%)	1135
2016	1072 (97.2%)	31 (2.8%)	1103
2017	946 (97.3%)	26 (2.7%)	972
2018	745 (96.4%)	28 (2.6%)	773
2019	691 (95.2%)	35 (2.8%)	726

Location

Edinburgh Road South at Wellington Street West had the highest frequency of total collisions (114) and injury related collisions (22) between 2015 – 2019. However, over 50% of collisions that occurred at Gordon Street at Surrey Street resulted in an injury (see [Table 4](#)).

Table 4: Top 10 Intersection Locations with Highest Percentage of Injury Collisions

Location	Injuries	PDO	Total Collisions	Percentage of Injury Collisions
Gordon St @ Surrey St W	15	14	29	51.7%
Kortright Rd W @ Scottsdale Dr	14	30	44	31.8%
Macdonell St @ Wellington St E	18	40	58	31.0%
Imperial Rd N @ Woodlawn Rd W	19	51	70	27.1%
Clair Rd W @ Gordon St	18	59	77	23.4%
Stone Rd W @ Scottsdale Dr	14	54	68	20.6%
Edinburgh Rd S @ Wellington St W	22	92	114	19.3%
Woodlawn Rd W @ Woolwich St	17	78	95	17.9%
Gordon St @ Stone Rd W	17	94	111	15.3%
Stone Rd W @ Edinburgh Rd S	16	90	106	15.1%

Victoria Rd S between Florence Ln & York Rd had the highest frequency of total collisions (69), whereas Woodlawn Road East between Speed River & Woolwich Street had the highest frequency of injury-related collisions (13). However, half of the collisions that occurred on Gordon Street between Clairfields Drive West & Clair Road West resulted in an injury (see [Table 5](#)).

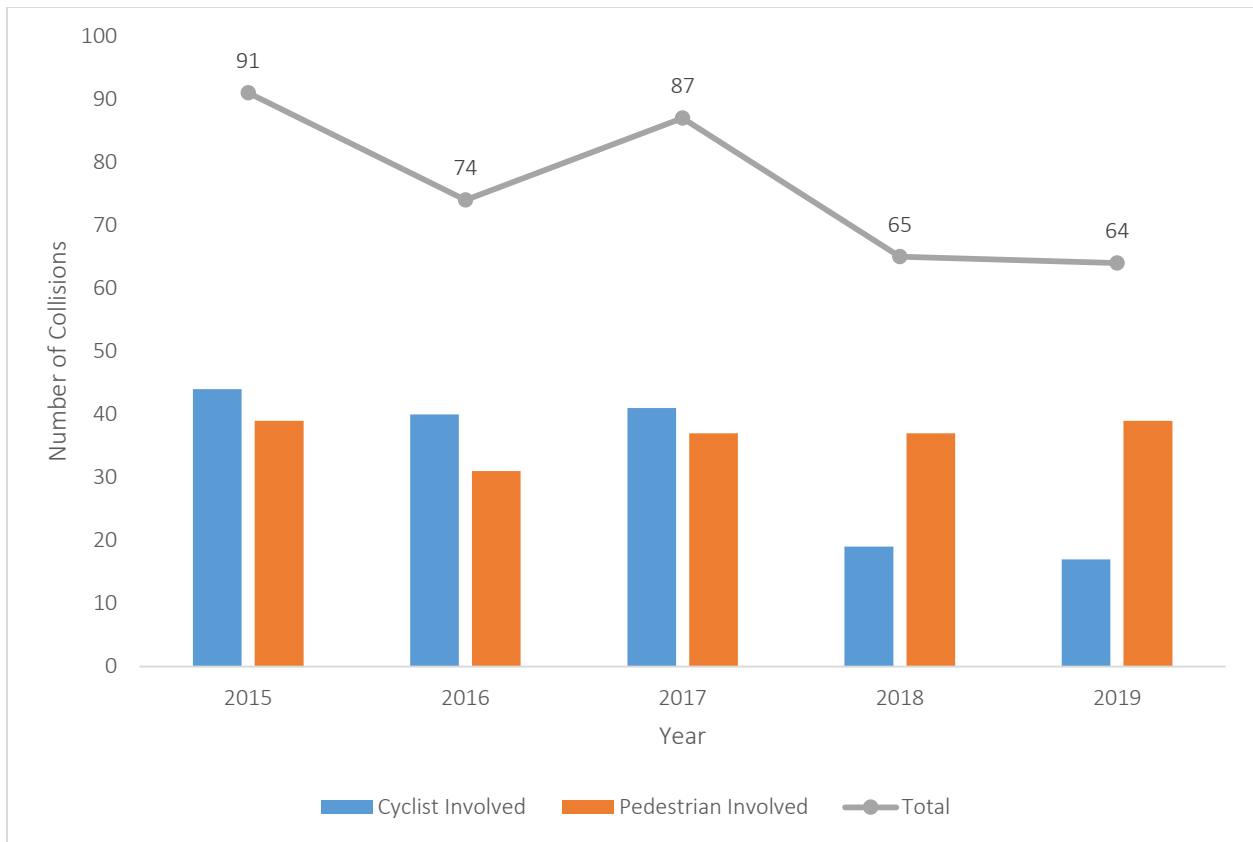
Table 5: Top 10 Midblock Locations with Highest Percentage of Injury Collisions

Location	Injuries	PDO	Total Collisions	Percentage of Injury Collisions
Gordon St btwn Clairfields Dr W & Clair Rd W	9	9	18	50.0%
Silvercreek Py N btwn Speedvale Av W & Campbell Rd	10	24	34	29.4%
Woodlawn Rd E btwn Speed River & Woolwich St	13	33	46	28.3%
Gordon St btwn Surrey St W & Wellington St W	7	18	25	28.0%
Eramosa Rd btwn Stevenson St N & Meyer Dr	8	24	32	25.0%
Woolwich St btwn Marilyn Dr & Woodlawn Rd E	8	27	35	22.9%
Wellington St W btwn Imperial Rd S & Hanlon XY	9	31	40	22.5%
Stone Rd W btwn Edinburgh Rd S & Scottsdale Dr	7	31	38	18.4%
Gordon St btwn Hands Dr & Kortright Rd W	6	29	35	17.1%
Victoria Rd S btwn Florence Ln & York Rd	6	63	69	8.7%

Collision Trends Involving Pedestrians and Cyclists

Collisions involving a cyclist or pedestrian make up 3.3% of total collisions in the City of Guelph. While the number of cyclists involved in a collision has decreased over the past 5 years, pedestrian-related collisions have remained relatively stable over time (see [Figure 2](#)).

Figure 2: Total Number of Collisions in Guelph involving pedestrians and/or cyclists (2015 – 2019)



Location and Injury Severity – Collisions Involving Pedestrians and/or Cyclists

On average, 39 pedestrians and 33 cyclists sustain an injury per year (see [Table 6](#)). Between 2015 – 2019, 8.1% of injury-related collisions that involved either a pedestrian or cyclist resulted in a major or fatal injury outcome (see [Table 7](#)).

Table 6: Pedestrian/Cyclist Injuries by Year (2015 – 2019)

Person Involved	2015	2016	2017	2018	2019	Total
Pedestrians Injured	44	32	38	39	41	194
Cyclists Injured	45	40	42	19	19	165

Table 7: Pedestrian/Cyclist Collisions by Injury Type

Person Involved	Minimal/Minor Injuries	Major/Fatal Injuries	Total Injuries
Pedestrians	168	26	194
Cyclists	162	<5	163 – 166

Gordon Street and Surrey Street had both the highest collision frequency and the highest injury-related collisions (9). All cyclists who were involved in a collision at this intersection sustained injuries. Similarly, Gordon Street between Surrey Street & Wellington Street was the midblock location with the highest frequency of total and injury-related collisions (6) for cyclists (see [Table 8](#)).

Table 8: Top Intersection and Midblock Locations (Cyclist Involved) with Highest Percentage of Injury Collisions

Location	Intersection /Midblock	Injuries	PDO	Total Collisions	Percentage of Injury Collisions
Gordon St @ Surrey St W	Intersection	9	0	9	100.0%
Gordon St btwn Surrey St W & Wellington St W	Midblock	6	0	6	100.0%

Macdonell Street at Wellington Street/Woolwich Street had both the highest collision frequency and the highest pedestrian injury-related collisions (5). All pedestrians who were involved in a collision at this intersection sustained injuries (see [Table 9](#)). The exact midblock locations where a pedestrian was involved in a collision cannot be reported as the cell size is less than 5.

Table 9: Top Intersection Location (Pedestrian Involved) with Highest Percentage of Injury Collisions

Location	Injuries	PDO	Total Collisions	Percentage of Injury Collisions
Macdonell St @ Wellington St E	5	0	5	100.0%

Collision Impact Type

Of all collisions that occurred at an intersection, the majority resulted in a rear-end (2,389, 41%). Whereas, single-motor vehicle (SMV) unattended which can include hitting a parked car, fixed object or running off the road accounted for 1,419 (26%) of midblock-related collisions (see [Figure 3](#)). Overall, rear-end collisions accounted for the highest frequency regardless of location (3,633, 41%) see [Table 10](#).

Figure 3: Initial Impact Type by Intersection vs. Midblock

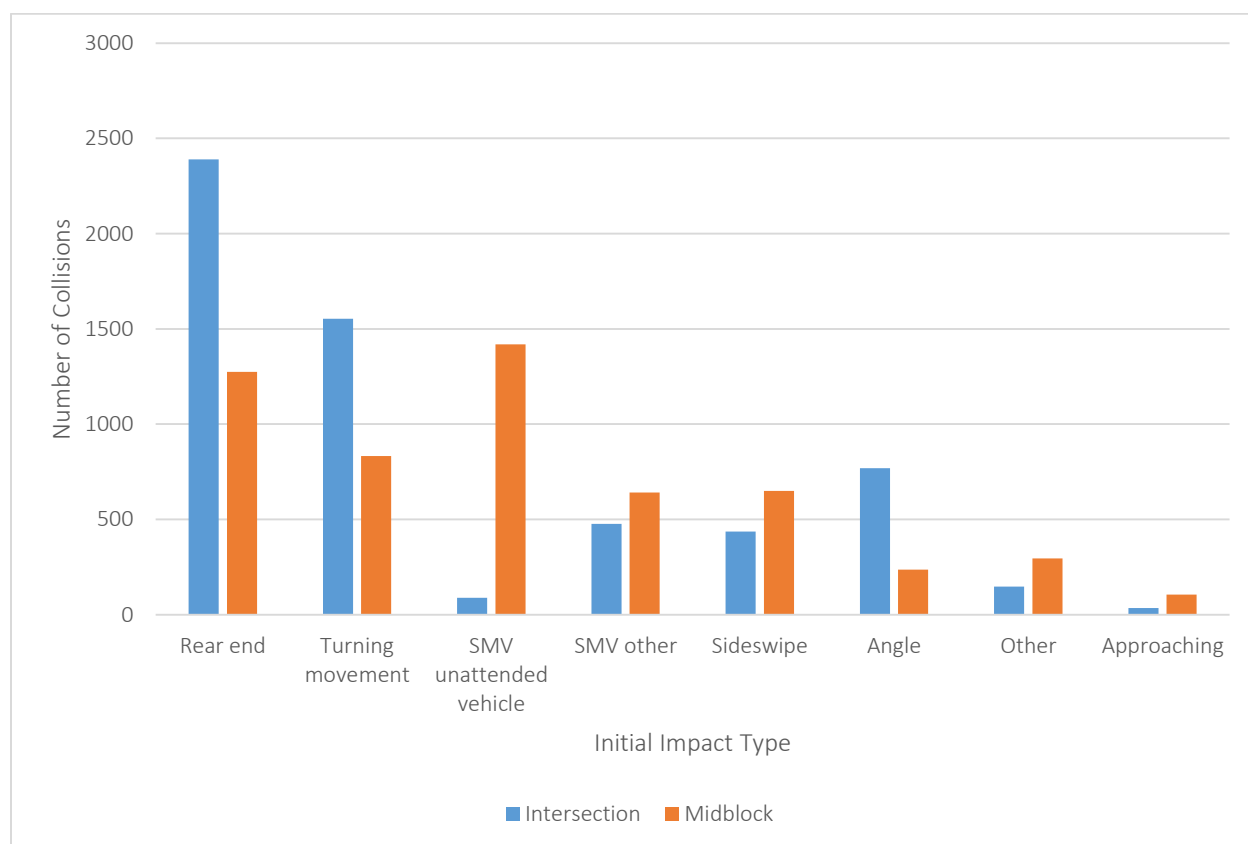


Table 10: Initial Impact Type by Intersection vs. Midblock

Initial Impact Type	Intersection	Midblock	Total
Rear end	2389	1274	3663
Turning movement	1553	832	2385
SMV unattended vehicle	88	1419	1507
SMV other	476	641	1117
Sideswipe	437	649	1086
Angle	769	237	1006
Other	148	295	443
Approaching	35	105	140

Rear-end collisions resulted in the highest frequency impact type for both signalized and unsignalized intersections (see [Figure 4](#)). These made up 1,451 (45%) and 938 (36%) of signalized and unsignalized collisions respectively (see [Table 11](#)). The majority of intersection-related collisions occur in areas where no traffic control device is present (54.1%), see [Figure 5](#).

Figure 4: Initial Impact Type by Signalized vs. Unsignalized Intersections

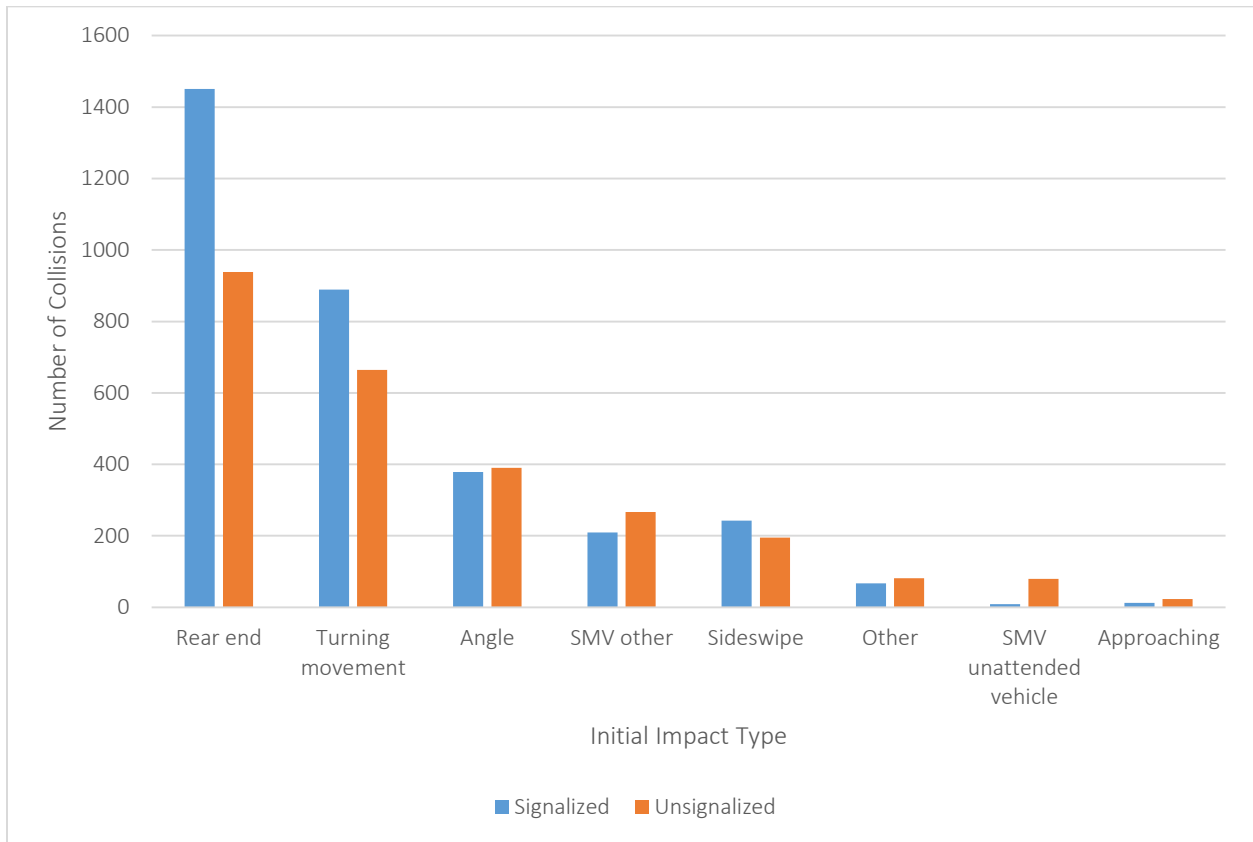
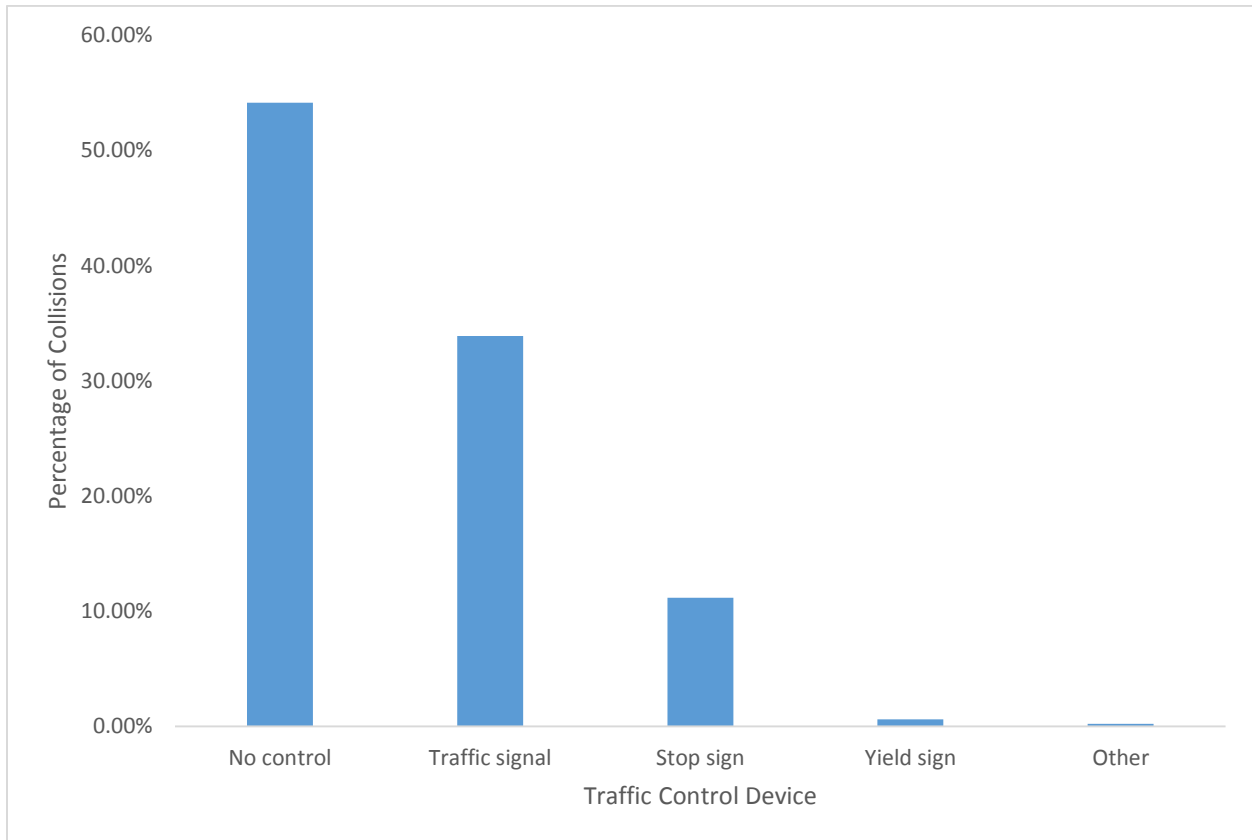


Table 11: Initial Impact Type by Signalized vs. Unsignalized Intersections

Initial Impact Type	Signalized	Unsignalized	Total
Rear end	1451	938	2389
Turning movement	889	664	1553
Angle	379	390	769
SMV other	209	267	476
Sideswipe	242	195	437
Other	67	81	148
SMV unattended vehicle	9	79	88
Approaching	12	23	35

Figure 5: Percentage of Collisions by Traffic Control Device (2015-2019)



Demographics and Driver Behaviour

Age Groups

Novice drivers between the ages of 20 – 29 years are more likely to be involved in a collision in the City of Guelph. Between 2015 – 2019, nearly 3000 collisions involved a young driver (see [Figure 6](#)). Similarly, individuals ages 20-29 who are involved in a collision sustained most of the injuries (587 injuries in 5 years), see [Figure 7](#).

Figure 6: Number of Collisions by Age Group (2015 – 2019)

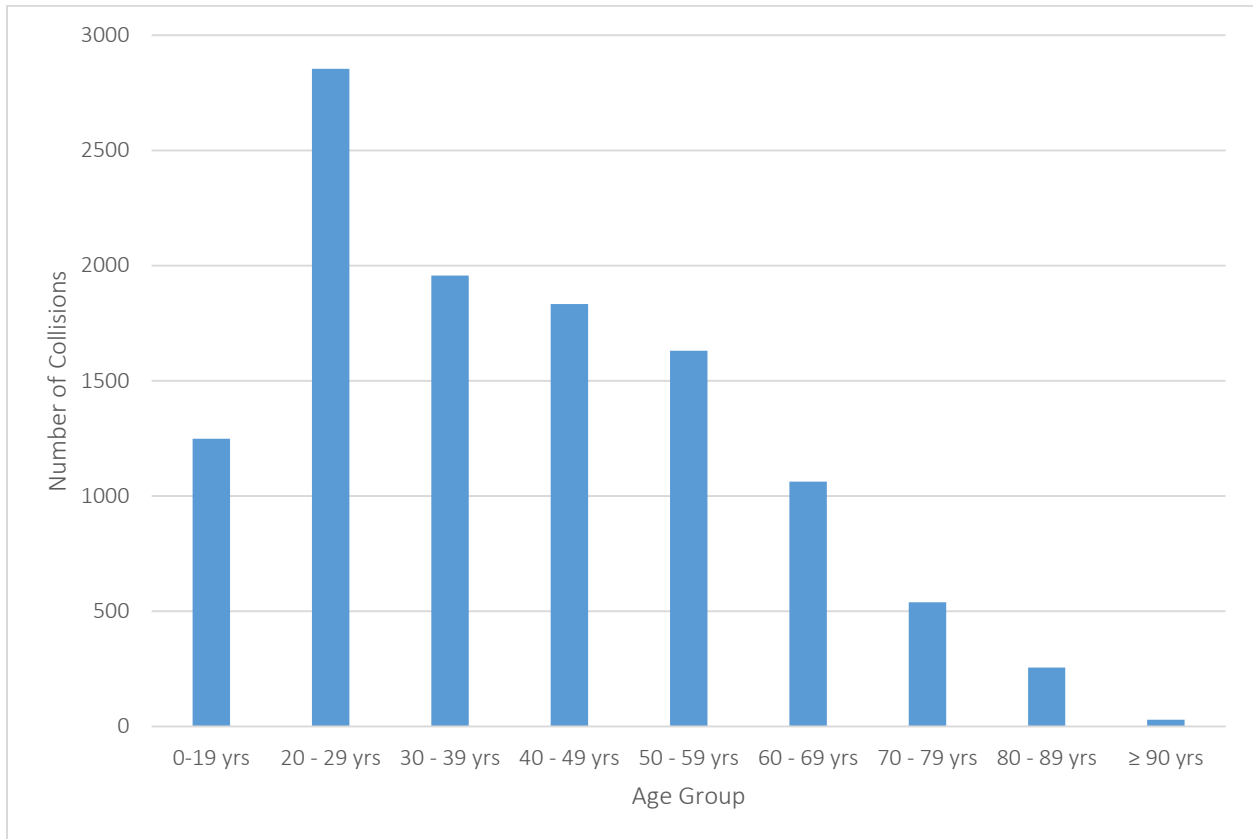
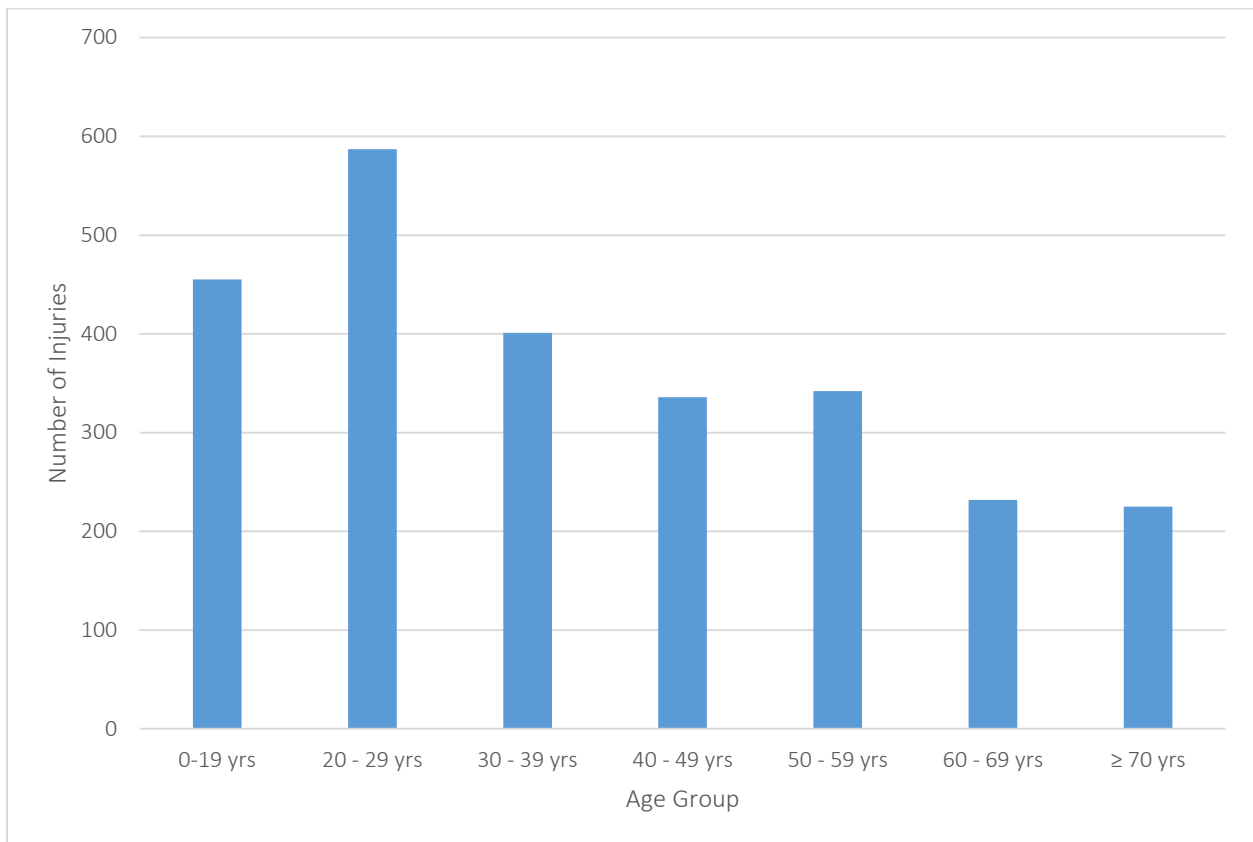


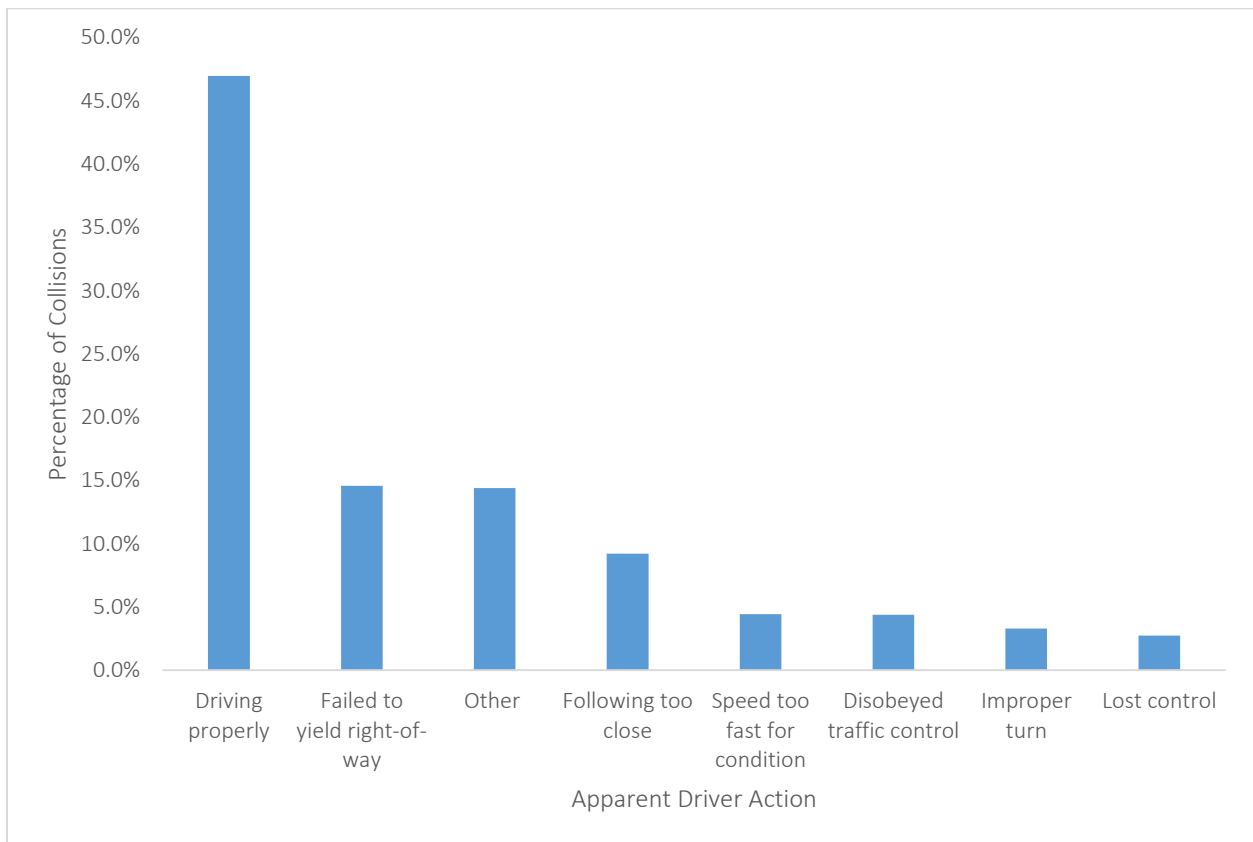
Figure 7: Number of Injuries by Age Group (2015 – 2019)



Driver Action, Maneuver, and Condition

In nearly half of all collisions (47%), the driver was coded as driving properly by the police. The other half of collisions involved drivers failing to yield right-of-way (14.6%), other (14.4%), following too closely (9.2%), speed too fast for condition (4.4%), disobeyed traffic control (4.4%), improper turn (3.3%), and lost control (2.7%), see [Figure 8](#).

Figure 8: Percentage of Collisions by Apparent Driver Action (2015 – 2019)



Over one third of collisions involved a driver going ahead on a road (37%). Another 17.6% of drivers were involved in a collision while the vehicle was stopped (see [Figure 9](#)).

Over half of the collisions involving a cyclist occur when a driver was going ahead (50.9%). Turning movements are also heavily involved in collisions with pedestrians and cyclists. More than one quarter of collisions that involve a cyclist occur when the driver is turning right. Drivers making a left turn make up 14.1% of collisions with a cyclist. Most collisions involving a pedestrian occur when a driver is making a left turn (42.3%), see [Figure 10](#).

Figure 9: Percentage of Collisions by Manoeuvre (2015 – 2019)

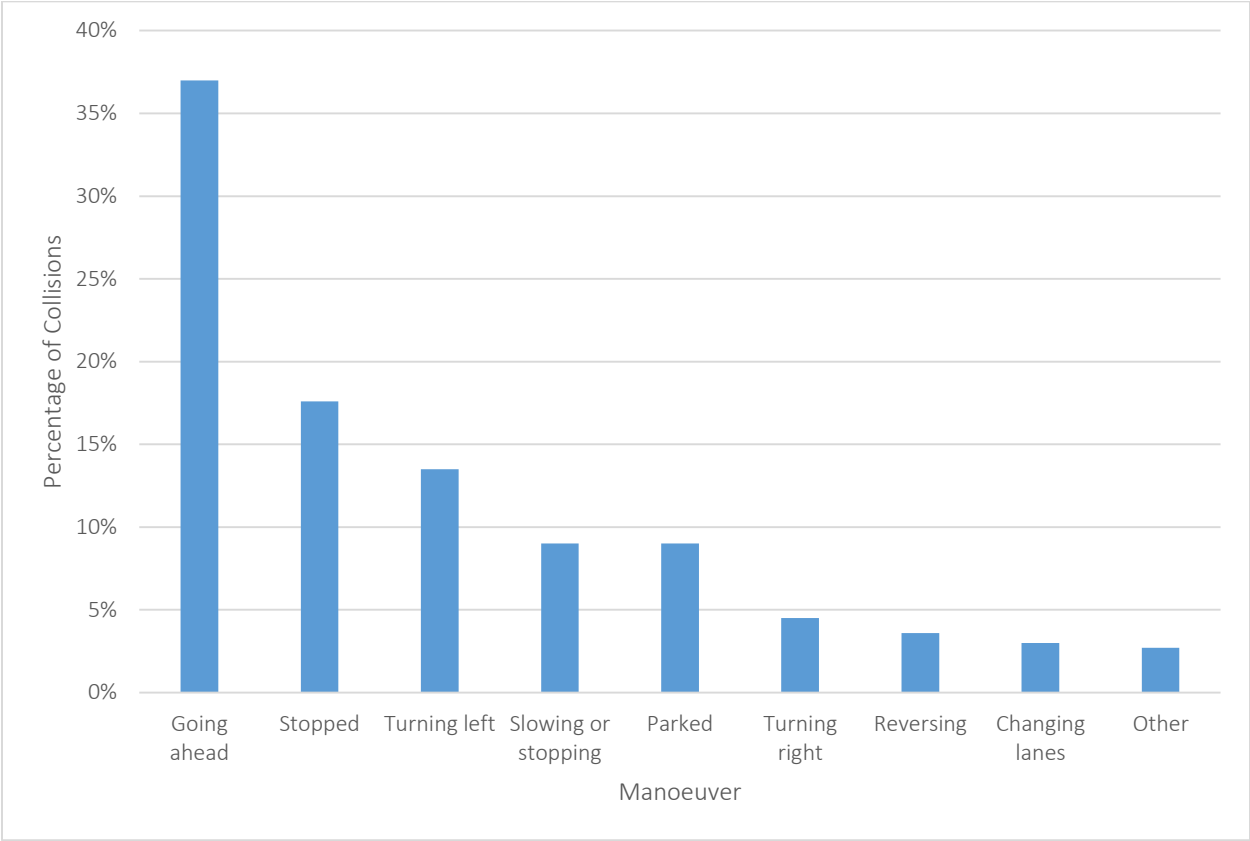
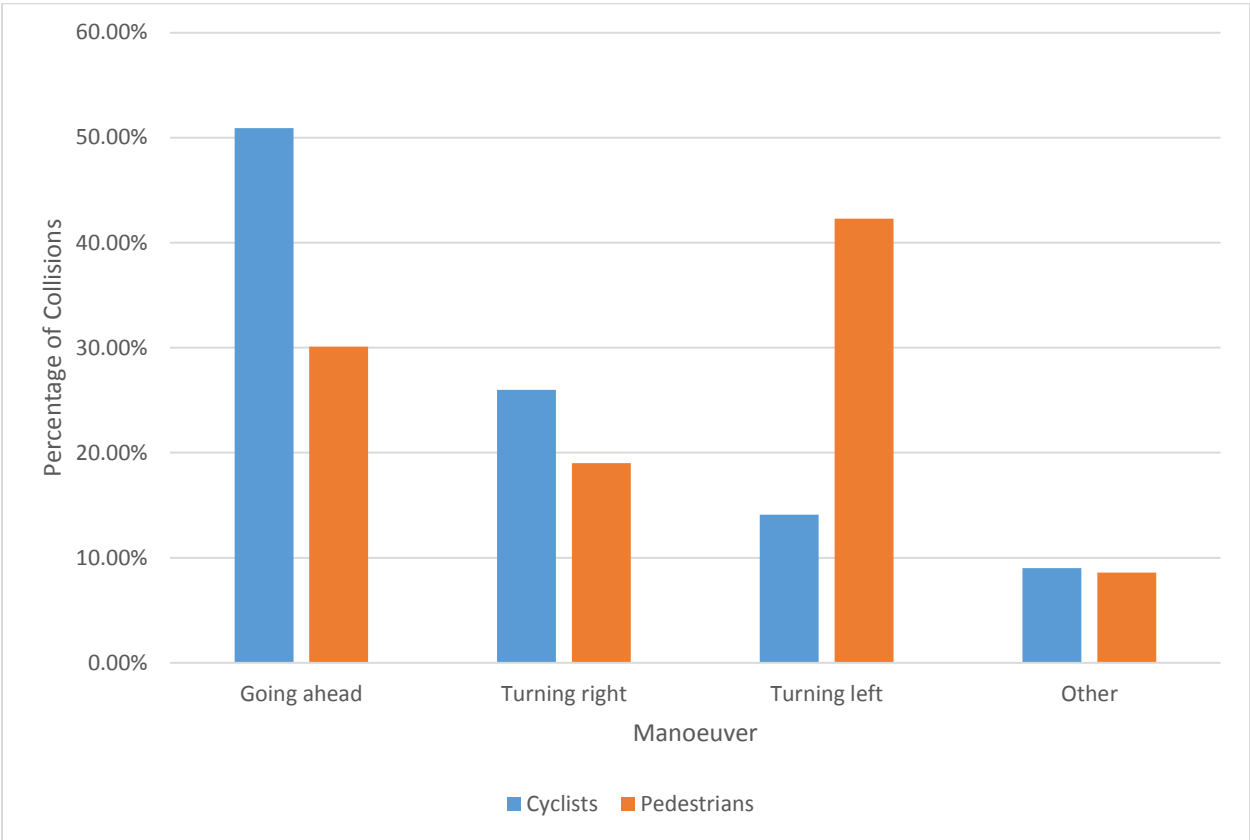
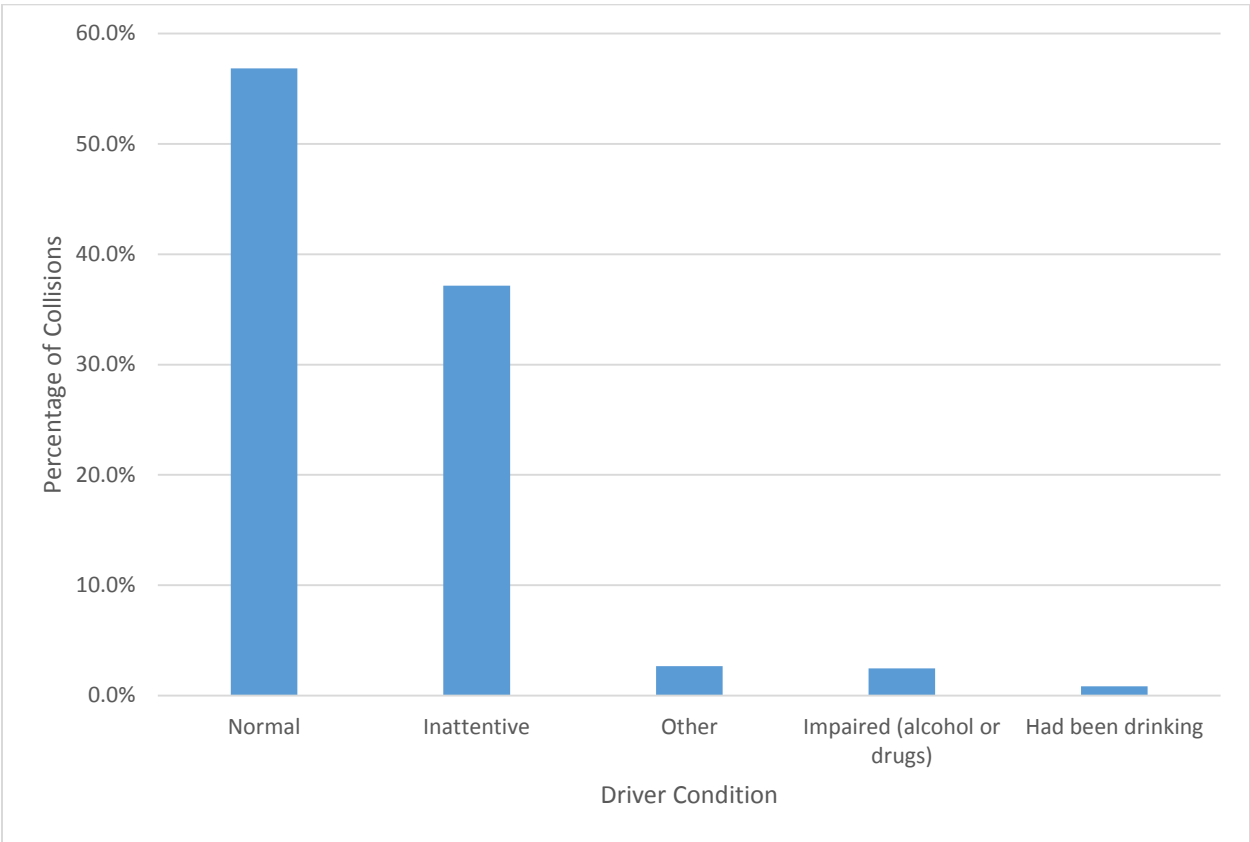


Figure 10: Percentage of Collisions by Manoeuvre Involving Cyclists or Pedestrians (2015 – 2019)



The condition of most drivers (56.9%) who are involved in a collision are normal (i.e. not impaired or distracted), however driver inattention still accounts for over one third of collisions (37.2%) and driver impairment accounts for 2.5% of all collisions (see [Figure 11](#)).

Figure 11: Percentage of Collisions by Driver Condition (2015 – 2019)



Temporal Trends

On average, over the past 5 years, most collisions happened during the winter months: November (236), December (230), and January (237), see [Figure 12](#). These collisions can likely be explained by poor weather conditions and slippery road surfaces. Most collisions also happen during the weekdays on Friday (403), see [Figure 13](#). Finally, collisions typically occur in the morning at 8:00 AM (156), around 12:00 PM (161), and 3:00 PM (221), see [Figure 14](#). These times coincide with pick-up and drop-off times for elementary and high-school students and may also coincide with lunch hours for University of Guelph students.

Figure 12: Average Number of Collisions by Month (2015 – 2019)

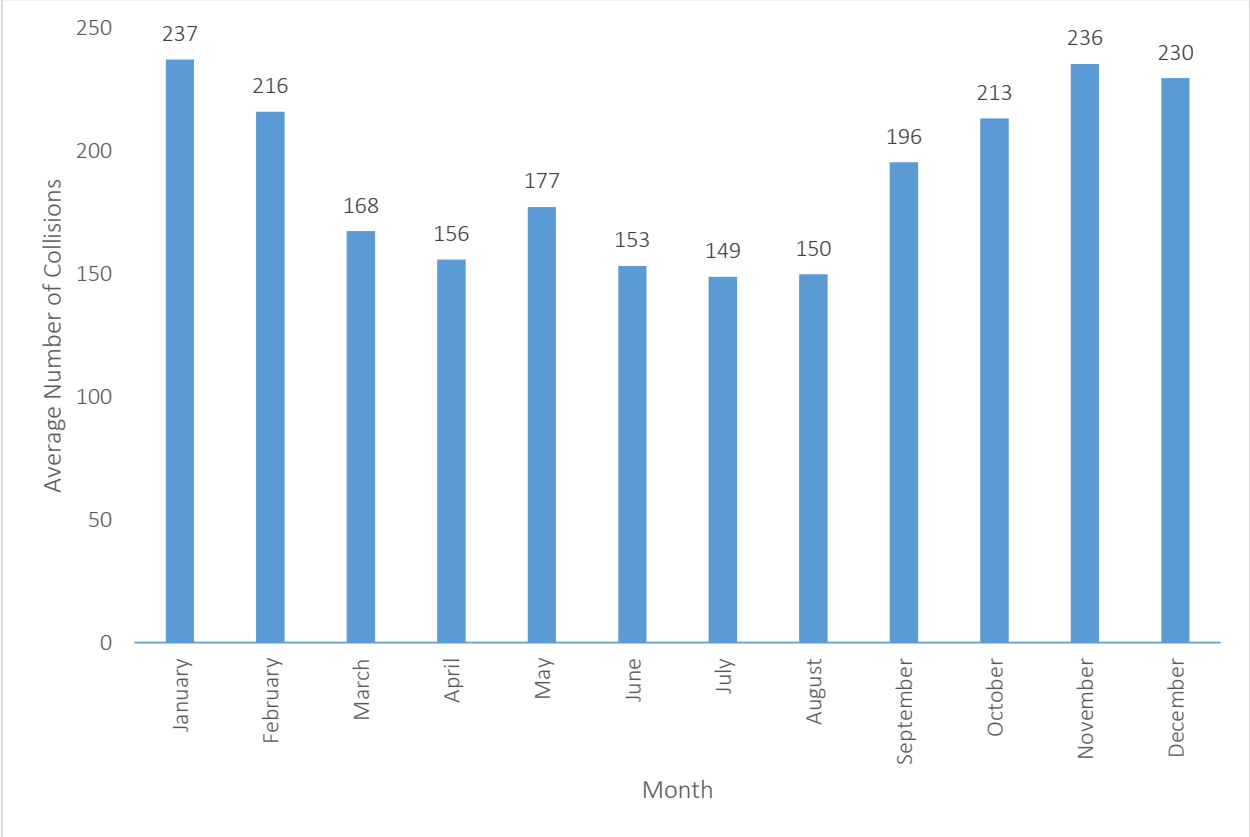


Figure 13: Average Number of Collisions by Day of Week (2015 – 2019)

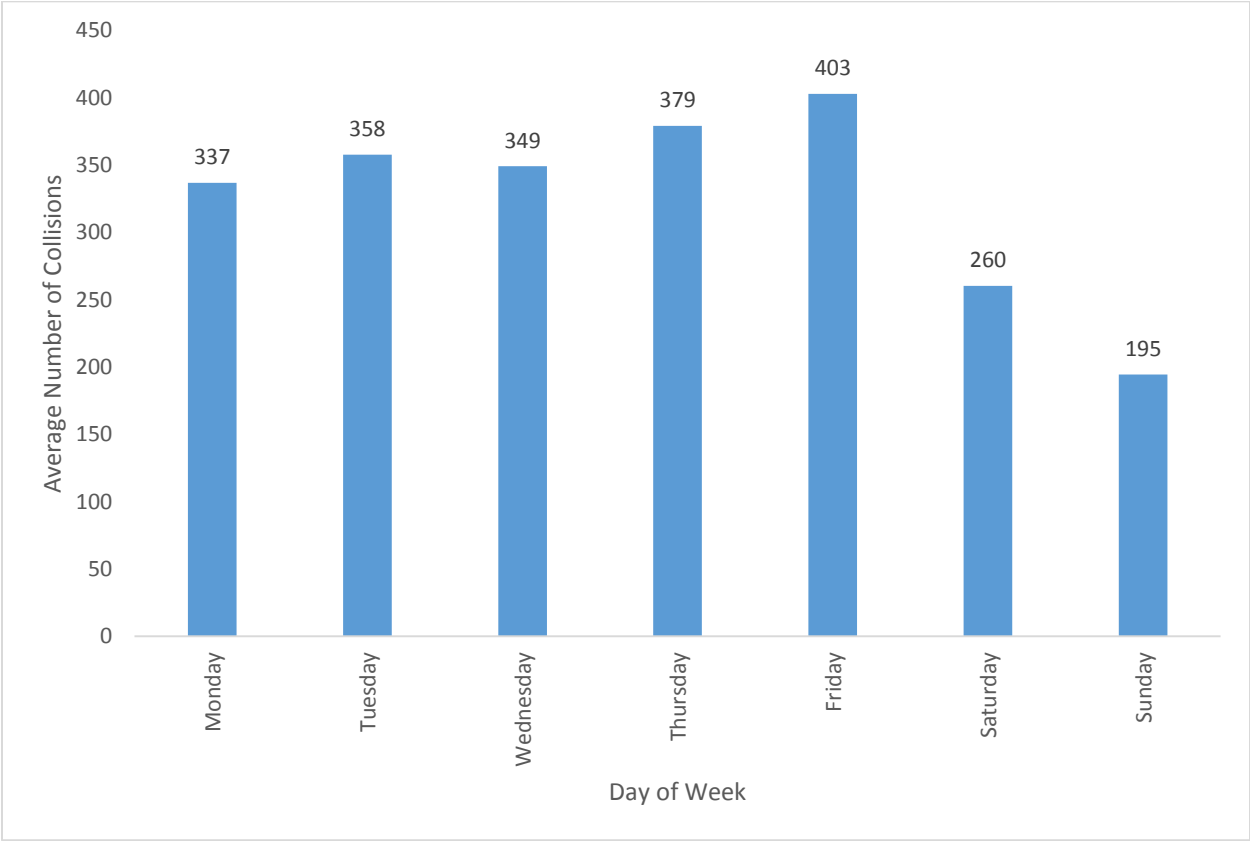


Figure 14: Average Number of Collisions by Hour (2015 – 2019)

