



ANNUAL COLLISION REPORT

2023 / 2024



Hamilton

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Executive Summary

The City of Hamilton's Annual Collision Report typically summarizes collision trends for a single year. The City now obtains collision reports through the Ministry of Transportation's Authorized Requester Information Services (ARIS) system. Due to system delays and a 2024 cyber security incident, the City received collision data later than anticipated. As a result, this report provides a combined analysis of 2023 and 2024 collision statistics and trends. New in this year's combined report is a comparison between rural and urban collision data, offering additional insight into location-based trends across the City's transportation network.

The COVID-19 pandemic travel restrictions declared in March 2020 had an impact on traffic volumes and patterns and as such, collision data from 2020 and 2021 should be viewed with this in mind. It appears that traffic volumes in 2024 and 2024 have been returning to pre-pandemic levels. The highlights of the report are listed below.

General Collision Trends

The following general collision trends were noted:

- The City of Hamilton experiences around 8,496 collisions per year on average in 2015 to 2024. There were 8,843 collisions in 2023 and 9,774 collisions in 2024.
- The collision data shows that the total number of collisions has increased over the years but has been impacted by the pandemic. The total collisions in 2023 increased by 7.0% over 2022 and in 2024 increased by 10.0% over 2023; however, when compared to 2019, total collisions in 2023 were 11.3% lower and in 2024 were 1.3% lower.
- While the total number of collisions have been increasing, the fatal and injury collisions have been decreasing in the City of Hamilton. Fatal and injury collisions in 2023 were 11.8% lower than in 2022 and in 2024 were 6.9% lower than in 2023. When compared to 2019, fatal and injury collisions in 2023 were 24.0% lower and in 2024 were 41.0% lower.
- There were 14 fatal collisions in both 2023 and 2024.
- There were four pedestrian fatalities in 2023 and three in 2024. There was one cyclist fatality in each of 2023 and 2024. There was one motorcyclist fatality in 2023 and four in 2024.
- In 2023, the Lincoln M. Alexander Parkway (LINC) showed a 20.9% increase in total collisions but a 24.0% decrease in injury collisions compared to 2022. In 2024, the LINC showed a decrease in total collisions of 16.8% and a decrease in fatal and injury collisions of 31.6% compared to 2023. There was one fatal collision on the LINC in 2023 and two fatal collisions on the LINC in 2024.
- In 2023, the RHVP showed a decrease in total collisions of 6.3% but an increase in fatal and injury collisions of 26.0% compared to 2022. In 2024, the RHVP showed an increase in total collisions of 6.3% and a decrease in fatal and injury collisions of 8.7% compared to 2023. There was one fatal collision on the RHVP in each of 2021, 2022, 2023, and 2024.
- In 2023, 1,382 people were injured in 1,048 collisions. Among those, 14 people were fatally injured and 124 suffered from a major injury¹. In 2024, 1,290 people were injured in 978 collisions. Among those, 15 people were fatally injured and 97 suffered from a major injury.
- Male drivers were involved in 61.4% of all collisions.



¹ Major injury means that a person was admitted to hospital and includes a person admitted for observation. A major injury could be either life-threatening or non-life-threatening. (MTO MVAR Manual, 2011).

- The majority of collisions (79.1%) occurred on dry surface conditions. Collisions that occurred on wet and snow/ice covered road surfaces were 14.6% and 5.1% respectively. These percentages are similar to Provincial averages.
- Collisions during non-dry conditions on the RHVP for 2020-2024 is 21.2%, which has improved greatly from 31.5% in 2018-2022, 45.7% in 2017–2021, 57.8% in 2016–2020, and 64.1% (2015-2019).
- The majority of collisions occurred during daylight conditions (65.7%) in 2020-2024, this percentage is lower than the Provincial average (approximately 72%).
- On road segments, Single Motor Vehicle (SMV) collisions (SMV unattended and SMV other²) constituted 41.9% of total collisions on road segments followed by rear-end collisions (21.9%).
- Rear-end collisions were the largest type of collisions (43.0%) at signalized intersections. This is consistent with other jurisdictions in Ontario.
- The vehicle type in the majority of intersection-related collisions was car (79.6%), followed by pick-up truck (8.8%), and van (4.4%).
- The vehicle type in the majority of collisions that occurred on road segments was car (76.7%), followed by pick-up truck (9.9%), and van (5.0%).

Temporal Trends

The following temporal trends were noted:

- The largest number of collisions occurred during September to December in both 2023 and 2024.
- October and November experienced the highest numbers of fatal and injury collisions.
- More collisions and most fatal and injury collisions occurred during Fridays compared to any other day of week, which is consistent with Provincial observations.
- Weekday collisions correlate to the peak periods of traffic. Most collisions regardless of their severity occurred in the PM peak of traffic (3:00 PM – 5:00 PM), mid-day peak of traffic (around noon), and AM peak of traffic (8:00 AM – 9:00 AM).
- The pattern of collisions during weekends is different from weekdays. The number of collisions during weekends was lower than weekdays and the hours with the largest number of collisions were distributed from 10:00 AM to 6:00 PM.

Spatial Trends

The following spatial trends were noted:

- The intersection of Mohawk Road West at Upper James Street experienced the highest number of injury collisions in 2019–2023 (25) and 2020-2024 (25). None of the collisions were fatal.
- Upper James Street between Lotus Avenue and Mohawk Road East experienced the largest number of fatal and injury collisions in 2019–2023 (18) and 2020-2024 (17). None of the collisions were fatal.
- The majority of fatal collisions occurred at road segments (54.8%) but the majority of injury collisions occurred at intersections (60.0%).
- The majority of collisions (92%) occurred in urban areas and the remaining 8% occurred in rural areas.
- Of the total collisions, 54.0% occurred at intersections. Of these, 68.3% occurred at signalized intersections and 23.8% occurred at two-way stop-controlled intersections.

² Single motor vehicle (SMV) unattended collisions occur when a vehicle strikes a vehicle unattended by its driver. Include parked, stopped, disabled, abandoned and runaway vehicles, provided it was not under the car and control of a driver. Does not include vehicles stopped for traffic or standing while loading or unloading passengers or cargo. Single motor vehicle (SMV) other refers to collisions where a single motor vehicle initially collides with a fixed object, pedestrian or animal.

- The road classification in the majority of intersection-related collisions was arterial-arterial (39.5%), followed by arterial-local (25.2%), and arterial-collector (20.2%). 33.7% of intersection fatal and injury collisions occurred at intersections of two arterial roads followed by arterial-local intersections (28.2%) and arterial-collector intersections (22.2%).
- The road classification in the majority of road segment collisions was local (28.8%), followed by major arterial (28.0%), and minor arterial (23.4%). The remaining road segment collisions occurred at major collector (11.1%) and parkway (8.1%). 33.6% of all road segment fatal and injury collisions occurred at major arterial roads followed by minor arterial roads (33.2%), local roads (13.3%), major collector roads (12.3%), and parkways (7.0%).

Vulnerable Road Users

The following trends and observations were noted for pedestrian and cyclist collisions:

- The number of pedestrian collisions has fluctuated between 172 and 228 in the past 5 years. In 2023, the City experienced 228 pedestrian collisions, which is 5.4% higher than in 2022. In 2024, the City experienced 190 pedestrian collisions, which is 18.2% lower than in 2023. There were 4 fatal pedestrian collisions in 2023 and 3 in 2024.
- The number of cyclist collisions has fluctuated between 121 and 154 in the past 5 years. In 2023, the City experienced 121 cyclist collisions, which is 16% lower than in 2022. In 2024, the City experienced 154 cyclist collisions, which is 24% higher than in 2023. There was one cyclist fatality in each of 2023 and 2024.
- The largest number of pedestrian collisions occurred in the months of November and December. In most Ontario municipalities, the largest number of pedestrian collisions occur in November. The largest number of cyclist collisions occurred between the months of June to August.
- The largest number of pedestrian and cyclist collisions occurred on Thursdays.
- The age group with the largest number of pedestrian collisions was 25-29. The age group with the largest cyclist collisions was 15-19.
- 90.9% of all pedestrian collisions resulted in an injury in 2020-2024 while 2.7% resulted in a fatality.
- 70.9% of all cyclists involved in a collision in 2020-2024 sustained injury (including 0.4% fatal injury).
- The majority of pedestrian and cyclist collisions occurred at intersections (66.2% and 68.4% respectively).
- A review of driver actions involved in pedestrian and cyclist collisions showed that 38% and 18.4% of drivers failed to provide the right of way to pedestrians and cyclists, respectively. Additionally, in 11.2% and 8.3% of collisions drivers committed improper turns in pedestrian and cyclist collisions, respectively.
- Collisions involving pedestrians and cyclists mainly occurred in urban areas, at 98.9% and 95.9%, respectively. Fatal and injury collisions involving pedestrians and cyclists followed the same trend, with 98.9% and 94.4% occurring in urban areas, respectively.
- The vehicle type of most intersection-related pedestrian collisions was car (75%) and pickup truck (13.7%). The vehicle types that cyclists collided with the most at intersections was car (84.9%) and pickup truck (7.0%).



- The vehicle type of most pedestrian collisions that occurred on road segments was car (75.8%) and pickup truck (10.1%). The vehicle types that cyclists collided with the most at road segment locations were car (75.2%) and pickup truck (12.6%).

Driver Behaviour

The following road user collision trends were noted:

- Impairment / alcohol consumption was a contributing factor in 7% of fatal and injury collisions.
- Speeding accounted for 18% of all police-reported collisions. The percentages of speed-related collisions on the LINC and the RHVP were 30% and 59% respectively.

Disclaimer and Explanation

Self-Reporting of Collisions

The use of the term “reported” or “police reported” collision refers to a collision attended by a member of the Hamilton Police Service who filled out the standard Provincial collision reporting form. The term “self-reported” refers to a collision reported by citizens involved in collisions that do not involve or damage to private, municipal, or highway property or medical attention. Self-reported collisions are filed at Collision Reporting Centres (CRC) based on the information provided by the parties involved in the collision. In this report, all charts and statistics are based on the total collisions (police reported and self-reported collisions), unless otherwise stated.

COVID-19 Pandemic and Traffic Patterns

On March 17, 2020, the Government of Ontario declared a state of emergency due to the COVID-19 pandemic and ordered gradual closure of businesses and facilities. As a result of the state of emergency and subsequent stay at home orders from the Province, the City of Hamilton, similar to other jurisdictions in Ontario, experienced reduction in vehicular traffic volumes, resulting in a reduction in the number of collisions. With the gradual removal of travel restrictions, traffic volumes have increased since July 2021. Due to the pandemic related travel restrictions, the number of collisions in 2020 and 2021 were significantly lower than the pre-pandemic levels.

Introduction

The City of Hamilton is situated in Southern Ontario at the westerly end of Lake Ontario. The population of the City of Hamilton was 569,355 in 2021 (Statistics Canada Census) and is estimated by the Conference Board of Canada to be growing at 1.5% per year. On this basis, the approximate population in 2024 was 595,361.

The City of Hamilton road system contains the full spectrum of road types: multi-lane, one-way and two-way arterials, residential local and collector streets, medium-speed and high-speed rural two-lane roads and an 80/90 km/h limited access parkway system. The City road network includes 2,990 kilometers of roads where 66% are in urban areas and 34% are in rural areas.

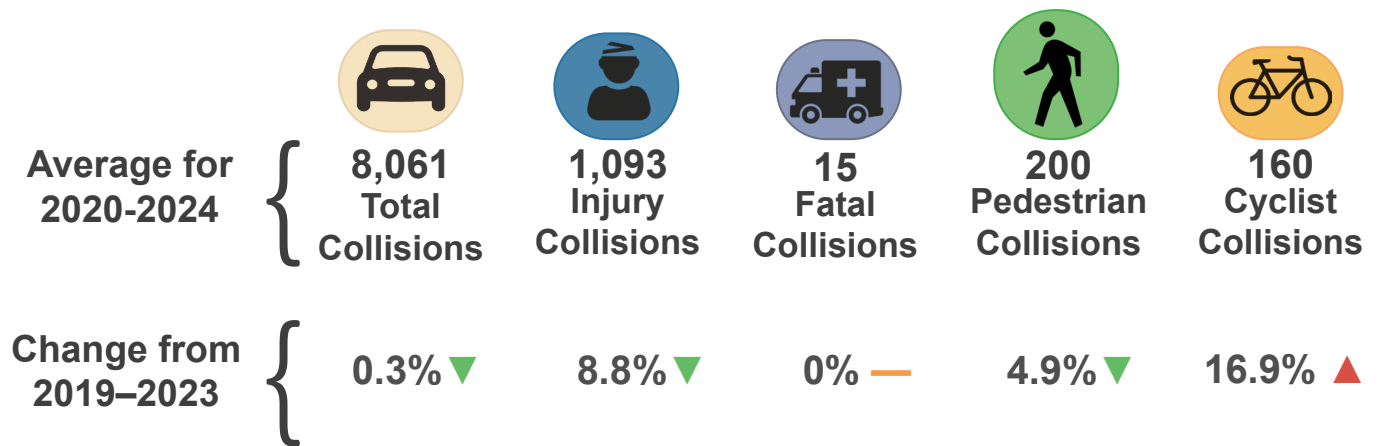
The geographic area for analysis in this report includes all roads within the Hamilton municipal boundaries, excluding provincially controlled roadways: Queen Elizabeth Way (mainline), Highway 6, Highway 8 from Highway 5 northerly, Highway 5 between Highway 6 and Highway 8/52, Highway 403, on-ramps and off-ramps to Highway 403. Collisions occurring on service roads to the Queen Elizabeth Way are included. Only collisions on City streets or sidewalks are recorded; private property collisions are not included. This report provides insight into the trends, patterns, and characteristics of collisions that occurred on the City road system. This report can assist in identifying potential safety issues and initiating the conversation to identify mitigative actions to improve safety for all road users of all ages.

Road safety is a complex and multidisciplinary subject. In the City of Hamilton, many professionals work together to provide a safe transportation system to our residents. These professionals include law enforcement, engineers, planners, public health nurses, student transportation services, transit operators, and educators who work together to provide a safe transportation system to our residents. The Hamilton Strategic Road Safety Program and Vision Zero Action Plan 2019–2025 was approved in 2019, which is a holistic data-driven approach to improve road safety through evaluation, engineering, enforcement, education, and engagement.

The graphic below presents an overview of the City of Hamilton’s road safety performance for the years 2023 / 2024:



The graphic below provides the average total collisions, injuries, fatalities, pedestrian collisions, and cyclist collisions for 2020-2024 and compares them to the averages for 2019-2023.



SECTION 1

Collision Trends

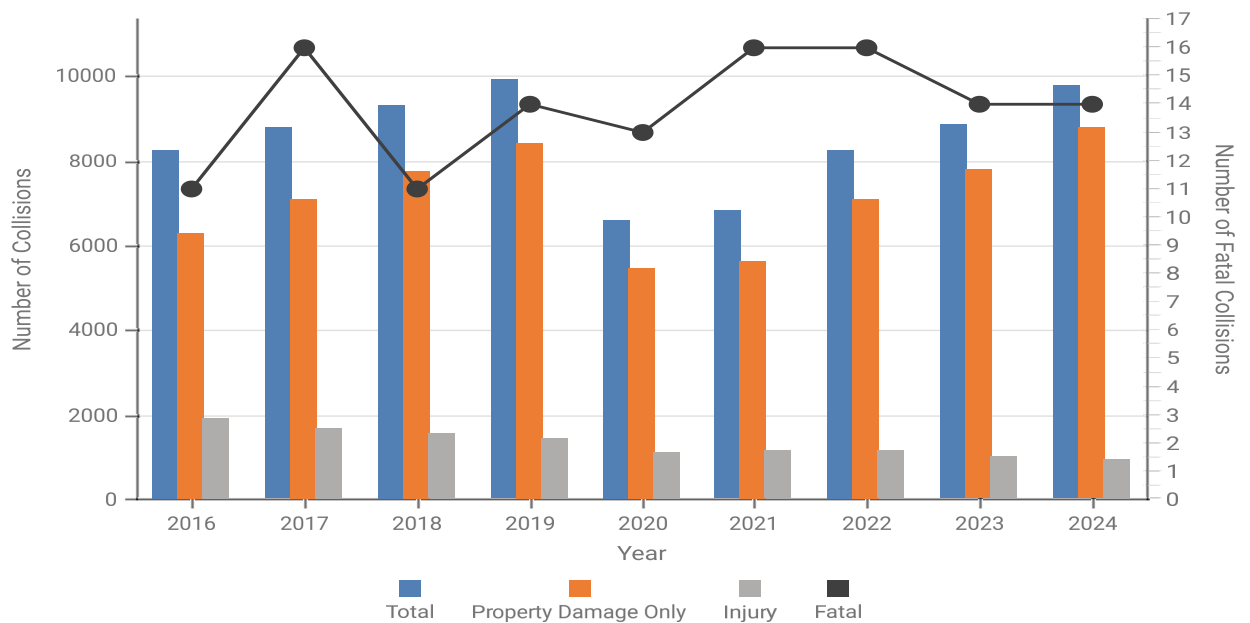


Frequency and Severity

A review of the City’s collision data shows that the total number of collisions has increased over the years but was impacted by the COVID-19 Pandemic. The City on average experiences 8,496 collisions each year in 2015 to 2024.

Total collisions in 2023 increased by 7.0% over 2022 but were still 11.3% lower than in 2019. Total collisions in 2024 increased by 10.0% over 2023 but were still 1.3% lower than in 2019. Fatal and injury collisions in 2023 decreased by 11.8% compared to 2022 and were 24.0% lower than in 2019. Fatal and injury collisions in 2024 decreased by 6.9% compared to 2023 and were 41.0% lower than in 2019. Considering Hamilton’s population growth, road safety trends appear to be improving, particularly in reducing fatal and injury collisions.

The City experienced 14 fatal collisions in both 2023 and 2024. The average number of fatal collisions over the past five years is 14.6 per year and over the past ten years is 13.9 per year.



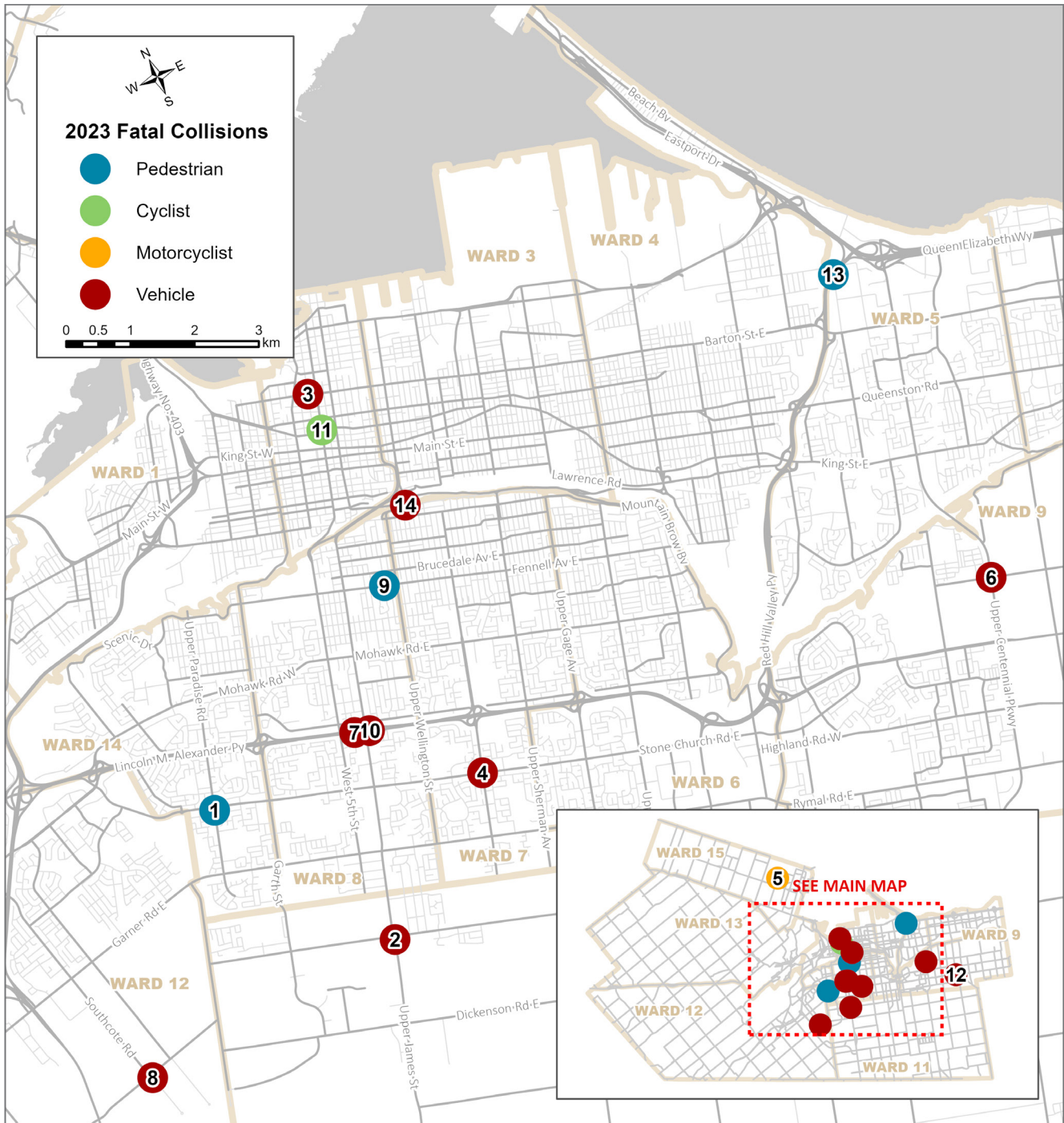
Collision Frequency (2015–2024)

Year	Total Collisions	Fatal Collisions	Fatal and Injury Collisions	Property Damage Only Collisions
2015	8,385	14	1,945	6,440
2016	8,259	11	1,947	6,312
2017	8,781	16	1,698	7,083
2018	9,333	11	1,572	7,761
2019	9,900	14	1,483	8,417
2020	6,610	13	1,154	5,456
2021	6,815	16	1,178	5,637
2022	8,264	16	1,179	7,085
2023	8,843	14	1,048	7,795
2024	9,774	14	978	8,796

In 2023, fatal collisions included nine occupants of vehicles, four pedestrians, one cyclist, and one motorcyclist spread across the City. Six fatal collisions occurred at intersections and eight fatal collisions occurred on road sections. In 2023, 1,382 people were injured in 1,048 collisions. Among those, 14 people were fatally injured and 124 suffered from a major injury.

In 2024, fatal collisions included ten occupants of vehicles, four pedestrians, one cyclist, and three motorcyclists spread across the City. Five fatal collisions occurred at intersections and nine fatal collisions occurred on road sections. In 2024, 1,290 people were injured in 978 collisions. Among those, 15 people were fatally injured and 97 suffered from a major injury.

Map of Locations of Fatal Collisions in 2023

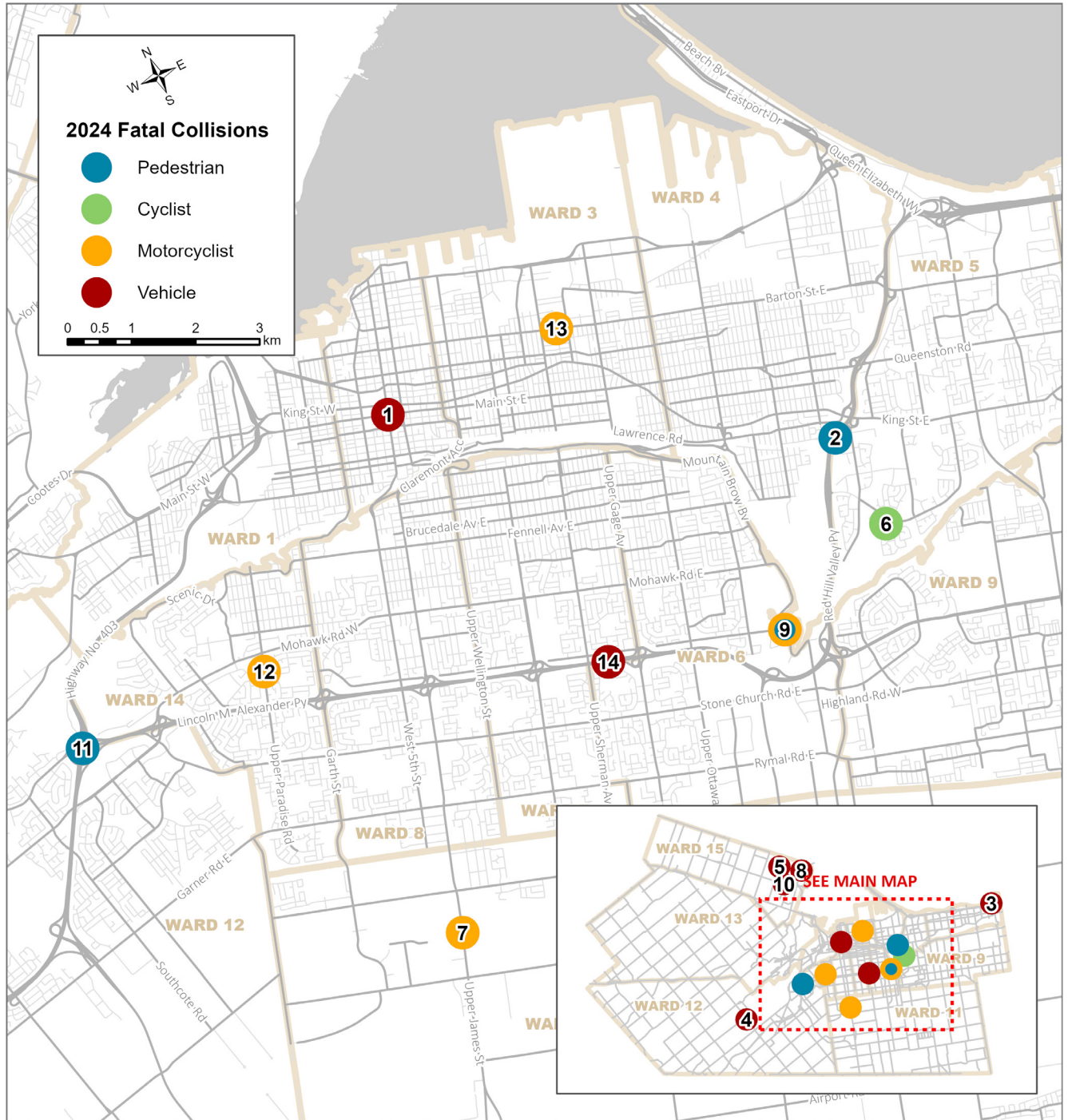


Locations and Dates of Fatal Collisions in 2023

2023 Fatal Collisions

- 1 Upper Paradise Road between Kordun Street and Stone Church Road • **January 11, 2023**
- 2 Upper James Street between Private Drive and Twenty Road West • **April 13, 2023**
- 3 Barton Street West at MacNab Street North • **April 25, 2023**
- 4 Stone Church Road at Upper Wentworth Street • **May 12, 2023**
- 5 Concession 5 East between Railway Line and Robson Road • **May 15, 2023**
- 6 Green Mountain Road East at Upper Centennial Parkway • **June 17, 2023**
- 7 Lincoln Alexander Parkway Eastbound between ramp Lincoln Alexander Parkway Eastbound and ramp Upper James Southbound to Lincoln Alexander Parkway Eastbound • **June 19, 2023**
- 8 Southcote Road south of Book Road East • **July 19, 2023**
- 9 Fennell Avenue East at Hoover Crescent • **July 25, 2023**
- 10 Lincoln Alexander Parkway Eastbound between ramp Lincoln Alexander Parkway Eastbound and ramp Upper James Southbound to Lincoln Alexander Parkway Eastbound • **August 26, 2023**
- 11 James Street North at York Boulevard • **September 28, 2023**
- 12 Highland Road East at Taplestown Road • **November 25, 2023**
- 13 Red Hill Valley Parkway Northbound between Highway Bridge ramp at ramp Red Hill Valley Parkway Northbound to Queen Elizabeth Way Niagara • **November 28, 2023**
- 14 Jolley Cut between Pedestrian Stairs and Top of Escarpment • **December 26, 2023**

Map of Fatal Collisions in 2024



Locations and Dates of Fatal Collisions in 2024

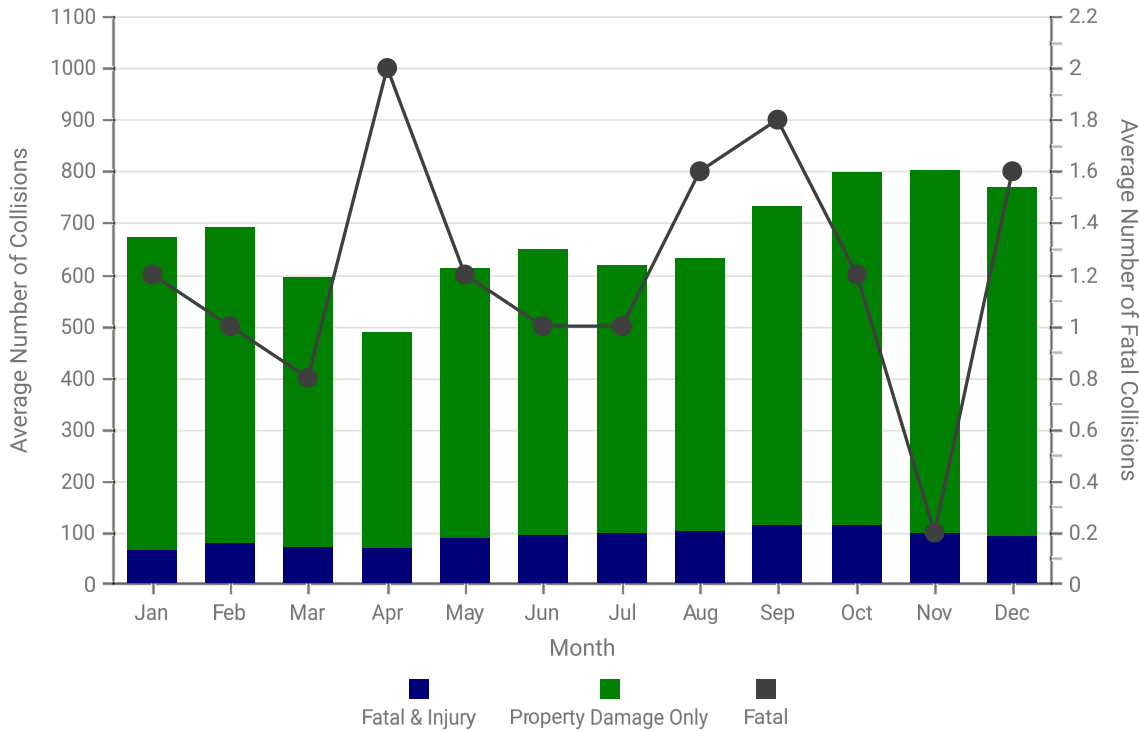
2024 Fatal Collisions

- 1 James Street North at Main Street East • **February 2, 2024**
- 2 Red Hill Valley Parkway Northbound between ramp Red Hill Valley Parkway Northbound to King and ramp King to Red Hill Valley Parkway Northbound • **February 17, 2024**
- 3 North Service Road between Baseline Road and Fifty Road • **March 20, 2024**
- 4 Highway No. 52 North between Powerline Road East and Powerline Road West • **March 22, 2024**
- 5 Concession 5 East between Beeforth Road and Concession 5 • **April 4, 2024**
- 6 Glen Valley Drive between Toro Drive and Capilano Drive • **April 15, 2024**
- 7 Upper James Street at HSR North Entrance • **June 12, 2024**
- 8 Avonsyde Boulevard at Highway No. 5 East • **July 23, 2024**
- 9 Mountain Brow Boulevard between Limeridge Road and Major Road Bridge • **August 4, 2024**
- 10 Centre Road between Wigood and Concession 5 • **August 15, 2024**
- 11 Lincoln Alexander Parkway Westbound between ramp Lincoln Alexander Parkway Westbound to Highway 403 Eastbound and Mohawk Road West • **August 31, 2024**
- 12 Lunner Avenue at Upper Paradise Road • **September 25, 2024**
- 13 Barnesdale Avenue North at Barton Street East • **September 26, 2024**
- 14 Lincoln Alexander Parkway Eastbound between ramp Lincoln Alexander Parkway Eastbound to Upper Gage and ramp Upper Gage Southbound to Lincoln Alexander Parkway Eastbound • **October 11, 2024**

Month, Day, and Time of Collisions

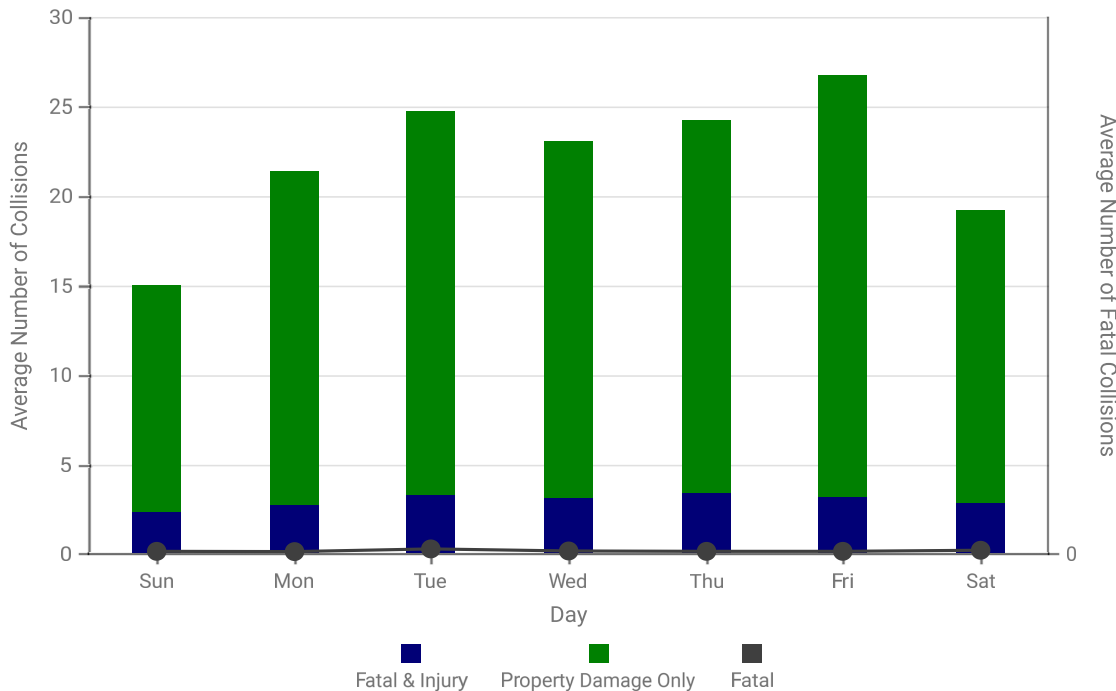
The largest number of collisions occurred during the months of September to December. The months of October and November experienced the highest numbers of fatal and injury collisions based on 2020-2024 collision data.

- Most fatal and injury collisions occurred during Fridays.
- The average number of fatal and injury collisions was 1,418 collisions per year over the last 10 years.



Collisions by Month, 5 Year Average (2020-2024)

More collisions and most fatal and injury collisions occurred during Fridays.

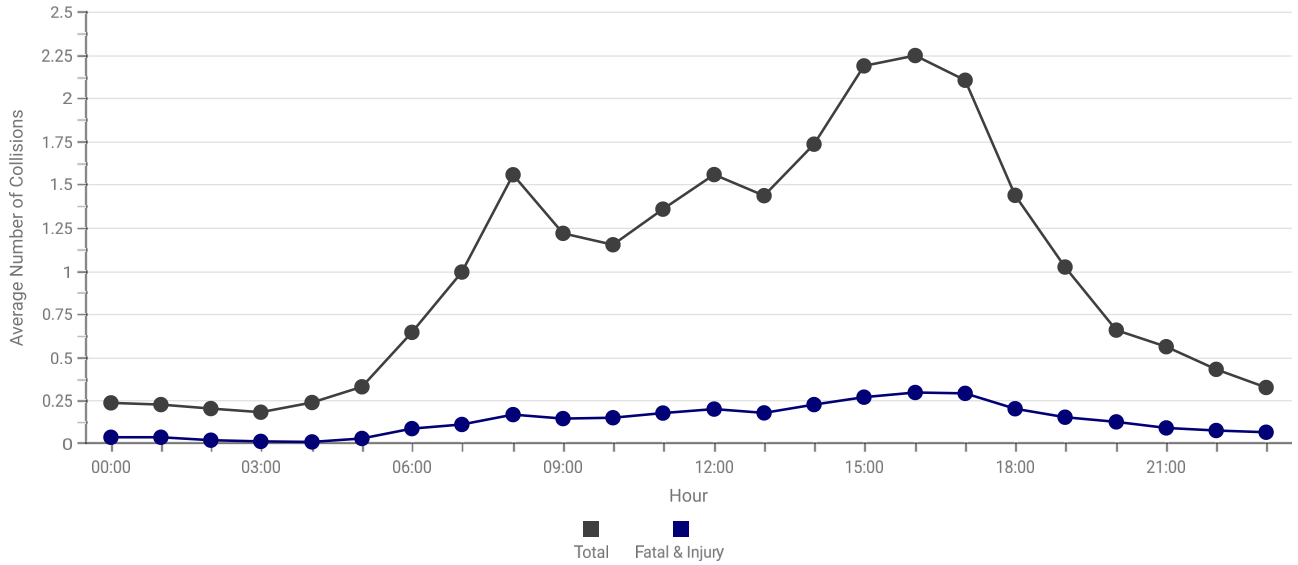


Collisions by Day of Week, 5 Year Average (2020-2024)

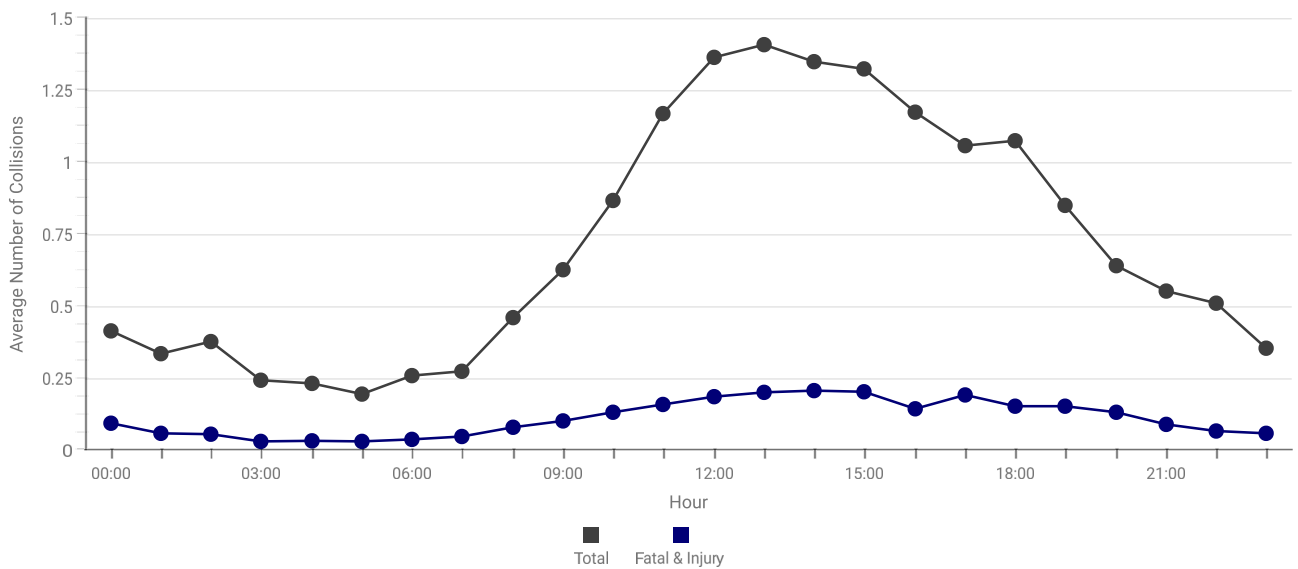


During weekdays, there is a strong correlation between the peak periods of traffic and the number of collisions. Most collisions regardless of their severity occurred in the PM peak of traffic (3:00 PM – 6:00 PM), mid-day peak of traffic (around noon), and AM peak of traffic (8:00 AM – 9:00 AM).

The pattern of collisions during weekends are different from weekdays. The number of collisions during weekends was lower than weekdays and the hours with the largest number of collisions were spread from 10:00 AM to 8:00 PM.



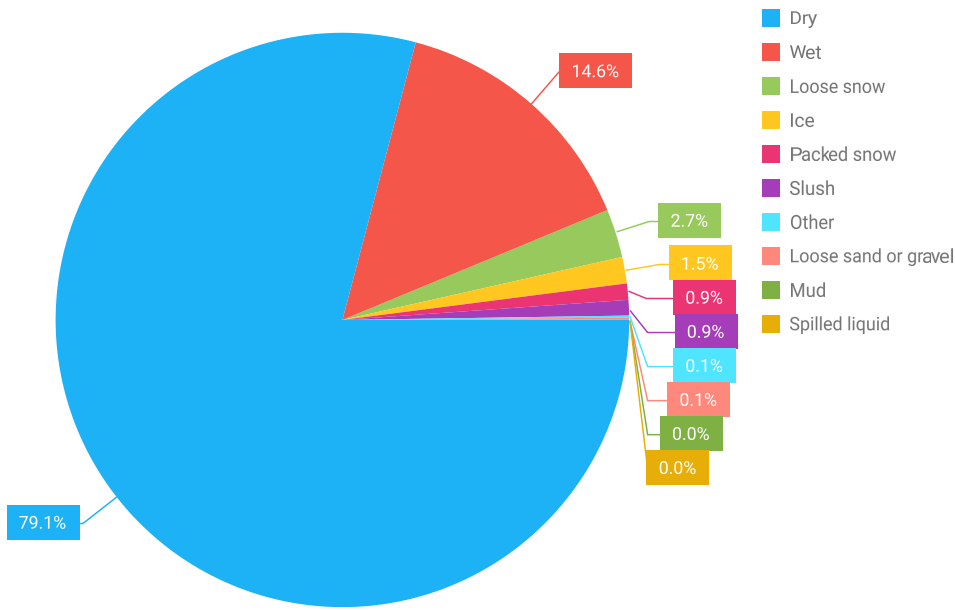
Weekday Collisions by Time-of-Day, 5 Year Average (2020-2024)



Weekend Collisions by Time-of-Day, 5 Year Average (2020-2024)

Collisions By Road Surface and Lighting Conditions

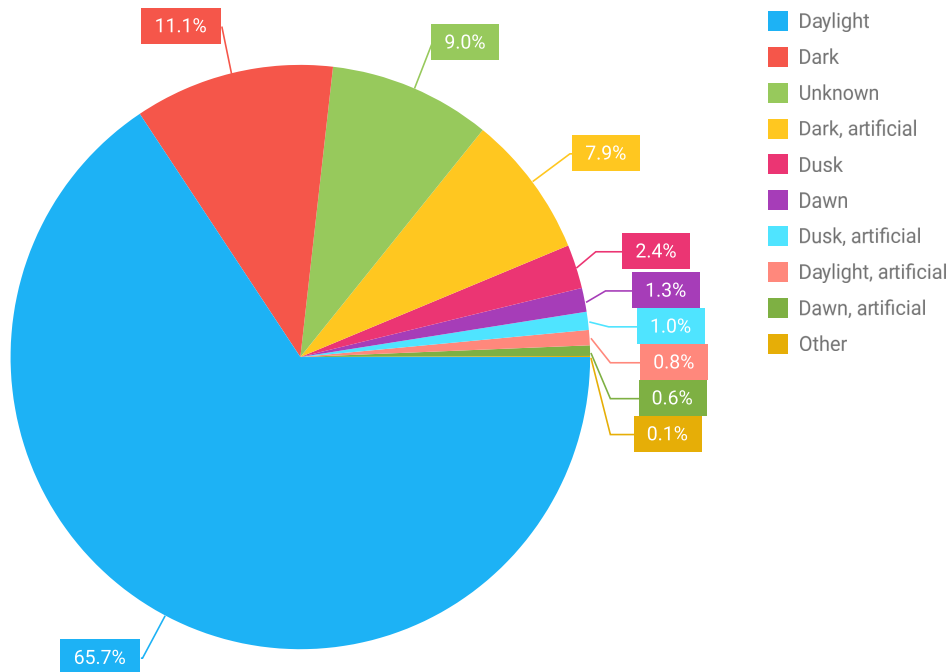
The majority of collisions (79.1%) occurred on dry surface conditions. Collisions that occurred on wet and snow/ice covered road surfaces were 14.6% and 5.1% respectively. These percentages are similar to Provincial averages.



Collisions by Road Surface Condition, 5 Years (2020-2024)

- The majority of collisions (79.1%) occurred on dry surface conditions.
- Collisions that occurred on wet and snow/ice covered road surfaces were 14.6% and 6.0% respectively.
- 65.7% of all collisions occurred during daylight conditions.

While the majority of collisions occurred during daylight conditions (65.7%) in 2020-2024, this percentage is lower than the Provincial average (approximately 72%).



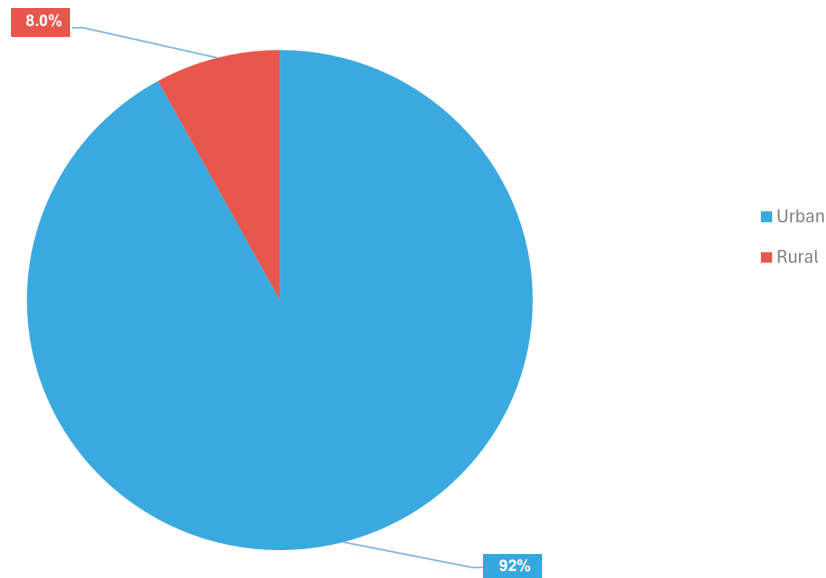
Collisions by Lighting Condition, 5 Years (2020-2024)



Collision Impact Type by Area, Location, and Traffic Control

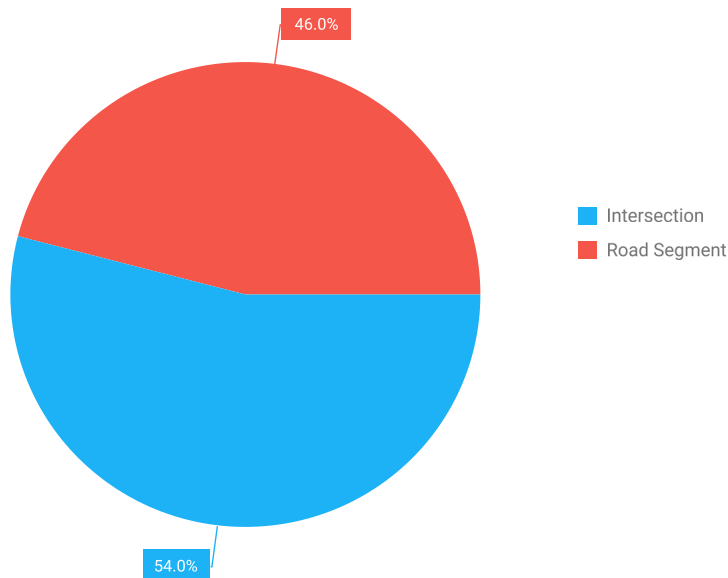
Collisions that occurred in urban areas represented 92% of total collisions, while those in rural areas accounted for 8%. When normalized by the length of the road network, collision density in urban Hamilton is substantially higher than in rural areas. Rural Hamilton experiences approximately 2.5 collisions per centre-line kilometre, while urban Hamilton experiences about 15.3 collisions per centre-line kilometre. This difference reflects the higher traffic volumes, intersection density, and multimodal activity typically associated with urban environments and highlights the need for continued emphasis on road safety improvements within the City's built-up areas.

Within urban areas, collisions at intersections made up 50.6% of all collisions, while those on road segments accounted for 41.3%. In comparison, rural intersections contributed 3.4% and rural road segments made up 4.7% of total collisions.

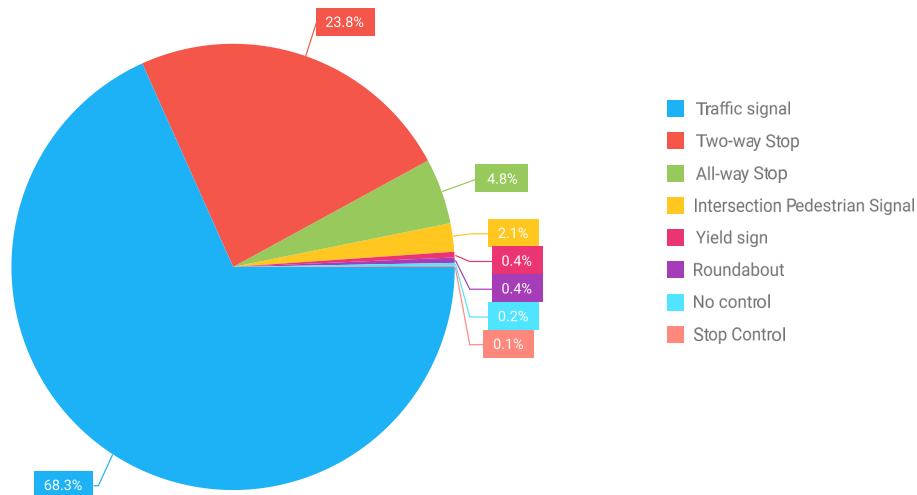


Collisions by Area Type, 5 Years (2020-2024)

Collisions that occurred at intersections or were intersection-related comprised 54.0% of total collisions. This observation is consistent with other municipalities, as intersections are major conflict points in a transportation network. Among those intersection collisions, the majority (68.3%) took place at signalized intersections and 23.8% at two-way stop-controlled intersections.



Collisions by Location, 5 Years (2020–2024)



Intersections Collisions by Traffic Control Type, 5 Years (2020-2024)

Single Motor Vehicle (SMV) collisions (SMV unattended and SMV other³) constituted 41.9% of total collisions on road segments followed by rear-end collisions (21.9%).

Rear-end collisions were the largest type of collisions (43.0%) at signalized intersections. This is consistent with other jurisdictions in Ontario. The second largest type of collision at signalized intersections is sideswipe collisions (19.0%) followed by angle collisions and turning movement collisions (14.3% each). It appears that similar to previous years, Hamilton experiences a high number of sideswipe collisions compared to other similar municipalities in Ontario.

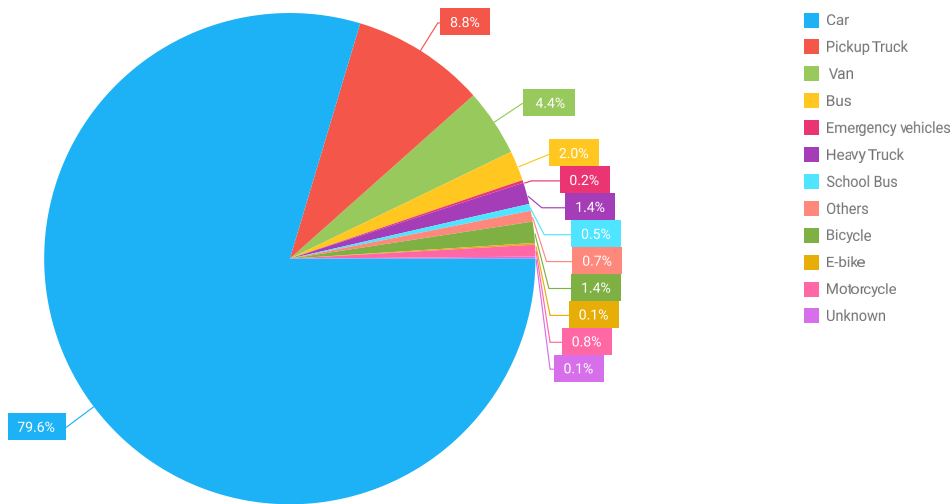
At stop-controlled intersections, angle collisions were the largest type of collisions (32.3%) followed by rear-end collisions (25.5%). This is consistent with other Ontario municipalities.

³ Single motor vehicle (SMV) unattended collisions occur when a vehicle strikes a vehicle unattended by its driver. Include parked, stopped, disabled, abandoned and runaway vehicles, provided it was not under the car and control of a driver. Does not include vehicles stopped for traffic or standing while loading or unloading passengers or cargo. Single motor vehicle (SMV) other refers to collisions where a single motor vehicle initially collides with a fixed object, pedestrian or animal.



Collisions by Vehicle Type

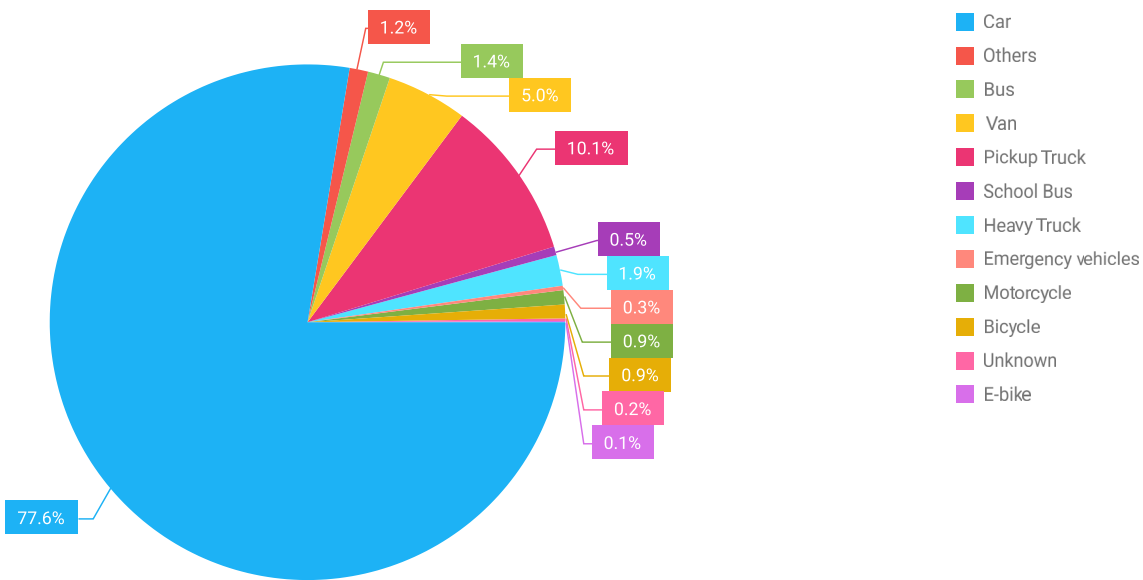
The vehicle type in the majority of intersection-related collisions was car (79.6%). The other vehicle types of note were pick-up truck (8.8%), and van (4.4%).



Intersection Collisions by Vehicle Type, 5 Years (2020–2024)

The vehicle type in the majority of intersection-related fatal and injury collisions was also car (75.6%). The other vehicle types of note were pick-up truck (8.4%), bicycle (5.1%), heavy truck (1%), motorcycle (2.7%), bus (1.3%), and van (4.4%).

The vehicle type in the majority of collisions on road segments was car (76.7%). The other vehicle types of note were pick-up truck (9.9%), van (5.0%), municipal transit bus (1.0%), and truck-closed (1%).



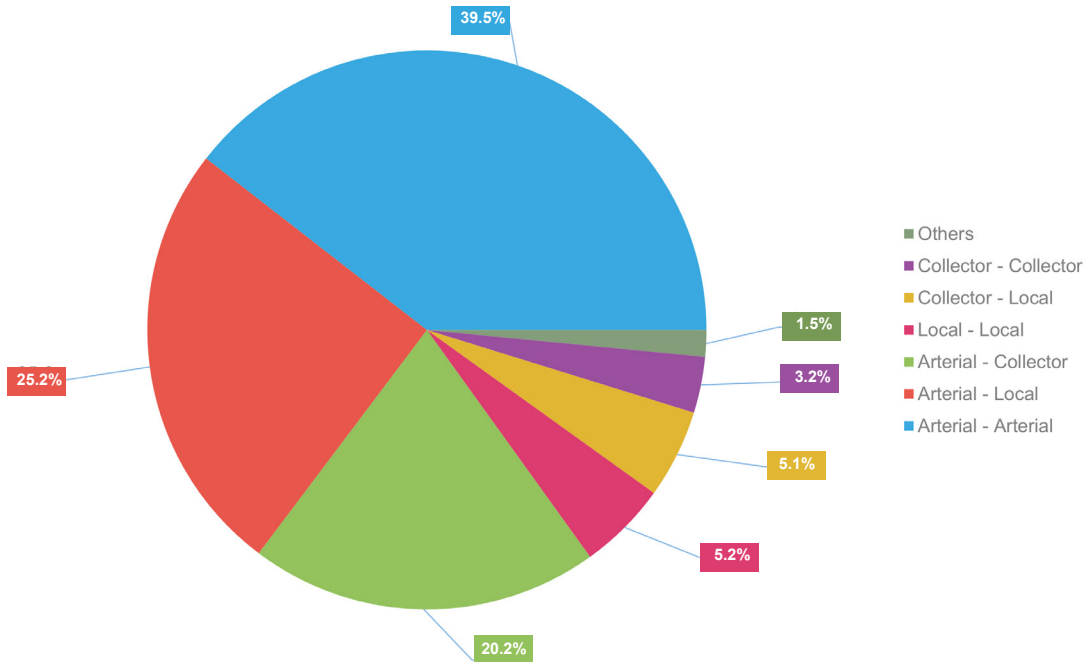
Road Segment Collisions by Vehicle Type, 5 Years (2020–2024)

The vehicle type in the majority of fatal and injury collisions on road segments was also car (75%). The remainder were split between pick-up truck (10%), and heavy truck (4%).



Collisions by Road Classification

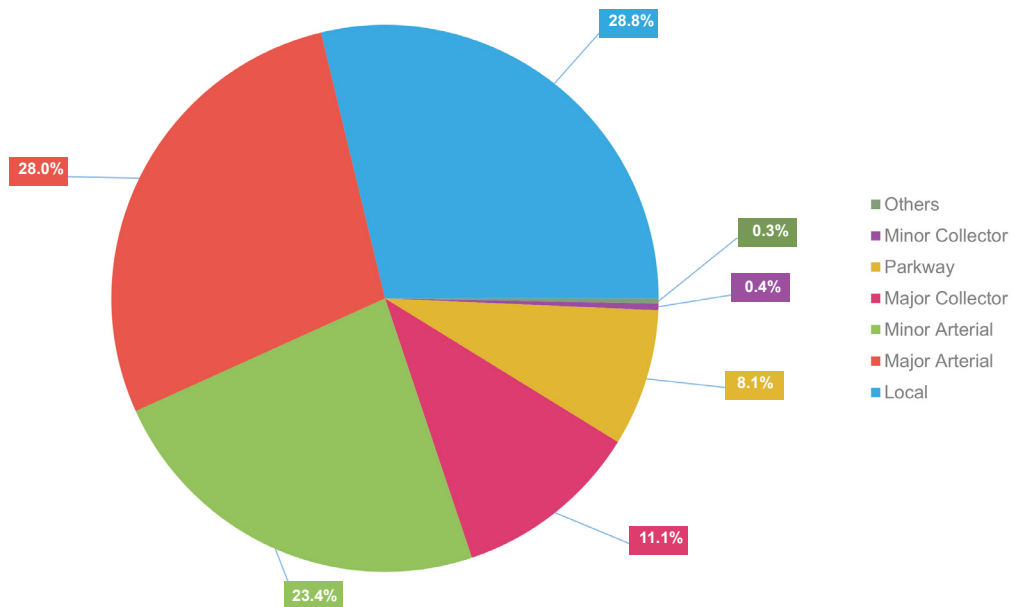
The road classification in the majority of intersection-related collisions was arterial-arterial (39.5%), followed by arterial-local (25.2%), and arterial-collector (20.2%). The remaining intersection-related collisions occurred at local-local (5.2%), collector-local (5.1%), and collector-collector (3.2%) road classifications.



Intersection Collisions by Road Classification, 5 Years (2020–2024)

Intersection-related fatal and injury collisions in 2020–2024 were split between arterial-arterial intersections (33.7%), arterial-local intersections (28.2%), arterial-collector intersections (22.2%), collector-local intersections (6.4%), local-local intersections (5.7%), collector-collector intersections, and others (0.8%).

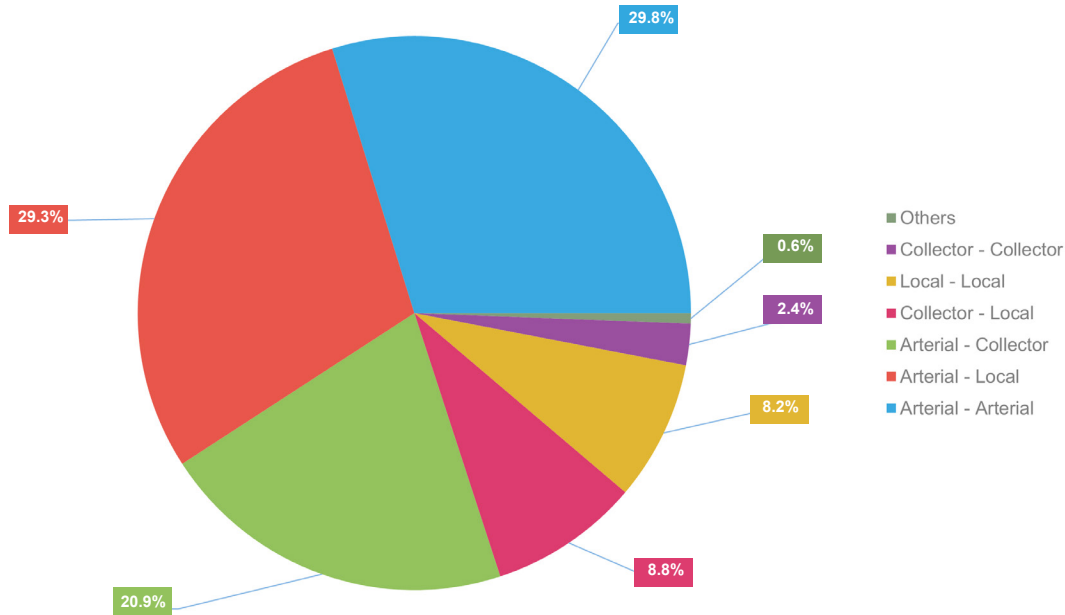
The road classification in the majority of road segment collisions was local (28.8%), followed by major arterial (28.0%), and minor arterial (23.4%). The remaining road segment collisions occurred at major collector (11.1%) and parkway (8.1%).



Road Segment Collisions by Road Classification, 5 Years (2020–2024)

Road segment-related fatal and injury collisions in 2020-2024 were split between major arterial (33.6%), minor arterial (33.2%), local (13.3%), major collector (12.3%), parkway (7.0%), minor collector (0.4%), and others (0.3%).

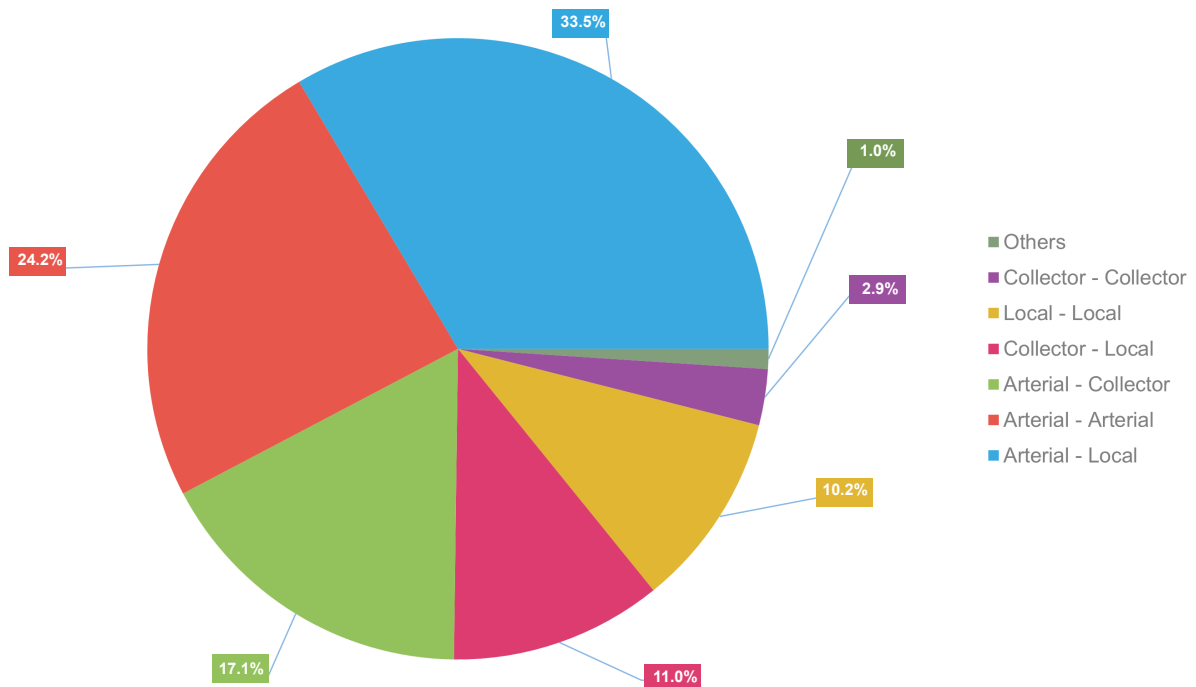
The road classification in the majority pedestrian-involved intersection collisions was arterial-arterial (29.8%), followed by arterial-local (29.3%), and arterial-collector (20.9%). The remaining pedestrian-involved intersection collisions occurred at collector-local (8.8%), local-local (8.2%), and collector-collector (2.4%).



Pedestrian Intersection Collisions by Road Classification, 5 Years (2020–2024)

Pedestrian intersection fatal and injury collisions were split between arterial-arterial intersections (30.4%), arterial-local intersections (29.6%), arterial-collector intersections (20.2%), collector-local intersections (9.2%), local-local intersections (7.8%), collector-collector intersections (2.4%), and others (0.3%).

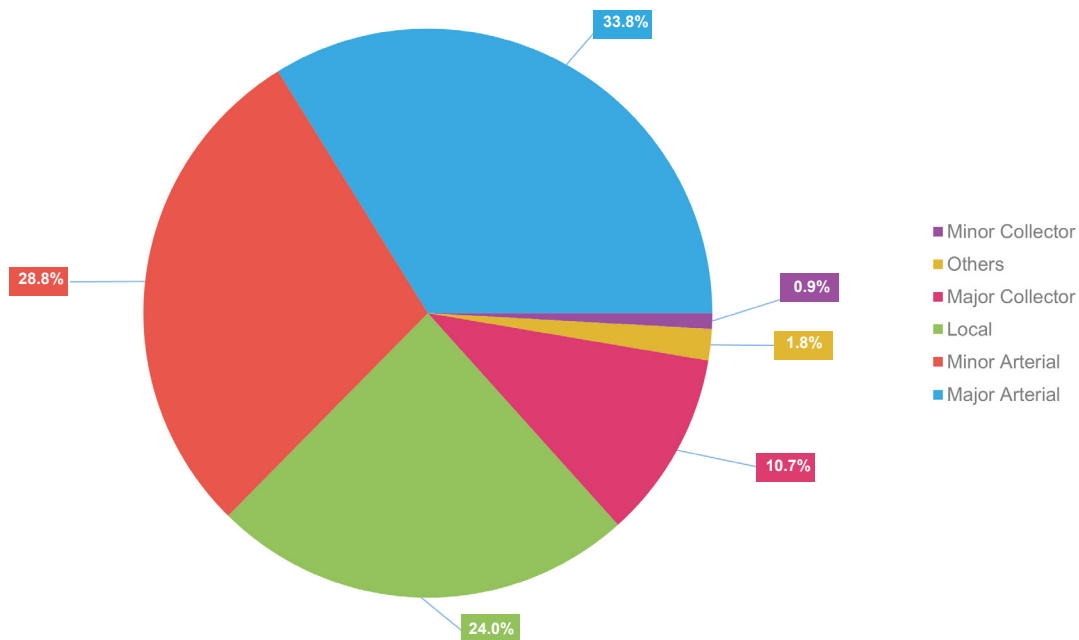
The road classification in the majority cyclist-involved intersection collisions was arterial-local (33.5%), followed by arterial-arterial (24.2%), and arterial-collector (17.1%). The remaining cyclist-involved intersection collisions occurred at collector-local (11.0%), local-local (10.2%), collector-collector (2.9%), and others (1.0%).



Cyclist Intersection Collisions by Road Classification, 5 Years (2020–2024)

Cyclist intersection fatal and injury collisions were split between arterial-local intersections 30.3%, arterial-arterial intersections 25.2%, arterial-collector intersections (18.4%), collector-local intersections (11.0%), local-local intersections (10.7%), collector-collector intersections (3.6%), and others (0.9%).

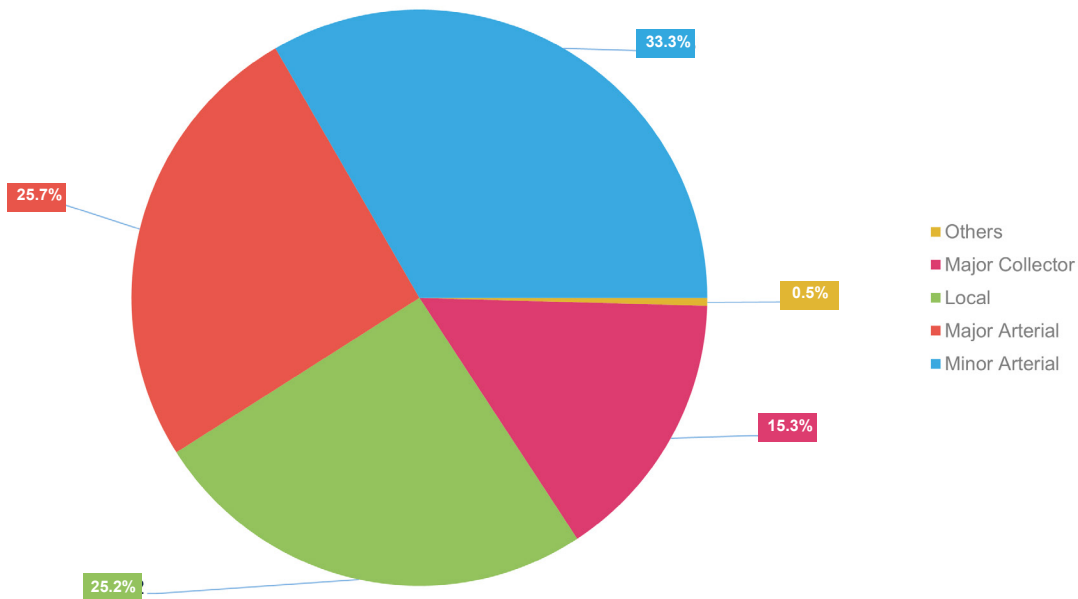
The road classification in the majority pedestrian-involved road segment collisions was major arterial (33.8%), followed by minor arterial (28.8%), and local roads (24.0%). The remaining pedestrian-involved road segment collisions occurred at major collector (10.7%), other (1.8%), and minor collector (0.9%).



Pedestrian Road Segment Collisions by Road Classification, 5 Years (2020–2024)

Pedestrian road segment fatal and injury collisions were split between major arterial (34.3%), minor arterial (28.3%), local (24.1%), major collector (10.5%), others (1.9%), and minor collector (1.0%).

The road classification in the majority cyclist-involved road segment collisions was minor arterial (33.3%), followed by major arterial (25.7%), and local roads (25.2%). The remaining cyclist-involved road segment collisions occurred at major collector (15.3%), and other roads (0.5%).



Cyclist Road Segment Collisions by Road Classification, 5 Years (2020–2024)

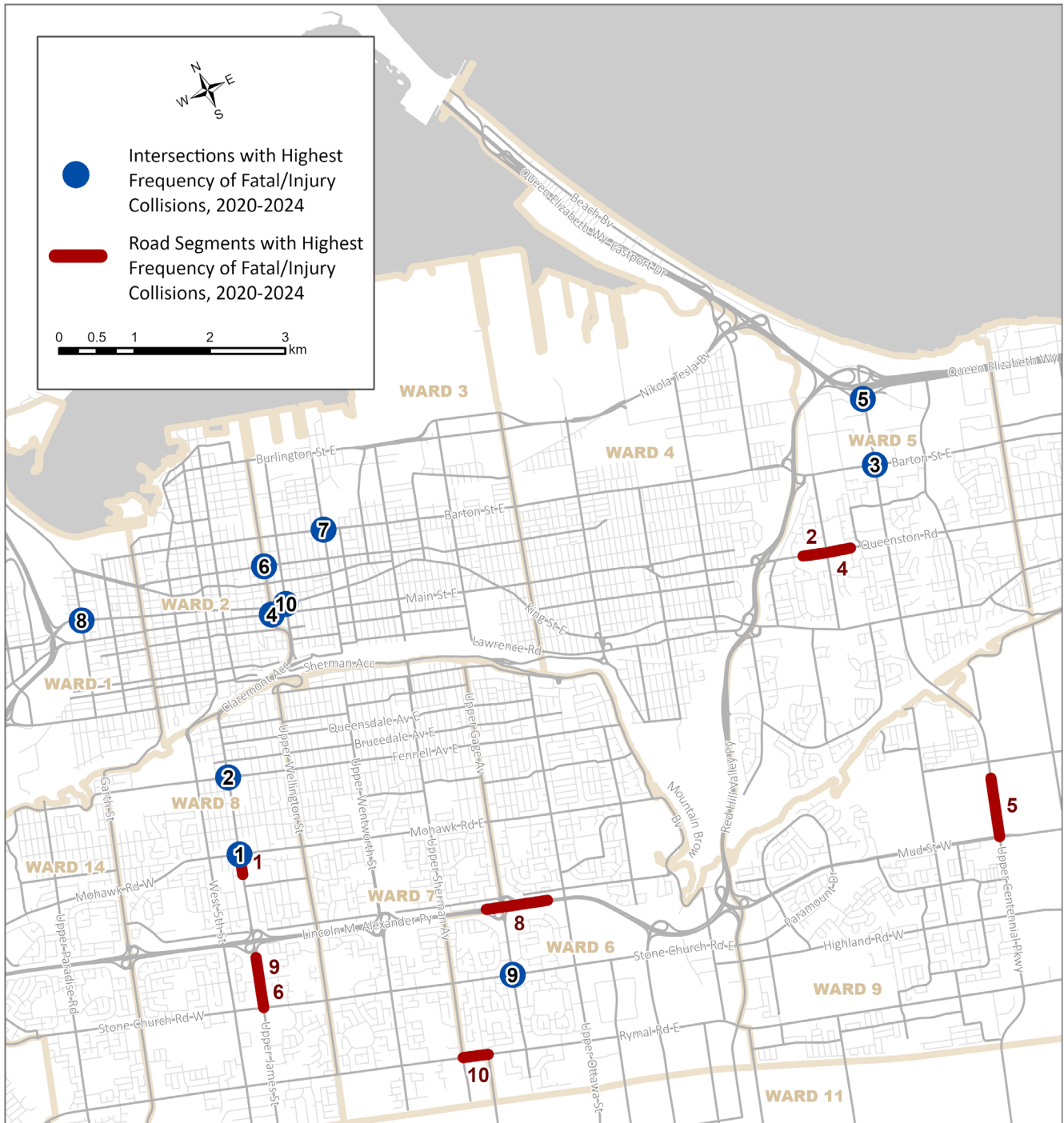
Cyclist road segment fatal and injury collisions were split between minor arterial (33.5%), major arterial (25.0%), local (23.8%), major collector (17.1%), and others (0.6%).



High Frequency Locations

A review of the City’s collision data shows that the total number of collisions had been increasing in the past 10 years but was impacted by the COVID-19 pandemic. Total collisions in 2023 increased by 7.0% over 2022 but were 11.3% lower than in 2019. Total collisions in 2024 increased by 10.0% over 2023 but were 1.3% lower than in 2019.

Map of Intersections and Road Segments with Highest Frequency of Fatal and Injury Collisions, 5 Years (2020–2024)



**Intersections and Road Segments with Highest Frequency of
Fatal and Injury Collisions, 5 Years (2020–2024 and 2019–2023)**

Intersections		Collision Frequency 2020–2024	Collision Frequency 2019–2023
1	Mohawk Road West at Upper James Street	25	25
2	Fennel Avenue West at Upper James Street	20	19
3	Barton Street East at Centennial Parkway North	20	22
4	Main Street East at Wellington Street South	19	24
5	Centennial Parkway North at South Service Road	18	19
6	Cannon Street East at Wellington Street North	17	17
7	Barton Street East at Wentworth Street North	16	15
8	Dundurn Street South at King Street West	15	16
9	Stone Church Road East at Upper Gage Avenue	15	15
10	King Street East at Victoria Street South	15	18
Road Segments		Collision Frequency 2020–2024	Collision Frequency 2019–2023
1	Upper James Street between Mohawk Road East and Lotus Avenue	17	18
2	Queenston Road between Nash Road and Red Rose Motel Plaza Entrance / Exit	14	14
3	Regional Road 56 between Regional Road 20 and Golf Club	9	8
4	Queenston Road between Nash Road and Clapham Road	9	9
5	Upper Centennial Parkway between Mud Street and Terrapure Regional Facility	9	9
6	Upper James Street between Blossom Lane and Stone Church Road	8	7
7	Beckett Drive between Amelia Street and Top of Escarpment	8	9
8	Lincoln Alexander Parkway Westbound between ramp Lincoln Alexander Parkway Westbound to Upper Gage and ramp Upper Gage Northbound to Lincoln Alexander Parkway Westbound	8	0
9	Upper James Street between ramp Upper James Northbound to Lincoln Alexander Parkway Eastbound and Blossom	7	11
10	Rymal Road East between Upper Sherman and Eva	7	8



A number of intersections in the City had a high frequency of fatal and injury collisions in the past, but are no longer on the high-frequency list from the 2022 Annual Collision Report. These include the following intersections:

- John Street South at Main Street East
- Main Street East at Victoria Avenue South
- Mohawk Road East at Upper Wentworth Street
- North Service Road at Ramp North Service Road to QEW Toronto
- Fray Road at Highway No. 8

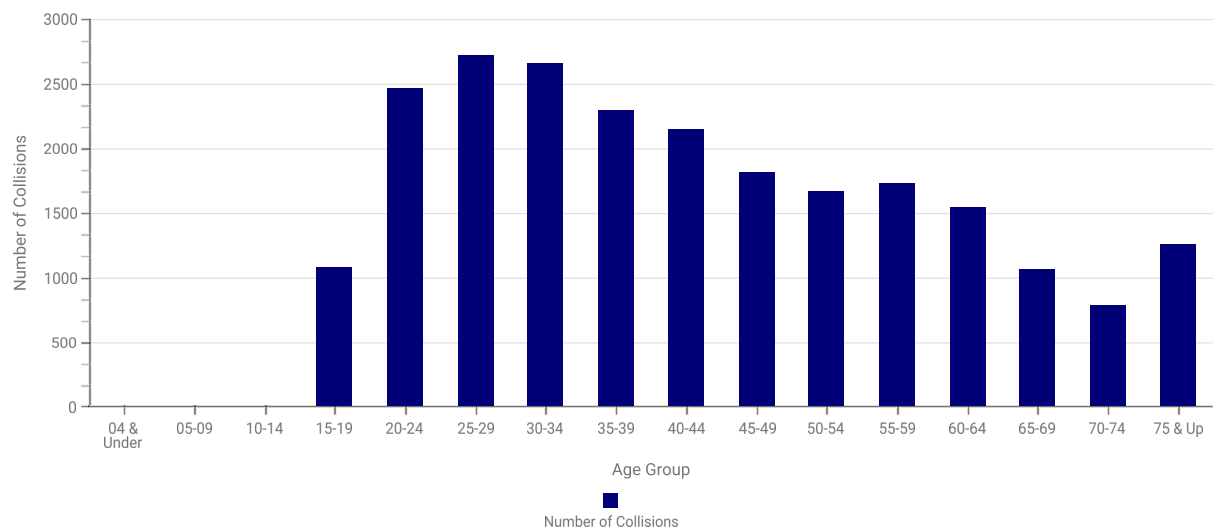
A number of road segments in the City had a high frequency of fatal and injury collisions in the past, but are no longer on the high-frequency list from the 2022 Annual Collision Report. These include the following road segments:

- Upper James Street between Lotus Avenue and Mohawk Road
- Upper James Street between Blossom Lane and Ramp Upper James Street Northbound to Lincoln Alexander Parkway Eastbound
- Red Hill Valley Parkway Southbound between Ramp King Street to Red Hill Valley Parkway Southbound and Ramp Red Hill Valley Parkway Southbound to King Street
- Queenston Road between Clapham Road and Greenford Drive
- King Street West between Caroline Street and Hess Street

Drivers

Research shows that among the three factors of drivers, roads, and vehicles, drivers have the largest contribution to collisions. A review of drivers showed that 33.7% of drivers involved in collisions were between 20 and 34 years old.

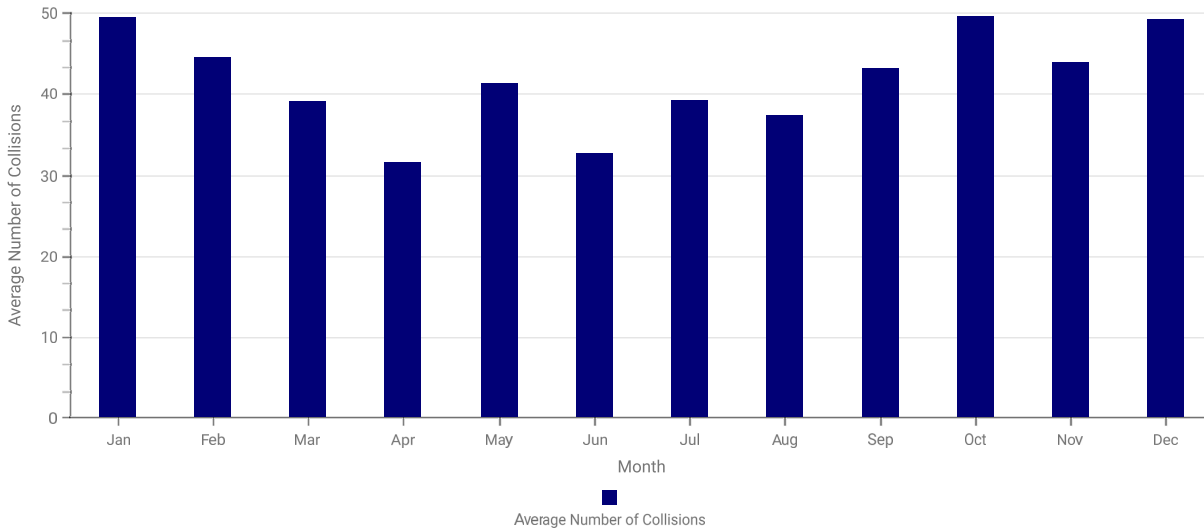
As in previous years, more male drivers are involved in collisions than female drivers. 61.4% of collisions involved male drivers, which is consistent with the Province of Ontario.



Collisions by Driver Age, 5 Years (2020–2024)

A review of driver conditions show that driver impairment / alcohol or drug consumption likely contributed to 9% of total collisions and 7% of fatal and injury collisions in 2020–2024.

It appears that the winter months (October, December, and January) experienced the largest number of collisions resulting from drivers losing control of their vehicle. Several factors might contribute to collisions related to drivers losing control such as distraction, speed too fast for road conditions, road surface conditions, lack of adequate warnings, and vehicle mechanical deficiencies among others.



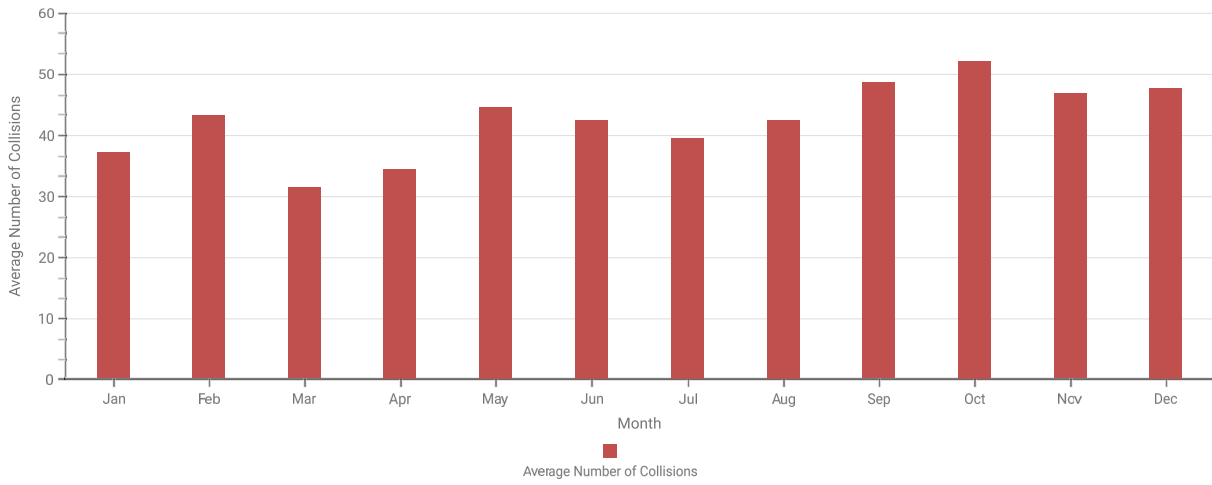
Lost Control Collisions by Month, 5 Year Average (2020–2024) - Police Reported

If the police officer attending to a collision scene reported that at least one of the drivers involved in the collision committed (1) following too close, (2) speeding too fast for conditions, or (3) exceeding the speed limit, then the collision is categorized as speed-related.

The three factors noted above are an indication of aggressive driving where drivers choose speeds that are too fast for the road surface conditions, for the traffic congestion, or for the road geometry. Speeding-related collisions were 18% of police-reported collisions in 2020-2024. In the MTO’s Preliminary Ontario Road Safety Annual Report, speed-related collisions accounted for 131 fatalities (21.3%), making it the leading factor in fatal crashes among the categorized causes.

In Hamilton, the months of September, October, and December experienced the highest number of speeding-related collisions.





Speed Related Collisions by Month, 5 Year Average (2020–2024) - Police Reported

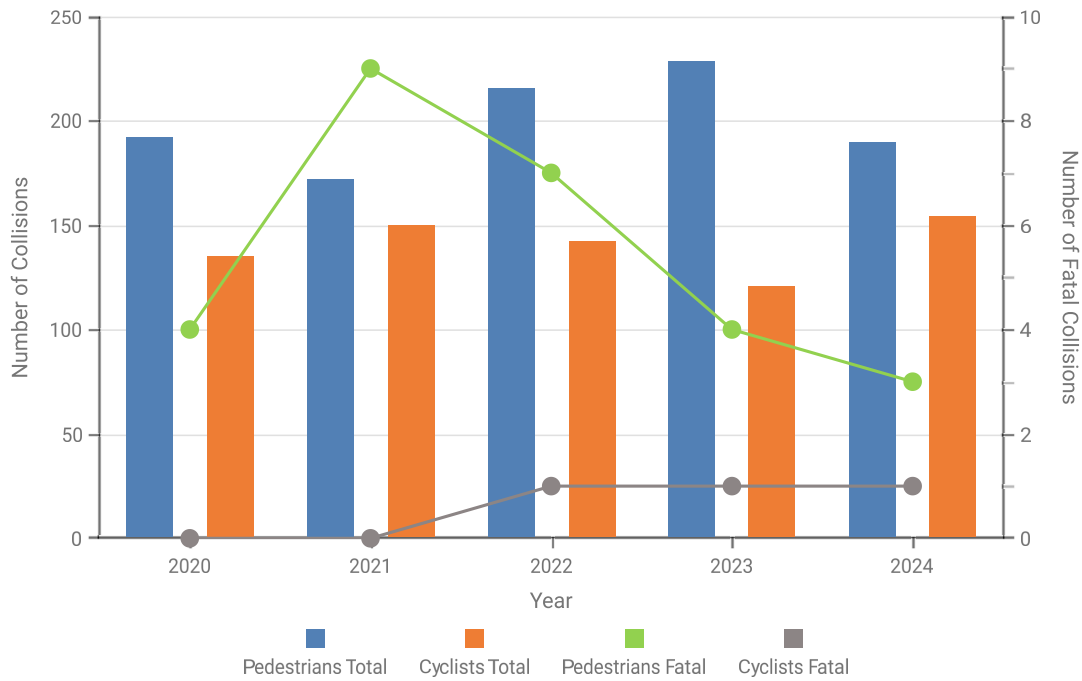


Pedestrian and Cyclist Collisions

Pedestrian and cyclist collisions often result in injury or fatality. The number of pedestrian collisions fluctuated between 172 and 228 in the past 5 years, with an average of 200 collisions. In 2023, the City experienced 228 pedestrian collisions, which is 5.4% higher than in 2022. In 2024, the City experienced 190 pedestrian collisions, which is 18.2% lower than in 2023.

There were four pedestrian fatalities in 2023 and three pedestrian fatalities in 2024. The average pedestrian fatalities is 5.4 over 2020-2024.

The number of cyclist collisions has fluctuated between 121 and 154 in the past 5 years, with an average of 140 collisions. In 2023, the City experienced 121 cyclist collisions, which is 16% lower than in 2022. In 2024, the City experienced 154 cyclist collisions, which is 24% higher than in 2023. There was one cyclist fatality in each of 2023 and 2024.

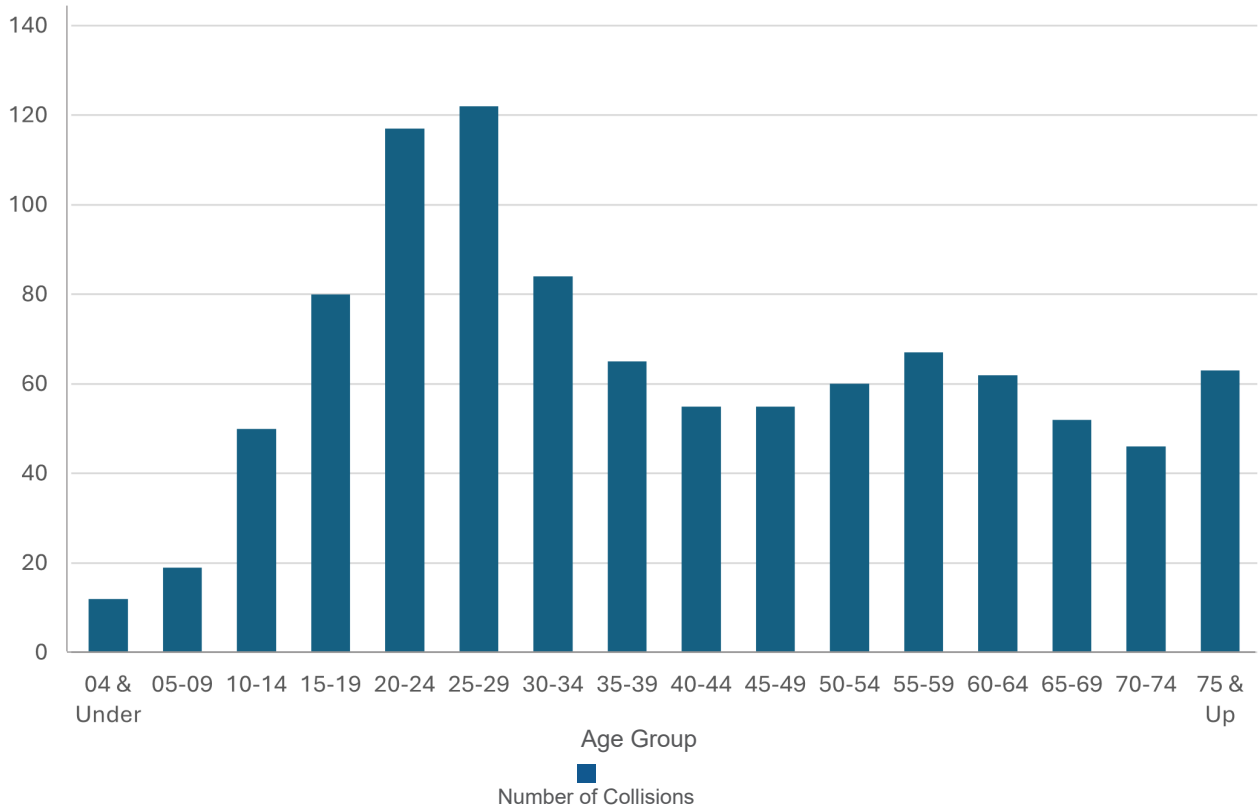


Collisions Involving Pedestrians and Cyclists (2020–2024)

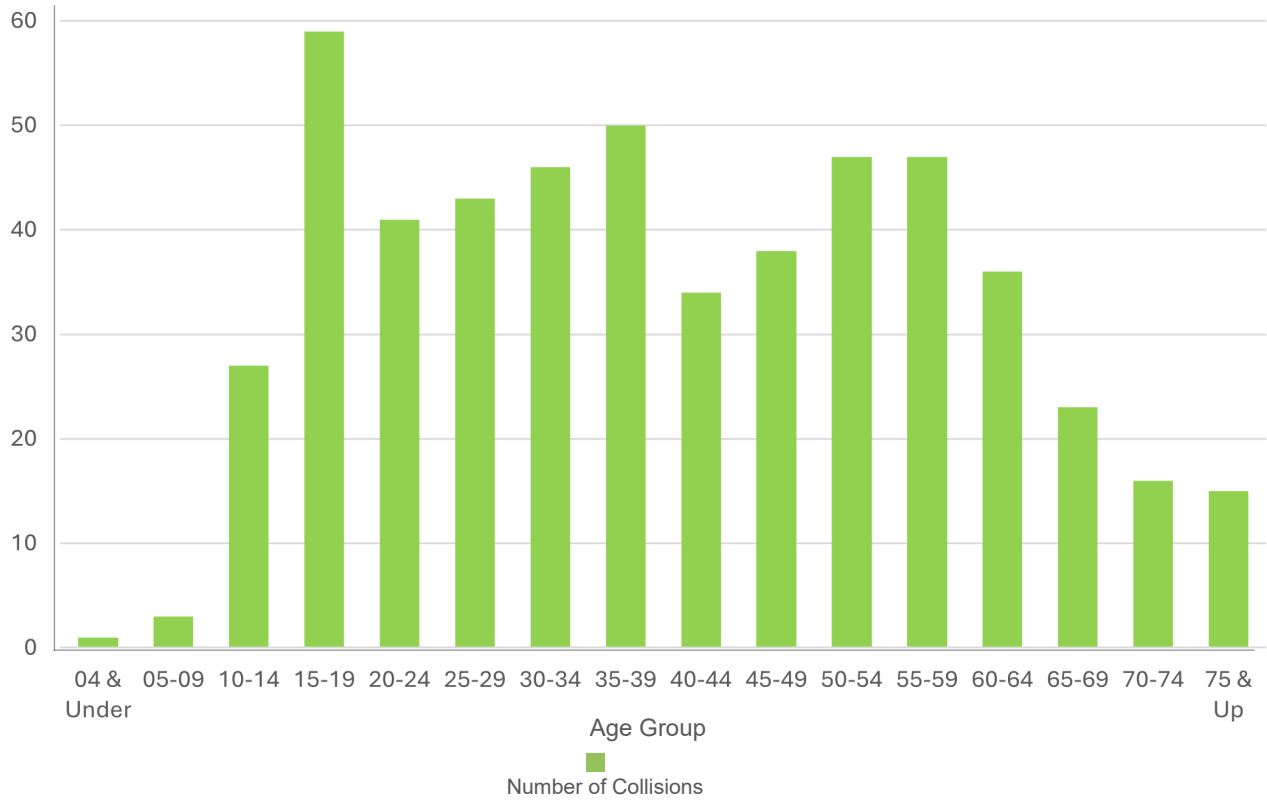
The largest number of pedestrian collisions occurred in the months of November and December in 2020-2024. This is consistent with other Ontario municipalities. The largest number of cyclist collisions occurred from June to August when cycling is generally a more frequent form of transportation compared to other months. This is consistent with other Ontario municipalities.

Thursdays experienced the largest numbers of pedestrian and cyclist collisions among all days of a week in 2020-2024.

Pedestrians in the age group of 25-29 experienced the largest number of pedestrian collisions followed by the 20-24 age group. Cyclists in the age group of 20-24 experienced the largest number of cyclist collisions, based on information collected. As shown in the graph below, the age of the cyclist was not collected in the majority of cyclist collisions.



Pedestrian Collisions by Pedestrian Age, 5 Years (2020–2024)



Cyclist Collisions by Cyclist Age, 5 Years (2020–2024)

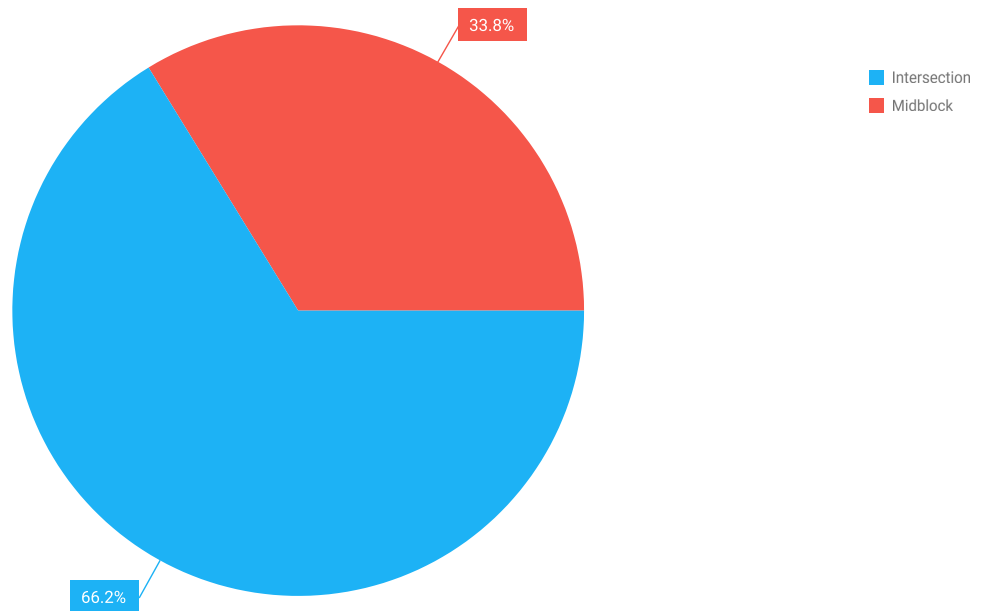
90.9% of all pedestrian collisions resulted in injury in 2020-2024 and 2.7% resulted in fatality. 70.9% of all cyclists involved in a collision sustained injury (including 0.4% fatal injury).

In the City of Hamilton, a smaller percentage of pedestrians and cyclists are fatally injured in collisions involving pedestrians and cyclists compared to the Province⁴.

Percentage of Fatality Among Injury Collisions for Pedestrians and Cyclists

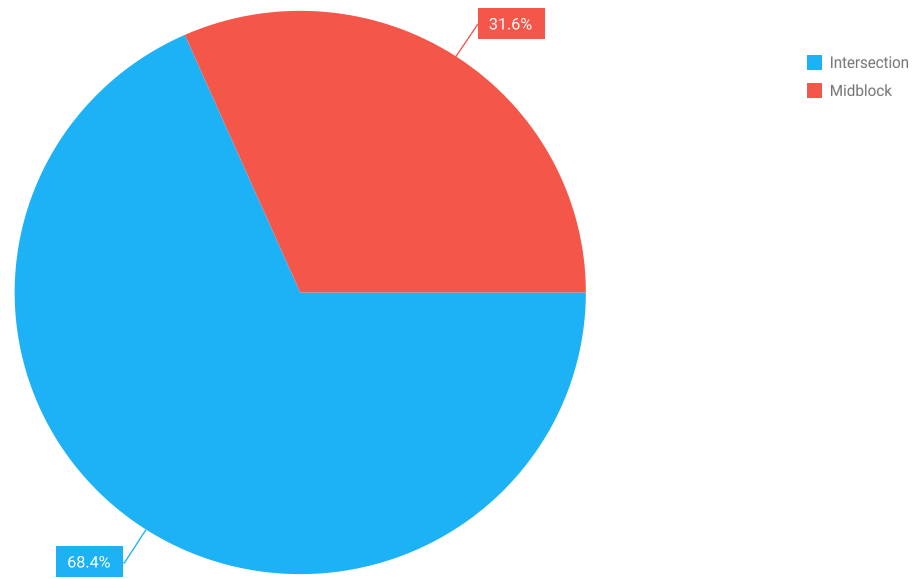
Jurisdiction	Pedestrians	Cyclists
Hamilton	2.7%	0.4%
Ontario	4.0%	1.4%

A majority of pedestrian and cyclist collisions occurred at intersections (66.2% and 68.4% respectively). Among those pedestrian collisions, 61% occurred at signalized intersections while 30.4% took place at stop-controlled intersections. Among those cyclist collisions, 49.8% of them occurred at signalized intersections and 47.5% of them occurred at stop-controlled intersections.



Collisions Involving Pedestrians by Location, 5 Year Average (2020 - 2024)

⁴ <https://www.ontario.ca/document/ontario-road-safety-annual-reports-orsar>



Collisions Involving Cyclists by Location, 5 Year Average (2020 - 2024)

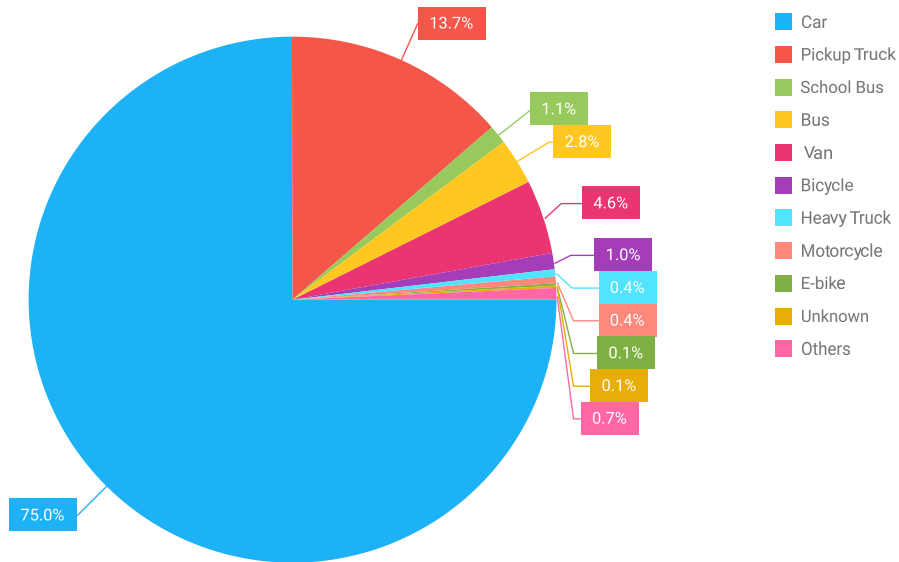
A review of driver actions involved in pedestrian and cyclist collisions show that 38% and 18.4% of drivers failed the right of way to pedestrians and cyclists respectively. Additionally, 11.2% and 8.3% of drivers committed improper turns in pedestrian and cyclist collisions, respectively.

In 9.9% of pedestrian collisions, pedestrians were walking on road shoulders or sidewalks. Also, in 11.7% of pedestrian collisions, the pedestrian did not have right of way (i.e., jaywalking).

In 9.4% of cyclist collisions, the cyclist failed to yield the right of way to vehicles.

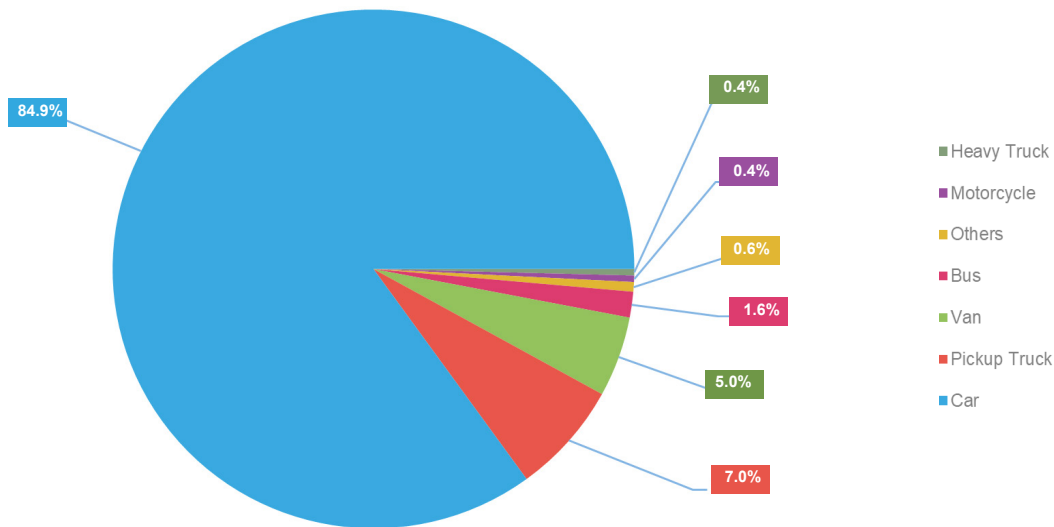
Collisions involving pedestrians and cyclists were predominantly concentrated in urban areas. Of the total pedestrian collisions, 98.9% occurred in urban areas, while only 1.1% occurred in rural areas. Cyclist collisions showed a similar pattern, with 95.9% in urban areas and 4.1% in rural areas. This distribution highlights the significantly higher exposure and risk for vulnerable road users in urban environments.

Fatal and injury collisions followed a consistent trend. For pedestrian collisions resulting in fatalities or injuries, 98.9% occurred in urban areas, compared to 1.1% in rural areas. Among cyclist fatal and injury collisions, 94.4% occurred in urban areas, while 5.6% occurred in rural areas.



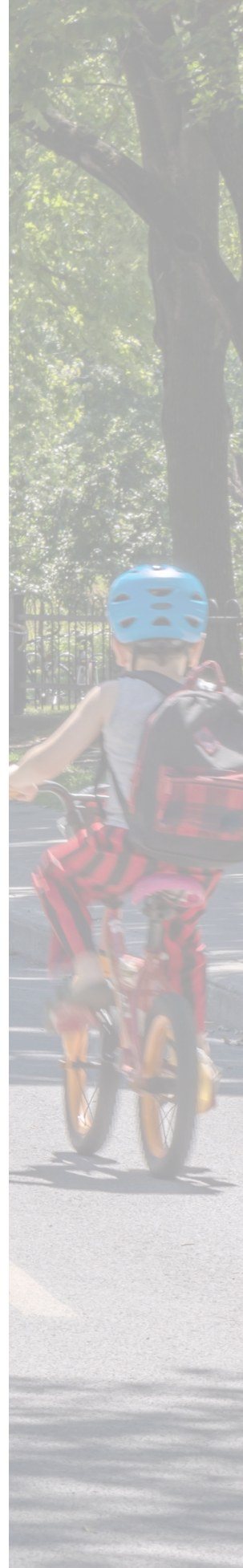
Intersection Pedestrian Collisions by Vehicle Type, 5 Years (2020–2024) - Police Reported

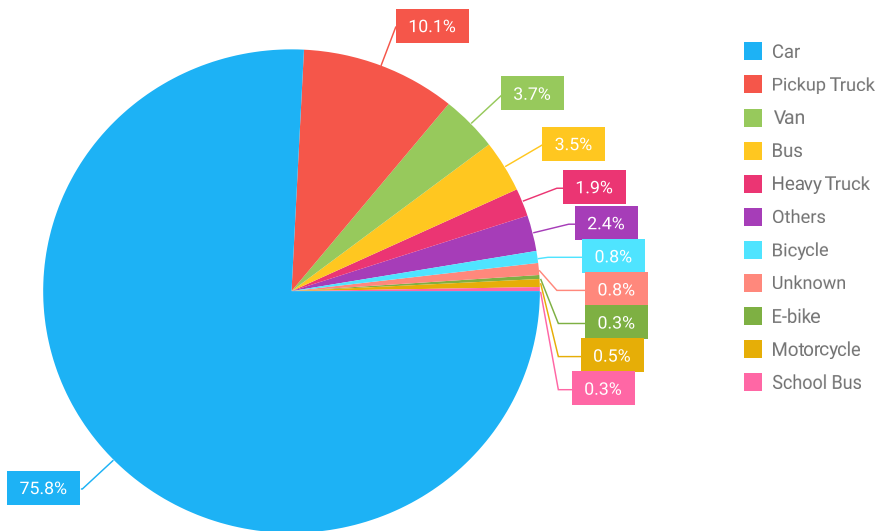
The vehicle types of most intersection-related pedestrian collisions was car (75%), pick-up truck (13.7%), van (4.6%), municipal transit bus (2.8%), and school bus (1.1%)



Intersection Cyclist Collisions by Vehicle Type, 5 Years (2020–2024) - Police Reported

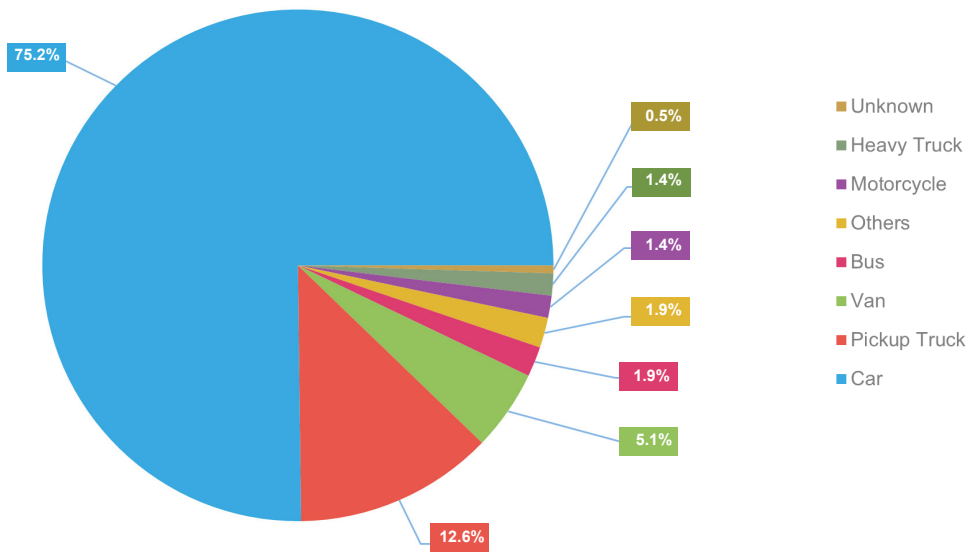
The vehicle type of most intersection-related cyclist collisions was cyclist collision with car (84.9%), followed by pickup truck (7.0%), and van (5.0%).





Road Segment Pedestrian Collisions by Vehicle Type, 5 Years (2020–2024) - Police Reported

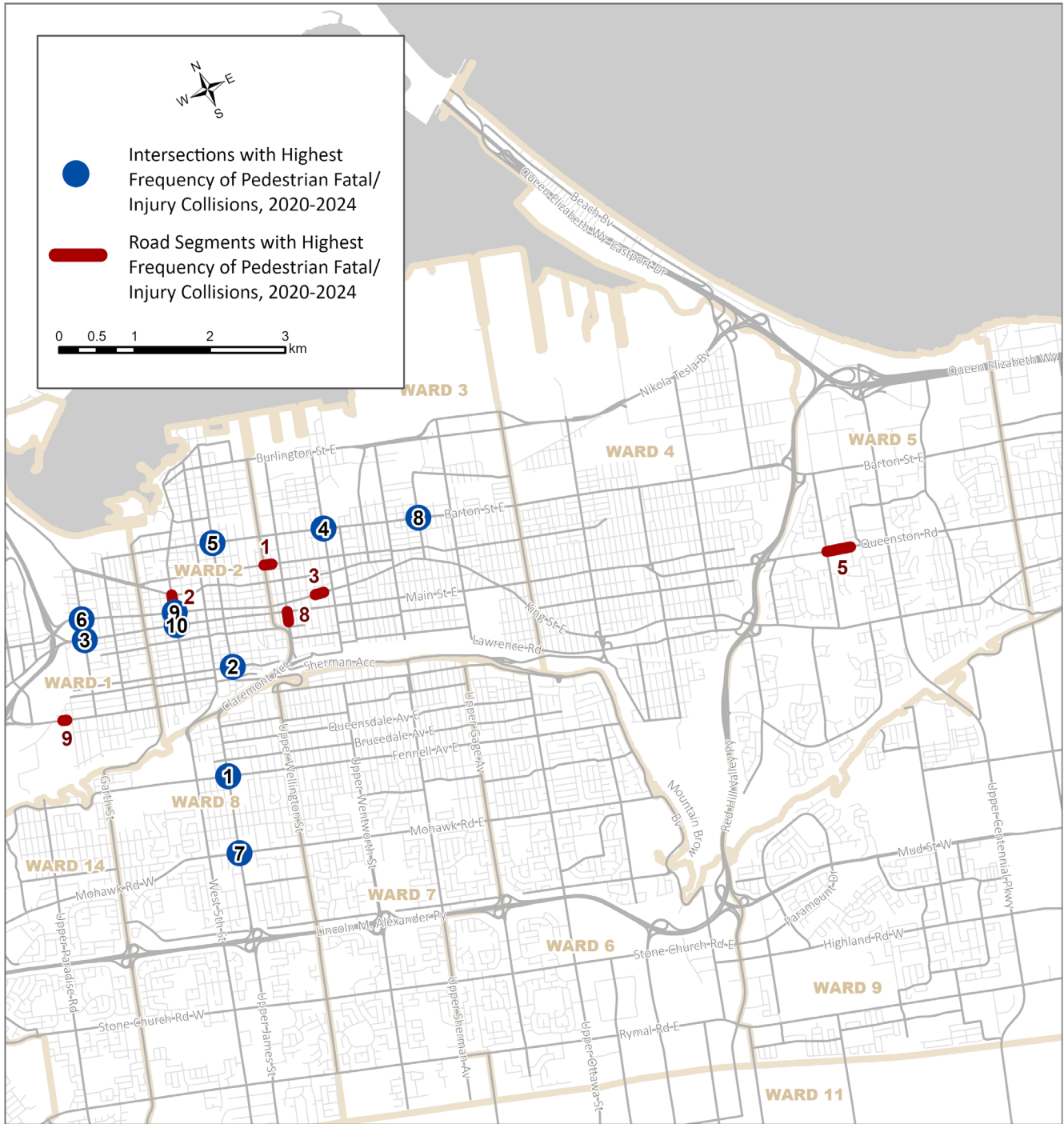
The vehicle type of most pedestrian collisions that occurred on road segments was car (75.8%). The next most frequent were with pick-up trucks (10.1%), vans (3.7%), and municipal buses (3.5%).



Road Segment Cyclist Collisions by Vehicle Type, 5 Years (2020–2024) - Police Reported

The vehicle type of cyclist collisions that occurred on road segments was cyclist collision with car (75.2%), pickup truck (12.6%), and van (5.1%).

Map of Intersections and Road Segments with the Highest Frequency of Pedestrian Fatal and Injury Collisions (2020–2024)



Intersections and Road Segments with the Highest Frequency of Pedestrian Fatal and Injury Collisions (2020-2024 and 2019-2023)

	Intersection	Collision Frequency 2020–2024	Collision Frequency 2019–2023
①	Fennell Avenue West and Upper James Street	8	9
②	Charlton Avenue East at John Street South	5	5
③	Dundurn Street South at Main Street West	5	1
④	Barton Street East at Wentworth Street North	4	2
⑤	Barton Street East and John Street North	4	4
⑥	Dundurn Street South at King Street West	4	1
⑦	Mohawk Road West at Upper James Street	4	3
⑧	Barton Street East at Lottridge Street	3	4
⑨	Bay Street North at King Street West	3	1
⑩	Bay Street South at Main Street West	3	3
	Road Segment	Collision Frequency 2020–2024	Collision Frequency 2019-2023
1	Barton Street East between Balsam Avenue North and Connaught Avenue North	2	1
2	Highway No. 8 between Chester Road and Corman Avenue	2	2
3	Jameston Avenue between Hawkridge Avenue and West 5th Street	2	0
4	King Street East between Barnesdale Avenue North and Fairholt Road South	2	2

A number of intersections in the City had a high frequency of pedestrian fatal and injury collisions in the past, but are no longer on the high-frequency list from the 2022 Annual Collision Report. This includes the following intersections:

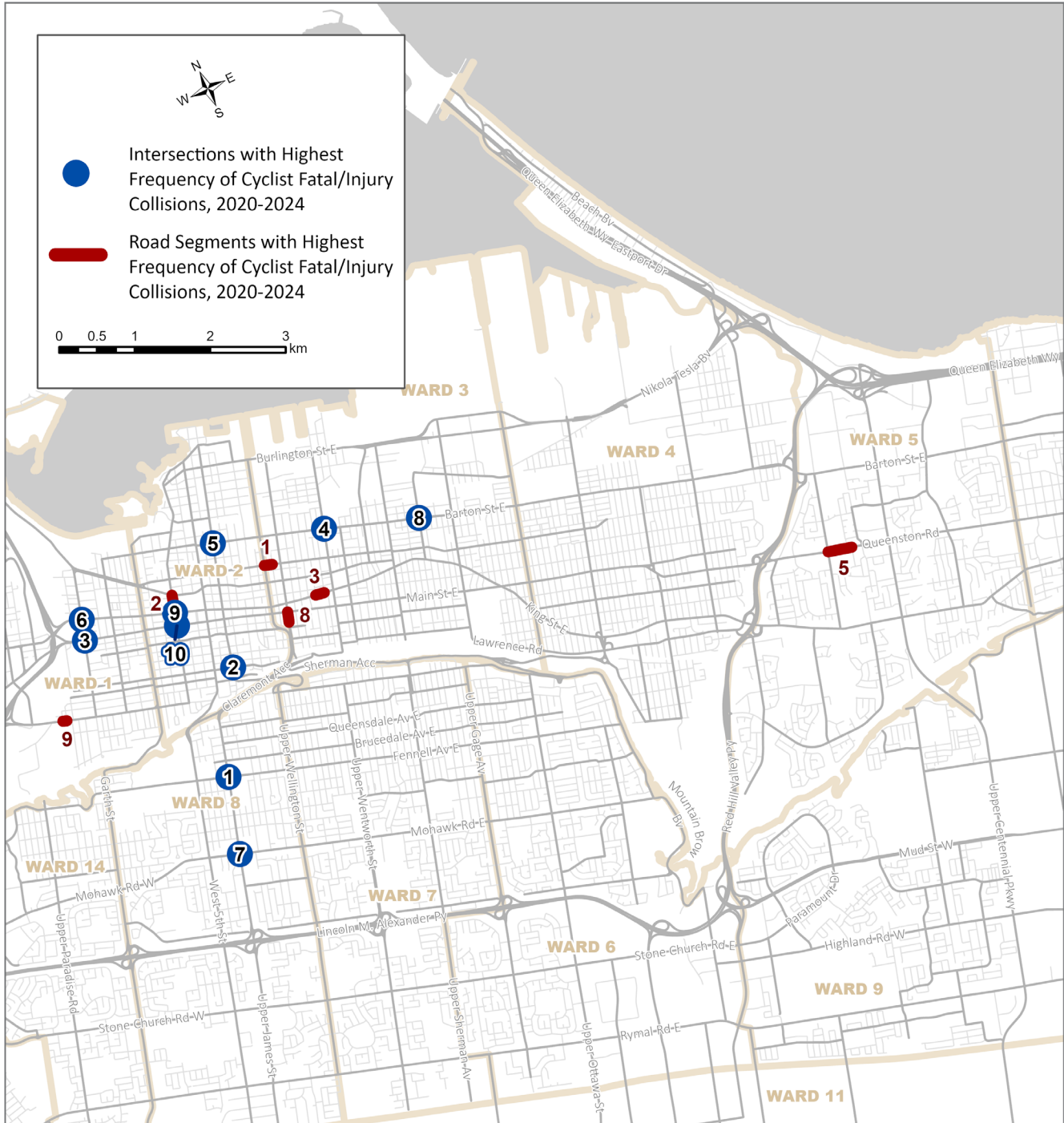
- John Street South and Main Street East
- Nash Road South and Queenston Road
- Main Street East and Victoria Avenue South

A number of road segments in the City had a high frequency of pedestrian fatal and injury collisions in the past, but are no longer on the high-frequency list from the 2022 Annual Collision Report. This includes the following road segments:

- Queenston Road between Nash Road North and 533 Queenston Road
- King Street West between Caroline Street South and Hess Street South

- McNab Street South between King Street and Main Street West
- King Street East between Ashley Street and Steven Street

Map of Intersections and Road Segments with the Highest Frequency of Cyclist Fatal and Injury Collisions (2019–2024)



**Intersections and Road Segments with the Highest Frequency of
Cyclist Fatal and Injury Collisions (2020-2024 and 2019–2023)**

	Intersection	Collision Frequency 2020-2024	Collision Frequency 2019–2023
①	Cannon Street East at Wellington Street North	12	12
②	Cannon Street East at Wentworth Street North	4	4
③	Barton Street East at Centennial Parkway North	3	4
④	Bay Street North at Cannon Street West	3	3
⑤	Cannon Street East at Gibson Avenue	3	1
⑥	Fifty Road at North Service Road	3	4
	Road Segment	Collision Frequency 2020-2024	Collision Frequency 2019-2023
1	Cannon Street East between Wellington Street North and West Avenue North	5	5
2	Bay Street North between Market Street and York Boulevard	2	1
3	King Street East between Ashley Street and Steven Street	2	2
4	Private Road between Barton and Private	2	2
5	Queenston Road between Clapham Road and Nash Road North	2	2
6	Robson Road between Concession 5 and Parkside Drive	2	2
7	Stone Church Road East between Private and Upper Ottawa Street	2	2
8	Victoria Avenue between Main Street South and Victoria	2	1
9	Aberdeen Avenue between Hawthorne Avenue and Linwood Avenue	1	1
10	Airport Road East between Miles Road and Private	1	1

A number of intersections in the City had a high frequency of cyclist fatal and injury collisions in the past, but are no longer on the high-frequency list for from the 2022 Annual Collision Report. These include the following intersections:

- Queenston Road at Ramp Queenston Road Eastbound to Red Hill Valley Parkway Northbound
- Barton Street East at Robins Avenue

A number of road segments in the City had a high frequency of cyclist fatal and injury collisions in the past, but are no longer on the high-frequency list from the 2022 Annual Collision Report. These include the following road segments:

- King Street West between Breadalbane Avenue and Dundurn Street
- Bay Street South between Jackson Street and Main Street

- Bay Street South between George Street and Main Street
- Barton Street between Parkdale Avenue North and Woodward Avenue
- Barton Street East between Elgin Street and Ferguson Avenue



SECTION 2

Lincoln M. Alexander Parkway and Red Hill Valley Parkway Collision Trends



Background

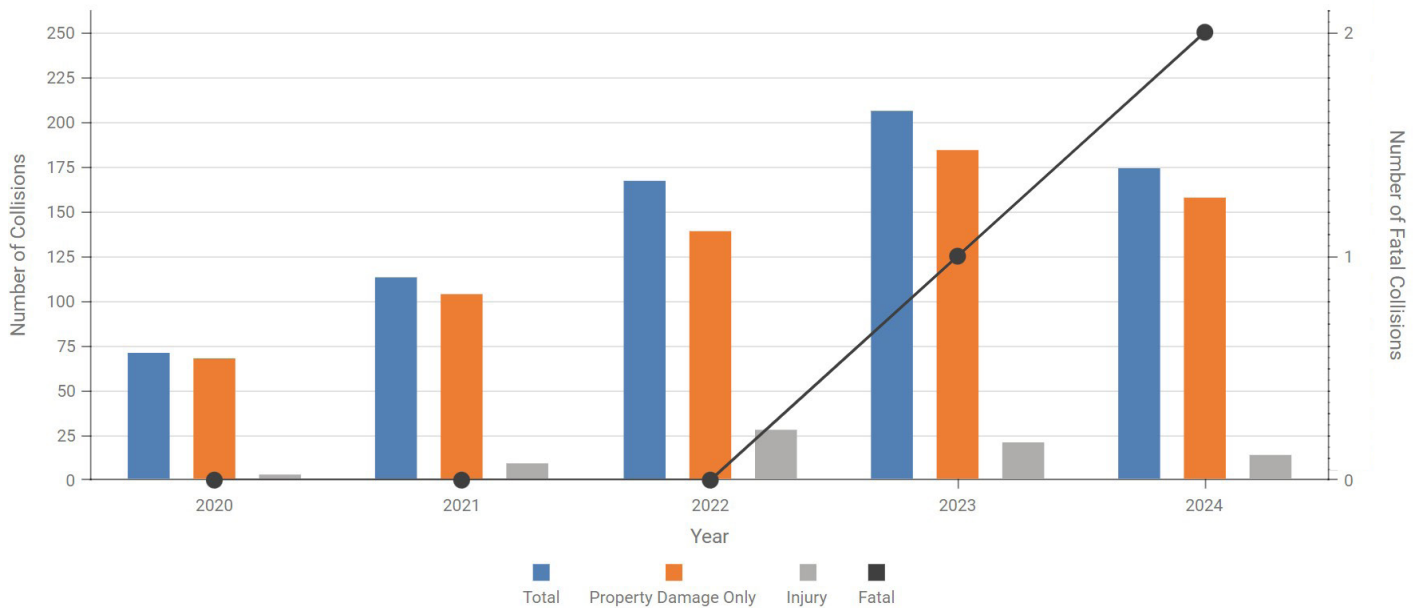
The Lincoln M. Alexander Parkway (LINC) continues to be an important inter-city commuter connection between major north/south arterials in the upper City’s road network. The road also serves as a connection between Highway 403 and the Red Hill Valley Parkway (RHVP) / the Queen Elizabeth Way (QEW). The LINC was opened to traffic in 1997 with five full access interchanges and a posted speed limit of 90 km/h.

The Red Hill Valley Parkway (RHVP) forms part of a continuous connection from Highway 403 and the QEW in conjunction with the LINC. The RHVP was opened to traffic in 2007. The RHVP serves inter-city traffic similarly to the LINC, but also serves intra-city traffic connecting the City to Niagara Region and Southwest Ontario. The RHVP includes six full-access interchanges of various design types. The City reduced the posted speed limit from 90 km/h to 80 km/h on the entire RHVP. Other engineering enhancement measures were also implemented including resurfacing, guide rail upgrades, delineation signage, and lane markings.

Frequency and Severity

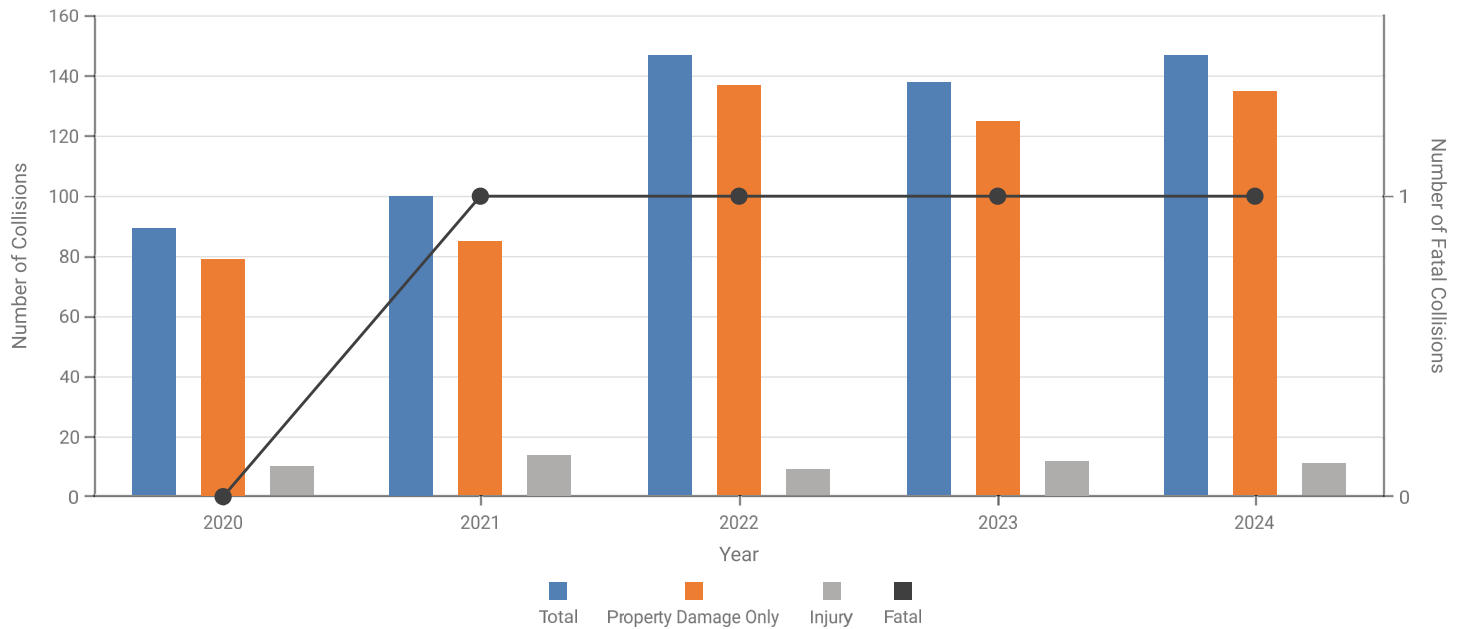
The severity of collisions on the LINC and on the RHVP over the last five years (2020–2024) was reviewed. Similarly to other municipalities, Hamilton experienced a decrease in traffic volumes due to the impact of the COVID-19 pandemic during the years of 2020 and 2021. It should be noted that as of 2023, traffic volumes on both the LINC and the RHVP have surpassed pre-pandemic levels.

In 2023, the LINC showed an increase in total collisions of 20.9% but a decrease in fatal and injury collisions of 24.0% compared to 2022. In 2024, the LINC showed a decrease in total collisions of 16.8% and a decrease in fatal and injury collisions of 31.6% compared to 2023. There was one fatal collision on the LINC in 2023 and two fatal collisions on the LINC in 2024.



Collisions Frequency - Lincoln Alexander Parkway (2020–2024)

In 2023, the RHVP showed a decrease in total collisions of 6.3% but an increase in fatal and injury collisions of 26.0% compared to 2022. In 2024, the RHVP showed an increase in total collisions of 6.3% and a decrease in fatal and injury collisions of 8.7% compared to 2023. There was one fatal collision on the RHVP in each of 2021, 2022, 2023, and 2024.



Collisions Frequency - Red Hill Valley Parkway (2020–2024)

Month, Day, and Time of Collisions

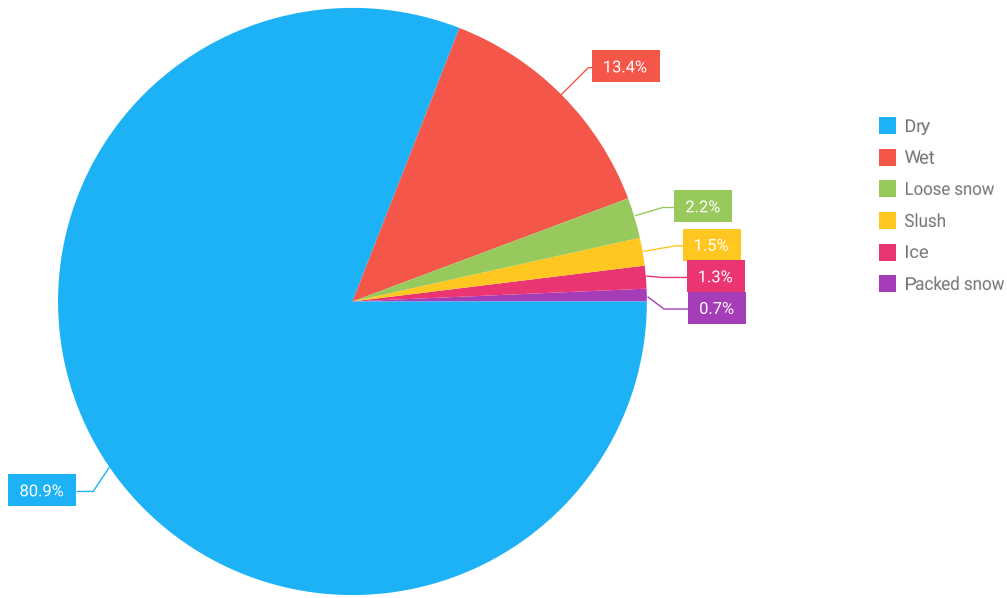
From 2020-2024, the largest number of collisions on the LINC took place in the month of October. On the RHVP, the month with the largest number of collisions was November in 2020-2024.

Sundays had the highest number of collisions on the LINC and RHVP, with 100 and 88 collisions, respectively.

There was a clear correlation between the time of collisions and the typical peak hours of traffic during weekdays on the LINC and the RHVP. The time of collisions during weekends did not follow any particular pattern. These observations are consistent with other roadways in the City.

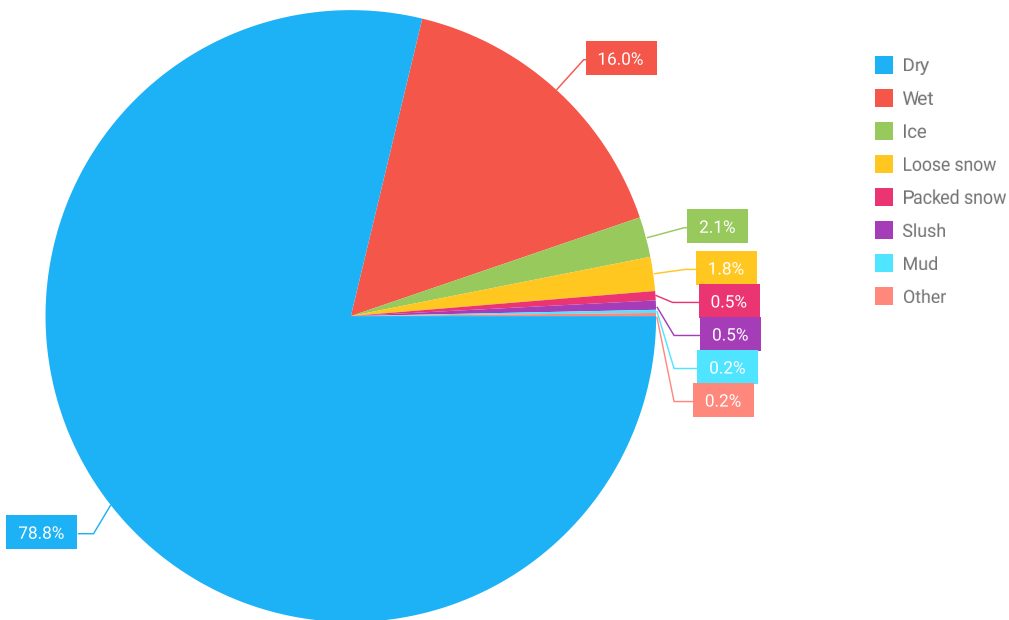
Collisions by Road Surface and Lighting Conditions

The number of collisions during non-dry conditions on the LINC is 19.1% of all collisions for 2019–2023, which is consistent with Provincial averages. The number of collisions during non-dry conditions has been steady in 2020-2024 compared to 2019-2023.

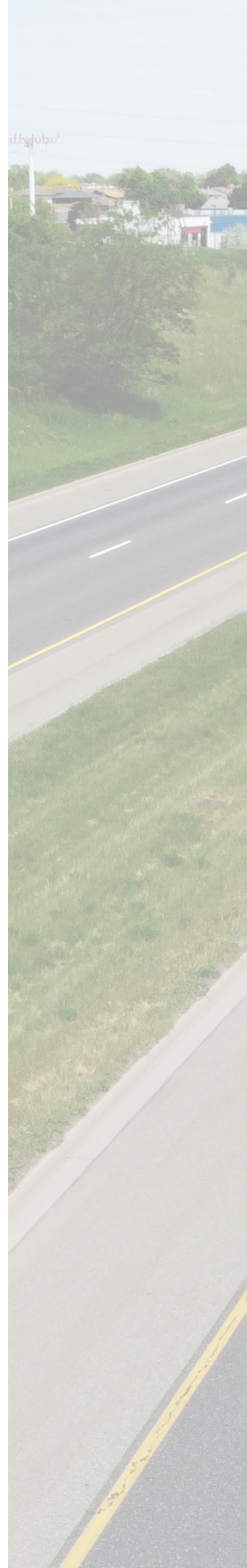


Collisions by Road Surface Condition, 5 Years - Lincoln Alexander Parkway (2020–2024)

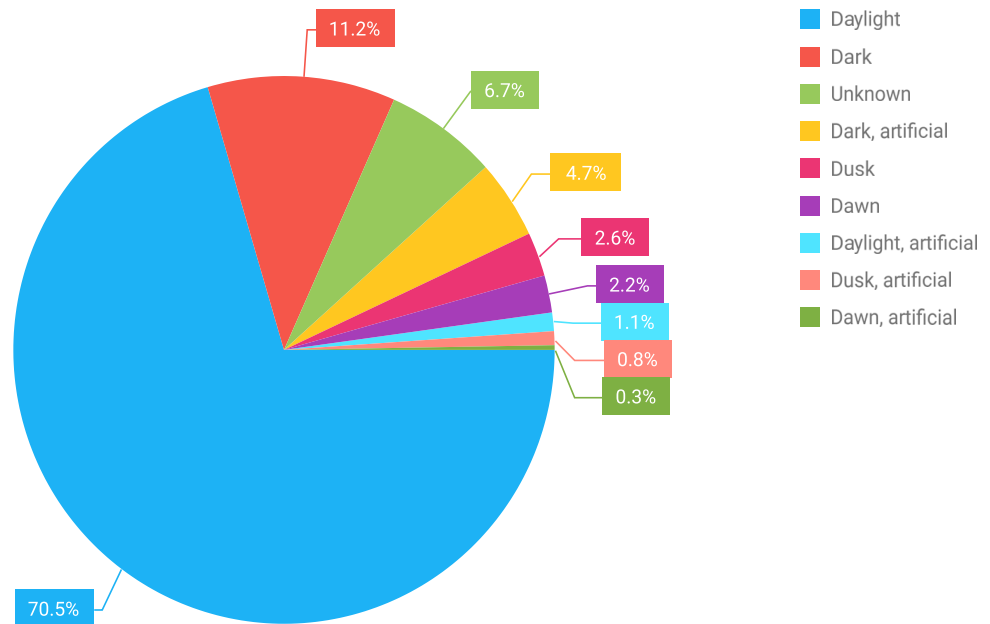
The number of collisions during non-dry conditions on the RHVP for 2020-2024 is 21.2%, which has improved greatly from 31.5% in 2018-2022, 45.7% in 2017–2021, 57.8% in 2016–2020, and 64.1% (2015-2019).



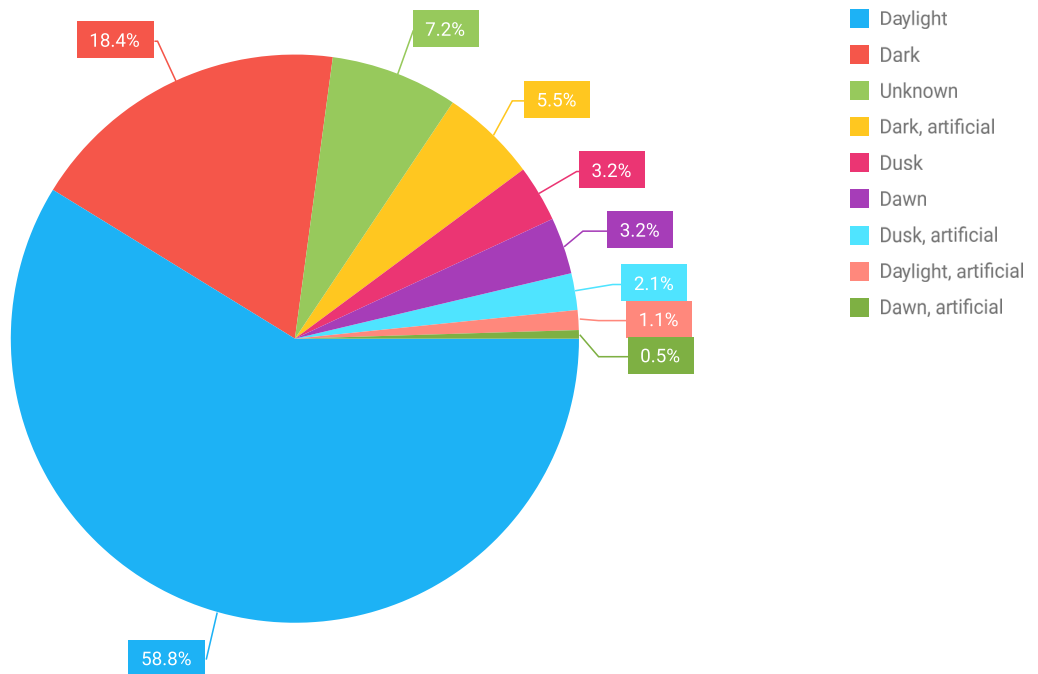
Collisions by Road Surface Conditions - Red Hill Valley Parkway (2020–2024)



The percentage of collisions during daylight hours on the LINC is 70.5%, which is consistent with the province of Ontario (72%). The percentage of collisions during daylight hours on the RHVP is 58.8%.



Collisions by Lighting Conditions, 5 Years - Lincoln Alexander Parkway (2020–2024)



Collisions by Lighting Conditions, 5 Years - Red Hill Valley Parkway (2020–2024)

Collisions by Impact Type

The prominent collision type on the LINC and the RHVP was rear end (66.9% and 51.7%, respectively). Consistent with previous years, the difference between the percentage of rear end type collisions on the LINC and the RHVP shows the difference between operations of these two highways. The LINC experiences recurring congestion and the high percentage of rear end collisions can be the result of traffic congestion.

Over 2020-2024 sideswipe collisions constituted the second highest collision type for both the LINC and the RHVP, at 20.0% and 29%, respectively.

Drivers

In 15.6% of all collisions reported by police on the LINC at least one driver lost control during 2020-2024. By comparison, in 30.2% of all collisions reported to police on the RHVP, at least one driver lost control. These percentages have increased compared to the 2019-2023 period.

On the LINC and RHVP, 30% and 59% of collisions respectively were speed-related during 2020-2024. The month with the highest number of speed-related collisions on the LINC during 2020-2024 was July. The month with the highest number of speed-related collisions on the RHVP during 2020-2024 was November.

