# Alberta traffic collision statistics 2019

Traffic Safety, Alberta Transportation

MAY 2022

Alberta

# 2019 Overview

- The number of **traffic fatalities decreased 19.4%** over the past year from 289 fatalities in 2018 to 233 in 2019.

- The number of **traffic injuries decreased 9.9%** over the past year from 17,055 injuries in 2018 to 15,364 in 2019.

- The number of **traffic collisions decreased 7.4%** over the past year from 142,596 in 2018 to 132,072 in 2019.

- The **highest number of fatal collisions** occurred in **July**. The **highest number of injury collisions** occurred in **January**.

- **Friday** was the most collision-prone day of the week.

- The most collision-prone time period was the **afternoon rush hour**.

- **Casualty rates** were highest for persons between the **ages of 15 and 24.**

- **Male drivers** between the **ages of 15 and 19** had the highest involvement rate of all drivers involved in casualty collisions.

- **Following too closely, running off the road and making a left turn across the path of an oncoming vehicle** were the most frequently identified improper driver actions contributing to casualty collisions.

- **Fatal collisions** occurred most frequently in **rural areas**, whereas **injury and property damage collisions** occurred more frequently in **urban areas**.

- **9.1% of pedestrians** involved in **fatal collisions were impaired** compared to **4.9% of pedestrians in injury collisions.**

- **11.8% of drivers** involved in **fatal collisions were impaired** compared to **1.6% of drivers in injury collisions**.

- **Collision-involved restraint users had a much lower injury rate** (6.5%) than those not using restraints (16.7%)

# Preface

The purpose of this report is to provide an overview of the "who", "what", "when", "where", "why", and "how" of traffic collisions which occurred in Alberta during 2019. Although the report is general in nature, it pays particular attention to casualty collisions, that is, those collisions resulting in death or injury. Legislation in Alberta requires that a motor vehicle traffic collision, which results in death, injury, or property damage to an apparent extent of $2,000.00 or more, be reported immediately to an authorized peace officer. The officer completes a standardized collision report, which provides information on various aspects of the traffic collision. This report is based on the data collected from these reports.

The collision report is issued with standard instructions to every police service within Alberta, to be completed by the officer attending the scene of a motor vehicle collision or at a police station. Police priorities at the scene of a collision are to care for the injured, protect the motoring public, complete an on-scene investigation and clear the roadway. Completion of the collision report is a secondary, but necessary, task.

Once the collision report is completed, the data is stored in the collision database. The system undergoes several data quality checks each year in order to ensure maximum accuracy of the final data output. This collision information is used to make Alberta's roads safer for all road users. Due to continuing police investigation, some numbers presented in this report may be subject to revision. It should also be noted that not all percentage columns will total 100 due to rounding error.

This report was produced based on collisions reported to Alberta Transportation by police, at the time of printing. The numbers presented in this report will not be updated. However, the patterns and trends detailed in this report represent an accurate description of Alberta's traffic collision picture.

Classification: Public

# Table of contents

# List of tables

Classification: Public

Classification: Public

# List of figures

Classification: Public

Classification: Public

# Glossary

**Casualty Collision**
>    A vehicle collision which results in either a fatal or personal injury.

**Fatality**
>    A fatality is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

**Impaired Driving**
>    In the judgment of the police officer, driving ability was legally impaired by alcohol and/or drug consumption. Whether or not the subject was actually charged is not taken into consideration by the collision report.

**Major Injury**
>    Persons with injuries or complaints of pain who went to the hospital and were subsequently admitted, even if for observation only.

**Minor Injury**
>    Persons with injuries or complaints of pain that went to the hospital, were treated in emergency (or refused treatment) and sent home without ever being admitted to the hospital.  (Also includes people who indicated that they intended to seek medical treatment.)

**Motorcyclist**
>    Refers to drivers and passengers of motorcycles.

**Occupant Casualties**
>    Refers to people who were injured or killed as a result of a vehicle collision and were identified as being either a vehicle driver or passenger.

**Property Damage**
>    A vehicle collision, which resulted in property damage exceeding $2,000.00.

**Reportable Collision**
>    A vehicle collision, which resulted in death, injury or property damage greater than $2,000.00.

**Rural**
>    Any area outside of what is defined as "Urban."

**Urban**
>    Any area within the corporate boundaries of a city, town, village or hamlet.

# 2019 traffic collision summary

## Introduction

During 2019, 132,072 collisions were recorded on Alberta roadways.  Property damage collisions (over $2,000) represented 90.9% (120,119) of this total while 8.9% (11,738) were non-fatal injury collisions.  Fatal collisions accounted for 0.2% (215) of the total reported collisions.

## Five-year trends

In terms of both population and licensed drivers, the fatal collision rate has decreased from 2018 to 2019, but remained the same for registered vehicles. The fatality rates have decreased in terms of population, licensed drivers and registered vehicles.

The non-fatal injury collision and injury rates decreased in terms of population, licensed drivers and registered vehicles.

Property damage collision rates decreased from 2018 to 2019 in terms of population, licensed drivers and registered vehicles.

## Jurisdictional comparisons

In order to get a picture of Alberta's traffic casualties in comparison to other Canadian jurisdictions, rates rather than absolute numbers are utilized.  In this instance, the most recent casualty rates per billion vehicle kilometres travelled were examined.

Based on this comparison of rates per billion vehicle kilometres travelled, Alberta had the lowest fatality rate in 2019. In 2019, Alberta had the third lowest injury rate.

Classification: Public

## Alberta traffic collisions
**2015 – 2019**

| Severity of Collisions | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Fatal Collisions | 215 | 246 | 259 | 273 | 288 |
| Non-Fatal Injury Collisions | 11,738 | 12,852 | 13,082 | 12,465 | 13,531 |
| Property Damage Collisions | 120,119 | 129,498 | 129,126 | 120,386 | 126,886 |
| **Total Reportable Collisions** | **132,072** | **142,596** | **142,467** | **133,124** | **140,705** |

| Injury Severity | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Number Killed | 233 | 289 | 290 | 299 | 330 |
| Number Injured | 15,364 | 17,055 | 17,186 | 16,622 | 17,907 |
| **Total Number of Casualties** | **15,597** | **17,344** | **17,476** | **16,921** | **18,237** |

*Table 1.1.* Alberta Traffic Collisions

**Observations**

In 2019, the overall number of collisions decreased 7.4% when compared to 2018.  In 2019, injury collisions decreased by 8.7% and fatal crashes decreased by 12.6%.  The number of fatalities decreased by 19.4% from 2018 to 2019 and the number of injuries decreased by 9.9%.  In terms of the past five years, overall collisions were lowest in 2019 and highest in 2018.

Classification: Public

## Traffic collision rates
**2015 – 2019**

| Severity of Collision | Rate Per 10,000 Population | | | | | Rate Per 10,000 Licensed Drivers | | | | | Rate Per 10,000 Registered Vehicles | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2019 | 2018 | 2017 | 2016 | 2015 | 2019 | 2018 | 2017 | 2016 | 2015 |
| Fatal Collisions | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.9 | 0.9 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 |
| Number Killed | 0.5 | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 0.9 | 0.9 | 1.0 | 1.1 | 0.6 | 0.8 | 0.8 | 0.8 | 0.9 |
| Non-Fatal Injury Collisions | 26.9 | 29.8 | 30.5 | 29.3 | 32.2 | 36.0 | 39.8 | 41.1 | 39.6 | 43.3 | 30.5 | 33.6 | 34.6 | 33.3 | 37.1 |
| Number Injured | 35.1 | 39.6 | 40.1 | 39.1 | 42.7 | 47.1 | 52.9 | 53.9 | 52.9 | 57.3 | 39.9 | 44.5 | 45.4 | 44.4 | 49.1 |
| Property Damage Collisions | 274.8 | 300.7 | 301.3 | 283.1 | 302.4 | 368.4 | 401.5 | 405.3 | 382.8 | 405.8 | 312.1 | 338.2 | 341.1 | 321.5 | 347.9 |
| **Total Reportable Collisions** | **302.1** | **331.1** | **332.4** | **313.0** | **335.3** | **405.0** | **442.1** | **447.1** | **423.3** | **450.0** | **343.1** | **372.4** | **376.3** | **355.6** | **385.8** |

*Table 1.2.* Traffic Collision Rates

**Observations**

In terms of both population and licensed drivers, the fatal collision rate has decreased from 2018 to 2019, but remained the same for registered vehicles. The fatality rates have decreased in terms of population, licensed drivers and registered vehicles.

The non-fatal injury collision and injury rates decreased in terms of population, licensed drivers and registered vehicles.

Property damage collision rates decreased from 2018 to 2019 in terms of population, licensed drivers and registered vehicles.

Sources:
Population – Statistics Canada as of July 1, 2019.
Licensed Drivers – Service Alberta, as of December 31, 2019.
Registered Vehicles – Service Alberta, as of December 31, 2019.

**Fatal collision rates
Alberta 2015 - 2019**

**Injury collision rates
Alberta 2015 - 2019**

**Property damage collision rates
Alberta 2015 - 2019**

**Overall collision rates
Alberta 2015 - 2019**
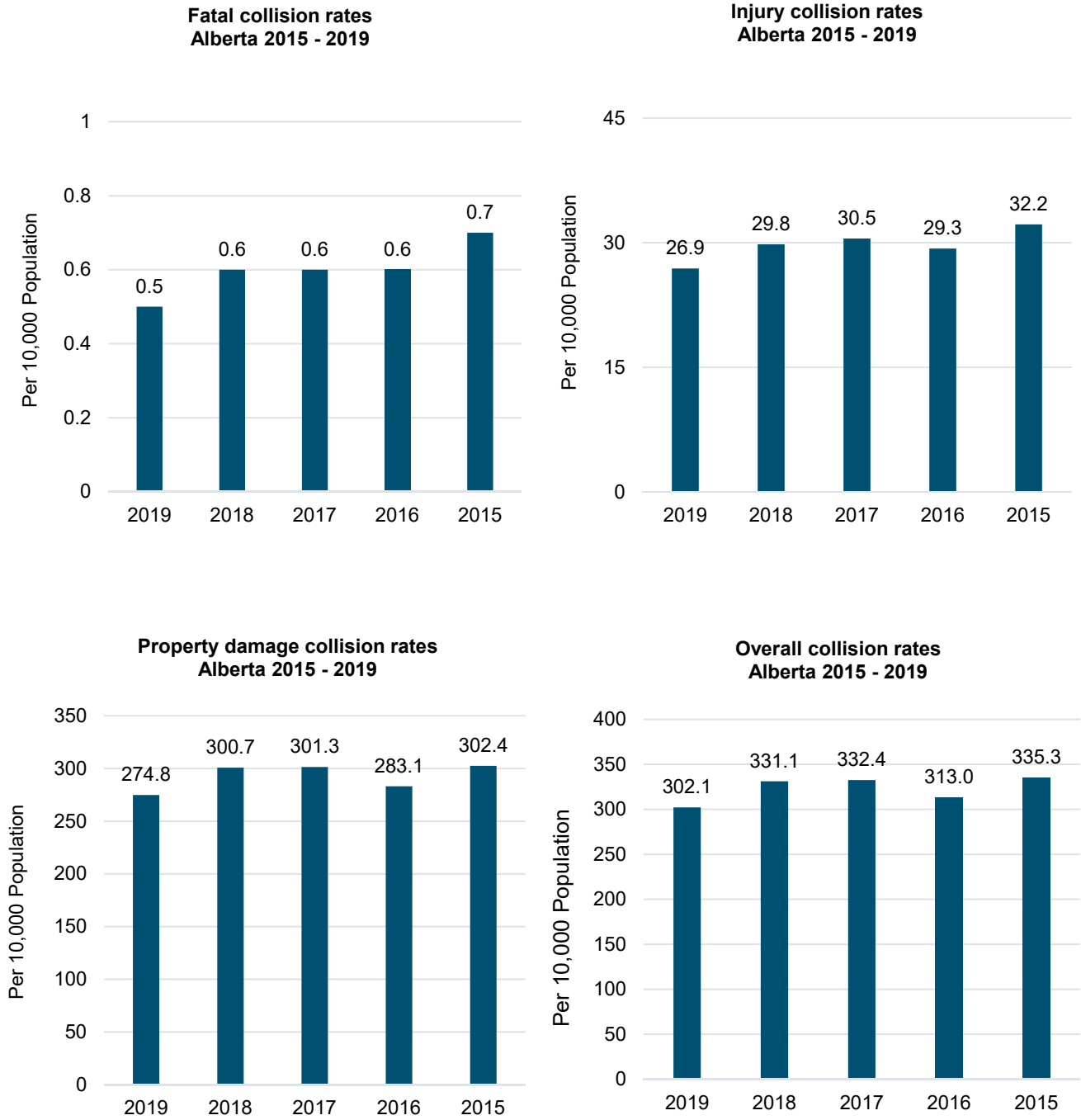
*Figure 1.* Alberta traffic collision rates per 10,000 population

## Jurisdictional comparison of casualty rates
## per billion vehicle kilometres travelled
## 2015 – 2019

| | Fatalities | | | | | Injuries | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2019 | 2018 | 2017 | 2016 | 2015 |
| Canada | 4.4 | 4.9 | 4.8 | 5.1 | 5.1 | 345.1 | 391.1 | 404.9 | 427.8 | 442.5 |
| Alberta | 3.7 | 4.5 | 4.8 | 4.8 | 5.5 | 228.5 | 265.8 | 273.1 | 269.6 | 298.2 |
| British Columbia | 6.4 | 6.9 | 6.9 | 7.4 | 7.7 | 381.7 | 477.5 | 523.5 | 538.5 | 583.7 |
| Saskatchewan | 4.6 | 8.6 | 6.8 | 8.7 | 8.7 | 270.1 | 284.0 | 311.1 | 400.8 | 396.3 |
| Manitoba | 4.9 | 4.6 | 4.9 | 7.3 | 5.5 | 743.0 | 791.6 | 844.4 | 859.1 | 837.4 |
| Ontario | 3.8 | 4.1 | 4.0 | 4.0 | 3.7 | 307.7 | 347.4 | 357.1 | 392.5 | 401.9 |
| Quebec | 4.1 | 4.5 | 4.6 | 4.6 | 4.9 | 429.3 | 444.1 | 475.5 | 491.5 | 499.3 |
| New Brunswick | 5.5 | 5.6 | 5.7 | 5.8 | 6.0 | 294.5 | 301.1 | 307.6 | 314.0 | 321.6 |
| Nova Scotia | 5.9 | 6.3 | 4.0 | 4.2 | 4.8 | 590.3 | 603.5 | 414.5 | 423.1 | 433.4 |
| Prince Edward Island | 9.4 | 9.6 | 9.1 | 7.3 | 12.3 | 378.4 | 415.6 | 403.7 | 389.3 | 354.5 |
| Newfoundland | 7.2 | 7.2 | 6.0 | 8.4 | 8.2 | 480.3 | 498.9 | 513.0 | 574.9 | 647.8 |
| Yukon | 14.0 | 10.1 | 10.3 | 6.0 | 6.1 | 223.3 | 284.5 | 392.1 | 367.3 | 319.5 |
| Northwest Territories | 13.9 | 4.7 | 7.2 | 9.8 | 7.6 | 177.8 | 235.8 | 241.0 | 304.7 | 204.0 |
| Nunavut | 47.6 | 48.8 | 0.0 | 51.3 | 26.3 | 595.2 | 609.8 | 575.0 | 1,000.0 | 1,289.5 |

*Table 1.3.* Jurisdictional Comparison of Casualty Rates, per Billion Vehicle Kilometres Travelled

### Observations

Based on the most recent information from Transport Canada, from 2018 to 2019, Alberta's fatality rate per billion vehicle kilometers travelled decreased from 4.5 to 3.7. During the same period, the injury rate per billion vehicle kilometers travelled decreased from 265.8 to 228.5.  Over the five years, since 2015, rates have declined by 1.8 fatalities and 69.7 injuries per billion vehicle kilometers travelled.

Sources:  Transport Canada, "Canadian Motor Vehicle Traffic Collision Statistics," (Catalogue No T45-3E-PDF) and Statistics Canada, "Canadian Vehicle Survey", catalogue No. 53-223-XIE.  The Canadian Vehicle Survey (CVS) is a voluntary vehicle-based survey that provides annual estimates of road vehicle activity (Vehicle-kilometres and passenger-kilometres) of vehicles registered in Canada. The in-scope vehicles for the CVS include all motor vehicles except motorcycles, buses, off-road vehicles (e.g., snowmobiles, dune buggies, and amphibious vehicles) and special equipment (e.g. cranes, street cleaners, snowplows and backhoes) registered in Canada anytime during the survey reference period that have not been scrapped or salvaged.  Vehicle kilometres travelled data were not available for 2019 so they were estimated using an econometric model. Data for Ontario and Alberta were preliminary for 2019. Data for New Brunswick were estimated. See the original report for all notes.

The Canadian Motor Vehicle Traffic Collision Statistics can be accessed online at:
https://tc.canada.ca/en/road-transportation/statistics-data/canadian-motor-vehicle-traffic-collision-statistics-2019.

Classification: Public

**Alberta fatality rates
2015-2019**



**Jurisdictional fatality rates
2019**
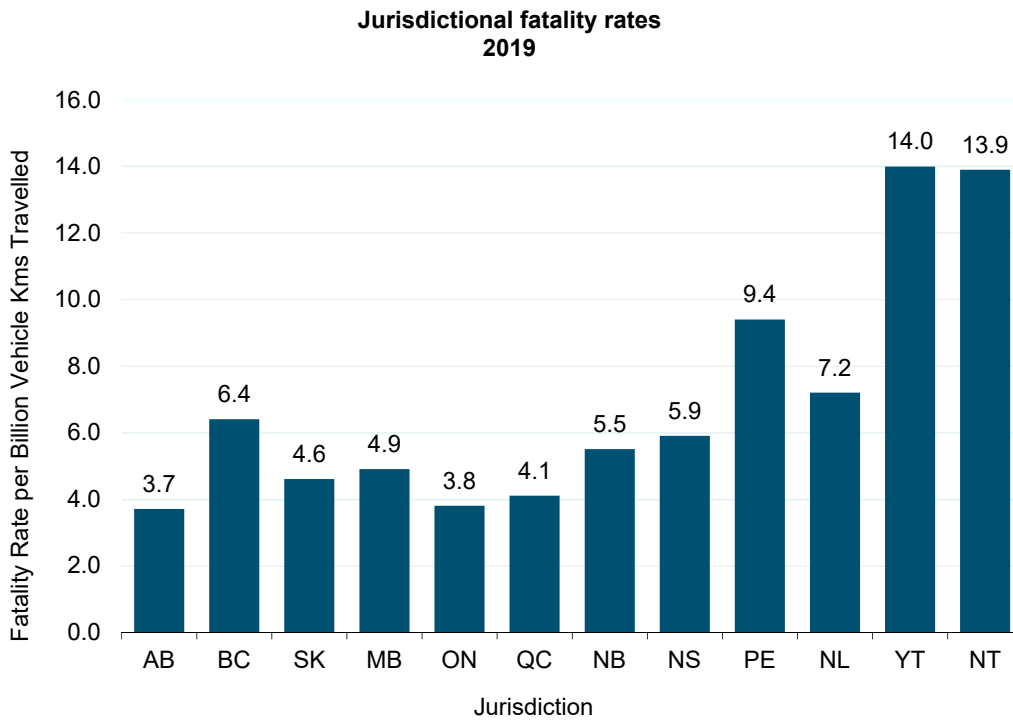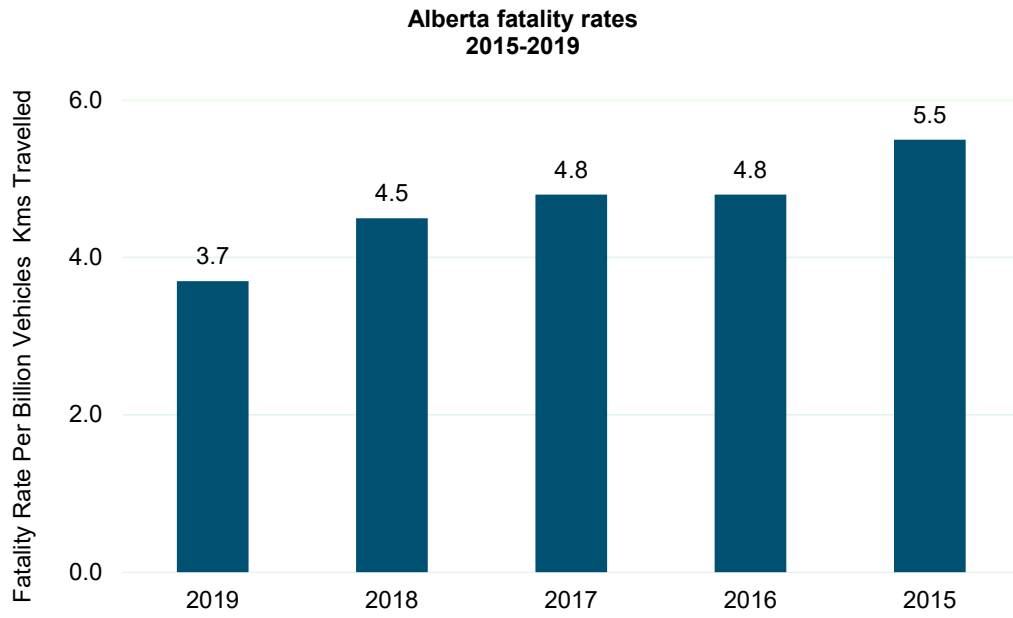


*Figure 2.* Traffic fatality rates per billion vehicle kilometers travelled

Note: To maintain the scale of the figure and to facilitate the comparison across jurisdictions the fatality rate for Nunavut is not included in the figure above. The rate for Nunavut is presented in Table 1.3.

# When the collisions occurred

## Month

July experienced more fatal collisions than other months.  The highest number of reported injury collisions was in January.  February reported more property damage collisions than any other month.

## Day of week

The daily distribution of collisions indicated that Friday was the most collision-prone day of the week.

## Time

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the highest proportion of collisions.  The least collision-prone time period was the late night/early morning period (11:00 p.m. – 2:59 a.m.).

## Holidays

The Easter Long Weekend recorded the highest number of fatalities while the Christmas Season recorded the highest number of injuries.  The Family Day Long Weekend recorded the highest total number of collisions.

## Collision occurrence by month
**2019**

| Month | Fatal Collisions | | Non-Fatal Injury Collisions | | Property Damage Collisions | | Total Collisions | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| January | 16 | 7.4 | 1,166 | 9.9 | 11,158 | 9.3 | 12,340 | 9.3 |
| February | 16 | 7.4 | 1,104 | 9.4 | 15,105 | 12.6 | 16,225 | 12.3 |
| March | 14 | 6.5 | 868 | 7.4 | 9,908 | 8.2 | 10,790 | 8.2 |
| April | 20 | 9.3 | 751 | 6.4 | 7,670 | 6.4 | 8,441 | 6.4 |
| May | 13 | 6.0 | 826 | 7.0 | 8,192 | 6.8 | 9,031 | 6.8 |
| June | 14 | 6.5 | 892 | 7.6 | 8,862 | 7.4 | 9,768 | 7.4 |
| July | 26 | 12.1 | 919 | 7.8 | 8,524 | 7.1 | 9,469 | 7.2 |
| August | 19 | 8.8 | 952 | 8.1 | 8,055 | 6.7 | 9,026 | 6.8 |
| September | 21 | 9.8 | 1,004 | 8.6 | 8,719 | 7.3 | 9,744 | 7.4 |
| October | 12 | 5.6 | 1,064 | 9.1 | 9,903 | 8.2 | 10,979 | 8.3 |
| November | 24 | 11.2 | 1,125 | 9.6 | 12,748 | 10.6 | 13,897 | 10.5 |
| December | 20 | 9.3 | 1,067 | 9.1 | 11,275 | 9.4 | 12,362 | 9.4 |
| Unspecified | -- | -- | -- | -- | -- | -- | -- | -- |
| **Total Number of Collisions** | **215** | **100.0** | **11,738** | **100.0** | **120,119** | **100.0** | **132,072** | **100.0** |

*Table 2.1.* Collision Occurrence by Month

**Observations**

The month of July experienced more fatal crashes than any other month. The highest number of reported injury collisions was in January. February reported more property damage collisions than any other month.

## Collision occurrence by day of week
**2019**

| Day of Week | Fatal Collisions | | Non-Fatal Injury Collisions | | Property Damage Collisions | | Total Collisions | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| Monday | 37 | 17.2 | 1,702 | 14.5 | 17,105 | 14.2 | 18,844 | 14.3 |
| Tuesday | 22 | 10.2 | 1,799 | 15.3 | 18,539 | 15.4 | 20,360 | 15.4 |
| Wednesday | 35 | 16.3 | 1,883 | 16.0 | 18,394 | 15.3 | 20,312 | 15.4 |
| Thursday | 27 | 12.6 | 1,759 | 15.0 | 17,908 | 14.9 | 19,694 | 14.9 |
| Friday | 32 | 14.9 | 1,956 | 16.7 | 20,045 | 16.7 | 22,033 | 16.7 |
| Saturday | 32 | 14.9 | 1,433 | 12.2 | 15,670 | 13.0 | 17,135 | 13.0 |
| Sunday | 30 | 14.0 | 1,206 | 10.3 | 12,458 | 10.4 | 13,694 | 10.4 |
| Unspecified | -- | -- | -- | -- | -- | -- | -- | -- |
| **Total Number of Collisions** | **215** | **100.0** | **11,738** | **100.0** | **120,119** | **100.0** | **132,072** | **100.0** |

*Table 2.2.* Collision Occurrence by Day of Week

**Observations**

The daily distribution of collisions indicated that, overall, Friday was the most collision-prone day of the week.

## Collision occurrence by time period
**2019**

| Time Period | Fatal Collisions | | Non-Fatal Injury Collisions | | Property Damage Collisions | | Total Collisions | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| 11:00 p.m. - 2:59 a.m. | 34 | 15.8 | 506 | 4.3 | 4,896 | 4.1 | 5,436 | 4.1 |
| 3:00 a.m. - 6:59 a.m. | 23 | 10.7 | 614 | 5.2 | 5,900 | 4.9 | 6,537 | 4.9 |
| 7:00 a.m. - 10:59 a.m. | 24 | 11.2 | 2,262 | 19.3 | 23,478 | 19.5 | 25,764 | 19.5 |
| 11:00 a.m. - 2:59 p.m. | 44 | 20.5 | 2,759 | 23.5 | 30,421 | 25.3 | 33,224 | 25.2 |
| 3:00 p.m. - 6:59 p.m. | 46 | 21.4 | 3,815 | 32.5 | 35,664 | 29.7 | 39,525 | 29.9 |
| 7:00 p.m. - 10:59 p.m. | 37 | 17.2 | 1,564 | 13.3 | 15,259 | 12.7 | 16,860 | 12.8 |
| Unspecified | 7 | 3.3 | 218 | 1.9 | 4,501 | 3.7 | 4,726 | 3.6 |
| **Total Number of Collisions** | **215** | **100.0** | **11,738** | **100.0** | **120,119** | **100.0** | **132,072** | **100.0** |

*Table 2.3.* Collision Occurrence by Time Period

**Observations**

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the largest percentage (29.9%) of collisions occurring in a 24-hour period. The least collision-prone time period was the late night/early morning (11:00 p.m. – 2:59 a.m.).

**Collision occurrence by month
Alberta 2019**



**Collision occurrence by day of week
Alberta 2019**



**Collision occurrence by time period
Alberta 2019**
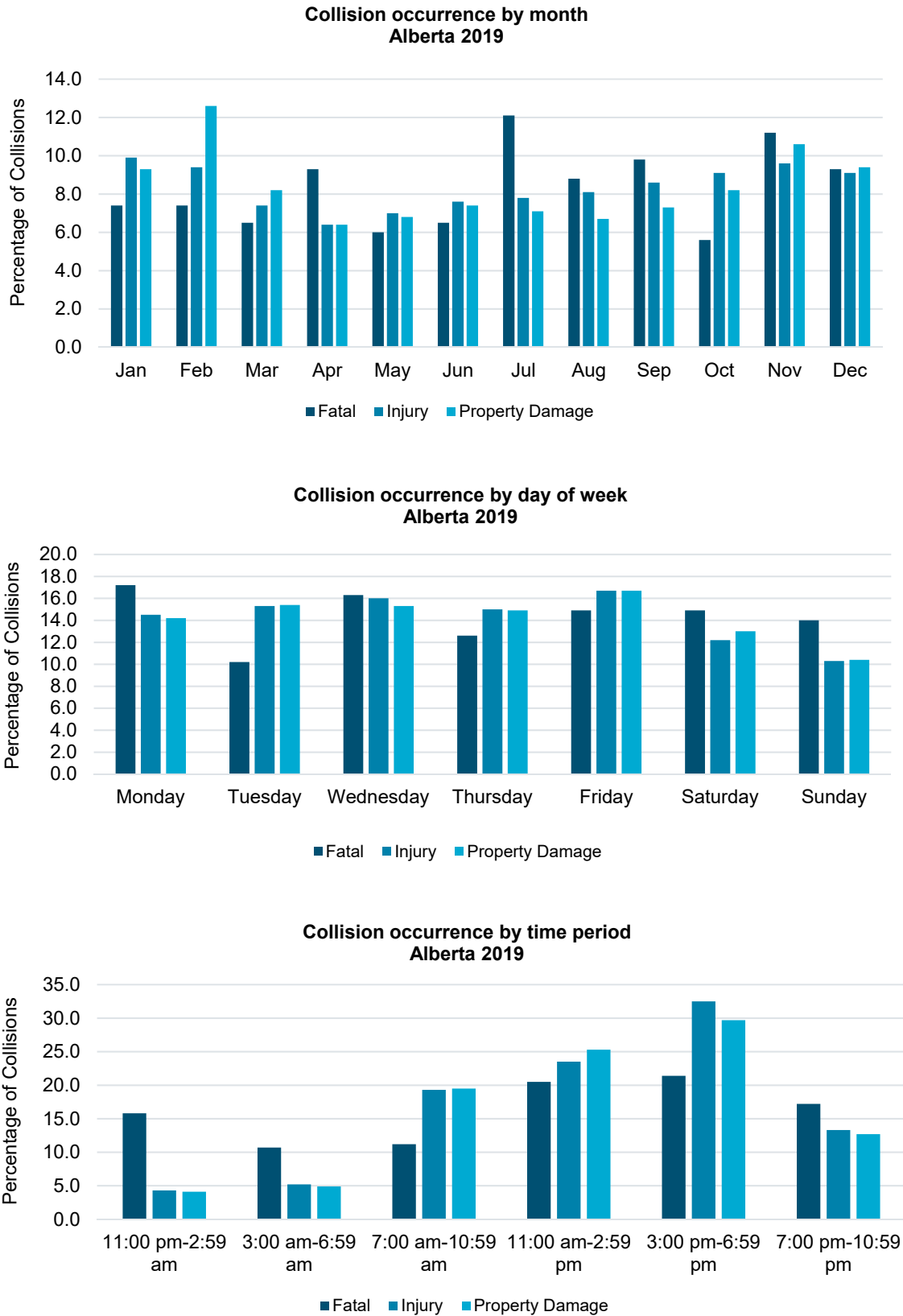


*Figure 3.* Collision Occurrence by Month/Day of Week/Time Period

Classification: Public

## Collisions during 2019 holidays
**2019**

| Holidays | Number Killed N | Number Injured N | Total Collisions* N |
|---|---|---|---|
| New Year's Day (January 1) | 1 | 31 | 266 |
| Family Day Long Weekend (February 15-18) | 2 | 200 | 1,974 |
| Easter Long Weekend (April 18-22) | 6 | 133 | 1,141 |
| Victoria Day Long Weekend (May 17-20) | 4 | 98 | 914 |
| Canada Day Long Weekend (June 28 - July 1) | 4 | 162 | 1,143 |
| August Long Weekend (August 2-5) | 3 | 171 | 1,042 |
| Labour Day Long Weekend (August 30 - September 2) | -- | 155 | 1,009 |
| Thanksgiving Long Weekend (October 11-14) | 5 | 132 | 1,096 |
| Remembrance Day Long Weekend (November 8-11) | 3 | 189 | 1,889 |
| Christmas Season (December 24-29) | 2 | 201 | 1,561 |
| **Total** | **30** | **1,472** | **12,035** |

*Table 2.4.* Collisions During 2019 Holidays

### Observations

The Easter Long Weekend recorded the highest number of fatalities while the Christmas Season recorded the highest number of injuries.  The Family Day Long Weekend recorded the highest total number of collisions.

*Total collisions includes fatal, injury and property damage collisions.

Note: Use caution when comparing holidays. The number of days for each holiday period within the year may vary. From year to year, holiday periods may also vary in length.

# Victims

## Road user class

The majority of traffic victims were drivers and passengers of vehicles.  Pedestrians and motorcyclists accounted for 6.1% and 2.8% of the total casualties, respectively.

## Age of casualties

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24.  The lowest casualty rates were recorded for children 14 years of age and under.

Classification: Public

## Injuries and fatalities by road user class
**2019**

| Road User Class | Persons Killed | | Persons Injured | | Total Casualties | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Drivers | 127 | 54.5 | 10,248 | 66.7 | 10,375 | 66.5 |
| Passengers | 44 | 18.9 | 3,060 | 19.9 | 3,104 | 19.9 |
| Pedestrians | 20 | 8.6 | 936 | 6.1 | 956 | 6.1 |
| Motorcyclists | 24 | 10.3 | 416 | 2.7 | 440 | 2.8 |
| Bicyclists | 3 | 1.3 | 363 | 2.4 | 366 | 2.3 |
| Other | 8 | 3.4 | 173 | 1.1 | 181 | 1.2 |
| Unspecified | 7 | 3.0 | 168 | 1.1 | 175 | 1.1 |
| **Total Casualties** | **233** | **100.0** | **15,364** | **100.0** | **15,597** | **100.0** |

*Table 3.1.* Injuries and Fatalities by Road User Class

**Observations**

The majority of traffic victims were drivers (66.5%) and passengers (19.9%) of vehicles. Pedestrians and motorcyclists accounted for 6.1% and 2.8% of the total casualties, respectively.

## Age of casualties
**2019**

| Age in Years | Persons Killed | | Persons Injured | | Total Casualties | | Casualty Rate Per 10,000 Population* |
|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | |
| Under 5 | 2 | 0.9 | 157 | 1.0 | 159 | 1.0 | 5.8 |
| 5 - 9 | 1 | 0.4 | 296 | 1.9 | 297 | 1.9 | 10.7 |
| 10 - 14 | 2 | 0.9 | 395 | 2.6 | 397 | 2.5 | 14.8 |
| 15 - 19 | 20 | 8.6 | 1,284 | 8.4 | 1,304 | 8.4 | 51.2 |
| 20 - 24 | 17 | 7.3 | 1,483 | 9.7 | 1,500 | 9.6 | 54.0 |
| 25 - 29 | 16 | 6.9 | 1,514 | 9.9 | 1,530 | 9.8 | 47.5 |
| 30 - 34 | 32 | 13.7 | 1,565 | 10.2 | 1,597 | 10.2 | 44.8 |
| 35 - 44 | 33 | 14.2 | 2,798 | 18.2 | 2,831 | 18.2 | 42.7 |
| 45 - 54 | 28 | 12.0 | 2,261 | 14.7 | 2,289 | 14.7 | 41.4 |
| 55 - 64 | 32 | 13.7 | 1,788 | 11.6 | 1,820 | 11.7 | 33.4 |
| 65 and over | 50 | 21.5 | 1,424 | 9.3 | 1,474 | 9.5 | 25.4 |
| Unspecified | -- | -- | 399 | 2.6 | 399 | 2.6 | |
| **Total Casualties** | **233** | **100.0** | **15,364** | **100.0** | **15,597** | **100.0** | |

*Table 3.2.* Age of Casualties

**Observations**

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children 14 years of age and younger.

*Population – Statistics Canada as of July 1, 2019.

**Age of casualties**
**Alberta 2019**
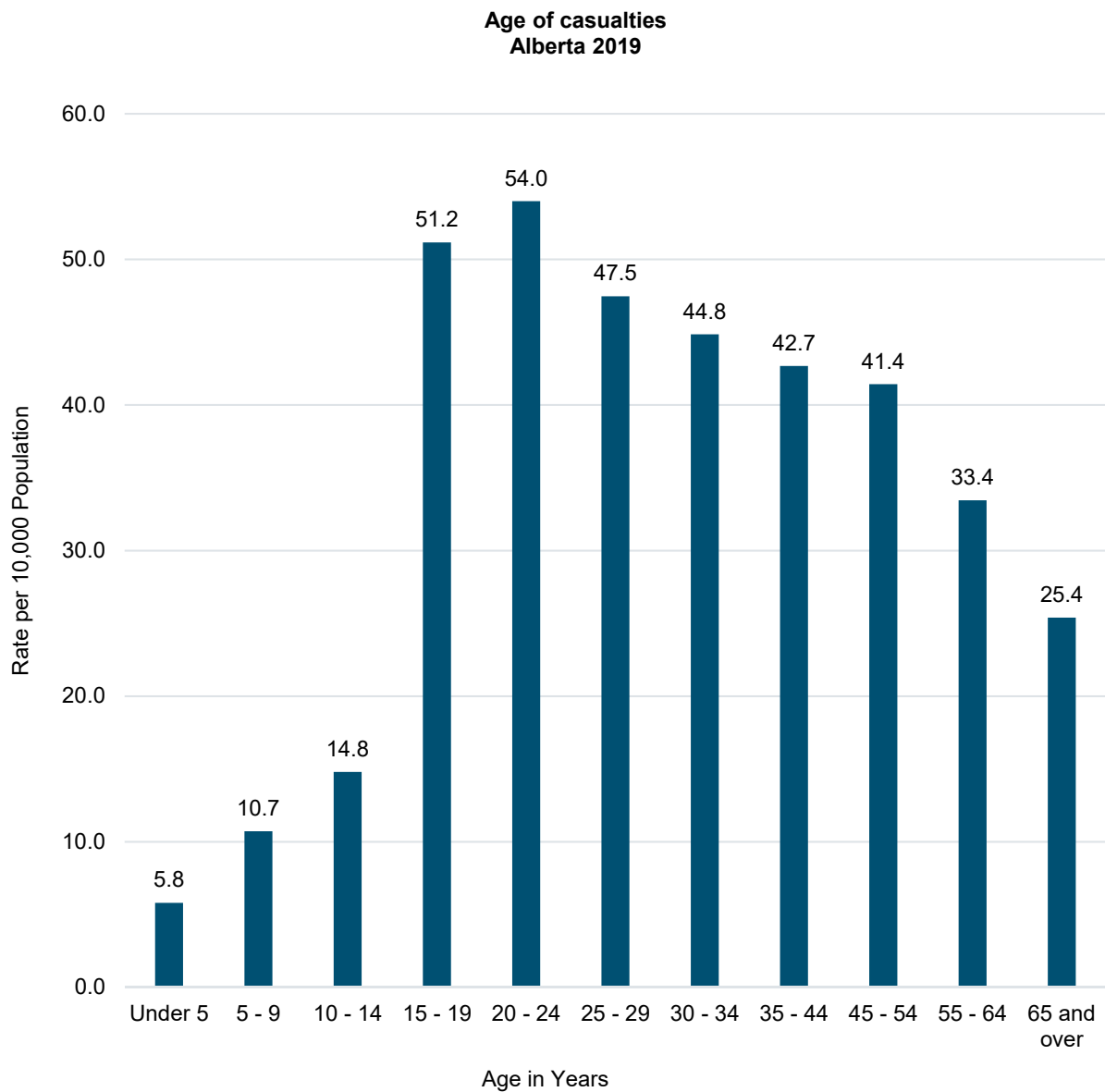


*Figure 4.* Age of Casualties

# Drivers

## Age and gender of drivers

Collision rates per 1,000 licensed drivers indicate that males 16 to 19 years old were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions was females 16 to 17 years old.

## Driver actions

Following too closely (33.4%), running off the road (16.1%) and making a left turn across the path of an incoming vehicle (11.7%) were the most frequently identified improper driver actions contributing to casualty collisions.

## Age and gender of drivers involved in casualty collisions: per 1,000 licensed drivers
**2019**

| Age of Driver | Male | | | Female | | | Total* | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | Rate Per 1,000** Licensed Drivers | N | % | Rate Per 1,000** Licensed Drivers | N | % | Rate Per 1,000** Licensed Drivers |
| Under 16 | 66 | 0.3 | 3.5 | 35 | 0.2 | 2.0 | 101 | 0.5 | 2.8 |
| 16 - 17 | 378 | 1.8 | 10.7 | 335 | 1.6 | 10.2 | 713 | 3.3 | 10.5 |
| 18 - 19 | 457 | 2.1 | 10.7 | 370 | 1.7 | 9.6 | 828 | 3.8 | 10.2 |
| 20 - 24 | 1,234 | 5.7 | 9.7 | 918 | 4.3 | 8.0 | 2,152 | 10.0 | 8.9 |
| 25 - 34 | 2,607 | 12.1 | 7.8 | 2,039 | 9.4 | 6.5 | 4,647 | 21.5 | 7.2 |
| 35 - 44 | 2,506 | 11.6 | 7.5 | 1,916 | 8.9 | 6.1 | 4,423 | 20.5 | 6.8 |
| 45 - 54 | 1,983 | 9.2 | 7.1 | 1,417 | 6.6 | 5.6 | 3,400 | 15.8 | 6.4 |
| 55 - 64 | 1,759 | 8.2 | 6.5 | 1,014 | 4.7 | 4.0 | 2,773 | 12.8 | 5.3 |
| 65 and over | 1,318 | 6.1 | 5.3 | 785 | 3.6 | 3.4 | 2,103 | 9.7 | 4.4 |
| Unspecified | 67 | 0.3 | | 36 | 0.2 | | 441 | 2.0 | |
| **Total Number of Drivers** | **12,375** | **57.3** | **7.3** | **8,865** | **41.1** | **5.7** | **21,581** | **100.0** | **6.6** |

*Table 4.1.* Age and Gender of Drivers Involved in Casualty Collisions: Per 1,000 Licensed Drivers

**Observations**

Collision rates per 1,000 licensed drivers indicated that males 16 to 19 years old were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions was females 16 to 17 years old.

*Total includes drivers whose gender was other or unspecified on the collision report form. Includes bicyclists.

**Source:  Licensed Drivers – Service Alberta, as of December 31, 2019.

**Age and gender of drivers involved in casualty collisions
Alberta 2019**
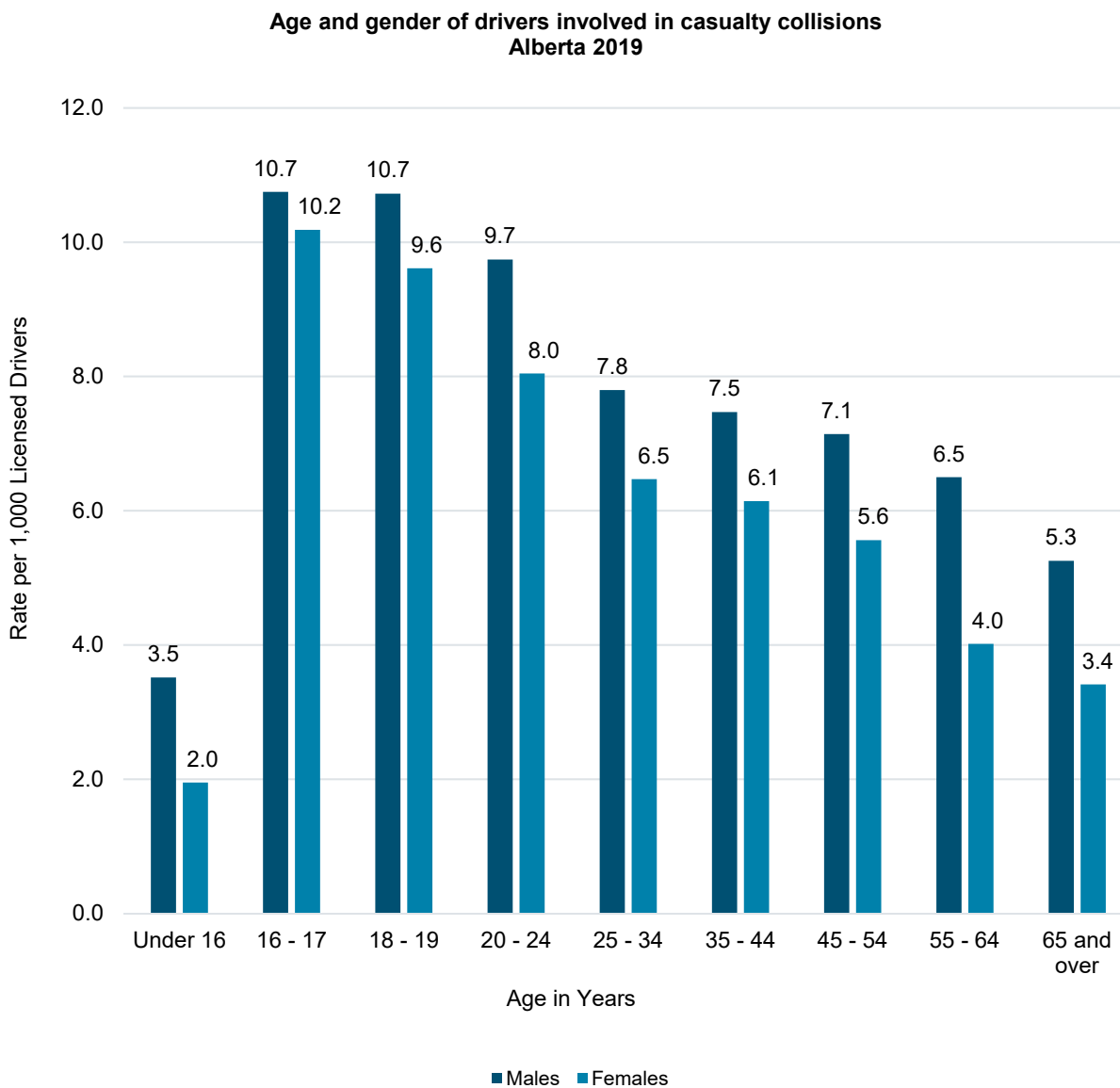


*Figure 5.* Age and Gender of Drivers Involved in Casualty Collisions

Classification: Public

## Improper actions of drivers involved in casualty collisions*
**2019**

| Improper Actions | Drivers in Fatal Collisions | | Drivers in Non-Fatal Injury Collisions | | Total Drivers in Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Followed Too Closely | 5 | 3.1 | 2,951 | 34.0 | 2,956 | 33.4 |
| Ran Off Road | 76 | 46.6 | 1,353 | 15.6 | 1,429 | 16.1 |
| Left Turn Across Path | 11 | 6.7 | 1,023 | 11.8 | 1,034 | 11.7 |
| Stop Sign Violation | 12 | 7.4 | 636 | 7.3 | 648 | 7.3 |
| Disobey Traffic Signal | 1 | 0.6 | 640 | 7.4 | 641 | 7.2 |
| Failed to Yield Right of Way to Pedestrian | 7 | 4.3 | 414 | 4.8 | 421 | 4.8 |
| Improper Lane Change | 4 | 2.5 | 306 | 3.5 | 310 | 3.5 |
| Improper Turn | 2 | 1.2 | 290 | 3.3 | 292 | 3.3 |
| Left of Centre | 35 | 21.5 | 204 | 2.3 | 239 | 2.7 |
| Backed Unsafely | 2 | 1.2 | 236 | 2.7 | 238 | 2.7 |
| Failed to Yield Right of Way - Uncontrolled Intersection | 1 | 0.6 | 182 | 2.1 | 183 | 2.1 |
| Yield Sign Violation | -- | -- | 169 | 1.9 | 169 | 1.9 |
| Improper Passing | 5 | 3.1 | 112 | 1.3 | 117 | 1.3 |
| Other | 2 | 1.2 | 171 | 2.0 | 173 | 2.0 |
| **Total Number of Drivers** | **163** | **100.0** | **8,687** | **100.0** | **8,850** | **100.0** |

*Table 4.2.* Improper Actions of Drivers Involved in Casualty Collisions*

**Observations**

Following too closely (33.4%), running off the road (16.1%) and making a left turn across the path of an oncoming vehicle (11.7%) were the most frequently identified improper driver actions contributing to casualty collisions.

*Based on those cases where driver actions were specified on the collision report form. Includes bicyclists.

Note: There were a total of 18,977 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 10,127 were indicated as driving properly at the time of the collision.

# Vehicles

## Types of vehicles

Passenger cars (35.0%), minivans/MPVs (33.8%) and pick-up trucks/vans (21.0%) were the vehicles most frequently involved in total casualty collisions.

## Vehicle factors

Overall 0.8% of vehicles involved in casualty collisions were identified as having a vehicle defect.  The most common defect was defective brakes.

## Point of impact

The most common point of impact in casualty collisions involved the front of the vehicle.  Overall, 45.2% of the impacts involved the centre front.

Classification: Public

## Types of vehicles involved in casualty collisions*
**2019**

| Type of Vehicle | Vehicles in Fatal Collisions | | Vehicles in Non-Fatal Injury Collisions | | Total Vehicles in Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Passenger Car | 90 | 25.6 | 7,554 | 35.2 | 7,644 | 35.0 |
| Mini-Van/MPV | 72 | 20.5 | 7,308 | 34.1 | 7,380 | 33.8 |
| Pick-up Truck/Van | 89 | 25.4 | 4,490 | 20.9 | 4,579 | 21.0 |
| Truck 4500 kg+ | 16 | 4.6 | 687 | 3.2 | 703 | 3.2 |
| Motorcycle | 25 | 7.1 | 416 | 1.9 | 441 | 2.0 |
| Tractor-Trailer | 47 | 13.4 | 362 | 1.7 | 409 | 1.9 |
| Bicycle | 3 | 0.9 | 365 | 1.7 | 368 | 1.7 |
| Transit Bus | -- | -- | 75 | 0.3 | 75 | 0.3 |
| Emergency Vehicle | -- | -- | 52 | 0.2 | 52 | 0.2 |
| Off-Highway Vehicle | 6 | 1.7 | 40 | 0.2 | 46 | 0.2 |
| School Bus | -- | -- | 45 | 0.2 | 45 | 0.2 |
| Construction Equipment | -- | -- | 25 | 0.1 | 25 | 0.1 |
| Farm Equipment | 2 | 0.6 | 15 | 0.1 | 17 | 0.1 |
| Other Bus | -- | -- | 13 | 0.1 | 13 | 0.1 |
| Motorhome | -- | -- | 5 | 0.0 | 5 | 0.0 |
| Intercity Bus | 1 | 0.3 | 4 | 0.0 | 5 | 0.0 |
| Motorized Snow Vehicle | -- | -- | 2 | 0.0 | 2 | 0.0 |
| Moped | -- | -- | -- | -- | -- | -- |
| Other | -- | -- | 4 | 0.0 | 4 | 0.0 |
| **Total Number of Vehicles** | **351** | **100.0** | **21,462** | **100.0** | **21,813** | **100.0** |

*Table 5.1.* Types of Vehicles Involved in Casualty Collisions*

**Observations**

Passenger cars, mini-vans/MPVs and pick-up trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, motorcycles represented 2.0% and bicycles 1.7% of the vehicles involved in casualty collisions. Tractor-Trailers were 1.9% of total vehicles in casualty crashes, but 13.4% of vehicles in fatal crashes.

*Based on those cases where type of vehicle was specified on the collision report form.

## Vehicle factors involved in casualty collisions*
**2019**

| Vehicle Factors | Vehicles in Fatal Collisions | | Vehicles in Non-Fatal Injury Collisions | | Total Vehicles in Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| No Apparent Defect | 257 | 98.5 | 19,424 | 99.2 | 19,681 | 99.2 |
| Defective Brakes | -- | -- | 56 | 0.3 | 56 | 0.3 |
| Tires Failed | -- | -- | 40 | 0.2 | 40 | 0.2 |
| Improper Load/Shift | -- | -- | 11 | 0.1 | 11 | 0.1 |
| Lighting Defect | -- | -- | 4 | 0.0 | 4 | 0.0 |
| Other | 4 | 1.5 | 42 | 0.2 | 46 | 0.2 |
| **Total Number of Vehicles** | **261** | **100.0** | **19,577** | **100.0** | **19,838** | **100.0** |

*Table 5.2.* Vehicle Factors Involved in Casualty Collisions*

**Observations**

Overall 0.8% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common defect was defective brakes.

*Based on those cases where a vehicle factor was specified on the collision report form. This information does not indicate whether a mechanical inspection of the collision-involved vehicle was conducted.

# Point of impact on vehicles involved in casualty collisions*
**2019**

| Point of Impact | Vehicles in Fatal Collisions | | Vehicles in Non-Fatal Injury Collisions | | Total Vehicles in Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Centre Front | 192 | 56.6 | 9,537 | 45.0 | 9,729 | 45.2 |
| Centre Rear | 25 | 7.4 | 4,699 | 22.2 | 4,724 | 21.9 |
| Left Front | 18 | 5.3 | 1,514 | 7.1 | 1,532 | 7.1 |
| Right Front | 14 | 4.1 | 1,443 | 6.8 | 1,457 | 6.8 |
| Left Side | 12 | 3.5 | 1,017 | 4.8 | 1,029 | 4.8 |
| Right Side | 17 | 5.0 | 936 | 4.4 | 953 | 4.4 |
| Rollover | 45 | 13.3 | 756 | 3.6 | 801 | 3.7 |
| Left Rear | 1 | 0.3 | 522 | 2.5 | 523 | 2.4 |
| Right Rear | 4 | 1.2 | 494 | 2.3 | 498 | 2.3 |
| Attachment | 9 | 2.7 | 186 | 0.9 | 195 | 0.9 |
| Undercarriage | 1 | 0.3 | 50 | 0.2 | 51 | 0.2 |
| Top | 1 | 0.3 | 39 | 0.2 | 40 | 0.2 |
| **Total Number of Vehicles** | **339** | **100.0** | **21,193** | **100.0** | **21,532** | **100.0** |

*Table 5.3.* Point of Impact on Vehicles Involved in Casualty Collisions*

**Observations**

The most common point of impact in casualty collisions involved the front of the vehicle. 45.2% of the impacts involved the centre front, while 21.9% of the impacts involved the centre rear.

*Based on those cases where point of impact was specified on the collision report form.

Classification: Public

# Environment

## Location

The majority of fatal crashes (65.6%) occurred in rural areas, whereas the majority of injury (75.9%) and property damage (85.1%) crashes occurred in urban areas.

## Surface conditions

The majority (60.4%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 24.7% of fatal collisions and 27.3% of non-fatal injury collisions.

Classification: Public

## Location of collisions
**2019**

| Location | Fatal Collisions | | Non-Fatal Injury Collisions | | Property Damage Collisions | | Total Collisions | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| Urban | 74 | 34.4 | 8,907 | 75.9 | 102,235 | 85.1 | 111,216 | 84.2 |
| Rural | 141 | 65.6 | 2,831 | 24.1 | 17,884 | 14.9 | 20,856 | 15.8 |
| **Total Number of Collisions** | **215** | **100.0** | **11,738** | **100.0** | **120,119** | **100.0** | **132,072** | **100.0** |

*Table 6.1.* Location of Collisions

**Observations**

The majority of fatal collisions (65.6%) occurred in rural areas. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (75.9%) and property damage crashes (85.1%).

Classification: Public

# Casualty collision occurrence by surface condition
**2019**

| | Fatal Collisions | | Non-Fatal Injury Collisions | | Total Casualty Collisions | |
|---|---|---|---|---|---|---|
| **Surface Condition** | **N** | **%** | **N** | **%** | **N** | **%** |
| Dry | 134 | 62.3 | 7,080 | 60.3 | 7,214 | 60.4 |
| Slush/Snow/Ice | 53 | 24.7 | 3,201 | 27.3 | 3,254 | 27.2 |
| Wet | 12 | 5.6 | 1,067 | 9.1 | 1,079 | 9.0 |
| Loose Surface Material | 9 | 4.2 | 106 | 0.9 | 115 | 1.0 |
| Muddy | -- | -- | 17 | 0.1 | 17 | 0.1 |
| Other | -- | -- | 43 | 0.4 | 43 | 0.4 |
| Unspecified | 7 | 3.3 | 224 | 1.9 | 231 | 1.9 |
| **Total Number of Collisions** | **215** | **100.0** | **11,738** | **100.0** | **11,953** | **100.0** |

*Table 6.2.* Casualty Collision Occurrence by Surface Condition

**Observations**

The majority (60.4%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 24.7% of fatal collisions and 27.3% of non-fatal injury collisions.

# Special types of vehicles - motorcycles

## Motorcycles

- In 2019, based on motorcycle registrations, the involvement rate of motorcycles increased for fatal collisions and decreased for injury collisions.

- The majority of motorcycle casualty collisions involved male drivers. Motorcycle operators under the age of 25 had the highest involvement rate per 1,000 licensed drivers.

- Compared to drivers involved in total casualty collisions, motorcycle operators were more likely to run off the road, pass improperly or make an improper lane change. However, motorcycle operators were less likely to follow too closely, make a left turn across the path of an oncoming vehicle, or disobey a stop sign.

- Compared to drivers involved in all types of vehicle casualty collisions, motorcycle operators were as likely to have been legally impaired.

- Vehicle factors were identified for 0.8% of motorcycles involved in casualty collisions compared to 0.8% for all types of vehicles involved in casualty collisions.

- The occurrence of casualty collisions involving motorcycles was highest in the month of July.

- The majority of casualty collisions involving motorcycles occurred on dry roads.

## Motorcycles involved in casualty collisions
**2015 – 2019**

| Number of Motorcycles | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Fatal | 25 | 17 | 27 | 38 | 31 |
| Non-Fatal Injury | 416 | 479 | 526 | 607 | 622 |
| **Total Number of Motorcycles Involved in Casualty Collisions** | **441** | **496** | **553** | **645** | **653** |

| Casualties* | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Number Killed | 24 | 18 | 26 | 32 | 33 |
| Number Injured | 450 | 510 | 557 | 665 | 685 |
| **Total Casualties in Collisions Involving Motorcycles** | **474** | **528** | **583** | **697** | **718** |

| Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles** | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Fatal Collisions | 2.0 | 1.4 | 2.2 | 3.1 | 2.5 |
| Non-Fatal Injury Collisions | 32.5 | 38.3 | 42.9 | 50.1 | 49.2 |

*Table 7.1.* Motorcycles Involved in Casualty Collisions

**Observations**

Based on motorcycle registrations in 2019, compared to 2018, the involvement rate of motorcycles increased for fatal collisions and decreased for injury collisions.

*This refers to the total number of people killed and injured in collisions in which a motorcycle was involved. It does not refer to the number of motorcyclists killed and injured.

**Source: Based on vehicle registration statistics, Service Alberta, December 31, 2019.

**Number of motorcycles involved in fatal collisions**
**Alberta 2015 - 2019**
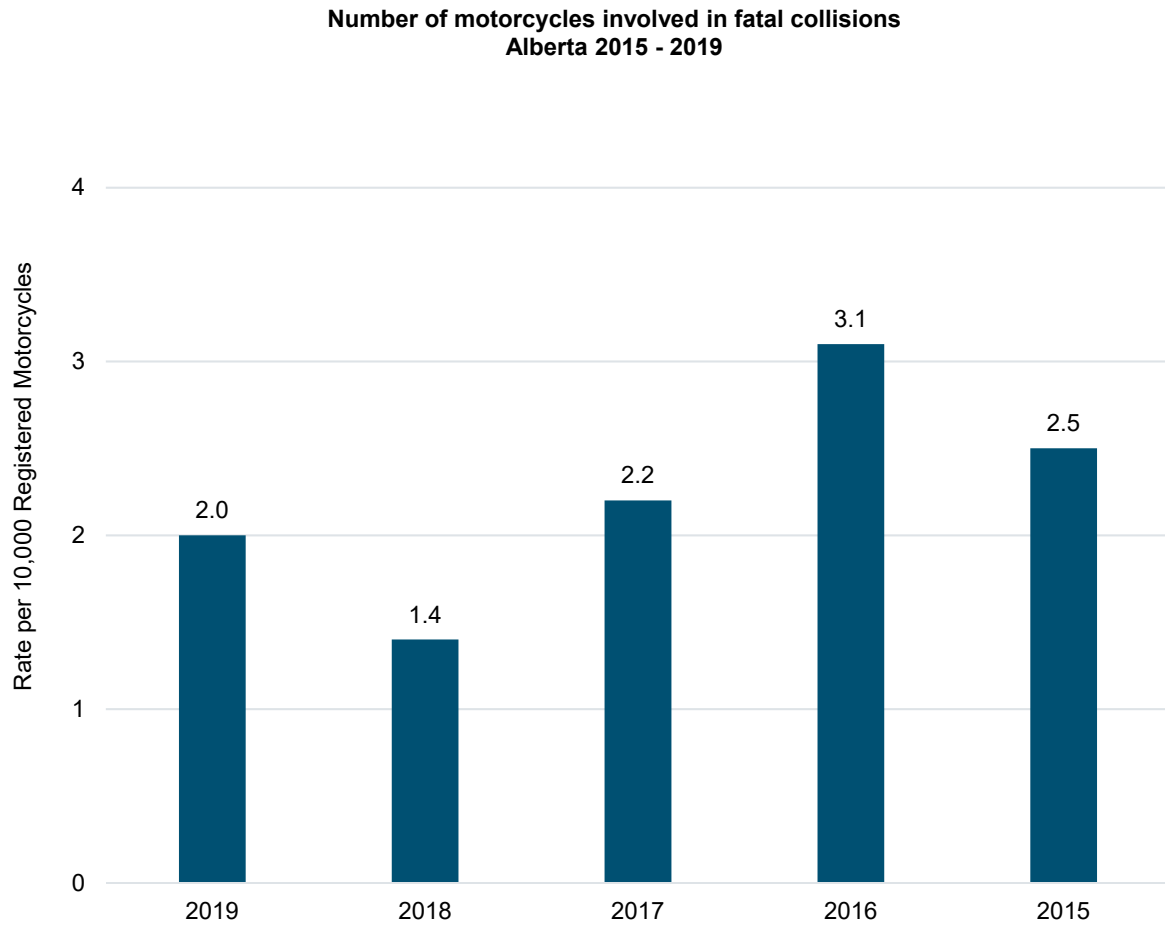


*Figure 6.* Number of Motorcycles Involved in Fatal Collisions

# Age and gender of motorcycle operators involved in casualty collisions
**2019**

| Age of Motorcycle Operators | Male | | Female | | Total* | | Rate Per 1,000 Licensed Motorcycle Operators** |
|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | |
| Under 16 | 2 | 0.5 | 3 | 0.7 | 5 | 1.1 | -- |
| 16 - 17 | 3 | 0.7 | 1 | 0.2 | 4 | 0.9 | 43.0 |
| 18 - 19 | 10 | 2.3 | -- | -- | 10 | 2.3 | 20.4 |
| 20 - 24 | 40 | 9.1 | 3 | 0.7 | 43 | 9.8 | 8.8 |
| 25 - 34 | 93 | 21.2 | 11 | 2.5 | 104 | 23.7 | 3.0 |
| 35 - 44 | 56 | 12.8 | 10 | 2.3 | 66 | 15.0 | 1.2 |
| 45 - 54 | 72 | 16.4 | 14 | 3.2 | 86 | 19.6 | 1.4 |
| 55 - 64 | 77 | 17.5 | 8 | 1.8 | 85 | 19.4 | 1.1 |
| 65 and over | 35 | 8.0 | 1 | 0.2 | 36 | 8.2 | 0.7 |
| Unspecified | -- | -- | -- | -- | -- | -- | |
| **Total Number of Motorcycle Operators** | **388** | **88.4** | **51** | **11.6** | **439** | **100.0** | |

*Table 7.2.* Age and Gender of Motorcycle Operators Involved in Casualty Collisions

## Observations

The majority of motorcycle casualty collisions involved male operators. Based on involvement per 1,000 licensed operators, motorcycle operators under the age of 25 were most likely to be involved in collisions. In particular, 16 - 17 year old motorcycle operators had the highest involvement rate per 1,000 licensed motorcycle operators. These age and gender comparisons are limited due to the lack of driving exposure data. In order to make valid age comparisons, it is important to take into account the number of kilometers driven annually by each age and gender group of motorcycle operators.

*Total includes drivers whose gender was other or unspecified on the collision report form.
**Source: Licensed Drivers – Service Alberta, as of December 31, 2019.
Note: In Alberta, Class 6 (motorcycle) licenses are not issued to operators under 16 years of age.

## Improper actions of motorcycle operators involved in casualty collisions*
**2019**

| Improper Actions of Motorcycle Operators | N | % | Driver Actions in Total Casualty Collisions (All Vehicle Types) % |
|---|---|---|---|
| Ran Off Road | 109 | 55.3 | 16.1 |
| Followed Too Closely | 35 | 17.8 | 33.4 |
| Improper Lane Change | 9 | 4.6 | 3.5 |
| Improper Turn | 8 | 4.1 | 3.3 |
| Improper Passing | 8 | 4.1 | 1.3 |
| Left of Centre | 8 | 4.1 | 2.7 |
| Disobey Traffic Signal | 3 | 1.5 | 7.2 |
| Left Turn Across Path | 2 | 1.0 | 11.7 |
| Stop Sign Violation | 2 | 1.0 | 7.3 |
| Yield Sign Violation | 2 | 1.0 | 1.9 |
| Failed to Yield Right of Way - Uncontrolled Intersection | 1 | 0.5 | 2.1 |
| Other | 10 | 5.1 | 2.0 |
| **Total Number of Operators** | **197** | **100.0** | |

*Table 7.3.* Improper Actions of Motorcycle Operators Involved in Casualty Collisions*

**Observations**

Compared to drivers involved in total casualty collisions, motorcycle operators were more likely to run off the road, pass improperly, or make an improper lane change. However, motorcycle operators were less likely to follow too closely, make a left turn across the path of an oncoming vehicle, or disobey a stop sign.

*Based on those cases where driver actions were specified on the collision report form.

Note: There were a total of 374 motorcycle operators involved in casualty collisions for which a driver action was specified on the collision report form. 177 were indicated as driving properly at the time of the collision.

## Condition of motorcycle operators involved in casualty collisions*
**2019**

| Condition of Motorcycle Operators | N | % | Driver Condition in Total Casualty Collisions (All Vehicle Types) % |
|---|---|---|---|
| Normal | 369 | 95.8 | 96.1 |
| Impaired by Alcohol | 6 | 1.6 | 1.4 |
| Impaired by Alcohol and Drugs | -- | -- | 0.1 |
| Impaired by Drugs | -- | -- | 0.2 |
| **Total Impaired Operators** | **6** | **1.6** | **1.7** |
| Fatigued/Asleep | -- | -- | 0.6 |
| Other | 10 | 2.6 | 1.6 |
| **Total Number of Operators** | **385** | **100.0** | **100.0** |

*Table 7.4.* Condition of Motorcycle Operators Involved in Casualty Collisions*

**Observations**

The motorcycle operator's condition was a contributory factor for 4.2% of the motorcycle operators involved in casualty collisions. Compared to drivers involved in total casualty collisions, motorcycle operators were as likely to have been legally impaired.

*Based on those cases where driver condition was specified on the collision report form.

## Motorcycle vehicle factors in casualty collisions*
**2019**

| Vehicle Factors | N | % | Vehicle Factors in Total Casualty Collisions (All Vehicle Types) % |
|---|---|---|---|
| No Apparent Defect | 381 | 99.2 | 99.2 |
| Defective Brakes | -- | -- | 0.3 |
| Tires Failed | 3 | 0.8 | 0.2 |
| Improper Load/Shift | -- | -- | 0.1 |
| Lighting Defect | -- | -- | 0.0 |
| Other | -- | -- | 0.2 |
| **Total Number of Motorcycles** | **384** | **100.0** | |

*Table 7.5.* Motorcycle Vehicle Factors in Casualty Collisions*

**Observations**

Vehicle factors were identified for 0.8% of the motorcycles involved in casualty collisions compared to 0.8% for all types of vehicles involved in casualty collisions.

*Based on those cases where a vehicle factor was specified on the collision report form. This information does not indicate whether a mechanical inspection of the collision-involved motorcycle was conducted.

## Casualty collisions involving motorcycles: month of occurrence
**2019**

| Month | N | % |
|---|---|---|
| January | 2 | 0.5 |
| February | -- | -- |
| March | 12 | 2.9 |
| April | 26 | 6.3 |
| May | 58 | 14.0 |
| June | 65 | 15.7 |
| July | 83 | 20.0 |
| August | 78 | 18.8 |
| September | 70 | 16.9 |
| October | 18 | 4.3 |
| November | 1 | 0.2 |
| December | 1 | 0.2 |
| Unspecified | -- | -- |
| **Total Number of Collisions** | **414** | **100.0** |

*Table 7.6.* Casualty Collisions Involving Motorcycles: Month of Occurrence

**Observations**

The month of July recorded the highest proportion of casualty crashes involving motorcycles.

## Casualty collisions involving motorcycles: road surface condition
**2019**

| Road Surface Condition | N | % |
| --- | --- | --- |
| Dry | 369 | 89.1 |
| Loose Surface Material | 23 | 5.6 |
| Wet | 11 | 2.7 |
| Slush/Snow/Ice | 2 | 0.5 |
| Muddy | 2 | 0.5 |
| Other | 3 | 0.7 |
| Unspecified | 4 | 1.0 |
| **Total Number of Collisions** | **414** | **100.0** |

*Table 7.7.* Casualty Collisions Involving Motorcycles: Road Surface Condition

**Observations**

The majority (89.1%) of casualty collisions involving motorcycles occurred on dry roads. Loose material on the road surface was involved in 5.6% of motorcycle casualty crashes. Wet roads were the scene for 2.7% of motorcycle casualty collisions.

# Special types of vehicles - truck tractors

## Truck tractors

- In 2019, there were 50 persons killed and 488 injured in collisions involving truck tractors. This represents an increase in fatalities and a decrease in injuries from 2018.

- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road or make an improper lane change.  However, operators of truck tractors were less likely than other vehicle operators to follow too closely or make a left turn across the path of an oncoming vehicle.

- Truck tractor drivers were less likely to have been legally impaired, compared to drivers in total casualty collisions.

- Vehicle factors were more likely to be present in truck tractor casualty collisions than in total casualty collisions.

- The occurrence of casualty collisions involving truck tractors was highest in the month of November.

## Truck tractors involved in casualty collisions
**2015 – 2019**

| Number of Truck Tractors | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Fatal | 47 | 45 | 49 | 36 | 39 |
| Non-Fatal Injury | 362 | 472 | 473 | 332 | 457 |
| **Total Number of Truck Tractors Involved in Casualty Collisions** | **409** | **517** | **522** | **368** | **496** |

| Casualties* | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Number Killed | 50 | 45 | 49 | 39 | 38 |
| Number Injured | 488 | 604 | 588 | 411 | 556 |
| **Total Casualties in Collisions Involving Truck Tractors** | **538** | **649** | **637** | **450** | **594** |

*Table 7.8.* Truck Tractors Involved in Casualty Collisions

**Observations**

In 2019, there were 50 persons killed and 488 injured in collisions involving truck tractors. This represents an increase in fatalities and a decrease in injuries from 2018. The total number of truck tractors involved in casualty crashes was highest in 2017 at 522.

*This refers to the total number of people killed and injured in collisions in which a truck tractor was involved. It does not refer to the number of truck tractor drivers killed and injured.

## Improper actions of truck tractor drivers involved in casualty collisions*
**2019**

| Improper Actions of Truck Tractor Driver | N | % | Driver Actions in Total Casualty Collisions (All Vehicle Types) % |
|---|---|---|---|
| Ran Off Road | 85 | 49.7 | 16.1 |
| Followed Too Closely | 29 | 17.0 | 33.4 |
| Improper Lane Change | 14 | 8.2 | 3.5 |
| Left Turn Across Path | 8 | 4.7 | 11.7 |
| Stop Sign Violation | 7 | 4.1 | 7.3 |
| Backed Unsafely | 5 | 2.9 | 2.7 |
| Left of Centre | 5 | 2.9 | 2.7 |
| Disobey Traffic Signal | 4 | 2.3 | 7.2 |
| Failed to Yield Right of Way - Uncontrolled Intersection | 4 | 2.3 | 2.1 |
| Improper Turn | 4 | 2.3 | 3.3 |
| Improper Passing | 3 | 1.8 | 1.3 |
| Failed to Yield Right of Way - Pedestrian | 1 | 0.6 | 4.8 |
| Yield Sign Violation | 1 | 0.6 | 1.9 |
| Other | 1 | 0.6 | 2.0 |
| **Total Number of Drivers** | **171** | **100.0** | |

*Table 7.9.* Improper Actions of Truck Tractor Drivers Involved in Casualty Collisions*

**Observations**

Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road or make an improper lane change.  However, operators of truck tractors were less likely than other vehicle operators to follow too closely or make a left turn across the path of an oncoming vehicle.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 351 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 180 were indicated as driving properly at the time of the collision.

## Condition of truck tractor drivers involved in casualty collisions*
**2019**

| Condition of Driver | N | % | Driver Condition in Total Casualty Collisions (All Vehicle Types) % |
|---|---|---|---|
| Normal | 346 | 96.4 | 96.1 |
| Impaired by Alcohol | 2 | 0.6 | 1.4 |
| Impaired by Alcohol and Drugs | -- | -- | 0.1 |
| Impaired by Drugs | -- | -- | 0.2 |
| **Total Impaired Drivers** | **2** | **0.6** | **1.7** |
| Fatigued/Asleep | 8 | 2.2 | 0.6 |
| Other | 3 | 0.8 | 1.6 |
| **Total Number of Drivers** | **359** | **100.0** | **100.0** |

*Table 7.10.* Condition of Truck Tractor Drivers Involved in Casualty Collisions*

**Observations**

The condition of the truck tractor driver was a contributory factor for 4.2% of the drivers involved. Compared to all drivers in casualty collisions, truck tractor drivers were more likely to have been fatigued or asleep at the time of the crash.

*Based on those cases where driver condition was specified on the collision report form.

# Vehicle factors of truck tractors involved in casualty collisions*
**2019**

| Vehicle Factors | N | % | Vehicle Factors in Total Casualty Collisions (All Vehicle Types) % |
|---|---|---|---|
| No Apparent Defect | 343 | 96.1 | 99.2 |
| Tires Failed | 5 | 1.4 | 0.2 |
| Improper Load/Shift | 4 | 1.1 | 0.1 |
| Defective Brakes | 1 | 0.3 | 0.3 |
| Lighting Defect | -- | -- | 0.0 |
| Other | 4 | 1.1 | 0.2 |
| **Total Number of Truck Tractors** | **357** | **100.0** | |

*Table 7.11.* Vehicle Factors of Truck Tractors Involved in Casualty Collisions*

**Observations**

Vehicle factors were identified for 3.9% of truck tractors in casualty collisions. Vehicle factors were more likely to be present in truck tractor collisions than in total casualty collisions.

*Based on those cases where a vehicle factor was specified on the collision report form. This does not indicate whether or not a mechanical inspection of the collision-involved truck tractor was conducted.

## Casualty collisions involving truck tractors: month of occurrence
**2019**

| Month | N | % |
|---|---|---|
| January | 40 | 10.5 |
| February | 38 | 10.0 |
| March | 35 | 9.2 |
| April | 22 | 5.8 |
| May | 36 | 9.5 |
| June | 18 | 4.7 |
| July | 27 | 7.1 |
| August | 32 | 8.4 |
| September | 26 | 6.8 |
| October | 25 | 6.6 |
| November | 50 | 13.2 |
| December | 31 | 8.2 |
| **Total Number of Collisions** | **380** | **100.0** |

*Table 7.12.* Casualty Collisions Involving Truck Tractors: Month of Occurrence     s

**Observations**

The occurrence of casualty collisions involving truck tractors was highest in the month of November and lowest during June.

# Special types of vehicles - trains

## Trains

- In 2019, one person was killed and 20 people were injured in crashes in which a train was involved. The number of casualties involving trains has increased from 2018.

- Compared to other types of casualty collisions, train-involved casualty collisions are relatively rare and occur throughout the year.

- All of the drivers (100%) involved in casualty collisions with a train made an improper driving action.

## Trains involved in casualty collisions
**2015 – 2019**

| Number of Trains | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Fatal | 1 | 1 | 1 | 1 | 4 |
| Non-Fatal Injury | 15 | 6 | 8 | 8 | 12 |
| **Total Number of Trains Involved in Casualty Collisions** | **16** | **7** | **9** | **9** | **16** |

| Casualties* | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| Number Killed | 1 | 1 | 1 | 2 | 4 |
| Number Injured | 20 | 8 | 10 | 10 | 14 |
| **Total Casualties in Collisions Involving Trains** | **21** | **9** | **11** | **12** | **18** |

*Table 7.13.* Trains Involved in Casualty Collisions

**Observations**

The number of trains involved in casualty collisions increased from 2018 to 2019. The number of casualties resulting from these collisions increased.

*This refers to the total number of people killed and injured in collisions involving a train.

## Casualty collisions involving trains: month of occurrence
**2019**

| Month | Fatal Collisions | | Non-Fatal Injury Collisions | | Total Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| January | 1 | 100.0 | 2 | 13.3 | 3 | 18.8 |
| February | -- | -- | 2 | 13.3 | 2 | 12.5 |
| March | -- | -- | 1 | 6.7 | 1 | 6.3 |
| April | -- | -- | -- | -- | -- | -- |
| May | -- | -- | 2 | 13.3 | 2 | 12.5 |
| June | -- | -- | 1 | 6.7 | 1 | 6.3 |
| July | -- | -- | -- | -- | -- | -- |
| August | -- | -- | 1 | 6.7 | 1 | 6.3 |
| September | -- | -- | 2 | 13.3 | 2 | 12.5 |
| October | -- | -- | -- | -- | -- | -- |
| November | -- | -- | 4 | 26.7 | 4 | 25.0 |
| December | -- | -- | -- | -- | -- | -- |
| **Total Number of Collisions** | **1** | **100.0** | **15** | **100.0** | **16** | **100.0** |

*Table 7.14.* Casualty Collisions Involving Trains: Month of Occurrence

**Observations**

Compared to other types of casualty collisions, train-involved casualty collisions are relatively rare and occur throughout the year.

Classification: Public

# Actions of drivers involved in casualty collisions with trains*
**2019**

| Driver Actions | Drivers in Fatal Collisions | | Drivers in Non-Fatal Injury Collisions | | Total Drivers in Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Driving Properly | -- | -- | -- | -- | -- | -- |
| Disobey Traffic Signal | -- | -- | 8 | 61.5 | 8 | 61.5 |
| Failed to Yield Right of Way - Uncontrolled Intersection | -- | -- | 2 | 15.4 | 2 | 15.4 |
| Stop Sign Violation | -- | -- | 2 | 15.4 | 2 | 15.4 |
| Ran Off Road | -- | -- | 1 | 7.7 | 1 | 7.7 |
| **Total Number of Drivers** | **0** | **0.0** | **13** | **100.0** | **13** | **100.0** |

*Table 7.15.* Actions of Drivers Involved in Casualty Collisions with Trains*

**Observations**

All drivers involved in a casualty collision with a train made an improper driving action.

*Based on those cases where driver actions were specified on the collision report form.

# Pedestrians

- Pedestrian casualty collisions were more likely to occur in October. February experienced the least number of pedestrian crashes.

- Pedestrian casualty collisions were most likely to occur on Thursday and least likely to occur on Sunday.

- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period (3:00 p.m. - 6:59 p.m.).

- 50.3% of the drivers in casualty collisions involving a pedestrian were recorded as failing to yield the right of way to the pedestrian.

- The casualty rate per 10,000 population was highest for pedestrians between the ages of 15 and 19.

- Of pedestrians involved in injury collisions, 4.9% were legally impaired, compared to 9.1% involved in fatal collisions.

- Of those pedestrians who were impaired, the highest rate of involvement per 10,000 population was for pedestrians 30 to 34 years of age.

Classification: Public

## Casualty collisions involving pedestrians: month of occurrence
**2019**

| Month of Collision | N | % |
|---|---|---|
| January | 96 | 10.2 |
| February | 43 | 4.6 |
| March | 82 | 8.7 |
| April | 69 | 7.4 |
| May | 46 | 4.9 |
| June | 60 | 6.4 |
| July | 66 | 7.0 |
| August | 77 | 8.2 |
| September | 94 | 10.0 |
| October | 118 | 12.6 |
| November | 94 | 10.0 |
| December | 93 | 9.9 |
| **Total Number of Collisions** | **938** | **100.0** |

*Table 8.1.* Casualty Collisions Involving Pedestrians: Month of Occurrence

**Observations**

Pedestrian casualty collisions were more likely to occur in October than any other month. February experienced the least number of pedestrian crashes.

## Casualty collisions involving pedestrians: day of week
**2019**

| Day of Week | N | % |
|---|---|---|
| Monday | 117 | 12.5 |
| Tuesday | 150 | 16.0 |
| Wednesday | 139 | 14.8 |
| Thursday | 162 | 17.3 |
| Friday | 146 | 15.6 |
| Saturday | 118 | 12.6 |
| Sunday | 106 | 11.3 |
| **Total Number of Collisions** | **938** | **100.0** |

*Table 8.2.* Casualty Collisions Involving Pedestrians: Day of Week

**Observations**

Pedestrian casualty collisions were most likely to occur on Thursday and least likely to occur on Sunday.

## Casualty collisions involving pedestrians: time period
**2019**

| Time Period | N | % |
|---|---|---|
| 11:00 p.m. - 2:59 a.m. | 49 | 5.2 |
| 3:00 a.m. - 6:59 a.m. | 40 | 4.3 |
| 7:00 a.m. - 10:59 a.m. | 196 | 20.9 |
| 11:00 a.m. - 2:59 p.m. | 219 | 23.3 |
| 3:00 p.m. - 6:59 p.m. | 272 | 29.0 |
| 7:00 p.m. - 10:59 p.m. | 137 | 14.6 |
| Unspecified | 25 | 2.7 |
| **Total Number of Collisions** | **938** | **100.0** |

*Table 8.3.* Casualty Collisions Involving Pedestrians: Time Period

**Observations**

Pedestrian casualty collisions were most likely to occur during the evening rush-hour period from 3:00 p.m. to 6:59 p.m. These collisions were least likely to occur during the early morning hours (3:00 a.m. to 6:59 a.m.).

## Casualty collisions involving pedestrians: location
**2019**

| Location | N | % |
|---|---|---|
| Urban | 910 | 97.0 |
| Rural | 28 | 3.0 |
| **Total Number of Collisions** | **938** | **100.0** |

*Table 8.4.* Casualty Collisions Involving Pedestrians: Location

**Observations**

The majority of pedestrian casualty collisions (97.0%) occurred in urban areas. Only 3.0% occurred in rural areas.

## Actions of drivers involved in casualty collisions with pedestrians*
**2019**

| Driver Actions | N | % |
|---|---|---|
| Driving Properly | 224 | 29.7 |
| Failed to Yield Right of Way To Pedestrian | 379 | 50.3 |
| Backed Unsafely | 65 | 8.6 |
| Improper Turn | 21 | 2.8 |
| Ran Off Road | 16 | 2.1 |
| Left Turn Across Path | 13 | 1.7 |
| Disobey Traffic Signal | 8 | 1.1 |
| Failed to Yield Right of Way - Uncontrolled Intersection | 5 | 0.7 |
| Followed Too Closely | 5 | 0.7 |
| Stop Sign Violation | 5 | 0.7 |
| Improper Passing | 3 | 0.4 |
| Left of Centre | 1 | 0.1 |
| Other | 9 | 1.2 |
| **Total Number of Drivers** | **754** | **100.0** |

*Table 8.5.* Actions of Drivers Involved in Casualty Collisions with Pedestrians*

**Observations**

29.7% of the drivers involved in pedestrian casualty crashes were recorded as driving properly. However, 50.3% of the drivers involved in pedestrian casualty collisions failed to yield the right of way to the pedestrian.

*Based on those cases where driver actions were specified on the collision report form.

# Age of pedestrian casualties
**2019**

| Age in Years | Pedestrians Killed | | Pedestrians Injured | | Total Pedestrian Casualties | | Pedestrian Casualty Rate Per 10,000 Population* |
|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | |
| Under 5 | 1 | 5.0 | 13 | 1.4 | 14 | 1.5 | 0.5 |
| 5 - 9 | -- | -- | 26 | 2.8 | 26 | 2.7 | 0.9 |
| 10 - 14 | -- | -- | 61 | 6.5 | 61 | 6.4 | 2.3 |
| 15 - 19 | 1 | 5.0 | 90 | 9.6 | 91 | 9.5 | 3.6 |
| 20 - 24 | -- | -- | 85 | 9.1 | 85 | 8.9 | 3.1 |
| 25 - 29 | 1 | 5.0 | 85 | 9.1 | 86 | 9.0 | 2.7 |
| 30 - 34 | 3 | 15.0 | 80 | 8.5 | 83 | 8.7 | 2.3 |
| 35 - 44 | 5 | 25.0 | 130 | 13.9 | 135 | 14.1 | 2.0 |
| 45 - 54 | 5 | 25.0 | 121 | 12.9 | 126 | 13.2 | 2.3 |
| 55 - 64 | 2 | 10.0 | 111 | 11.9 | 113 | 11.8 | 2.1 |
| 65 and over | 2 | 10.0 | 114 | 12.2 | 116 | 12.1 | 2.0 |
| Unspecified | -- | -- | 20 | 2.1 | 20 | 2.1 | |
| **Total Number of Pedestrian Casualties** | **20** | **100.0** | **936** | **100.0** | **956** | **100.0** | |

*Table 8.6.* Age of Pedestrian Casualties

**Observations**

The casualty rate per 10,000 population was highest for pedestrians between the ages of 15 and 19. The lowest casualty rate was recorded for children under 5 years of age.

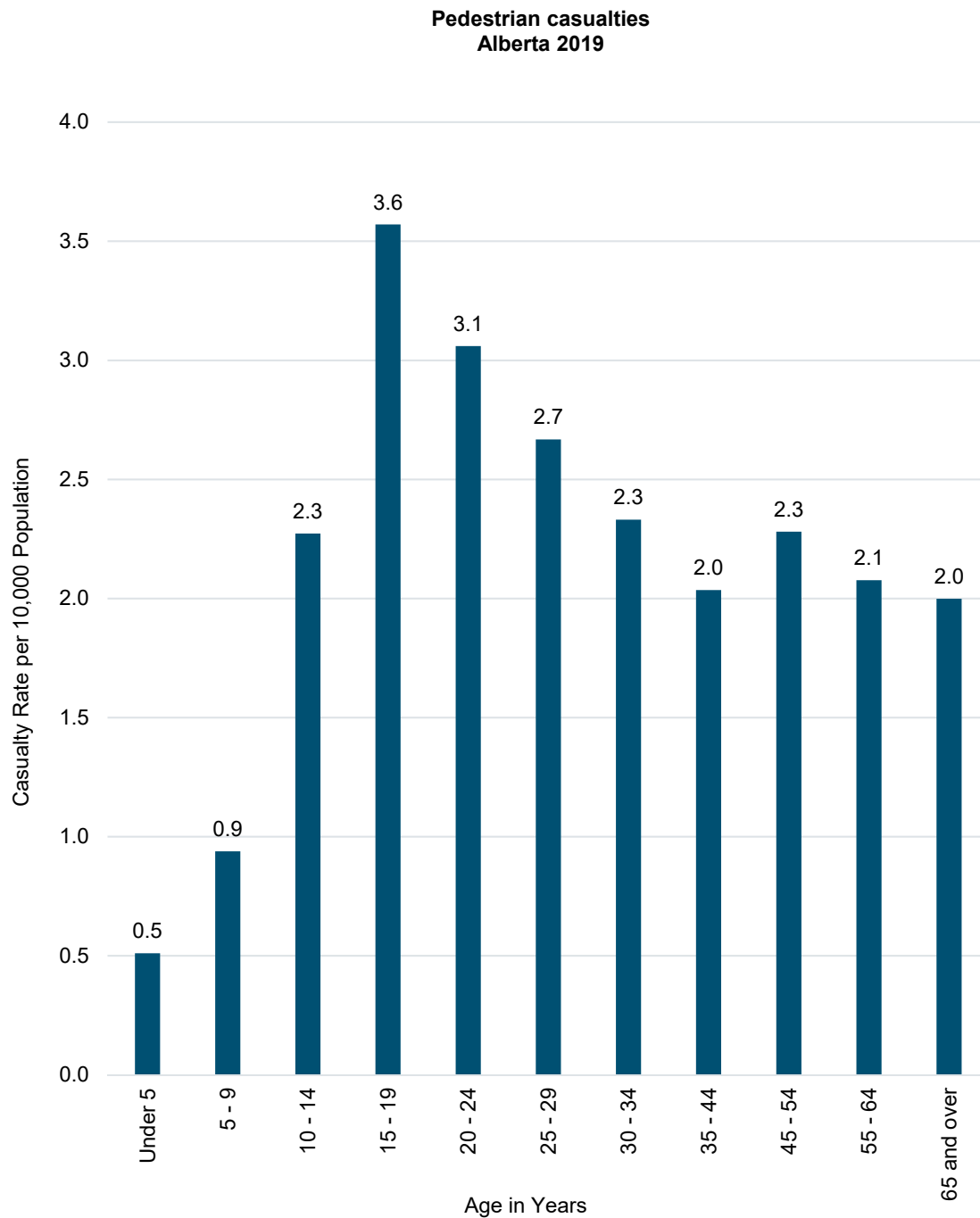*Population – Statistics Canada as of July 1, 2019.

Classification: Public

**Pedestrian casualties**
**Alberta 2019**



*Figure 7.* Pedestrian Casualties

Note: The bars in the above figure depict the actual number. The data labels have been rounded.

## Condition of pedestrians involved in casualty collisions*
**2019**

| Condition of Pedestrian | Pedestrians in Fatal Collisions | | Pedestrians in Non-Fatal Injury Collisions | | Total Pedestrians in Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Normal | 10 | 90.9 | 787 | 90.6 | 797 | 90.6 |
| Impaired by Alcohol | 1 | 9.1 | 34 | 3.9 | 35 | 4.0 |
| Impaired by Alcohol and Drugs | -- | -- | 2 | 0.2 | 2 | 0.2 |
| Impaired by Drugs | -- | -- | 7 | 0.8 | 7 | 0.8 |
| **Total Impaired Pedestrians** | **1** | **9.1** | **43** | **4.9** | **44** | **5.0** |
| Fatigued/Asleep | -- | -- | 1 | 0.1 | 1 | 0.1 |
| Other | -- | -- | 38 | 4.4 | 38 | 4.3 |
| **Total Number of Pedestrians** | **11** | **100.0** | **869** | **100.0** | **880** | **100.0** |

*Table 8.7.* Condition of Pedestrians Involved in Casualty Collisions*

**Observations**

Of pedestrians involved in injury collisions, 4.9% were legally impaired, compared to 9.1% involved in fatal collisions. As the severity of the collision increased, the involvement of impairment increased.

*Based on those cases where driver/pedestrian condition was specified on the collision report form.

# Age of impaired pedestrians involved in casualty collisions*
**2019**

| Age in Years | N | % | Rate per 10,000 Population** |
|---|---|---|---|
| Under 10 | -- | -- | -- |
| 10 - 14 | -- | -- | -- |
| 15 - 19 | 1 | 2.3 | 0.0 |
| 20 - 24 | 4 | 9.1 | 0.1 |
| 25 - 29 | 6 | 13.6 | 0.2 |
| 30 - 34 | 11 | 25.0 | 0.3 |
| 35 - 44 | 9 | 20.5 | 0.1 |
| 45 - 54 | 10 | 22.7 | 0.2 |
| 55 - 64 | 3 | 6.8 | 0.1 |
| 65 and over | -- | -- | -- |
| Unspecified | -- | -- | |
| **Total Number of Pedestrian Casualties** | **44** | **100.0** | |

*Table 8.8.* Age of Impaired Pedestrians Involved in Casualty Collisions*

## Observations

Of those pedestrians who were legally impaired, the highest rate of involvement per 10,000 population was for pedestrians 30 to 34 years of age.

*Based on those cases where pedestrian condition was specified on the collision report form.

**Population – Statistics Canada as of July 1, 2019.

# Bicyclists

- Casualty collisions involving bicycles were more likely to occur in the month of July.

- Weekdays experienced the most casualty collisions involving bicycles. As well, the largest number of these crashes (39.8%) occurred during the evening rush-hour period.

- Young bicyclists aged 10 to 14 had the highest casualty rate per 10,000 population.

- Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to disobey a traffic signal or fail to yield right-of-way at an uncontrolled intersection.

- 3.1% of bicyclists involved in casualty collisions were legally impaired.

## Casualty collisions involving bicycles: month of occurrence
**2019**

| Month of Collision | N | % |
|---|---|---|
| January | 9 | 2.5 |
| February | 1 | 0.3 |
| March | 16 | 4.4 |
| April | 29 | 7.9 |
| May | 35 | 9.5 |
| June | 59 | 16.1 |
| July | 60 | 16.3 |
| August | 52 | 14.2 |
| September | 56 | 15.3 |
| October | 32 | 8.7 |
| November | 11 | 3.0 |
| December | 7 | 1.9 |
| **Total Number of Collisions** | **367** | **100.0** |

*Table 9.1.* Casualty Collisions Involving Bicycles: Month of Occurrence

**Observations**

The highest number of casualty crashes involving bicycles occurred during the month of July.

# Casualty collisions involving bicycles: day of week
**2019**

| Day of Week | N | % |
| --- | --- | --- |
| Monday | 59 | 16.1 |
| Tuesday | 54 | 14.7 |
| Wednesday | 62 | 16.9 |
| Thursday | 69 | 18.8 |
| Friday | 63 | 17.2 |
| Saturday | 31 | 8.4 |
| Sunday | 29 | 7.9 |
| **Total Number of Collisions** | **367** | **100.0** |

*Table 9.2.* Casualty Collisions Involving Bicycles: Day of Week

**Observations**

Casualty collisions involving bicycles were most likely to occur on weekdays.

Classification: Public

# Casualty collisions involving bicycles: time period
**2019**

| Time Period | N | % |
|---|---|---|
| 11:00 p.m. - 2:59 a.m. | 12 | 3.3 |
| 3:00 a.m. - 6:59 a.m. | 8 | 2.2 |
| 7:00 a.m. - 10:59 a.m. | 61 | 16.6 |
| 11:00 a.m. - 2:59 p.m. | 81 | 22.1 |
| 3:00 p.m. - 6:59 p.m. | 146 | 39.8 |
| 7:00 p.m. - 10:59 p.m. | 51 | 13.9 |
| Unspecified | 8 | 2.2 |
| **Total Number of Collisions** | **367** | **100.0** |

*Table 9.3.* Casualty Collisions Involving Bicycles: Time Period

**Observations**

The largest proportion of casualty crashes (39.8%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

## Age of bicyclist casualties
**2019**

| Age in Years | Persons Killed | | Persons Injured | | Total Bicyclist Casualties | | Casualty Rate Per 10,000 Population* |
|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | |
| Under 5 | -- | -- | 1 | 0.3 | 1 | 0.3 | 0.0 |
| 5 - 9 | -- | -- | 14 | 3.9 | 14 | 3.8 | 0.5 |
| 10 - 14 | -- | -- | 43 | 11.8 | 43 | 11.7 | 1.6 |
| 15 - 19 | -- | -- | 37 | 10.2 | 37 | 10.1 | 1.5 |
| 20 - 24 | -- | -- | 30 | 8.3 | 30 | 8.2 | 1.1 |
| 25 - 29 | -- | -- | 40 | 11.0 | 40 | 10.9 | 1.2 |
| 30 - 34 | 1 | 33.3 | 37 | 10.2 | 38 | 10.4 | 1.1 |
| 35 - 44 | -- | -- | 60 | 16.5 | 60 | 16.4 | 0.9 |
| 45 - 54 | 1 | 33.3 | 44 | 12.1 | 45 | 12.3 | 0.8 |
| 55 - 64 | -- | -- | 27 | 7.4 | 27 | 7.4 | 0.5 |
| 65 and over | 1 | 33.3 | 13 | 3.6 | 14 | 3.8 | 0.2 |
| Unspecified | -- | -- | 17 | 4.7 | 17 | 4.6 | |
| **Total Casualties** | **3** | **100.0** | **363** | **100.0** | **366** | **100.0** | |

*Table 9.4.* Age of Bicyclist Casualties

**Observations**

Casualty rates per 10,000 population were highest for persons between the ages of 10 and 14. The lowest casualty rates were recorded for children under 5 years of age and adults aged 65 and older.

* Population – Statistics Canada as of July 1, 2018.

Classification: Public

## Improper actions of bicyclists involved in casualty collisions
**2019**

| Improper Actions of Bicyclists | N | % | Driver Actions in Total Casualty Collisions (All Vehicle Types) % |
|---|---|---|---|
| Disobey Traffic Signal | 26 | 17.0 | 7.2 |
| Failed to Yield Right of Way - Uncontrolled Intersection | 12 | 7.8 | 2.1 |
| Stop Sign Violation | 10 | 6.5 | 7.3 |
| Left Turn Across Path | 6 | 3.9 | 11.7 |
| Yield Sign Violation | 5 | 3.3 | 1.9 |
| Improper Lane Change | 4 | 2.6 | 3.5 |
| Improper Passing | 3 | 2.0 | 1.3 |
| Ran Off Road | 2 | 1.3 | 16.1 |
| Improper Turn | 2 | 1.3 | 3.3 |
| Backed Unsafely | 1 | 0.7 | 2.7 |
| Failed to Yield Right of Way to Pedestrian | 1 | 0.7 | 4.8 |
| Left of Centre | 1 | 0.7 | 2.7 |
| Other | 80 | 52.3 | 2.0 |
| **Total Number of Bicyclists** | **153** | **100.0** | |

**Observations**

Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to disobey a traffic signal or to fail to yield right-of-way at an uncontrolled intersection.

*Based on those cases where driver actions were specified on the collision report form.

Note: There were a total of 293 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 140 were indicated as driving properly at the time of the collision.

Classification: Public

## Condition of bicyclists involved in casualty collisions*
**2019**

| Condition of Bicyclist | N | % |
|---|---|---|
| Normal | 307 | 95.0 |
| Impaired by Alcohol | 4 | 1.2 |
| Impaired by Alcohol and Drugs | 4 | -- |
| Impaired by Drugs | 2 | 0.6 |
| **Total Impaired Bicyclists** | **10** | **3.1** |
| Fatigued/Asleep | -- | -- |
| Other | 6 | 1.9 |
| **Total Number of Bicyclists** | **323** | **100.0** |

*Table 9.6.* Condition of Bicyclists Involved in Casualty Collisions*

**Observations**

3.1% of bicyclists involved in casualty collisions were legally impaired.

*Based only on those cases where bicyclist condition was specified on the collision report form.

# Traffic safety issues

## Impaired driving

- A total of 1.6% of drivers involved in injury crashes were judged to have been legally impaired, compared to 11.8% of drivers involved in fatal collisions. As the severity of the collision increased, the involvement of impairment dramatically increased.

- In terms of involvement per 1,000 licensed drivers, males between 25 and 29 years of age were most likely to have been legally impaired. There were almost three times as many male impaired drivers as female impaired drivers.

- In 2019, impaired driving casualty crashes were most likely to have occurred in November, on Saturday, and between 7:00 p.m. and 10:59 p.m.

- Figure 8 provides a graphic representation of the involvement of impaired drivers in casualty collisions over the five year period, 2015 to 2019.

## Condition of drivers in casualty collisions*
**2019**

| Condition of Driver | Drivers in Fatal Collisions | | Drivers in Non-Fatal Injury Collisions | | Total Drivers in Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Normal | 191 | 80.3 | 18,128 | 96.3 | 18,319 | 96.1 |
| Alcohol Impaired | 27 | 11.3 | 237 | 1.3 | 264 | 1.4 |
| Alcohol and Drug Impaired | -- | -- | 15 | 0.1 | 15 | 0.1 |
| Drug Impaired | 1 | 0.4 | 46 | 0.2 | 47 | 0.2 |
| **Total Impaired Drivers** | **28** | **11.8** | **298** | **1.6** | **326** | **1.7** |
| Fatigued/Asleep | 1 | 0.4 | 109 | 0.6 | 110 | 0.6 |
| Other | 18 | 7.6 | 292 | 1.6 | 310 | 1.6 |
| **Total Number of Drivers** | **238** | **100.0** | **18,827** | **100.0** | **19,065** | **100.0** |

*Table 10.1.* Condition of Drivers Involved in Casualty Collisions*

**Observations**

Of drivers involved in injury collisions, 1.6% were legally impaired by alcohol and/or drugs, compared to 11.8% in fatal collisions. As the severity of the collision increased, the involvement of impairment dramatically increased. Overall, 1.7% of drivers involved in casualty collisions were judged to have been legally impaired.

*Based on those cases where driver condition was specified on the collision report form. These numbers do not include bicyclists (see table 9.6, page 65)

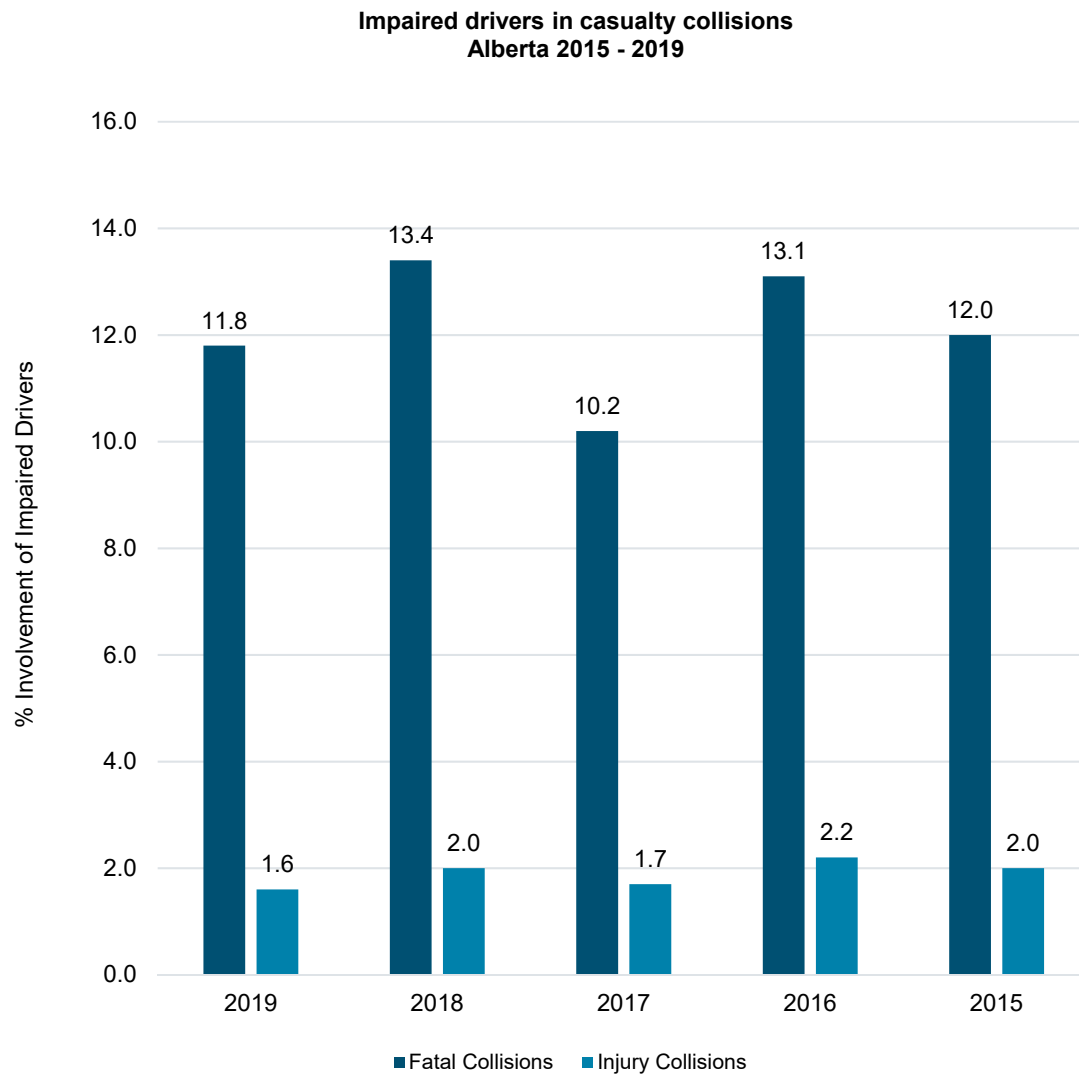**Impaired drivers in casualty collisions**
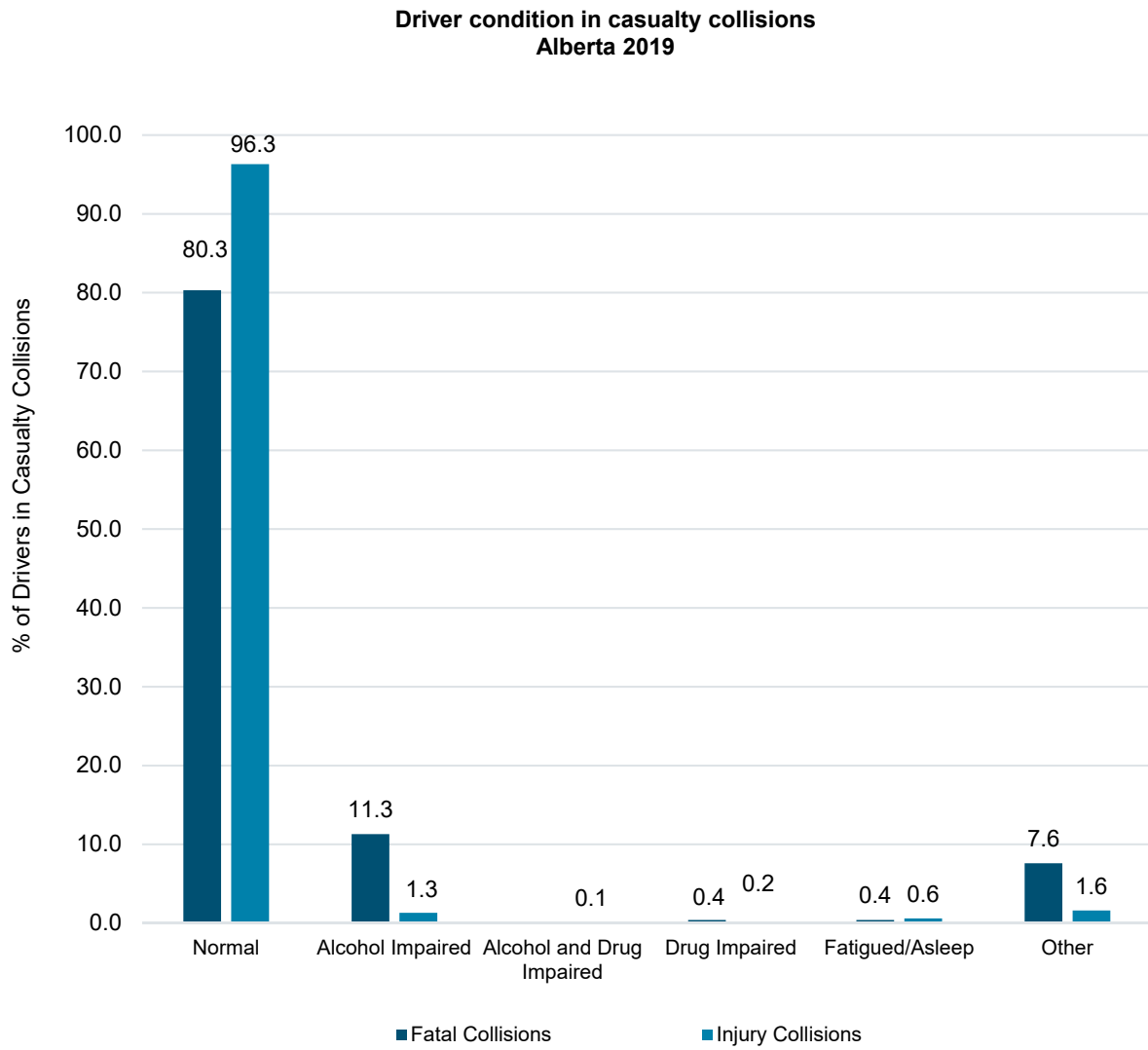**Alberta 2015 - 2019**



*Figure 8.* Impaired Drivers in Casualty Collisions

Classification: Public

**Driver condition in casualty collisions**
**Alberta 2019**



*Figure 9.* Driver Condition in Casualty Collisions

## Age and gender of impaired drivers in casualty collisions*
**2019**

| Age in Years | Male | | | Female | | | Total* | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | Rate Per 1,000** Licensed Drivers | N | % | Rate Per 1,000** Licensed Drivers | N | % | Rate Per 1,000** Licensed Drivers |
| Under 16 | -- | -- | -- | 1 | 0.3 | 0.1 | 1 | 0.3 | 0.0 |
| 16 - 17 | 7 | 2.1 | 0.2 | 1 | 0.3 | 0.0 | 8 | 2.4 | 0.1 |
| 18 - 19 | 8 | 2.4 | 0.2 | 4 | 1.2 | 0.1 | 12 | 3.7 | 0.1 |
| 20 - 21 | 8 | 2.4 | 0.2 | 4 | 1.2 | 0.1 | 12 | 3.7 | 0.1 |
| 22 - 24 | 16 | 4.9 | 0.2 | 10 | 3.0 | 0.1 | 26 | 7.9 | 0.2 |
| 25 - 29 | 45 | 13.7 | 0.3 | 17 | 5.2 | 0.1 | 62 | 18.9 | 0.2 |
| 30 - 34 | 44 | 13.4 | 0.2 | 19 | 5.8 | 0.1 | 63 | 19.2 | 0.2 |
| 35 - 44 | 56 | 17.1 | 0.2 | 14 | 4.3 | 0.0 | 70 | 21.3 | 0.1 |
| 45 - 54 | 24 | 7.3 | 0.1 | 4 | 1.2 | 0.0 | 28 | 8.5 | 0.1 |
| 55 - 64 | 22 | 6.7 | 0.1 | 6 | 1.8 | 0.0 | 28 | 8.5 | 0.1 |
| 65 and over | 13 | 4.0 | 0.1 | 1 | 0.3 | 0.0 | 14 | 4.3 | 0.0 |
| Unspecified | -- | -- | | 2 | 0.6 | | 4 | 1.2 | |
| **Total Drivers** | **243** | **74.1** | | **83** | **25.3** | | **328** | **100.0** | |

*Table 10.2.* Age and Gender of Impaired Drivers in Casualty Collisions*

**Observations**

Of those collision-involved drivers who were legally impaired, there were almost three times as many male drivers as female drivers. In terms of involvement per 1,000 licensed drivers, males 25 to 29 years of age were more likely to have been legally impaired in a casualty collision than any other age group.

*Total includes drivers whose gender was other or unspecified on the collision report form.

**Source: Licensed Drivers – Service Alberta, as of December 31, 2019.

**Age and gender of impaired drivers in casualty collisions**
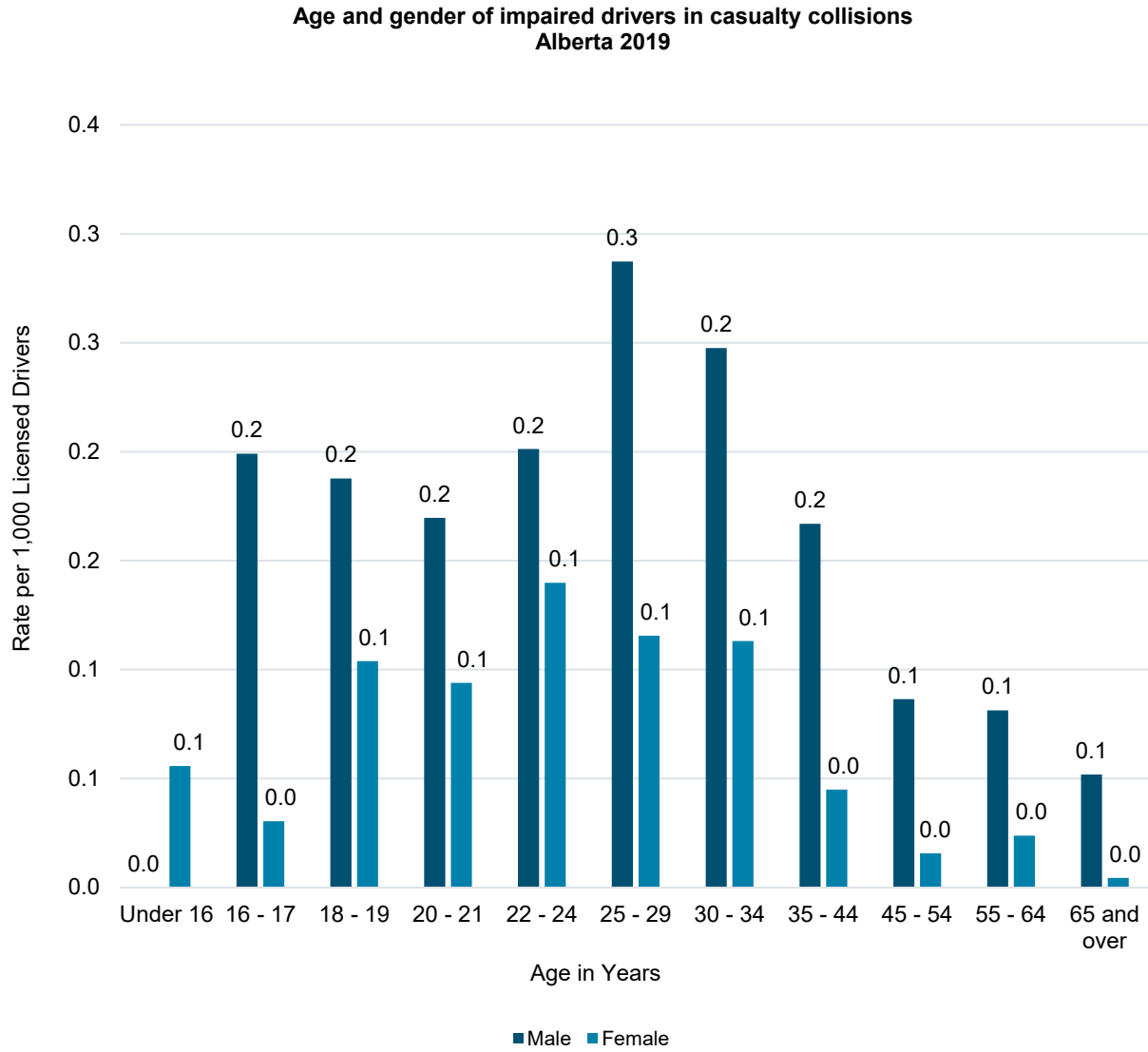**Alberta 2019**



*Figure 10.* Age and Gender of Impaired Drivers in Casualty Collisions

Note: The bars in the above figure depict the actual number. The data labels have been rounded.

# Impaired driving casualty collisions: month of occurrence
**2019**

| Month | Fatal Collisions | | Non-Fatal Injury Collisions | | Total Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| January | 1 | 3.6 | 31 | 10.5 | 32 | 9.9 |
| February | 1 | 3.6 | 18 | 6.1 | 19 | 5.9 |
| March | 2 | 7.1 | 18 | 6.1 | 20 | 6.2 |
| April | 3 | 10.7 | 29 | 9.8 | 32 | 9.9 |
| May | 2 | 7.1 | 21 | 7.1 | 23 | 7.1 |
| June | 3 | 10.7 | 21 | 7.1 | 24 | 7.4 |
| July | 2 | 7.1 | 29 | 9.8 | 31 | 9.6 |
| August | 1 | 3.6 | 29 | 9.8 | 30 | 9.3 |
| September | 8 | 28.6 | 26 | 8.8 | 34 | 10.5 |
| October | 2 | 7.1 | 23 | 7.8 | 25 | 7.7 |
| November | 3 | 10.7 | 33 | 11.1 | 36 | 11.1 |
| December | -- | -- | 18 | 6.1 | 18 | 5.6 |
| **Total Number of Collisions** | **28** | **100.0** | **296** | **100.0** | **324** | **100.0** |

*Table 10.3* Impaired Driving Casualty Collisions: Month of Occurrence

**Observations**

The month of November accounted for the largest proportion of impaired driving casualty collisions. The month of December accounted for the smallest proportion of impaired driving casualty collisions.

## Impaired driving casualty collisions: day of week
**2019**

| Day of Week | Fatal Collisions | | Non-Fatal Injury Collisions | | Total Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Monday | 6 | 21.4 | 26 | 8.8 | 32 | 9.9 |
| Tuesday | 1 | 3.6 | 33 | 11.1 | 34 | 10.5 |
| Wednesday | 4 | 14.3 | 27 | 9.1 | 31 | 9.6 |
| Thursday | 4 | 14.3 | 37 | 12.5 | 41 | 12.7 |
| Friday | 6 | 21.4 | 51 | 17.2 | 57 | 17.6 |
| Saturday | 5 | 17.9 | 68 | 23.0 | 73 | 22.5 |
| Sunday | 2 | 7.1 | 54 | 18.2 | 56 | 17.3 |
| **Total Number of Collisions** | **28** | **100.0** | **296** | **100.0** | **324** | **100.0** |

*Table 10.4.* Impaired Driving Casualty Collisions: Day of Week

**Observations**

The highest number of impaired driving fatal collisions occurred on Friday (21.4%) and Monday (21.4%). The highest number of non-fatal injury collisions occurred on Saturday (23.0%). The smallest number of impaired driving casualty collisions occurred on Wednesday (9.6%).

## Impaired driving casualty collisions: time period
**2019**

| Time Period | Fatal Collisions | | Non-Fatal Injury Collisions | | Total Casualty Collisions | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| 11:00 p.m. - 2:59 a.m. | 6 | 21.4 | 60 | 20.3 | 66 | 20.4 |
| 3:00 a.m. - 6:59 a.m. | 5 | 17.9 | 27 | 9.1 | 32 | 9.9 |
| 7:00 a.m. - 10:59 a.m. | -- | -- | 28 | 9.5 | 28 | 8.6 |
| 11:00 a.m. - 2:59 p.m. | 5 | 17.9 | 29 | 9.8 | 34 | 10.5 |
| 3:00 p.m. - 6:59 p.m. | 2 | 7.1 | 68 | 23.0 | 70 | 21.6 |
| 7:00 p.m. - 10:59 p.m. | 9 | 32.1 | 79 | 26.7 | 88 | 27.2 |
| Unspecified | 1 | 3.6 | 5 | 1.7 | 6 | 1.9 |
| **Total Number of Collisions** | **28** | **100.0** | **296** | **100.0** | **324** | **100.0** |

*Table 10.5.* Impaired Driving Casualty Collisions: Time Period

**Observations**

The evening period (7:00 p.m. – 10:59 p.m.) was most likely to record impaired driving casualty collisions (27.2%). The morning hours (7:00 a.m. – 10:59 a.m.) were least likely to record impaired driving casualty crashes (8.6%).
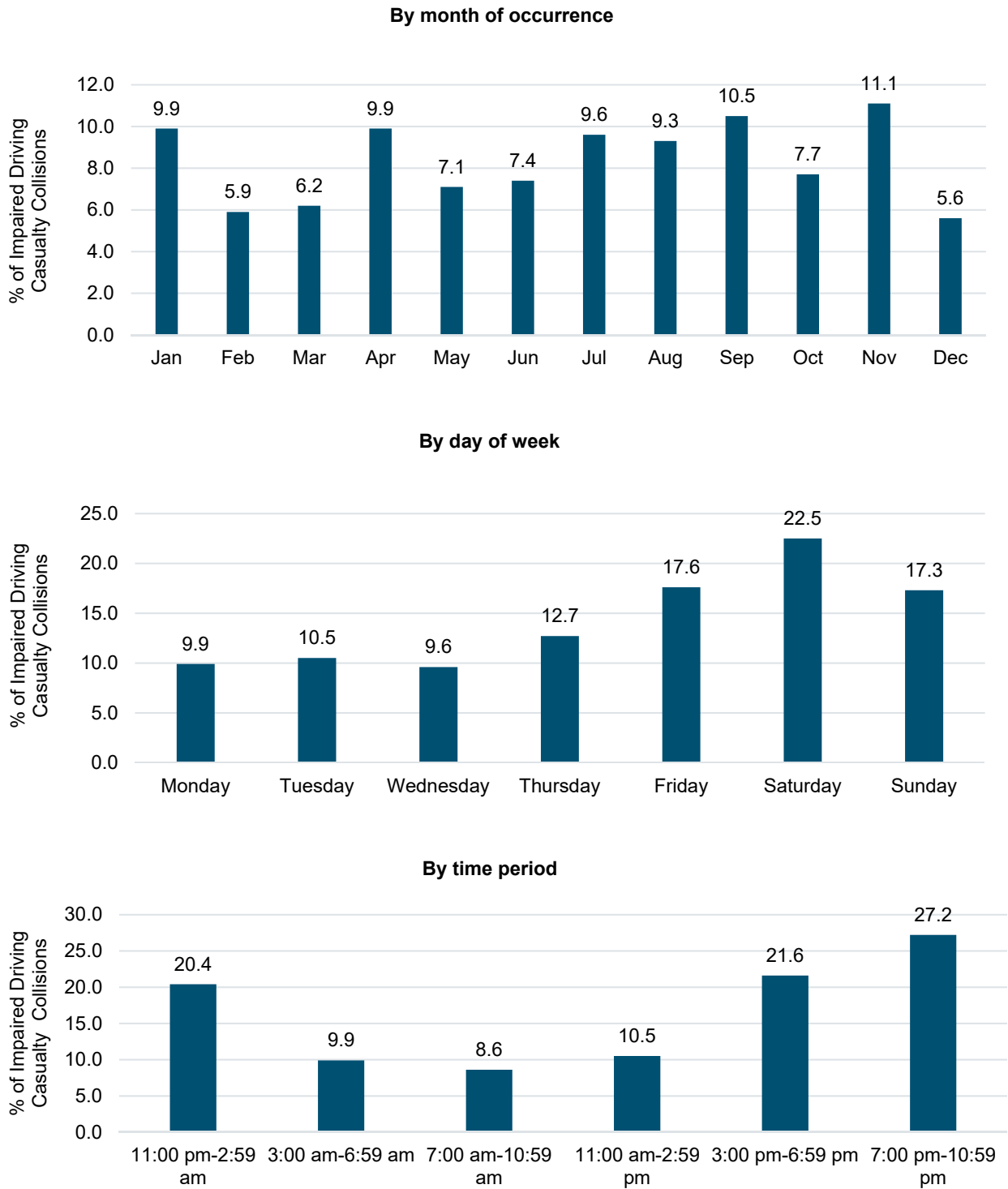
**Impaired driving casualty collisions**
**Alberta 2019**

**By month of occurrence**



**By day of week**



**By time period**



*Figure 11.* Impaired Driving Casualty Collisions by Month/Day of Week/Time Period

# Traffic safety issues

## Restraint use

- Collision-involved restraint users had a much lower injury rate (6.5%) than those not using restraints (16.7%).

- Occupants using a restraint reduce the likelihood of sustaining an injury and the severity of injury decreases.

# Restraint use of vehicle occupants and injury severity* (use versus non-use)
**2019**

| Injury Severity of Occupants | Percentage of Occupants Using Restraints | Percentage of Occupants Not Using Restraints |
|---|---|---|
| | % | % |
| Fatal Injury | 0.0 | 2.1 |
| Major Injury | 0.7 | 4.7 |
| Minor Injury | 5.7 | 9.8 |
| **Total Occupants Sustaining Injuries** | **6.5** | **16.7** |
| No Apparent Injury | 93.5 | 83.3 |
| **Total Occupants** | **100.0** | **100.0** |

*Table 10.6.* Restraint Use of Vehicle Occupants and Injury Severity* (Use versus Non-Use)

## Observations

Collision involved restraint users had a much lower injury rate (6.5%) than those not using restraints (16.7%). This table illustrates the moderating effect of seat belt use on injury severity. Occupants using a restraint reduce the likelihood of sustaining an injury and the severity of injury decreases.

## Injury Severity

Fatal – A fatal injury is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

Major – Persons with injuries or complaint of pain that went to the hospital and were subsequently admitted even if for observation only.

Minor – Persons with injuries or complaint of pain that went to the hospital, were treated in emergency (or refused treatment) and sent home without ever being admitted to the hospital. (Also includes persons who indicated they intend to seek medical attention.)

*Based on those cases where occupant restraint use and injury severity were specified on the collision report form.

Classification: Public