



---

# Alberta Traffic Collision Statistics Summary 2021

Traffic Safety, Alberta Transportation  
and Economic Corridors

This publication is issued under the Open Government Licence – Alberta (<http://open.alberta.ca/licence>).

This publication is available online at <https://open.alberta.ca/publications/0844-7985>

Alberta Collision Statistics Summary 2021 | Alberta Transportation and Economic Corridors

© 2023 Government of Alberta | September 2023

## Table of contents

Alberta traffic collisions .....	1
Alberta traffic collision rates .....	2
Where did collisions occur (urban/rural)? .....	3
Where did collisions occur (intersection-related)? .....	3
What was the condition of drivers in casualty collisions? .....	4
How many people are killed or injured in collisions involving impaired drivers? .....	5
Who is driving impaired then crashing? .....	5
When do impaired driving casualty crashes occur? .....	5
How big of an issue is drug-impaired driving? .....	5
Speeding drivers in casualty collisions .....	6
When are speed-related casualty collisions occurring? .....	6
Distracted drivers in casualty collisions .....	7
When are distracted casualty collisions occurring? .....	7
Restraint use of vehicle occupants and injury severity (use versus non-use) .....	8
When did casualty collisions occur? .....	9
Who were the victims in casualty collisions? .....	10
Who were the drivers in casualty collisions? .....	11
Improper driver actions in casualty collisions.....	12
What types of vehicles were involved in casualty collisions? .....	13

## List of tables

Table 1. Alberta Traffic Collisions.....	1
Table 2. Alberta Traffic Collision Rates .....	2
Table 3. Location of Collisions (urban/rural).....	3
Table 4. Location of Collisions (intersection-related).....	3
Table 5. Condition of Drivers in Casualty Collisions.....	4
Table 6. Speeding Drivers in Casualty Collisions.....	6
Table 7. Distracted Drivers in Casualty Collisions.....	7
Table 8. Restraint Use of Vehicle Occupants and Injury Severity (Use versus Non-Use).....	8
Table 9. Age and Gender of Drivers Involved in Casualty Collisions .....	11
Table 10. Improper Actions of Drivers Involved in Casualty Collisions.....	12
Table 11. Types of Vehicles Involved in Casualty Collisions.....	13

## List of figures

Figure 1. Number Killed and Injured in Motor Vehicle Collisions.....	1
Figure 2. Fatality and Injury Rates per 10,000 Population .....	2
Figure 3. Impaired Drivers in Casualty Collisions.....	4
Figure 4. Number Killed and Injured in Impaired Driving Collisions.....	5
Figure 5. Casualty Collisions Involving Speed by Month.....	6
Figure 6. Casualty Collisions involving Distracted Driving by Month .....	7
Figure 7. Injury Severity by Seatbelt (Use versus Non-Use) .....	8
Figure 8. Collision Occurrence by Month .....	9
Figure 9. Collision Occurrence by Day of Week.....	9
Figure 10. Age of Casualties .....	10
Figure 11. Casualty Rate per 10,000 Population by Age .....	10
Figure 12. Casualty Collision Rate per 1,000 Licensed Drivers by Age and Gender .....	11

## Alberta traffic collisions 2017 - 2021

Severity of Collisions	2021	2020	2019	2018	2017
Fatal Collisions	233	207	215	246	259
Non-Fatal Injury Collisions	10,022	9,092	11,738	12,852	13,082
Property Damage Collisions	89,976	85,702	120,119	129,498	129,126
<b>Total Reportable Collisions</b>	<b>100,231</b>	<b>95,001</b>	<b>132,072</b>	<b>142,596</b>	<b>142,467</b>

Injury Severity	2021	2020	2019	2018	2017
Number Killed	254	235	233	289	290
Number Injured	13,097	11,844	15,364	17,055	17,186
<b>Total Number of Casualties</b>	<b>13,351</b>	<b>12,079</b>	<b>15,597</b>	<b>17,344</b>	<b>17,476</b>

Table 1. Alberta Traffic Collisions

Total collisions for 2021 are up 5.5% compared to 2020:

- Fatal collisions increased 12.6% (from 207 to 233)
- Injury collisions increased 10.2% (from 9,092 to 10,022)
- Property damage collisions increased 5.0% (from 85,702 to 89,976)

Total casualties for 2021 are up 10.5% compared to 2020:

- The number of fatal injuries increased 8.1% (from 235 to 254)
- The number of non-fatal injuries increased 10.6% (from 11,844 to 13,097)

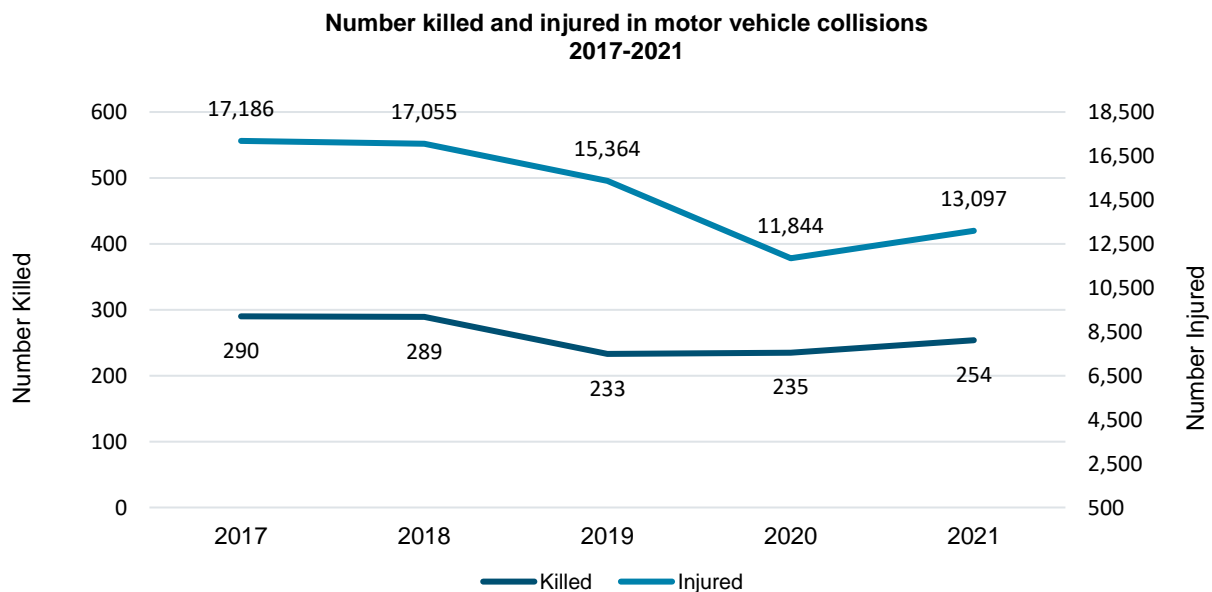


Figure 1. Number Killed and Injured in Motor Vehicle Collisions

## Alberta traffic collision rates 2017 – 2021

Severity of Collision	Rate per 10,000 Population					Rate per 10,000 Licensed Drivers					Rate per 10,000 Registered Vehicles				
	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017
Fatal Collisions	0.5	0.5	0.5	0.6	0.6	0.7	0.6	0.7	0.8	0.8	0.6	0.5	0.6	0.6	0.7
Number Killed	0.6	0.5	0.5	0.7	0.7	0.8	0.7	0.7	0.9	0.9	0.7	0.6	0.6	0.8	0.8
Non-Fatal Injury Collisions	22.6	20.6	26.9	29.8	30.5	30.2	27.8	36.0	39.8	41.1	26.4	23.7	30.5	33.6	34.6
Number Injured	29.5	26.8	35.1	39.6	40.1	39.5	36.2	47.1	52.9	53.9	34.5	30.9	39.9	44.5	45.4
Property Damage Collisions	202.5	193.9	274.8	300.7	301.3	271.4	262.2	368.4	401.5	405.3	237.1	223.4	312.1	338.2	341.1
<b>Total Reportable Collisions</b>	<b>225.6</b>	<b>214.9</b>	<b>302.1</b>	<b>331.1</b>	<b>332.4</b>	<b>302.3</b>	<b>290.7</b>	<b>405.0</b>	<b>442.1</b>	<b>447.1</b>	<b>264.1</b>	<b>247.6</b>	<b>343.1</b>	<b>372.4</b>	<b>376.3</b>

Table 2. Alberta Traffic Collision Rates

Fatal collision and fatality rates are down from 2020, in terms of population, drivers, and registered vehicles. Injury collision and injury rates have slightly increased since 2020, and overall collision rates have also gone up.

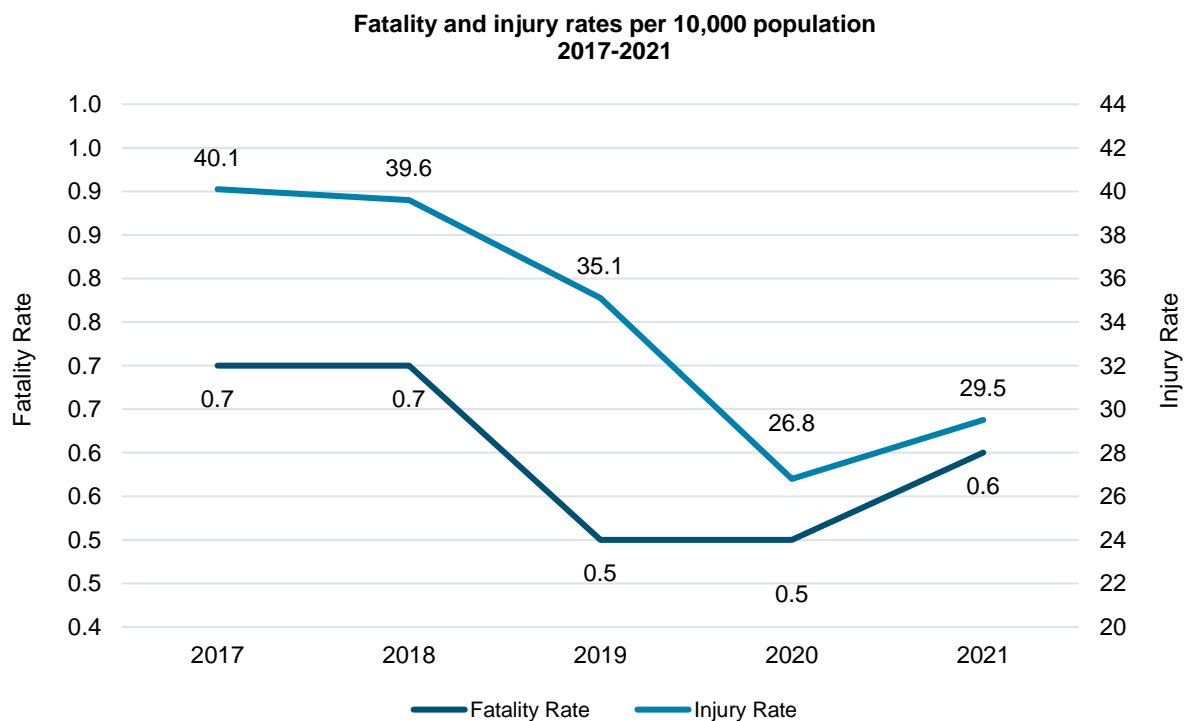


Figure 2. Fatality and Injury Rates per 10,000 Population

## Where did collisions occur (urban/rural)? 2021

Location	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Urban	62	26.6	7,281	72.7	75,830	84.3	83,173	83.0
Rural	171	73.4	2,741	27.3	14,146	15.7	17,058	17.0
<b>Total Number of Collisions</b>	<b>233</b>	<b>100.0</b>	<b>10,022</b>	<b>100.0</b>	<b>89,976</b>	<b>100.0</b>	<b>100,231</b>	<b>100.0</b>

Table 3. Location of Collisions (urban/rural)

The majority of fatal collisions (73.4%) occurred in rural areas. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (72.7%) and property damage collisions (84.3%).

## Where did collisions occur (intersection-related)? 2021

Location	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Intersection Related	36	15.5	4,470	44.6	22,190	24.7	26,696	26.6
Non-Intersection Related	197	84.5	5,552	55.4	67,786	75.3	73,535	73.4
<b>Total Number of Collisions</b>	<b>233</b>	<b>100.0</b>	<b>10,022</b>	<b>100.0</b>	<b>89,976</b>	<b>100.0</b>	<b>100,231</b>	<b>100.0</b>

Table 4. Location of Collisions (intersection-related)

One in four (26.6%) collisions were intersection-related. During 2021, 42 people were killed and 5,989 were injured in intersection related collisions.

In Alberta, in 2021, three of the top five most frequently identified improper driver actions for drivers in casualty collisions were intersection-related: Left Turn Across Path (11.5%), Stop Sign Violation (7.7%) and Disobey Traffic Signal (7.3%).

See page 12 for a complete summary of all driver actions in casualty collisions.

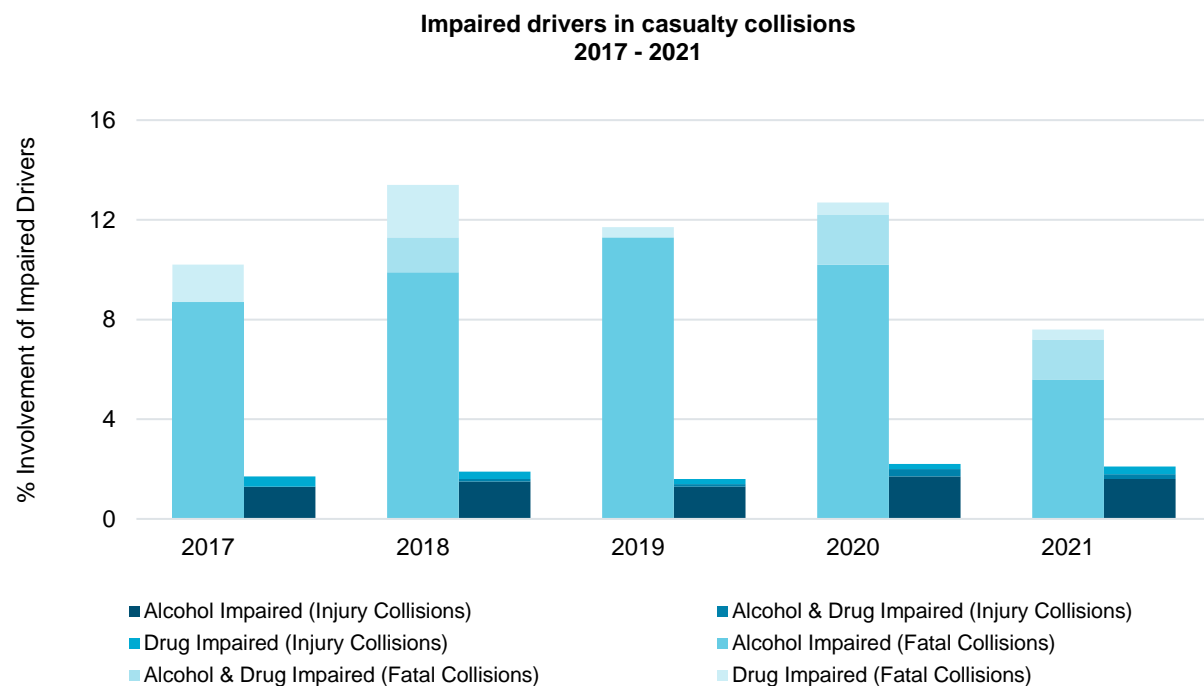


## What was the condition of drivers in casualty collisions? 2021

Condition of Driver	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Normal	212	84.8	14,557	95.4	14,769	95.3
Alcohol Impaired	14	5.6	250	1.6	264	1.7
Alcohol and Drug Impaired	4	1.6	30	0.2	34	0.2
Drug Impaired	1	0.4	40	0.3	41	0.3
<b>Total Impaired Drivers</b>	<b>19</b>	<b>7.6</b>	<b>320</b>	<b>2.1</b>	<b>339</b>	<b>2.2</b>
Fatigued/Asleep	--	--	104	0.7	104	0.7
Other	19	7.6	272	1.8	291	1.9
<b>Total Number of Drivers</b>	<b>250</b>	<b>100.0</b>	<b>15,253</b>	<b>100.0</b>	<b>15,503</b>	<b>100.0</b>

Table 5. Condition of Drivers in Casualty Collisions

Of drivers involved in injury collisions, 2.1% were legally impaired by alcohol and/or drugs, compared to 7.6% in fatal collisions.



Note: collection of 'Impaired by Alcohol and Drugs' began on January 1, 2018

Figure 3. Impaired Drivers in Casualty Collisions

## How many people are killed or injured in collisions involving impaired drivers?

- During 2021, 20 people were killed in impaired driving collisions - this is down 25.9% from 2020, with 27. Another 450 people were injured in 2021 - down 5.7% over 2020, with 477.
- From 2017 to 2021, on average, each year 32 people were killed and 495 people were injured in collisions involving impaired driving.

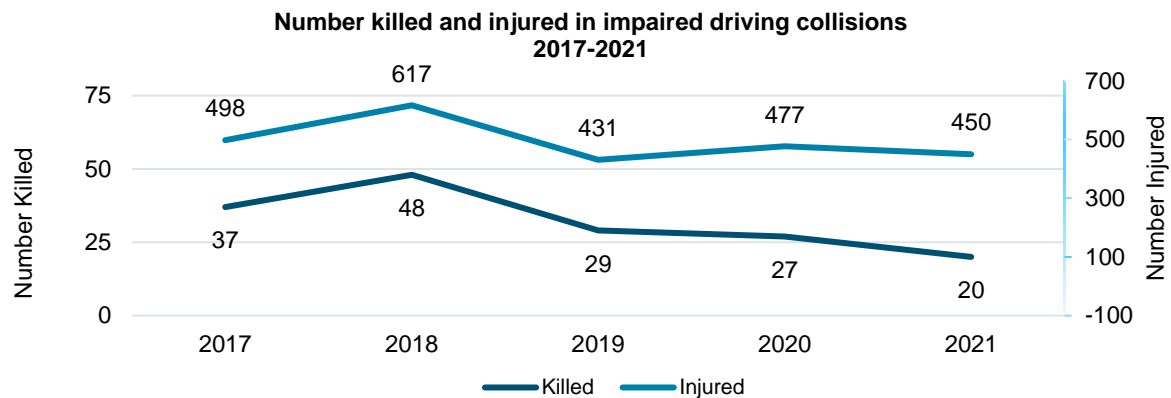


Figure 4. Number Killed and Injured in Impaired Driving Collisions

## Who is driving impaired then crashing?

- In Alberta, about one in 13 drivers involved in fatal collisions were legally impaired. This compares to about one in 48 drivers involved in injury collisions.
- Males between 20 and 21 years of age were most likely to have been impaired.
- Male drivers were much more likely to have been impaired compared to female drivers.
- As the severity of the collision increases, so does the likelihood the collision involved impairment.

## When do impaired driving casualty collisions occur?

- In 2021, September saw the highest number of fatal collisions involving an impaired driver (21.1%). June recorded the highest number of injury collisions involving impaired driving (14.4%).
- The most casualty collisions involving impaired driving occurred on the weekends. The most likely time period for these collisions, on any day of the week, was between 7:00 p.m. - 10:59 p.m.

## How big of an issue is drug-impaired driving?

- A recent Canadian study of alcohol and drug use among drivers found that drug use in nighttime drivers exceeded that of alcohol use.
- In Alberta, drugs were found in more than 40% of fatally injured drivers (2015).

## Speeding drivers in casualty collisions 2021

Unsafe Speed	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Yes	58	26.4	897	7.6	955	8.0
No	162	73.6	10,871	92.4	11,033	92.0
<b>Total Number of Drivers</b>	<b>220</b>	<b>100.0</b>	<b>11,768</b>	<b>100.0</b>	<b>11,988</b>	<b>100.0</b>

Table 6. Speeding Drivers in Casualty Collisions

Over one quarter (26.4%) of drivers in fatal collisions were reported as travelling at an unsafe speed compared to 7.6% in injury collisions. Collisions involving these 955 drivers resulted in 68 fatalities and 1,251 injuries.

## When are speed-related casualty collisions occurring?

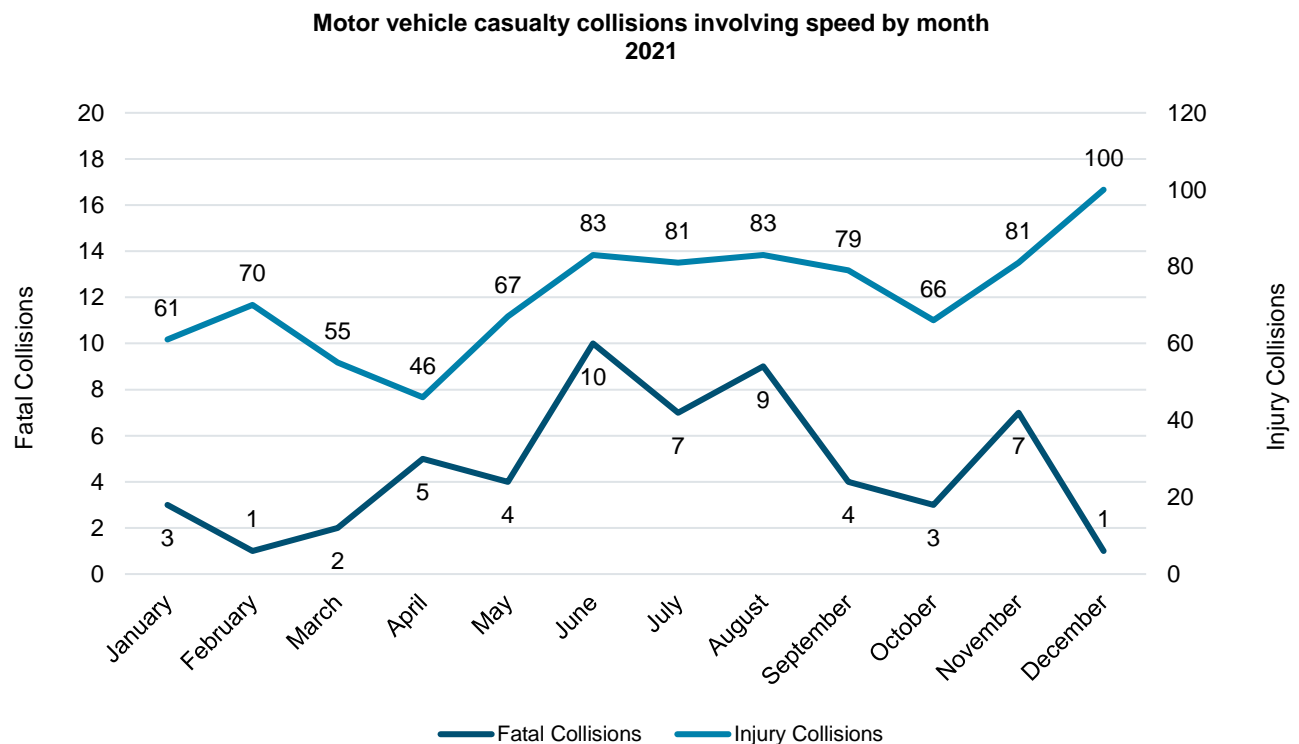


Figure 5. Casualty Collisions Involving Speed by Month

The months of June saw the most speed-related fatal collisions. December recorded the most injury collisions involving unsafe speed.

## Distracted drivers in casualty collisions 2021

Distracted Driving*	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Apparently Not Distracted	182	97.8	11,494	95.6	11,676	95.6
Using Hand-held Cell-Phone or Electronic Device	1	0.5	74	0.6	75	0.6
Reading, Writing, Printing, Sketching, Grooming, or Attending to Personal Hygiene	--	--	13	0.1	13	0.1
Using Hands-free Cell-phone or Electronic Device	1	0.5	19	0.2	20	0.2
Other	2	1.1	422	3.5	424	3.5
<b>Total Number of Drivers</b>	<b>186</b>	<b>100.0</b>	<b>12,022</b>	<b>100.0</b>	<b>12,208</b>	<b>100.0</b>

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

Table 7. Distracted Drivers in Casualty Collisions

Only a few drivers in fatal collisions (2.2%) and injury collisions (4.4%) were reported as distracted in some form. Collisions involving these 532 drivers resulted in 4 fatalities and 735 injuries.

## When are distracted casualty collisions occurring?

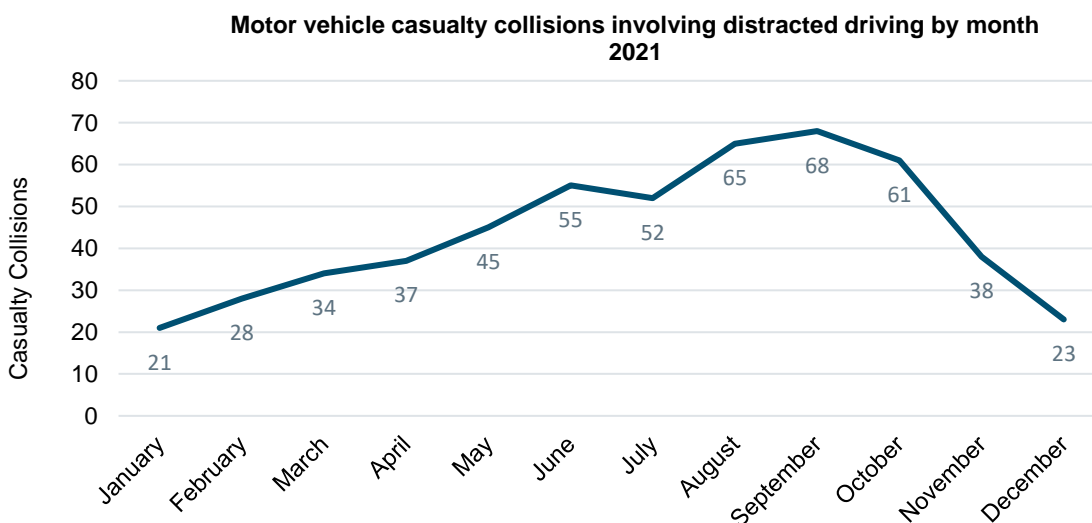


Figure 6. Casualty Collisions involving Distracted Driving by Month

The month of September saw the most casualty collisions involving distracted driving.

## Restraint use of vehicle occupants and injury severity (use versus non-use) 2021

	Percentage of Occupants Using Restraints	Percentage of Occupants Not Using Restraints
Injury Severity of Occupants	%	%
Fatal Injury	0.1	1.8
Major Injury	0.9	5.1
Minor Injury	6.4	7.6
<b>Total Occupants Sustaining Injuries</b>	<b>7.4</b>	<b>14.5</b>
No Apparent Injury	92.6	85.5
<b>Total Occupants</b>	<b>100.0</b>	<b>100.0</b>

Table 8. Restraint Use of Vehicle Occupants and Injury Severity (Use versus Non-Use)

Collision involved restraint users had a much lower injury rate (7.4%) than those not using restraints (14.5%). 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.

During 2021, 35 people who died and 250 people who sustained injuries were not properly restrained at the time of the collision.

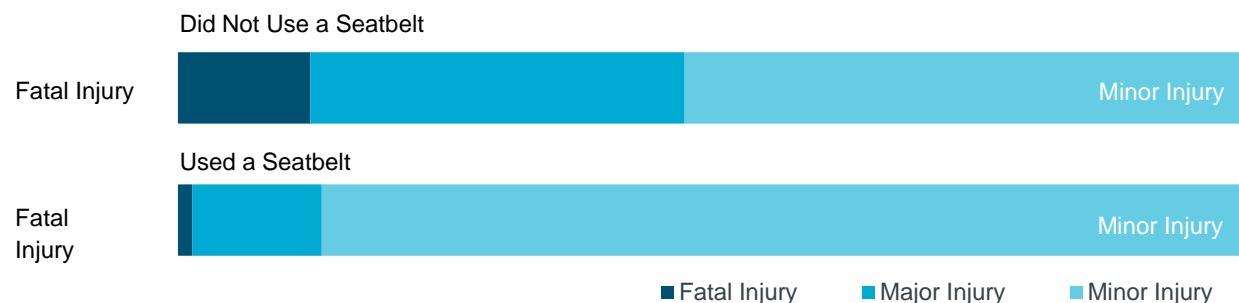


Figure 7. Injury Severity by Seatbelt (Use versus Non-Use)

## When did casualty collisions occur?

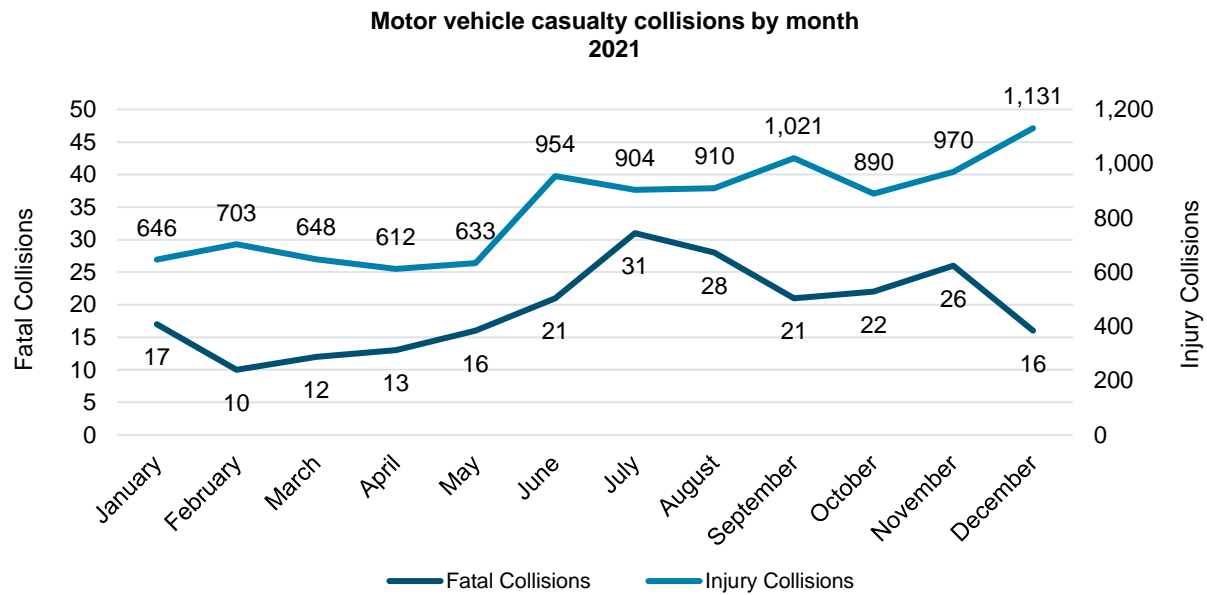


Figure 8. Collision Occurrence by Month

During 2021, July recorded the highest number of fatal collisions at 31 (13.3%) and December saw the highest number of injury collisions at 1,131 (11.3%).

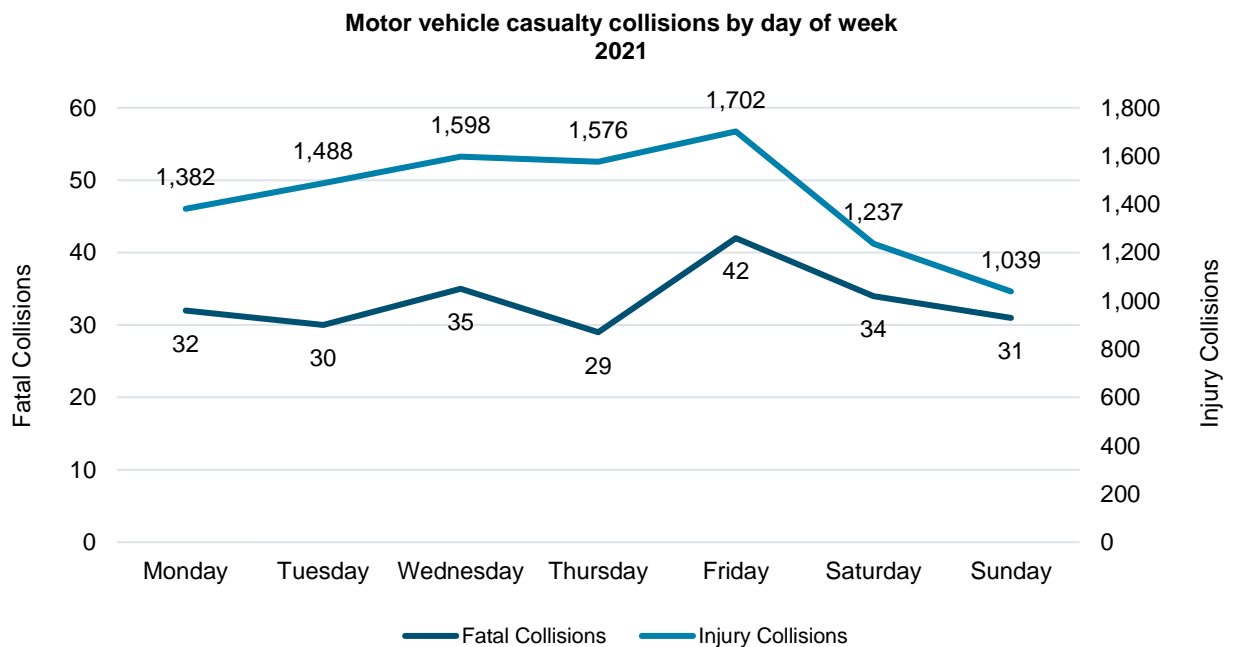


Figure 9. Collision Occurrence by Day of Week

Friday recorded the most number of fatal collisions at 42 (18.0%) and Friday recorded the most number of injury collisions at 1,702 (17.0%).

## Who were the victims in casualty collisions?

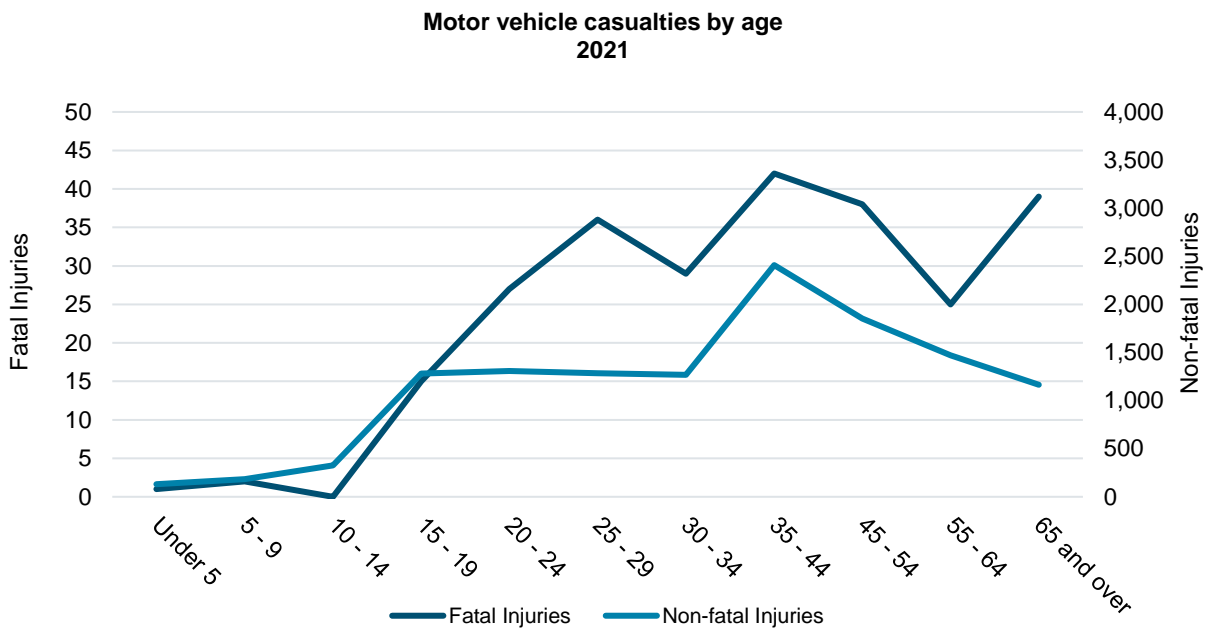


Figure 10. Age of Casualties

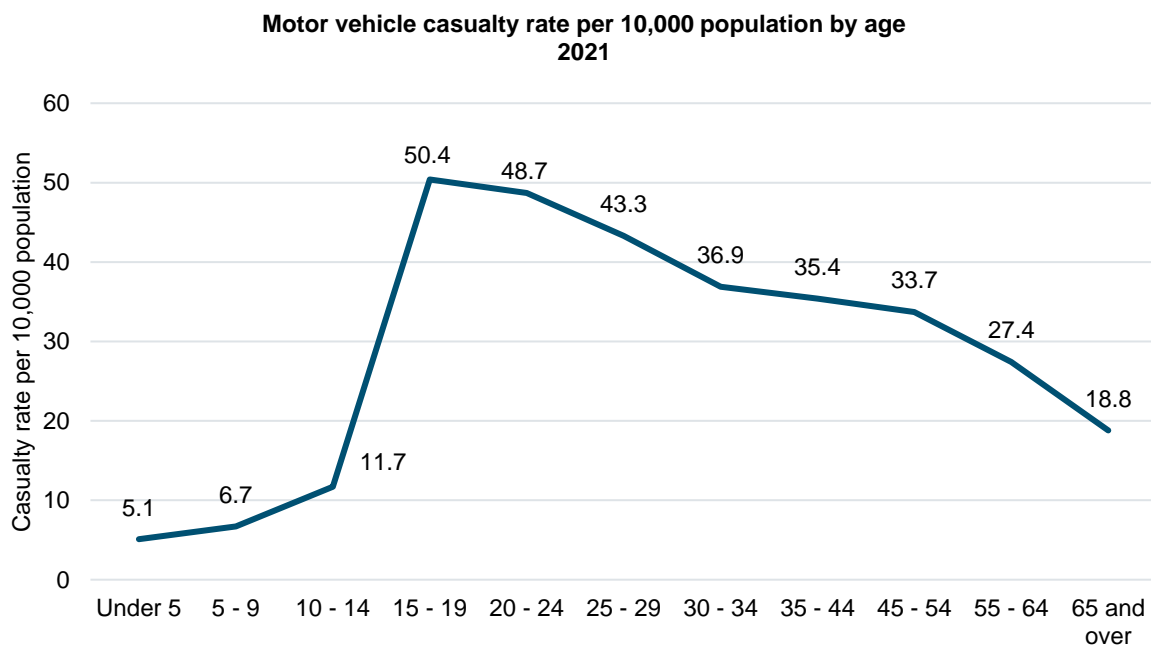


Figure 11. Casualty Rate per 10,000 Population by Age

Casualty rates per 10,000 population continue to be highest for persons between the ages of 15 and 19. The lowest casualty rate was recorded for children under 5 years of age.

## Who were the drivers in casualty collisions? 2021

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	96	0.5	4.5	47	0.3	2.3	143	0.8	3.4
16 - 17	371	2.1	9.8	333	1.9	9.6	704	3.9	9.7
18 - 19	446	2.5	10.1	319	1.8	7.8	765	4.3	9.0
20 - 24	1,067	5.9	8.6	784	4.4	6.9	1,851	10.3	7.8
25 - 34	2,129	11.9	6.7	1,578	8.8	5.2	3,708	20.7	6.0
35 - 44	2,234	12.4	6.5	1,469	8.2	4.5	3,704	20.6	5.6
45 - 54	1,739	9.7	6.2	1,062	5.9	4.1	2,801	15.6	5.2
55 - 64	1,352	7.5	5.0	824	4.6	3.3	2,176	12.1	4.2
65 and over	1,129	6.3	4.1	615	3.4	2.4	1,744	9.7	3.3
Unspecified	23	0.1		12	0.1		358	2.0	
<b>Total Number of Drivers</b>	<b>10,586</b>	<b>59.0</b>	<b>6.2</b>	<b>7,043</b>	<b>39.2</b>	<b>4.4</b>	<b>17,954</b>	<b>100.0</b>	<b>5.4</b>

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

Table 9. Age and Gender of Drivers Involved in Casualty Collisions

Collision rates per 1,000 licensed drivers indicated that males 18 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 males 16 to 17 years old.

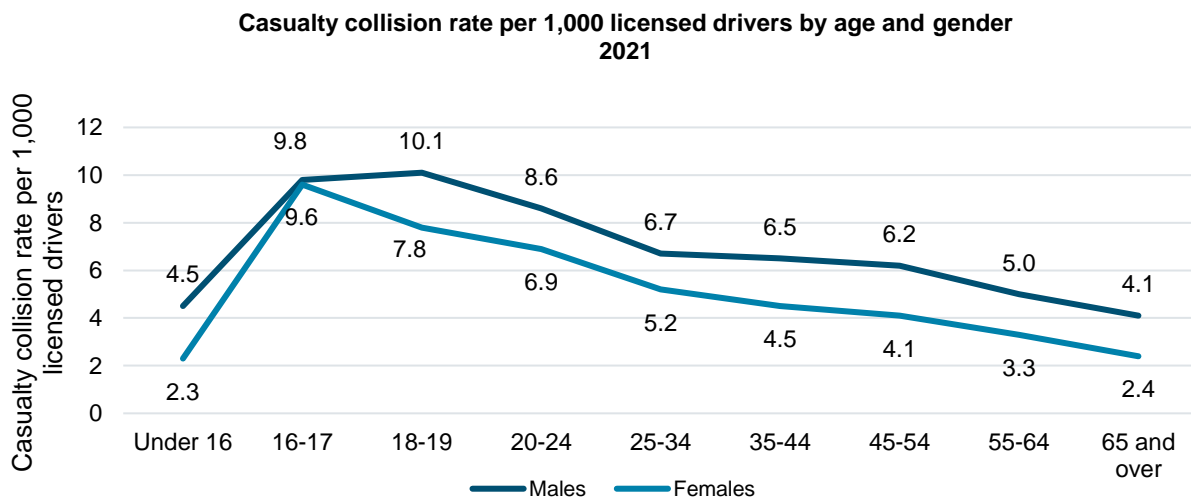


Figure 12. Casualty Collision Rate per 1,000 Licensed Drivers by Age and Gender



## Improper driver actions in casualty collisions 2021

Improper Actions*	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Followed Too Closely	6	3.7	2,126	30.6	2,132	30.0
Ran Off Road	68	41.7	1,180	17.0	1,248	17.5
Left Turn Across Path	7	4.3	814	11.7	821	11.5
Disobey Traffic Signal	16	9.8	530	7.6	546	7.7
Stop Sign Violation	4	2.5	516	7.4	520	7.3
Fail to Yield Right of Way to Pedestrian	4	2.5	336	4.8	340	4.8
Improper Turn	1	0.6	274	3.9	275	3.9
Improper Lane Change	1	0.6	272	3.9	273	3.8
Left of Centre	42	25.8	168	2.4	210	3.0
Backed Unsafely	--	--	204	2.9	204	2.9
Fail to Yield Right of Way at Uncontrolled Intersection	3	1.8	152	2.2	155	2.2
Yield Sign Violation	2	1.2	131	1.9	133	1.9
Improper Passing	7	4.3	98	1.4	105	1.5
Other	2	1.2	153	2.2	155	2.2
<b>Total Number of Drivers</b>	<b>163</b>	<b>100.0</b>	<b>6,954</b>	<b>100.0</b>	<b>7,117</b>	<b>100.0</b>

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

Note: There were a total of 15,568 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 8,451 were indicated as driving properly at the time of the collision.

Table 10. Improper Actions of Drivers Involved in Casualty Collisions

Followed Too Closely (30.0%), Ran Off Road (17.5%) and making a Left Turn Across Path of an oncoming vehicle (11.5%) were the most frequently identified improper driver actions contributing to casualty collisions.

## What types of vehicles were involved in casualty collisions? 2021

Type of Vehicle	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
Passenger Car	81	21.9	6,122	34.2	6,203	34.0
Mini-Van/MPV/SUV	66	17.8	6,013	33.6	6,079	33.3
Pick-Up/Van <4500kg	114	30.8	3,604	20.2	3,718	20.4
Truck >4500kg	19	5.1	631	3.5	650	3.6
Motorcycle/Scooter	35	9.5	448	2.5	483	2.6
Bicycle	3	0.8	443	2.5	446	2.4
Truck Tractor	37	10.0	320	1.8	357	2.0
Off-Highway Vehicle	15	4.1	100	0.6	115	0.6
Transit Bus	--	--	55	0.3	55	0.3
Emergency Vehicle	--	--	43	0.2	43	0.2
School Bus	--	--	31	0.2	31	0.2
Construction Equipment	--	--	21	0.1	21	0.1
Motorhome	--	--	14	0.1	14	0.1
eScooter	--	--	11	0.1	11	0.1
Other Bus	--	--	9	0.1	9	0.0
Farm Equipment	--	--	8	0.0	8	0.0
Intercity Bus	--	--	2	0.0	2	0.0
Motorized Snow Vehicle	--	--	2	0.0	2	0.0
Moped	--	--	1	0.0	1	0.0
Other	--	--	--	--	--	--
<b>Total Number of Vehicles</b>	<b>370</b>	<b>100.0</b>	<b>17,878</b>	<b>100.0</b>	<b>18,248</b>	<b>100.0</b>

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

Table 11. Types of Vehicles Involved in Casualty Collisions

Passenger Car (34.0%), Mini-Van/MPV/SUV (33.3%) and Pick-Up/Van <4500kg (20.4%) were the vehicles most frequently involved in casualty collisions.