

Alberta

Traffic Collision Statistics

2015

Alberta

Traffic Collision Statistics

2015

For further information contact:
Alberta Transportation
Office of Traffic Safety
Main Floor, Twin Atria Building
4999 – 98 Avenue
Edmonton, Alberta T6B 2X3
780-427-8901
www.transportation.alberta.ca

2015 Overview

- The number of **traffic fatalities decreased 10.6%** over the past year from 369 fatalities in 2014 to 330 in 2015.
- The number of **traffic injuries decreased 4.5%** over the past year from 18,745 injuries in 2014 to 17,907 in 2015.
- The number of **traffic collisions decreased 2.8%** over the past year from 144,740 collisions in 2014 to 140,705 in 2015.
- **The highest number of fatal collisions** occurred in **July**. **The highest number of injury collisions** occurred in **October**.
- **Friday** was the most collision-prone day of the week.
- **The most collision-prone period of time was the afternoon rush hour.**
- **Casualty rates** were highest for persons between the **ages of 15 and 24**.
- **Male drivers** between the **ages of 18 and 19** had the highest involvement rate of all drivers involved in casualty collisions.
- **Following too closely, running off the road and left turn across path** 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**.
- **21.7% of pedestrians** involved in **fatal collisions had consumed alcohol** prior to the collision compared to **10.2% of pedestrians in injury collisions**.
- **19.8% of drivers** involved in **fatal collisions had consumed alcohol** prior to the crash compared to **3.1% of drivers in injury collisions**.
- **Collision-involved restraint users had a much lower injury rate (6.8%)** than those not using restraints (22.4%)

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 2015. Although the report is general in nature, it pays particular attention to casualty collisions, that is, those collisions which result in death or injury. Legislation in Alberta requires that a traffic collision, which results in death, injury, or property damage to an apparent extent of \$2000.00 or more, be reported immediately to an authorized peace officer. The officer completes a standardized collision report form which provides information on various aspects of the traffic collision. This report is based on the data collected from these report forms.

The collision report form 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 form is a secondary, but necessary, task.

After completion, the information on the collision report form is coded for input to computer files. The Alberta Collision Information System, which has been operational since 1978, undergoes several manual and computerized inspections 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.

Table of Contents

	Page
2015 Overview	i
Preface	iii
List of Tables	vii
List of Figures.....	ix
Glossary	xi
2015 Traffic Collision Summary	1
When the Collisions Occurred.....	7
Victims.....	13
Drivers	17
Vehicles.....	21
Environment	25
Special Types of Vehicles	
Motorcycles	29
Truck Tractors	39
Trains.....	45
Pedestrians	49
Bicyclists.....	59
Traffic Safety Issues	
Alcohol Involvement	67
Restraint Use.....	77

List of Tables

	Page
Table 1.1	Alberta Traffic Collisions 2011 - 2015.....2
Table 1.2	Traffic Collision Rates 2011 - 2015.....3
Table 1.3	Provincial Comparison of Casualty Rates Per Billion Vehicle Kilometres Travelled 2010 - 2014.....5
Table 2.1	Collision Occurrence by Month 2015.....8
Table 2.2	Collision Occurrence by Day of Week 20159
Table 2.3	Collision Occurrence by Time Period 201510
Table 2.4	Collisions During 2015 Holidays12
Table 3.1	Injuries and Fatalities by Road User Class 2015.....14
Table 3.2	Age of Casualties 2015.....15
Table 4.1	Age and Sex of Drivers Involved in Casualty Collisions: Per 1,000 Licenced Drivers 2015.....18
Table 4.2	Improper Actions of Drivers Involved in Casualty Collisions 201520
Table 5.1	Types of Vehicles Involved in Casualty Collisions 2015.....22
Table 5.2	Vehicle Factors Involved in Casualty Collisions 201523
Table 5.3	Point of Impact on Vehicles Involved in Casualty Collisions 201524
Table 6.1	Location of Collisions 2015.....26
Table 6.2	Casualty Collision Occurrence by Surface Condition 201527
Table 7.1	Motorcycles Involved in Casualty Collisions 2011 - 2015.....30
Table 7.2	Age and Sex of Motorcycle Operators Involved in Casualty Collisions 2015.....32
Table 7.3	Improper Actions of Motorcycle Operators Involved in Casualty Collisions 201533
Table 7.4	Condition of Motorcycle Operators Involved in Casualty Collisions 201534
Table 7.5	Motorcycle Vehicle Factors in Casualty Collisions 201535
Table 7.6	Casualty Collisions Involving Motorcycles: Month of Occurrence 201536
Table 7.7	Casualty Collisions Involving Motorcycles: Road Surface Condition 2015.....37

Table 7.8	Truck Tractors Involved in Casualty Collisions 2011 - 2015.....	40
Table 7.9	Improper Actions of Truck Tractor Drivers Involved in Casualty Collisions 2015.....	41
Table 7.10	Condition of Truck Tractor Drivers Involved in Casualty Collisions 2015.....	42
Table 7.11	Vehicle Factors of Truck Tractors Involved in Casualty Collisions 2015.....	43
Table 7.12	Casualty Collisions Involving Truck Tractors: Month of Occurrence 2015.....	44
Table 7.13	Trains Involved in Casualty Collisions 2011 - 2015.....	46
Table 7.14	Casualty Collisions Involving Trains: Month of Occurrence 2015.....	47
Table 7.15	Actions of Drivers Involved in Casualty Collisions with Trains 2015.....	48
Table 8.1	Casualty Collisions Involving Pedestrians: Month of Occurrence 2015.....	50
Table 8.2	Casualty Collisions Involving Pedestrians: Day of Week 2015.....	51
Table 8.3	Casualty Collisions Involving Pedestrians: Time Period 2015.....	52
Table 8.4	Casualty Collisions Involving Pedestrians: Location 2015.....	53
Table 8.5	Actions of Drivers Involved in Casualty Collisions with Pedestrians 2015.....	54
Table 8.6	Age of Pedestrian Casualties 2015.....	55
Table 8.7	Condition of Pedestrians Involved in Casualty Collisions 2015.....	57
Table 8.8	Age of Drinking Pedestrians Involved in Casualty Collisions 2015.....	58
Table 9.1	Casualty Collisions Involving Bicycles: Month of Occurrence 2015.....	60
Table 9.2	Casualty Collisions Involving Bicycles: Day of Week 2015.....	61
Table 9.3	Casualty Collisions Involving Bicycles: Time Period 2015.....	62
Table 9.4	Age of Bicyclist Casualties 2015.....	63
Table 9.5	Improper Actions of Bicyclists Involved in Casualty Collisions 2015.....	64
Table 9.6	Condition of Bicyclists Involved in Casualty Collisions 2015.....	65
Table 10.1	Condition of Drivers in Casualty Collisions 2015.....	68
Table 10.2	Age and Sex of Drinking Drivers in Casualty Collisions 2015.....	71
Table 10.3	Alcohol-Involved Casualty Collisions: Month of Occurrence 2015.....	73
Table 10.4	Alcohol-Involved Casualty Collisions: Day of Week 2015.....	74
Table 10.5	Alcohol-Involved Casualty Collisions: Time Period 2015.....	75
Table 10.6	Restraint Use of Vehicle Occupants and Injury Severity 2015 (Use vs. Non-Use)	78

List of Figures

	Page
Figure 1	Alberta Traffic Collision Rates Per 10,000 Population 2011 - 2015 4
Figure 2	Traffic Fatality Rates per Billion Vehicle Kilometres Travelled 2010 - 2014..... 6
Figure 3	Collision Occurrence by Month/Day of Week/Time Period 2015..... 11
Figure 4	Age of Casualties 2015..... 16
Figure 5	Age and Sex of Drivers Involved in Casualty Collisions 2015..... 19
Figure 6	Number of Motorcycles Involved in Fatal Collisions 2011 - 2015..... 31
Figure 7	Pedestrian Casualties 2015..... 56
Figure 8	Involvement of Drinking Drivers in Casualty Collisions 2011 - 2015..... 69
Figure 9	Driver Condition in Casualty Collisions 2015..... 70
Figure 10	Drinking Drivers Involved in Casualty Collisions 2015..... 72
Figure 11	Alcohol-Involved Casualty Collisions by Month/Day of Week/Time Period 2015..... 76

Glossary

Alcohol Impaired – In the judgment of the police officer, driving ability was impaired by alcohol consumption. Whether or not the subject was actually charged is not taken into consideration by the collision report form.

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

Drinking Driver – Refers to those drivers judged by the police officer as having been drinking prior to the collision or as being alcohol impaired at the time of the collision. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

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.

Had Been Drinking – In the judgment of the police officer, the driver had recently consumed alcohol but his driving ability was not obviously impaired.

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 \$2000.00.

Reportable Collision – A vehicle collision which resulted in death, injury or property damage greater than \$2000.00.

Rural – Any area outside of what is defined as “**Urban**”.

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

2015 Traffic Collision Summary

Introduction

During 2015, 140,705 collisions were recorded on Alberta roadways. Property damage collisions (over \$2000) represented 90.2% (126,886) of this total while 9.6% (13,531) were non-fatal injury collisions. Fatal collisions accounted for 0.2% (288) of the total reported collisions.

Five-Year Trends

In terms of population, licenced drivers and registered vehicles, the fatal collision rate has decreased from 2014. The fatality rates also decreased in terms of population, licenced drivers, and registered vehicles.

The non-fatal injury collision and injury rates decreased in 2015 in terms of population, licenced drivers and registered vehicles.

Property damage collision rates decreased from 2014 to 2015 in terms of population, licenced drivers and registered vehicles.

Provincial Comparisons

In order to get a picture of Alberta's traffic casualties in comparison to other provinces, 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, five provinces and territories had a higher fatality rate than Alberta in 2014. With regard to injury rates, in 2014, 10 jurisdictions had a higher injury rate than Alberta.

Table 1.1**Alberta Traffic Collisions****2011 – 2015**

Severity of Collisions	2015	2014	2013	2012	2011
Fatal Collisions	288	328	331	307	285
Non-Fatal Injury Collisions	13531	14244	14073	13822	13909
Property Damage Collisions	126886	130168	127234	122466	124985
Total Reportable Collisions	140705	144740	141638	136595	139179
Number Killed	330	369	358	345	313
Number Injured	17907	18745	18650	18220	18584
Total Number of Casualties	18237	19114	19008	18565	18897

Observations

In 2015, the overall number of collisions decreased 2.8% when compared to 2014. In 2015, injury collisions decreased by 5.0% and fatal crashes decreased by 12.2%. The number of fatalities decreased by 10.6% from 2014 to 2015 and the number of injuries decreased by 4.5%. In terms of the past five years, overall collisions were lowest in 2012 and highest in 2014.

Table 1.2**Traffic Collision Rates****2011 – 2015**

Severity of Collision	Rate Per 10,000 Population					Rate Per 10,000 Licenced Drivers					Rate Per 10,000 Registered Vehicles				
	2015	2014	2013	2012	2011	2015	2014	2013	2012	2011	2015	2014	2013	2012	2011
Fatal Collisions	0.7	0.8	0.8	0.8	0.8	0.9	1.1	1.1	1.1	1.0	0.8	0.9	1.0	0.9	0.9
Number Killed	0.8	0.9	0.9	0.9	0.8	1.1	1.2	1.2	1.2	1.1	0.9	1.0	1.0	1.0	1.0
Non-Fatal Injury Collisions	32.2	34.6	35.0	35.7	36.8	43.3	46.6	47.4	47.9	49.2	37.1	39.5	40.5	41.3	43.2
Number Injured	42.7	45.5	46.3	47.0	49.2	57.3	61.3	62.8	63.1	65.8	49.1	52.0	53.6	54.4	57.7
Property Damage Collisions	302.4	315.8	316.1	316.1	330.7	405.8	425.7	428.7	424.1	442.3	347.9	360.8	366.0	365.8	388.0
Total Reportable Collisions	335.3	351.2	351.9	352.6	368.3	450.0	473.4	477.2	473.0	492.6	385.8	401.2	407.4	408.0	432.1

Observations

In terms of population, licenced drivers and registered vehicles the fatal collision rate has decreased from 2014 to 2015. The fatality rates also decreased in terms of population, licenced drivers, and registered vehicles.

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

Property damage collision rates decreased from 2014 to 2015 in terms of population, licenced drivers and registered vehicles.

Sources:

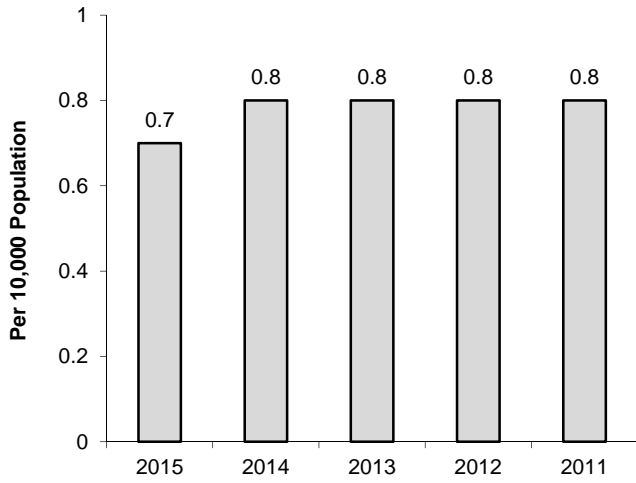
Population – Statistics Canada as of July 1, 2015

Licenced Drivers – Service Alberta – Registries Services, as of December 31, 2015

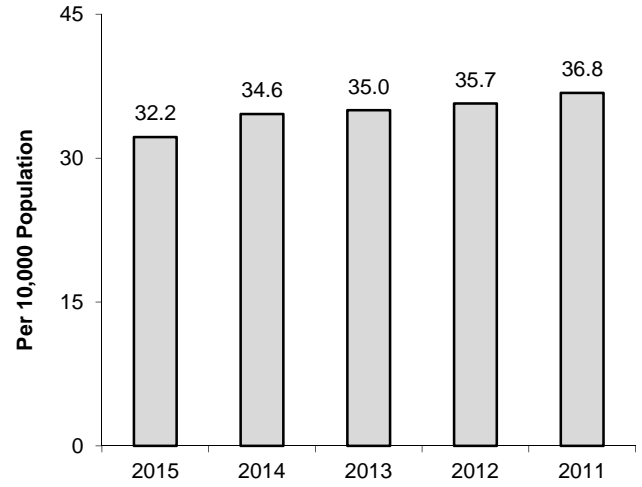
Registered Vehicles – Service Alberta – Registries Services, as of December 31, 2015

Figure 1

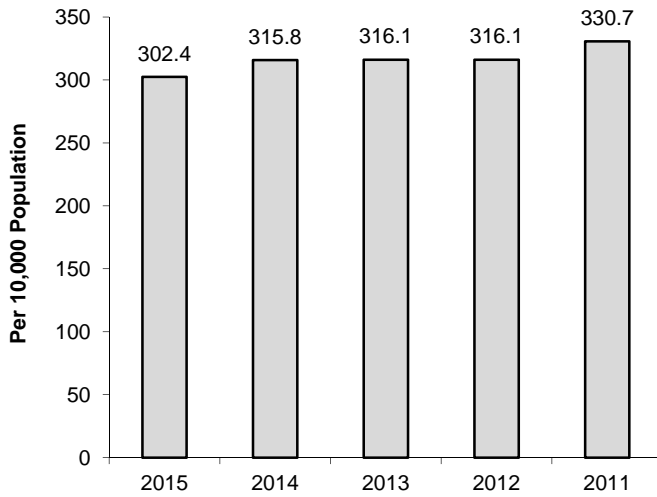
**Fatal Collision Rates
Alberta 2011 - 2015**



**Injury Collision Rates
Alberta 2011 - 2015**



**Property Damage Collision Rates
Alberta 2011 - 2015**



**Overall Collision Rates
Alberta 2011 - 2015**

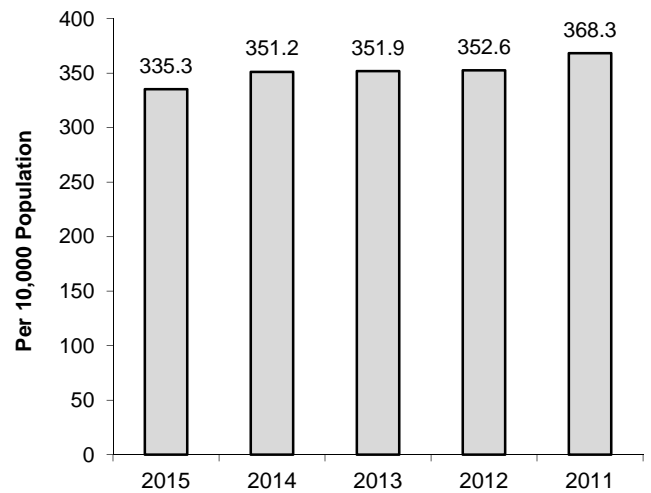


Table 1.3**Provincial Comparison of Casualty Rates
Per Billion Vehicle Kilometres Travelled****2010 – 2014**

	Fatalities					Injuries				
	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010
Canada	5.1	5.6	6.0	5.8	6.6	418.1	481.9	480.5	485.0	504.1
Alberta	6.3	6.4	6.4	5.7	6.6	317.8	335.5	340.1	338.7	349.5
British Columbia	7.7	7.5	7.6	8.0	10.1	560.0	567.2	543.3	536.1	579.3
Saskatchewan	9.5	10.6	13.9	11.2	12.8	423.0	535.7	548.2	512.6	499.5
Manitoba	4.9	6.4	7.3	8.9	7.2	820.3	840.0	805.5	662.6	583.9
Ontario	3.6	3.7	4.3	3.7	4.5	352.1	465.6	459.9	479.8	498.3
Quebec	4.6	5.6	5.9	6.6	6.6	493.3	530.4	545.2	565.6	594.2
New Brunswick	7.1	6.3	8.0	7.6	11.5	326.5	355.7	351.8	344.3	425.9
Nova Scotia	5.0	7.6	7.7	6.2	6.9	356.2	401.4	434.1	480.1	476.9
Prince Edward Island	3.5	9.7	7.6	13.4	6.9	358.9	826.1	439.8	503.6	493.7
Newfoundland	5.8	5.8	5.9	5.5	5.8	413.7	426.2	433.7	407.5	426.2
Yukon	6.3	6.4	3.2	17.9	7.9	280.6	329.6	318.3	383.0	433.9
Northwest Territories	10.3	7.9	5.2	0.0	9.4	228.8	314.0	378.9	332.5	353.6
Nunavut	108.1	85.7	26.5	83.5	60.2	1270.3	1142.9	1538.1	1197.0	1234.6

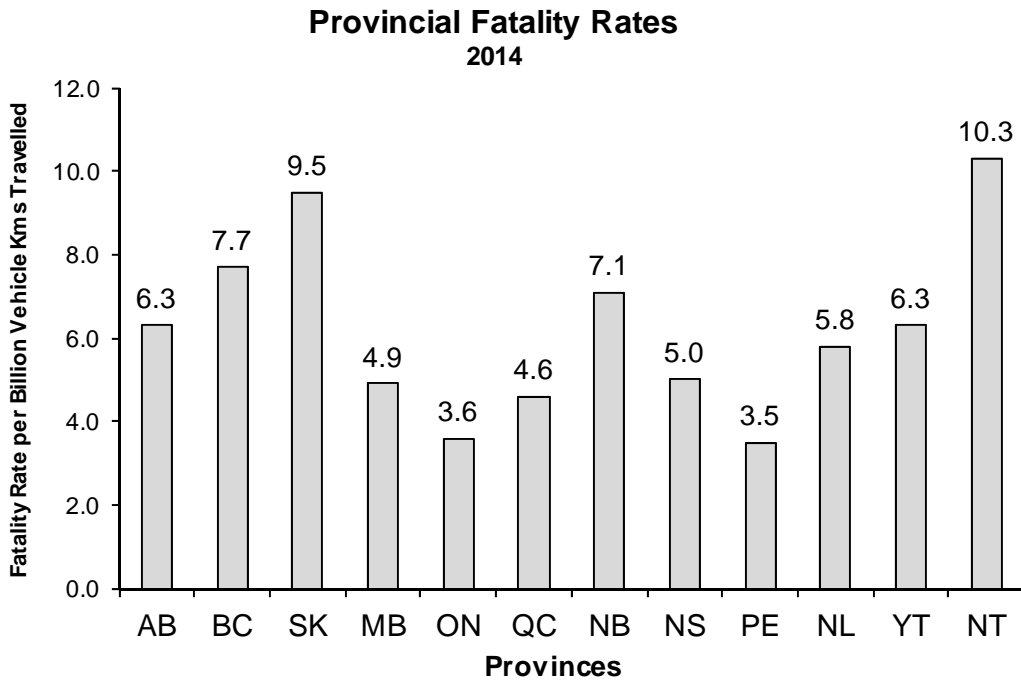
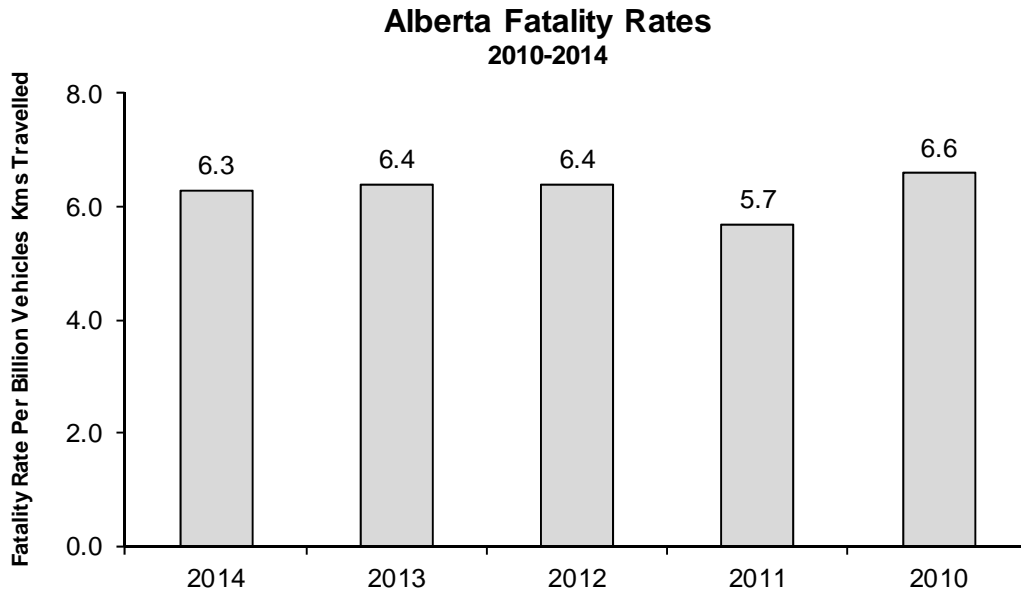
Observations

Based on the most recent information from Transport Canada, from 2013 to 2014, Alberta's fatality rate per billion vehicle kilometers travelled decreased to 6.3. During the same period, the injury rate per billion vehicle kilometers travelled decreased from 335.5 to 317.8. Over the five years, since 2010, rates have declined by 0.3 fatalities and 31.7 injuries per billion vehicle kilometers travelled.

Sources: Transport Canada, "Canadian Motor Vehicle Traffic Collision Statistics," (TP3322) 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 data for 2013 were estimated using average yearly change for the years 2010-2012.

The Canadian Motor Vehicle Traffic Collision Statistics can be accessed online at:
<http://www.tc.gc.ca/eng/roadsafety/resources-researchstats-menu-847.htm>

Figure 2



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

When the Collisions Occurred

Month

July experienced more fatal collisions than other months. The highest number of injury and property damage collisions were recorded during the months of October and January, respectively.

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 early morning (3:00 a.m. – 6:59 a.m.).

Holidays

The August Long Weekend recorded the highest number of fatalities while the Christmas Season recorded the highest number of injuries. The Christmas Season also recorded the highest total number of collisions.

Table 2.1**Collision Occurrence by Month****2015**

Month	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	23	8.0	1262	9.3	14053	11.1	15338	10.9
February	14	4.9	1036	7.7	10865	8.6	11915	8.5
March	14	4.9	975	7.2	9998	7.9	10987	7.8
April	18	6.3	910	6.7	8716	6.9	9644	6.9
May	23	8.0	1119	8.3	9558	7.5	10700	7.6
June	37	12.8	1173	8.7	9964	7.9	11174	7.9
July	40	13.9	1219	9.0	9454	7.5	10713	7.6
August	31	10.8	1101	8.1	8886	7.0	10018	7.1
September	26	9.0	1105	8.2	9802	7.7	10933	7.8
October	23	8.0	1267	9.4	10458	8.2	11748	8.3
November	18	6.3	1172	8.7	12168	9.6	13358	9.5
December	21	7.3	1189	8.8	12827	10.1	14037	10.0
Unspecified	--	--	3	0.0	137	0.1	140	0.1
Total Number of Collisions	288	100.0	13531	100.0	126886	100.0	140705	100.0

Observations

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

Table 2.2**Collision Occurrence by Day of Week****2015**

Day of Week	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Monday	38	13.2	1958	14.5	17855	14.1	19851	14.1
Tuesday	36	12.5	2044	15.1	19001	15.0	21081	15.0
Wednesday	37	12.8	2050	15.2	19101	15.1	21188	15.1
Thursday	44	15.3	2056	15.2	19732	15.6	21832	15.5
Friday	32	11.1	2288	16.9	21075	16.6	23395	16.6
Saturday	53	18.4	1754	13.0	17008	13.4	18815	13.4
Sunday	48	16.7	1378	10.2	12977	10.2	14403	10.2
Unspecified	--	--	3	0.0	137	0.1	140	0.1
Total Number of Collisions	288	100.0	13531	100.0	126886	100.0	140705	100.0

Observations

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

Table 2.3**Collision Occurrence by Time Period****2015**

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.	44	15.3	883	6.5	7642	6.0	8569	6.1
3:00 a.m. - 6:59 a.m.	23	8.0	721	5.3	6317	5.0	7061	5.0
7:00 a.m. - 10:59 a.m.	53	18.4	2454	18.1	23040	18.2	25547	18.2
11:00 a.m. - 2:59 p.m.	51	17.7	3048	22.5	32001	25.2	35100	24.9
3:00 p.m. - 6:59 p.m.	63	21.9	4360	32.2	37678	29.7	42101	29.9
7:00 p.m. - 10:59 p.m.	52	18.1	1902	14.1	16841	13.3	18795	13.4
Unspecified	2	0.7	163	1.2	3367	2.7	3532	2.5
Total Number of Collisions	288	100.0	13531	100.0	126886	100.0	140705	100.0

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 early morning (3:00 a.m. – 6:59 a.m.).

Figure 3

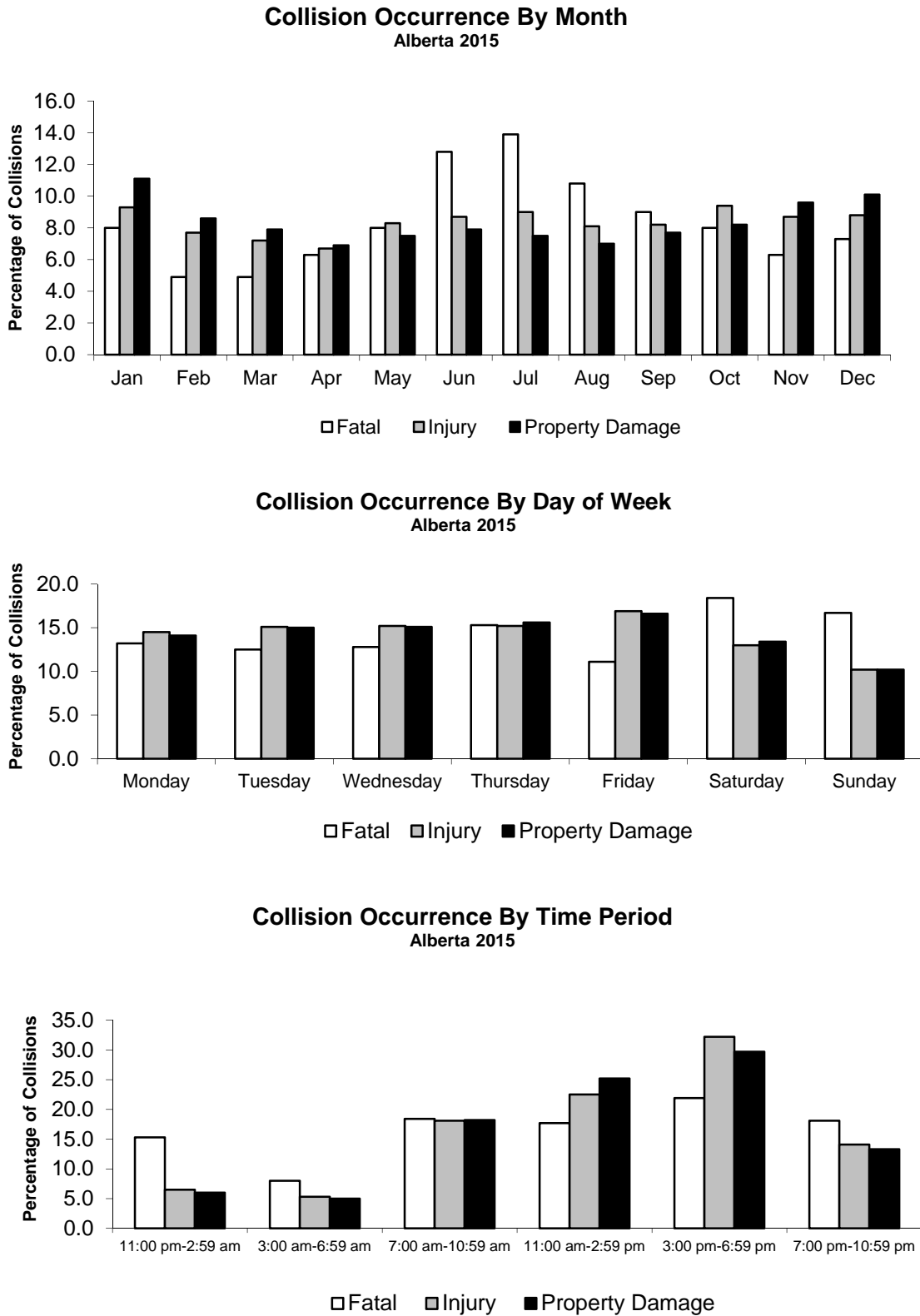


Table 2.4**Collisions During 2015 Holidays**

Holidays	Number Killed	Number Injured	Total Collisions*
	N	N	N
New Year's Day (January 1)	1	29	247
Family Day Long Weekend (February 13-16)	6	208	1523
Easter Long Weekend (April 2-6)	5	172	1370
Victoria Day Long Weekend (May 15-18)	4	142	1109
Canada Day (July 1)	1	34	285
August Long Weekend (July 31 - August 3)	7	177	1198
Labour Day Long Weekend (September 4-7)	5	164	1189
Thanksgiving Long Weekend (October 9-12)	6	199	1196
Remembrance Day (November 11)	--	29	303
Christmas Season (December 24-28)	1	226	2016
Total	36	1380	10436

Observations

The August Long Weekend recorded the highest number of fatalities while the Christmas Season recorded the highest number of injuries. The Christmas Season also recorded the highest total number of collisions.

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

Note: Comparisons should be done with caution. 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 6.8% and 3.7% 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.

Table 3.1**Injuries and Fatalities by Road User Class****2015**

Road User Class	Persons Killed		Persons Injured		Total Casualties	
	N	%	N	%	N	%
Drivers	173	52.4	11254	62.8	11427	62.7
Passengers	70	21.2	3906	21.8	3976	21.8
Pedestrians	36	10.9	1198	6.7	1234	6.8
Motorcyclists	33	10.0	640	3.6	673	3.7
Bicyclists	3	0.9	534	3.0	537	2.9
Other	11	3.3	228	1.3	239	1.3
Unspecified	4	1.2	147	0.8	151	0.8
Total Casualties	330	100.0	17907	100.0	18237	100.0

Observations

The majority of traffic victims were drivers (62.7%) and passengers (21.8%) of vehicles. Pedestrians and motorcyclists accounted for 6.8% and 3.7% of the total casualties, respectively.

Table 3.2**Age of Casualties****2015**

Age in Years	Persons Killed		Persons Injured		Total Casualties		Casualty Rate Per 10,000 Population*
	N	%	N	%	N	%	
Under 5	3	0.9	226	1.3	229	1.3	8.3
5 - 9	2	0.6	355	2.0	357	2.0	13.6
10 - 14	2	0.6	439	2.5	441	2.4	18.9
15 - 19	24	7.3	1731	9.7	1755	9.6	71.9
20 - 24	50	15.2	2026	11.3	2076	11.4	71.0
25 - 29	41	12.4	2111	11.8	2152	11.8	62.1
30 - 34	27	8.2	1767	9.9	1794	9.8	49.1
35 - 44	52	15.8	2917	16.3	2969	16.3	48.2
45 - 54	48	14.5	2562	14.3	2610	14.3	45.5
55 - 64	40	12.1	1903	10.6	1943	10.7	38.8
65 and over	40	12.1	1348	7.5	1388	7.6	28.5
Unspecified	1	0.3	522	2.9	523	2.9	
Total Casualties	330	100.0	17907	100.0	18237	100.0	

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.

*Based on estimates of the Alberta population by age groups and sex, July 1, 2015, Statistics Canada

Figure 4

Drivers

Age and Sex of Drivers

Collision rates per 1000 licenced drivers indicate 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 20 to 24 years old.

Driver Actions

Following too closely (31.2%), running off the road (18.4%) and left turn across path (11.3%) were the most frequently identified improper driver actions contributing to casualty collisions.

Table 4.1**Age and Sex of Drivers Involved in Casualty Collisions:****Per 1,000 Licenced Drivers****2015**

Age of Driver	Male			Female			Total*		
	N	%	Rate Per 1000** Licenced Drivers	N	%	Rate Per 1000** Licenced Drivers	N	%	Rate Per 1000** Licenced Drivers
Under 16	114	0.5	6.9	43	0.2	2.8	159	0.6	5.0
16 - 17	428	1.7	12.8	382	1.6	12.6	810	3.3	12.7
18 - 19	638	2.6	15.3	459	1.9	12.3	1097	4.5	13.9
20 - 24	1764	7.2	13.0	1176	4.8	9.8	2942	12.0	11.5
25 - 34	3400	13.8	9.6	2313	9.4	7.2	5713	23.2	8.5
35 - 44	2673	10.9	8.5	1848	7.5	6.6	4522	18.4	7.6
45 - 54	2401	9.8	8.4	1542	6.3	5.9	3944	16.0	7.2
55 - 64	1831	7.5	7.2	1050	4.3	4.6	2882	11.7	5.9
65 and over	1230	5.0	5.9	660	2.7	3.6	1890	7.7	4.8
Unspecified	132	0.5		44	0.2		618	2.5	
Total Number of Drivers	14611	59.4		9517	38.7		24577	100.0	

Observations

Collision rates per 1000 licenced 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 20 to 24 years old.

*Total includes drivers whose sex was not specified on the collision report form. Includes bicyclists.

**Source: Licenced Drivers – Service Alberta – Registries Services, as of December 31, 2015.

Figure 5

**Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2015**

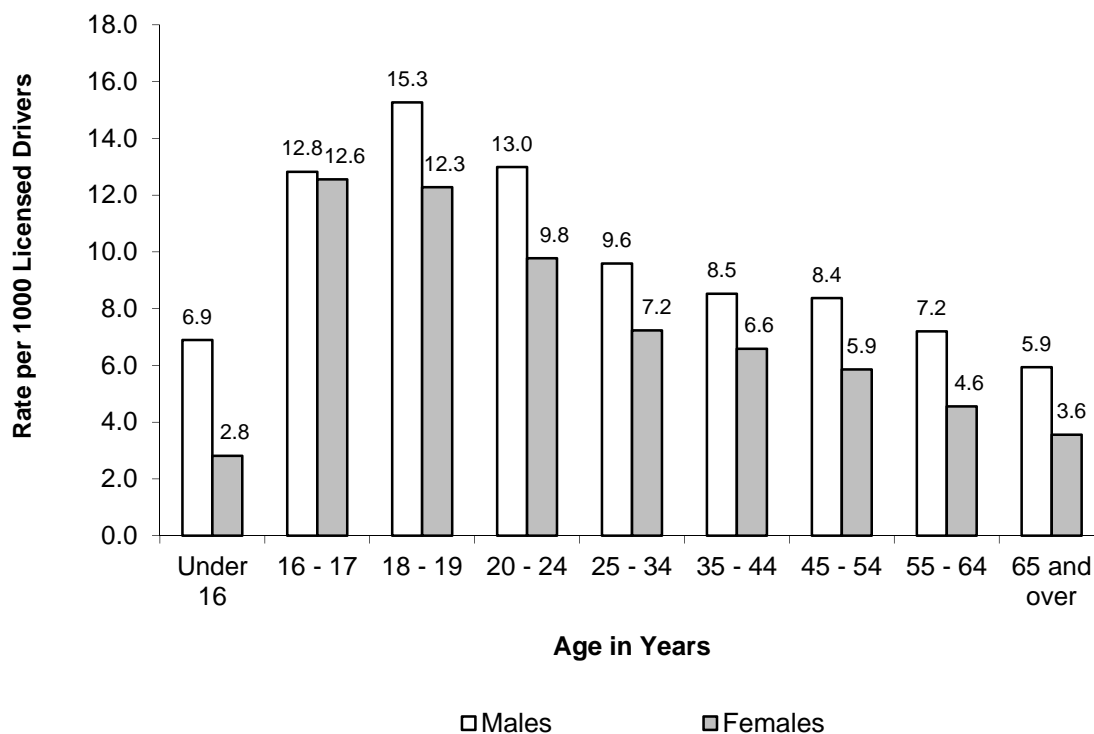


Table 4.2**Improper Actions of Drivers Involved in Casualty Collisions*****2015**

Improper Actions	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Followed Too Closely	7	3.0	3420	31.8	3427	31.2
Ran Off Road	104	43.9	1917	17.8	2021	18.4
Left Turn Across Path	19	8.0	1218	11.3	1237	11.3
Stop Sign Violation	22	9.3	886	8.2	908	8.3
Disobey Traffic Signal	9	3.8	730	6.8	739	6.7
Failed to Yield Right of Way to Pedestrian	6	2.5	592	5.5	598	5.4
Improper Turn	3	1.3	375	3.5	378	3.4
Improper Lane Change	2	0.8	348	3.2	350	3.2
Left of Centre	50	21.1	264	2.5	314	2.9
Backed Unsafely	1	0.4	276	2.6	277	2.5
Failed to Yield Right of Way - Uncontrolled Intersection	2	0.8	230	2.1	232	2.1
Yield Sign Violation	--	--	186	1.7	186	1.7
Improper Passing	7	3.0	103	1.0	110	1.0
Other	5	2.1	210	2.0	215	2.0
Total Number of Drivers	237	100.0	10755	100.0	10992	100.0

Observations

Following too closely (31.2%), running off the road (18.4%) and left turn across path (11.3%) 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 22,242 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 11,250 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (37.4%), minivans/MPVs (28.1%) and pick-up trucks/vans (22.6%) were the vehicles most frequently involved in total casualty collisions.

Vehicle Factors

Overall 0.9% 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, 45.1% of the impacts involved the centre front.

Table 5.1**Types of Vehicles Involved in Casualty Collisions*****2015**

Type of Vehicle	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
Passenger Car	110	24.2	9201	37.6	9311	37.4
Mini-Van/MPV	83	18.2	6916	28.3	6999	28.1
Pick-up Truck/Van	134	29.5	5488	22.5	5622	22.6
Truck 4500 kg+	35	7.7	876	3.6	911	3.7
Motorcycle	31	6.8	622	2.5	653	2.6
Bicycle	3	0.7	536	2.2	539	2.2
Tractor-Trailer	39	8.6	457	1.9	496	2.0
Off-Highway Vehicle	9	2.0	95	0.4	104	0.4
Transit Bus	1	0.2	88	0.4	89	0.4
School Bus	4	0.9	46	0.2	50	0.2
Emergency Vehicle	--	--	35	0.1	35	0.1
Construction Equipment	2	0.4	18	0.1	20	0.1
Other Bus	--	--	16	0.1	16	0.1
Motorhome	1	0.2	14	0.1	15	0.1
Farm Equipment	2	0.4	11	0.0	13	0.1
Motorized Snow Vehicle	--	--	12	0.0	12	0.0
Moped	--	--	7	0.0	7	0.0
Intercity Bus	1	0.2	4	0.0	5	0.0
Other	--	--	1	0.0	1	0.0
Total Number of Vehicles	455	100.0	24443	100.0	24898	100.0

Observations

Passenger cars, mini-vans/MPVs and pick-up trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 2.2% and motorcycles 2.6% of the vehicles involved in casualty collisions. Tractor-Trailers were 2.0% of total vehicles in casualty crashes, but 8.6% of vehicles in fatal crashes.

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

Table 5.2**Vehicle Factors Involved in Casualty Collisions*****2015**

Vehicle Factors	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
No Apparent Defect	356	98.3	21906	99.1	22262	99.1
Defective Brakes	2	0.6	68	0.3	70	0.3
Tires Failed	2	0.6	36	0.2	38	0.2
Improper Load/Shift	1	0.3	15	0.1	16	0.1
Lighting Defect	--	--	3	0.0	3	0.0
Other	1	0.3	74	0.3	75	0.3
Total Number of Vehicles	362	100.0	22102	100.0	22464	100.0

Observations

Overall 0.9% 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 or not a mechanical inspection of the collision-involved vehicle was conducted.

Table 5.3**Point of Impact on Vehicles Involved in Casualty Collisions*****2015**

Point of Impact	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
Centre Front	229	51.5	10630	45.0	10859	45.1
Centre Rear	22	4.9	5122	21.7	5144	21.4
Right Front	18	4.0	1631	6.9	1649	6.8
Left Front	16	3.6	1632	6.9	1648	6.8
Rollover	77	17.3	1176	5.0	1253	5.2
Left Side	36	8.1	1055	4.5	1091	4.5
Right Side	18	4.0	1001	4.2	1019	4.2
Left Rear	5	1.1	554	2.3	559	2.3
Right Rear	4	0.9	521	2.2	525	2.2
Attachment	14	3.1	211	0.9	225	0.9
Undercarriage	2	0.4	61	0.3	63	0.3
Top	4	0.9	48	0.2	52	0.2
Total Number of Vehicles	445	100.0	23642	100.0	24087	100.0

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 45.1% of the impacts involved the centre front, while 21.4% of the impacts involved the centre rear.

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

Environment

Location

The majority of fatal crashes (68.1%) occurred in rural areas, whereas the majority of injury (75.7%) and property damage (85.1%) crashes occurred in urban areas.

Surface Conditions

The majority (68.4%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 10.8% of fatal collisions and 19.6% of non-fatal injury collisions.

Table 6.1**Location of Collisions****2015**

Location	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Urban	92	31.9	10247	75.7	107974	85.1	118313	84.1
Rural	196	68.1	3284	24.3	18912	14.9	22392	15.9
Total Number of Collisions	288	100.0	13531	100.0	126886	100.0	140705	100.0

Observations

The majority of fatal collisions (68.1%) occurred in rural areas. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (75.7%) and property damage crashes (85.1%).

Table 6.2**Casualty Collision Occurrence by Surface Condition****2015**

Surface Condition	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Dry	223	77.4	9233	68.2	9456	68.4
Slush/Snow/Ice	31	10.8	2655	19.6	2686	19.4
Wet	23	8.0	1089	8.0	1112	8.0
Loose Surface Material	4	1.4	201	1.5	205	1.5
Muddy	--	--	26	0.2	26	0.2
Other	2	0.7	41	0.3	43	0.3
Unspecified	5	1.7	286	2.1	291	2.1
Total Number of Collisions	288	100.0	13531	100.0	13819	100.0

Observations

The majority (68.4%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 10.8% of fatal collisions and 19.6% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- In 2015, based on motorcycle registrations, the involvement rate of motorcycles has decreased in fatal collisions over 2014 but increased in injury collisions.
- The majority of motorcycle casualty collisions involved male drivers. Motorcycle operators under the age of 25 had the highest involvement rate per 1000 licenced drivers.
- Compared to drivers involved in total casualty collisions, motorcycle operators were more likely to run off the road, make an improper turn, or pass improperly. However, motorcycle operators were less likely to follow too closely, make a left turn across the path of an oncoming vehicle or commit a stop sign violation.
- Compared to drivers involved in all types of vehicle casualty collisions, motorcycle operators were more likely to have consumed alcohol before the crash.
- Vehicle factors were identified for 1.9% of motorcycles involved in casualty collisions compared to 1.0% 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.

Table 7.1**Motorcycles Involved in Casualty Collisions****2011 – 2015**

Number of Motorcycles	2015	2014	2013	2012	2011
Fatal	31	36	42	22	26
Non-Fatal Injury	622	598	642	609	655
Total Number of Motorcycles Involved in Casualty Collisions	653	634	684	631	681
Casualties*					
Number Killed	33	35	42	21	24
Number Injured	685	649	697	660	719
Total Casualties in Collisions Involving Motorcycles	718	684	739	681	743
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	2.5	2.9	3.6	2.0	2.4
Non-Fatal Injury Collisions	49.2	48.9	54.7	54.3	60.5

Observations

Based on motorcycle registrations in 2015, compared to 2014, the involvement rate of motorcycles has decreased in fatal collisions but increased in 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 – Registries Services, December 31, 2015.

Figure 6

Number of Motorcycles Involved in Fatal Collisions
Alberta 2011 - 2015

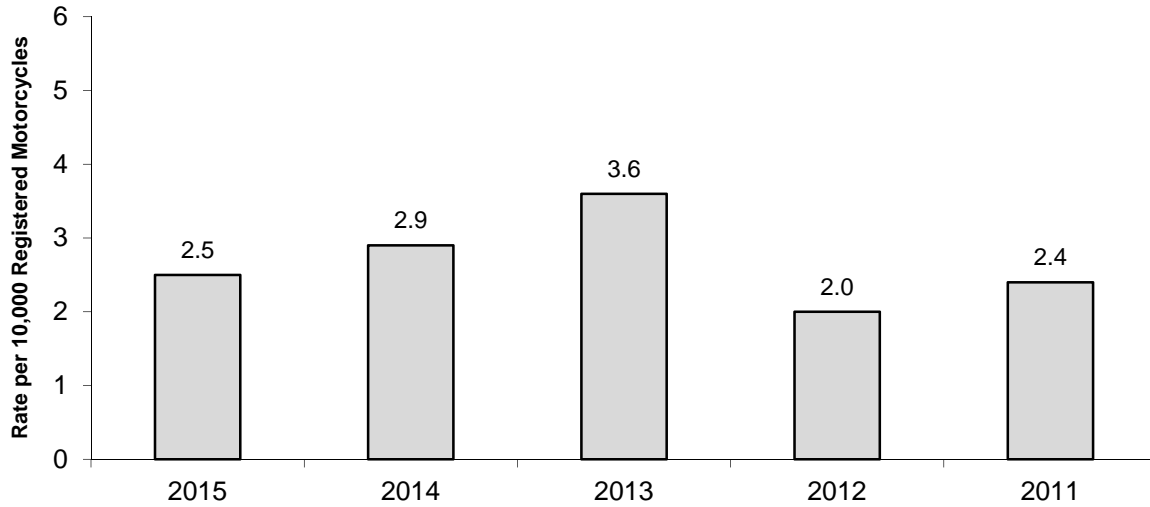


Table 7.2**Age and Sex of Motorcycle Operators Involved in Casualty Collisions****2015**

Age of Motorcycle Operators	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Operators**
	N	%	N	%	N	%	
Under 16	5	0.8	1	0.2	6	0.9	--
16 - 17	2	0.3	1	0.2	3	0.5	19.6
18 - 19	16	2.5	--	--	16	2.5	25.4
20 - 24	59	9.1	2	0.3	61	9.4	9.1
25 - 34	151	23.2	8	1.2	159	24.5	3.7
35 - 44	109	16.8	17	2.6	126	19.4	2.3
45 - 54	123	18.9	20	3.1	143	22.0	2.0
55 - 64	105	16.2	6	0.9	111	17.1	1.4
65 and over	21	3.2	1	0.2	22	3.4	0.6
Unspecified	1	0.2	--	--	3	0.5	
Total Number of Motorcycle Operators	592	91.1	56	8.6	650	100.0	

Observations

The majority of motorcycle casualty collisions involved male operators. Based on involvement per 1,000 licenced operators, motorcycle operators under the age of 25 were most likely to be involved in collisions. In particular, 18 - 19 year old motorcycle operators had the highest involvement rate per 1,000 licenced motorcycle operators. These age and sex 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 sex group of motorcycle operators.

Note: In Alberta, Class 6 (motorcycle) licences are not issued to operators under 16 years of age.

*Total includes drivers whose sex was not specified on the collision report form.

**Source: Licenced Drivers – Service Alberta – Registries Services, as of December 31, 2015.

Table 7.3**Improper Actions of Motorcycle Operators Involved in Casualty Collisions*****2015**

Improper Actions of Motorcycle Operators	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types)
			%
Ran Off Road	140	49.5	18.4
Followed Too Closely	55	19.4	31.2
Improper Turn	19	6.7	3.4
Left Turn Across Path	10	3.5	11.3
Improper Passing	9	3.2	1.0
Improper Lane Change	8	2.8	3.2
Disobey Traffic Signal	8	2.8	6.7
Left of Centre	6	2.1	2.9
Stop Sign Violation	3	1.1	8.3
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.1	2.1
Yield Sign Violation	1	0.4	1.7
Failed to Yield Right of Way to Pedestrian	1	0.4	5.4
Backed Unsafely	--	--	2.5
Other	20	7.1	2.0
Total Number of Operators	283	100.0	

Observations

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

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

Note: There were a total of 556 motorcycle operators involved in casualty collisions for which a driver action was specified on the collision report form. 273 were indicated as driving properly at the time of the collision.

Table 7.4**Condition of Motorcycle Operators Involved in Casualty Collisions*****2015**

Condition of Motorcycle Operator	N	%	Driver Condition in Total
			Casualty Collisions (All Vehicle Types) %
Normal	546	95.5	94.4
Had Been Drinking	15	2.6	1.5
Alcohol Impaired	10	1.7	1.9
Total Alcohol Involvement	25	4.4	3.4
Impaired by Drugs	1	0.2	0.3
Fatigued/Asleep	--	--	0.9
Other	--	--	1.1
Total Number of Motorcycle Operators	572	100.0	

Observations

The motorcycle operator's condition was a contributory factor for 4.5% of the motorcycle operators involved in casualty collisions. Compared to drivers involved in total casualty collisions, motorcycle operators were more likely to have consumed alcohol prior to the crash.

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

Table 7.5**Motorcycle Vehicle Factors in Casualty Collisions*****2015**

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	581	98.1	99.0
Tires Failed	3	0.5	0.2
Defective Brakes	2	0.3	0.3
Lighting Defect	1	0.2	0.0
Improper Load/Shift	--	--	0.1
Other	5	0.8	0.4
Total Number of Motorcycles	592	100.0	

Observations

Vehicle factors were identified for 1.9% of the motorcycles involved in casualty collisions compared to 1.0% 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 does not indicate that a mechanical inspection of the collision-involved motorcycle was conducted.

Table 7.6**Casualty Collisions Involving Motorcycles:****Month of Occurrence****2015**

Month	N	%
January	1	0.2
February	1	0.2
March	23	3.6
April	50	7.8
May	97	15.2
June	107	16.8
July	122	19.1
August	101	15.8
September	85	13.3
October	43	6.7
November	8	1.3
December	--	--
Total Number of Collisions	638	100.0

Observations

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

Table 7.7**Casualty Collisions Involving Motorcycles:****Road Surface Condition****2015**

Road Surface Condition	N	%
Dry	571	89.5
Loose Surface Material	29	4.5
Wet	23	3.6
Other	7	1.1
Unspecified	8	1.3
Total Number of Collisions	638	100.0

Observations

The majority (89.5%) of casualty collisions involving motorcycles occurred on dry roads. Loose material on the road surface was involved in 4.5% of motorcycle casualty crashes. Wet roads were the scene for 3.6% of motorcycle casualty collisions.

Special Types of Vehicles

Truck Tractors

- In 2015, there were 38 persons killed and 556 injured in collisions involving truck tractors. This represents a decrease in fatalities and injuries from 2014.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change, or pass improperly. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make a left turn across the path of oncoming vehicles or fail to yield right of way to a pedestrian.
- Truck tractor drivers were less likely to consume alcohol before the crash 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 January.

Table 7.8**Truck Tractors Involved in Casualty Collisions****2011 – 2015**

Number of Truck Tractors	2015	2014	2013	2012	2011
Fatal	39	54	50	39	48
Non-Fatal Injury	457	526	477	476	481
Total Number of Truck Tractors Involved in Casualty Collisions	496	580	527	515	529
Casualties*					
Number Killed	38	57	53	37	50
Number Injured	556	633	584	599	670
Total Casualties in Collisions Involving Truck Tractors	594	690	637	636	720

Observations

In 2015, there were 38 persons killed and 556 injured in collisions involving truck tractors. This represents a decrease in fatalities and injuries from 2014. The total number of truck tractors involved in casualty crashes was highest in 2014 at 580.

*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.

Table 7.9**Improper Actions of Truck Tractor Drivers Involved in Casualty Collisions*****2015**

Improper Actions of Truck Tractor Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types)
			%
Ran Off Road	88	43.1	18.4
Followed Too Closely	41	20.1	31.2
Improper Lane Change	14	6.9	3.2
Stop Sign Violation	13	6.4	8.3
Improper Passing	9	4.4	1.0
Left Turn Across Path	7	3.4	11.3
Left of Centre	7	3.4	2.9
Disobey Traffic Signal	6	2.9	6.7
Improper Turn	5	2.5	3.4
Backed Unsafely	4	2.0	2.5
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.5	2.1
Yield Sign Violation	1	0.5	1.7
Failed to Yield Right of Way - Pedestrian	1	0.5	5.4
Other	5	2.5	2.0
Total Number of Drivers	204	100.0	

Observations

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

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

Note: There was a total of 446 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 242 were indicated as driving properly at the time of the collision.

Table 7.10**Condition of Truck Tractor Drivers Involved in Casualty Collisions*****2015**

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	420	96.8	94.4
Had Been Drinking	3	0.7	1.5
Alcohol Impaired	2	0.5	1.9
Total Alcohol Involvement	5	1.2	3.4
Fatigued/Asleep	7	1.6	0.3
Impaired by Drugs	--	--	0.9
Other	2	0.5	1.1
Total Number of Drivers	434	100.0	

Observations

The condition of the truck tractor driver was a contributory factor for 3.2% of the drivers involved. In 2015, five truck tractor drivers were reported by police as having consumed alcohol. 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.

Table 7.11**Vehicle Factors of Truck Tractors Involved in Casualty Collisions*****2015**

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	431	97.7	99.0
Defective Brakes	5	1.1	0.3
Improper Load/Shift	3	0.7	0.0
Lighting Defect	1	0.2	0.1
Tires Failed	--	--	0.2
Other	1	0.2	0.4
Total Number of Truck Tractors	441	100.0	

Observations

Vehicle factors were identified for 2.3% 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.

Table 7.12**Casualty Collisions Involving Truck Tractors:****Month of Occurrence****2015**

Month	N	%
January	60	13.1
February	41	9.0
March	31	6.8
April	26	5.7
May	23	5.0
June	33	7.2
July	47	10.3
August	48	10.5
September	25	5.5
October	43	9.4
November	36	7.9
December	43	9.4
Unspecified	1	0.2
Total Number of Collisions	457	100.0

Observations

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

Special Types of Vehicles

Trains

- In 2015, four people were killed and 14 people were injured in crashes in which a train was involved. The number of casualties involving trains remained the same from 2014.
- The largest number of casualty collisions involving trains occurred in the month of November.
- The majority (93.3%) of drivers involved in casualty collisions with a train made an improper driving action.

Table 7.13**Trains Involved in Casualty Collisions****2011 – 2015**

Number of Trains	2015	2014	2013	2012	2011
Fatal	4	2	4	1	3
Non-Fatal Injury	12	14	16	16	19
Total Number of Trains Involved in Casualty Collisions	16	16	20	17	22
Casualties*					
Number Killed	4	2	4	1	3
Number Injured	14	16	20	20	27
Total Casualties in Collisions Involving Trains	18	18	24	21	30

Observations

The number of trains involved in casualty collisions remained the same compared to 2014. The number of casualties resulting from these collisions also remained the same.

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

Table 7.14**Casualty Collisions Involving Trains:****Month of Occurrence****2015**

Month	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
January	--	--	--	--	--	--
February	--	--	2	16.7	2	12.5
March	--	--	--	--	--	--
April	1	25.0	--	--	1	6.3
May	--	--	2	16.7	2	12.5
June	--	--	--	--	--	--
July	1	25.0	--	--	1	6.3
August	--	--	2	16.7	2	12.5
September	--	--	2	16.7	2	12.5
October	1	25.0	1	8.3	2	12.5
November	--	--	3	25.0	3	18.8
December	1	25.0	--	--	1	6.3
Total Number of Collisions	4	100.0	12	100.0	16	100.0

Observations

The largest number of casualty collisions involving trains occurred in the month of November.

Table 7.15**Actions of Drivers Involved in Casualty Collisions with Trains*****2015**

Driver Actions	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Driving Properly	--	--	1	9.1	1	6.7
Disobey Traffic Signal	3	75.0	5	45.5	8	53.3
Stop Sign Violation	1	25.0	2	18.2	3	20.0
Failed to Yield Right of Way - Uncontrolled Intersection	--	--	2	18.2	2	13.3
Improper Turn	--	--	1	9.1	1	6.7
Total Number of Drivers	4	100.0	11	100.0	15	100.0

Observations

The majority (93.3%) of 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. July experienced the least number of pedestrian crashes.
- Pedestrian casualty collisions were most likely to occur on Tuesday 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.).
- 50.2% 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 population was highest for pedestrians between the ages of 15 and 19.
- Of pedestrians involved in injury collisions, 10.2% had consumed alcohol before the collision, compared to 21.7% involved in fatal collisions.
- Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for pedestrians 20 - 24 years of age.

Table 8.1**Casualty Collisions Involving Pedestrians:****Month of Occurrence****2015**

Month of Collision	N	%
January	105	8.8
February	91	7.7
March	107	9.0
April	81	6.8
May	93	7.8
June	87	7.3
July	79	6.6
August	80	6.7
September	107	9.0
October	126	10.6
November	122	10.3
December	111	9.3
Total Number of Collisions	1189	100.0

Observations

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

Table 8.2**Casualty Collisions Involving Pedestrians:****Day of Week****2015**

Day of Week	N	%
Monday	181	15.2
Tuesday	191	16.1
Wednesday	185	15.6
Thursday	187	15.7
Friday	185	15.6
Saturday	139	11.7
Sunday	121	10.2
Total Number of Collisions	1189	100.0

Observations

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

Table 8.3**Casualty Collisions Involving Pedestrians:****Time Period****2015**

Time Period	N	%
11:00 p.m. - 2:59 a.m.	86	7.2
3:00 a.m. - 6:59 a.m.	52	4.4
7:00 a.m. - 10:59 a.m.	223	18.8
11:00 a.m. - 2:59 p.m.	258	21.7
3:00 p.m. - 6:59 p.m.	348	29.3
7:00 p.m. - 10:59 p.m.	216	18.2
Unspecified	6	0.5
Total Number of Collisions	1189	100.0

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.).

Table 8.4**Casualty Collisions Involving Pedestrians:****Location****2015**

Location	N	%
Urban	1146	96.4
Rural	43	3.6
Total Number of Collisions	1189	100.0

Observations

The majority of pedestrian casualty collisions (96.4%) occurred in urban areas. Only 3.6% occurred in rural areas.

Table 8.5**Actions of Drivers Involved in Casualty Collisions with Pedestrians*****2015**

Driver Actions	N	%
Driving Properly	306	28.9
Failed to Yield Right of Way To Pedestrian	531	50.2
Backed Unsafely	96	9.1
Improper Turn	29	2.7
Ran Off Road	16	1.5
Failed to Yield Right of Way - Uncontrolled Intersection	16	1.5
Followed Too Closely	12	1.1
Left Turn Across Path	11	1.0
Stop Sign Violation	11	1.0
Disobey Traffic Signal	11	1.0
Yield Sign Violation	5	0.5
Left of Centre	3	0.3
Improper Passing	3	0.3
Improper Lane Change	2	0.2
Other	6	0.6
Total Number of Drivers	1058	100.0

Observations

28.9% of the drivers involved in pedestrian casualty crashes were recorded as driving properly. However, 50.2% 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.

Table 8.6**Age of Pedestrian Casualties****2015**

Age in Years	Pedestrians	Pedestrians	Total Pedestrian		Pedestrian Casualty Rate Per 10,000 Population*
	Killed N	Injured N	N	%	
Under 5	--	20	20	1.6	0.7
5 - 9	1	53	54	4.4	2.1
10 - 14	1	75	76	6.2	3.3
15 - 19	2	123	125	10.1	5.1
20 - 24	1	122	123	10.0	4.2
25 - 29	2	122	124	10.0	3.6
30 - 34	2	94	96	7.8	2.6
35 - 44	9	150	159	12.9	2.6
45 - 54	5	142	147	11.9	2.6
55 - 64	5	125	130	10.5	2.6
65 and over	8	128	136	11.0	2.8
Unspecified	--	44	44	3.6	
Total Number of Pedestrian Casualties	36	1198	1234	100.0	

Observations

The casualty rate per 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.

*Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2015, Statistics Canada

Figure 7

Pedestrian Casualties
Alberta 2015

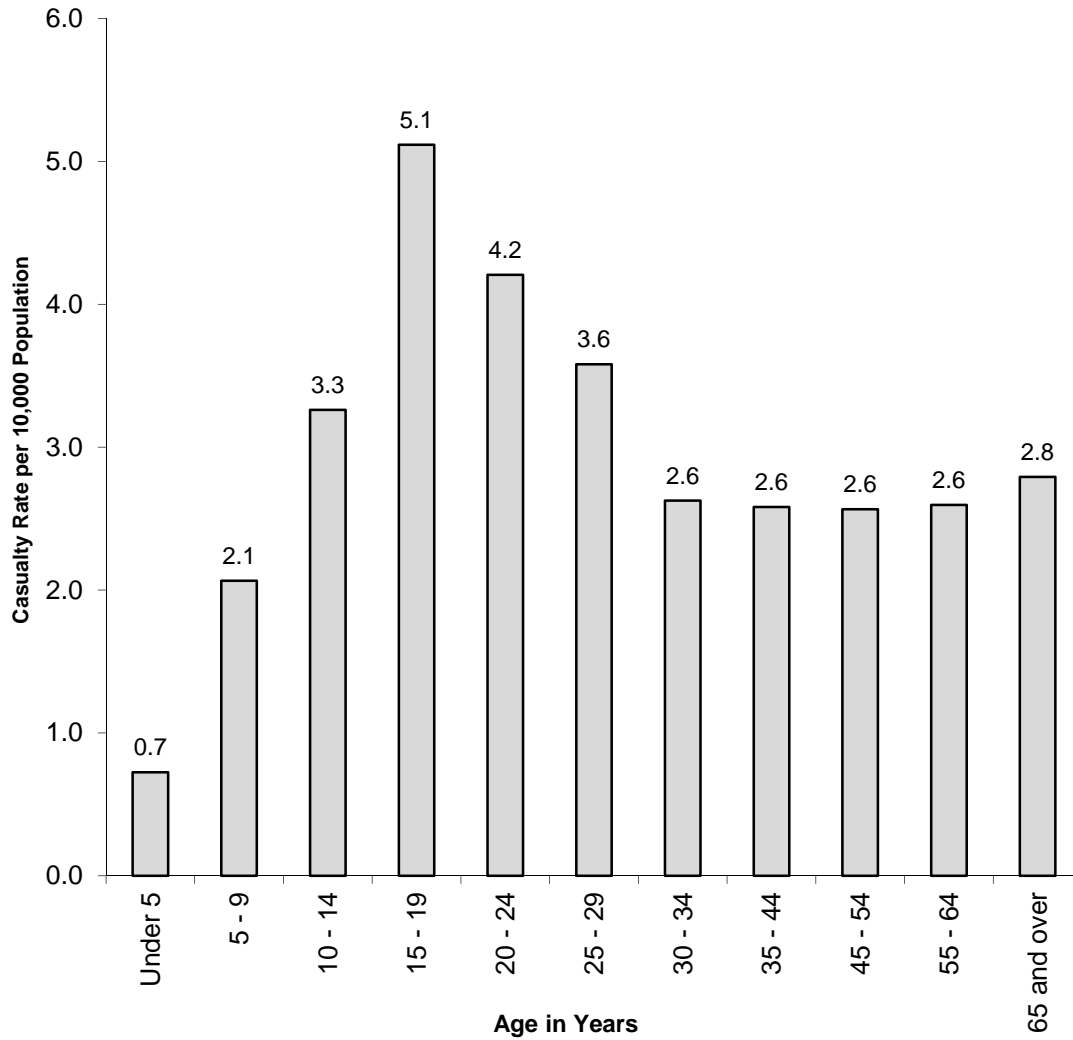


Table 8.7**Condition of Pedestrians Involved in Casualty Collisions*****2015**

Condition of Pedestrian	Pedestrians in Fatal Collisions		Pedestrians in Non-Fatal Injury Collisions		Total Pedestrians in Casualty Collisions	
	N	%	N	%	N	%
Normal	17	73.9	944	88.5	961	88.2
Had Been Drinking	2	8.7	42	3.9	44	4.0
Alcohol Impaired	3	13.0	67	6.3	70	6.4
Total Alcohol Involvement	5	21.7	109	10.2	114	10.5
Impaired by Drugs	--	--	7	0.7	7	0.6
Fatigued/Asleep	--	--	1	0.1	1	0.1
Other	1	4.3	6	0.6	7	0.6
Total Number of Pedestrians	23	100.0	1067	100.0	1090	100.0

Observations

Of pedestrians involved in injury collisions, 10.2% had consumed alcohol before the collision, compared to 21.7% involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol increased.

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

Table 8.8**Age of Drinking Pedestrians Involved in Casualty Collisions*****2015**

Age in Years	N	%	Rate per 10,000 Population**
Under 10	--	--	--
10 - 14	1	0.9	0.0
15 - 19	3	2.6	0.1
20 - 24	18	15.8	0.6
25 - 29	15	13.2	0.4
30 - 34	15	13.2	0.4
35 - 44	20	17.5	0.3
45 - 54	26	22.8	0.5
55 - 64	8	7.0	0.2
65 and over	4	3.5	0.1
Unspecified	4	3.5	
Total Number of Pedestrian Casualties	114	100.0	

Observations

Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for pedestrians 20 - 24 years of age.

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

**Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2015, Statistics Canada.

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 (38.1%) occurred during the evening rush-hour period.
- Young bicyclists aged 15 to 19 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.
- 5.2% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1**Casualty Collisions Involving Bicycles:****Month of Occurrence****2015**

Month of Collision	N	%
January	7	1.3
February	8	1.5
March	15	2.8
April	44	8.3
May	54	10.1
June	87	16.3
July	91	17.1
August	80	15.0
September	76	14.3
October	46	8.6
November	17	3.2
December	8	1.5
Total Number of Collisions	533	100.0

Observations

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

Table 9.2**Casualty Collisions Involving Bicycles:****Day of Week****2015**

Day of Week	N	%
Monday	65	12.2
Tuesday	91	17.1
Wednesday	97	18.2
Thursday	94	17.6
Friday	90	16.9
Saturday	58	10.9
Sunday	38	7.1
Total Number of Collisions	533	100.0

Observations

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

Table 9.3**Casualty Collisions Involving Bicycles:****Time Period****2015**

Time Period	N	%
11:00 p.m. - 2:59 a.m.	17	3.2
3:00 a.m. - 6:59 a.m.	22	4.1
7:00 a.m. - 10:59 a.m.	103	19.3
11:00 a.m. - 2:59 p.m.	92	17.3
3:00 p.m. - 6:59 p.m.	203	38.1
7:00 p.m. - 10:59 p.m.	90	16.9
Unspecified	6	1.1
Total Number of Collisions	533	100.0

Observations

The largest proportion of casualty crashes (38.1%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

Table 9.4**Age of Bicyclist Casualties****2015**

Age in Years	Persons Killed		Persons Injured		Total Bicyclist Casualties		Casualty Rate Per 10,000 Population*
	N	%	N	%	N	%	
Under 5	--	--	3	0.6	3	0.6	0.1
5 - 9	--	--	26	4.9	26	4.8	1.0
10 - 14	--	--	59	11.0	59	11.0	2.5
15 - 19	--	--	75	14.0	75	14.0	3.1
20 - 24	1	33.3	57	10.7	58	10.8	2.0
25 - 29	--	--	49	9.2	49	9.1	1.4
30 - 34	--	--	36	6.7	36	6.7	1.0
35 - 44	1	33.3	72	13.5	73	13.6	1.2
45 - 54	1	33.3	77	14.4	78	14.5	1.4
55 - 64	--	--	43	8.1	43	8.0	0.9
65 and over	--	--	10	1.9	10	1.9	0.2
Unspecified	--	--	27	5.1	27	5.0	
Total Casualties	3	100.0	534	100.0	537	100.0	

Observations

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 19. The lowest casualty rates were recorded for children under 5 years of age and adults aged 65 and older.

*Based on estimates of the Alberta population by age groups and sex, July 1, 2015, Statistics Canada

Table 9.5**Improper Actions of Bicyclists Involved in Casualty Collisions****2015**

Improper Actions of Bicyclists	N	%	Driver Actions in
			Total Casualty Collisions (All Vehicle Types)
			%
Disobey Traffic Signal	44	23.4	6.7
Failed to Yield Right of Way - Uncontrolled Intersection	26	13.8	2.1
Stop Sign Violation	23	12.2	8.3
Followed Too Closely	7	3.7	31.2
Backed Unsafely	5	2.7	2.5
Improper Lane Change	5	2.7	3.2
Left Turn Across Path	5	2.7	11.3
Improper Turn	4	2.1	3.4
Left of Centre	4	2.1	2.9
Improper Passing	4	2.1	1.0
Failed to Yield Right of Way to Pedestrian	3	1.6	5.4
Yield Sign Violation	3	1.6	1.7
Ran Off Road	2	1.1	18.4
Other	53	28.2	2.0
Total Number of Bicyclists	188	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 381 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 193 were indicated as driving properly at the time of the collision.

Table 9.6**Condition of Bicyclists Involved in Casualty Collisions*****2015**

Condition of Bicyclist	N	%
Normal	449	93.7
Had Been Drinking	17	3.5
Alcohol Impaired	8	1.7
Total Alcohol Involvement	25	5.2
Impaired by Drugs	2	0.4
Fatigued/Asleep	1	0.2
Other	2	0.4
Total Number of Bicyclists	479	100.0

Observations

5.2% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

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

Traffic Safety Issues

Alcohol Involvement

- A total of 3.1% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 19.8% of drivers involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased.
- In terms of involvement per 1,000 licenced drivers, males between 18 and 21 years of age were most likely to have been drinking before the crash. There were over four times as many male drivers as female drivers who had consumed alcohol prior to the collision.
- In 2015, alcohol related casualty crashes were most likely to have occurred in May, on Saturday, and between 11:00 p.m. and 2:59 a.m.
- Figure 8 provides a graphic representation of the involvement of drinking drivers in casualty collisions over the past five years, 2011 - 2015.

Table 10.1**Condition of Drivers in Casualty Collisions*****2015**

Condition of Driver	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Normal	273	76.0	19812	94.7	20085	94.4
Had Been Drinking	34	9.5	279	1.3	313	1.5
Alcohol Impaired	37	10.3	370	1.8	407	1.9
Total Alcohol Involvement	71	19.8	649	3.1	720	3.4
Impaired by Drugs	6	1.7	52	0.2	58	0.3
Fatigued/Asleep	7	1.9	186	0.9	193	0.9
Other	2	0.6	226	1.1	228	1.1
Total Number of Drivers	359	100.0	20925	100.0	21284	100.0

Observations

Of drivers involved in injury collisions, 3.1% had consumed alcohol before the crash, compared to 19.8% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 3.4% of drivers involved in casualty collisions were judged to have consumed alcohol before the crash.

*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).

Figure 8

Involvement of Drinking Drivers in Casualty Collisions
 Alberta 2011 - 2015

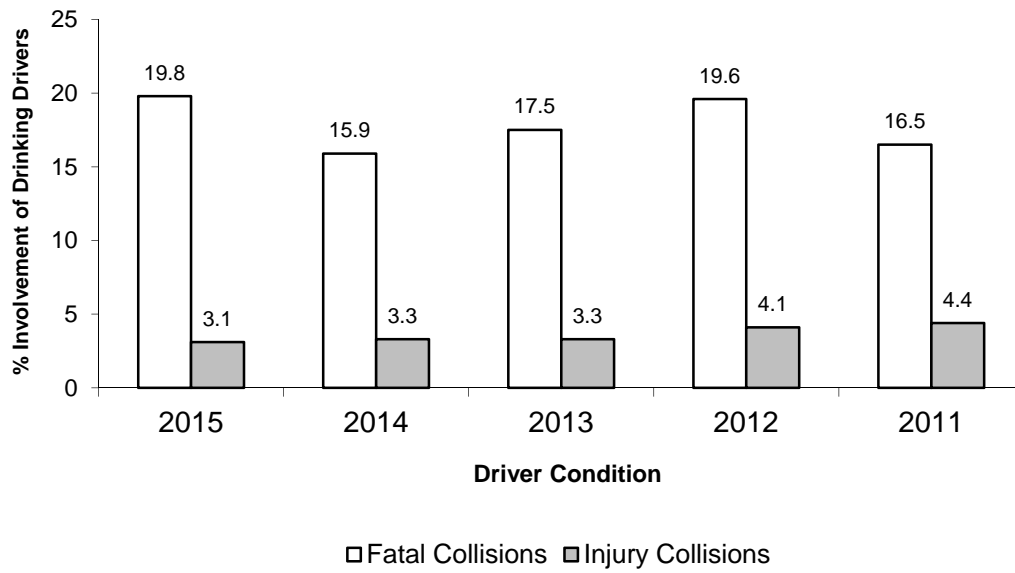


Figure 9

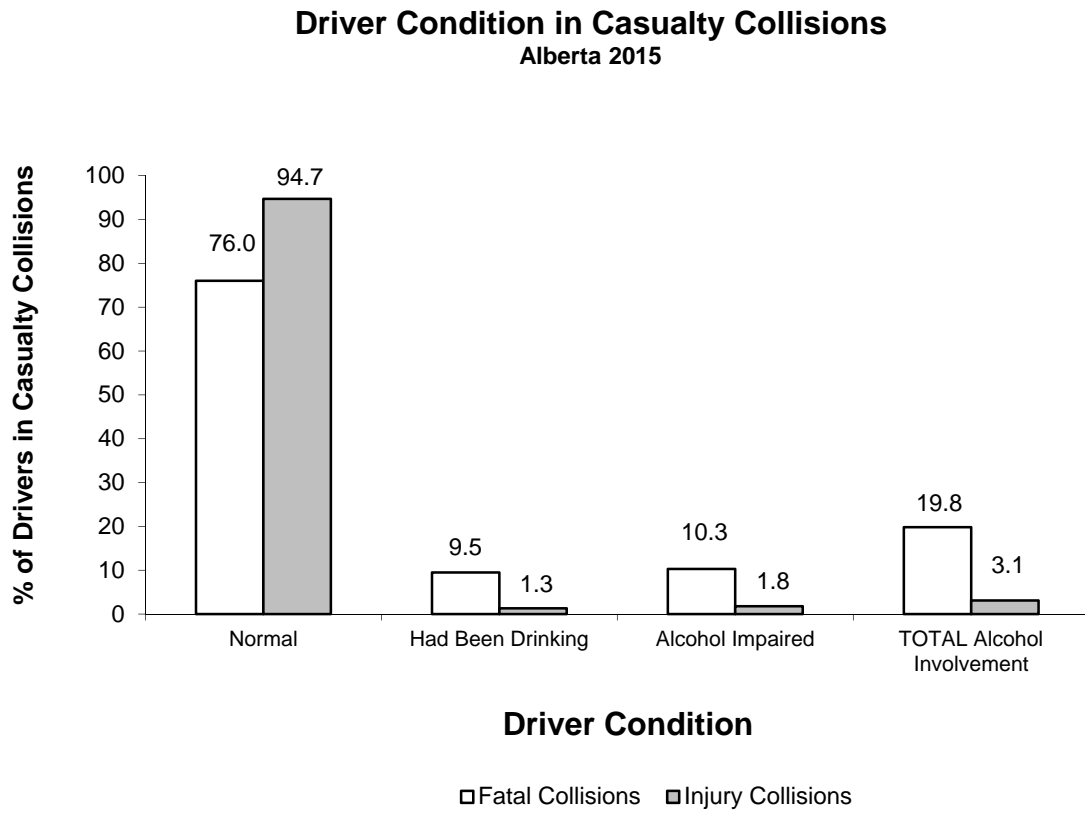


Table 10.2**Age and Sex of Drinking Drivers in Casualty Collisions*****2015**

Age in Years	Male		Rate Per 1,000** Licensed Drivers	Female		Rate Per 1,000** Licensed Drivers	Total*		Rate Per 1,000** Licensed Drivers
	N	%		N	%		N	%	
Under 16	2	0.3	0.1	2	0.3	0.1	4	0.6	0.1
16 - 17	9	1.3	0.3	3	0.4	0.1	12	1.7	0.2
18 - 19	46	6.4	1.1	6	0.8	0.2	52	7.2	0.7
20 - 21	53	7.4	1.1	10	1.4	0.2	63	8.8	0.7
22 - 24	66	9.2	0.8	10	1.4	0.1	76	10.6	0.5
25 - 29	94	13.1	0.5	25	3.5	0.2	119	16.5	0.4
30 - 34	79	11.0	0.4	17	2.4	0.1	96	13.3	0.3
35 - 44	99	13.8	0.3	21	2.9	0.1	120	16.7	0.2
45 - 54	69	9.6	0.2	23	3.2	0.1	92	12.8	0.2
55 - 64	47	6.5	0.2	8	1.1	0.0	55	7.6	0.1
65 and over	11	1.5	0.1	5	0.7	0.0	16	2.2	0.0
Unspecified	4	0.6		1	0.1		15	2.1	
Total Drivers	579	80.4		131	18.2		720	100.0	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over four times as many male drivers as female drivers. In terms of involvement per 1,000 licenced drivers, males 18 - 21 years of age were more likely to have consumed alcohol prior to a casualty collision than any other age group.

Drinking drivers include those indicated on the collision report form as having been drinking prior to the crash and those who were alcohol-impaired at the time of the crash. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

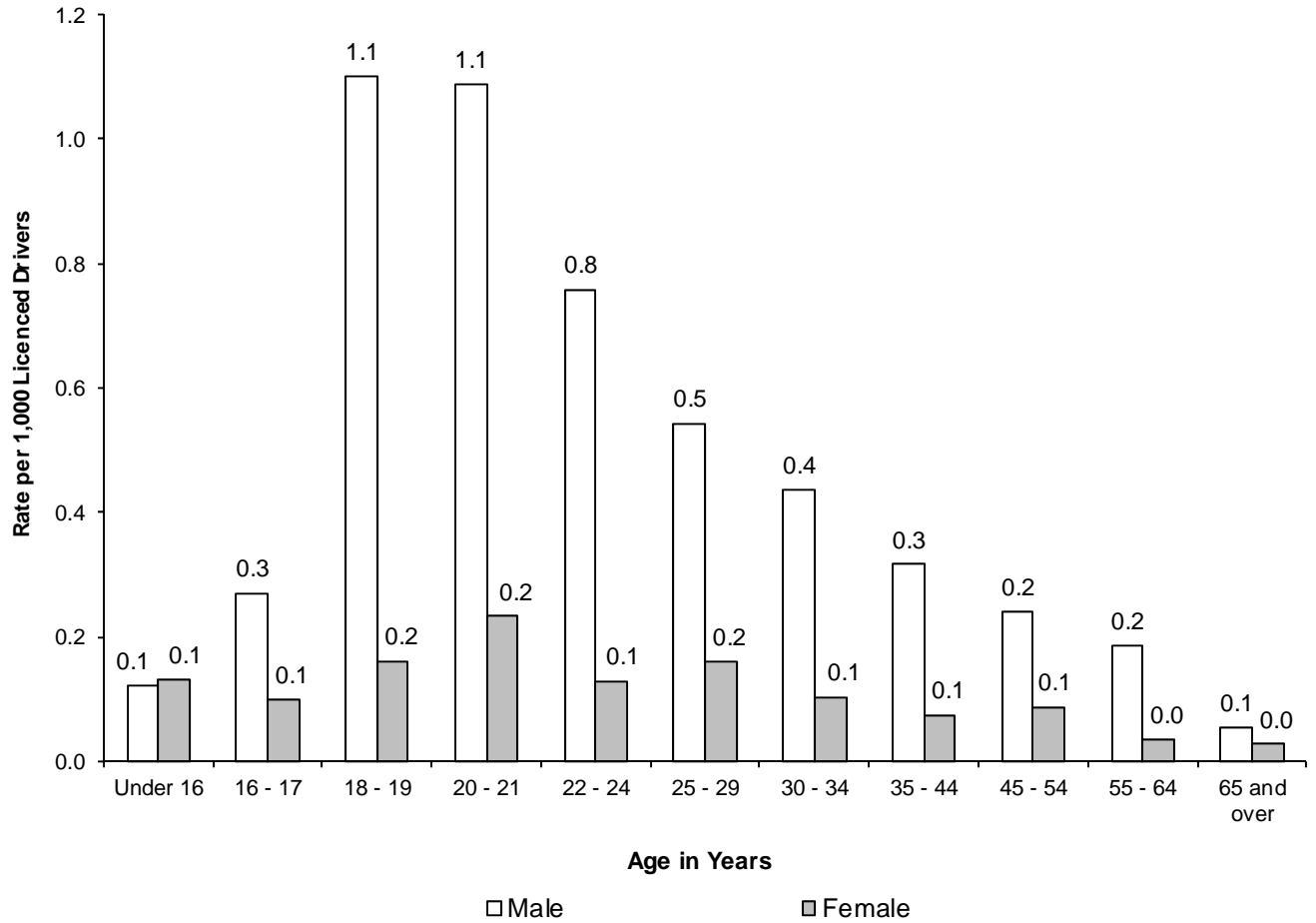
*Includes only drivers whose age and/or sex was specified on the collision report form. Total includes drinking drivers whose sex was not specified on the collision report form.

**Source: Licenced Drivers – Service Alberta – Registries Services, as of December 31, 2015.

Figure 10

Drinking Drivers Involved in Casualty Collisions

Alberta 2015



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

Table 10.3**Alcohol-Involved Casualty Collisions:****Month of Occurrence****2015**

Month	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
January	3	4.2	42	6.5	45	6.3
February	1	1.4	35	5.4	36	5.0
March	4	5.6	46	7.1	50	7.0
April	8	11.3	67	10.4	75	10.5
May	6	8.5	76	11.8	82	11.5
June	7	9.9	55	8.5	62	8.7
July	12	16.9	58	9.0	70	9.8
August	7	9.9	66	10.2	73	10.2
September	7	9.9	46	7.1	53	7.4
October	7	9.9	69	10.7	76	10.6
November	6	8.5	49	7.6	55	7.7
December	3	4.2	35	5.4	38	5.3
Unspecified	--	--	1	0.2	1	0.1
Total Number of Collisions	71	100.0	645	100.0	716	100.0

Observations

The month of May accounted for the largest proportion of alcohol-involved casualty collisions. The month of February accounted for the smallest proportion of alcohol-involved casualty collisions.

Table 10.4**Alcohol-Involved Casualty Collisions:****Day of Week****2015**

Day of Week	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Monday	5	7.0	87	13.5	92	12.8
Tuesday	8	11.3	81	12.6	89	12.4
Wednesday	11	15.5	63	9.8	74	10.3
Thursday	7	9.9	66	10.2	73	10.2
Friday	6	8.5	91	14.1	97	13.5
Saturday	17	23.9	145	22.5	162	22.6
Sunday	17	23.9	111	17.2	128	17.9
Unspecified	--	--	1	0.2	1	0.1
Total Number of Collisions	71	100.0	645	100.0	716	100.0

Observations

The highest number of alcohol-involved fatal collisions occurred on Saturday and Sunday (23.9%). The highest number of non-fatal injury collisions occurred on Saturday (22.5%). The smallest number of alcohol-involved casualty collisions occurred on Thursday (10.2%).

Table 10.5**Alcohol-Involved Casualty Collisions:****Time Period****2015**

Time Period	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
11:00 p.m. - 2:59 a.m.	19	26.8	193	29.9	212	29.6
3:00 a.m. - 6:59 a.m.	8	11.3	73	11.3	81	11.3
7:00 a.m. - 10:59 a.m.	5	7.0	38	5.9	43	6.0
11:00 a.m. - 2:59 p.m.	8	11.3	45	7.0	53	7.4
3:00 p.m. - 6:59 p.m.	12	16.9	127	19.7	139	19.4
7:00 p.m. - 10:59 p.m.	19	26.8	161	25.0	180	25.1
Unspecified	--	--	8	1.2	8	1.1
Total Number of Collisions	71	100.0	645	100.0	716	100.0

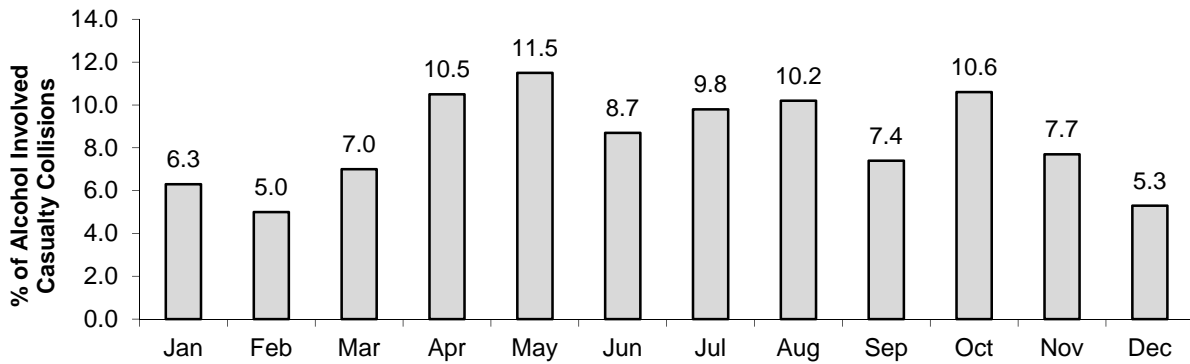
Observations

The late night/early morning time period (11:00 p.m. – 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (29.6%). The morning hours (7:00 a.m. – 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (6.0%).

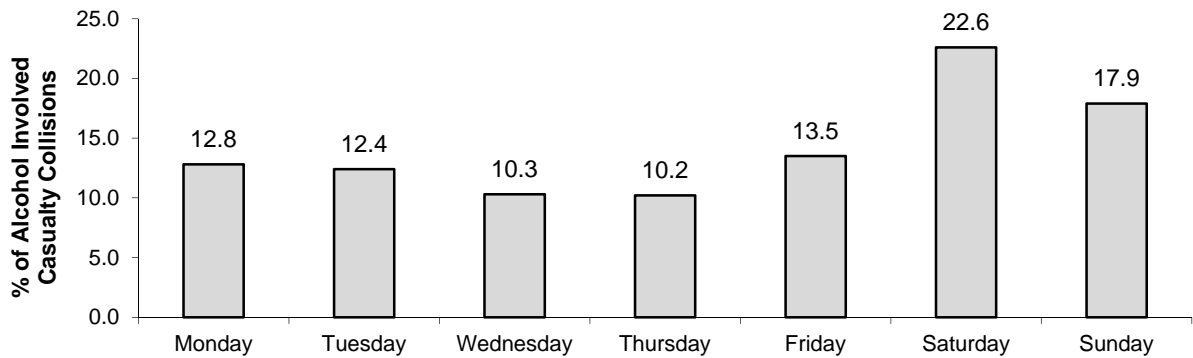
Figure 11

Alcohol-Involved Casualty Collisions Alberta 2015

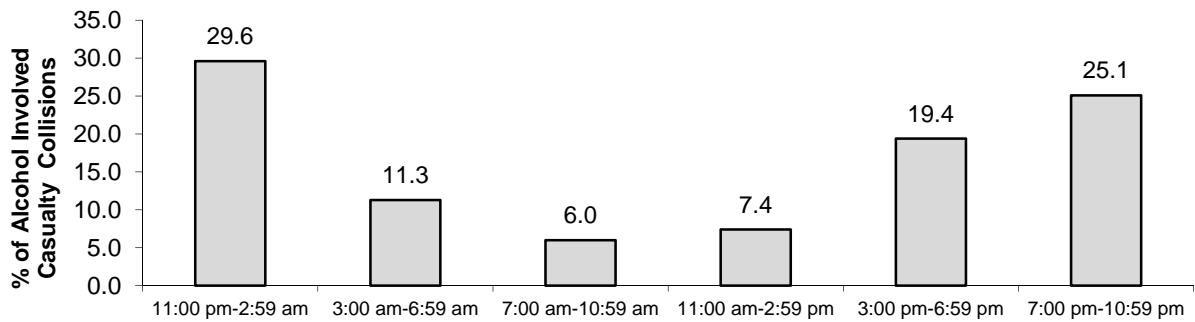
By Month of Occurrence



By Day of Week



By Time Period



Traffic Safety Issues

Restraint Use

- Collision-involved restraint users had a much lower injury rate (6.8%) than those not using restraints (22.4%).
- Occupants using a restraint reduce the likelihood of sustaining an injury and the severity of injury decreases.

Table 10.6**Restraint Use of Vehicle Occupants
and Injury Severity* (Use versus Non-Use)****2015**

Injury Severity of Occupants	Percentage of Occupants Using Restraints %	Percentage of Occupants Not Using Restraints %
Fatal Injury	0.1	3.5
Major Injury	0.9	7.9
Minor Injury	5.9	11.0
Total Occupants Sustaining Injuries	6.8	22.4
No Apparent Injury	93.2	77.6
Total Occupants	100.0	100.0

Observations

Collision involved restraint users had a much lower injury rate (6.8%) than those not using restraints (22.4%). 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.