Alberta

Traffic Collision Statistics

2013

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2013 Overview

- The number of **traffic fatalities increased 3.8%** over the past year from 345 fatalities in 2012 to 358 in 2013.
- The number of **traffic injuries increased 2.4%** over the past year from 18220 injuries in 2012 to 18650 in 2013.
- The number of **traffic collisions increased 3.7%** over the past year from 136595 collisions in 2012 to 141638 in 2013.
- **The highest number of fatal collisions** occurred in **September. The highest number of injury collisions** occurred in **November**.
- **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**.
- **28.3% of pedestrians** involved in **fatal collisions had consumed alcohol** prior to the collision compared to **11.2% of pedestrians in injury collisions**.
- **17.5% of drivers** involved in **fatal collisions had consumed alcohol** prior to the crash compared to **3.3% of drivers in injury collisions**.
- **Collision-involved restraint users had a much lower injury rate** (7.4%) than those not using restraints (28.1%)

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 2013. 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 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.

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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.

2013 Traffic Collision Summary

Introduction

During 2013, 141638 collisions were recorded on Alberta roadways. Property damage collisions (over $2000) represented 89.8% (127234) of this total while 9.9% (14073) were non-fatal injury collisions. Fatal collisions accounted for 0.2% (331) of the total reported collisions.

Five-Year Trends

In terms of population and licenced drivers, the fatal collision rate is unchanged from 2012, but increased for registered vehicles. The fatality rates are unchanged in terms of population, licenced drivers, and registered vehicles.

The non-fatal injury collision and injury rates decreased in 2013 in terms of population, licenced drivers and registered vehicles.

Property damage collision rates are unchanged from 2012 to 2013 in terms of population, but increased for 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, nine provinces and territories had a higher fatality rate than Alberta in 2011. With regard to injury rates, in 2011, 11 jurisdictions had a higher injury rate than Alberta.

Table 1.1

Alberta Traffic Collisions

2009 – 2013

Severity of Collisions	**2013**	**2012**	**2011**	**2010**	**2009**
Fatal Collisions	331	307	285	307	302
Non-Fatal Injury Collisions	14073	13822	13909	13552	14246
Property Damage Collisions	127234	122466	124985	137430	142678
Total Reportable Collisions	**141638**	**136595**	**139179**	**151289**	**157226**
Number Killed	358	345	313	344	351
Number Injured	18650	18220	18584	18253	19167
Total Number of Casualties	**19008**	**18565**	**18897**	**18597**	**19518**

Observations

In 2013, the overall number of collisions increased 3.7% when compared to 2012. In 2013, injury collisions increased by 1.8% and fatal crashes increased by 7.8%. The number of fatalities increased by 3.8% from 2012 to 2013 and the number of injuries increased by 2.4%. In terms of the past five years, overall collisions were lowest in 2012 and highest in 2009.

Note: On January 1, 2011, the reporting threshold for property damage only collisions increased from $1000 to $2000.

Table 1.2

Traffic Collision Rates

2009 – 2013

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licenced Drivers					Rate Per 10,000 Registered Vehicles				
	2013	**2012**	**2011**	**2010**	**2009**	**2013**	**2012**	**2011**	**2010**	**2009**	**2013**	**2012**	**2011**	**2010**	**2009**
Fatal Collisions	0.8	0.8	0.8	0.8	0.8	1.1	1.1	1.0	1.1	1.1	1.0	0.9	0.9	1.0	1.0
Number Killed	0.9	0.9	0.8	0.9	1.0	1.2	1.2	1.1	1.2	1.3	1.0	1.0	1.0	1.1	1.1
Non-Fatal Injury Collisions	35.0	35.7	36.8	36.4	38.6	47.4	47.9	49.2	48.7	52.2	40.5	41.3	43.2	43.3	46.5
Number Injured	46.3	47.0	49.2	49.1	52.0	62.8	63.1	65.8	65.6	70.2	53.6	54.4	57.7	58.3	62.6
Property Damage Collisions	316.1	316.1	330.7	369.3	386.9	428.7	424.1	442.3	493.8	522.3	366.0	365.8	388.0	438.9	466.1
Total Reportable Collisions	**351.9**	**352.6**	**368.3**	**406.6**	**426.4**	**477.2**	**473.0**	**492.6**	**543.6**	**575.6**	**407.4**	**408.0**	**432.1**	**483.2**	**513.6**

Observations

In terms of population and licenced drivers, the fatal collision rate is unchanged from 2012 to 2013, but increased for registered vehicles. The fatality rates are unchanged 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.

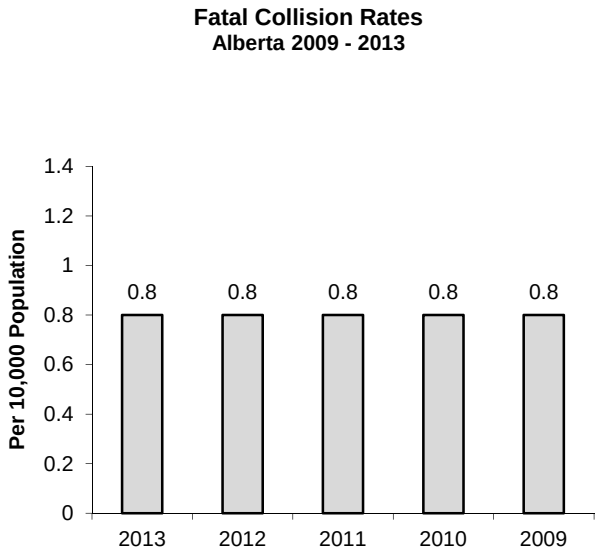
Property damage collision rates are unchanged from 2012 to 2013 in terms of population, but increased for licenced drivers and registered vehicles.

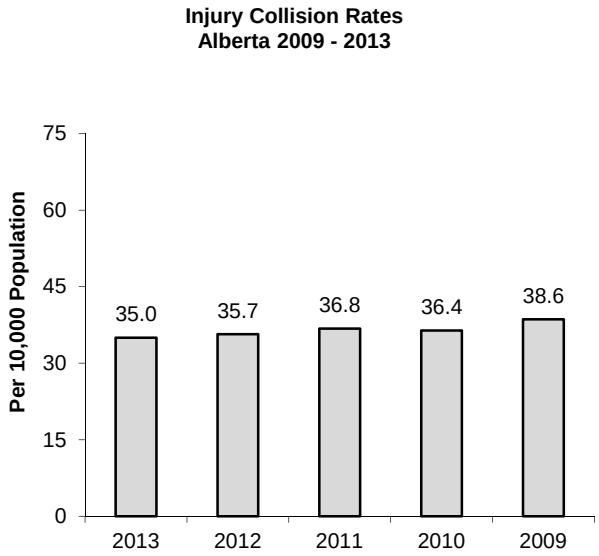
Note: On January 1, 2011, the reporting threshold for property damage only collisions increased from $1000 to $2000.

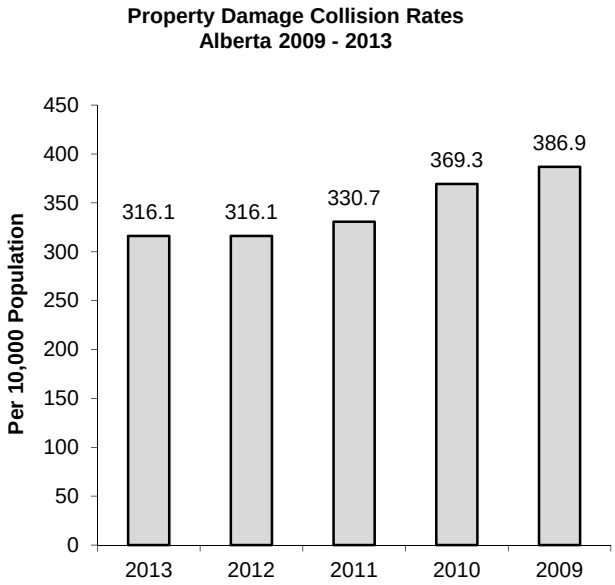
*In 2009, Statistics Canada updated the Alberta population estimates for 2004 - 2009 to align with the 2006 Standard Geographical Classification (SGC). As a result, collision rates for 2009 in this report are based on the updated population estimates and may differ from previous publications in this series.

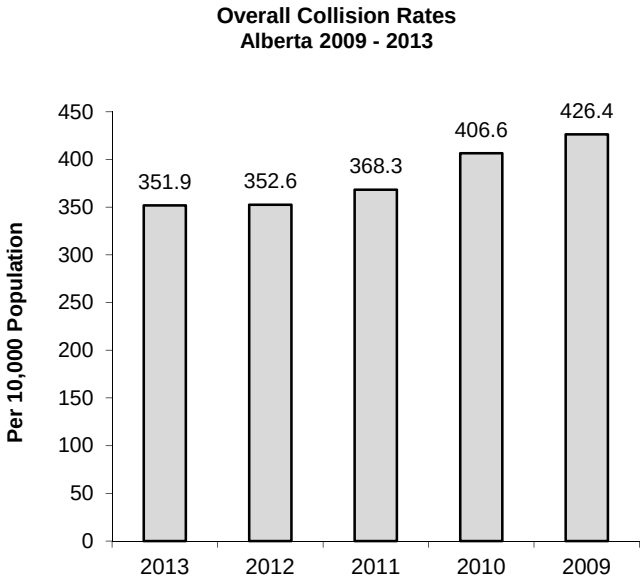
Sources:
Population – Statistics Canada as of July 1, 2013
Licenced Drivers – Service Alberta – Registries Services, as of December 31, 2013
Registered Vehicles – Service Alberta – Registries Services, as of December 31, 2013

Figure 1









Note: On January 1, 2011, the reporting threshold for property damage only collisions increased from $1000 to $2000.

Note: In 2009, Statistics Canada updated the Alberta population estimates for 2004 - 2009 to align with the 2006 Standard Geographical Classification (SGC). As a result, collision rates for 2009 in this report are based on the updated population estimates and may differ from previous publications in this series.

Table 1.3

Provincial Comparison of Casualty Rates
Per Billion Vehicle Kilometres Travelled

2007 – 2011

	Fatalities					Injuries				
	2011	**2010**	**2009**	**2008**	**2007**	**2011**	**2010**	**2009**	**2008**	**2007**
Canada	5.8	6.6	6.6	7.4	8.3	485.0	504.1	518.7	549.2	584.4
Alberta	5.7	6.6	7.1	8.6	9.6	338.7	349.5	385.6	464.2	513.2
British Columbia	8.0	10.1	10.5	9.9	11.6	536.1	579.3	562.6	613.1	725.5
Saskatchewan	11.2	12.8	11.8	12.2	10.6	512.6	499.5	526.0	541.0	509.0
Manitoba	8.9	7.2	7.3	8.1	7.9	662.6	583.9	615.9	689.1	617.1
Ontario	3.7	4.5	4.2	5.0	6.2	479.8	498.3	490.7	479.9	534.8
Quebec	6.6	6.6	7.1	8.1	8.8	565.6	594.2	592.2	632.1	678.6
New Brunswick	7.6	11.5	8.3	9.6	11.0	344.3	425.9	480.7	482.2	459.5
Nova Scotia	6.2	6.9	7.2	8.6	9.3	480.1	476.9	751.5	743.6	577.9
Prince Edward Island	13.4	6.9	9.4	14.9	5.6	503.6	493.7	596.2	496.5	565.6
Newfoundland	5.5	5.8	6.9	8.0	9.4	407.5	426.2	508.9	385.9	519.0
Yukon	17.9	7.9	13.7	15.4	10.3	383.0	433.9	341.1	461.4	427.0
Northwest Territories	0.0	9.4	15.9	11.8	13.9	332.5	353.6	419.8	408.8	435.0
Nunavut	83.5	60.2	65.1	132.5	0.0	1197.0	1234.6	1368.1	1357.6	461.5

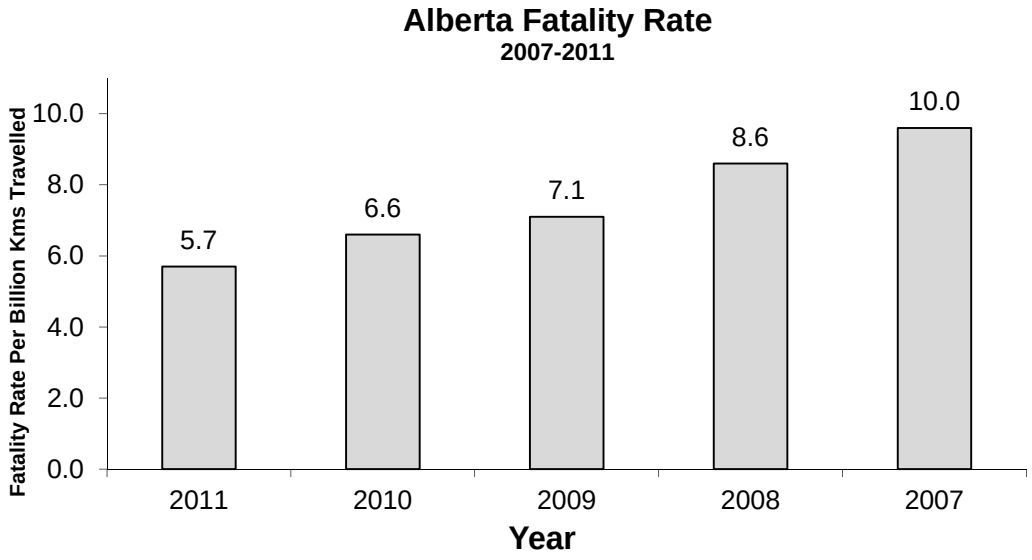
Observations

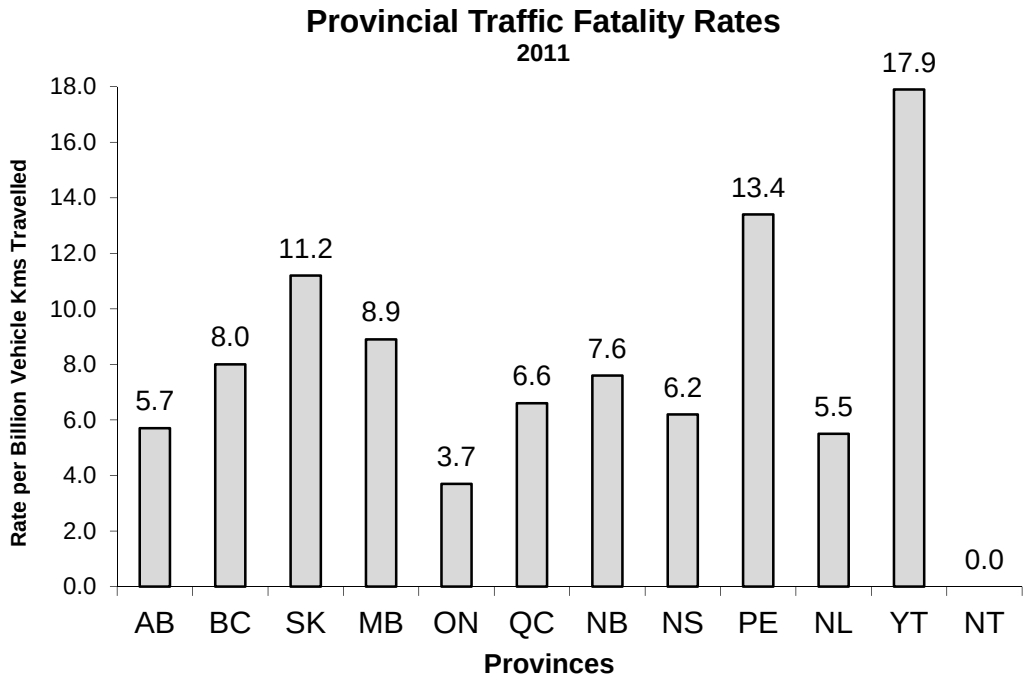
Based on the most recent information from Transport Canada, from 2010 to 2011, Alberta's fatality rate per billion vehicle kilometers travelled decreased from 6.6 to 5.7. During the same period, the injury rate per billion vehicle kilometers travelled decreased from 349.5 to 338.7. Over the five years, since 2007, rates have declined by 3.9 fatalities and 174.5 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 2011 were estimated using average annual growth rates for the years 2005-2009. Data for Ontario are preliminary.

The 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

September experienced more fatal collisions than other months. The highest number of injury and property damage collisions were recorded during the months of November and December, 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 Victoria Day Long Weekend recorded the highest number of fatalities while the Labour Day Long Weekend recorded the highest number of injuries. The Remembrance Day Long Weekend recorded the highest total number of collisions.

Table 2.1

Collision Occurrence by Month

2013

Month	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	22	6.6	1273	9.0	12300	9.7	13595	9.6
February	23	6.9	994	7.1	8877	7.0	9894	7.0
March	13	3.9	1067	7.6	11121	8.7	12201	8.6
April	17	5.1	842	6.0	8747	6.9	9606	6.8
May	40	12.1	1125	8.0	9027	7.1	10192	7.2
June	33	10.0	1134	8.1	9170	7.2	10337	7.3
July	35	10.6	1217	8.6	9233	7.3	10485	7.4
August	28	8.5	1268	9.0	8830	6.9	10126	7.1
September	48	14.5	1286	9.1	9483	7.5	10817	7.6
October	29	8.8	1269	9.0	10652	8.4	11950	8.4
November	23	6.9	1333	9.5	14123	11.1	15479	10.9
December	20	6.0	1263	9.0	15656	12.3	16939	12.0
Unspecified	--	--	2	0.0	15	0.0	17	0.0
Total Number of Collisions	**331**	**100.0**	**14073**	**100.0**	**127234**	**100.0**	**141638**	**100.0**

Observations

The month of September experienced more fatal crashes than any other month. The highest number of reported injury collisions were in November. December reported more property damage collisions than any other month.

Table 2.2

Collision Occurrence by Day of Week

2013

Day of Week	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Property Damage Collisions N	Property Damage Collisions %	Total Collisions N	Total Collisions %
Monday	51	15.4	2057	14.6	18184	14.3	20292	14.3
Tuesday	40	12.1	2087	14.8	18420	14.5	20547	14.5
Wednesday	40	12.1	2083	14.8	18993	14.9	21116	14.9
Thursday	49	14.8	2155	15.3	19516	15.3	21720	15.3
Friday	39	11.8	2263	16.1	21520	16.9	23822	16.8
Saturday	60	18.1	1858	13.2	16657	13.1	18575	13.1
Sunday	52	15.7	1568	11.1	13929	10.9	15549	11.0
Unspecified	--	--	2	0.0	15	0.0	17	0.0
Total Number of Collisions	**331**	**100.0**	**14073**	**100.0**	**127234**	**100.0**	**141638**	**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

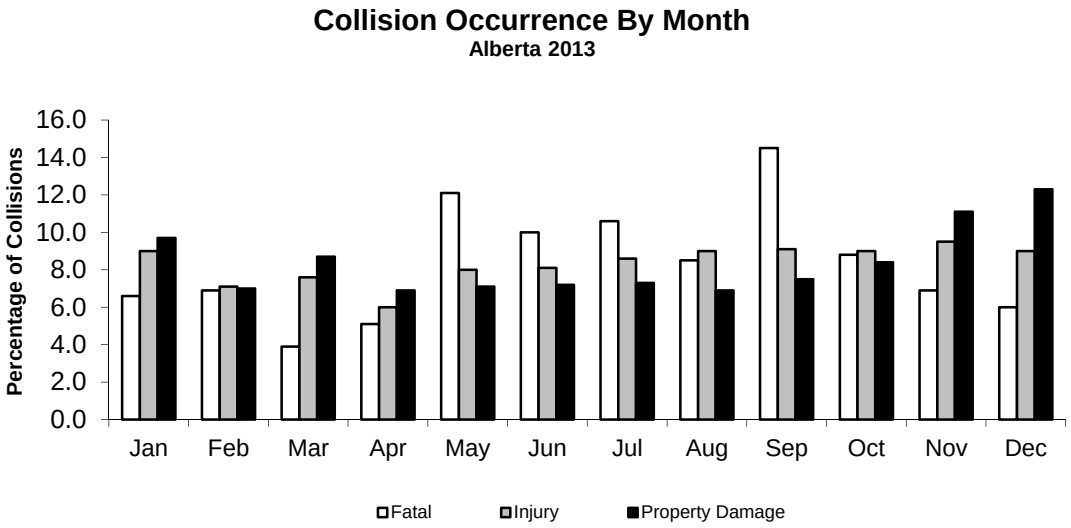
2013

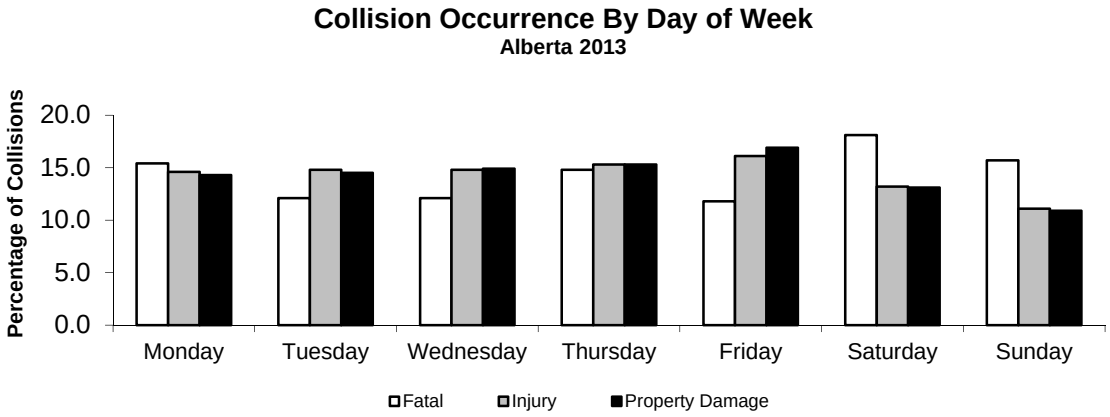
Time Period	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Property Damage Collisions N	Property Damage Collisions %	Total Collisions N	Total Collisions %
11:00 p.m. - 2:59 a.m.	54	16.3	928	6.6	8494	6.7	9476	6.7
3:00 a.m. - 6:59 a.m.	44	13.3	771	5.5	6413	5.0	7228	5.1
7:00 a.m. - 10:59 a.m.	48	14.5	2582	18.3	23785	18.7	26415	18.6
11:00 a.m. - 2:59 p.m.	53	16.0	3282	23.3	31603	24.8	34938	24.7
3:00 p.m. - 6:59 p.m.	74	22.4	4467	31.7	37174	29.2	41715	29.5
7:00 p.m. - 10:59 p.m.	52	15.7	1927	13.7	17674	13.9	19653	13.9
Unspecified	6	1.8	116	0.8	2091	1.6	2213	1.6
Total Number of Collisions	**331**	**100.0**	**14073**	**100.0**	**127234**	**100.0**	**141638**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the largest percentage (29.5%) 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


Collision Occurrence By Month
Alberta 2013
Percentage of Collisions
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Fatal
Injury
Property Damage


Collision Occurrence By Day of Week
Alberta 2013
Percentage of Collisions
20.0
15.0
10.0
5.0
0.0
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Fatal
Injury
Property Damage

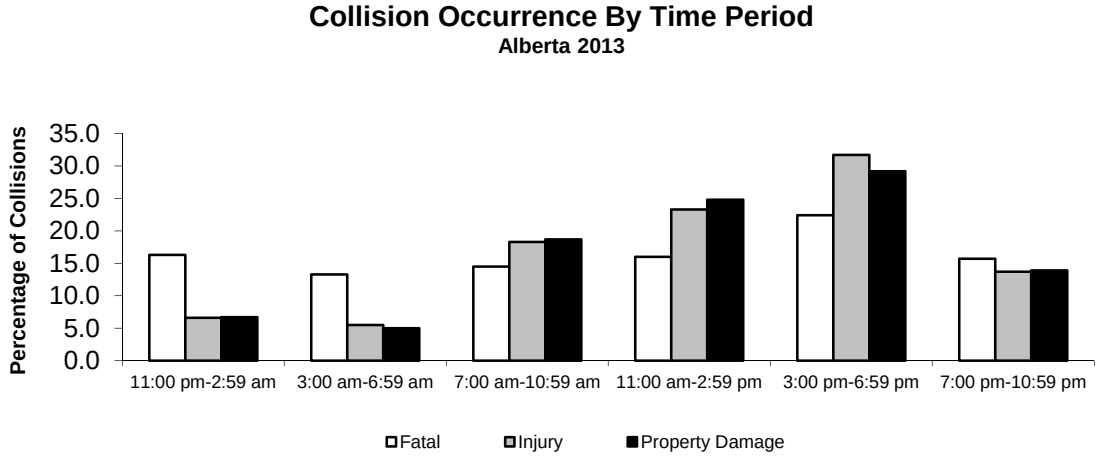

Collision Occurrence By Time Period
Alberta 2013
Percentage of Collisions
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Table 2.4

Collisions During 2013 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	1	61	303
Family Day Long Weekend (February 15-18)	1	166	1263
Easter Long Weekend (March 28-April 1)	5	189	1433
Victoria Day Long Weekend (May 17-20)	13	167	1059
Canada Day Long Weekend (June 28-July 1)	8	221	1363
August Long Weekend (August 2-5)	1	205	1127
Labour Day Long Weekend (August 30-September 2)	4	235	1263
Thanksgiving Long Weekend (October 11-14)	5	213	1306
Remembrance Day Long Weekend (November 8-11)	2	188	1780
Christmas Season (December 24-29)	2	195	1621
Total	**42**	**1840**	**12518**

Observations

The Victoria Day Long Weekend recorded the highest number of fatalities while the Labour Day Long Weekend recorded the highest number of injuries. The Remembrance Day Long Weekend 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 6.4% 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

2013

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	181	50.6	11651	62.5	11832	62.2
Passengers	61	17.0	4287	23.0	4348	22.9
Pedestrians	47	13.1	1167	6.3	1214	6.4
Motorcyclists	41	11.5	667	3.6	708	3.7
Bicyclists	4	1.1	507	2.7	511	2.7
Other	12	3.4	265	1.4	277	1.5
Unspecified	12	3.4	106	0.6	118	0.6
Total Casualties	**358**	**100.0**	**18650**	**100.0**	**19008**	**100.0**

Observations

The majority of traffic victims were drivers (62.2%) and passengers (22.9%) of vehicles. Pedestrians and motorcyclists accounted for 6.4% and 3.7% of the total casualties, respectively.

Table 3.2

Age of Casualties

2013

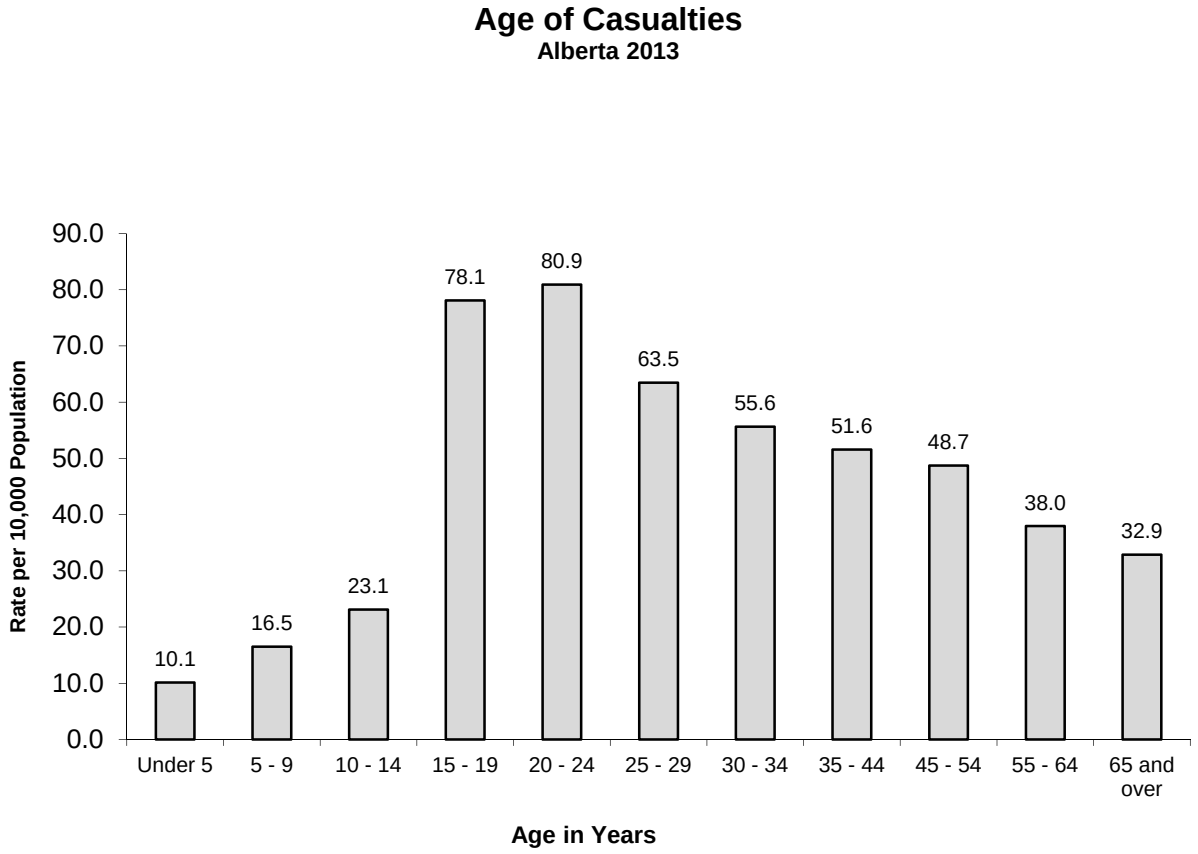
Age in Years	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %	Casualty Rate Per 10,000 Population*
Under 5	6	1.7	261	1.4	267	1.4	10.1
5 - 9	3	0.8	399	2.1	402	2.1	16.5
10 - 14	6	1.7	517	2.8	523	2.8	23.1
15 - 19	33	9.2	1899	10.2	1932	10.2	78.1
20 - 24	52	14.5	2320	12.4	2372	12.5	80.9
25 - 29	38	10.6	2108	11.3	2146	11.3	63.5
30 - 34	26	7.3	1862	10.0	1888	9.9	55.6
35 - 44	41	11.5	2959	15.9	3000	15.8	51.6
45 - 54	53	14.8	2767	14.8	2820	14.8	48.7
55 - 64	41	11.5	1720	9.2	1761	9.3	38.0
65 and over	54	15.1	1423	7.6	1477	7.8	32.9
Unspecified	5	1.4	415	2.2	420	2.2	
Total Casualties	**358**	**100.0**	**18650**	**100.0**	**19008**	**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, 2013, Statistics Canada

Figure 4


Age of Casualties
Alberta 2013
Rate per 10,000 Population
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
10.1
16.5
23.1
78.1
80.9
63.5
55.6
51.6
48.7
38.0
32.9
Under 5
5 - 9
10 - 14
15 - 19
20 - 24
25 - 29
30 - 34
35 - 44
45 - 54
55 - 64
65 and over
Age in Years

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 16 to 17 years old.

Driver Actions

Following too closely (30.3%), running off the road (13.9%) and left turn across path (12.9%) 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

2013

	Male			Female			Total*		
Age of Driver	**N**	**%**	**Rate Per 1000** Licenced Drivers**	**N**	**%**	**Rate Per 1000** Licenced Drivers**	**N**	**%**	**Rate Per 1000** Licenced Drivers**
Under 16	132	0.5	8.4	47	0.2	3.4	179	0.7	6.1
16 - 17	494	1.9	15.2	383	1.5	13.4	878	3.4	14.4
18 - 19	699	2.7	16.6	497	1.9	13.4	1197	4.7	15.1
20 - 24	1876	7.3	14.0	1335	5.2	11.2	3212	12.5	12.7
25 - 34	3508	13.7	10.6	2309	9.0	7.7	5817	22.7	9.2
35 - 44	2787	10.9	9.4	1937	7.6	7.3	4725	18.4	8.4
45 - 54	2623	10.2	9.2	1713	6.7	6.5	4336	16.9	7.9
55 - 64	1782	7.0	7.6	969	3.8	4.6	2751	10.7	6.1
65 and over	1252	4.9	6.6	666	2.6	4.0	1918	7.5	5.4
Unspecified	125	0.5		41	0.2		609	2.4	
Total Number of Drivers	**15278**	**59.6**		**9897**	**38.6**		**25622**	**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 16 to 17 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, 2013.

Figure 5

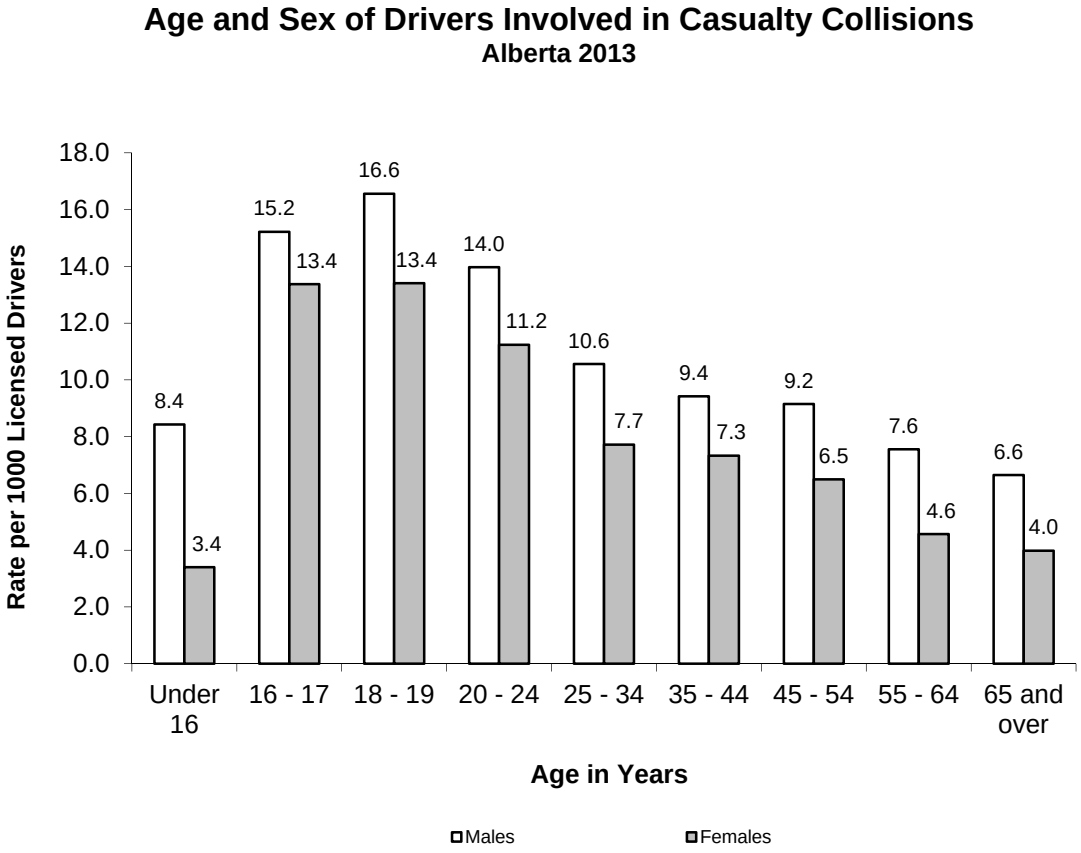

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2013
Rate per 1000 Licensed Drivers
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
8.4
3.4
15.2
13.4
16.6
13.4
14.0
11.2
10.6
7.7
9.4
7.3
9.2
6.5
7.6
4.6
6.6
4.0
Under 16
16 - 17
18 - 19
20 - 24
25 - 34
35 - 44
45 - 54
55 - 64
65 and over
Age in Years
Males
Females

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2013

Improper Actions	Drivers in Fatal Collisions N	Drivers in Fatal Collisions %	Drivers in Non-Fatal Injury Collisions N	Drivers in Non-Fatal Injury Collisions %	Total Drivers in Casualty Collisions N	Total Drivers in Casualty Collisions %
Followed Too Closely	5	1.9	3207	31.1	3212	30.3
Ran Off Road	102	38.3	1374	13.3	1476	13.9
Left Turn Across Path	17	6.4	1350	13.1	1367	12.9
Stop Sign Violation	33	12.4	794	7.7	827	7.8
Disobey Traffic Signal	9	3.4	754	7.3	763	7.2
Failed to Yield Right of Way to Pedestrian	13	4.9	492	4.8	505	4.8
Left of Centre	47	17.7	308	3.0	355	3.4
Improper Lane Change	1	0.4	347	3.4	348	3.3
Improper Turn	8	3.0	314	3.0	322	3.0
Backed Unsafely	4	1.5	278	2.7	282	2.7
Failed to Yield Right of Way - Uncontrolled Intersection	6	2.3	215	2.1	221	2.1
Yield Sign Violation	6	2.3	215	2.1	221	2.1
Improper Passing	3	1.1	144	1.4	147	1.4
Other	12	4.5	526	5.1	538	5.1
Total Number of Drivers	**266**	**100.0**	**10318**	**100.0**	**10584**	**100.0**

Observations

Following too closely (30.3%), running off the road (13.9%) and left turn across path (12.9%) 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 22947 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 12363 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (38.9%), minivans/MPVs (25.8%) and pick-up trucks/vans (23.4%) 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, 43.9% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2013

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	126	23.1	9975	39.2	10101	38.9
Mini-Van/MPV	95	17.4	6613	26.0	6708	25.8
Pick-up Truck/Van	163	29.9	5917	23.3	6080	23.4
Truck 4500 kg+	43	7.9	889	3.5	932	3.6
Motorcycle	42	7.7	642	2.5	684	2.6
Tractor-Trailer	50	9.2	477	1.9	527	2.0
Bicycle	4	0.7	510	2.0	514	2.0
Off-Highway Vehicle	6	1.1	113	0.4	119	0.5
Transit Bus	2	0.4	97	0.4	99	0.4
School Bus	3	0.6	43	0.2	46	0.2
Emergency Vehicle	--	--	52	0.2	52	0.2
Motorhome	4	0.7	25	0.1	29	0.1
Construction Equipment	--	--	27	0.1	27	0.1
Farm Equipment	3	0.6	21	0.1	24	0.1
Other Bus	2	0.4	20	0.1	22	0.1
Motorized Snow Vehicle	2	0.4	10	0.0	12	0.0
Intercity Bus	--	--	7	0.0	7	0.0
Moped	--	--	3	0.0	3	0.0
Other	--	--	1	0.0	1	0.0
Total Number of Vehicles	**545**	**100.0**	**25442**	**100.0**	**25987**	**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 2.0% and motorcycles 2.6% of the vehicles involved in casualty collisions. Tractor-Trailers were 2.0% of total vehicles in casualty crashes, but 9.2% 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*

2013

Vehicle Factors	Vehicles in Fatal Collisions N	Vehicles in Fatal Collisions %	Vehicles in Non-Fatal Injury Collisions N	Vehicles in Non-Fatal Injury Collisions %	Total Vehicles in Casualty Collisions N	Total Vehicles in Casualty Collisions %
No Apparent Defect	435	98.4	22924	99.2	23359	99.2
Defective Brakes	4	0.9	44	0.2	48	0.2
Tires Failed	2	0.5	44	0.2	46	0.2
Lighting Defect	--	--	11	0.0	11	0.0
Improper Load/Shift	--	--	9	0.0	9	0.0
Other	1	0.2	73	0.3	74	0.3
Total Number of Vehicles	**442**	**100.0**	**23105**	**100.0**	**23547**	**100.0**

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

Table 5.3

Point of Impact on Vehicles Involved in Casualty Collisions*

2013

Point of Impact	Vehicles in Fatal Collisions N	Vehicles in Fatal Collisions %	Vehicles in Non-Fatal Injury Collisions N	Vehicles in Non-Fatal Injury Collisions %	Total Vehicles in Casualty Collisions N	Total Vehicles in Casualty Collisions %
Centre Front	261	49.8	10703	43.8	10964	43.9
Centre Rear	23	4.4	5216	21.3	5239	21.0
Rollover	81	15.5	1548	6.3	1629	6.5
Right Front	36	6.9	1778	7.3	1814	7.3
Left Front	17	3.2	1741	7.1	1758	7.0
Left Side	42	8.0	986	4.0	1028	4.1
Right Side	26	5.0	944	3.9	970	3.9
Left Rear	7	1.3	588	2.4	595	2.4
Right Rear	10	1.9	558	2.3	568	2.3
Attachment	18	3.4	270	1.1	288	1.2
Undercarriage	2	0.4	65	0.3	67	0.3
Top	1	0.2	55	0.2	56	0.2
Total Number of Vehicles	**524**	**100.0**	**24452**	**100.0**	**24976**	**100.0**

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 43.9% of the impacts involved the centre front, while 21.0% 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 (67.4%) occurred in rural areas, whereas the majority of injury (74.2%) and property damage (83.8%) crashes occurred in urban areas.

Surface Conditions

The majority (60.9%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.6% of fatal collisions and 27.3% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2013

Location	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Property Damage Collisions N	Property Damage Collisions %	Total Collisions N	Total Collisions %
Urban	108	32.6	10449	74.2	106619	83.8	117176	82.7
Rural	223	67.4	3624	25.8	20615	16.2	24462	17.3
Total Number of Collisions	**331**	**100.0**	**14073**	**100.0**	**127234**	**100.0**	**141638**	**100.0**

Observations

The majority of fatal collisions (67.4%) occurred in rural areas. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (74.2%) and property damage crashes (83.8%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2013

Surface Condition	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
Dry	228	68.9	8544	60.7	8772	60.9
Slush/Snow/Ice	55	16.6	3841	27.3	3896	27.0
Wet	29	8.8	1079	7.7	1108	7.7
Loose Surface Material	10	3.0	221	1.6	231	1.6
Muddy	--	--	27	0.2	27	0.2
Other	1	0.3	57	0.4	58	0.4
Unspecified	8	2.4	304	2.2	312	2.2
Total Number of Collisions	**331**	**100.0**	**14073**	**100.0**	**14404**	**100.0**

Observations

The majority (60.9%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.6% of fatal collisions and 27.3% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- In 2013, based on motorcycle registrations, the involvement rate of motorcycles has increased in fatal collisions and in injury collisions from 2012.
- The majority of motorcycle casualty collisions involved male drivers. Motorcycle drivers under the age of 25 had the highest involvement rate per 1000 licenced drivers.
- Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road, pass improperly, or make an improper turn. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn or commit a stop sign violation.
- Compared to drivers involved in all types of vehicle casualty collisions, motorcycle drivers were more likely to have consumed alcohol before the crash.
- Vehicle factors were identified for 3.2% 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 August.
- The majority of casualty collisions involving motorcycles occurred on dry roads.

Table 7.1

Motorcycles Involved in Casualty Collisions

2009 – 2013

Number of Motorcycles	**2013**	**2012**	**2011**	**2010**	**2009**
Fatal	42	22	26	31	34
Non-Fatal Injury	642	609	655	662	692
Total Number of Motorcycles Involved in Casualty Collisions	**684**	**631**	**681**	**693**	**726**
Casualties*					
Number Killed	42	21	24	31	37
Number Injured	697	660	719	715	757
Total Casualties in Collisions Involving Motorcycles	**739**	**681**	**743**	**746**	**794**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	3.6	2.0	2.4	2.9	3.3
Non-Fatal Injury Collisions	54.7	54.3	60.5	62.7	67.4

Observations

Based on motorcycle registrations in 2013, the involvement rate of motorcycles has increased in fatal and injury collisions from 2012.

*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, 2013.

Figure 6

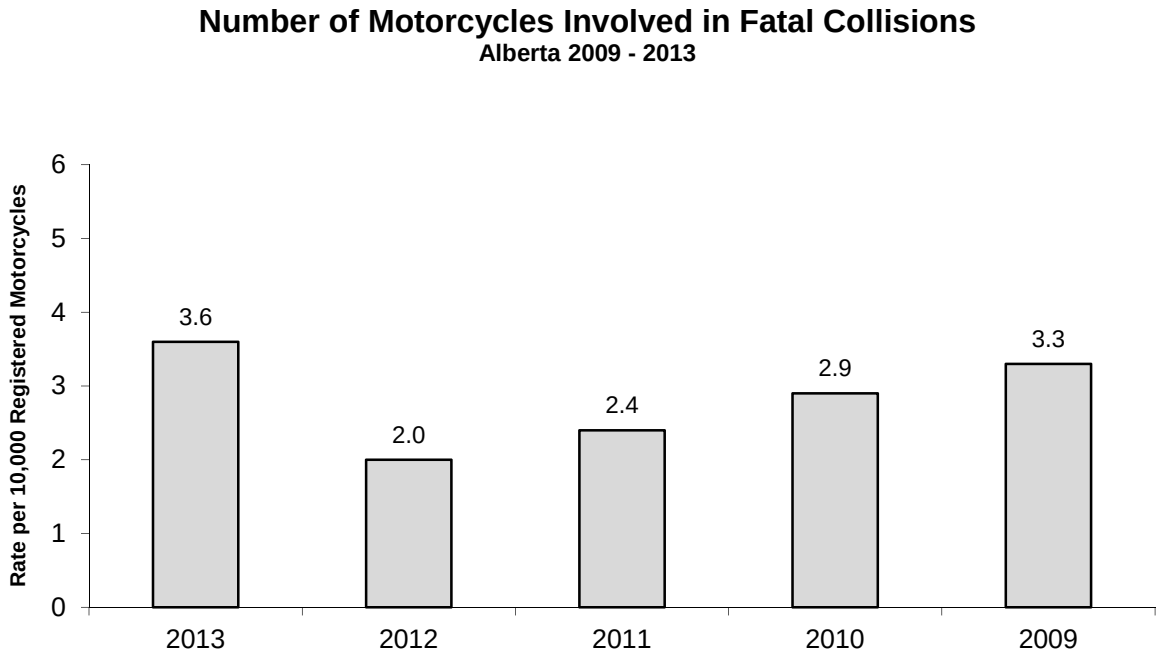

Number of Motorcycles Involved in Fatal Collisions
Alberta 2009 - 2013
Rate per 10,000 Registered Motorcycles
0
1
2
3
4
5
6
3.6
2.0
2.4
2.9
3.3
2013
2012
2011
2010
2009

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2013

	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
Age of Motorcycle Driver	**N**	**%**	**N**	**%**	**N**	**%**	
Under 16	6	0.9	3	0.4	9	1.3	--
16 - 17	6	0.9	1	0.1	7	1.0	44.0
18 - 19	14	2.1	1	0.1	15	2.2	22.3
20 - 24	79	11.6	8	1.2	87	12.8	12.0
25 - 34	140	20.5	18	2.6	158	23.2	3.7
35 - 44	117	17.2	17	2.5	134	19.6	2.5
45 - 54	127	18.6	11	1.6	138	20.2	1.8
55 - 64	86	12.6	6	0.9	92	13.5	1.3
65 and over	34	5.0	1	0.1	35	5.1	1.3
Unspecified	1	0.1	--	--	7	1.0	
Total Number of Motorcycle Drivers	**610**	**89.4**	**66**	**9.7**	**682**	**100.0**	

Observations

The majority of motorcycle casualty collisions involved male drivers. Based on involvement per 1,000 licenced operators, motorcycle drivers under the age of 25 were most likely to be involved in collisions. In particular, 16 - 17 year old motorcycle drivers had the highest involvement rate per 1,000 licenced motorcyclists. 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, 2013.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2013

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	90	40.4	13.9
Followed Too Closely	48	21.5	30.3
Left Turn Across Path	14	6.3	12.9
Improper Passing	11	4.9	1.4
Improper Turn	11	4.9	3.0
Improper Lane Change	10	4.5	3.3
Left of Centre	7	3.1	3.4
Stop Sign Violation	6	2.7	7.8
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.3	2.1
Failed to Yield Right of Way to Pedestrian	2	0.9	4.8
Disobey Traffic Signal	1	0.4	7.2
Yield Sign Violation	1	0.4	2.1
Backed Unsafely	1	0.4	2.7
Other	18	8.1	5.1
Total Number of Drivers	**223**	**100.0**	

Observations

Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road, pass improperly, or make an improper turn. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn 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 578 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 355 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers Involved in Casualty Collisions*

2013

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	589	95.0	94.5
Had Been Drinking	18	2.9	1.4
Alcohol Impaired	10	1.6	2.1
Total Alcohol Involvement	**28**	**4.5**	**3.6**
Impaired by Drugs	1	0.2	0.2
Fatigued/Asleep	1	0.2	0.8
Other	1	0.2	0.9
Total Number of Motorcycle Drivers	**620**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 5.0% of the motorcycle drivers involved in casualty collisions. Compared to drivers involved in total casualty collisions, motorcycle drivers 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*

2013

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	609	96.8	99.2
Tires Failed	8	1.3	0.2
Defective Brakes	4	0.6	0.2
Lighting Defect	1	0.2	0.0
Improper Load/Shift	--	--	0.0
Other	7	1.1	0.3
Total Number of Motorcycles	**629**	**100.0**	

Observations

Vehicle factors were identified for 3.2% 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 does not indicate that a mechanical inspection of the collision-involved motorcycle was conducted.

Table 7.6

Casualty Collisions Involving Motorcycles:

Month of Occurrence

2013

Month	N	%
January	--	--
February	2	0.3
March	7	1.1
April	36	5.5
May	110	16.7
June	97	14.7
July	122	18.5
August	129	19.6
September	117	17.8
October	37	5.6
November	2	0.3
December	--	--
Total Number of Collisions	**659**	**100.0**

Observations

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

Table 7.7

Casualty Collisions Involving Motorcycles:

Road Surface Condition

2013

Road Surface Condition	N	%
Dry	573	86.9
Loose Surface Material	30	4.6
Wet	29	4.4
Muddy	2	0.3
Slush/Snow/Ice	1	0.2
Other	5	0.8
Unspecified	19	2.9
Total Number of Collisions	**659**	**100.0**

Observations

The majority (86.9%) of casualty collisions involving motorcycles occurred on dry roads. Loose material on the road surface was involved in 4.6% of motorcycle casualty crashes. Wet roads were the scene for 4.4% of motorcycle casualty collisions.

Special Types of Vehicles

Truck Tractors

- In 2013, there were 53 persons killed and 584 injured in collisions involving truck tractors. This represents an increase in fatalities and decrease in injuries from 2012.

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

- 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 November.

Table 7.8

Truck Tractors Involved in Casualty Collisions

2009 – 2013

Number of Truck Tractors	**2013**	**2012**	**2011**	**2010**	**2009**
Fatal	50	39	48	32	44
Non-Fatal Injury	477	476	481	411	331
Total Number of Truck Tractors Involved in Casualty Collisions	**527**	**515**	**529**	**443**	**375**
Casualties*					
Number Killed	53	37	50	33	49
Number Injured	584	599	670	535	453
Total Casualties in Collisions Involving Truck Tractors	**637**	**636**	**720**	**568**	**502**

Observations

In 2013, there were 53 persons killed and 584 injured in collisions involving truck tractors. This represents an increase in fatalities and decrease in injuries from 2012. The total number of truck tractors involved in casualty crashes was highest in 2011 at 529.

*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*

2013

Improper Actions of Truck Tractor Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	54	31.2	13.9
Followed Too Closely	48	27.7	30.3
Improper Lane Change	13	7.5	3.3
Left of Centre	11	6.4	3.4
Left Turn Across Path	10	5.8	12.9
Stop Sign Violation	10	5.8	7.8
Disobey Traffic Signal	8	4.6	7.2
Improper Turn	5	2.9	3.0
Improper Passing	3	1.7	1.4
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.7	2.1
Failed to Yield Right of Way to Pedestrian	1	0.6	4.8
Yield Sign Violation	1	0.6	2.1
Backed Unsafely	--	--	2.7
Other	6	3.5	5.1
Total Number of Drivers	**173**	**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 drive left of centre. However, operators of truck tractors were less likely than other vehicle operators to make a left turn across the path of oncoming vehicles, fail to yield right of way to a pedestrian or back unsafely.

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

Note: There was a total of 468 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 295 were indicated as driving properly at the time of the collision.

Table 7.10

Condition of Truck Tractor Drivers Involved in Casualty Collisions*

2013

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	458	97.4	94.5
Had Been Drinking	--	--	1.4
Alcohol Impaired	2	0.4	2.1
Total Alcohol Involvement	**2**	**0.4**	**3.6**
Fatigued/Asleep	7	1.5	0.8
Impaired by Drugs	--	--	0.2
Other	3	0.6	0.9
Total Number of Drivers	**470**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 2.6% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash compared to drivers involved in total casualty collisions. However, they 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*

2013

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	473	98.1	99.2
Defective Brakes	4	0.8	0.2
Tires Failed	3	0.6	0.2
Lighting Defect	--	--	0.0
Improper Load/Shift	--	--	0.0
Other	2	0.4	0.3
Total Number of Truck Tractors	**482**	**100.0**	

Observations

Vehicle factors were identified for 1.9% 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.

Table 7.12

Casualty Collisions Involving Truck Tractors:

Month of Occurrence

2013

Month	N	%
January	49	10.3
February	39	8.2
March	43	9.0
April	28	5.9
May	37	7.8
June	29	6.1
July	41	8.6
August	38	8.0
September	31	6.5
October	31	6.5
November	56	11.8
December	54	11.3
Unspecified	--	--
Total Number of Collisions	**476**	**100.0**

Observations

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

Special Types of Vehicles

Trains

- In 2013, 4 people were killed and 20 people were injured in crashes in which a train was involved. The number of casualties involving trains has increased from 2012.
- The largest number of casualty collisions involving trains occurred in the months of January.
- All of the drivers involved in casualty collisions with a train made an improper driving action.

Table 7.13

Trains Involved in Casualty Collisions

2009 – 2013

Number of Trains	**2013**	**2012**	**2011**	**2010**	**2009**
Fatal	4	1	3	5	2
Non-Fatal Injury	16	16	19	10	9
Total Number of Trains Involved in Casualty Collisions	**20**	**17**	**22**	**15**	**11**
Casualties*					
Number Killed	4	1	3	6	2
Number Injured	20	20	27	13	12
Total Casualties in Collisions Involving Trains	**24**	**21**	**30**	**19**	**14**

Observations

The number of trains involved in casualty collisions increased from 2012. The number of casualties resulting from these collisions also increased.

*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

2013

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	2	50.0	4	25.0	6	30.0
February	--	--	1	6.3	1	5.0
March	--	--	--	--	--	--
April	2	50.0	--	--	2	10.0
May	--	--	2	12.5	2	10.0
June	--	--	1	6.3	1	5.0
July	--	--	1	6.3	1	5.0
August	--	--	1	6.3	1	5.0
September	--	--	--	--	--	--
October	--	--	--	--	--	--
November	--	--	4	25.0	4	20.0
December	--	--	2	12.5	2	10.0
Total Number of Collisions	**4**	**100.0**	**16**	**100.0**	**20**	**100.0**

Observations

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

Table 7.15

Actions of Drivers Involved in Casualty Collisions with Trains*

2013

Driver Actions	Drivers in Fatal Collisions N	Drivers in Fatal Collisions %	Drivers in Non-Fatal Injury Collisions N	Drivers in Non-Fatal Injury Collisions %	Total Drivers in Casualty Collisions N	Total Drivers in Casualty Collisions %
Driving Properly	--	--	--	--	--	--
Disobey Traffic Signal	1	33.3	5	41.7	6	40.0
Stop Sign Violation	--	--	3	25.0	3	20.0
Failed to Yield Right of Way - Uncontrolled Intersection	1	33.3	2	16.7	3	20.0
Left Turn Across Path	--	--	1	8.3	1	6.7
Improper Turn	--	--	1	8.3	1	6.7
Ran Off Road	1	33.3	--	--	1	6.7
Other	--	--	--	--	--	--
Total Number of Drivers	**3**	**100.0**	**12**	**100.0**	**15**	**100.0**

Observations

All of the drivers involved in casualty collisions 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 September. April experienced the least number of pedestrian crashes.
- Pedestrian casualty collisions were most likely to occur on Friday and least likely to occur on Sunday.
- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period (3:00 - 6:59 p.m.).
- 44.6% 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, 11.2% had consumed alcohol before the collision, compared to 28.3% 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

2013

Month of Collision	N	%
January	104	8.9
February	99	8.4
March	76	6.5
April	66	5.6
May	99	8.4
June	86	7.3
July	84	7.2
August	109	9.3
September	134	11.4
October	133	11.3
November	113	9.6
December	69	5.9
Total Number of Collisions	**1172**	**100.0**

Observations

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

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2013

Day of Week	N	%
Monday	169	14.4
Tuesday	180	15.4
Wednesday	174	14.8
Thursday	200	17.1
Friday	204	17.4
Saturday	136	11.6
Sunday	109	9.3
Total Number of Collisions	**1172**	**100.0**

Observations

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

Table 8.3

Casualty Collisions Involving Pedestrians:

Time Period

2013

Time Period	N	%
11:00 p.m. - 2:59 a.m.	102	8.7
3:00 a.m. - 6:59 a.m.	68	5.8
7:00 a.m. - 10:59 a.m.	225	19.2
11:00 a.m. - 2:59 p.m.	228	19.5
3:00 p.m. - 6:59 p.m.	343	29.3
7:00 p.m. - 10:59 p.m.	198	16.9
Unspecified	8	0.7
Total Number of Collisions	**1172**	**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

2013

Location	**N**	%
Urban	1129	96.3
Rural	43	3.7
Total Number of Collisions	**1172**	**100.0**

Observations

The majority of pedestrian casualty collisions (96.3%) occurred in urban areas. Only 3.7% occurred in rural areas.

Table 8.5

Actions of Drivers Involved in Casualty Collisions with Pedestrians*

2013

Driver Actions	N	%
Driving Properly	324	32.5
Failed to Yield Right of Way To Pedestrian	445	44.6
Backed Unsafely	78	7.8
Left Turn Across Path	21	2.1
Improper Turn	19	1.9
Ran Off Road	17	1.7
Failed to Yield Right of Way - Uncontrolled Intersection	13	1.3
Disobey Traffic Signal	11	1.1
Stop Sign Violation	8	0.8
Improper Passing	7	0.7
Followed Too Closely	6	0.6
Left of Centre	3	0.3
Improper Lane Change	2	0.2
Yield Sign Violation	1	0.1
Other	43	4.3
Total Number of Drivers	**998**	**100.0**

Observations

32.5% of the drivers involved in pedestrian casualty crashes were recorded as driving properly. However, 44.6% 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

2013

Age in Years	Pedestrians Killed N	Pedestrians Injured N	Total Pedestrian Casualties N	%	Pedestrian Casualty Rate Per 10,000 Population*
Under 5	2	19	21	1.7	0.8
5 - 9	2	49	51	4.2	2.1
10 - 14	1	83	84	6.9	3.7
15 - 19	5	141	146	12.0	5.9
20 - 24	4	144	148	12.2	5.0
25 - 29	7	120	127	10.5	3.8
30 - 34	4	87	91	7.5	2.7
35 - 44	2	132	134	11.0	2.3
45 - 54	8	136	144	11.9	2.5
55 - 64	4	101	105	8.6	2.3
65 and over	8	121	129	10.6	2.9
Unspecified	--	34	34	2.8	
Total Number of Pedestrian Casualties	**47**	**1167**	**1214**	**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, 2013, Statistics Canada

Figure 7

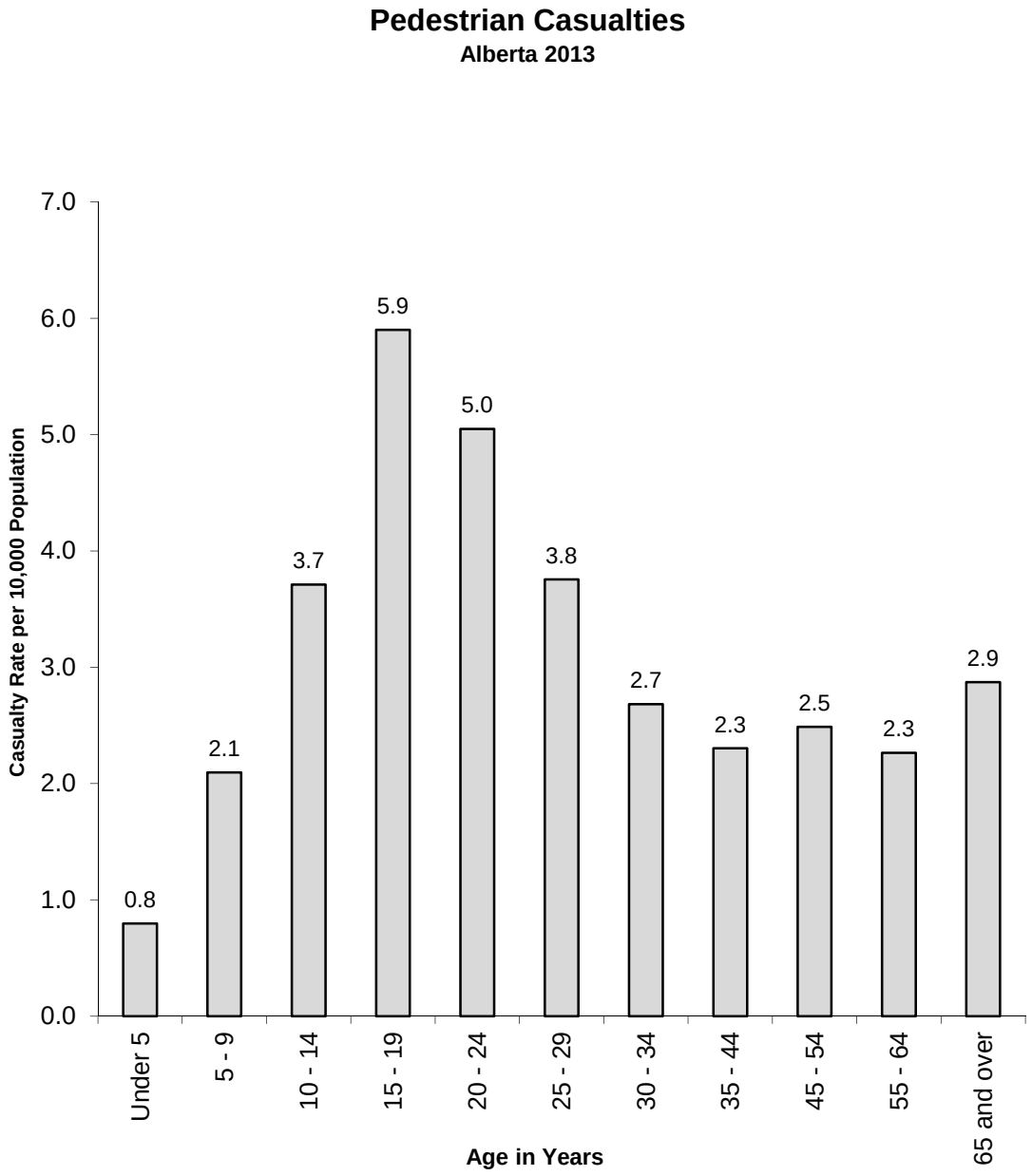

Pedestrian Casualties
Alberta 2013
Casualty Rate per 10,000 Population
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.8
2.1
3.7
5.9
5.0
3.8
2.7
2.3
2.5
2.3
2.9
Under 5
5 - 9
10 - 14
15 - 19
20 - 24
25 - 29
30 - 34
35 - 44
45 - 54
55 - 64
65 and over
Age in Years

Table 8.7

Condition of Pedestrians Involved in Casualty Collisions*

2013

Condition of Pedestrian	Pedestrians in Fatal Collisions N	%	Pedestrians in Non-Fatal Injury Collisions N	%	Total Pedestrians in Casualty Collisions N	%
Normal	32	69.6	903	87.2	935	86.5
Had Been Drinking	7	15.2	49	4.7	56	5.2
Alcohol Impaired	6	13.0	67	6.5	73	6.8
Total Alcohol Involvement	**13**	**28.3**	**116**	**11.2**	**129**	**11.9**
Impaired by Drugs	1	2.2	6	0.6	7	0.6
Other	--	--	10	1.0	10	0.9
Total Number of Pedestrians	**46**	**100.0**	**1035**	**100.0**	**1081**	**100.0**

Observations

Of pedestrians involved in injury collisions, 11.2% had consumed alcohol before the collision, compared to 28.3% 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*

2013

Age in Years	N	%	Rate per 10,000 Population**
Under 10	--	--	--
10 - 14	1	0.8	0.0
15 - 19	15	11.6	0.6
20 - 24	22	17.1	0.8
25 - 29	24	18.6	0.7
30 - 34	15	11.6	0.4
35 - 44	19	14.7	0.3
45 - 54	19	14.7	0.3
55 - 64	7	5.4	0.2
65 and over	2	1.6	0.0
Unspecified	5	3.9	
Total Number of Pedestrian Casualties	**129**	**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, 2013, 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 (39.4%) occurred during the evening rush-hour period.
- Young bicyclists aged 10 - 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 had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2013

Month of Collision	N	%
January	3	0.6
February	8	1.6
March	11	2.1
April	8	1.6
May	83	16.2
June	74	14.4
July	97	18.9
August	70	13.6
September	91	17.7
October	52	10.1
November	13	2.5
December	3	0.6
Total Number of Collisions	**513**	**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

2013

Day of Week	N	%
Monday	72	14.0
Tuesday	109	21.2
Wednesday	77	15.0
Thursday	84	16.4
Friday	87	17.0
Saturday	45	8.8
Sunday	39	7.6
Total Number of Collisions	**513**	**100.0**

Observations

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

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2013

Time Period	N	%
11:00 p.m. - 2:59 a.m.	22	4.3
3:00 a.m. - 6:59 a.m.	18	3.5
7:00 a.m. - 10:59 a.m.	92	17.9
11:00 a.m. - 2:59 p.m.	100	19.5
3:00 p.m. - 6:59 p.m.	202	39.4
7:00 p.m. - 10:59 p.m.	77	15.0
Unspecified	2	0.4
Total Number of Collisions	**513**	**100.0**

Observations

The largest proportion of casualty crashes (39.4%) 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

2013

Age in Years	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Bicyclist Casualties N	Total Bicyclist Casualties %	Casualty Rate Per 10,000 Population*
Under 5	--	--	6	1.2	6	1.2	0.2
5 - 9	--	--	25	4.9	25	4.9	1.0
10 - 14	--	--	79	15.6	79	15.5	3.5
15 - 19	2	50.0	71	14.0	73	14.3	3.0
20 - 24	--	--	59	11.6	59	11.5	2.0
25 - 29	--	--	36	7.1	36	7.0	1.1
30 - 34	--	--	38	7.5	38	7.4	1.1
35 - 44	--	--	50	9.9	50	9.8	0.9
45 - 54	1	25.0	68	13.4	69	13.5	1.2
55 - 64	1	25.0	30	5.9	31	6.1	0.7
65 and over	--	--	18	3.6	18	3.5	0.4
Unspecified	--	--	27	5.3	27	5.3	
Total Casualties	**4**	**100.0**	**507**	**100.0**	**511**	**100.0**	

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.

*Based on estimates of the Alberta population by age groups and sex, July 1, 2013, Statistics Canada

Table 9.5

Improper Actions of Bicyclists Involved in Casualty Collisions

2013

Improper Actions of Bicyclists	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Disobey Traffic Signal	71	32.9	7.2
Failed to Yield Right of Way - Uncontrolled Intersection	18	8.3	2.1
Stop Sign Violation	13	6.0	7.8
Improper Turn	9	4.2	3.0
Left of Centre	9	4.2	3.4
Improper Lane Change	9	4.2	3.3
Left Turn Across Path	8	3.7	12.9
Backed Unsafely	8	3.7	2.7
Yield Sign Violation	6	2.8	2.1
Improper Passing	4	1.9	1.4
Followed Too Closely	4	1.9	30.3
Ran Off Road	3	1.4	13.9
Failed to Yield Right of Way to Pedestrian	--	--	4.8
Other	54	25.0	5.1
Total Number of Bicyclists	**216**	**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 394 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 178 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2013

Condition of Bicyclist	N	%
Normal	442	96.3
Had Been Drinking	9	2.0
Alcohol Impaired	5	1.1
Total Alcohol Involvement	**14**	**3.1**
Impaired by Drugs	1	0.2
Fatigued/Asleep	--	--
Other	2	0.4
Total Number of Bicyclists	**459**	**100.0**

Observations

3.1% 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 3.3% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 17.5% 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 3 times as many male drivers as female drivers who had consumed alcohol prior to the collision.

- In 2013, alcohol related casualty crashes were most likely to have occurred in August, on Sunday, 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, 2009 - 2013.

Table 10.1

Condition of Drivers in Casualty Collisions*

2013

Condition of Driver	Drivers in Fatal Collisions N	Drivers in Fatal Collisions %	Drivers in Non-Fatal Injury Collisions N	Drivers in Non-Fatal Injury Collisions %	Total Drivers in Casualty Collisions N	Total Drivers in Casualty Collisions %
Normal	345	77.5	20866	94.8	21211	94.5
Had Been Drinking	34	7.6	288	1.3	322	1.4
Alcohol Impaired	44	9.9	431	2.0	475	2.1
Total Alcohol Involvement	**78**	**17.5**	**719**	**3.3**	**797**	**3.6**
Impaired by Drugs	8	1.8	41	0.2	49	0.2
Fatigued/Asleep	5	1.1	181	0.8	186	0.8
Other	9	2.0	193	0.9	202	0.9
Total Number of Drivers	**445**	**100.0**	**22000**	**100.0**	**22445**	**100.0**

Observations

Of drivers involved in injury collisions, 3.3% had consumed alcohol before the crash, compared to 17.5% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 3.6% 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

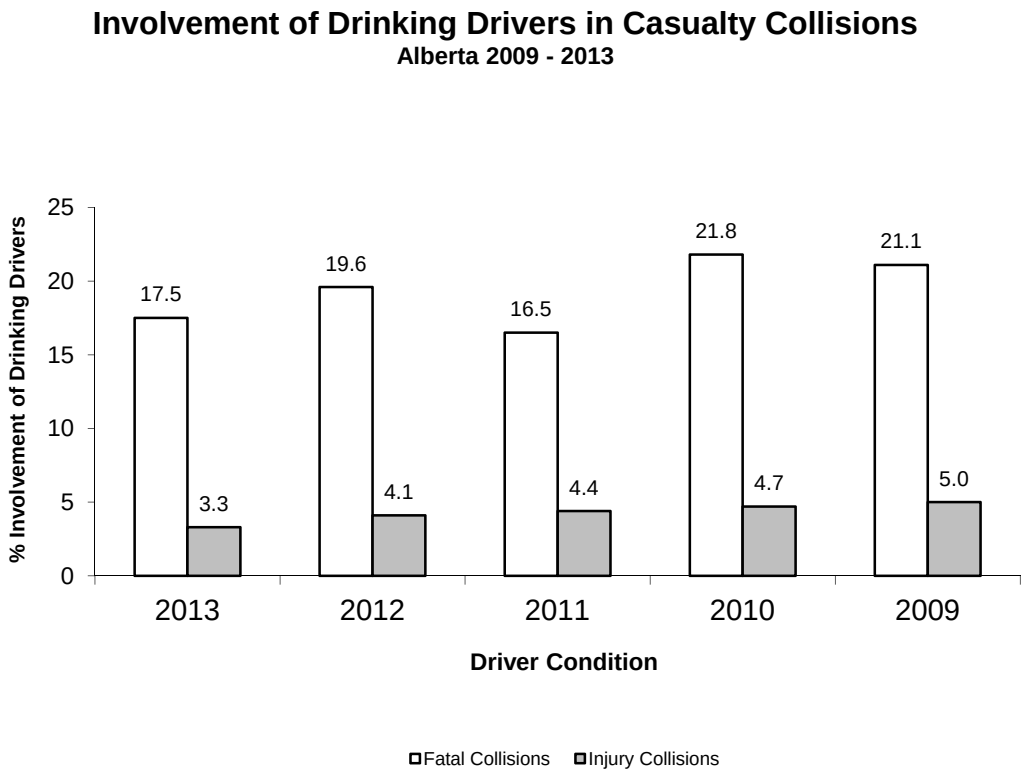

Involvement of Drinking Drivers in Casualty Collisions
Alberta 2009 - 2013
% Involvement of Drinking Drivers
25
20
15
10
5
0
17.5
3.3
19.6
4.1
16.5
4.4
21.8
4.7
21.1
5.0
2013
2012
2011
2010
2009
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

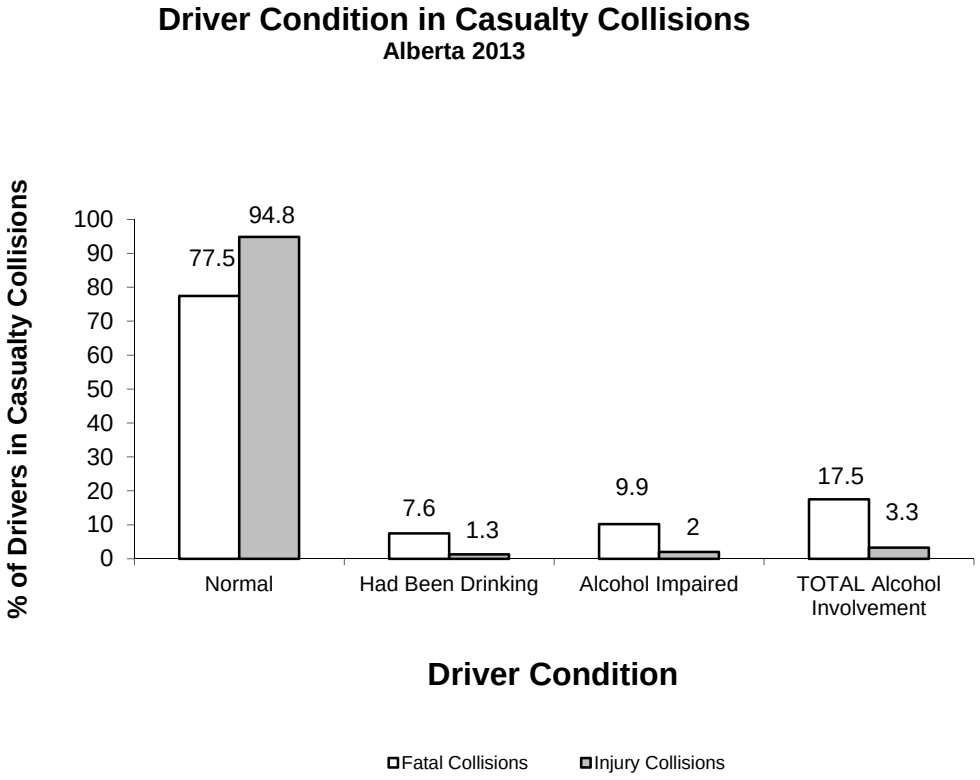

Driver Condition in Casualty Collisions
Alberta 2013
% of Drivers in Casualty Collisions
100
90
80
70
60
50
40
30
20
10
0
77.5
94.8
7.6
1.3
9.9
2
17.5
3.3
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2013

	Male		Rate Per 1,000** Licensed Drivers	Female		Rate Per 1,000** Licensed Drivers	Total*		Rate Per 1,000** Licensed Drivers
Age in Years	**N**	**%**		**N**	**%**		**N**	**%**	
Under 16	2	0.3	0.1	--	--	--	2	0.3	0.1
16 - 17	11	1.4	0.3	6	0.8	0.2	17	2.1	0.3
18 - 19	53	6.6	1.3	10	1.3	0.3	63	7.9	0.8
20 - 21	60	7.5	1.2	20	2.5	0.5	80	10.0	0.9
22 - 24	78	9.8	0.9	28	3.5	0.4	106	13.3	0.7
25 - 29	104	13.0	0.6	41	5.1	0.3	145	18.2	0.5
30 - 34	73	9.2	0.4	20	2.5	0.1	93	11.7	0.3
35 - 44	88	11.0	0.3	29	3.6	0.1	117	14.7	0.2
45 - 54	82	10.3	0.3	24	3.0	0.1	106	13.3	0.2
55 - 64	32	4.0	0.1	5	0.6	0.0	37	4.6	0.1
65 and over	13	1.6	0.1	1	0.1	0.0	14	1.8	0.0
Unspecified	4	0.5		--	--		17	2.1	
Total Drivers	**600**	**75.3**		**184**	**23.1**		**797**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over 3 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, 2012.

Figure 10

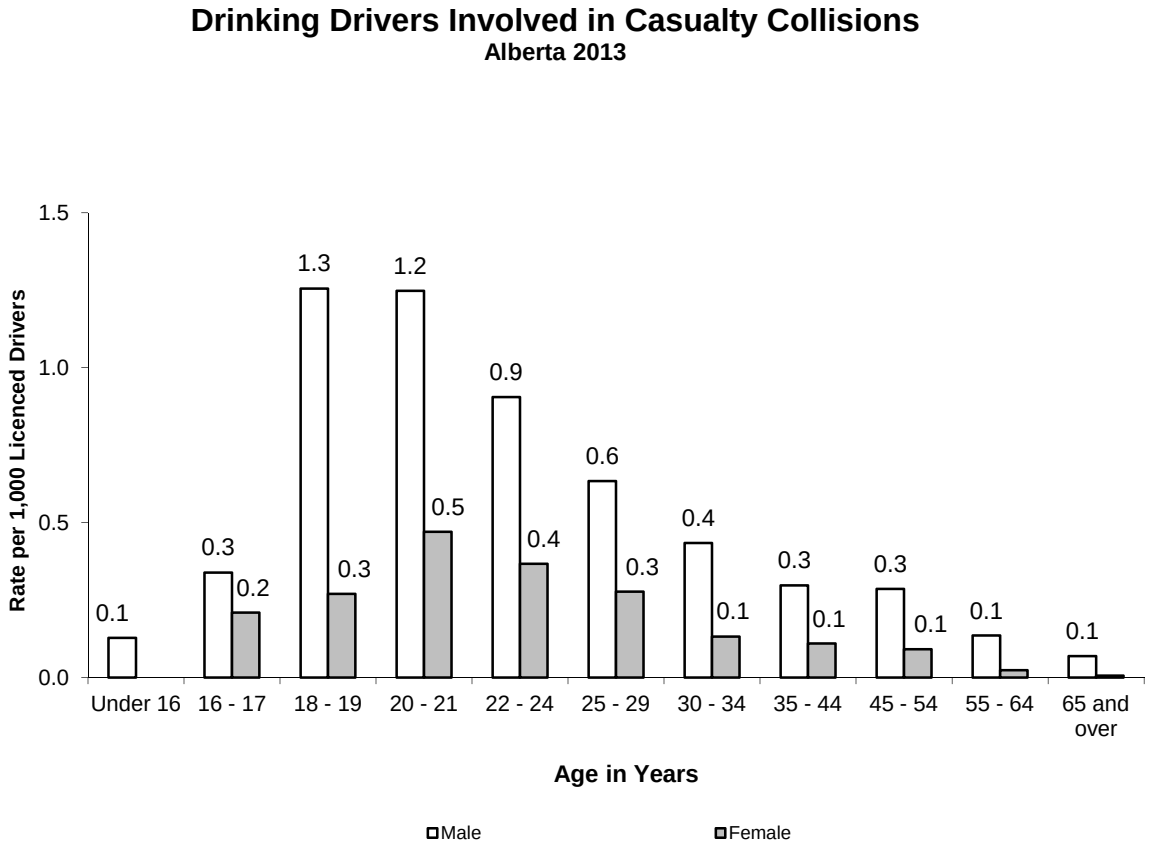

Drinking Drivers Involved in Casualty Collisions
Alberta 2013
Rate per 1,000 Licenced Drivers
1.5
1.0
0.5
0.0
0.1
0.3
0.2
1.3
0.3
1.2
0.5
0.9
0.4
0.6
0.3
0.4
0.1
0.3
0.1
0.3
0.1
0.1
0.1
Under 16
16 - 17
18 - 19
20 - 21
22 - 24
25 - 29
30 - 34
35 - 44
45 - 54
55 - 64
65 and over
Age in Years
Male
Female

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2013

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	6	7.8	50	7.0	56	7.1
February	4	5.2	43	6.0	47	5.9
March	2	2.6	54	7.6	56	7.1
April	2	2.6	56	7.9	58	7.3
May	10	13.0	75	10.5	85	10.8
June	12	15.6	71	10.0	83	10.5
July	10	13.0	57	8.0	67	8.5
August	4	5.2	85	11.9	89	11.3
September	11	14.3	57	8.0	68	8.6
October	10	13.0	69	9.7	79	10.0
November	3	3.9	54	7.6	57	7.2
December	3	3.9	42	5.9	45	5.7
Total Number of Collisions	**77**	**100.0**	**713**	**100.0**	**790**	**100.0**

Observations

The month of August accounted for the largest proportion of alcohol-involved casualty collisions. The month of December accounted for the smallest proportion of alcohol-involved casualty collisions.

Table 10.4

Alcohol-Involved Casualty Collisions:

Day of Week

2013

Day of Week	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
Monday	6	7.8	79	11.1	85	10.8
Tuesday	10	13.0	60	8.4	70	8.9
Wednesday	8	10.4	68	9.5	76	9.6
Thursday	5	6.5	74	10.4	79	10.0
Friday	9	11.7	109	15.3	118	14.9
Saturday	17	22.1	151	21.2	168	21.3
Sunday	22	28.6	172	24.1	194	24.6
Total Number of Collisions	**77**	**100.0**	**713**	**100.0**	**790**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions and non-fatal injury collisions occurred on Sunday (28.6% and 24.1% respectively). The smallest number of alcohol-involved casualty collisions occurred on Tuesday (8.9%).

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2013

Time Period	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
11:00 p.m. - 2:59 a.m.	30	39.0	229	32.1	259	32.8
3:00 a.m. - 6:59 a.m.	16	20.8	108	15.1	124	15.7
7:00 a.m. - 10:59 a.m.	2	2.6	41	5.8	43	5.4
11:00 a.m. - 2:59 p.m.	1	1.3	51	7.2	52	6.6
3:00 p.m. - 6:59 p.m.	13	16.9	108	15.1	121	15.3
7:00 p.m. - 10:59 p.m.	12	15.6	173	24.3	185	23.4
Unspecified	3	3.9	3	0.4	6	0.8
Total Number of Collisions	**77**	**100.0**	**713**	**100.0**	**790**	**100.0**

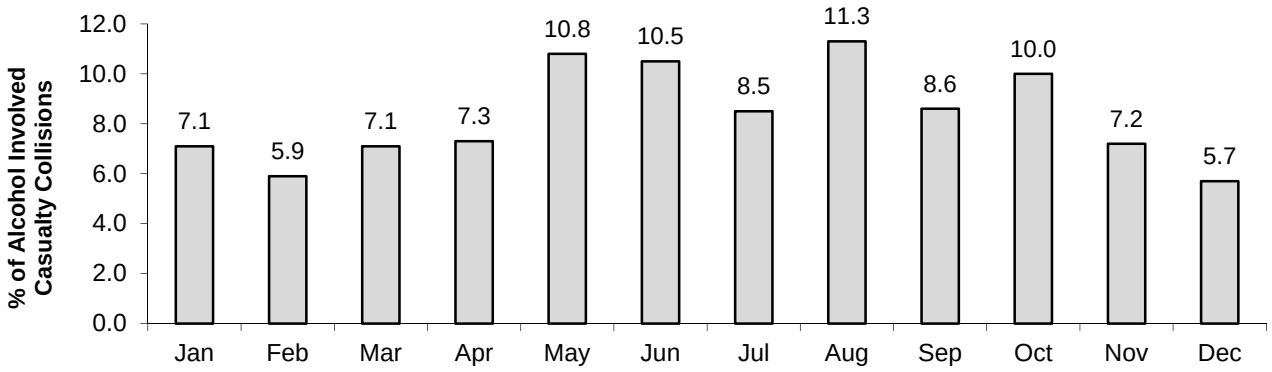
Observations

The late night/early morning time period (11:00 p.m. – 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (32.8%). The morning hours (7:00 a.m. – 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (5.4%).

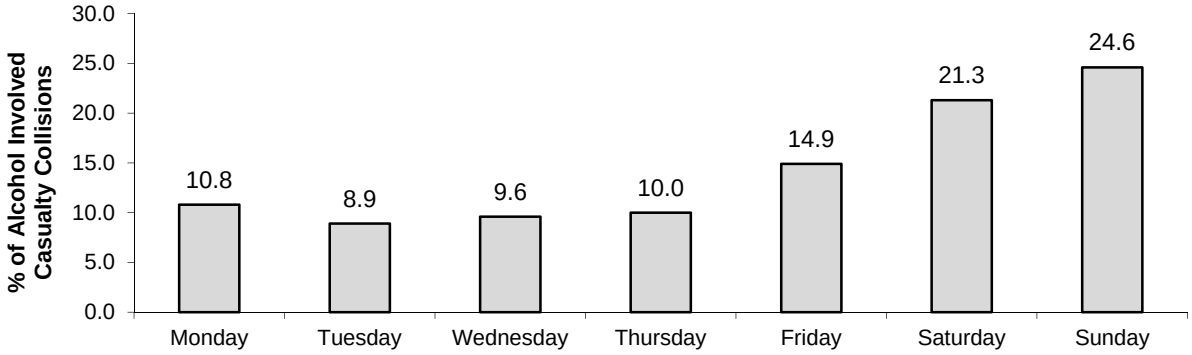
Figure 11

Alcohol-Involved Casualty Collisions
Alberta 2013

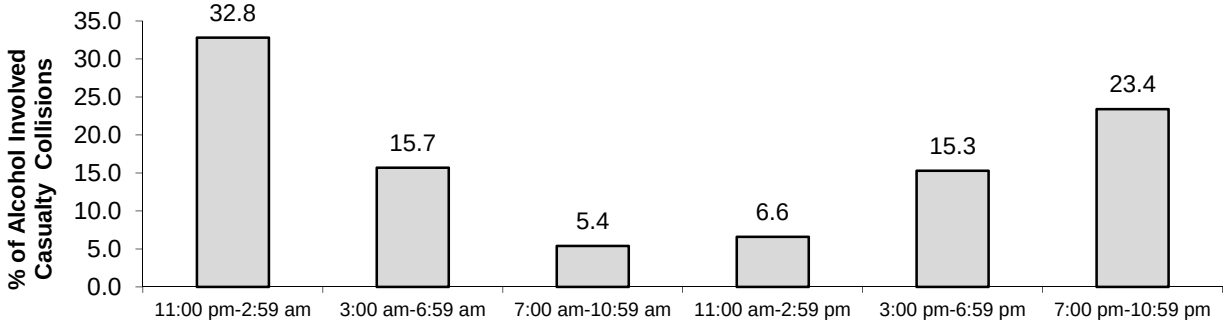
By Month of Occurrence



By Day of Week



By Time Period



Traffic Safety Issues

Restraint Use

- Collision-involved restraint users had a much lower injury rate (7.4%) than those not using restraints (28.1%).
- 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)

2013

Injury Severity of Occupants	Percentage of Occupants Using Restraints %	Percentage of Occupants Not Using Restraints %
Fatal Injury	0.1	3.3
Major Injury	0.9	9.5
Minor Injury	6.4	15.3
Total Occupants Sustaining Injuries	**7.4**	**28.1**
No Apparent Injury	92.6	71.9
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (7.4%) than those not using restraints (28.1%). 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.