Alberta

Traffic Collision Statistics

2012

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2012 Overview

- The number of **traffic fatalities increased 10.2%** over the past year from 313 fatalities in 2011 to 345 in 2012.
- The number of **traffic injuries decreased 2.0%** over the past year from 18584 injuries in 2011 to 18220 in 2012.
- The number of **traffic collisions decreased 1.9%** over the past year from 139179 collisions in 2011 to 136595 in 2012.
- **The highest number of fatal collisions** occurred in **June and September. The highest number of injury collisions** occurred in **December**.
- **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**.
- **45.0% of pedestrians** involved in **fatal collisions had consumed alcohol** prior to the collision compared to **12.4% of pedestrians in injury collisions**.
- **19.6% of drivers** involved in **fatal collisions had consumed alcohol** prior to the crash compared to **4.1% of drivers in injury collisions**.
- **Collision-involved restraint users had a much lower injury rate** (7.7%) than those not using restraints (30.1%)

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 2012. 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.

2012 Traffic Collision Summary

Introduction

During 2012, 136595 collisions were recorded on Alberta roadways. Property damage collisions (over $2000) represented 89.7% (122466) of this total while 10.1% (13822) were non-fatal injury collisions. Fatal collisions accounted for 0.2% (307) of the total reported collisions.

Five-Year Trends

In terms of population and registered vehicles, the fatal collision rate is unchanged from 2011, but increased for licenced drivers. The fatality rates have increased in terms of population and licenced drivers, but is unchanged for registered vehicles.

The non-fatal injury collision and injury rates decreased in 2012 in terms of population, licenced drivers and registered vehicles.

Property damage collision rates decreased in 2012 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, nine provinces and territories had a higher fatality rate than Alberta in 2010. With regard to injury rates, in 2010, 11 jurisdictions had a higher injury rate than Alberta.

Table 1.1

Alberta Traffic Collisions

2008 – 2012

Severity of Collisions	**2012**	**2011**	**2010**	**2009**	**2008**
Fatal Collisions	307	285	307	302	375
Non-Fatal Injury Collisions	13822	13909	13552	14246	16153
Property Damage Collisions	122466	124985	137430	142678	141527
Total Reportable Collisions	**136595**	**139179**	**151289**	**157226**	**158055**
Number Killed	345	313	344	351	410
Number Injured	18220	18584	18253	19167	22015
Total Number of Casualties	**18565**	**18897**	**18597**	**19518**	**22425**

Observations

In 2012, the overall number of collisions decreased 1.9% when compared to 2011. In 2012, injury collisions decreased by 0.6% and fatal crashes increased by 7.7%. The number of fatalities increased by 10.2% from 2011 to 2012 and the number of injuries decreased by 2.0%. In terms of the past five years, overall collisions were lowest in 2012 and highest in 2008.

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

Table 1.2

Traffic Collision Rates

2008 – 2012

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licenced Drivers					Rate Per 10,000 Registered Vehicles				
	2012	**2011**	**2010**	**2009**	**2008**	**2012**	**2011**	**2010**	**2009**	**2008**	**2012**	**2011**	**2010**	**2009**	**2008**
Fatal Collisions	0.8	0.8	0.8	0.8	1.0	1.1	1.0	1.1	1.1	1.4	0.9	0.9	1.0	1.0	1.2
Number Killed	0.9	0.8	0.9	1.0	1.1	1.2	1.1	1.2	1.3	1.5	1.0	1.0	1.1	1.1	1.4
Non-Fatal Injury Collisions	35.7	36.8	36.4	38.6	44.9	47.9	49.2	48.7	52.2	60.5	41.3	43.2	43.3	46.5	53.3
Number Injured	47.0	49.2	49.1	52.0	61.2	63.1	65.8	65.6	70.2	82.4	54.4	57.7	58.3	62.6	72.7
Property Damage Collisions	316.1	330.7	369.3	386.9	393.6	424.1	442.3	493.8	522.3	529.8	365.8	388.0	438.9	466.1	467.1
Total Reportable Collisions	**352.6**	**368.3**	**406.6**	**426.4**	**439.5**	**473.0**	**492.6**	**543.6**	**575.6**	**591.7**	**408.0**	**432.1**	**483.2**	**513.6**	**521.6**

Observations

In terms of population and registered vehicles, the fatal collision rate is unchanged from 2011 to 2012, but increased for licenced drivers. The fatality rates have increased in terms of population and licenced drivers, but is unchanged for registered vehicles.

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

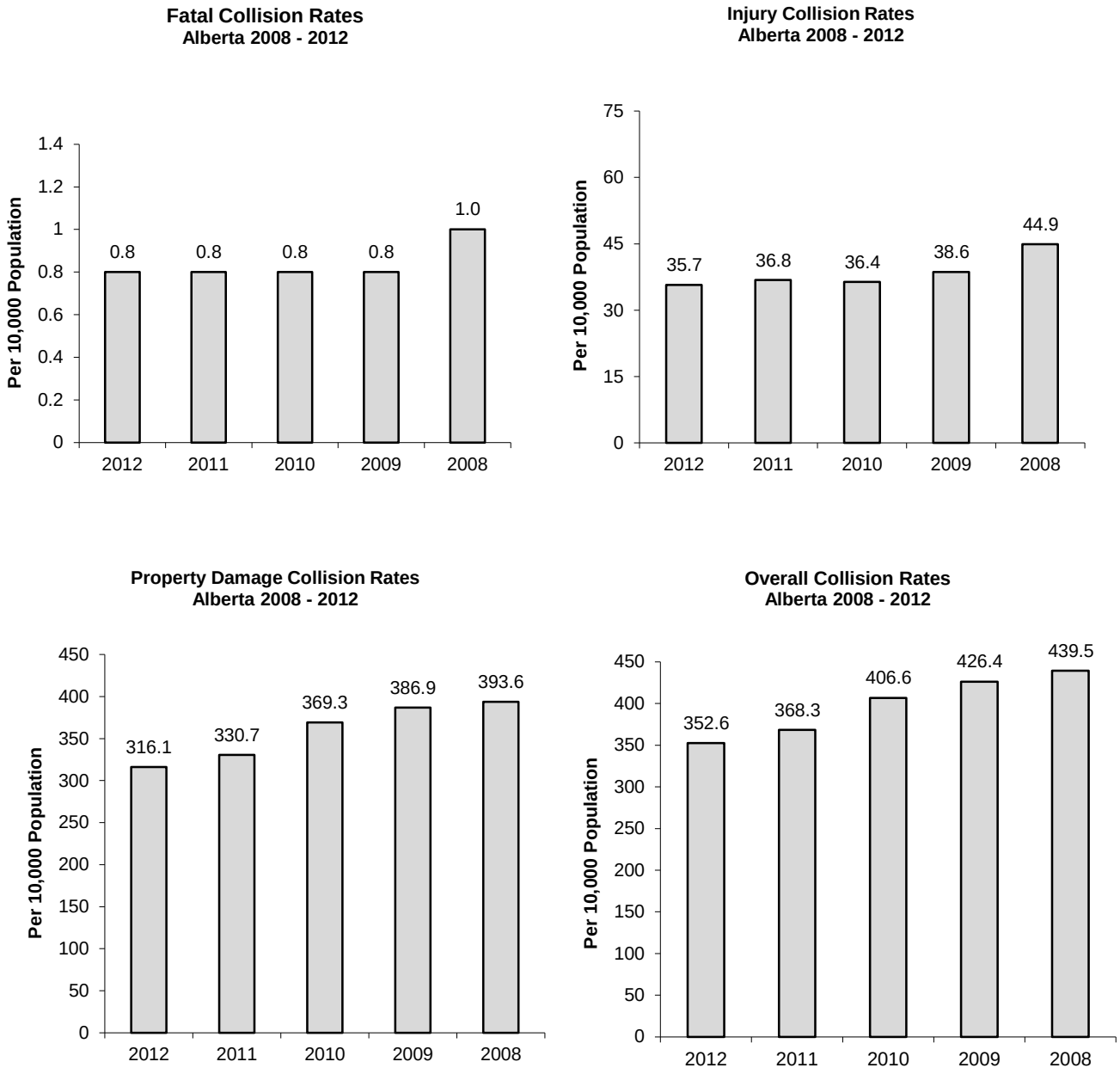
Property damage collision rates decreased from 2011 to 2012 in terms of population, licenced drivers, and registered vehicles.

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 - 2008 to align with the 2006 Standard Geographical Classification (SGC). As a result, collision rates for 2008 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, 2012
Licenced Drivers – Service Alberta – Registries Services, as of December 31, 2012
Registered Vehicles – Service Alberta – Registries Services, as of December 31, 2012

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 - 2008 to align with the 2006 Standard Geographical Classification (SGC). As a result, collision rates for 2008 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

2006 – 2010

	Fatalities					Injuries				
	2010	**2009**	**2008**	**2007**	**2006**	**2010**	**2009**	**2008**	**2007**	**2006**
Canada	6.6	6.6	7.4	8.3	8.9	504.1	518.7	549.2	584.4	604.0
Alberta	6.6	7.1	8.6	9.6	10.0	349.5	385.6	464.2	513.2	570.7
British Columbia	10.1	10.5	9.9	11.6	12.9	579.3	562.6	613.1	725.5	789.5
Saskatchewan	12.8	11.8	12.2	10.6	12.2	499.5	526.0	541.0	509.0	604.4
Manitoba	7.2	7.3	8.1	7.9	9.9	583.9	615.9	689.1	617.1	729.1
Ontario	4.5	4.2	5.0	6.2	6.0	498.3	490.7	479.9	534.8	525.2
Quebec	6.6	7.1	8.1	8.8	10.3	594.2	592.2	632.1	678.6	711.1
New Brunswick	11.5	8.3	9.6	11.0	12.3	425.9	480.7	482.2	459.5	452.3
Nova Scotia	6.9	7.2	8.6	9.3	8.4	476.9	751.5	743.6	577.9	470.8
Prince Edward Island	6.9	9.4	14.9	5.6	25.0	493.7	596.2	496.5	565.6	803.6
Newfoundland	5.8	6.9	8.0	9.4	8.5	426.2	508.9	385.9	519.0	501.3
Yukon	7.9	13.7	15.4	10.3	24.2	433.9	341.1	461.4	427.0	434.5
Northwest Territories	9.4	15.9	11.8	13.9	5.3	353.6	419.8	408.8	435.0	294.3
Nunavut	60.2	65.1	132.5	0.0	N/A	1234.6	1368.1	1357.6	461.5	N/A

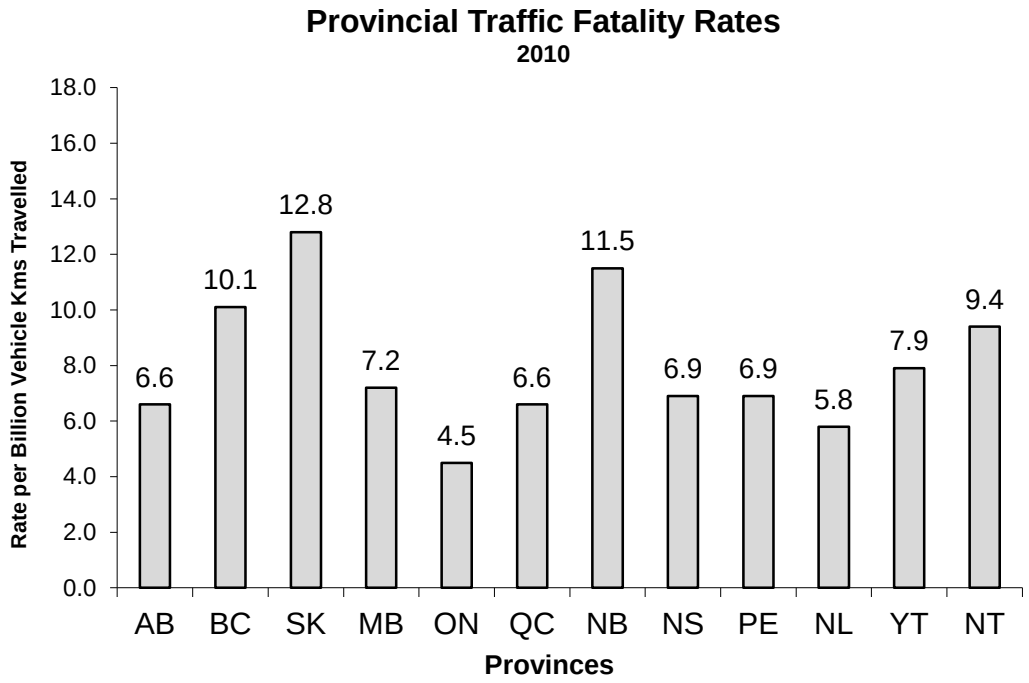
Observations

Based on the most recent information from Transport Canada, from 2009 to 2010, Alberta's fatality rate per billion vehicle kilometers travelled decreased from 7.1 to 6.6. During the same period, the injury rate per billion vehicle kilometers travelled decreased from 385.6 to 349.5. Over the five years, since 2006, rates have declined by 3.4 fatalities and 221.2 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 2010 were estimated using average annual growth rates for the previous five years. 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

June and September experienced more fatal collisions than other months. The highest number of injury and property damage collisions were recorded during the months of December and November, 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 Canada Day 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

2012

Month	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	32	10.4	1071	7.7	11410	9.3	12513	9.2
February	14	4.6	991	7.2	9615	7.9	10620	7.8
March	30	9.8	1038	7.5	9683	7.9	10751	7.9
April	14	4.6	882	6.4	7829	6.4	8725	6.4
May	22	7.2	1042	7.5	8376	6.8	9440	6.9
June	35	11.4	1174	8.5	9207	7.5	10416	7.6
July	32	10.4	1248	9.0	8878	7.2	10158	7.4
August	33	10.7	1256	9.1	8653	7.1	9942	7.3
September	35	11.4	1267	9.2	9078	7.4	10380	7.6
October	25	8.1	1289	9.3	11262	9.2	12576	9.2
November	19	6.2	1249	9.0	14372	11.7	15640	11.4
December	16	5.2	1308	9.5	13889	11.3	15213	11.1
Unspecified	--	--	7	0.1	214	0.2	221	0.2
Total Number of Collisions	**307**	**100.0**	**13822**	**100.0**	**122466**	**100.0**	**136595**	**100.0**

Observations

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

Table 2.2

Collision Occurrence by Day of Week

2012

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	44	14.3	1957	14.2	17359	14.2	19360	14.2
Tuesday	36	11.7	2027	14.7	17728	14.5	19791	14.5
Wednesday	41	13.4	2006	14.5	17775	14.5	19822	14.5
Thursday	42	13.7	2198	15.9	19078	15.6	21318	15.6
Friday	31	10.1	2280	16.5	20382	16.6	22693	16.6
Saturday	68	22.1	1825	13.2	16406	13.4	18299	13.4
Sunday	45	14.7	1512	10.9	13462	11.0	15019	11.0
Unspecified	--	--	17	0.1	276	0.2	293	0.2
Total Number of Collisions	**307**	**100.0**	**13822**	**100.0**	**122466**	**100.0**	**136595**	**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

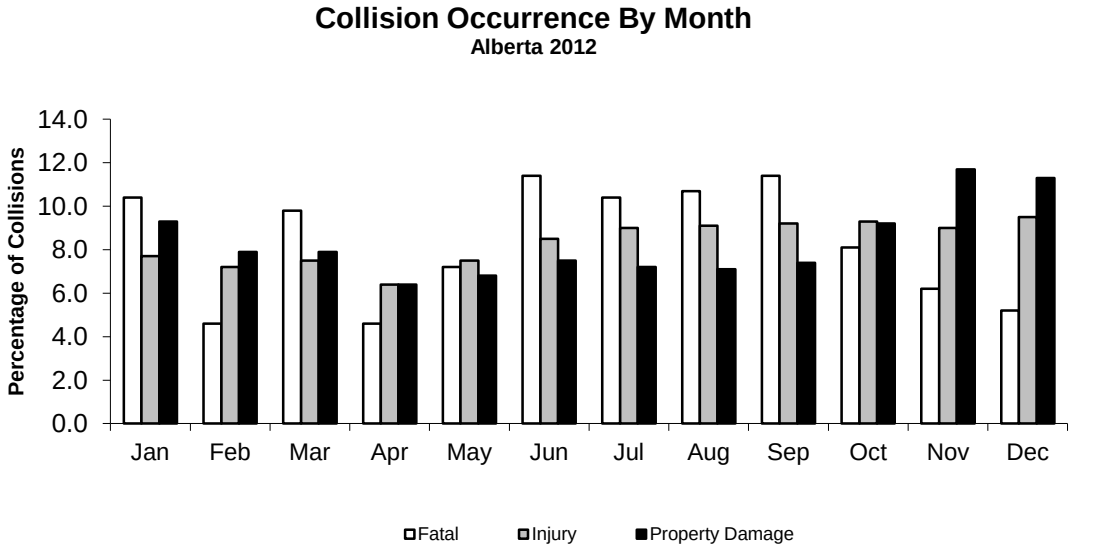
2012

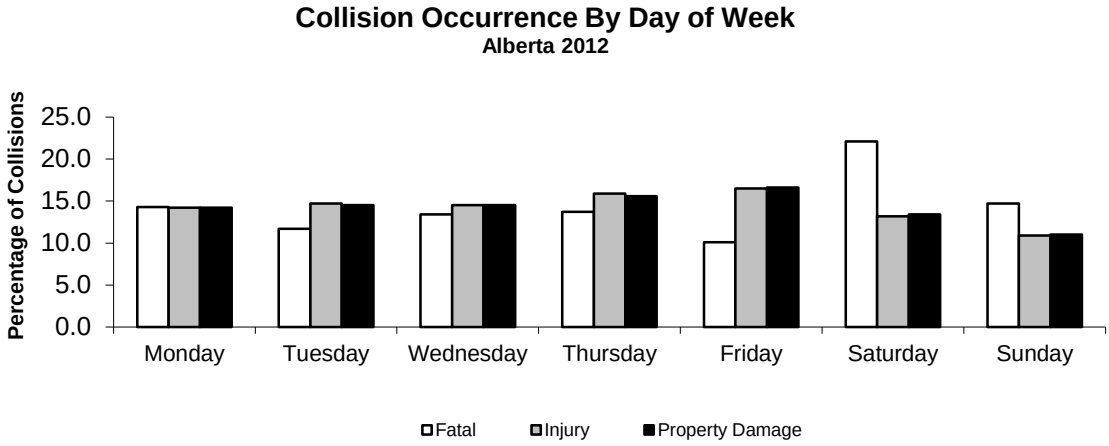
Time Period	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Property Damage Collisions N	Property Damage Collisions %	Total Collisions N	Total Collisions %
11:00 p.m. - 2:59 a.m.	52	16.9	904	6.5	7233	5.9	8189	6.0
3:00 a.m. - 6:59 a.m.	33	10.7	753	5.4	6796	5.5	7582	5.6
7:00 a.m. - 10:59 a.m.	43	14.0	2452	17.7	22735	18.6	25230	18.5
11:00 a.m. - 2:59 p.m.	56	18.2	3129	22.6	29258	23.9	32443	23.8
3:00 p.m. - 6:59 p.m.	68	22.1	4425	32.0	36062	29.4	40555	29.7
7:00 p.m. - 10:59 p.m.	49	16.0	1940	14.0	17132	14.0	19121	14.0
Unspecified	6	2.0	219	1.6	3250	2.7	3475	2.5
Total Number of Collisions	**307**	**100.0**	**13822**	**100.0**	**122466**	**100.0**	**136595**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the largest percentage (29.7%) 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 2012
Percentage of Collisions
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 2012
Percentage of Collisions
25.0
20.0
15.0
10.0
5.0
0.0
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Fatal
Injury
Property Damage

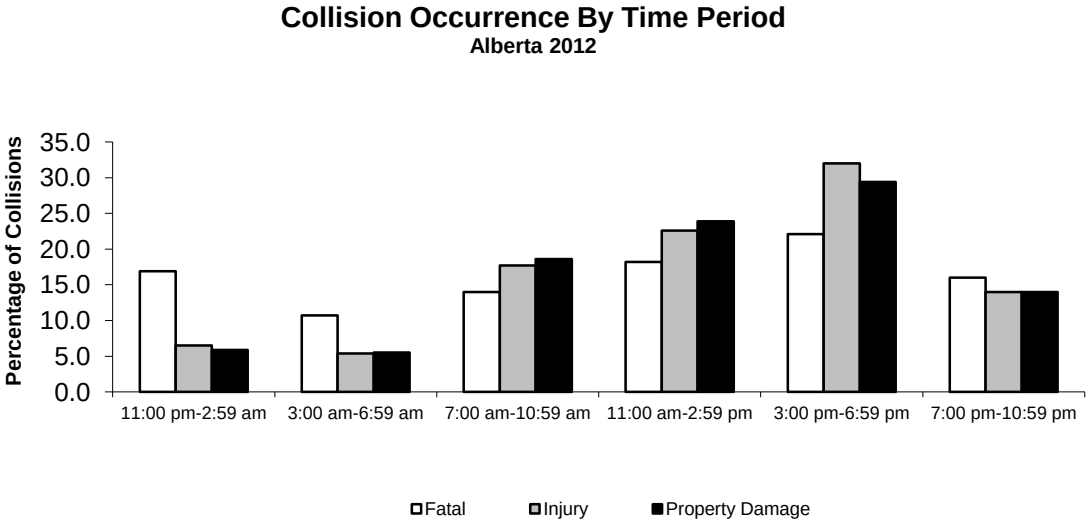

Collision Occurrence By Time Period
Alberta 2012
Percentage of Collisions
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Table 2.4

Collisions During 2012 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	--	31	228
Family Day Long Weekend (February 17-20)	8	177	1296
Easter Long Weekend (April 5-9)	3	190	1441
Victoria Day Long Weekend (May 18-21)	3	173	993
Canada Day Long Weekend (June 29-July 2)	15	226	1208
August Long Weekend (August 3-6)	8	216	1083
Labour Day Long Weekend (August 31-September 3)	4	190	1147
Thanksgiving Long Weekend (October 5-8)	6	180	1159
Remembrance Day Long Weekend (November 9-12)	1	207	2337
Christmas Season (December 21-26)	--	312	3319
Total	**48**	**1902**	**14211**

Observations

The Canada Day 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 6.5% and 3.3% 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

2012

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	198	57.4	11317	62.1	11515	62.0
Passengers	63	18.3	4304	23.6	4367	23.5
Pedestrians	47	13.6	1162	6.4	1209	6.5
Motorcyclists	21	6.1	627	3.4	648	3.5
Bicyclists	4	1.2	510	2.8	514	2.8
Other	12	3.5	214	1.2	226	1.2
Unspecified	--	--	86	0.5	86	0.5
Total Casualties	**345**	**100.0**	**18220**	**100.0**	**18565**	**100.0**

Observations

The majority of traffic victims were drivers (62.0%) and passengers (23.5%) of vehicles. Pedestrians and motorcyclists accounted for 6.5% and 3.5% of the total casualties, respectively.

Table 3.2

Age of Casualties

2012

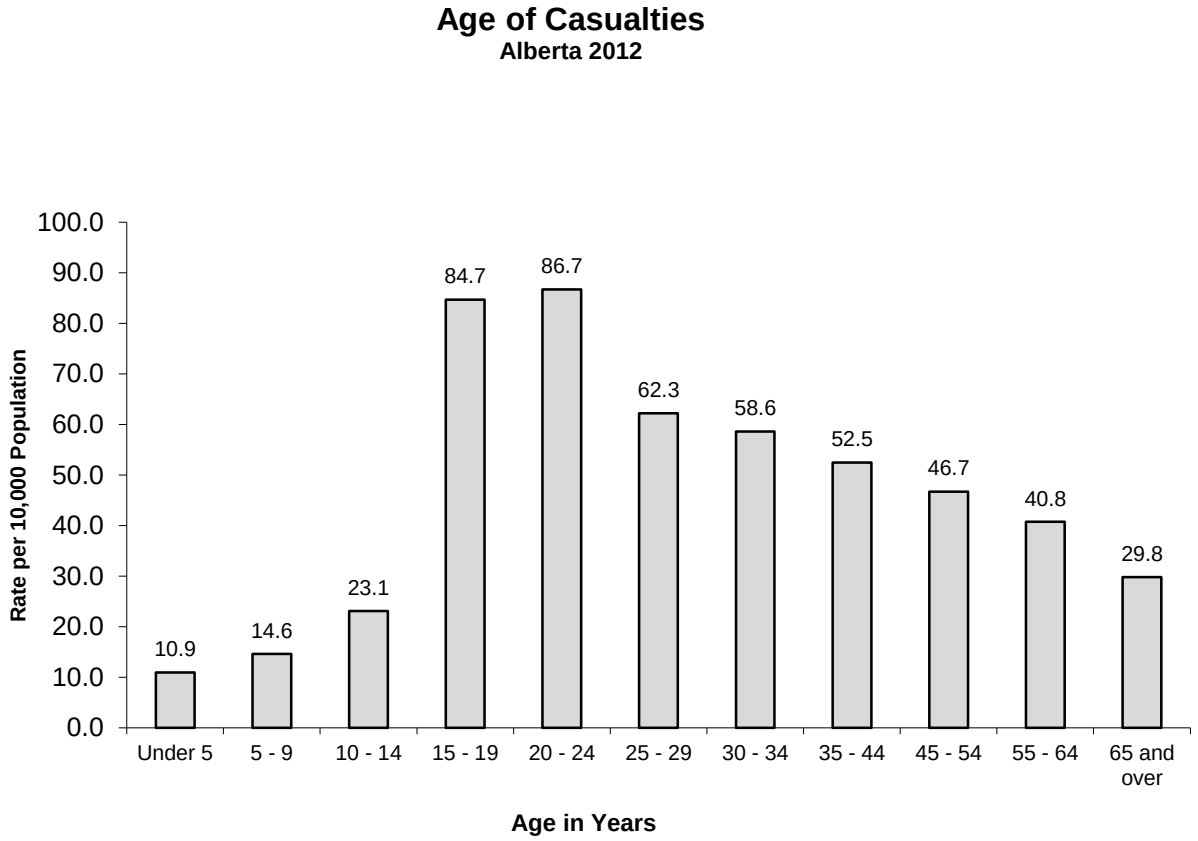
Age in Years	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %	Casualty Rate Per 10,000 Population*
Under 5	3	0.9	280	1.5	283	1.5	10.9
5 - 9	4	1.2	333	1.8	337	1.8	14.6
10 - 14	4	1.2	502	2.8	506	2.7	23.1
15 - 19	35	10.1	1987	10.9	2022	10.9	84.7
20 - 24	59	17.1	2395	13.1	2454	13.2	86.7
25 - 29	35	10.1	2017	11.1	2052	11.1	62.3
30 - 34	28	8.1	1800	9.9	1828	9.8	58.6
35 - 44	50	14.5	2919	16.0	2969	16.0	52.5
45 - 54	45	13.0	2604	14.3	2649	14.3	46.7
55 - 64	34	9.9	1759	9.7	1793	9.7	40.8
65 and over	47	13.6	1237	6.8	1284	6.9	29.8
Unspecified	1	0.3	387	2.1	388	2.1	
Total Casualties	**345**	**100.0**	**18220**	**100.0**	**18565**	**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, 2012, Statistics Canada

Figure 4


Age of Casualties
Alberta 2012
Rate per 10,000 Population
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
10.9
14.6
23.1
84.7
86.7
62.3
58.6
52.5
46.7
40.8
29.8
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 (28.3%), running off the road (14.6%) and left turn across path (12.2%) 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

2012

	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	115	0.5	7.6	51	0.2	3.8	166	0.7	5.8
16 - 17	489	2.0	15.0	372	1.5	13.0	861	3.5	14.1
18 - 19	762	3.1	18.4	515	2.1	14.1	1277	5.1	16.4
20 - 24	1895	7.6	14.5	1340	5.4	11.4	3236	13.0	13.0
25 - 34	3421	13.8	10.7	2312	9.3	8.0	5734	23.1	9.4
35 - 44	2694	10.9	9.4	1853	7.5	7.2	4547	18.3	8.4
45 - 54	2462	9.9	8.6	1549	6.2	5.9	4011	16.2	7.3
55 - 64	1744	7.0	7.7	956	3.9	4.7	2700	10.9	6.3
65 and over	1165	4.7	6.5	601	2.4	3.8	1766	7.1	5.2
Unspecified	89	0.4		47	0.2		526	2.1	
Total Number of Drivers	**14836**	**59.8**		**9596**	**38.7**		**24824**	**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, 2012.

Figure 5

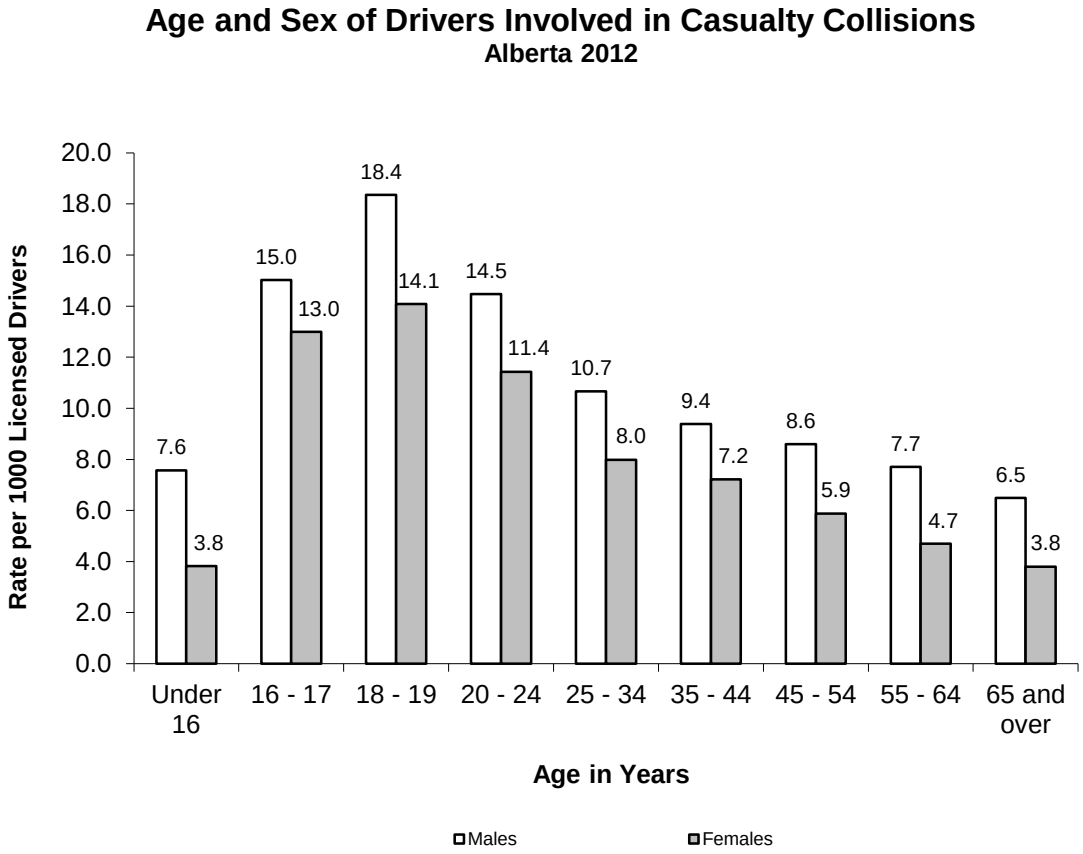

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2012
Rate per 1000 Licensed Drivers
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
7.6
3.8
15.0
13.0
18.4
14.1
14.5
11.4
10.7
8.0
9.4
7.2
8.6
5.9
7.7
4.7
6.5
3.8
Under 16
16 - 17
18 - 19
20 - 24
25 - 34
35 - 44
45 - 54
55 - 64
65 and over
Age in Years
Males
Females

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2012

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	9	3.8	2939	28.8	2948	28.3
Ran Off Road	99	42.3	1426	14.0	1525	14.6
Left Turn Across Path	11	4.7	1259	12.4	1270	12.2
Stop Sign Violation	29	12.4	764	7.5	793	7.6
Disobey Traffic Signal	8	3.4	735	7.2	743	7.1
Failed to Yield Right of Way to Pedestrian	7	3.0	454	4.5	461	4.4
Left of Centre	47	20.1	283	2.8	330	3.2
Improper Turn	7	3.0	314	3.1	321	3.1
Improper Lane Change	--	--	314	3.1	314	3.0
Backed Unsafely	1	0.4	267	2.6	268	2.6
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.3	235	2.3	238	2.3
Yield Sign Violation	2	0.9	220	2.2	222	2.1
Improper Passing	8	3.4	140	1.4	148	1.4
Other	3	1.3	843	8.3	846	8.1
Total Number of Drivers	**234**	**100.0**	**10193**	**100.0**	**10427**	**100.0**

Observations

Following too closely (28.3%), running off the road (14.6%) and left turn across path (12.2%) 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 22056 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 11629 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (40.2%), minivans/MPVs (25.4%) and pick-up trucks/vans (22.4%) were the vehicles most frequently involved in total casualty collisions.

Vehicle Factors

Overall 0.7% 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, 44.8% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2012

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	142	29.1	10060	40.5	10202	40.2
Mini-Van/MPV	62	12.7	6374	25.6	6436	25.4
Pick-up Truck/Van	154	31.6	5522	22.2	5676	22.4
Truck 4500 kg+	49	10.0	941	3.8	990	3.9
Motorcycle	22	4.5	609	2.4	631	2.5
Bicycle	5	1.0	518	2.1	523	2.1
Tractor-Trailer	39	8.0	476	1.9	515	2.0
Off-Highway Vehicle	6	1.2	106	0.4	112	0.4
Transit Bus	--	--	90	0.4	90	0.4
School Bus	--	--	44	0.2	44	0.2
Emergency Vehicle	--	--	42	0.2	42	0.2
Construction Equipment	3	0.6	22	0.1	25	0.1
Other Bus	--	--	19	0.1	19	0.1
Motorized Snow Vehicle	4	0.8	10	0.0	14	0.1
Farm Equipment	1	0.2	13	0.1	14	0.1
Motorhome	--	--	13	0.1	13	0.1
Intercity Bus	1	0.2	4	0.0	5	0.0
Moped	--	--	4	0.0	4	0.0
Other	--	--	2	0.0	2	0.0
Total Number of Vehicles	**488**	**100.0**	**24869**	**100.0**	**25357**	**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 2.1% and motorcycles 2.5% of the vehicles involved in casualty collisions. Tractor-Trailers were 2.0% of total vehicles in casualty crashes, but 8.0% 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*

2012

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	382	97.9	21951	99.3	22333	99.3
Defective Brakes	1	0.3	44	0.2	45	0.2
Tires Failed	4	1.0	36	0.2	40	0.2
Lighting Defect	1	0.3	7	0.0	8	0.0
Improper Load/Shift	--	--	7	0.0	7	0.0
Other	2	0.5	64	0.3	66	0.3
Total Number of Vehicles	**390**	**100.0**	**22109**	**100.0**	**22499**	**100.0**

Observations

Overall 0.7% 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*

2012

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	219	47.7	10694	44.8	10913	44.8
Centre Rear	22	4.8	5044	21.1	5066	20.8
Rollover	80	17.4	1376	5.8	1456	6.0
Right Front	23	5.0	1740	7.3	1763	7.2
Left Front	34	7.4	1700	7.1	1734	7.1
Left Side	31	6.8	965	4.0	996	4.1
Right Side	25	5.4	901	3.8	926	3.8
Left Rear	8	1.7	566	2.4	574	2.4
Right Rear	4	0.9	524	2.2	528	2.2
Attachment	10	2.2	246	1.0	256	1.1
Undercarriage	3	0.7	73	0.3	76	0.3
Top	--	--	47	0.2	47	0.2
Total Number of Vehicles	**459**	**100.0**	**23876**	**100.0**	**24335**	**100.0**

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 44.8% of the impacts involved the centre front, while 20.8% 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 (67.1%) occurred in rural areas, whereas the majority of injury (74.3%) and property damage (81.8%) crashes occurred in urban areas.

Surface Conditions

The majority (63.9%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 14.3% of fatal collisions and 24.0% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2012

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	101	32.9	10272	74.3	100207	81.8	110580	81.0
Rural	206	67.1	3550	25.7	22259	18.2	26015	19.0
Total Number of Collisions	**307**	**100.0**	**13822**	**100.0**	**122466**	**100.0**	**136595**	**100.0**

Observations

Collisions which occurred in rural areas accounted for 67.1% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (74.3%) and property damage crashes (81.8%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2012

Surface Condition	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
Dry	229	74.6	8794	63.6	9023	63.9
Slush/Snow/Ice	44	14.3	3321	24.0	3365	23.8
Wet	21	6.8	1112	8.0	1133	8.0
Loose Surface Material	6	2.0	212	1.5	218	1.5
Muddy	2	0.7	30	0.2	32	0.2
Other	1	0.3	46	0.3	47	0.3
Unspecified	4	1.3	307	2.2	311	2.2
Total Number of Collisions	**307**	**100.0**	**13822**	**100.0**	**14129**	**100.0**

Observations

The majority (63.9%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 14.3% of fatal collisions and 24.0% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- In 2012, based on motorcycle registrations, the involvement rate of motorcycles has decreased in fatal collisions and in injury collisions from 2011.
- 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 lane change. 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 0.3% of motorcycles involved in casualty collisions compared to 0.7% 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

2008 – 2012

Number of Motorcycles	**2012**	**2011**	**2010**	**2009**	**2008**
Fatal	22	26	31	34	43
Non-Fatal Injury	609	655	662	692	807
Total Number of Motorcycles Involved in Casualty Collisions	**631**	**681**	**693**	**726**	**850**
Casualties*					
Number Killed	21	24	31	37	42
Number Injured	660	719	715	757	852
Total Casualties in Collisions Involving Motorcycles	**681**	**743**	**746**	**794**	**894**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	2.0	2.4	2.9	3.3	4.4
Non-Fatal Injury Collisions	54.3	60.5	62.7	67.4	82.4

Observations

Based on motorcycle registrations in 2012, the involvement rate of motorcycles has decreased in fatal and injury collisions from 2011.

*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, 2012.

Figure 6

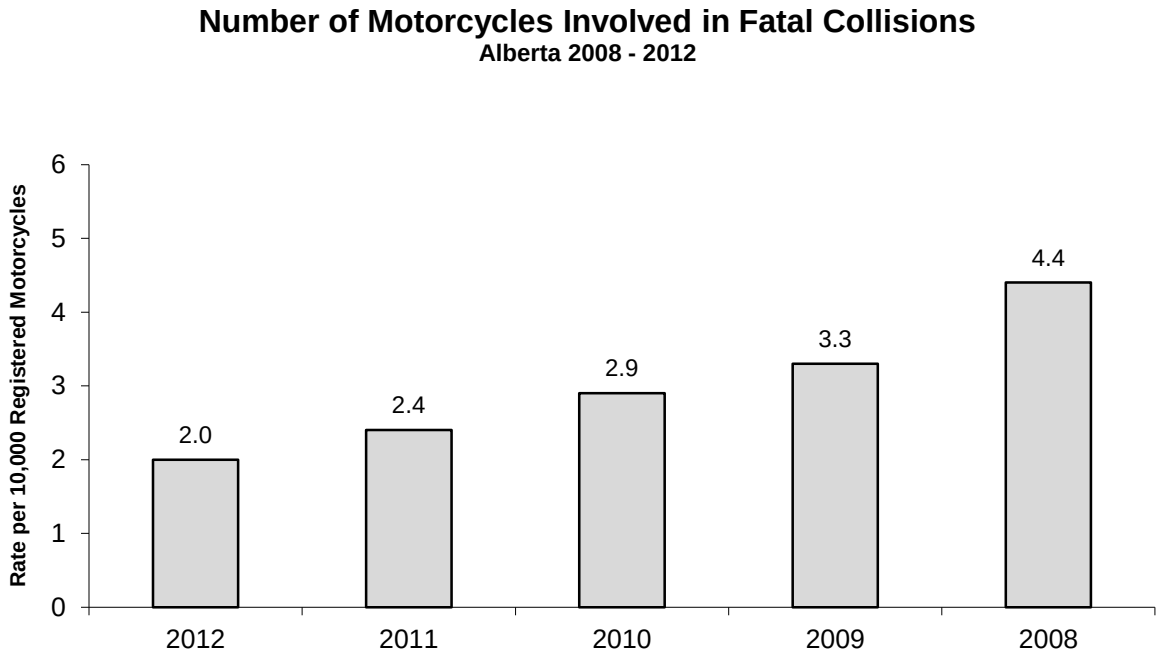

Number of Motorcycles Involved in Fatal Collisions
Alberta 2008 - 2012
Rate per 10,000 Registered Motorcycles
0
1
2
3
4
5
6
2.0
2.4
2.9
3.3
4.4
2012
2011
2010
2009
2008

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2012

	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
Age of Motorcycle Driver	**N**	**%**	**N**	**%**	**N**	**%**	
Under 16	6	1.0	--	--	6	1.0	
16 - 17	4	0.6	1	0.2	5	0.8	35.5
18 - 19	14	2.2	3	0.5	17	2.7	24.3
20 - 24	77	12.2	8	1.3	85	13.5	11.5
25 - 34	138	21.9	13	2.1	151	23.9	3.6
35 - 44	114	18.1	12	1.9	126	20.0	2.3
45 - 54	117	18.5	19	3.0	136	21.6	1.8
55 - 64	86	13.6	7	1.1	93	14.7	1.4
65 and over	9	1.4	--	--	9	1.4	0.4
Unspecified	--	--	--	--	3	0.5	
Total Number of Motorcycle Drivers	**565**	**89.5**	**63**	**10.0**	**631**	**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, 2012.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2012

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	73	35.6	14.6
Followed Too Closely	40	19.5	28.3
Improper Passing	13	6.3	1.4
Improper Lane Change	11	5.4	3.0
Left Turn Across Path	9	4.4	12.2
Improper Turn	8	3.9	3.1
Left of Centre	7	3.4	3.2
Disobey Traffic Signal	5	2.4	7.1
Stop Sign Violation	3	1.5	7.6
Failed to Yield Right of Way to Pedestrian	--	--	4.4
Failed to Yield Right of Way - Uncontrolled Intersection	--	--	2.3
Backed Unsafely	--	--	2.6
Yield Sign Violation	--	--	2.1
Other	36	17.6	8.1
Total Number of Motorcycle Drivers	**205**	**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 lane change. 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 509 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 304 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers Involved in Casualty Collisions*

2012

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	523	92.7	93.9
Had Been Drinking	20	3.5	1.7
Alcohol Impaired	16	2.8	2.7
Total Alcohol Involvement	**36**	**6.4**	**4.4**
Impaired by Drugs	1	0.2	0.1
Fatigued/Asleep	1	0.2	0.7
Other	3	0.5	0.9
Total Number of Motorcycle Drivers	**564**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 6.4% 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*

2012

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	570	99.7	99.3
Tires Failed	1	0.2	0.2
Defective Brakes	--	--	0.2
Lighting Defect	--	--	--
Improper Load/Shift	--	--	--
Other	1	0.2	0.3
Total Number of Motorcycles	**572**	**100.0**	

Observations

Vehicle factors were identified for 0.3% of the motorcycles involved in casualty collisions compared to 0.7% 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

2012

Month	N	%
January	3	0.5
February	3	0.5
March	13	2.1
April	45	7.3
May	70	11.4
June	106	17.3
July	139	22.6
August	98	16.0
September	112	18.2
October	23	3.7
November	--	--
December	--	--
Unspecified	2	0.3
Total Number of Collisions	**614**	**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

2012

Road Surface Condition	N	%
Dry	544	88.6
Loose Surface Material	41	6.7
Wet	17	2.8
Muddy	1	0.2
Slush/Snow/Ice	1	0.2
Other	1	0.2
Unspecified	9	1.5
Total Number of Collisions	**614**	**100.0**

Observations

The majority (88.6%) of casualty collisions involving motorcycles occurred on dry roads. Loose material on the road surface was involved in 6.7% of motorcycle casualty crashes. Wet roads were the scene for 2.8% of motorcycle casualty collisions.

Special Types of Vehicles

Truck Tractors

- In 2012, there were 37 persons killed and 599 injured in collisions involving truck tractors. This represents a decrease in fatalities and injuries from 2011.

- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, drive left of centre, or make an improper lane change. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, fail to yield right of way to a pedestrian or disobey a traffic signal.

- 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 December.

Table 7.8

Truck Tractors Involved in Casualty Collisions

2008 – 2012

Number of Truck Tractors	**2012**	**2011**	**2010**	**2009**	**2008**
Fatal	39	48	32	44	55
Non-Fatal Injury	476	481	411	331	498
Total Number of Truck Tractors Involved in Casualty Collisions	**515**	**529**	**443**	**375**	**553**
Casualties*					
Number Killed	37	50	33	49	61
Number Injured	599	670	535	453	657
Total Casualties in Collisions Involving Truck Tractors	**636**	**720**	**568**	**502**	**718**

Observations

In 2012, there were 37 persons killed and 599 injured in collisions involving truck tractors. This represents a decrease in fatalities and injuries from 2011. The total number of truck tractors involved in casualty crashes was highest in 2008 at 553.

*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*

2012

Improper Actions of Truck Tractor Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	58	35.4	14.6
Followed Too Closely	32	19.5	28.3
Left Turn Across Path	15	9.1	12.2
Left of Centre	10	6.1	3.2
Improper Lane Change	9	5.5	3.0
Stop Sign Violation	7	4.3	7.6
Improper Passing	5	3.0	1.4
Improper Turn	5	3.0	3.1
Backed Unsafely	3	1.8	2.6
Disobey Traffic Signal	3	1.8	7.1
Yield Sign Violation	3	1.8	2.1
Failed to Yield Right of Way - Uncontrolled Intersection	2	1.2	2.3
Failed to Yield Right of Way to Pedestrian	1	0.6	4.4
Other	11	6.7	8.1
Total Number of Drivers	**164**	**100.0**	

Observations

Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, drive left of centre, or make an improper lane change. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, fail to yield right of way to a pedestrian or disobey a traffic signal.

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

Note: There was a total of 430 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 266 were indicated as driving properly at the time of the collision.

Table 7.10

Condition of Truck Tractor Drivers Involved in Casualty Collisions*

2012

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	425	96.4	93.9
Had Been Drinking	--	--	1.7
Alcohol Impaired	--	--	2.7
Total Alcohol Involvement	**--**	**--**	**4.4**
Fatigued/Asleep	7	1.6	0.1
Impaired by Drugs	2	0.5	0.7
Other	7	1.6	0.9
Total Number of Drivers	**441**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 3.6% 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*

2012

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	450	97.8	99.3
Defective Brakes	3	0.7	0.2
Lighting Defect	2	0.4	0.0
Improper Load/Shift	1	0.2	0.0
Tires Failed	1	0.2	0.2
Other	3	0.7	0.3
Total Number of Truck Tractors	**460**	**100.0**	

Observations

Vehicle factors were identified for 2.2% 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

2012

Month	N	%
January	42	8.6
February	30	6.1
March	41	8.4
April	21	4.3
May	20	4.1
June	34	6.9
July	48	9.8
August	47	9.6
September	39	7.9
October	50	10.2
November	57	11.6
December	62	12.6
Unspecified	--	--
Total Number of Collisions	**491**	**100.0**

Observations

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

Special Types of Vehicles

Trains

- In 2012, 1 person was killed and 20 people were injured in crashes in which a train was involved. The number of casualties involving trains has decreased from 2011.
- The largest number of casualty collisions involving trains occurred in the months of February, March, and November.
- The majority of the drivers involved in casualty collisions with a train made an improper driving action.

Table 7.13

Trains Involved in Casualty Collisions

2008 – 2012

Number of Trains	**2012**	**2011**	**2010**	**2009**	**2008**
Fatal	1	3	5	2	3
Non-Fatal Injury	16	19	10	9	21
Total Number of Trains Involved in Casualty Collisions	**17**	**22**	**15**	**11**	**24**
Casualties*					
Number Killed	1	3	6	2	3
Number Injured	20	27	13	12	27
Total Casualties in Collisions Involving Trains	**21**	**30**	**19**	**14**	**30**

Observations

The number of trains involved in casualty collisions decreased from 2011. The number of casualties resulting from these collisions also decreased.

*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

2012

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	--	--	1	6.3	1	5.9
February	--	--	3	18.8	3	17.6
March	1	100.0	2	12.5	3	17.6
April	--	--	1	6.3	1	5.9
May	--	--	2	12.5	2	11.8
June	--	--	2	12.5	2	11.8
July	--	--	--	--	--	--
August	--	--	--	--	--	--
September	--	--	--	--	--	--
October	--	--	2	12.5	2	11.8
November	--	--	3	18.8	3	17.6
December	--	--	--	--	--	--
Total Number of Collisions	**1**	**100.0**	**16**	**100.0**	**17**	**100.0**

Observations

The largest number of casualty collisions involving trains occurred in the months of February, March, and November.

Table 7.15

Actions of Drivers Involved in Casualty Collisions with Trains*

2012

Driver Actions	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Driving Properly	--	--	3	20.0	3	18.8
Disobey Traffic Signal	1	100.0	4	26.7	5	31.3
Ran Off Road	--	--	1	6.7	1	6.3
Improper Turn	--	--	1	6.7	1	6.3
Stop Sign Violation	--	--	2	13.3	2	12.5
Failed to Yield Right of Way - Uncontrolled Intersection	--	--	2	13.3	2	12.5
Other	--	--	2	13.3	2	12.5
Total Number of Drivers	**1**	**100.0**	**15**	**100.0**	**16**	**100.0**

Observations

The majority 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 October. 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.).
- 40.7% 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, 12.4% had consumed alcohol before the collision, compared to 45.0% 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

2012

Month of Collision	N	%
January	118	10.1
February	112	9.6
March	94	8.0
April	71	6.1
May	94	8.0
June	91	7.8
July	86	7.4
August	85	7.3
September	103	8.8
October	129	11.0
November	95	8.1
December	89	7.6
Unspecified	1	0.1
Total Number of Collisions	**1168**	**100.0**

Observations

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

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2012

Day of Week	N	%
Monday	166	14.2
Tuesday	169	14.5
Wednesday	174	14.9
Thursday	192	16.4
Friday	203	17.4
Saturday	148	12.7
Sunday	114	9.8
Unspecified	2	0.2
Total Number of Collisions	**1168**	**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

2012

Time Period	N	%
11:00 p.m. - 2:59 a.m.	94	8.0
3:00 a.m. - 6:59 a.m.	62	5.3
7:00 a.m. - 10:59 a.m.	204	17.5
11:00 a.m. - 2:59 p.m.	234	20.0
3:00 p.m. - 6:59 p.m.	362	31.0
7:00 p.m. - 10:59 p.m.	198	17.0
Unspecified	14	1.2
Total Number of Collisions	**1168**	**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

2012

Location	N	%
Urban	1127	96.5
Rural	41	3.5
Total Number of Collisions	**1168**	**100.0**

Observations

The majority of pedestrian casualty collisions (96.5%) occurred in urban areas. Only 3.5% occurred in rural areas.

Table 8.5

Actions of Drivers Involved in Casualty Collisions with Pedestrians*

2012

Driver Actions	N	%
Driving Properly	349	35.4
Failed to Yield Right of Way To Pedestrian	402	40.7
Backed Unsafely	76	7.7
Improper Turn	22	2.2
Ran Off Road	17	1.7
Left Turn Across Path	14	1.4
Disobey Traffic Signal	13	1.3
Failed to Yield Right of Way - Uncontrolled Intersection	13	1.3
Stop Sign Violation	11	1.1
Yield Sign Violation	10	1.0
Followed Too Closely	8	0.8
Left of Centre	5	0.5
Improper Passing	3	0.3
Improper Lane Change	2	0.2
Other	42	4.3
Total Number of Drivers	**987**	**100.0**

Observations

35.4% of the drivers involved in pedestrian casualty crashes were recorded as driving properly. However, 40.7% 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

2012

Age in Years	Pedestrians Killed N	Pedestrians Injured N	Total Pedestrian Casualties N	%	Pedestrian Casualty Rate Per 10,000 Population*
Under 5	2	29	31	2.6	1.2
5 - 9	--	40	40	3.3	1.7
10 - 14	--	90	90	7.4	4.1
15 - 19	9	157	166	13.7	7.0
20 - 24	8	144	152	12.6	5.4
25 - 29	3	96	99	8.2	3.0
30 - 34	1	86	87	7.2	2.8
35 - 44	5	150	155	12.8	2.7
45 - 54	8	140	148	12.2	2.6
55 - 64	6	109	115	9.5	2.6
65 and over	5	101	106	8.8	2.5
Unspecified	--	20	20	1.7	
Total Number of Pedestrian Casualties	**47**	**1162**	**1209**	**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, 2012, Statistics Canada

Figure 7

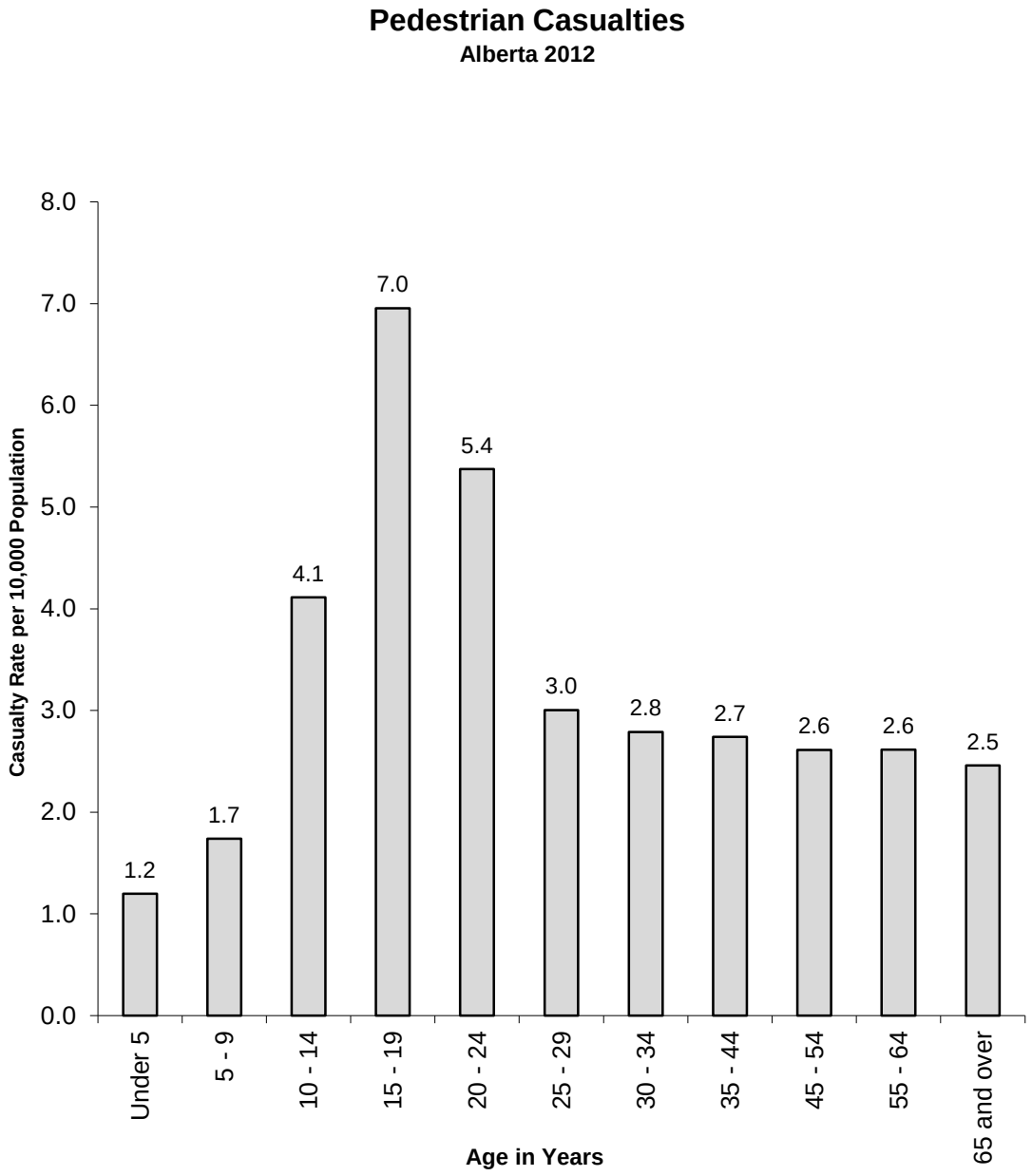

Pedestrian Casualties
Alberta 2012
Casualty Rate per 10,000 Population
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1.2
1.7
4.1
7.0
5.4
3.0
2.8
2.7
2.6
2.6
2.5
Under 5
5 - 9
10 - 14
15 - 19
20 - 24
25 - 29
30 - 34
35 - 44
45 - 54
55 - 64
65 and over
Age in Years

Table 8.7

Condition of Pedestrians Involved in Casualty Collisions*

2012

Condition of Pedestrian	Pedestrians in Fatal Collisions N	%	Pedestrians in Non-Fatal Injury Collisions N	%	Total Pedestrians in Casualty Collisions N	%
Normal	22	55.0	871	86.3	893	85.1
Had Been Drinking	9	22.5	57	5.6	66	6.3
Alcohol Impaired	9	22.5	68	6.7	77	7.3
Total Alcohol Involvement	**18**	**45.0**	**125**	**12.4**	**143**	**13.6**
Impaired by Drugs	--	--	3	0.3	3	0.3
Other	--	--	10	1.0	10	1.0
Total Number of Pedestrians	**40**	**100.0**	**1009**	**100.0**	**1049**	**100.0**

Observations

Of pedestrians involved in injury collisions,12.4% had consumed alcohol before the collision, compared to 45.0% 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*

2012

Age in Years	N	%	Rate per 10,000 Population**
Under 10	--	--	--
10 - 14	2	1.4	0.1
15 - 19	16	11.2	0.7
20 - 24	35	24.5	1.2
25 - 29	18	12.6	0.5
30 - 34	16	11.2	0.5
35 - 44	19	13.3	0.3
45 - 54	22	15.4	0.4
55 - 64	7	4.9	0.2
65 and over	3	2.1	0.1
Unspecified	5	3.5	
Total Number of Pedestrian Casualties	**143**	**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, 2012, 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 (36.6%) occurred during the evening rush-hour period.
- Young bicyclists aged 15 - 19 had the highest casualty rate per 10,000 population.
- Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right-of-way at an uncontrolled intersection or to disobey a traffic signal.
- 4.3% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2012

Month of Collision	N	%
January	9	1.7
February	11	2.1
March	18	3.5
April	36	6.9
May	63	12.1
June	83	16.0
July	90	17.3
August	80	15.4
September	81	15.6
October	34	6.6
November	8	1.5
December	6	1.2
Unspecified	--	--
Total Number of Collisions	**519**	**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

2012

Day of Week	N	%
Monday	78	15.0
Tuesday	69	13.3
Wednesday	80	15.4
Thursday	98	18.9
Friday	97	18.7
Saturday	56	10.8
Sunday	41	7.9
Unspecified	--	--
Total Number of Collisions	**519**	**100.0**

Observations

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

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2012

Time Period	N	%
11:00 p.m. - 2:59 a.m.	14	2.7
3:00 a.m. - 6:59 a.m.	11	2.1
7:00 a.m. - 10:59 a.m.	109	21.0
11:00 a.m. - 2:59 p.m.	112	21.6
3:00 p.m. - 6:59 p.m.	190	36.6
7:00 p.m. - 10:59 p.m.	78	15.0
Unspecified	5	1.0
Total Number of Collisions	**519**	**100.0**

Observations

The largest proportion of casualty crashes (36.6%) 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

2012

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	--	--	--	--	--	--	--
5 - 9	--	--	27	5.3	27	5.3	1.2
10 - 14	--	--	68	13.3	68	13.2	3.1
15 - 19	1	25.0	79	15.5	80	15.6	3.4
20 - 24	2	50.0	72	14.1	74	14.4	2.6
25 - 29	--	--	40	7.8	40	7.8	1.2
30 - 34	--	--	40	7.8	40	7.8	1.3
35 - 44	--	--	66	12.9	66	12.8	1.2
45 - 54	--	--	68	13.3	68	13.2	1.2
55 - 64	1	25.0	26	5.1	27	5.3	0.6
65 and over	--	--	11	2.2	11	2.1	0.3
Unspecified	--	--	13	2.5	13	2.5	
Total Casualties	**4**	**100.0**	**510**	**100.0**	**514**	**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, 2012, Statistics Canada

Table 9.5

Improper Actions of Bicyclists Involved in Casualty Collisions

2012

Improper Actions of Bicyclists	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Disobey Traffic Signal	33	18.0	7.1
Failed to Yield Right of Way - Uncontrolled Intersection	26	14.2	2.3
Stop Sign Violation	10	5.5	7.6
Improper Passing	8	4.4	1.4
Left of Centre	8	4.4	3.2
Improper Lane Change	8	4.4	3.0
Left Turn Across Path	7	3.8	12.2
Yield Sign Violation	5	2.7	2.1
Improper Turn	5	2.7	3.1
Failed to Yield Right of Way to Pedestrian	3	1.6	4.4
Followed Too Closely	3	1.6	28.3
Backed Unsafely	1	0.5	2.6
Ran Off Road	--	--	14.6
Other	66	36.1	8.1
Total Number of Bicyclists	**183**	**100.0**	

Observations

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

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

Note: There were a total of 353 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 170 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2012

Condition of Bicyclist	N	%
Normal	430	93.5
Had Been Drinking	12	2.6
Alcohol Impaired	8	1.7
Total Alcohol Involvement	**20**	**4.3**
Impaired by Drugs	5	1.1
Fatigued/Asleep	2	0.4
Other	3	0.7
Total Number of Bicyclists	**460**	**100.0**

Observations

4.3% 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 4.1% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 19.6% 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 almost 4 times as many male drivers as female drivers who had consumed alcohol prior to the collision.

- In 2012, alcohol related casualty crashes were most likely to have occurred in August, 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, 2008 - 2012.

Table 10.1

Condition of Drivers in Casualty Collisions*

2012

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	279	78.2	19758	94.1	20037	93.9
Had Been Drinking	22	6.2	341	1.6	363	1.7
Alcohol Impaired	48	13.4	520	2.5	568	2.7
Total Alcohol Involvement	**70**	**19.6**	**861**	**4.1**	**931**	**4.4**
Impaired by Drugs	--	--	32	0.2	32	0.1
Fatigued/Asleep	3	0.8	155	0.7	158	0.7
Other	5	1.4	180	0.9	185	0.9
Total Number of Drivers	**357**	**100.0**	**20986**	**100.0**	**21343**	**100.0**

Observations

Of drivers involved in injury collisions, 4.1% had consumed alcohol before the crash, compared to 19.6% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 4.4% 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

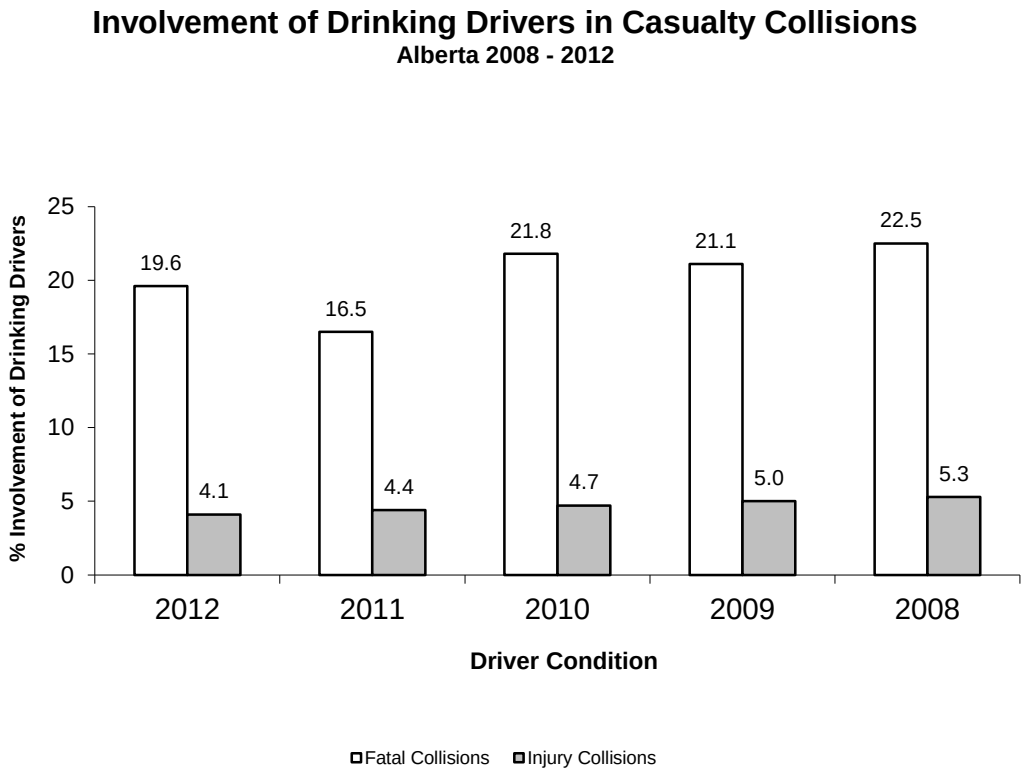

Involvement of Drinking Drivers in Casualty Collisions
Alberta 2008 - 2012
% Involvement of Drinking Drivers
25
20
15
10
5
0
19.6
4.1
16.5
4.4
21.8
4.7
21.1
5.0
22.5
5.3
2012
2011
2010
2009
2008
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

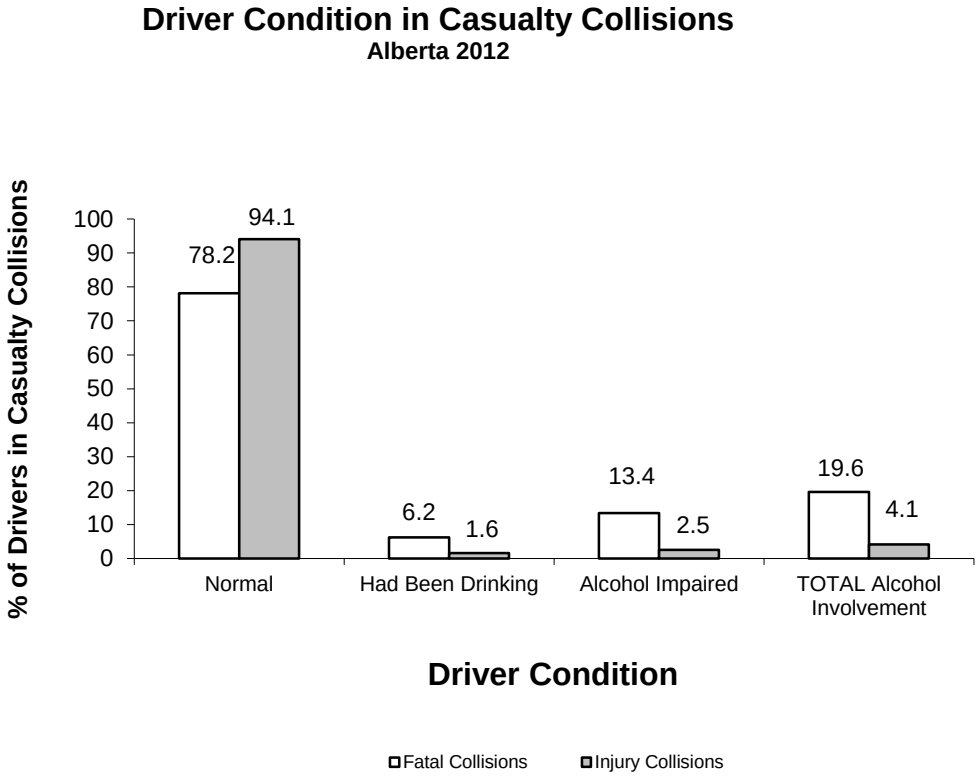

Driver Condition in Casualty Collisions
Alberta 2012
% of Drivers in Casualty Collisions
100
90
80
70
60
50
40
30
20
10
0
78.2
94.1
6.2
1.6
13.4
2.5
19.6
4.1
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2012

	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	1	0.1	0.1	2	0.2	0.2	3	0.3	0.1
16 - 17	19	2.0	0.6	8	0.9	0.3	27	2.9	0.4
18 - 19	65	7.0	1.6	20	2.1	0.5	85	9.1	1.1
20 - 21	79	8.5	1.7	11	1.2	0.3	90	9.7	1.0
22 - 24	78	8.4	0.9	23	2.5	0.3	101	10.8	0.6
25 - 29	146	15.7	0.9	40	4.3	0.3	186	20.0	0.6
30 - 34	90	9.7	0.6	23	2.5	0.2	113	12.1	0.4
35 - 44	105	11.3	0.4	25	2.7	0.1	130	14.0	0.2
45 - 54	107	11.5	0.4	27	2.9	0.1	134	14.4	0.2
55 - 64	35	3.8	0.2	6	0.6	0.0	41	4.4	0.1
65 and over	11	1.2	0.1	1	0.1	0.0	12	1.3	0.0
Unspecified	4	0.4		1	0.1		9	1.0	
Total Drivers	**740**	**79.5**		**187**	**20.1**		**931**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were almost 4 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

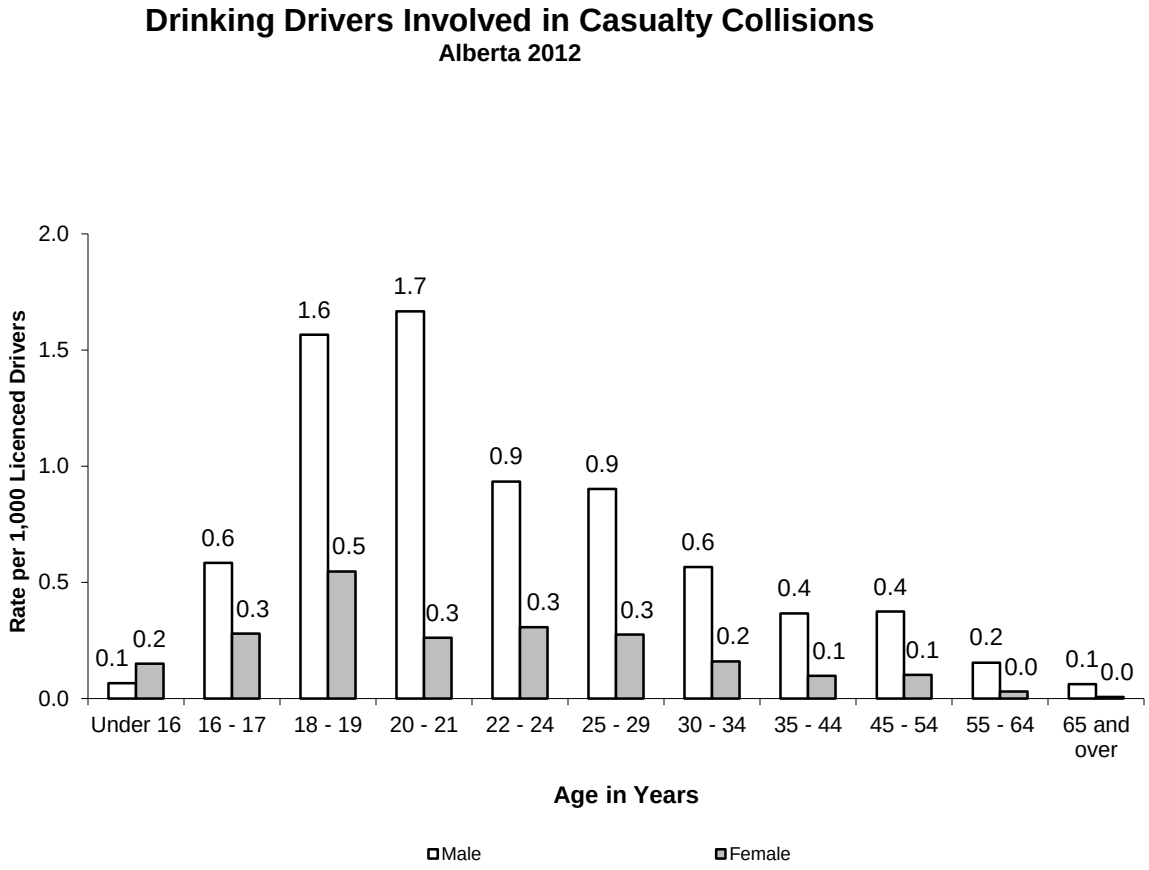

Drinking Drivers Involved in Casualty Collisions
Alberta 2012
Rate per 1,000 Licenced Drivers
2.0
1.5
1.0
0.5
0.0
0.1
0.2
0.6
0.3
1.6
0.5
1.7
0.3
0.9
0.3
0.9
0.3
0.6
0.2
0.4
0.1
0.4
0.1
0.2
0.0
0.1
0.0
Under 16
16 - 17
18 - 19
20 - 21
22 - 24
25 - 29
30 - 34
35 - 44
45 - 54
55 - 64
65 and over
Age in Years
Male
Female

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2012

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	5	7.2	60	7.1	65	7.1
February	3	4.3	69	8.2	72	7.9
March	11	15.9	54	6.4	65	7.1
April	4	5.8	78	9.2	82	9.0
May	6	8.7	79	9.4	85	9.3
June	7	10.1	81	9.6	88	9.6
July	8	11.6	78	9.2	86	9.4
August	8	11.6	82	9.7	90	9.9
September	5	7.2	82	9.7	87	9.5
October	5	7.2	58	6.9	63	6.9
November	3	4.3	73	8.6	76	8.3
December	4	5.8	49	5.8	53	5.8
Unspecified	--	--	1	0.1	1	0.1
Total Number of Collisions	**69**	**100.0**	**844**	**100.0**	**913**	**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

2012

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	9	13.0	89	10.5	98	10.7
Tuesday	4	5.8	78	9.2	82	9.0
Wednesday	10	14.5	84	10.0	94	10.3
Thursday	3	4.3	92	10.9	95	10.4
Friday	9	13.0	128	15.2	137	15.0
Saturday	19	27.5	186	22.0	205	22.5
Sunday	15	21.7	185	21.9	200	21.9
Unspecified	--	--	2	0.2	2	0.2
Total Number of Collisions	**69**	**100.0**	**844**	**100.0**	**913**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions and non-fatal injury collisions occurred on Saturday (27.5% and 22.0% respectively). The smallest number of alcohol-involved casualty collisions occurred on Tuesday (9.0%).

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2012

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.	24	34.8	269	31.9	293	32.1
3:00 a.m. - 6:59 a.m.	13	18.8	131	15.5	144	15.8
7:00 a.m. - 10:59 a.m.	3	4.3	39	4.6	42	4.6
11:00 a.m. - 2:59 p.m.	6	8.7	51	6.0	57	6.2
3:00 p.m. - 6:59 p.m.	7	10.1	136	16.1	143	15.7
7:00 p.m. - 10:59 p.m.	14	20.3	202	23.9	216	23.7
Unspecified	2	2.9	16	1.9	18	2.0
Total Number of Collisions	**69**	**100.0**	**844**	**100.0**	**913**	**100.0**

Observations

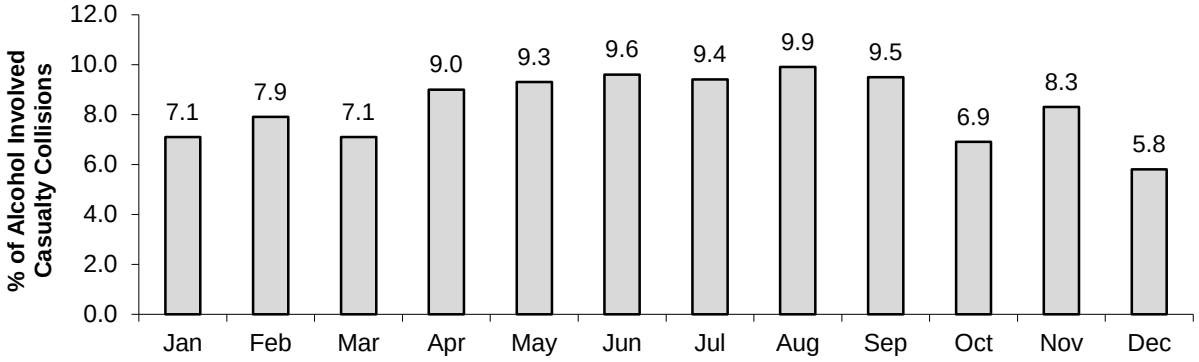
The late night/early morning time period (11:00 p.m. – 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (32.1%). The morning hours (7:00 a.m. – 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (4.6%).

Figure 11

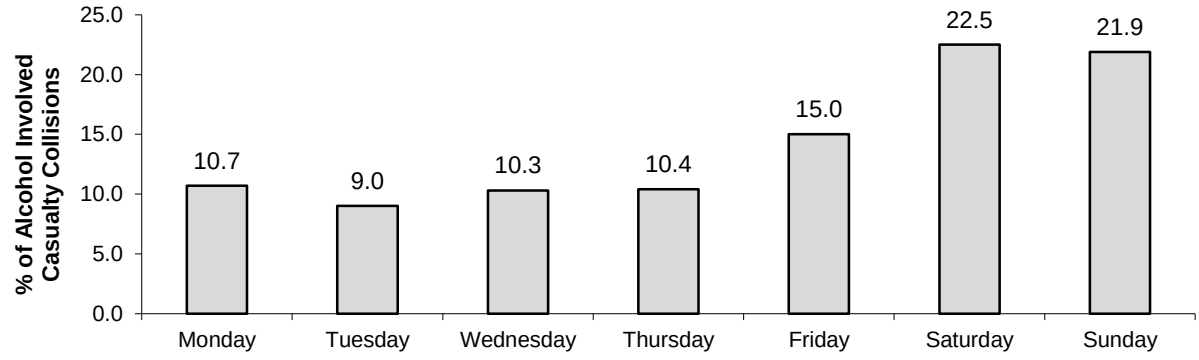
Alcohol-Involved Casualty Collisions

Alberta 2012

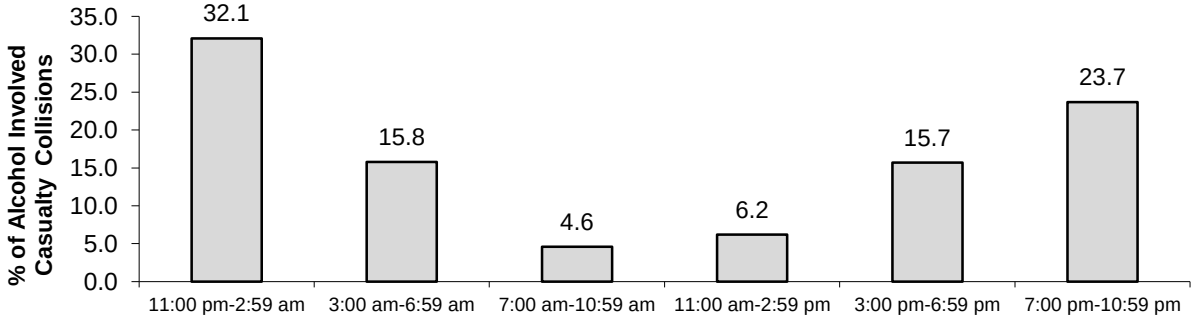
By Month of Occurrence



By Day of Week



By Time Period



Traffic Safety Issues

Restraint Use

- Collision-involved restraint users had a much lower injury rate (7.7%) than those not using restraints (30.1%).
- 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)

2012

Injury Severity of Occupants	Percentage of Occupants Using Restraints %	Percentage of Occupants Not Using Restraints %
Fatal Injury	0.1	4.0
Major Injury	0.9	9.4
Minor Injury	6.7	16.7
Total Occupants Sustaining Injuries	**7.7**	**30.1**
No Apparent Injury	92.3	69.9
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (7.7%) than those not using restraints (30.1%). 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.