Alberta

Traffic Collision Statistics

2006

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2006 Overview

- The number of **traffic fatalities decreased 2.8%** over the past year from 466 fatalities in 2005 to 453 in 2006.
- The number of **traffic injuries increased 6.0%** over the past year from 24504 injuries in 2005 to 25964 in 2006.
- The number of **traffic collisions increased 14.8%** over the past year from 124206 collisions in 2005 to 142592 in 2006.
- **The highest number of fatal collisions** occurred in **August and September. The highest number of injury collisions** occurred in October.
- **Friday** was the most collision-prone day of the week.
- **The most collision-prone period of time was the afternoon rush-hour**.
- **Casualty rates** were highest for persons between the **ages of 15 and 24**.
- **Male drivers** between the **ages of 18 and 19** had the highest involvement rate of all drivers involved in casualty collisions.
- Following too closely, running off the road and left turn across path were the most frequently identified improper driver actions contributing to casualty collisions.
- **Fatal collisions** occurred most frequently in **rural areas**, whereas **injury and property damage collisions** occurred more frequently in **urban areas**.
- **43.8% of pedestrians** involved in **fatal collisions had consumed alcohol prior to the collision** compared to 17.3**% of pedestrians in injury collisions**.
- **22.7%** of drivers involved in fatal collisions **had consumed alcohol** prior to the crash compared to 4.6**%** of drivers in injury collisions.
- Collision involved restraint users had a much lower injury rate (10.3%) than those not using restraints (38.7%)

Preface

The purpose of this report is to provide an overview of the “who”, “what”, “when”, “where”, “why”, and “how” of traffic collisions which occurred in Alberta during 2006. 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 either death, injury or property damage to an apparent extent of $1000.00 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 Infrastructure and 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 judgement 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 judgement of the police officer, the driver had recently consumed alcohol but his driving ability was not obviously impaired.

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

Minor Injury – 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 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 $1000.00.

Reportable Collision – A vehicle collision which resulted in death, injury or property damage greater than $1000.00.

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

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

2006 Traffic Collision Summary

Introduction

During 2006, 142592 collisions were recorded on Alberta roadways. Property damage collisions (over $1000) represented 86.5% (123357) of this total while 13.2% (18831) were non-fatal injury collisions. Fatal collisions accounted for 0.3% (404) of the total reported collisions.

Five Year Trends

In terms of population, licensed drivers and registered vehicles the fatal collision rates stayed the same and fatality rates decreased from 2005.

The non-fatal injury collision rate has decreased in 2006 in terms of registered vehicles and increased in terms of population and licensed drivers.

Property damage collision rates increased in 2006 in terms of population, licensed 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 casualty rates per billion vehicle kilometres travelled were examined.

Figures for 2006 provincial comparisons were not available at the time of printing; therefore, figures for 2005 were used. Based on this comparison of rates per billion vehicle kilometres travelled, of the twelve provinces and territories for which information was available, five had a higher fatality rate than Alberta and one had the same rate, in 2005. With regard to injury rate, in 2005, six jurisdictions had a higher injury rate than Alberta.

Table 1.1

Alberta Traffic Collisions

2002 – 2006

Severity of Collisions	**2006**	**2005**	**2004**	**2003**	**2002**
Fatal Collisions	404	392	339	321	322
Non-Fatal Injury Collisions	18831	17726	17248	18447	20152
Property Damage Collisions	123357	106088	94966	94589	95834
Total Reportable Collisions	**142592**	**124206**	**112553**	**113357**	**116308**
Number Killed	453	466	387	385	372
Number Injured	25964	24504	24249	26426	28989
Total Number of Casualties	**26417**	**24970**	**24636**	**26811**	**29361**

Observations

In 2006, the overall number of collisions increased 14.8% when compared to 2005. In 2006, injury collisions increased by 6.2% and fatal crashes increased by 3.1%. The number of fatalities decreased by 2.8% from 2005 to 2006, and the number of injuries increased by 6.0%. In terms of the past five years, overall collisions were lowest in 2004 and highest in 2006.

Table 1.2

Traffic Collision Rates

2002 – 2006

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers*					Rate Per 10,000 Registered Vehicles*				
	2006	**2005**	**2004**	**2003**	**2002**	**2006**	**2005**	**2004**	**2003**	**2002**	**2006**	**2005**	**2004**	**2003**	**2002**
Fatal Collisions	1.2	1.2	1.1	1.0	1.0	1.6	1.6	1.4	1.4	1.4	1.5	1.5	1.4	1.3	1.3
Number Killed	1.3	1.4	1.2	1.2	1.2	1.8	1.9	1.6	1.6	1.6	1.6	1.8	1.6	1.6	1.6
Non-Fatal Injury Collisions	55.8	54.4	53.9	58.5	64.7	74.5	72.6	72.2	78.0	86.3	68.0	68.2	69.7	76.4	84.4
Number Injured	76.9	75.2	75.7	83.8	93.1	102.8	100.3	101.5	111.8	124.2	93.8	94.3	98.0	109.5	121.5
Property Damage Collisions	365.4	325.7	296.6	299.9	307.8	488.3	434.4	397.6	400.2	410.5	445.4	408.1	383.7	391.8	401.6
Total Reportable Collisions	**422.4**	**381.4**	**351.5**	**359.4**	**373.5**	**564.5**	**508.6**	**471.2**	**479.6**	**498.1**	**514.9**	**477.8**	**454.7**	**469.5**	**487.4**

Observations

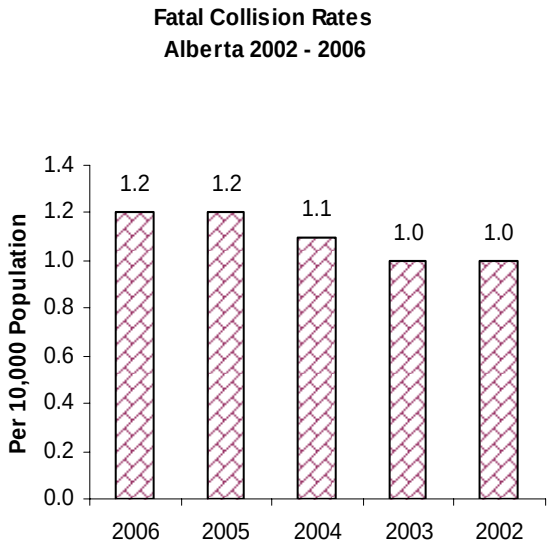
In terms of population, licensed drivers and registered vehicles the fatality rates have decreased from 2005.

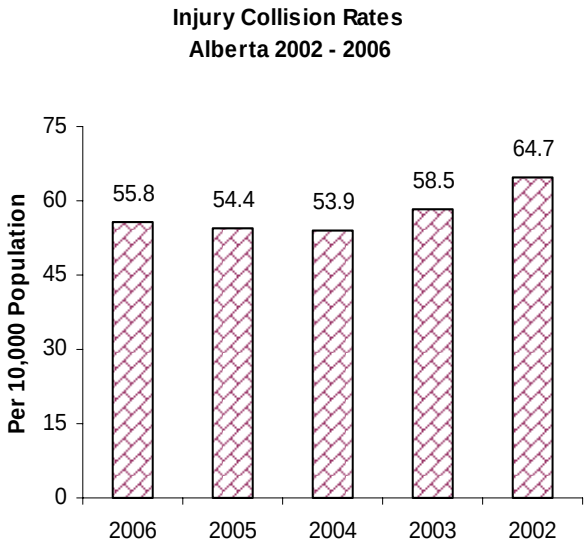
The rate for number injured, has increased in 2006 in terms of population and licensed drivers and decreased in terms of registered vehicles.

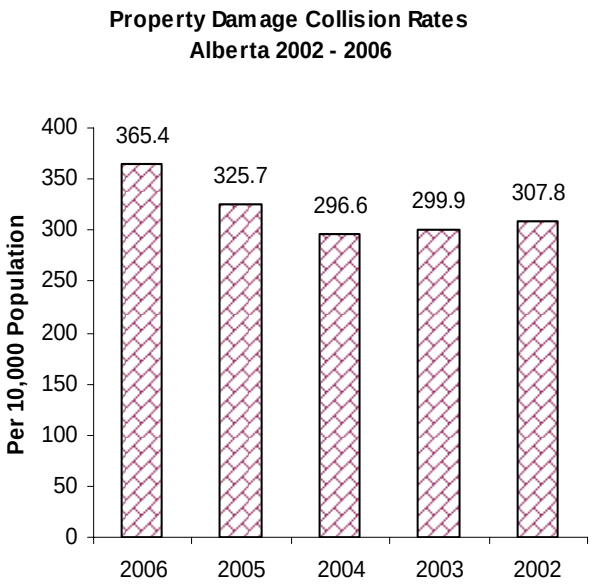
Overall collision rates have increased in 2006.

*Sources:
Population – Statistics Canada as of July 1, 2006
Licensed Drivers – Service Alberta – Registries, as of December 31, 2006
Registered Vehicles – Service Alberta – Registries, as of December 31, 2006

Figure 1


Fatal Collision Rates
Alberta 2002 - 2006
Per 10,000 Population
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.2
1.2
1.1
1.0
1.0
2006
2005
2004
2003
2002


Injury Collision Rates
Alberta 2002 - 2006
Per 10,000 Population
75
60
45
30
15
0
55.8
54.4
53.9
58.5
64.7
2006
2005
2004
2003
2002


Property Damage Collision Rates
Alberta 2002 - 2006
Per 10,000 Population
400
350
300
250
200
150
100
50
0
365.4
325.7
296.6
299.9
307.8
2006
2005
2004
2003
2002

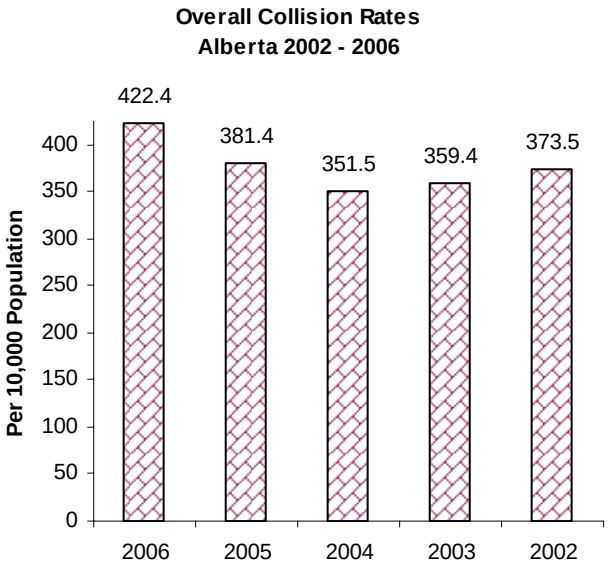

Overall Collision Rates
Alberta 2002 - 2006
Per 10,000 Population
422.4
381.4
351.5
359.4
373.5
400
350
300
250
200
150
100
50
0
2006
2005
2004
2003
2002

Table 1.3

Provincial Comparison of Casualty Rates
Per Billion Vehicle Kilometres Travelled*

2002-2005

	2005		2004		2003		2002	
	Fatalities	**Injuries**	**Fatalities**	**Injuries**	**Fatalities**	**Injuries**	**Fatalities**	**Injuries**
Canada	9.3	668.0	8.8	680.8	8.9	711.0	9.3	721.2
Alberta	10.6	555.1	9.9	621.5	9.8	671.8	10.1	783.6
British Columbia	13.9	873.3	12.4	842.4	12.9	902.5	12.4	776.6
Saskatchewan	13.2	612.8	11.0	647.1	12.1	618.0	12.3	652.7
Manitoba	10.3	788.4	9.5	890.8	8.5	795.9	10.8	948.9
Ontario	6.3	571.5	6.6	599.8	7.3	669.2	7.1	679.4
Quebec	10.6	871.2	9.0	778.0	8.4	754.3	9.9	749.1
New Brunswick	13.6	508.5	9.6	572.9	11.8	572.5	12.2	592.3
Nova Scotia	7.1	487.7	9.4	533.2	6.7	504.1	8.5	574.0
Prince Edward Island	11.3	565.7	22.6	759.5	12.0	753.3	14.3	789.8
Newfoundland	9.8	537.1	9.7	699.1	11.0	768.5	10.0	701.2
Yukon	12.3	396.4	9.4	397.4	14.1	468.3	25.3	572.6
Northwest Territories	5.4	505.7	9.6	485.2	8.2	471.4	8.4	643.2
Nunavut	N/A	N/A	33.7	2222.2	N/A	N/A	N/A	N/A

Observations

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 casualty rates per billion vehicle kilometres travelled were examined.

Figures for 2006 provincial comparisons were not available at the time of printing; therefore, figures for 2005 were used. Based on this comparison of rates per billion vehicle kilometres travelled, of the twelve provinces and territories for which information was available, five had a higher fatality rate than Alberta and one had the same rate, in 2005. With regard to injury rate, in 2005, six jurisdictions had a higher injury rate than Alberta.

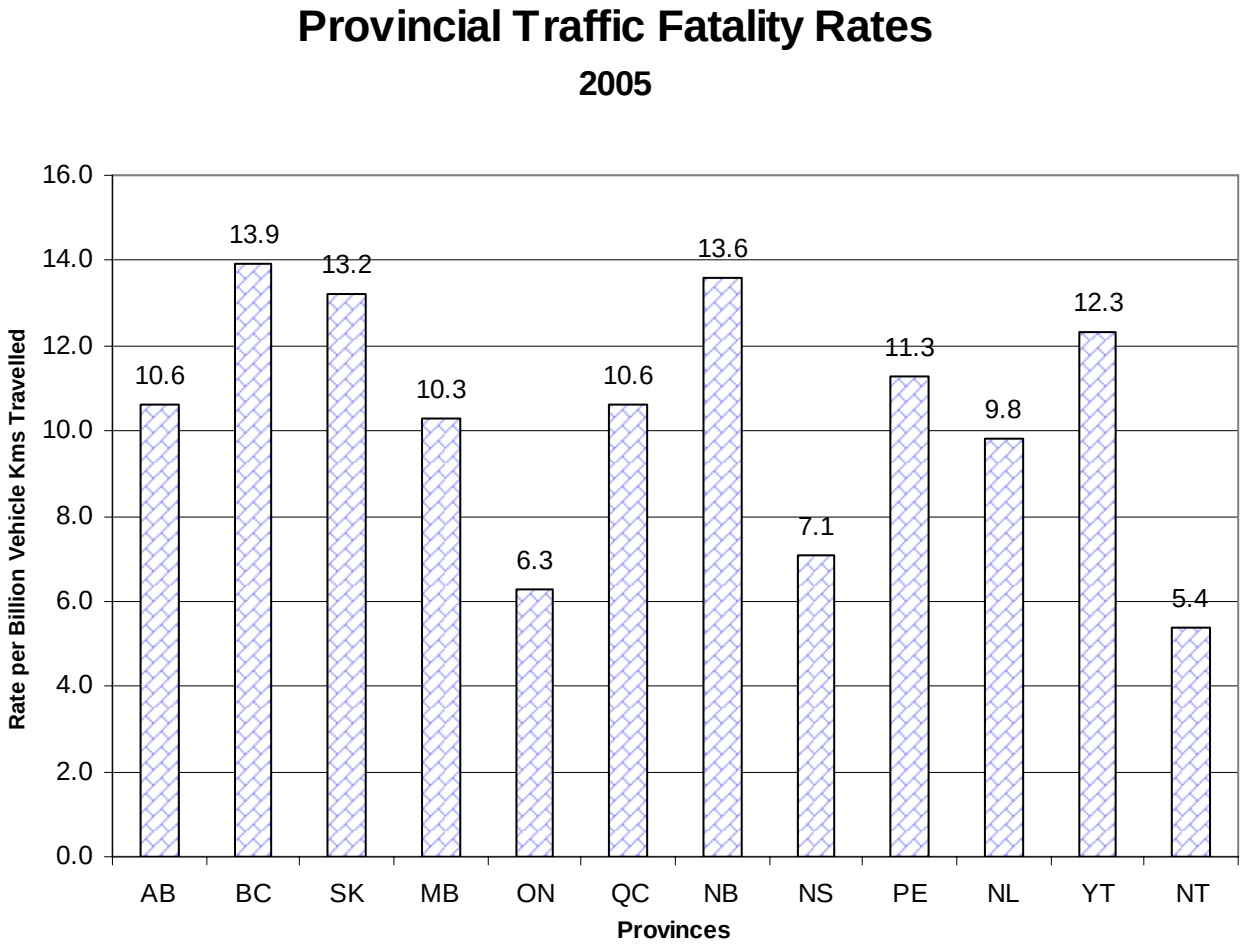
*Figures for 2006 were not available at time of printing.

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, off-road vehicles (e.g., snowmobiles, dune buggies, 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.

Figure 2


Provincial Traffic Fatality Rates
2005
Rate per Billion Vehicle Kms Travelled
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
10.6
13.9
13.2
10.3
6.3
10.6
13.6
7.1
11.3
9.8
12.3
5.4
AB
BC
SK
MB
ON
QC
NB
NS
PE
NL
YT
NT
Provinces

When the Collisions Occurred

Month

The month of October experienced more casualty collisions than other months. The highest number of property damage collisions was recorded during the month of November.

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 Labour Day Long Weekend recorded the highest number of individuals killed and injured. The Remembrance Day Long Weekend recorded the highest total number of collisions.

Table 2.1

Collision Occurrence by Month

2006

Month	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	34	8.4	1480	7.9	10094	8.2	11608	8.1
February	34	8.4	1265	6.7	9404	7.6	10703	7.5
March	26	6.4	1463	7.8	10172	8.2	11661	8.2
April	31	7.7	1250	6.6	7291	5.9	8572	6.0
May	34	8.4	1458	7.7	8439	6.8	9931	7.0
June	28	6.9	1645	8.7	9696	7.9	11369	8.0
July	33	8.2	1684	8.9	8849	7.2	10566	7.4
August	40	9.9	1654	8.8	8530	6.9	10224	7.2
September	40	9.9	1706	9.1	9258	7.5	11004	7.7
October	37	9.2	1837	9.8	11487	9.3	13361	9.4
November	30	7.4	1795	9.5	16810	13.6	18635	13.1
December	37	9.2	1591	8.4	13093	10.6	14721	10.3
Unspecified	--	--	3	0.0	234	0.2	237	0.2
Total Number of Collisions	**404**	**100.0**	**18831**	**100.0**	**123357**	**100.0**	**142592**	**100.0**

Observations

The months of August and September experienced more fatal crashes than other months. The highest number of reported injury collisions was in October and the highest number of property damage collisions was in the month of November.

Table 2.2

Collision Occurrence by Day of Week

2006

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	59	14.6	2593	13.8	16750	13.6	19402	13.6
Tuesday	53	13.1	2772	14.7	17636	14.3	20461	14.3
Wednesday	62	15.3	2795	14.8	18623	15.1	21480	15.1
Thursday	55	13.6	2940	15.6	19049	15.4	22044	15.5
Friday	63	15.6	3103	16.5	20999	17.0	24165	16.9
Saturday	67	16.6	2531	13.4	16551	13.4	19149	13.4
Sunday	45	11.1	2074	11.0	13401	10.9	15520	10.9
Unspecified	--	--	23	0.1	348	0.3	371	0.3
Total Number of Collisions	**404**	**100.0**	**18831**	**100.0**	**123357**	**100.0**	**142592**	**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

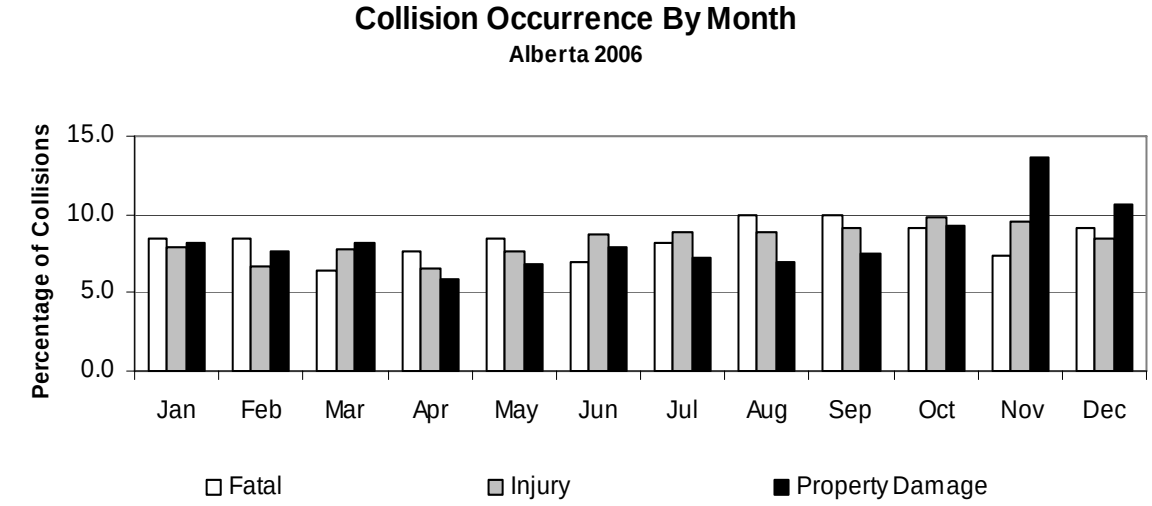
2006

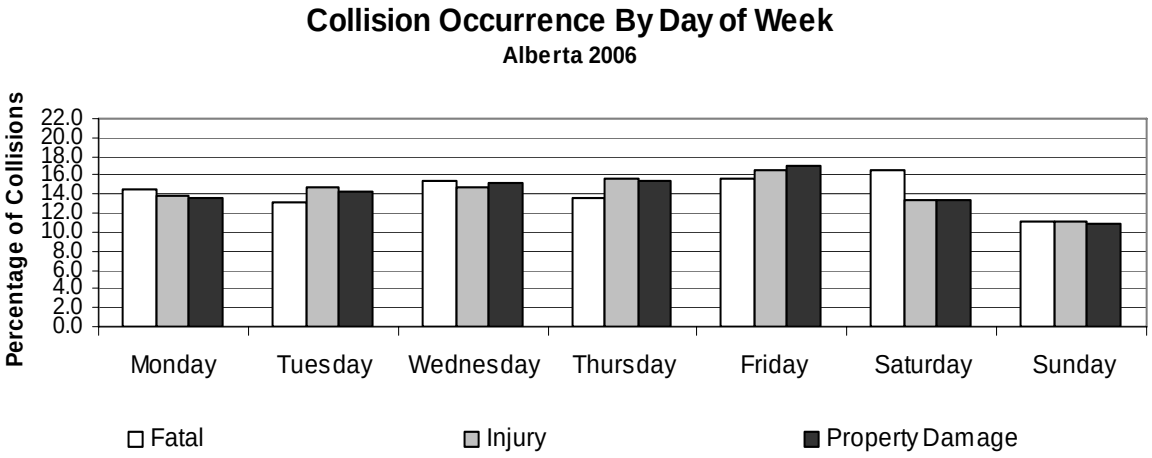
Time Period	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Property Damage Collisions N	Property Damage Collisions %	Total Collisions N	Total Collisions %
11:00 p.m. - 2:59 a.m.	59	14.6	1330	7.1	9338	7.6	10727	7.5
3:00 a.m. - 6:59 a.m.	44	10.9	1079	5.7	6785	5.5	7908	5.5
7:00 a.m. - 10:59 a.m.	59	14.6	3273	17.4	21713	17.6	25045	17.6
11:00 a.m. - 2:59 p.m.	62	15.3	4206	22.3	28355	23.0	32623	22.9
3:00 p.m. - 6:59 p.m.	85	21.0	6073	32.3	35292	28.6	41450	29.1
7:00 p.m. - 10:59 p.m.	81	20.0	2717	14.4	19583	15.9	22381	15.7
Unspecified	14	3.5	153	0.8	2291	1.9	2458	1.7
Total Number of Collisions	**404**	**100.0**	**18831**	**100.0**	**123357**	**100.0**	**142592**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the largest percentage (29.1%) 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 2006
Percentage of Collisions
15.0
10.0
5.0
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 2006
Percentage of Collisions
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Fatal
Injury
Property Damage

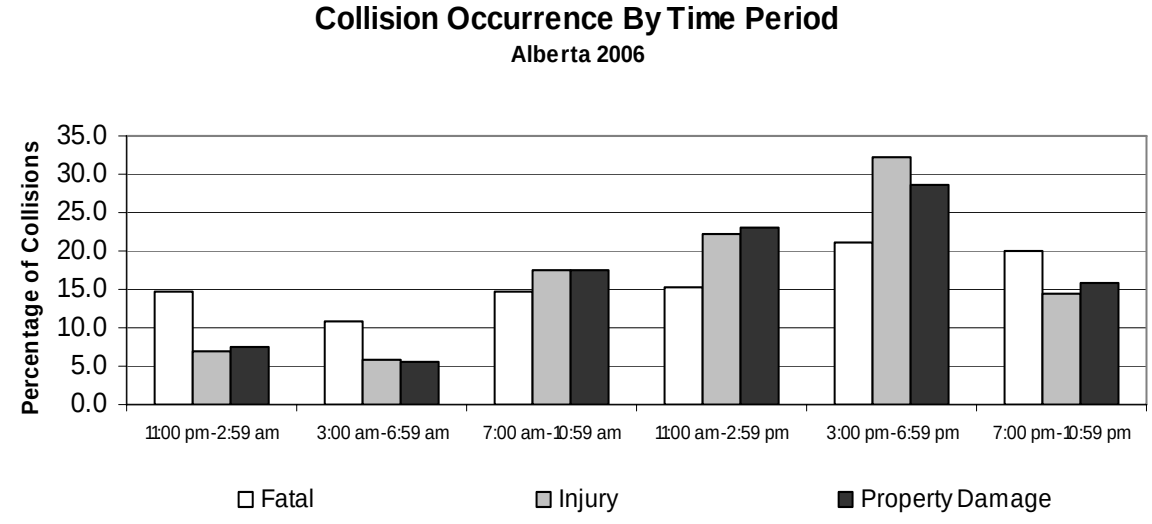

Collision Occurrence By Time Period
Alberta 2006
Percentage of Collisions
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Table 2.4

Collisions During 2006 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	3	52	261
Family Day Long Weekend (February 17-20)	8	232	1326
Easter Long Weekend (April 13-17)	6	271	1268
Victoria Day Long Weekend (May 19-22)	9	300	1160
Canada Day (June 30 -July 3)	5	255	1280
August Long Weekend (August 4-7)	7	303	1163
Labour Day Long Weekend (September 1-4)	10	333	1273
Thanksgiving Long Weekend (October 6-9)	8	267	1347
Remembrance Day (November 10-13)	1	240	2086
Christmas Season (December 22-26)	3	202	1545
TOTAL	**60**	**2455**	**12709**

Observations

The Labour Day Long Weekend recorded the highest number of individuals killed and injured. 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 5.1% and 3.1% 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 and under.

Table 3.1

Injuries and Fatalities by Road User Class

2006

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	246	54.3	15812	60.9	16058	60.8
Passengers	111	24.5	7098	27.3	7209	27.3
Pedestrians	39	8.6	1307	5.0	1346	5.1
Motorcyclists	31	6.8	789	3.0	820	3.1
Bicyclists	3	0.7	588	2.3	591	2.2
Other	15	3.3	282	1.1	297	1.1
Unspecified	8	1.8	88	0.3	96	0.4
Total Casualties	**453**	**100.0**	**25964**	**100.0**	**26417**	**100.0**

Observations

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 5.1% and 3.1% of the total casualties, respectively.

Table 3.2

Age of Casualties

2006

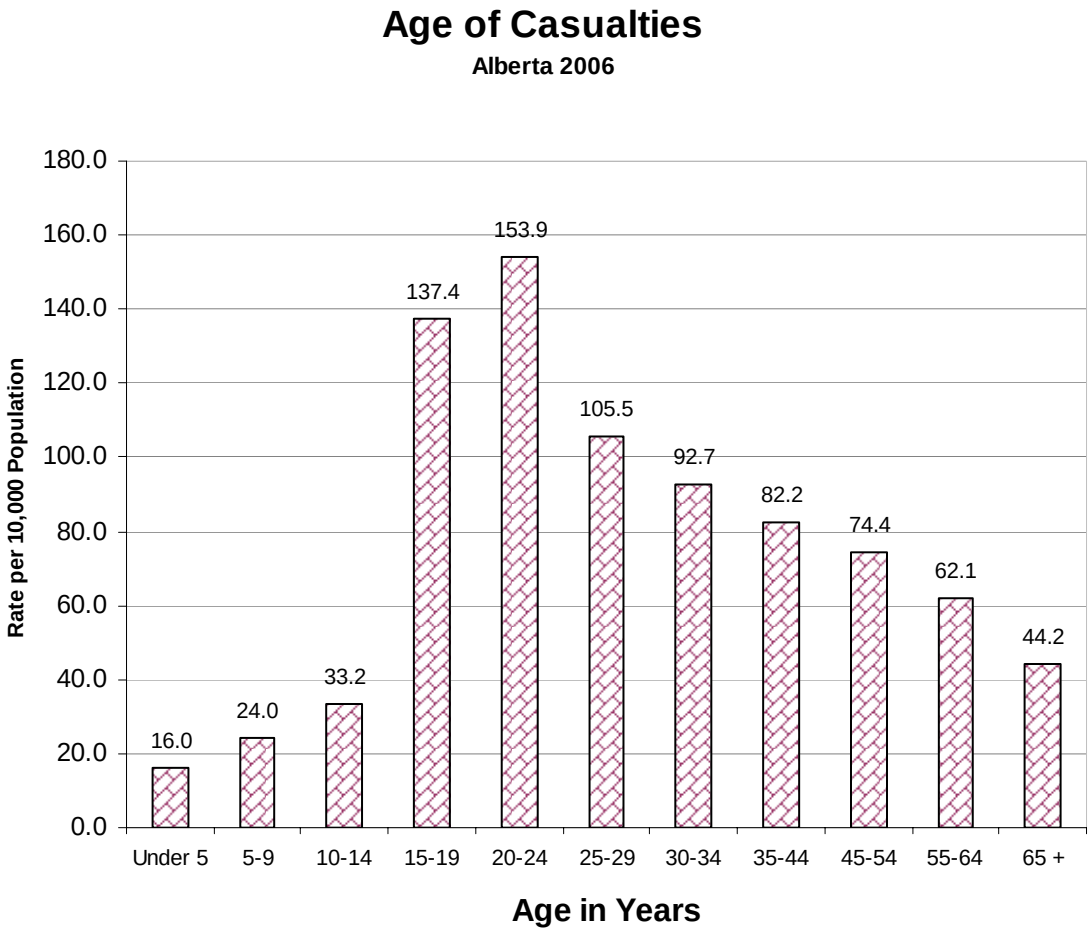
Age in Years	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %	Casualty Rate Per 10,000 Population*
Under 5	5	1.1	328	1.3	333	1.3	16.0
5-9	5	1.1	491	1.9	496	1.9	24.0
10-14	12	2.6	727	2.8	739	2.8	33.2
15-19	58	12.8	3238	12.5	3296	12.5	137.4
20-24	65	14.3	4014	15.5	4079	15.4	153.9
25-29	50	11.0	2793	10.8	2843	10.8	105.5
30-34	31	6.8	2307	8.9	2338	8.9	92.7
35-44	71	15.7	4237	16.3	4308	16.3	82.2
45-54	74	16.3	3736	14.4	3810	14.4	74.4
55-64	34	7.5	1976	7.6	2010	7.6	62.1
65 and over	48	10.6	1511	5.8	1559	5.9	44.2
Unspecified	--	--	606	2.3	606	2.3	
Total Casualties	**453**	**100.0**	**25964**	**100.0**	**26417**	**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, 2006, Statistics Canada

Figure 4


Age of Casualties
Alberta 2006
Rate per 10,000 Population
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
16.0
24.0
33.2
137.4
153.9
105.5
92.7
82.2
74.4
62.1
44.2
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65 +
Age in Years

Drivers

Age and Sex of Drivers

Collision rates per 1000 licensed 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 were males 20 to 24 years old.

Driver Actions

Following too closely (29.2%), running off the road (15.1%) and left turn across path (12.5%) 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 Licensed Drivers

2006

	Male			Female			Total*		
Age of Driver	**N**	**%**	**Rate Per 1000** Licensed Drivers**	**N**	**%**	**Rate Per 1000** Licensed Drivers**	**N**	**%**	**Rate Per 1000** Licensed Drivers**
Under 16	149	0.4	10.9	72	0.2	6.4	225	0.7	9.0
16-17	751	2.2	23.8	443	1.3	16.6	1196	3.5	20.5
18-19	1286	3.8	31.7	742	2.2	20.8	2029	5.9	26.6
20-24	3327	9.7	25.7	1971	5.8	17.3	5302	15.5	21.8
25-34	4525	13.2	16.9	2820	8.2	11.7	7354	21.5	14.4
35-44	3849	11.2	14.3	2715	7.9	11.0	6569	19.2	12.7
45-54	3432	10.0	12.7	2262	6.6	9.1	5696	16.6	11.0
55-64	1923	5.6	11.4	1097	3.2	7.2	3026	8.8	9.4
65 and over	1426	4.2	10.1	665	1.9	5.7	2093	6.1	8.1
Unspecified	172	0.5		44	0.1		756	2.2	
Total Number of Drivers	**20840**	**60.9**	**15.6**	**12831**	**37.5**	**10.8**	**34246**	**100.0**	**13.6**

Observations

Collision rates per 1000 licensed drivers indicated that males 18 to 19 years old were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions was males 20 to 24 years old.

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

**Source: Service Alberta – Registries. Operator Statistics, December 31, 2006

Figure 5

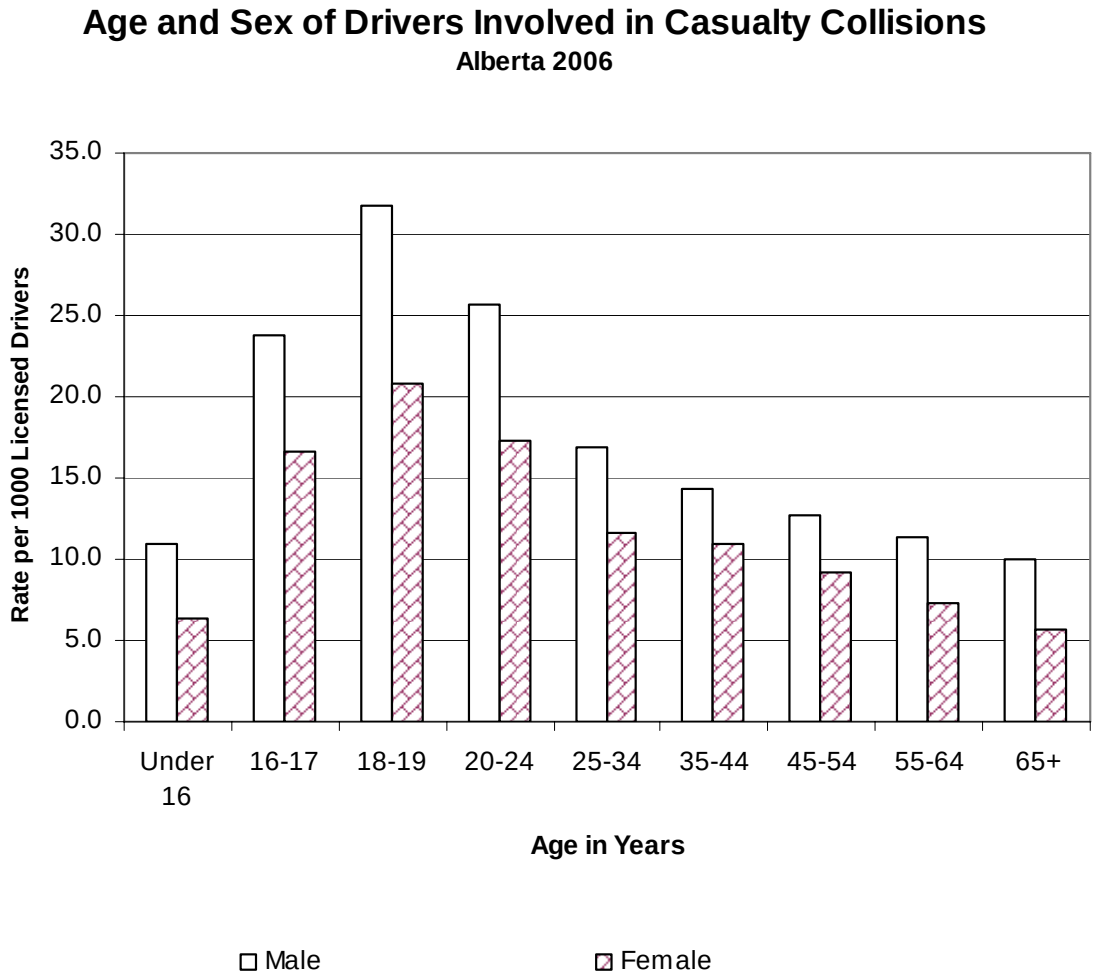

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2006
Rate per 1000 Licensed Drivers
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Under 16
16-17
18-19
20-24
25-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2006

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	8	2.3	3999	29.9	4007	29.2
Ran Off Road	142	40.9	1926	14.4	2068	15.1
Left Turn Across Path	26	7.5	1687	12.6	1713	12.5
Stop Sign Violation	41	11.8	1042	7.8	1083	7.9
Disobey Traffic Signal	12	3.5	866	6.5	878	6.4
Left of Centre	60	17.3	371	2.8	431	3.1
Failed to Yield Right of Way to Pedestrian	10	2.9	414	3.1	424	3.1
Improper Lane Change	2	0.6	376	2.8	378	2.8
Improper Turn	3	0.9	327	2.4	330	2.4
Backed Unsafely	2	0.6	312	2.3	314	2.3
Yield Sign Violation	3	0.9	255	1.9	258	1.9
Failed to Yield Right of Way - Uncontrolled Intersection	1	0.3	205	1.5	206	1.5
Improper Passing	9	2.6	127	0.9	136	1.0
Other	28	8.1	1466	11.0	1494	10.9
Total Number of Drivers	**347**	**100.0**	**13373**	**100.0**	**13720**	**100.0**

Observations

Following too closely (29.2%), running off the road (15.1%) and left turn across path (12.5%) 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 was a total of 28,328 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 14,608 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (49.0%), pick-up trucks/vans (20.1%) and minivans/MPV (19.8%) were the vehicles most frequently involved in total casualty collisions.

Vehicle Factors

Only 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. Approximately 43.9% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2006

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	197	30.8	16861	49.3	17058	49.0
Pick-up Truck/Van	183	28.6	6804	19.9	6987	20.1
Mini-Van/MPV	98	15.3	6801	19.9	6899	19.8
Truck 4500 kg+	38	5.9	1248	3.7	1286	3.7
Motorcycle	31	4.9	764	2.2	795	2.3
Tractor-Trailer	64	10.0	642	1.9	706	2.0
Bicycle	3	0.5	590	1.7	593	1.7
Off-Highway Vehicle	12	1.9	137	0.4	149	0.4
Transit Bus	1	0.2	94	0.3	95	0.3
School Bus	1	0.2	71	0.2	72	0.2
Emergency Vehicle	2	0.3	54	0.2	56	0.2
Motorhome	6	0.9	25	0.1	31	0.1
Construction Equipment	1	0.2	27	0.1	28	0.1
Motorized Snow Vehicle	1	0.2	20	0.1	21	0.1
Other Bus	--	--	14	0.0	14	0.0
Farm Equipment	1	0.2	12	0.0	13	0.0
Intercity Bus	--	--	6	0.0	6	0.0
Moped	--	--	2	0.0	2	0.0
Other	--	--	4	0.0	4	0.0
Total Number of Vehicles	**639**	**100.0**	**34176**	**100.0**	**34815**	**100.0**

Observations

Passenger cars, pick-up trucks/vans and mini-van/MPV were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 1.7% and motorcycles 2.3% of the vehicles involved in casualty collisions. Tractor-Trailers were 1.9% of total vehicles in casualty crashes, but 10.0% 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*

2006

Vehicle Factors	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
No Apparent Defect	481	98.0	27350	99.2	27831	99.2
Defective Brakes	2	0.4	61	0.2	63	0.2
Tires Failed	1	0.2	43	0.2	44	0.2
Lighting Defect	4	0.8	18	0.1	22	0.1
Improper Load/Shift	--	--	17	0.1	17	0.1
Other	3	0.6	73	0.3	76	0.3
Total Number of Vehicles	**491**	**100.0**	**27562**	**100.0**	**28053**	**100.0**

Observations

Only 0.8% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common 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*

2006

Point of Impact	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Centre Front	292	47.0	14233	43.9	14525	43.9
Centre Rear	20	3.2	7540	23.2	7560	22.9
Left Front	32	5.2	2208	6.8	2240	6.8
Right Front	33	5.3	2192	6.8	2225	6.7
Rollover	110	17.7	1996	6.2	2106	6.4
Left Side	52	8.4	1180	3.6	1232	3.7
Right Side	42	6.8	1182	3.6	1224	3.7
Right Rear	5	0.8	755	2.3	760	2.3
Left Rear	15	2.4	715	2.2	730	2.2
Attachment	15	2.4	257	0.8	272	0.8
Undercarriage	4	0.6	106	0.3	110	0.3
Top	1	0.2	89	0.3	90	0.3
Total Number of Vehicles	**621**	**100.0**	**32453**	**100.0**	**33074**	**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 22.9% of the impacts involved the centre rear.

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

Environment

Location

The majority of fatal crashes (68.1%) occurred in rural areas, whereas the majority of injury (76.5%) and property damage (79.0%) crashes occurred in urban areas.

Surface Conditions

The majority (58.9%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 17.6% of fatal collisions and 20.0% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2006

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	129	31.9	14409	76.5	97450	79.0	111988	78.5
Rural	275	68.1	4422	23.5	25907	21.0	30604	21.5
Total Number of Collisions	**404**	**100.0**	**18831**	**100.0**	**123357**	**100.0**	**142592**	**100.0**

Observations

Collisions which occurred in rural areas accounted for 68.1% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (76.5%) and property damage crashes (79.0%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2006

Surface Condition	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
Dry	262	64.9	11059	58.7	11321	58.9
Slush/Snow/Ice	71	17.6	3766	20.0	3837	19.9
Wet	34	8.4	2082	11.1	2116	11.0
Loose Surface Material	12	3.0	334	1.8	346	1.8
Muddy	1	0.2	50	0.3	51	0.3
Other	11	2.7	75	0.4	86	0.4
Unspecified	13	3.2	1465	7.8	1478	7.7
Total Number of Collisions	**404**	**100.0**	**18831**	**100.0**	**19235**	**100.0**

Observations

The majority (58.9%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 17.6% of fatal collisions and 20.0% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- Based on motorcycle registrations, the involvement rate of motorcycles in fatal collisions has increased. However, the involvement rate in injury collisions has decreased in 2006.

- The majority of motorcycle casualty collisions involved male drivers. Motorcycle drivers under the age of 25 had the highest involvement rate per 1000 licensed drivers. In particular, 16-17 year old motorcycle drivers had an involvement rate per 1000 licensed drivers of 49.8, a rate almost three times greater than that of the 20-24 year old motorcycle drivers.

- Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. 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 1.0% of motorcycles involved in casualty collisions compared to 0.8% for all types of vehicles involved in casualty collisions.

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

Table 7.1

Motorcycles Involved in Casualty Collisions

2002-2006

Number of Motorcycles	**2006**	**2005**	**2004**	**2003**	**2002**
Fatal	31	22	26	13	25
Non-Fatal Injury	764	718	661	616	558
Total Number of Motorcycles Involved in Casualty Collisions	**795**	**740**	**687**	**629**	**583**
Casualties*					
Number Killed	32	21	25	13	24
Number Injured	830	771	715	666	620
Total Casualties in Collisions Involving Motorcycles	**862**	**792**	**740**	**679**	**644**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	4.2	3.4	4.4	2.4	4.8
Non-Fatal Injury Collisions	103.1	110.9	110.9	111.5	106.2

Observations

Based on motorcycle registrations in 2006, the involvement rate of motorcycles in fatal collisions has increased. However, the involvement rate in injury collisions has decreased.

*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, December 31, 2006.

Figure 6

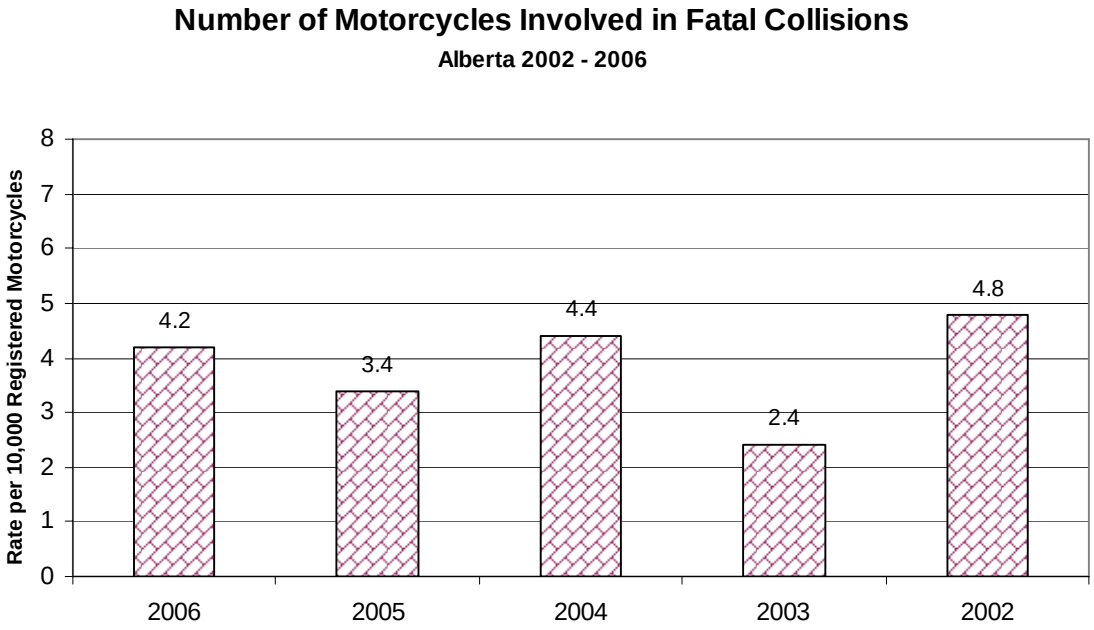

Number of Motorcycles Involved in Fatal Collisions
Alberta 2002 - 2006
Rate per 10,000 Registered Motorcycles
0
1
2
3
4
5
6
7
8
4.2
3.4
4.4
2.4
4.8
2006
2005
2004
2003
2002

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2006

	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
Age of Motorcycle Driver	**N**	**%**	**N**	**%**	**N**	**%**	
Under 16	7	0.9	1	0.1	8	1.0	
16-17	9	1.1	2	0.3	11	1.4	49.8
18-19	33	4.2	1	0.1	34	4.3	33.9
20-24	164	20.6	10	1.3	174	21.9	18.0
25-34	174	21.9	10	1.3	187	23.5	5.2
35-44	122	15.3	17	2.1	139	17.5	2.5
45-54	148	18.6	17	2.1	165	20.8	2.1
55-64	55	6.9	4	0.5	60	7.5	1.6
65 and over	12	1.5	--	--	12	1.5	0.9
Unspecified	--	--	1	0.1	5	0.6	
Total Number of Motorcycle Drivers	**724**	**91.1**	**63**	**7.9**	**795**	**100.0**	

Observations

The majority of motorcycle casualty collisions involved male drivers. Based on involvement per 1,000 licensed 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 licensed motorcyclists. These age and sex comparisons are limited due to the lack of driving exposure data. That is, 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) licenses are not issued to operators under 16 years of age.

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

**Source: Service Alberta – Registries. Operator Statistics, December 31, 2006.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2006

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	112	41.0	15.1
Followed Too Closely	41	15.0	29.2
Left of Centre	13	4.8	3.1
Left Turn Across Path	11	4.0	12.5
Improper Passing	10	3.7	1.0
Disobey Traffic Signal	10	3.7	6.4
Improper Turn	9	3.3	2.4
Improper Lane Change	4	1.5	2.8
Failed to Yield Right of Way - Uncontrolled Intersection	2	0.7	1.5
Stop Sign Violation	2	0.7	7.9
Yield Sign Violation	2	0.7	1.9
Failed to Yield Right of Way to Pedestrian	1	0.4	3.1
Other	56	20.5	10.9
Total Number of Motorcycle Drivers	**273**	**100.0**	

Observations

Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. 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 was a total of 613 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 340 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers Involved in Casualty Collisions*

2006

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	625	92.3	92.9
Had Been Drinking	33	4.9	2.4
Alcohol Impaired	15	2.2	2.5
Total Alcohol Involvement	**48**	**7.1**	**4.9**
Other	4	0.6	0.8
Total Number of Motorcycle Drivers	**677**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 7.1% of the involved motorcycle drivers. 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*

2006

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	685	99.0	99.2
Defective Brakes	2	0.3	0.2
Tires Failed	1	0.1	0.2
Lighting Defect	1	0.1	0.1
Improper Load/Shift	1	0.1	0.1
Other	2	0.3	0.3
Total Number of Motorcycles	**692**	**100.0**	

Observations

Vehicle factors were identified for 1.0% 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

2006

Month	N	%
January	5	0.6
February	1	0.1
March	2	0.3
April	83	10.7
May	120	15.5
June	116	15.0
July	160	20.7
August	147	19.0
September	98	12.7
October	39	5.0
November	2	0.3
December	--	--
Total Number of Collisions	**773**	**100.0**

Observations

The months of July and August recorded the highest proportion of casualty crashes involving motorcycles.

Table 7.7

Casualty Collisions Involving Motorcycles:

Road Surface Condition

2006

Road Surface Condition	N	%
Dry	662	85.6
Loose Surface Material	41	5.3
Wet	27	3.5
Slush/Snow/Ice	2	0.3
Muddy	--	--
Other	6	0.8
Unspecified	35	4.5
Total Number of Collisions	**773**	**100.0**

Observations

The majority of casualty collisions involving motorcycles occurred on dry roads. Loose material on the road surface was involved in 5.3% of motorcycle casualty crashes. Wet roads were the scene of 3.5% of motorcycle casualty collisions.

Special Types of Vehicles

Truck Tractors

- In 2006, there were 67 persons killed and 813 injured in collisions involving truck tractors. This represents an increase in fatalities and injuries from 2005.

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

- Truck tractor drivers were less likely to consume alcohol before the crash than were 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

2002-2006

Number of Truck Tractors	**2006**	**2005**	**2004**	**2003**	**2002**
Fatal	64	45	59	58	43
Non-Fatal Injury	642	601	574	566	505
Total Number of Truck Tractors Involved in Casualty Collisions	**706**	**646**	**633**	**624**	**548**
Casualties*					
Number Killed	67	58	69	76	49
Number Injured	813	802	753	782	744
Total Casualties in Collisions Involving Truck Tractors	**880**	**860**	**822**	**858**	**793**

Observations

In 2006, there were 67 persons killed and 813 injured in collisions involving truck tractors. This represents an increase in both fatalities and in injuries from 2005. The total number of truck tractors involved in casualty crashes increased in 2006 standing at 880, the five-year high.

*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*

2006

Improper Actions of Truck Tractor Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	79	34.3	15.1
Followed Too Closely	37	16.1	29.2
Improper Lane Change	22	9.6	2.8
Left Turn Across Path	19	8.3	12.5
Stop Sign Violation	11	4.8	7.9
Left of Centre	10	4.3	3.1
Improper Passing	9	3.9	1.0
Improper Turn	8	3.5	2.4
Disobey Traffic Signal	8	3.5	6.4
Backed Unsafely	4	1.7	2.3
Failed to Yield Right of Way - Uncontrolled Intersection	4	1.7	1.6
Yield Sign Violation	2	0.9	1.9
Failed to Yield Right of Way to Pedestrian	1	0.4	3.1
Other	16	7.0	10.9
Total Number of Drivers	**230**	**100.0**	

Observations

Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road or make an improper lane change. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, 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 was a total of 582 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 352 were indicated as driving properly at the time of the collision.

Table 7.10

Condition of Truck Tractor Drivers Involved in Casualty Collisions*

2006

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	549	94.8	92.9
Had Been Drinking	4	0.7	2.4
Alcohol Impaired	--	--	2.5
Total Alcohol Involvement	**4**	**0.7**	**4.9**
Fatigued/Asleep	23	4.0	1.2
Impaired by Drugs	--	--	0.2
Other	3	0.5	0.8
Total Number of Drivers	**579**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 5.2% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions (0.7% compared to 4.9%). 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*

2006

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	577	97.0	99.2
Tires Failed	6	1.0	0.2
Defective Brakes	4	0.7	0.2
Improper Load/Shift	4	0.7	0.1
Lighting Defect	1	0.2	0.1
Other	3	0.5	0.3
Total Number of Truck Tractors	**595**	**100.0**	

Observations

Vehicle factors were identified for 3.0% 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

2006

Month	N	%
January	59	8.8
February	66	9.9
March	55	8.2
April	36	5.4
May	47	7.0
June	42	6.3
July	63	9.4
August	40	6.0
September	55	8.2
October	54	8.1
November	67	10.0
December	84	12.6
Total Number of Collisions	**668**	**100.0**

Observations

The occurrence of casualty collisions involving truck tractors was highest in the month of December. The lowest number of truck tractor casualty collisions occurred during April.

Special Types of Vehicles

Trains

- In 2006, three people were killed and 30 people were injured in crashes in which a train was involved. The number of casualties involving trains has remained the same from 2005.
- The largest number of casualty collisions involving trains occurred in the month of January.
- A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

Table 7.13

Trains Involved in Casualty Collisions

2002-2006

Number of Trains	**2006**	**2005**	**2004**	**2003**	**2002**
Fatal	3	5	2	3	5
Non-Fatal Injury	23	23	21	22	32
Total Number of Trains Involved in Casualty Collisions	**26**	**28**	**23**	**25**	**37**
Casualties*					
Number Killed	3	5	2	3	6
Number Injured	30	28	35	35	38
Total Casualties in Collisions Involving Trains	**33**	**33**	**37**	**38**	**44**

Observations

The number of trains involved in casualty collisions decreased from 2005. The number of casualties resulting from these collisions has remained the same.

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

Table 7.14

Casualty Collisions Involving Trains:

Month of Occurrence

2006

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	--	--	4	17.4	4	15.4
February	1	33.3	1	4.3	2	7.7
March	--	--	1	4.3	1	3.8
April	--	--	1	4.3	1	3.8
May	--	--	2	8.7	2	7.7
June	1	33.3	2	8.7	3	11.5
July	--	--	1	4.3	1	3.8
August	--	--	3	13.0	3	11.5
September	--	--	2	8.7	2	7.7
October	--	--	1	4.3	1	3.8
November	1	33.3	2	8.7	3	11.5
December	--	--	3	13.0	3	11.5
Total Number of Collisions	**3**	**100.0**	**23**	**100.0**	**26**	**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*

2006

Driver Actions	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Driving Properly	--	--	--	--	--	--
Disobey Traffic Signal	1	33.3	8	38.1	9	37.5
Stop Sign Violation	2	66.7	3	14.3	5	20.8
Yield Sign Violation	--	--	2	9.5	2	8.3
Ran off Road	--	--	2	9.5	2	8.3
Failed to Yield Right of Way - Uncontrolled Intersection	--	--	1	4.8	1	4.2
Left Turn Across Path	--	--	1	4.8	1	4.2
Other	--	--	4	19.0	4	16.7
Total Number of Drivers	**3**	**100.0**	**21**	**100.0**	**24**	**100.0**

Observations

A large percentage of drivers involved in collisions with a train disobeyed a traffic control device (37.5%) or committed a stop sign violation (20.8%).

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

Pedestrians

- Pedestrian casualty collisions were more likely to occur in the month of October and March 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.).
- 36.6% of the drivers in 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, 17.3% had consumed alcohol before the collision, compared to 43.8% 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

2006

Month of Collision	N	%
January	128	10.0
February	93	7.3
March	76	6.0
April	90	7.1
May	98	7.7
June	106	8.3
July	105	8.2
August	96	7.5
September	117	9.2
October	158	12.4
November	85	6.7
December	124	9.7
Unspecified	--	--
Total Number of Collisions	**1276**	**100.0**

Observations

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

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2006

Day of Week	N	%
Monday	184	14.4
Tuesday	193	15.1
Wednesday	180	14.1
Thursday	191	15.0
Friday	218	17.1
Saturday	171	13.4
Sunday	137	10.7
Unspecified	2	0.2
Total Number of Collisions	**1276**	**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

2006

Time Period	N	%
11:00 p.m. - 2:59 a.m.	124	9.7
3:00 a.m. - 6:59 a.m.	57	4.5
7:00 a.m. - 10:59 a.m.	219	17.2
11:00 a.m. - 2:59 p.m.	277	21.7
3:00 p.m. - 6:59 p.m.	375	29.4
7:00 p.m. - 10:59 p.m.	216	16.9
Unspecified	8	0.6
Total Number of Collisions	**1276**	**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

2006

Location	N	%
Urban	1225	96.0
Rural	51	4.0
Total Number of Collisions	**1276**	**100.0**

Observations

The majority of pedestrian casualty collisions (96.0%) occurred in urban areas. Only 4.0% occurred in rural areas.

Table 8.5

Actions of Drivers Involved in Casualty Collisions with Pedestrians*

2006

Driver Actions	N	%
Driving Properly	384	37.3
Failed to Yield Right of Way To Pedestrian	377	36.6
Backed Unsafely	78	7.6
Ran Off Road	22	2.1
Left Turn Across Path	18	1.7
Disobey Traffic Signal	18	1.7
Improper Turn	18	1.7
Failed to Yield Right of Way - Uncontrolled Intersection	14	1.4
Followed Too Closely	11	1.1
Stop Sign Violation	7	0.7
Yield Sign Violation	3	0.3
Improper Lane Change	2	0.2
Improper Passing	2	0.2
Other	75	7.3
Total Number of Drivers	**1029**	**100.0**

Observations

37.3% of the drivers involved in pedestrian crashes were recorded as driving properly. However, 36.6% 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

2006

Age in Years	Pedestrians Killed N	Pedestrians Injured N	Total Pedestrian Casualties N	%	Pedestrian Casualty Rate Per 10,000 Population*
Under 5	--	22	22	1.6	1.1
5 - 9	--	47	47	3.5	2.3
10 - 14	--	89	89	6.6	4.0
15 - 19	4	206	210	15.6	8.8
20 - 24	5	177	182	13.5	6.9
25 - 29	2	118	120	8.9	4.5
30 - 34	3	87	90	6.7	3.6
35 - 44	4	162	166	12.3	3.2
45 - 54	8	159	167	12.4	3.3
55 - 64	3	92	95	7.1	2.9
65 and over	10	110	120	8.9	3.4
Unspecified	--	38	38	2.8	
Total Number of Pedestrian Casualties	**39**	**1307**	**1346**	**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, 2006, Statistics Canada

Figure 7

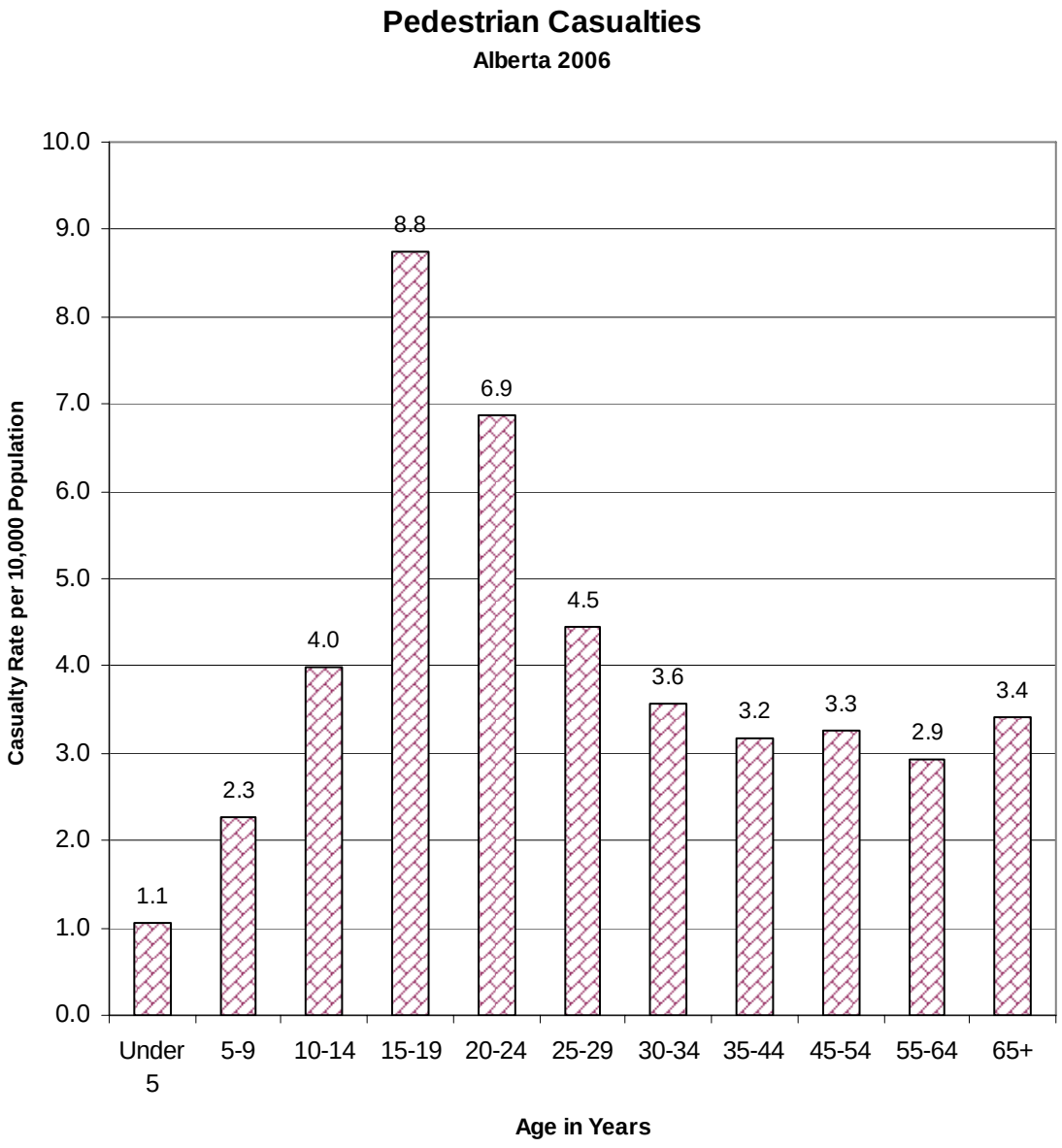

Pedestrian Casualties
Alberta 2006
Casualty Rate per 10,000 Population
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1.1
2.3
4.0
8.8
6.9
4.5
3.6
3.2
3.3
2.9
3.4
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Table 8.7

Condition of Pedestrians Involved in Casualty Collisions*

2006

Condition of Pedestrian	Pedestrians in Fatal Collisions N	%	Pedestrians in Non-Fatal Injury Collisions N	%	Total Pedestrians in Casualty Collisions N	%
Normal	18	56.3	838	81.2	856	80.5
Had Been Drinking	11	34.4	76	7.4	87	8.2
Alcohol Impaired	3	9.4	103	10.0	106	10.0
Total Alcohol Involvement	**14**	**43.8**	**179**	**17.3**	**193**	**18.1**
Impaired by Drugs	--	--	5	0.5	5	0.5
Other	--	--	10	1.0	10	0.9
Total Number of Pedestrians	**32**	**100.0**	**1032**	**100.0**	**1064**	**100.0**

Observations

Of pedestrians involved in injury collisions, 17.3% had consumed alcohol before the collision, compared to 43.8% involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol increased dramatically.

*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*

2006

Age in Years	N	%	Rate per 10,000 Population**
Under 10	--	--	--
10 - 14	2	1.0	0.1
15 - 19	20	10.4	0.8
20 - 24	45	23.3	1.7
25 - 29	26	13.5	1.0
30 - 34	21	10.9	0.8
35 - 44	40	20.7	0.8
45 - 54	14	7.3	0.3
55 - 64	10	5.2	0.3
65 and over	6	3.1	0.2
Unspecified	9	4.7	
Total Number of Pedestrian Casualties	**193**	**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, 2006, 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 (39.9%) occurred during the evening rush-hour period.
- Young bicyclists, 15-19 years of age, were the group most frequently involved in bicycle casualty crashes.
- 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.
- 4.8% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2006

Month of Collision	N	%
January	15	2.5
February	18	3.1
March	13	2.2
April	49	8.3
May	95	16.1
June	70	11.9
July	100	17.0
August	87	14.8
September	76	12.9
October	45	7.6
November	11	1.9
December	10	1.7
Total Number of Collisions	**589**	**100.0**

Observations

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

Table 9.2

Casualty Collisions Involving Bicycles:

Day of Week

2006

Day of Week	N	%
Monday	90	15.3
Tuesday	96	16.3
Wednesday	94	16.0
Thursday	101	17.1
Friday	79	13.4
Saturday	54	9.2
Sunday	75	12.7
Total Number of Collisions	**589**	**100.0**

Observations

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

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2006

Time Period	N	%
11:00 p.m. - 2:59 a.m.	22	3.7
3:00 a.m. - 6:59 a.m.	14	2.4
7:00 a.m. - 10:59 a.m.	100	17.0
11:00 a.m. - 2:59 p.m.	124	21.1
3:00 p.m. - 6:59 p.m.	235	39.9
7:00 p.m. - 10:59 p.m.	89	15.1
Unspecified	5	0.8
Total Number of Collisions	**589**	**100.0**

Observations

The largest proportion of casualty crashes (39.9%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

Table 9.4

Age of Bicycle Casualties

2006

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	--	--	4	0.7	4	0.7	0.2
5-9	--	--	27	4.6	27	4.6	1.3
10-14	--	--	94	16.0	94	15.9	4.2
15-19	1	33.3	100	17.0	101	17.1	4.2
20-24	--	--	79	13.4	79	13.4	3.0
25-29	--	--	46	7.8	46	7.8	1.7
30-34	--	--	43	7.3	43	7.3	1.7
35-44	1	33.3	80	13.6	81	13.7	1.5
45-54	--	--	69	11.7	69	11.7	1.3
55-64	--	--	18	3.1	18	3.0	0.6
65 and over	1	33.3	13	2.2	14	2.4	0.4
Unspecified	--	--	15	2.6	15	2.5	
Total Casualties	**3**	**100.0**	**588**	**100.0**	**591**	**100.0**	

Observations

Casualty rates per 10,000 population were highest for persons between the ages of 10 and 19. The lowest casualty rates were recorded for children under 5 years of age and adults aged 55 and older.

*Based on estimates of the Alberta population by age groups and sex, July 1, 2006, Statistics Canada

Table 9.5

Improper Actions of Bicyclists Involved in Casualty Collisions

2006

Improper Actions of Bicyclists	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Disobey Traffic Signal	43	16.8	6.4
Failed to Yield Right of Way - Uncontrolled Intersection	23	9.0	1.5
Stop Sign Violation	20	7.8	7.9
Left of Centre	14	5.5	3.1
Left Turn Across Path	11	4.3	12.5
Improper Passing	8	3.1	1.0
Improper Lane Change	4	1.6	2.8
Yield Sign Violation	4	1.6	1.9
Improper Turn	3	1.2	2.4
Followed Too Closely	2	0.8	29.2
Ran Off Road	1	0.4	15.1
Failed to Yield Right of Way to Pedestrian	1	0.4	3.1
Other	122	47.7	10.9
Total Number of Bicyclists	**256**	**100.0**	

Observations

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.

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

Note: There was a total of 401 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 145 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2006

Condition of Bicyclist	N	%
Normal	446	93.1
Had Been Drinking	17	3.5
Alcohol Impaired	6	1.3
Total Alcohol Involvement	**23**	**4.8**
Impaired by Drugs	3	0.6
Other	7	1.5
Total Number of Bicyclists	**479**	**100.0**

Observations

4.8% 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 4.6% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 22.7% 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 licensed drivers, males between 18 and 24 years of age were most likely to have been drinking before the crash. There were five times as many male drivers as female drivers who had consumed alcohol prior to the collision.

- In 2006, 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, 2002-2006.

Table 10.1

Condition of Drivers in Casualty Collisions*

2006

Condition of Driver	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Normal	394	75.0	24735	93.3	25129	92.9
Had Been Drinking	52	9.9	606	2.3	658	2.4
Alcohol Impaired	67	12.8	611	2.3	678	2.5
Total Alcohol Involvement	**119**	**22.7**	**1217**	**4.6**	**1336**	**4.9**
Impaired by Drugs	2	0.4	49	0.2	51	0.2
Fatigued/Asleep	7	1.3	305	1.2	312	1.2
Other	3	0.6	211	0.8	214	0.8
Total Number of Drivers	**525**	**100.0**	**26517**	**100.0**	**27042**	**100.0**

Observations

Of drivers involved in injury collisions, 4.6% had consumed alcohol before the crash, compared to 22.7% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 4.9% 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

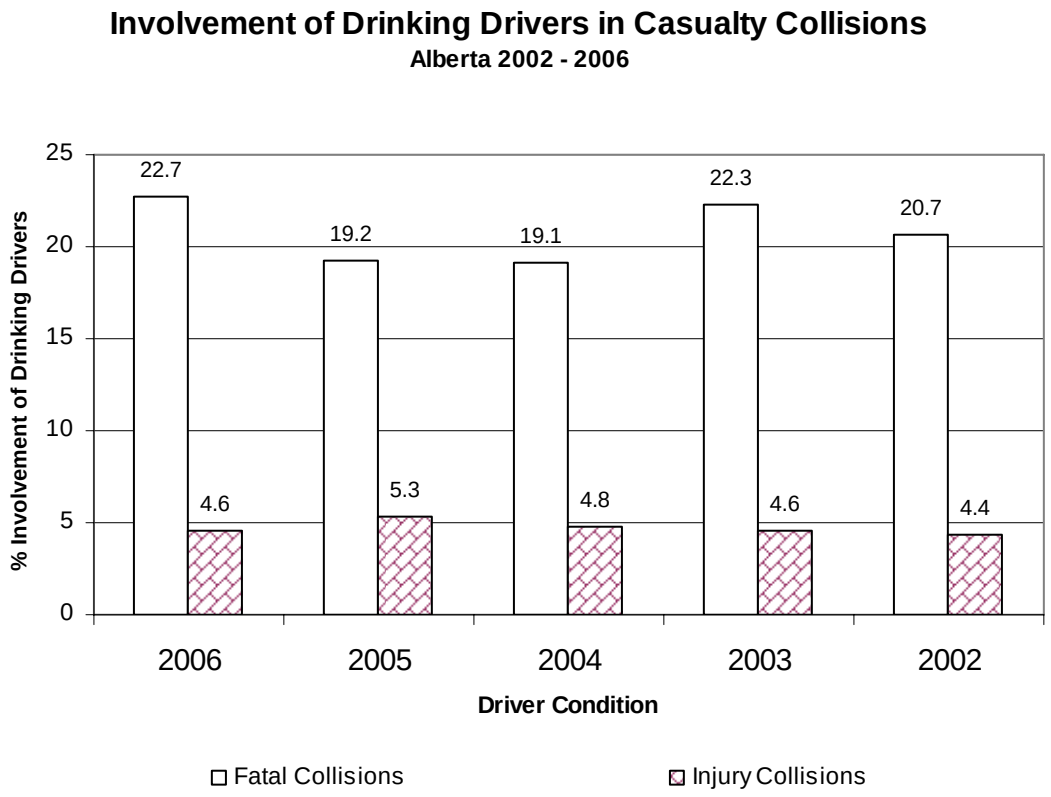

Involvement of Drinking Drivers in Casualty Collisions
Alberta 2002 - 2006
% Involvement of Drinking Drivers
25
20
15
10
5
0
22.7
4.6
19.2
5.3
19.1
4.8
22.3
4.6
20.7
4.4
2006
2005
2004
2003
2002
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

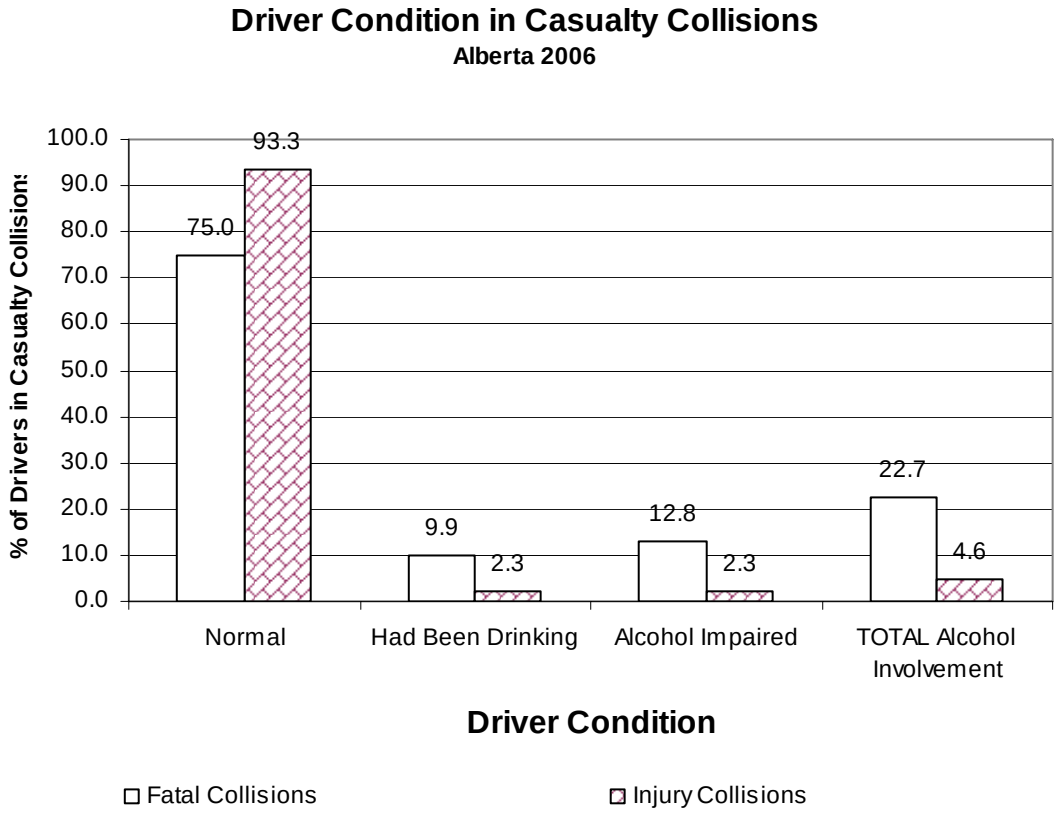

Driver Condition in Casualty Collisions
Alberta 2006
% of Drivers in Casualty Collisions
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
75.0
93.3
9.9
2.3
12.8
2.3
22.7
4.6
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2006

	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	0.1	0.1	2	0.1	0.2	4	0.3	0.2
16 - 17	38	2.8	1.2	10	0.7	0.4	48	3.6	0.8
18 - 19	131	9.8	3.2	28	2.1	0.8	159	11.9	2.1
20 - 21	120	9.0	2.5	20	1.5	0.5	140	10.5	1.6
22 - 24	146	10.9	1.8	22	1.6	0.3	168	12.6	1.1
25 - 29	187	14.0	1.4	24	1.8	0.2	211	15.8	0.8
30 - 34	100	7.5	0.8	14	1.0	0.1	114	8.5	0.5
35 - 44	182	13.6	0.7	58	4.3	0.2	240	18.0	0.5
45 - 54	133	10.0	0.5	34	2.5	0.1	167	12.5	0.3
55 - 64	37	2.8	0.2	4	0.3	0.0	41	3.1	0.1
65 and over	24	1.8	0.2	1	0.1	0.0	25	1.9	0.1
Unspecified	5	0.4		2	0.1		19	1.4	
Total Drivers	**1105**	**82.7**		**219**	**16.4**		**1336**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were five times as many male drivers as female drivers. In terms of involvement per 1,000 licensed drivers, males 18-24 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.

** Licensed Drivers – Service Alberta – Registries, as of December 31, 2006

Figure 10

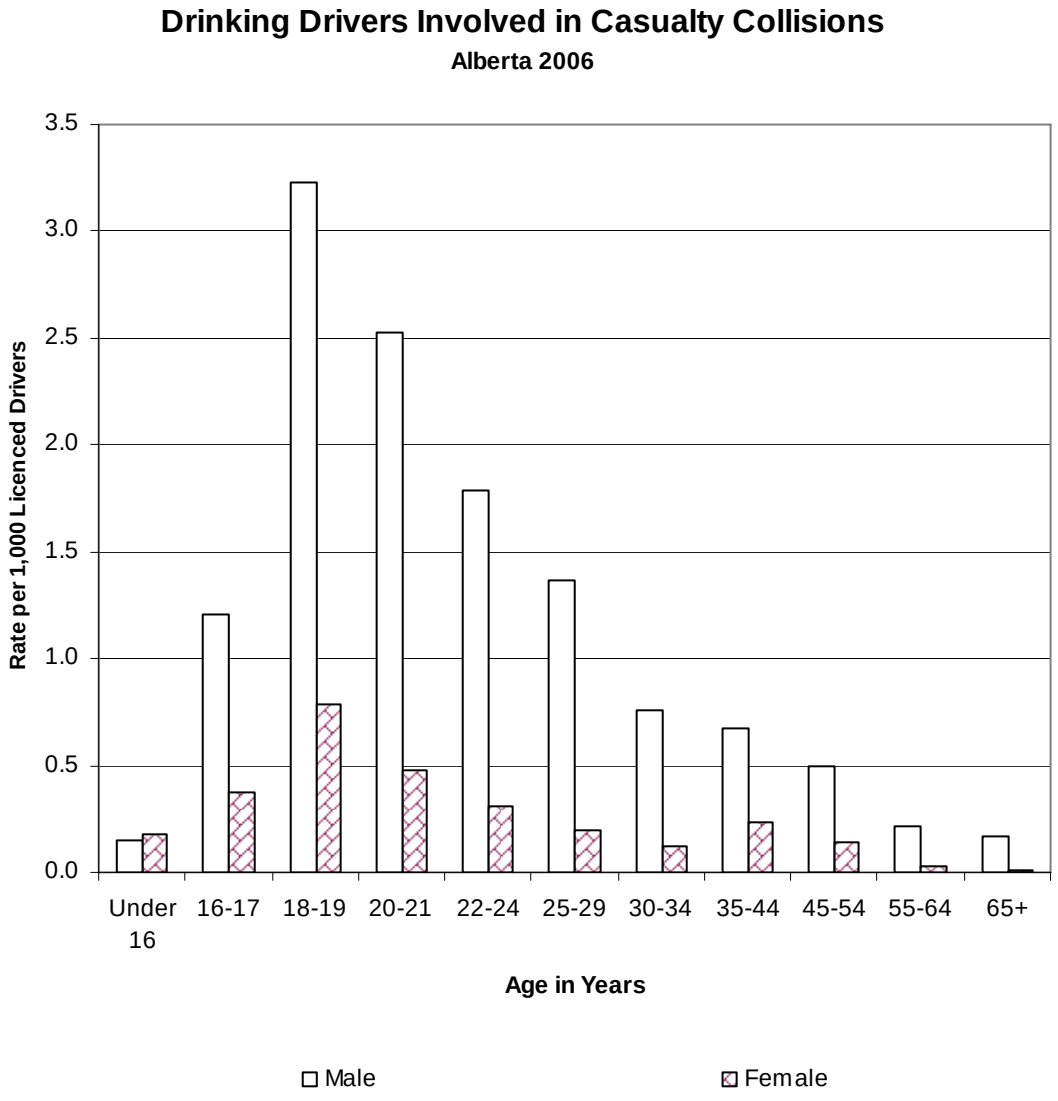

Drinking Drivers Involved in Casualty Collisions
Alberta 2006
Rate per 1,000 Licenced Drivers
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Under 16
16-17
18-19
20-21
22-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2006

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	9	7.7	97	8.1	106	8.0
February	10	8.5	84	7.0	94	7.1
March	8	6.8	98	8.1	106	8.0
April	9	7.7	92	7.6	101	7.7
May	15	12.8	110	9.1	125	9.5
June	11	9.4	114	9.5	125	9.5
July	8	6.8	115	9.6	123	9.3
August	11	9.4	120	10.0	131	9.9
September	13	11.1	114	9.5	127	9.6
October	8	6.8	108	9.0	116	8.8
November	7	6.0	69	5.7	76	5.8
December	8	6.8	82	6.8	90	6.8
Total Number of Collisions	**117**	**100.0**	**1203**	**100.0**	**1320**	**100.0**

Observations

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

Table 10.4

Alcohol-Involved Casualty Collisions:

Day of Week

2006

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	5.1	110	9.1	116	8.8
Tuesday	14	12.0	117	9.7	131	9.9
Wednesday	21	17.9	117	9.7	138	10.5
Thursday	9	7.7	134	11.1	143	10.8
Friday	20	17.1	222	18.5	242	18.3
Saturday	33	28.2	295	24.5	328	24.8
Sunday	14	12.0	208	17.3	222	16.8
Total Number of Collisions	**117**	**100.0**	**1203**	**100.0**	**1320**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions and non-fatal injury collisions occurred on Saturday (28.2% and 24.5% respectively). The smallest number of alcohol-involved casualty collisions occurred on Monday and Tuesday.

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2006

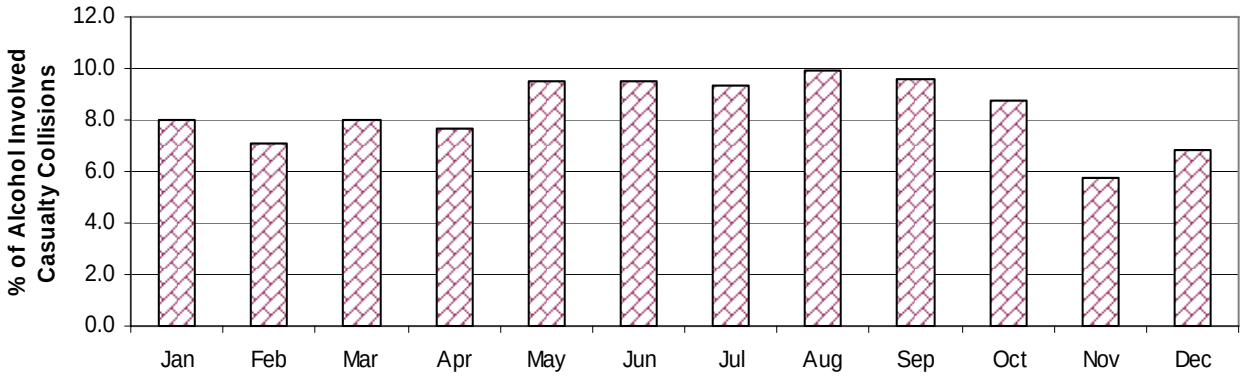
Time Period	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
11:00 p.m. - 2:59 a.m.	32	27.4	402	33.4	434	32.9
3:00 a.m. - 6:59 a.m.	22	18.8	212	17.6	234	17.7
7:00 a.m. - 10:59 a.m.	13	11.1	53	4.4	66	5.0
11:00 a.m. - 2:59 p.m.	4	3.4	62	5.2	66	5.0
3:00 p.m. - 6:59 p.m.	12	10.3	174	14.5	186	14.1
7:00 p.m. - 10:59 p.m.	29	24.8	277	23.0	306	23.2
Unspecified	5	4.3	23	1.9	28	2.1
Total Number of Collisions	**117**	**100.0**	**1203**	**100.0**	**1320**	**100.0**

Observations

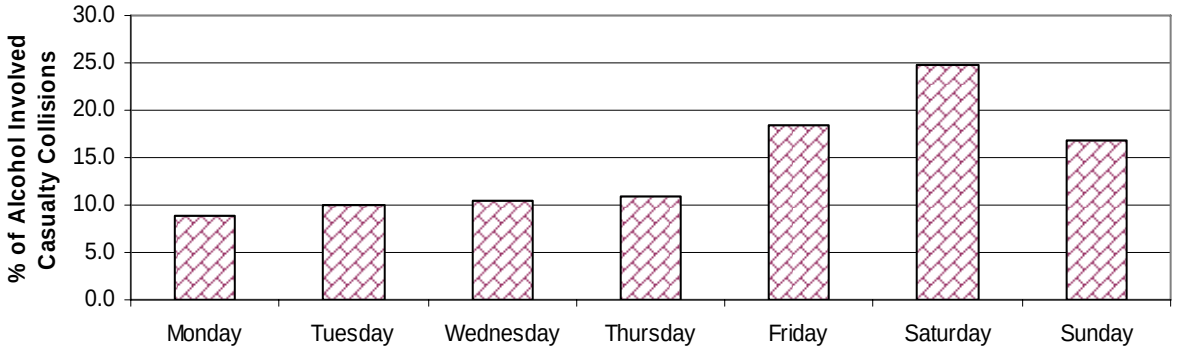
The late night/early morning time period (11:00 p.m. – 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (32.9%). The daytime hours (7:00 a.m. – 2:59 p.m.) were least likely to record alcohol-involved casualty crashes (10.0%).

Figure 11

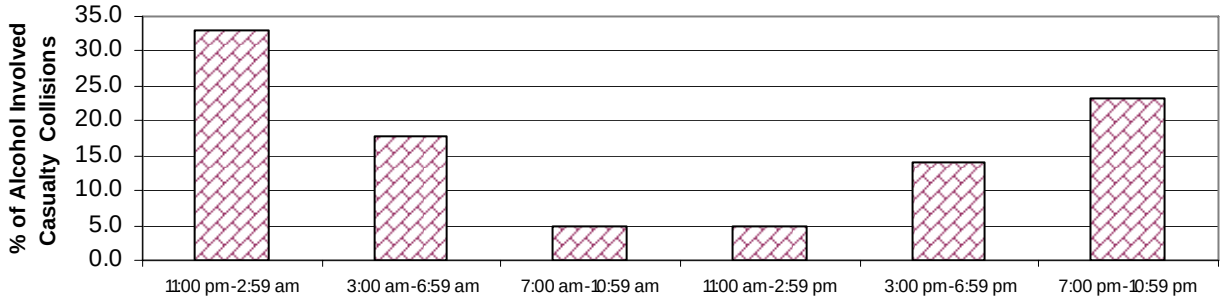
Alcohol-Involved Casualty Collisions
Alberta 2006
By Month of Occurrence



By Day of Week



By Time Period



Traffic Safety Issues

Restraint Use

- Collision-involved restraint users had a much lower injury rate (10.3%) than those not using restraints (38.7%).
- 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)

2006

Injury Severity of Occupants	Percentage of Occupants Using Restraints %	Percentage of Occupants Not Using Restraints %
Fatal Injury	0.1	3.6
Major Injury	1.1	11.9
Minor Injury	9.1	23.3
Total Occupants Sustaining Injuries	**10.3**	**38.7**
No Apparent Injury	89.7	61.3
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (10.3%) than those not using restraints (38.7%). This table illustrates the moderating effect of seat belt use on injury severity. Occupants using a restraint reduce the likelihood of sustaining an injury and the severity of injury decreases.

Injury Severity

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

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

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

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