Alberta

Traffic Collision Statistics

2004

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2004 Overview

- The number of **traffic fatalities increased 0.5%** over the past year from 385 fatalities in 2003 to 387 in 2004.
- The number of **traffic injuries decreased 6.5%** over the past year from 26426 injuries in 2003 to 24249 in 2004.
- The number of **traffic collisions decreased 0.7%** over the past year from 113357 collisions in 2003 to 112553 in 2004.
- **The highest number of fatal collisions** occurred in **July. The highest number of injury collisions** occurred in **January**.
- **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**.
- **48.6% of pedestrians** involved in **fatal collisions had consumed alcohol prior to the collision** compared to **13.7% of pedestrians in injury collisions**.
- **19.1%** of drivers involved in fatal collisions **had consumed alcohol** prior to the crash compared to **4.8%** of drivers in injury collisions.
- Collision involved restraint users had a much lower injury rate (11.3%) than those not using restraints (39.5%)

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 2004. 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.

2004 Traffic Collision Summary

Introduction

During 2004, 112553 collisions were recorded on Alberta roadways. Property damage collisions (over $1000) represented 84.4% (94966) of this total while 15.3% (17248) were non-fatal injury collisions. Fatal collisions accounted for 0.3% (339) of the total reported collisions.

Five Year Trends

In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates are unchanged from 2003.

The non-fatal injury rate, has decreased in 2004 in terms of population, licensed drivers and registered vehicles.

Property damage collision rates also decreased in 2004 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 2004 provincial comparisons were not available at the time of printing; therefore, figures for 2003 were used. Based on this comparison of rates per billion vehicle kilometres travelled, of the twelve provinces and territories for which information was available, six had a higher fatality rate than Alberta in 2003. With regard to injury rate, in 2003, five jurisdictions had a higher injury rate than Alberta.

Table 1.1

Alberta Traffic Collisions

2000 – 2004

Severity of Collisions	**2004**	**2003**	**2002**	**2001**	**2000**
Fatal Collisions	339	321	322	341	312
Non-Fatal Injury Collisions	17248	18447	20152	19000	18246
Property Damage Collisions	94966	94589	95834	88050	85905
Total Reportable Collisions	**112553**	**113357**	**116308**	**107391**	**104463**
Number Killed	387	385	372	404	364
Number Injured	24249	26426	28989	27583	26464
Total Number of Casualties	**24636**	**26811**	**29361**	**27987**	**26828**

Observations

In 2004, the overall number of collisions decreased 0.7% when compared to 2003. In 2004, injury collisions decreased by 6.5% and fatal crashes increased by 5.6%. The number of fatalities increased by 0.5% from 2003 to 2004, and the number of injuries decreased by 8.2%. In terms of the past five years, overall collisions were lowest in 2000 and highest in 2002.

Table 1.2

Traffic Collision Rates

2000 – 2004

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers*					Rate Per 10,000 Registered Vehicles*				
	2004	**2003**	**2002**	**2001****	**2000**	**2004**	**2003**	**2002**	**2001**	**2000**	**2004**	**2003**	**2002**	**2001**	**2000**
Fatal Collisions	1.1	1.0	1.0	1.1	1.0	1.4	1.4	1.4	1.5	1.4	1.4	1.3	1.3	1.5	1.4
Number Killed	1.2	1.2	1.2	1.3	1.2	1.6	1.6	1.6	1.8	1.6	1.6	1.6	1.6	1.7	1.6
Non-Fatal Injury Collisions	53.9	58.5	64.7	62.0	60.9	72.2	78.0	86.3	83.2	82.0	69.7	76.4	84.4	81.5	81.0
Number Injured	75.7	83.8	93.1	90.0	88.3	101.5	111.8	124.2	120.7	118.9	98.0	109.5	121.5	118.3	117.5
Property Damage Collisions	296.6	299.9	307.8	287.4	286.6	397.6	400.2	410.5	385.4	386.1	383.7	391.8	401.6	377.6	381.3
Total Reportable Collisions	**351.5**	**359.4**	**373.5**	**350.5**	**348.5**	**471.2**	**479.6**	**498.1**	**470.0**	**469.5**	**454.7**	**469.5**	**487.4**	**460.5**	**463.7**

Observations

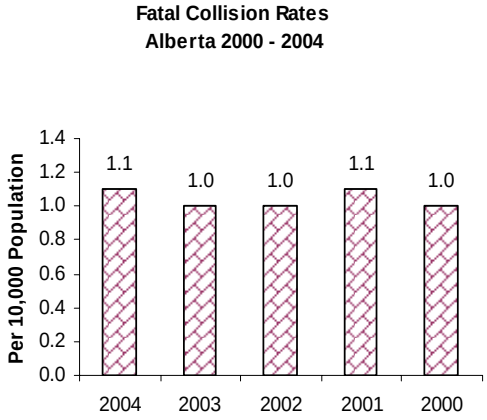
In terms of population, licensed drivers and registered vehicles the fatality rates are unchanged from 2004.

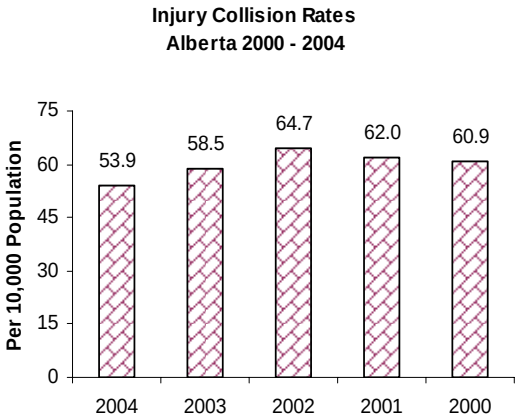
The non-fatal injury rate, has decreased in 2004 in terms of population, licensed drivers and registered vehicles.

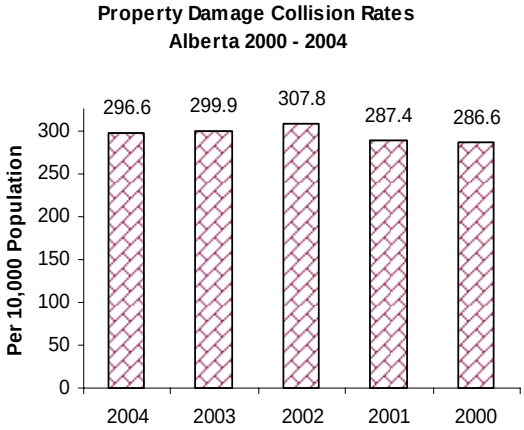
Property damage collision rates also decreased in 2004 in terms of population, licensed drivers and registered vehicles.

*Sources:
Population – Statistics Canada as of July 1, 2004
Licensed Drivers – Government Services – Registries, as of December 31, 2004
Registered Vehicles – Government Services – Registries, as of December 31, 2004
**Updated 2003, Source: Statistics Canada as of July 1, 2001

Figure 1


Fatal Collision Rates
Alberta 2000 - 2004
Per 10,000 Population
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.1
1.0
1.0
1.1
1.0
2004
2003
2002
2001
2000


Injury Collision Rates
Alberta 2000 - 2004
Per 10,000 Population
75
60
45
30
15
0
53.9
58.5
64.7
62.0
60.9
2004
2003
2002
2001
2000


Property Damage Collision Rates
Alberta 2000 - 2004
Per 10,000 Population
300
250
200
150
100
50
0
296.6
299.9
307.8
287.4
286.6
2004
2003
2002
2001
2000

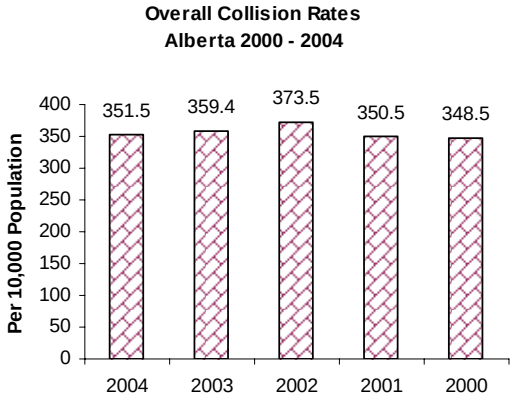

Overall Collision Rates
Alberta 2000 - 2004
Per 10,000 Population
400
350
300
250
200
150
100
50
0
351.5
359.4
373.5
350.5
348.5
2004
2003
2002
2001
2000

Table 1.3

Provincial Comparison of Casualty Rates
Per Billion Vehicle Kilometres Travelled*

2000-2003

	2003		2002		2001		2000	
	Fatalities	**Injuries**	**Fatalities**	**Injuries**	**Fatalities**	**Injuries**	**Fatalities**	**Injuries**
Canada	8.9	711.0	9.3	721.2	9.0	713.0	9.4	732.3
Alberta	9.8	671.8	10.1	783.6	10.0	682.4	8.6	628.5
British Columbia	12.9	902.5	12.4	776.6	11.7	838.5	12.0	849.6
Saskatchewan	12.1	618.0	12.3	652.7	13.0	547.5	12.7	656.8
Manitoba	8.5	795.9	10.8	948.9	8.3	799.3	10.5	894.8
Ontario	7.3	669.2	7.1	679.4	7.3	705.4	7.2	721.4
Quebec	8.4	754.3	9.9	749.1	8.8	707.5	11.2	755.3
New Brunswick	11.8	572.5	12.2	592.3	11.7	686.5	10.5	647.0
Nova Scotia	6.7	504.1	8.5	574.0	8.2	647.6	9.4	756.4
Prince Edward Island	12.0	753.3	14.3	789.8	12.2	896.0	15.8	939.1
Newfoundland	11.0	768.5	10.0	701.2	9.3	690.2	10.6	613.7
Yukon	14.1	468.3	25.3	572.6	10.9	836.7	21.7	745.9
Northwest Territories	8.2	471.4	8.4	643.2	7.5	512.8	16.6	738.5
Nunavut	N/A	N/A	N/A	N/A	47.6	N/A	70.4	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.

Based on this comparison of rates per billion vehicle kilometres travelled, of the twelve provinces and territories for which information was available, six had a higher fatality rate than Alberta in 2003. With regard to injury rate, in 2003, five jurisdictions had a higher injury rate than Alberta.

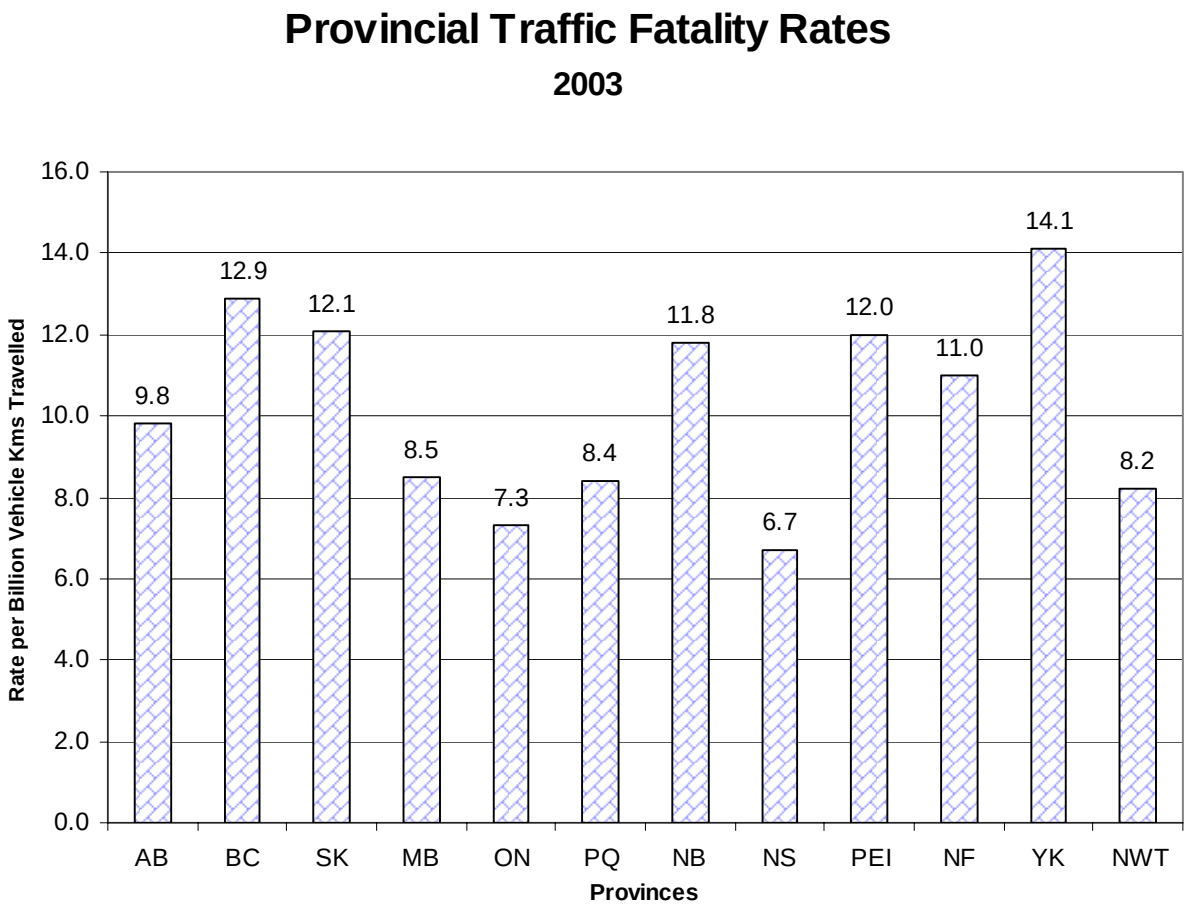
*Figures for 2004 were not available at time of printing.

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
2003
Rate per Billion Vehicle Kms Travelled
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
9.8
12.9
12.1
8.5
7.3
8.4
11.8
6.7
12.0
11.0
14.1
8.2
AB
BC
SK
MB
ON
PQ
NB
NS
PEI
NF
YK
NWT
Provinces

When the Collisions Occurred

Month

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

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 and the August Long Weekend recorded the highest number of individuals killed. The August Long Weekend recorded the highest number of injuries. The five-day Christmas Season recorded the highest total number of collisions.

Table 2.1

Collision Occurrence by Month

2004

Month	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	29	8.6	1815	10.5	11668	12.3	13512	12.0
February	21	6.2	1350	7.8	7540	7.9	8911	7.9
March	13	3.8	1300	7.5	6851	7.2	8164	7.3
April	26	7.7	1147	6.7	5967	6.3	7140	6.3
May	22	6.5	1247	7.2	5761	6.1	7030	6.2
June	28	8.3	1492	8.7	6867	7.2	8387	7.5
July	44	13.0	1452	8.4	6967	7.3	8463	7.5
August	34	10.0	1401	8.1	6247	6.6	7682	6.8
September	33	9.7	1488	8.6	6679	7.0	8200	7.3
October	33	9.7	1577	9.1	9347	9.8	10957	9.7
November	28	8.3	1341	7.8	9111	9.6	10480	9.3
December	28	8.3	1637	9.5	11737	12.4	13402	11.9
Unspecified	--	--	1	0.0	224	0.2	225	0.2
Total Number of Collisions	**339**	**100.0**	**17248**	**100.0**	**94966**	**100.0**	**112553**	**100.0**

Observations

The month of July experienced more fatal crashes than other months. The highest number of reported injury collisions was in January and the highest number of property damage collisions was in the month of December.

Table 2.2

Collision Occurrence by Day of Week

2004

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	39	11.5	2437	14.1	13227	13.9	15703	14.0
Tuesday	33	9.7	2403	13.9	13490	14.2	15926	14.1
Wednesday	52	15.3	2480	14.4	13747	14.5	16279	14.5
Thursday	59	17.4	2587	15.0	14130	14.9	16776	14.9
Friday	52	15.3	2956	17.1	16363	17.2	19371	17.2
Saturday	61	18.0	2481	14.4	13616	14.3	16158	14.4
Sunday	43	12.7	1902	11.0	10121	10.7	12066	10.7
Unspecified	--	--	2	0.0	272	0.3	274	0.2
Total Number of Collisions	**339**	**100.0**	**17248**	**100.0**	**94966**	**100.0**	**112553**	**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

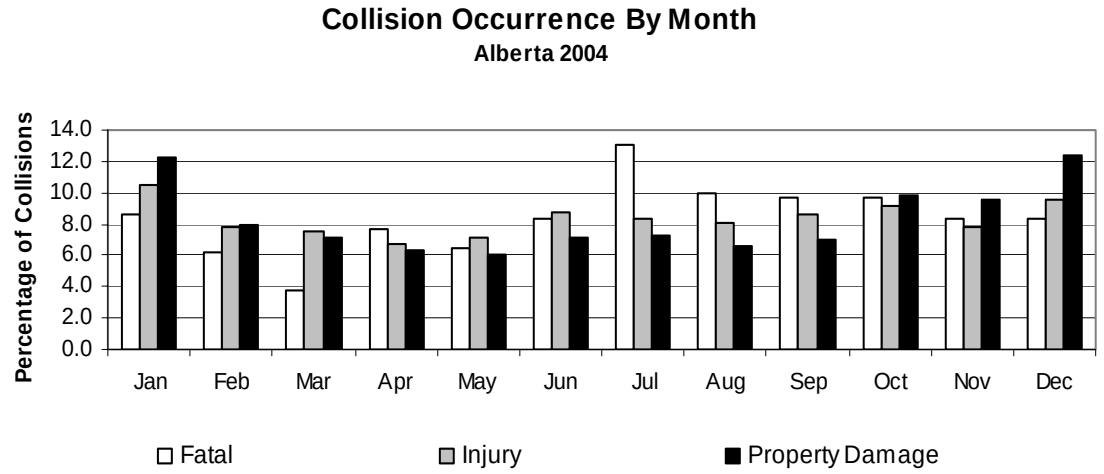
2004

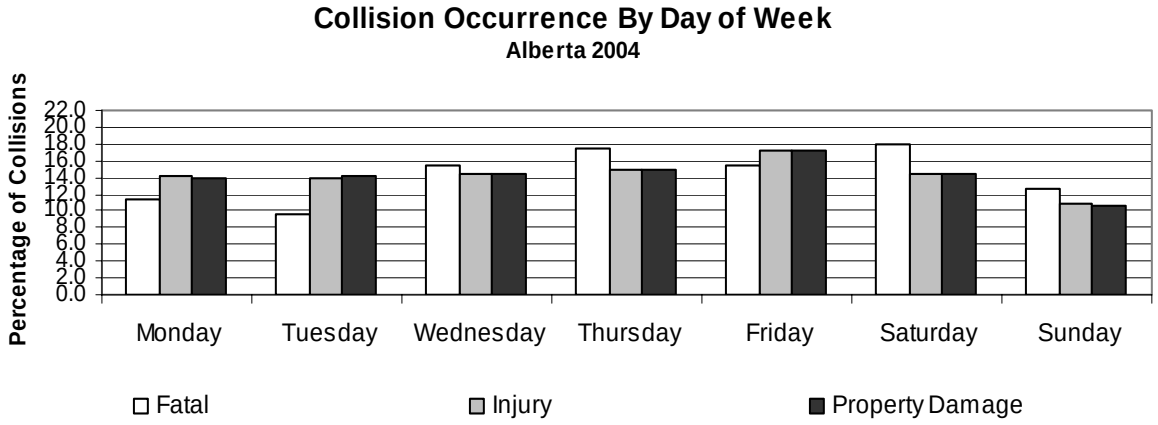
Time Period	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Property Damage Collisions N	Property Damage Collisions %	Total Collisions N	Total Collisions %
11:00 p.m. - 2:59 a.m.	53	15.6	1233	7.1	7214	7.6	8500	7.6
3:00 a.m. - 6:59 a.m.	33	9.7	859	5.0	4933	5.2	5825	5.2
7:00 a.m. - 10:59 a.m.	43	12.7	2957	17.1	16494	17.4	19494	17.3
11:00 a.m. - 2:59 p.m.	62	18.3	4073	23.6	22279	23.5	26414	23.5
3:00 p.m. - 6:59 p.m.	63	18.6	5473	31.7	26824	28.2	32360	28.8
7:00 p.m. - 10:59 p.m.	77	22.7	2556	14.8	15326	16.1	17959	16.0
Unspecified	8	2.4	97	0.6	1896	2.0	2001	1.8
Total Number of Collisions	**339**	**100.0**	**17248**	**100.0**	**94966**	**100.0**	**112553**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the largest percentage (28.8%) 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 2004
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 2004
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

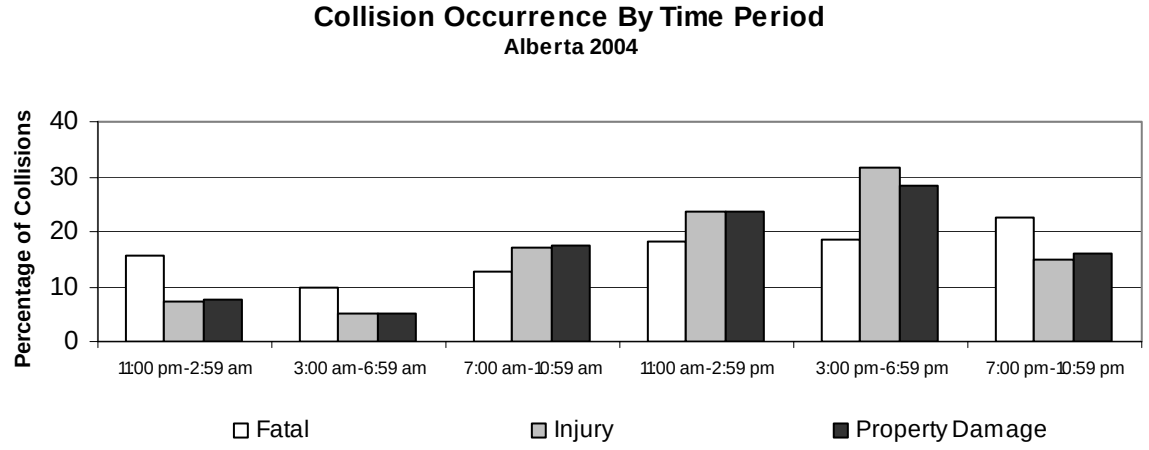

Collision Occurrence By Time Period
Alberta 2004
Percentage of Collisions
40
30
20
10
0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Table 2.4

Collisions During 2004 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	--	58	312
Family Day Long Weekend (February 13-16)	3	209	977
Easter Long Weekend (April 8-12)	5	244	898
Victoria Day Long Weekend (May 21-24)	3	212	795
Canada Day (July 1)	1	63	244
August Long Weekend (July 30 - August 2)	7	311	944
Labour Day Long Weekend (September 3-6)	10	243	928
Thanksgiving Long Weekend (October 8-11)	2	239	967
Remembrance Day (November 11)	1	43	262
Christmas Season (December 24-28)	3	290	1732
TOTAL	**35**	**1912**	**8059**

Observations

The Labour Day Long Weekend and the August Long Weekend recorded the highest number of individuals killed. The August Long Weekend recorded the highest number of injuries. The five-day Christmas Season 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 5.0% and 2.9% 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

2004

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	197	50.9	14486	59.7	14683	59.6
Passengers	99	25.6	6766	27.9	6865	27.9
Pedestrians	50	12.9	1188	4.9	1238	5.0
Motorcyclists	25	6.5	678	2.8	703	2.9
Bicyclists	6	1.6	612	2.5	618	2.5
Other	8	2.1	343	1.4	351	1.4
Unspecified	2	0.5	176	0.7	178	0.7
Total Casualties	**387**	**100.0**	**24249**	**100.0**	**24636**	**100.0**

Observations

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 5.0% and 2.9% of the total casualties, respectively.

Table 3.2

Age of Casualties

2004

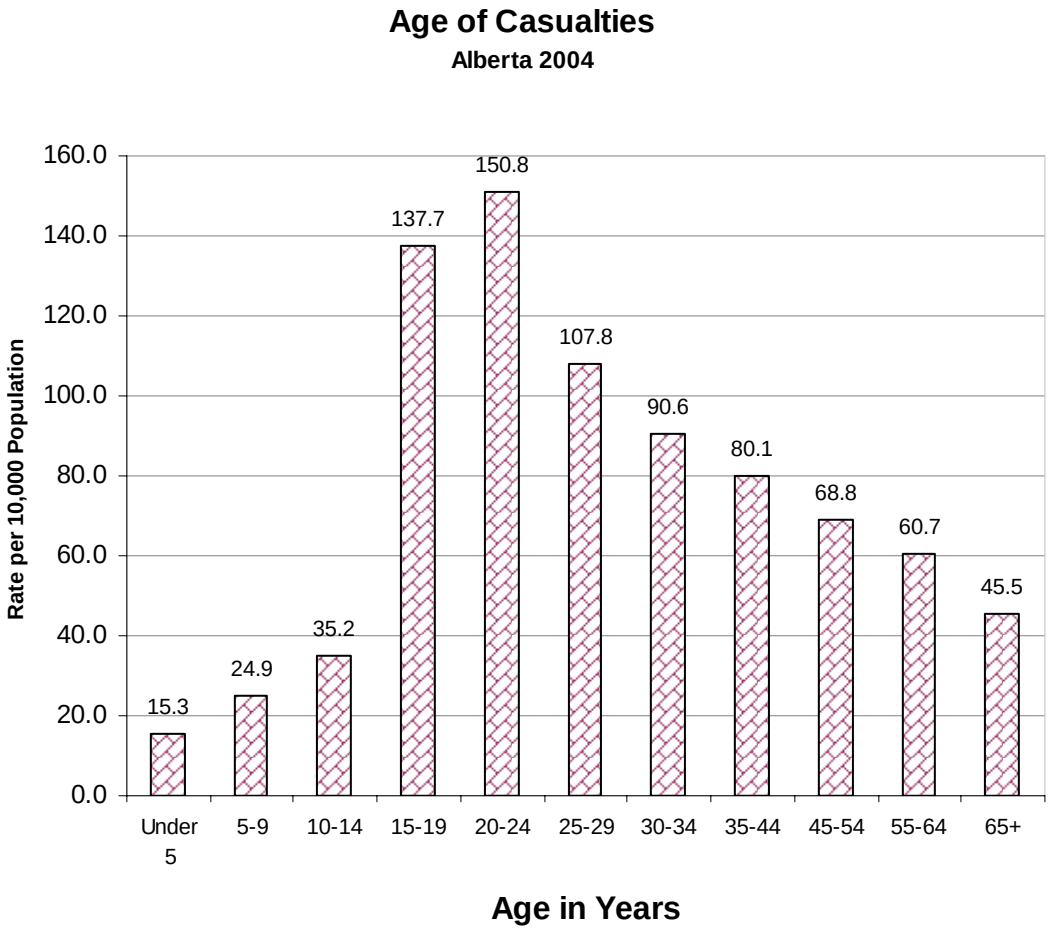
Age in Years	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %	Casualty Rate Per 10,000 Population*
Under 5	3	0.8	294	1.2	297	1.2	15.3
5-9	11	2.8	498	2.0	509	2.1	24.9
10-14	5	1.3	780	3.2	785	3.2	35.2
15-19	38	9.8	3187	12.9	3225	13.1	137.7
20-24	67	17.3	3675	14.9	3742	15.2	150.8
25-29	33	8.5	2597	10.5	2630	10.7	107.8
30-34	32	8.3	2136	8.7	2168	8.8	90.6
35-44	60	15.5	4076	16.5	4136	16.8	80.1
45-54	57	14.7	3216	13.1	3273	13.3	68.8
55-64	30	7.8	1731	7.0	1761	7.1	60.7
65 and over	51	13.2	1464	5.9	1515	6.1	45.5
Unspecified	--	--	595	2.4	595	2.4	
Total Casualties	**387**	**100.0**	**24249**	**100.0**	**24636**	**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, 2004, Statistics Canada

Figure 4


Age of Casualties
Alberta 2004
Rate per 10,000 Population
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
15.3
24.9
35.2
137.7
150.8
107.8
90.6
80.1
68.8
60.7
45.5
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 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 were males 20 to 24 years old.

Driver Actions

Following too closely (27.0%), running off the road (15.0%) and left turn across path (11.5%) 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

2004

	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	199	1.1	13.9	73	0.6	6.6	272	0.9	10.7
16-17	698	3.7	22.9	562	4.7	21.1	1260	4.0	22.0
18-19	1179	6.2	28.7	765	6.4	20.9	1945	6.2	25.0
20-24	2890	15.3	24.0	1766	14.8	16.3	4657	14.9	20.4
25-34	3997	21.2	15.9	2602	21.8	11.4	6600	21.2	13.7
35-44	3697	19.6	14.0	2555	21.4	10.3	6255	20.1	12.2
45-54	3052	16.2	12.2	1952	16.4	8.5	5004	16.1	10.4
55-64	1683	8.9	11.0	948	8.0	7.0	2631	8.4	9.1
65 and over	1296	6.9	9.7	640	5.4	5.9	1937	6.2	8.0
Unspecified	178	0.9		55	0.5		614	2.0	
Total Number of Drivers	**18869**	**100.0**	**16.9**	**11918**	**100.0**	**12.0**	**31175**	**100.0**	**14.6**

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: Government Services – Registries. Operator Statistics, December 31, 2004

Figure 5

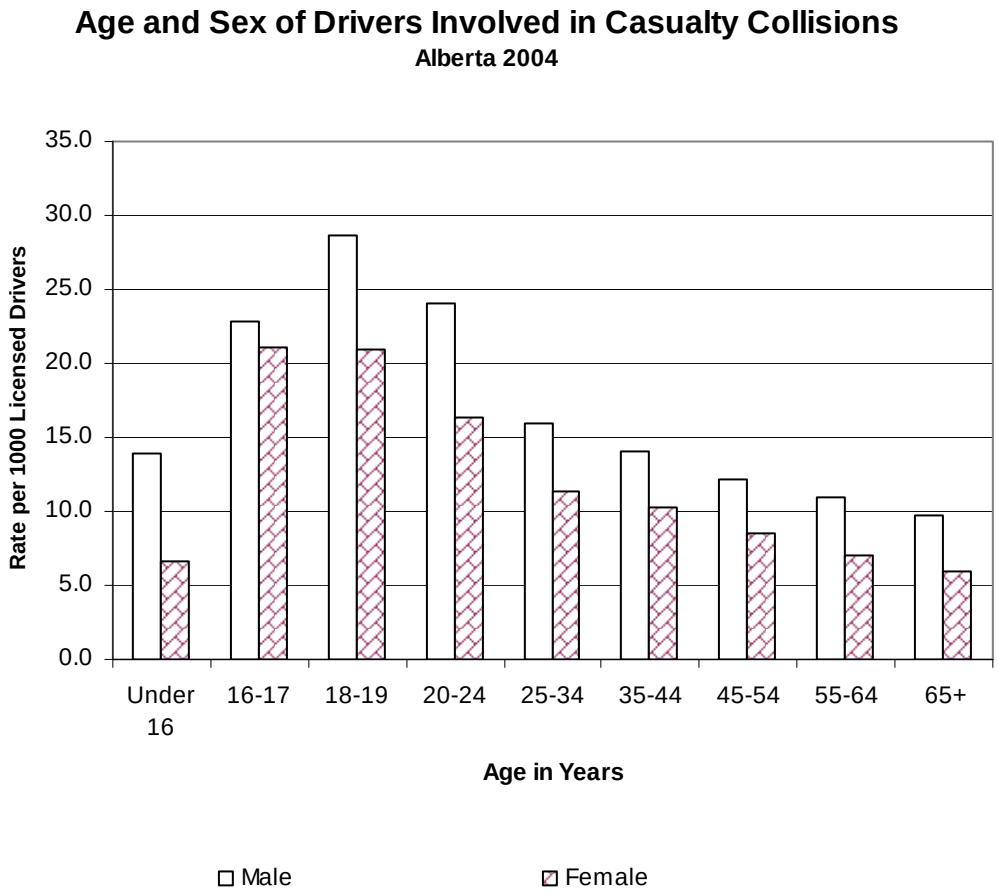

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2004
Rate per 1000 Licensed Drivers
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Under 16
16-17
18-19
20-24
25-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2004

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	3.0	3390	27.5	3398	27.0
Ran Off Road	106	39.1	1777	14.4	1883	15.0
Left Turn Across Path	27	10.0	1421	11.5	1448	11.5
Stop Sign Violation	32	11.8	961	7.8	993	7.9
Disobey Traffic Signal	8	3.0	841	6.8	849	6.7
Failed to Yield Right of Way to Pedestrian	12	4.4	399	3.2	411	3.3
Left of Centre	48	17.7	322	2.6	370	2.9
Improper Lane Change	2	0.7	282	2.3	284	2.3
Backed Unsafely	1	0.4	264	2.1	265	2.1
Improper Turn	3	1.1	257	2.1	260	2.1
Yield Sign Violation	1	0.4	227	1.8	228	1.8
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.1	210	1.7	213	1.7
Improper Passing	5	1.8	119	1.0	124	1.0
Other	15	5.5	1847	15.0	1862	14.8
Total Number of Drivers	**271**	**100.0**	**12317**	**100.0**	**12588**	**100.0**

Observations

Following too closely (27.0%), running off the road (15.0%) and left turn across path (11.5%) 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 25710 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 13122 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (50.7%) and pick-up trucks/vans (20.5%) were the vehicles most frequently involved in total casualty collisions.

Vehicle Factors

Less than 1.0% 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 40.7% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2004

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	182	33.5	15878	51.0	16060	50.7
Pick-up Truck/Van	138	25.4	6366	20.4	6504	20.5
Mini-Van/MPV	81	14.9	5683	18.2	5764	18.2
Truck 4500 kg+	36	6.6	889	2.9	925	2.9
Motorcycle	26	4.8	661	2.1	687	2.2
Tractor-Trailer	59	10.9	574	1.8	633	2.0
Bicycle	6	1.1	610	2.0	616	1.9
Off-Highway Vehicle	5	0.9	137	0.4	142	0.4
Transit Bus	1	0.2	102	0.3	103	0.3
School Bus	3	0.6	69	0.2	72	0.2
Emergency Vehicle	--	--	57	0.2	57	0.2
Construction Equipment	2	0.4	27	0.1	29	0.1
Other Bus	--	--	26	0.1	26	0.1
Motorized Snow Vehicle	--	--	24	0.1	24	0.1
Motorhome	1	0.2	23	0.1	24	0.1
Farm Equipment	3	0.6	13	0.0	16	0.1
Intercity Bus	--	--	8	0.0	8	0.0
Moped	--	--	5	0.0	5	0.0
Other	--	--	11	0.0	11	0.0
Total Number of Vehicles	**543**	**100.0**	**31163**	**100.0**	**31706**	**100.0**

Observations

Passenger cars and pick-up trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 1.9% and motorcycles 2.2% of the vehicles involved in casualty collisions. Truck tractors were 2.0% of total vehicles in casualty crashes, but 10.9% 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*

2004

Vehicle Factors	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
No Apparent Defect	447	98.9	24536	99.2	24983	99.2
Defective Brakes	1	0.2	48	0.2	49	0.2
Tires Failed	2	0.4	40	0.2	42	0.2
Lighting Defect	--	--	19	0.1	19	0.1
Improper Load/Shift	--	--	11	0.0	11	0.0
Other	2	0.4	84	0.3	86	0.3
Total Number of Vehicles	**452**	**100.0**	**24738**	**100.0**	**25190**	**100.0**

Observations

Less than 1.0% 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*

2004

Point of Impact	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Centre Front	245	47.7	12004	40.5	12249	40.7
Centre Rear	21	4.1	6894	23.3	6915	23.0
Right Front	22	4.3	2397	8.1	2419	8.0
Left Front	40	7.8	2274	7.7	2314	7.7
Rollover	92	17.9	1978	6.7	2070	6.9
Left Side	33	6.4	1133	3.8	1166	3.9
Right Side	28	5.4	1029	3.5	1057	3.5
Left Rear	8	1.6	755	2.6	763	2.5
Right Rear	5	1.0	756	2.6	761	2.5
Attachment	11	2.1	213	0.7	224	0.7
Undercarriage	4	0.8	112	0.4	116	0.4
Top	5	1.0	62	0.2	67	0.2
Total Number of Vehicles	**514**	**100.0**	**29607**	**100.0**	**30121**	**100.0**

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 40.7% of the impacts involved the centre front, while 23.0% of the impacts involved the centre rear.

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

Environment

Location

The majority of fatal crashes (69.9%) occurred in rural areas, whereas the majority of injury (76.0%) and property damage (78.8%) crashes occurred in urban areas.

Surface Conditions

The majority (58.7%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.5% of fatal collisions and 22.7% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2004

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	102	30.1	13106	76.0	74797	78.8	88005	78.2
Rural	237	69.9	4142	24.0	20169	21.2	24548	21.8
Total Number of Collisions	**339**	**100.0**	**17248**	**100.0**	**94966**	**100.0**	**112553**	**100.0**

Observations

Collisions which occurred in rural areas accounted for 69.9% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (76.0%) and property damage crashes (78.8%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2004

Surface Condition	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
Dry	239	70.5	10082	58.5	10321	58.7
Slush/Snow/Ice	56	16.5	3911	22.7	3967	22.6
Wet	30	8.8	1473	8.5	1503	8.5
Loose Surface Material	8	2.4	266	1.5	274	1.6
Muddy	1	0.3	43	0.2	44	0.3
Other	3	0.9	86	0.5	89	0.5
Unspecified	2	0.6	1387	8.0	1389	7.9
Total Number of Collisions	**339**	**100.0**	**17248**	**100.0**	**17587**	**100.0**

Observations

The majority (58.7%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.5% of fatal collisions and 22.7% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- Based on motorcycle registrations, the involvement rate of motorcycles in fatal collisions has increased but in injury collisions has decreased in 2004.

- 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 70.7, a rate over 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, to 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 2.2% 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

2000-2004

Number of Motorcycles	**2004**	**2003**	**2002**	**2001**	**2000**
Fatal	26	13	25	21	14
Non-Fatal Injury	661	616	558	629	476
Total Number of Motorcycles Involved in Casualty Collisions	**687**	**629**	**583**	**650**	**490**
Casualties*					
Number Killed	25	13	24	21	14
Number Injured	715	666	620	701	540
Total Casualties in Collisions Involving Motorcycles	**740**	**679**	**644**	**722**	**554**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	4.4	2.4	4.8	4.2	3.2
Non-Fatal Injury Collisions	110.9	111.5	106.2	126.9	109.3

Observations

Based on motorcycle registrations in 2004, the involvement rate of motorcycles in fatal collisions has increased but 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, Government Services – Registries, December 31, 2004.

Figure 6

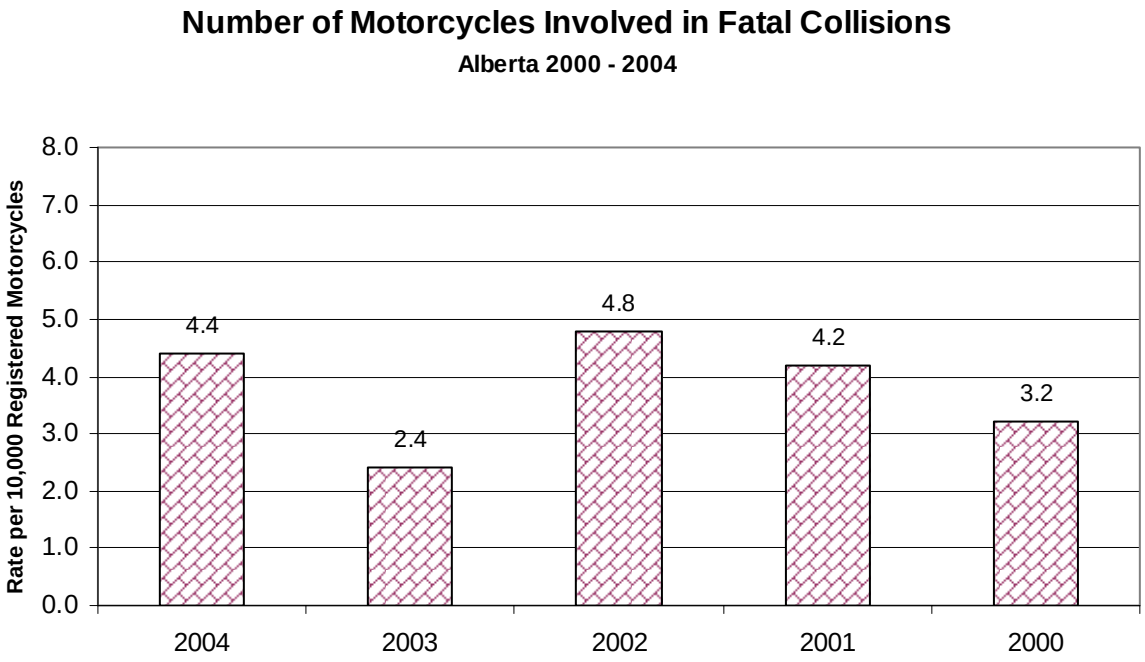

Number of Motorcycles Involved in Fatal Collisions
Alberta 2000 - 2004
Rate per 10,000 Registered Motorcycles
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
4.4
2.4
4.8
4.2
3.2
2004
2003
2002
2001
2000

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2004

	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
Age of Motorcycle Driver	**N**	**%**	**N**	**%**	**N**	**%**	
Under 16	7	1.1	--	--	7	1.0	
16-17	20	3.1	--	--	20	2.9	70.7
18-19	52	8.1	1	2.4	53	7.7	44.4
20-24	186	29.1	5	11.9	191	27.8	22.1
25-34	124	19.4	10	23.8	134	19.5	4.1
35-44	113	17.7	16	38.1	129	18.8	2.3
45-54	94	14.7	7	16.7	101	14.7	1.4
55-64	34	5.3	3	7.1	37	5.4	1.3
65 and over	10	1.6	--	--	10	1.5	0.9
Unspecified	--	--	--	--	4	0.6	
Total Number of Motorcycle Drivers	**640**	**100.0**	**42**	**100.0**	**686**	**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: Government Services – Registries. Operator Statistics, December 31, 2004.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2004

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	108	41.2	15.0
Followed Too Closely	22	8.4	27.0
Left Turn Across Path	10	3.8	11.5
Improper Passing	9	3.4	1.0
Left of Center	8	3.1	2.9
Improper Lane Change	7	2.7	2.3
Disobey Traffic Signal	5	1.9	6.7
Improper Turn	3	1.1	2.1
Yield Sign Violation	3	1.1	1.8
Stop Sign Violation	2	0.8	7.9
Failed to Yield Right of Way to Pedestrian	1	0.4	3.3
Failed to Yield Right of Way - Uncontrolled Intersection	--	--	3.3
Other	84	32.1	14.8
Total Number of Motorcycle Drivers	**262**	**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 542 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 280 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers Involved in Casualty Collisions*

2004

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	537	92.0	92.8
Had Been Drinking	28	4.8	2.4
Alcohol Impaired	17	2.9	2.6
Total Alcohol Involvement	**45**	**7.7**	**5.0**
Other	2	0.3	2.1
Total Number of Motorcycle Drivers	**584**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 8.0% 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*

2004

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	567	97.8	99.2
Defective Brakes	3	0.5	0.2
Tires Failed	3	0.5	0.2
Improper Load/Shift	1	0.2	0.0
Lighting Defect	--	--	0.1
Other	6	1.0	0.3
Total Number of Motorcycles	**580**	**100.0**	

Observations

Vehicle factors were identified for 2.2% of the motorcycles involved in casualty collisions, compared to 0.8% for all types of vehicles involved in casualty collisions.

*Based on those cases where a vehicle factor was specified on the collision report form. This does not indicate that a mechanical inspection of the collision-involved motorcycle was conducted.

Table 7.6

Casualty Collisions Involving Motorcycles:

Month of Occurrence

2004

Month	N	%
January	1	0.2
February	--	--
March	14	2.1
April	60	9.0
May	97	14.6
June	114	17.1
July	114	17.1
August	116	17.4
September	81	12.2
October	41	6.2
November	23	3.5
December	4	0.6
Total Number of Collisions	**665**	**100.0**

Observations

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

Table 7.7

Casualty Collisions Involving Motorcycles:

Road Surface Condition

2004

Road Surface Condition	N	%
Dry	576	86.6
Wet	37	5.6
Loose Surface Material	26	3.9
Unspecified	23	3.5
Other	2	0.3
Muddy	1	0.2
Total Number of Collisions	**665**	**100.0**

Observations

The majority of casualty collisions involving motorcycles occurred on dry roads. Wet roads were the scene of 5.6% of motorcycle casualty collisions. Loose material on the road surface was involved in 3.9% of motorcycle casualty crashes.

Special Types of Vehicles

Truck Tractors

- In 2004, there were 69 persons killed and 753 injured in collisions involving truck tractors. This represents a decrease in casualties from 2003.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change. However, operators of truck tractors were less likely than other vehicle operators to make an unsafe left turn, disobey a traffic signal or disobey a stop sign.
- 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 January.

Table 7.8

Truck Tractors Involved in Casualty Collisions

2000-2004

Number of Truck Tractors	**2004**	**2003**	**2002**	**2001**	**2000**
Fatal	59	58	43	43	60
Non-Fatal Injury	574	566	505	507	512
Total Number of Truck Tractors Involved in Casualty Collisions	**633**	**624**	**548**	**550**	**572**
Casualties*					
Number Killed	69	76	49	52	76
Number Injured	753	782	744	686	740
Total Casualties in Collisions Involving Truck Tractors	**822**	**858**	**793**	**738**	**816**

Observations

In 2004, there were 69 persons killed and 753 injured in collisions involving truck tractors. This represents a decrease in casualties from 2003. The total number of truck tractors involved in casualty crashes increased in 2004 standing at 633, 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*

2004

Improper Actions of Truck Tractor Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	80	32.9	15.0
Followed Too Closely	57	23.5	27.0
Left Turn Across Path	15	6.2	11.5
Improper Lane Change	13	5.3	2.3
Left of Center	12	4.9	2.9
Stop Sign Violation	9	3.7	7.9
Disobey Traffic Signal	5	2.1	6.7
Yield Sign Violation	4	1.6	1.8
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.2	1.7
Improper Turn	3	1.2	2.1
Improper Passing	2	0.8	1.0
Backed Unsafely	2	0.8	2.1
Other	38	15.6	14.8
Total Number of Drivers	**243**	**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 make an unsafe left turn, disobey a traffic signal or disobey a stop sign.

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

Note: There was a total of 518 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 275 were indicated as driving properly at the time of the collision.

Table 7.10

Condition of Truck Tractor Drivers Involved in Casualty Collisions*

2004

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	504	95.8	92.8
Had Been Drinking	2	0.4	2.4
Alcohol Impaired	1	0.2	2.6
Total Alcohol Involvement	**3**	**0.6**	**5.0**
Fatigued/Asleep	14	2.7	0.2
Impaired by Drugs	2	0.4	1.1
Other	3	0.6	0.8
Total Number of Drivers	**526**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 4.2% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions (0.6% compared to 5.0%). 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*

2004

Vehicle Factors	N	%	Vehicle Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	524	97.4	99.2
Defective Brakes	4	0.7	0.2
Improper Load/Shift	3	0.6	0.0
Lighting Defect	2	0.4	0.1
Tires Failed	2	0.4	0.2
Other	3	0.6	0.3
Total Number of Truck Tractors	**538**	**100.0**	

Observations

Vehicle factors were identified for 2.6% 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

2004

Month	N	%
January	74	12.5
February	60	10.1
March	58	9.8
April	42	7.1
May	34	5.7
June	49	8.3
July	48	8.1
August	38	6.4
September	46	7.8
October	48	8.1
November	41	6.9
December	55	9.3
Total Number of Collisions	**593**	**100.0**

Observations

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

Special Types of Vehicles

Trains

- In 2004, 2 people were killed and 35 people were injured in crashes in which a train was involved. The number of casualties involving trains has decreased from 2003.
- The largest number of casualty collisions involving trains occurred in the months of February, October and November.
- A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

Table 7.13

Trains Involved in Casualty Collisions

2000-2004

Number of Trains	**2004**	**2003**	**2002**	**2001**	**2000**
Fatal	2	3	5	6	3
Non-Fatal Injury	21	22	32	25	20
Total Number of Trains Involved in Casualty Collisions	**23**	**25**	**37**	**31**	**23**
Casualties*					
Number Killed	2	3	6	6	4
Number Injured	35	35	38	30	34
Total Casualties in Collisions Involving Trains	**37**	**38**	**44**	**36**	**38**

Observations

The number of trains involved in casualty collisions decreased from 2003. The number of casualties resulting from these collisions has 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

2004

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	--	--	2	9.5	2	8.7
February	--	--	4	19.0	4	17.4
March	--	--	1	4.8	1	4.3
April	--	--	1	4.8	1	4.3
May	--	--	--	--	--	--
June	--	--	1	4.8	1	4.3
July	--	--	1	4.8	1	4.3
August	--	--	3	14.3	3	13.0
September	--	--	1	4.8	1	4.3
October	2	100.0	2	9.5	4	17.4
November	--	--	4	19.0	4	17.4
December	--	--	1	4.8	1	4.3
Total Number of Collisions	**2**	**100.0**	**21**	**100.0**	**23**	**100.0**

Observations

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

Table 7.15

Actions of Drivers Involved in Casualty Collisions with Trains*

2004

Driver Actions	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Disobey Traffic Signal	1	50.0	7	36.8	8	38.1
Driving Properly	1	50.0	3	15.8	4	19.0
Stop Sign Violation	--	--	3	15.8	3	14.3
Failed to Yield Right of Way - Uncontrolled Intersection	--	--	2	10.5	2	9.5
Left of Centre	--	--	1	5.3	1	4.8
Other	--	--	3	15.8	3	14.3
Total Number of Drivers	**2**	**100.0**	**19**	**100.0**	**21**	**100.0**

Observations

A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

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

Pedestrians

- Pedestrian casualty collisions were more likely to occur in September and 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.).
- 38.0% 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, 13.7% had consumed alcohol before the collision, compared to 48.6% 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

2004

Month of Collision	N	%
January	94	7.9
February	101	8.5
March	83	7.0
April	82	6.9
May	86	7.2
June	99	8.3
July	101	8.5
August	90	7.5
September	120	10.1
October	123	10.3
November	117	9.8
December	97	8.1
Unspecified	1	0.1
Total Number of Collisions	**1194**	**100.0**

Observations

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

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2004

Day of Week	N	%
Monday	176	14.7
Tuesday	193	16.2
Wednesday	166	13.9
Thursday	189	15.8
Friday	197	16.5
Saturday	161	13.5
Sunday	111	9.3
Unspecified	1	0.1
Total Number of Collisions	**1194**	**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

2004

Time Period	N	%
11:00 p.m. - 2:59 a.m.	109	9.1
3:00 a.m. - 6:59 a.m.	44	3.7
7:00 a.m. - 10:59 a.m.	210	17.6
11:00 a.m. - 2:59 p.m.	241	20.2
3:00 p.m. - 6:59 p.m.	386	32.3
7:00 p.m. - 10:59 p.m.	197	16.5
Unspecified	7	0.6
Total Number of Collisions	**1194**	**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

2004

Location	N	%
Urban	1141	95.6
Rural	53	4.4
Total Number of Collisions	**1194**	**100.0**

Observations

The majority of pedestrian casualty collisions (95.6%) occurred in urban areas. Only 4.4% occurred in rural areas.

Table 8.5

Actions of Drivers Involved in Casualty Collisions with Pedestrians*

2004

Driver Actions	N	%
Failed to Yield Right of Way To Pedestrian	368	38.0
Driving Properly	352	36.4
Backed Unsafely	94	9.7
Left Turn Across Path	15	1.5
Ran Off Road	12	1.2
Stop Sign Violation	11	1.1
Failed to Yield Right of Way - Uncontrolled Intersection	10	1.0
Improper Passing	9	0.9
Improper Turn	8	0.8
Followed Too Closely	6	0.6
Left of Centre	4	0.4
Disobey Traffic Signal	3	0.3
Improper Lane Change	2	0.2
Other	74	7.6
Total Number of Drivers	**968**	**100.0**

Observations

36.4% of the drivers involved in pedestrian crashes were recorded as driving properly. However, 38.0% 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

2004

Age in Years	Pedestrians Killed N	Pedestrians Injured N	Total Pedestrian Casualties N	%	Pedestrian Casualty Rate Per 10,000 Population*
Under 5	--	26	26	2.1	1.3
5 - 9	1	49	50	4.0	2.4
10 - 14	2	92	94	7.6	4.2
15 - 19	4	186	190	15.3	8.1
20 - 24	10	160	170	13.7	6.9
25 - 29	5	97	102	8.2	4.2
30 - 34	6	77	83	6.7	3.5
35 - 44	6	174	180	14.5	3.5
45 - 54	1	120	121	9.8	2.5
55 - 64	5	80	85	6.9	2.9
65 and over	10	93	103	8.3	3.1
Unspecified	--	34	34	2.7	
Total Number of Pedestrian Casualties	**50**	**1188**	**1238**	**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 persons under 5 years of age.

*Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2004, Statistics Canada

Figure 7

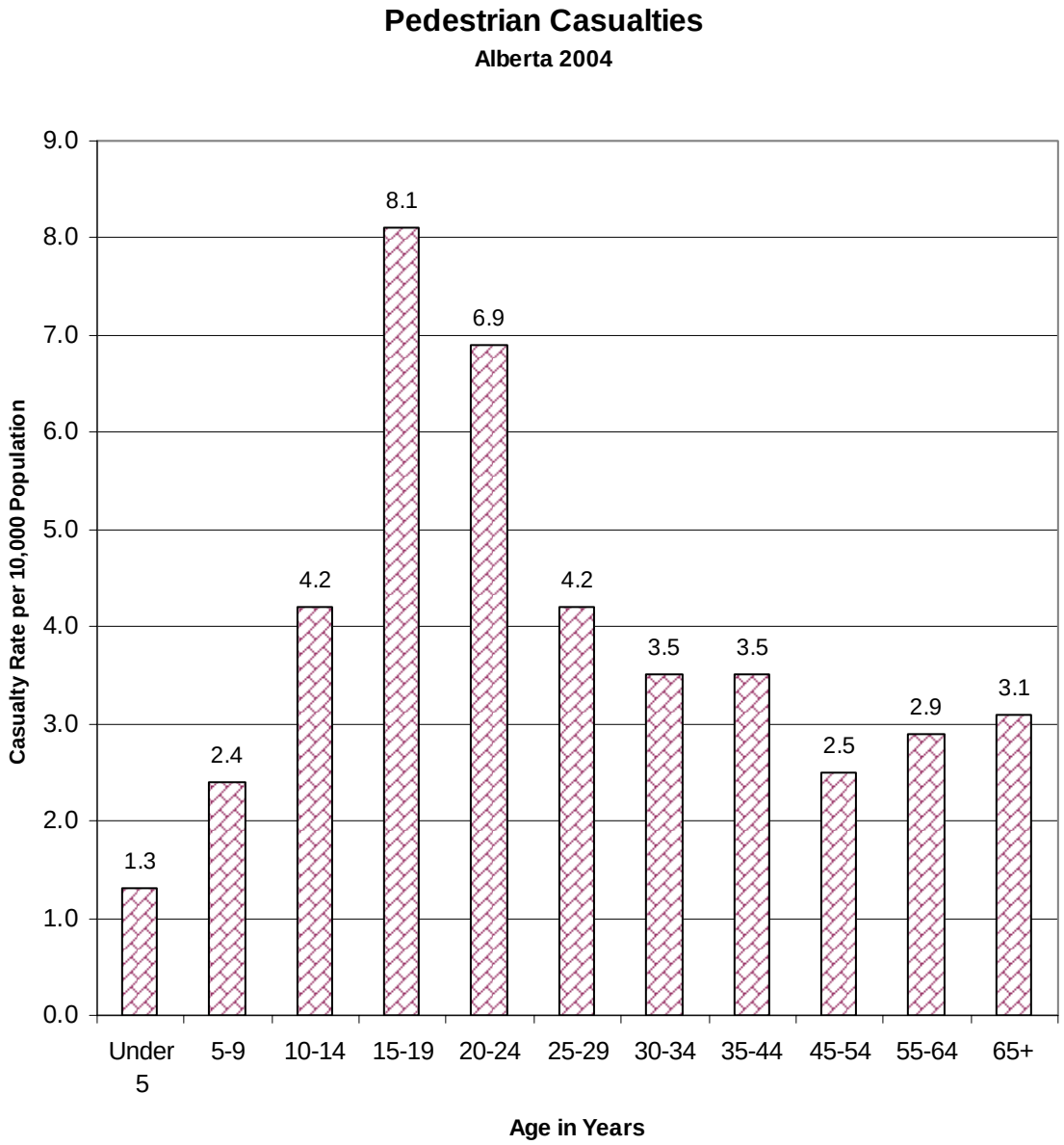

Pedestrian Casualties
Alberta 2004
Casualty Rate per 10,000 Population
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1.3
2.4
4.2
8.1
6.9
4.2
3.5
3.5
2.5
2.9
3.1
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Table 8.7

Condition of Pedestrians Involved in Casualty Collisions*

2004

Condition of Pedestrian	Pedestrians in Fatal Collisions N	%	Pedestrians in Non-Fatal Injury Collisions N	%	Total Pedestrians in Casualty Collisions N	%
Normal	17	48.6	775	84.7	792	83.4
Had Been Drinking	12	34.3	64	7.0	76	8.0
Alcohol Impaired	5	14.3	61	6.7	66	6.9
Total Alcohol Involvement	**17**	**48.6**	**125**	**13.7**	**142**	**14.9**
Impaired by Drugs	1	2.9	4	0.4	5	0.5
Other	--	--	11	1.2	11	1.2
Total Number of Pedestrians	**35**	**100.0**	**915**	**100.0**	**950**	**100.0**

Observations

Of pedestrians involved in injury collisions, 13.7% had consumed alcohol before the collision, compared to 48.6% 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*

2004

Age in Years	N	%	Rate per 10,000 Population**
Under 10	--	--	--
10 - 14	--	--	--
15 - 19	20	14.1	0.9
20 - 24	33	23.2	1.3
25 - 29	19	13.4	0.8
30 - 34	15	10.6	0.6
35 - 44	29	20.4	0.6
45 - 54	17	12.0	0.4
55 - 64	6	4.2	0.2
65 and over	1	0.7	0.0
Unspecified	2	1.4	
Total Number of Pedestrian Casualties	**142**	**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, 2004, Statistics Canada.

Bicyclists

- Casualty collisions involving bicycles were more likely to occur in the month of June.
- Weekdays experienced the most casualty collisions involving bicycles. As well, the largest number of these crashes (35.1%) occurred during the evening rush-hour period.
- Young bicyclists, 10-14 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 the right-of-way at an uncontrolled intersection.
- 4.6% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2004

Month of Collision	N	%
January	5	0.8
February	12	2.0
March	24	3.9
April	45	7.3
May	70	11.4
June	107	17.5
July	101	16.5
August	82	13.4
September	73	11.9
October	51	8.3
November	31	5.1
December	12	2.0
Total Number of Collisions	**613**	**100.0**

Observations

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

Table 9.2

Casualty Collisions Involving Bicycles:

Day of Week

2004

Day of Week	N	%
Monday	86	14.0
Tuesday	101	16.5
Wednesday	93	15.2
Thursday	91	14.8
Friday	118	19.2
Saturday	58	9.5
Sunday	66	10.8
Total Number of Collisions	**613**	**100.0**

Observations

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

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2004

Time Period	N	%
11:00 p.m. - 2:59 a.m.	26	4.2
3:00 a.m. - 6:59 a.m.	16	2.6
7:00 a.m. - 10:59 a.m.	107	17.5
11:00 a.m. - 2:59 p.m.	145	23.7
3:00 p.m. - 6:59 p.m.	215	35.1
7:00 p.m. - 10:59 p.m.	103	16.8
Unspecified	1	0.2
Total Number of Collisions	**613**	**100.0**

Observations

The largest proportion of casualty crashes (35.1%) 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

2004

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	0.6	0.2
5-9	1	16.7	49	8.0	50	8.1	2.4
10-14	--	--	112	18.3	112	18.1	5.0
15-19	--	--	83	13.6	83	13.4	3.5
20-24	--	--	71	11.6	71	11.5	2.9
25-29	--	--	57	9.3	57	9.2	2.3
30-34	--	--	42	6.9	42	6.8	1.8
35-44	3	50.0	87	14.2	90	14.6	1.7
45-54	--	--	55	9.0	55	8.9	1.2
55-64	--	--	12	2.0	12	1.9	0.4
65 and over	2	33.3	16	2.6	18	2.9	0.5
Unspecified	--	--	24	3.9	24	3.9	
Total Casualties	**6**	**100.0**	**612**	**100.0**	**618**	**100.0**	

Observations

Casualty rates per 10,000 population were highest for persons between the ages of 10 and 14. The lowest casualty rates were recorded for children under 5 years of age and adults aged 55 and older.

*Based on estimates of the Alberta population by age groups and sex, July 1, 2004, Statistics Canada

Table 9.5

Improper Actions of Bicyclists Involved in Casualty Collisions

2004

Improper Actions of Bicyclists	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Disobey Traffic Signal	48	15.8	6.7
Failed to Yield Right of Way - Uncontrolled Intersection	30	9.9	1.7
Stop Sign Violation	19	6.3	7.9
Left of Centre	15	4.9	2.9
Left Turn Across Path	15	4.9	11.5
Improper Lane Change	7	2.3	2.3
Yield Sign Violation	4	1.3	1.8
Ran Off Road	3	1.0	15.0
Improper Passing	3	1.0	1.0
Improper Turn	3	1.0	2.1
Followed Too Closely	1	0.3	27.0
Failed to Yield Right of Way to Pedestrian	1	0.3	3.3
Other	155	51.0	14.8
Total Number of Bicyclists	**304**	**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 441 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 137 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2004

Condition of Bicyclist	N	%
Normal	480	94.3
Had Been Drinking	14	2.8
Alcohol Impaired	9	1.8
Total Alcohol Involvement	**23**	**4.6**
Fatigued/Asleep	1	0.2
Other	5	1.0
Total Number of Bicyclists	**509**	**100.0**

Observations

4.6% 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 4.8% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 19.1% 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 over four and a half times as many male drivers as female drivers who had consumed alcohol prior to the collision.

- In 2004, alcohol related casualty crashes were most likely to have occurred in September, 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, 2000-2004.

Table 10.1

Condition of Drivers in Casualty Collisions*

2004

Condition of Driver	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Normal	362	76.9	22293	93.2	22655	92.8
Had Been Drinking	37	7.9	545	2.3	582	2.4
Alcohol Impaired	53	11.3	593	2.5	646	2.6
Total Alcohol Involvement	**90**	**19.1**	**1138**	**4.8**	**1228**	**5.0**
Impaired by Drugs	2	0.4	50	0.2	52	0.2
Fatigued/Asleep	15	3.2	245	1.0	260	1.1
Other	2	0.4	192	0.8	194	0.8
Total Number of Drivers	**471**	**100.0**	**23918**	**100.0**	**24389**	**100.0**

Observations

Of drivers involved in injury collisions, 4.8% had consumed alcohol before the crash, compared to 19.1% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 5.0% 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

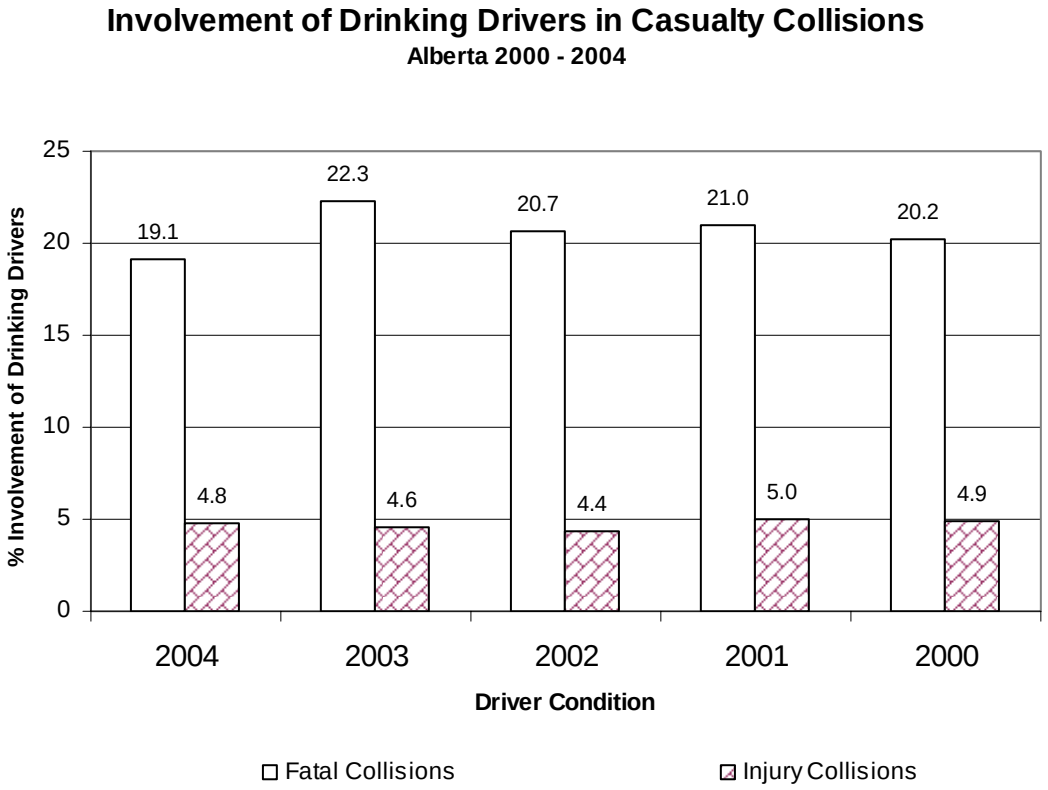

Involvement of Drinking Drivers in Casualty Collisions
Alberta 2000 - 2004
% Involvement of Drinking Drivers
25
20
15
10
5
0
19.1
4.8
22.3
4.6
20.7
4.4
21.0
5.0
20.2
4.9
2004
2003
2002
2001
2000
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

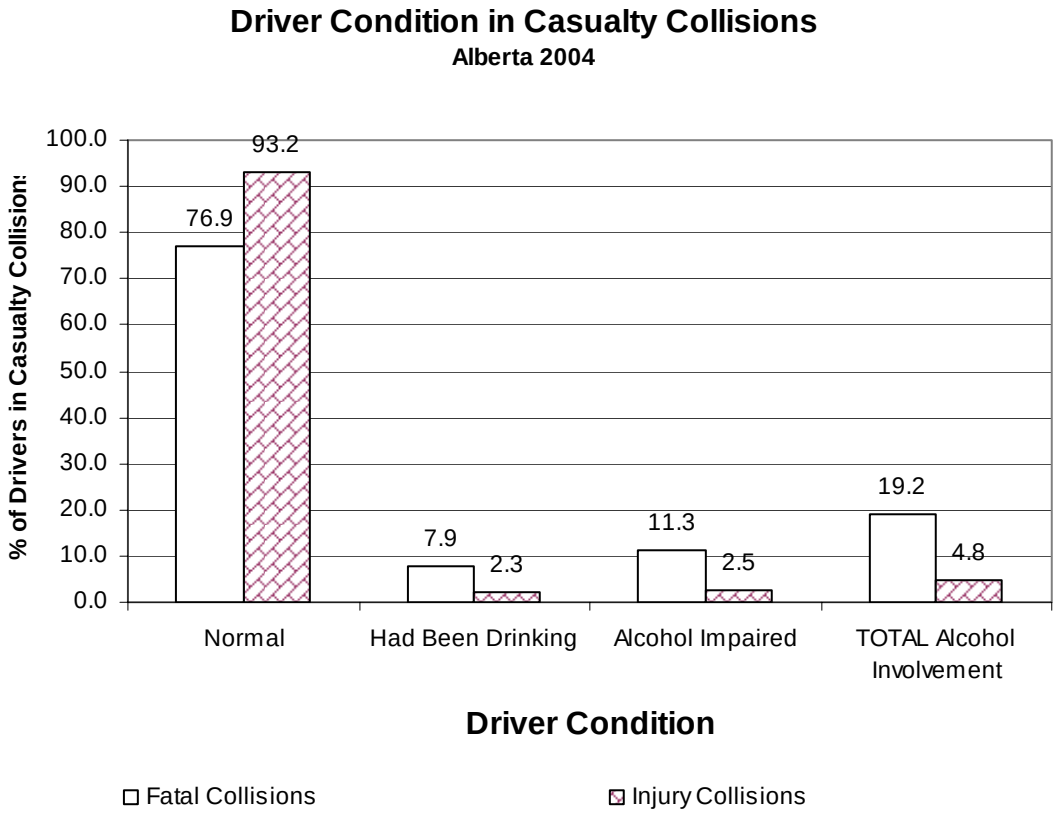

Driver Condition in Casualty Collisions
Alberta 2004
% of Drivers in Casualty Collisions
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
76.9
93.2
7.9
2.3
11.3
2.5
19.2
4.8
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2004

	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	3	0.3	0.2	3	1.4	0.3	6	0.5	0.2
16 - 17	31	3.1	1.0	12	5.5	0.4	43	3.5	0.8
18 - 19	103	10.3	2.5	19	8.6	0.5	122	9.9	1.6
20 - 21	110	11.0	2.4	20	9.1	0.5	130	10.6	1.5
22 - 24	122	12.2	1.6	24	10.9	0.4	146	11.9	1.0
25 - 29	131	13.1	1.0	34	15.5	0.3	165	13.4	0.7
30 - 34	107	10.7	0.9	21	9.5	0.2	128	10.4	0.5
35 - 44	207	20.7	0.8	44	20.0	0.2	251	20.4	0.5
45 - 54	125	12.5	0.5	32	14.5	0.1	157	12.8	0.3
55 - 64	40	4.0	0.3	9	4.1	0.1	49	4.0	0.2
65 and over	19	1.9	0.1	2	0.9	0.0	21	1.7	0.1
Unspecified	3	0.3		--	--		10	0.8	
Total Drivers	**1001**	**100.0**		**220**	**100.0**		**1228**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over four and a half 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.

**Source: Government – Registries. Operator Statistics, December 31, 2004.

Figure 10

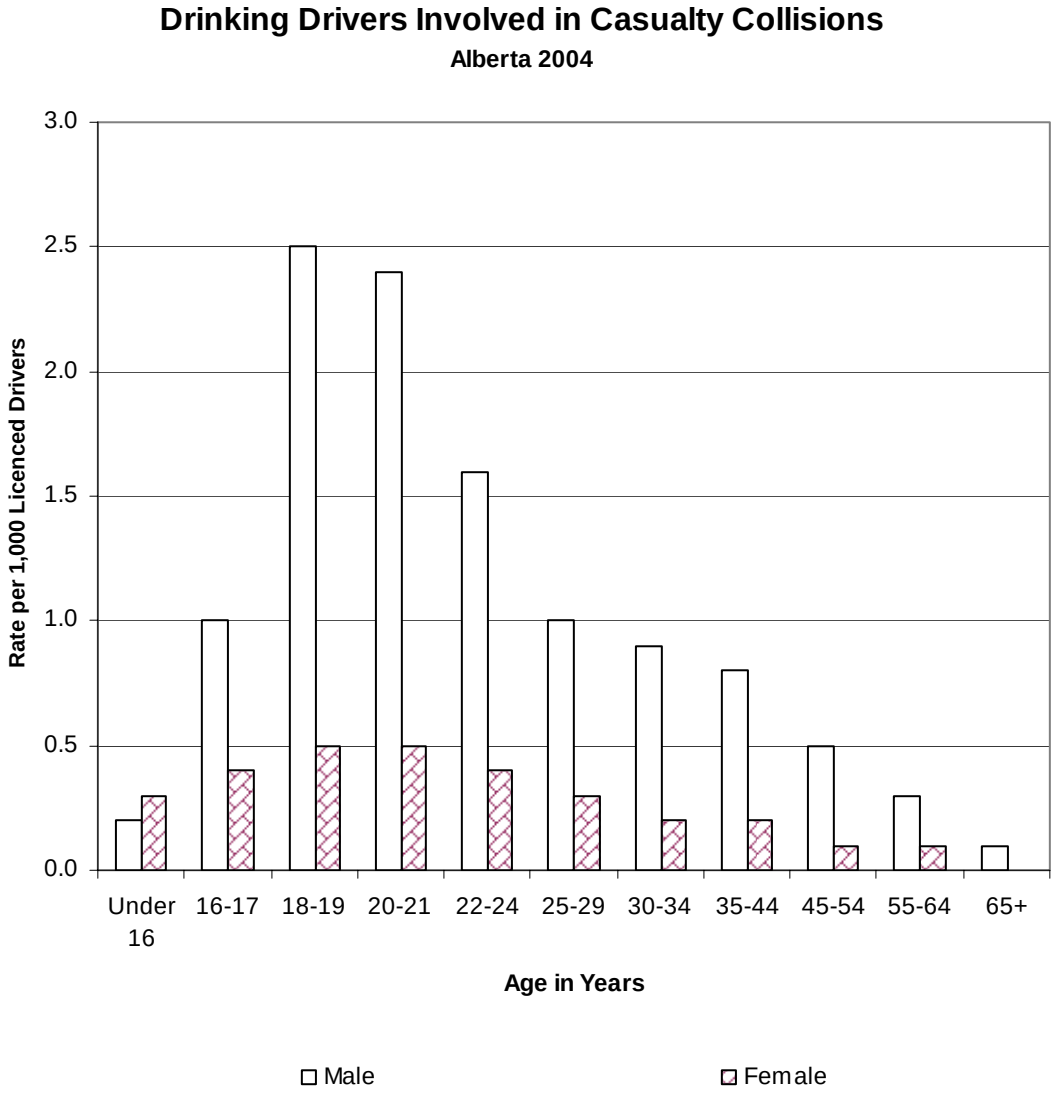

Drinking Drivers Involved in Casualty Collisions
Alberta 2004
Rate per 1,000 Licenced Drivers
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Under 16
16-17
18-19
20-21
22-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2004

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	4	4.4	73	6.5	77	6.3
February	7	7.8	73	6.5	80	6.6
March	5	5.6	95	8.4	100	8.2
April	3	3.3	98	8.7	101	8.3
May	11	12.2	79	7.0	90	7.4
June	9	10.0	106	9.4	115	9.4
July	13	14.4	110	9.8	123	10.1
August	10	11.1	108	9.6	118	9.7
September	7	7.8	120	10.6	127	10.4
October	10	11.1	105	9.3	115	9.4
November	8	8.9	75	6.7	83	6.8
December	3	3.3	85	7.5	88	7.2
Total Number of Collisions	**90**	**100.0**	**1127**	**100.0**	**1217**	**100.0**

Observations

The month of September accounted for the largest proportion of alcohol-involved casualty collisions. The month of January accounted for the smallest proportion of alcohol-involved casualty collisions.

Table 10.4

Alcohol-Involved Casualty Collisions:

Day of Week

2004

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	6.7	101	9.0	107	8.8
Tuesday	5	5.6	104	9.2	109	9.0
Wednesday	9	10.0	110	9.8	119	9.8
Thursday	17	18.9	151	13.4	168	13.8
Friday	18	20.0	211	18.7	229	18.8
Saturday	21	23.3	250	22.2	271	22.3
Sunday	14	15.6	200	17.7	214	17.6
Unspecified						
Total Number of Collisions	**90**	**100.0**	**1127**	**100.0**	**1217**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions occurred on Saturdays (23.3%) The highest number of non-fatal injury collisions occurred on Saturday (22.2%) The smallest number of alcohol-involved casualty collisions occurred on Monday.

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2004

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.	28	31.1	377	33.5	405	33.3
3:00 a.m. - 6:59 a.m.	15	16.7	168	14.9	183	15.0
7:00 a.m. - 10:59 a.m.	3	3.3	43	3.8	46	3.8
11:00 a.m. - 2:59 p.m.	4	4.4	58	5.1	62	5.1
3:00 p.m. - 6:59 p.m.	12	13.3	152	13.5	164	13.5
7:00 p.m. - 10:59 p.m.	25	27.8	309	27.4	334	27.4
Unspecified	3	3.3	20	1.8	23	1.9
Total Number of Collisions	**90**	**100.0**	**1127**	**100.0**	**1217**	**100.0**

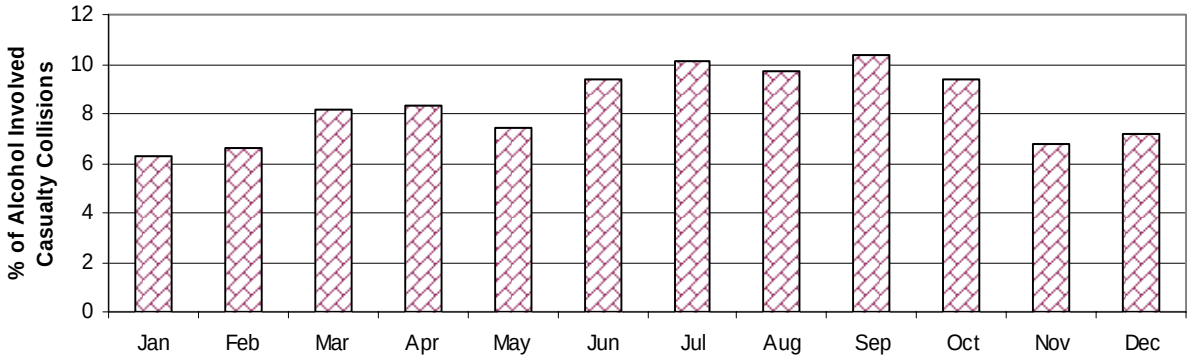
Observations

The late night/early morning time period (11:00 p.m. – 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (33.3%). The morning hours (7:00 a.m. – 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (3.8%).

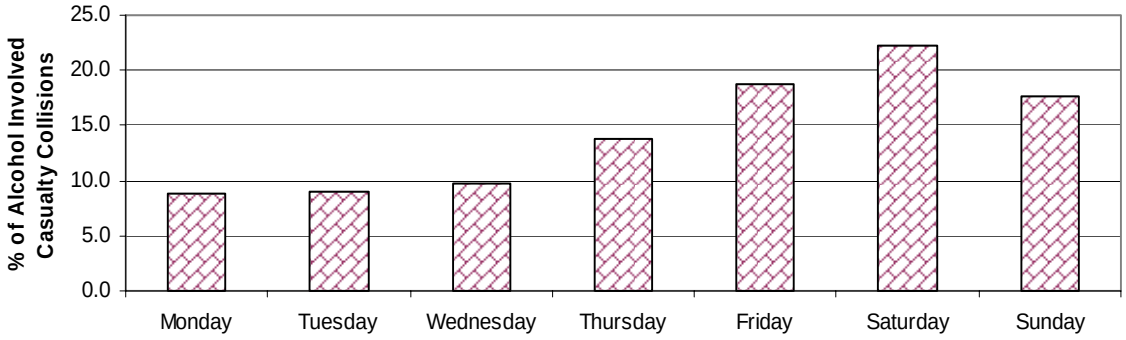
Figure 11

Alcohol-Involved Casualty Collisions
Alberta 2004

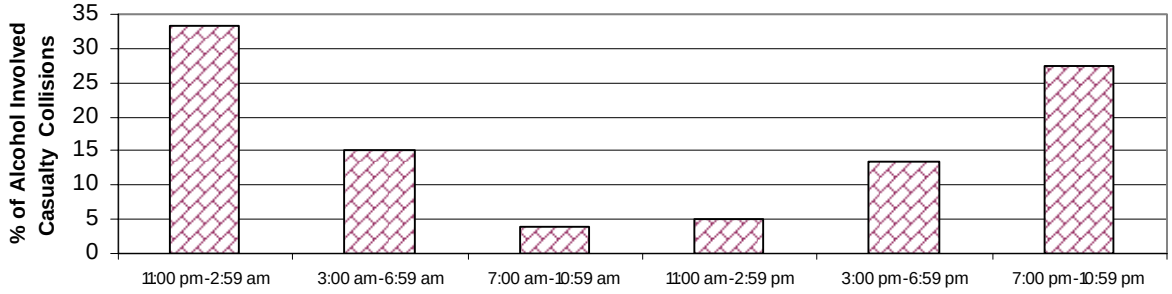
By Month of Occurrence



By Day of Week



By Time Period



Traffic Safety Issues

Restraint Use

- Collision-involved restraint users had a much lower injury rate (11.3%) than those not using restraints (39.5%).
- Non-restraint users were three and a half times more likely than restraint users to be injured.

Table 10.6

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

2004

Injury Severity of Occupants	Percentage of Occupants Using Restraints %	Percentage of Occupants Not Using Restraints %
Fatal Injury	0.1	3.4
Major Injury	1.1	11.3
Minor Injury	10.2	24.8
Total Occupants Sustaining Injuries	**11.3**	**39.5**
No Apparent Injury	88.7	60.5
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (11.3%) than those not using restraints (39.5%). Non-restraint users were three and a half times as likely as restraint users to be injured.

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.