Alberta

Traffic Collision Statistics

2002

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2002 Overview

- The number of **traffic fatalities decreased 7.9%** over the past year from 404 fatalities in 2001 to 372 in 2002.
- The number of **traffic injuries increased 5.1%** over the past year from 27583 injuries in 2001 to 28989 in 2002.
- The number of **traffic collisions increased 8.3%** over the past year from 107391 collisions in 2001 to 116308 in 2002.
- **The highest number of casualty collisions** occurred in **December.**
- **Friday** was the most collision-prone day of the week. As well, the largest percentage of fatal collisions occurred on Saturday.
- **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 16 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.**
- **27.0% of pedestrians** involved in **fatal collisions had consumed alcohol prior to the collision** compared to **15.5% of pedestrians in injury collisions.**
- **20.7%** of drivers involved in fatal collisions **had consumed alcohol** prior to the crash compared to **4.4%** of drivers in injury collisions. These percentages represent a decrease from 2001.
- Collision involved restraint users had a much lower injury rate (14.0%) than those not using restraints (38.8%).

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 2002. 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 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.

2002 Traffic Collision Summary

Introduction

During 2002, 116308 collisions were recorded on Alberta roadways. Property damage collisions (over $1000) represented 82.4% (95834) of this total while 17.3% (20152) were non-fatal injury collisions. Fatal collisions accounted for 0.3% (322) of the total reported collisions.

Five Year Trends

In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates have decreased from 2001.

The non-fatal injury rate, has increased in 2002 in terms of population, licensed drivers and registered vehicles.

Property damage collision rates also increased in 2002 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.

Based on this comparison of rates per billion vehicle kilometres travelled, of the provinces and territories for which information was available, six had a higher fatality rate than Alberta in 2001 and eleven had a higher fatality rate in 2000. Similarly, with regard to injury rate, in 2001, eight provinces and territories had a higher injury rate than Alberta and in 2000, ten had a higher rate.

Table 1.1

Alberta Traffic Collisions

1998 - 2002

Severity of Collision	2002	2001	2000	1999	1998
Fatal Collisions	322	341	312	305	358
Non-Fatal Injury Collisions	20152	19000	18246	17398	16987
Property Damage Collisions	95834	88050	85905	77543	81256
Total Reportable Collisions	**116308**	**107391**	**104463**	**95246**	**98601**
Number Killed	372	404	364	347	429
Number Injured	28989	27583	26464	25451	24935
Total Number of Casualties	**29361**	**27987**	**26828**	**25798**	**25364**

Observations

In 2002, the overall number of collisions increased 8.3% when compared to 2001. In 2002, injury collisions increased 6.1% and fatal crashes decreased by 5.6%. The number of fatalities decreased by 7.9% from 2001 to 2002, and the number of injuries increased by 5.1%. In terms of the past five years, overall collisions were lowest in 1999 and highest in 2002.

Table 1.2

Traffic Collision Rates

1998 - 2002

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers*					Rate Per 10,000 Registered Vehicles*				
	2002	**2001 ****	**2000**	**1999**	**1998**	**2002**	**2001**	**2000**	**1999**	**1998**	**2002**	**2001**	**2000**	**1999**	**1998**
Fatal Collisions	1.0	1.1	1.0	1.0	1.2	1.4	1.5	1.4	1.4	1.7	1.3	1.5	1.4	1.4	1.7
Number Killed	1.2	1.3	1.2	1.2	1.5	1.6	1.8	1.6	1.6	2.0	1.6	1.7	1.6	1.6	2.0
Non-Fatal Injury Collisions	64.7	62.0	60.9	58.7	58.3	86.3	83.2	82.0	80.0	80.0	84.4	81.5	81.0	79.6	79.7
Number Injured	93.1	90.0	88.3	85.8	85.5	124.2	120.7	118.9	117.0	117.5	121.5	118.3	117.5	116.4	117.0
Property Damage Only Collisions	307.8	287.4	286.6	261.6	278.8	410.5	385.4	386.1	356.5	382.9	401.6	377.6	381.3	354.6	381.2
Total Reportable Collisions	**373.5**	**350.5**	**348.5**	**321.3**	**338.3**	**498.1**	**470.0**	**469.5**	**437.9**	**464.6**	**487.4**	**460.5**	**463.7**	**435.6**	**462.5**

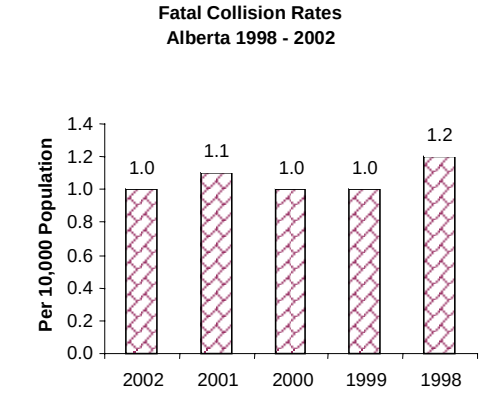
Observations

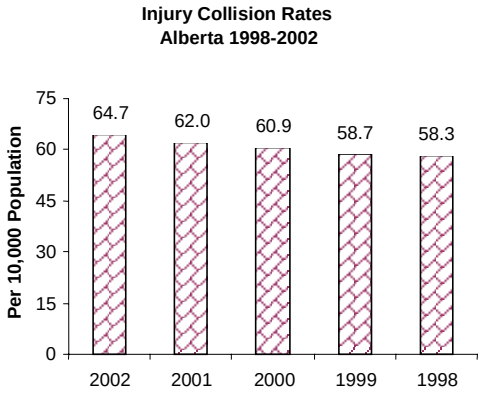
In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates have decreased from 2001.

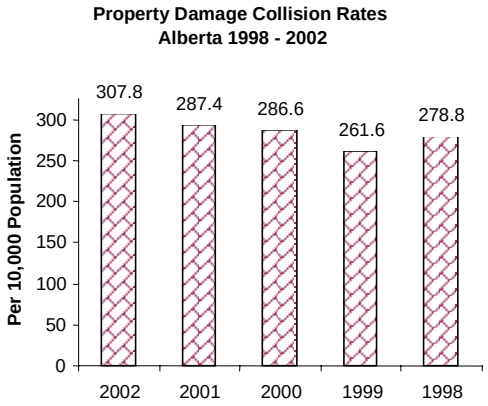
The non-fatal injury rate, has increased in 2002 in terms of population, licensed drivers and registered vehicles.

Property damage collision rates also increased in 2002 in terms of population, licensed drivers and registered vehicles.

*Sources:
Population - Statistics Canada as of July 1, 2002.
Licensed Drivers – Government Services - Registries, as of December 31, 2002.
Registered Vehicles – Government Services - Registries, as of December 31, 2002.
** Updated 2003, Source: Statistics Canada as of July 1, 2001


Fatal Collision Rates
Alberta 1998 - 2002
Per 10,000 Population
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.0
1.1
1.0
1.0
1.2
2002
2001
2000
1999
1998


Injury Collision Rates
Alberta 1998-2002
Per 10,000 Population
75
60
45
30
15
0
64.7
62.0
60.9
58.7
58.3
2002
2001
2000
1999
1998


Property Damage Collision Rates
Alberta 1998 - 2002
Per 10,000 Population
300
250
200
150
100
50
0
307.8
287.4
286.6
261.6
278.8
2002
2001
2000
1999
1998

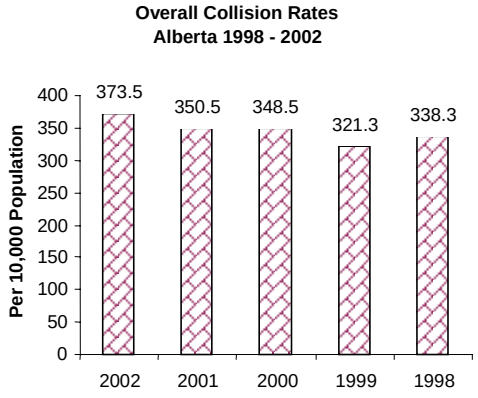

Overall Collision Rates
Alberta 1998 - 2002
Per 10,000 Population
400
350
300
250
200
150
100
50
0
373.5
350.5
348.5
321.3
338.3
2002
2001
2000
1999
1998

Figure 1

Table 1.3

Provincial Comparison of Casualty Rates
Per Billion Vehicle Kilometres Travelled*

2000-2001

	2001		2000	
	Fatalities	**Injuries**	**Fatalities**	**Injuries**
Canada	9.0	713.0	9.4	732.3
Alberta	10.0	682.4	8.6	628.5
British Columbia	11.7	838.5	12.0	849.6
Saskatchewan	13.0	547.5	12.7	656.8
Manitoba	8.3	799.3	10.5	894.8
Ontario	7.3	705.4	7.2	721.4
Quebec	8.8	707.5	11.2	755.3
New Brunswick	11.7	686.5	10.5	647.0
Nova Scotia	8.2	647.6	9.4	756.4
Prince Edward Island	12.2	896.0	15.8	939.1
Newfoundland	9.3	690.2	10.6	613.7
Yukon	10.9	836.7	21.7	745.9
Northwest Territories	7.5	512.8	16.6	738.5
Nunavut	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.

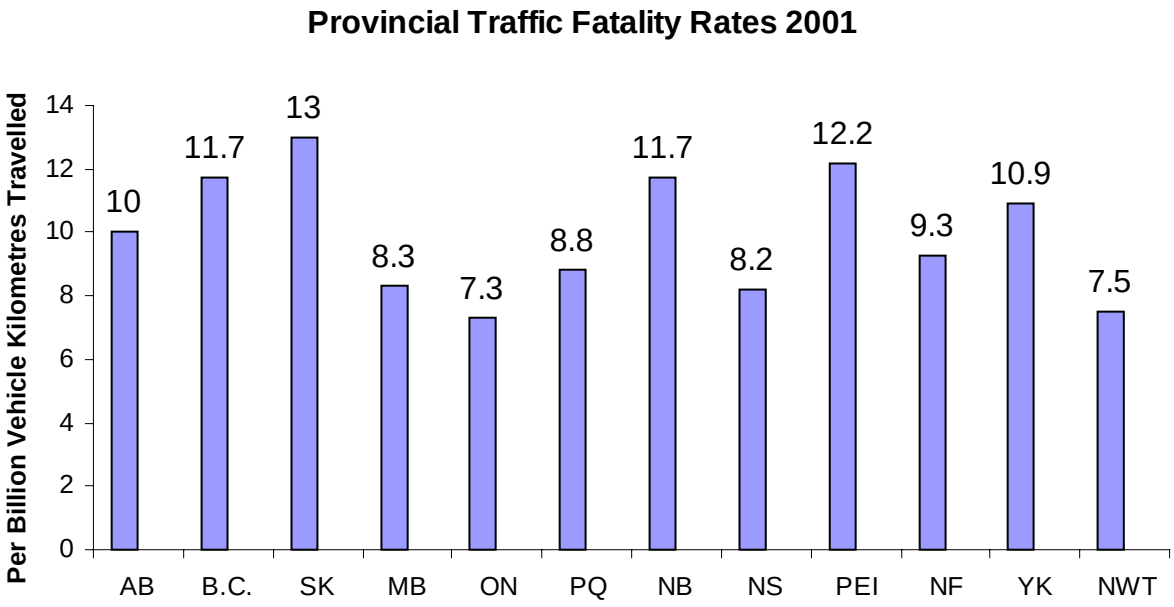
Based on this comparison of rates per billion vehicle kilometres travelled, of the provinces and territories for which information was available, six had a higher fatality rate than Alberta in 2001 and eleven had a higher fatality rate in 2000. Similarly, with regard to injury rate, in 2001, eight provinces and territories had a higher injury rate than Alberta and in 2000, ten had a higher rate.

*Figures for 2002 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.



Note: The fatality rate for Nunavut for 2001 was 47.6.
Figures for 2002 are not available at this time.

Figure 2

When the Collisions Occurred

Month

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

Day of Week

The daily distribution of collisions indicated that Friday was the most collision-prone day of the week. The largest number of fatal crashes occurred on Saturday.

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 Remembrance Day Long Weekend recorded the highest number of individuals killed. The Christmas Season recorded the highest number of injuries. The Remembrance Day Long Weekend recorded the highest total number of collisions.

Table 2.1

Collision Occurrence by Month

2002

Month	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 %
January	27	8.4	1882	9.3	9894	10.3	11803	10.1
February	16	5.0	1490	7.4	7466	7.8	8972	7.7
March	18	5.6	1815	9.0	10030	10.5	11863	10.2
April	19	5.9	1367	6.8	6735	7.0	8121	7.0
May	29	9.0	1452	7.2	6353	6.6	7834	6.7
June	36	11.2	1640	8.1	6958	7.3	8634	7.4
July	28	8.7	1731	8.6	7165	7.5	8924	7.7
August	34	10.6	1648	8.2	6676	7.0	8358	7.2
September	26	8.1	1712	8.5	6939	7.2	8677	7.5
October	27	8.4	1804	9.0	8956	9.3	10787	9.3
November	25	7.8	1669	8.3	9172	9.6	10866	9.3
December	37	11.5	1939	9.6	9219	9.6	11195	9.6
Unspecified	---	---	3	0.0	271	0.3	274	0.2
Total Number of Collisions	**322**	**100.00**	**20152**	**100.0**	**95834**	**100.0**	**116308**	**100.0**

Observations

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

Table 2.2

Collision Occurrence by Day of Week

2002

	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
Day of Week	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Monday	40	12.4	2919	14.5	13853	14.5	16812	14.5
Tuesday	28	8.7	2921	14.5	13690	14.3	16639	14.3
Wednesday	37	11.5	2912	14.5	13955	14.6	16904	14.5
Thursday	46	14.3	2933	14.6	13648	14.2	16627	14.3
Friday	58	18.0	3539	17.6	16837	17.6	20434	17.6
Saturday	66	20.5	2729	13.5	13284	13.9	16079	13.8
Sunday	47	14.6	2188	10.9	10245	10.7	12480	10.7
Unspecified	---	---	11	0.1	322	0.3	333	0.3
Total Number of Collisions	**322**	**100.0**	**20152**	**100.0**	**95834**	**100.0**	**116308**	**100.0**

Observations

The daily distribution of collisions indicated that overall Friday was the most collision-prone day of the week. The largest number of fatal crashes occurred on Saturday.

Table 2.3

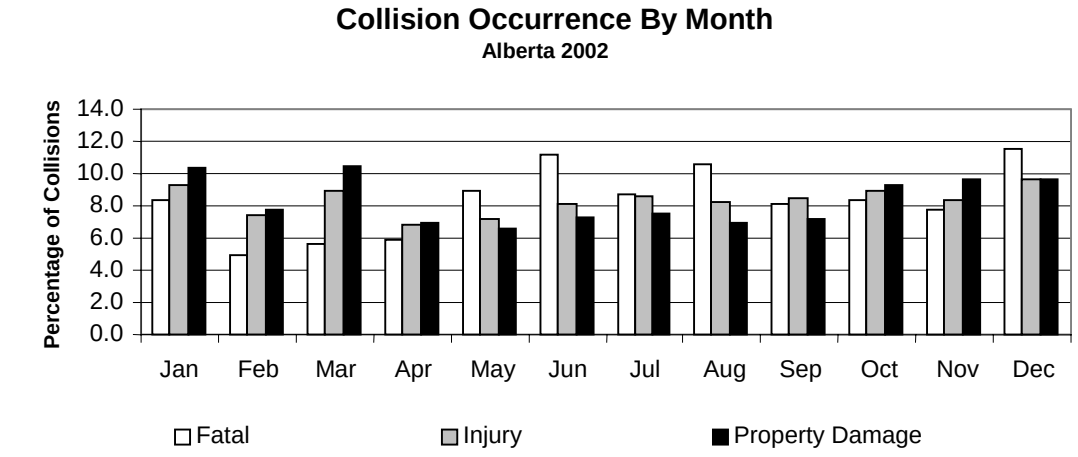
Collision Occurrence by Time Period

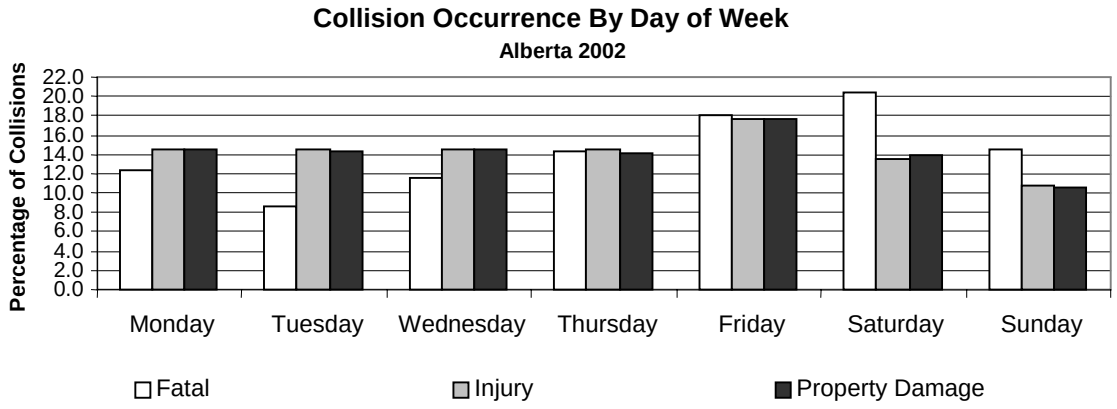
2002

	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
Time Period	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
11:00 p.m.-2:59 a.m.	38	11.8	1431	7.1	7747	8.1	9216	7.9
3:00 a.m.-6:59 a.m.	35	10.9	871	4.3	4898	5.1	5804	5.0
7:00 a.m.-10:59 a.m.	53	16.5	3629	18.0	17117	17.9	20799	17.9
11:00 a.m.-2:59 p.m.	51	15.8	4720	23.4	22003	23.0	26774	23.0
3:00 p.m.-6:59 p.m.	84	26.1	6449	32.0	26903	28.1	33436	28.7
7:00 p.m.-10:59 p.m.	50	15.5	2880	14.3	15273	15.9	18203	15.7
Unspecified	11	3.4	172	0.9	1893	2.0	2076	1.8
Total Number of Collisions	**322**	**100.0**	**20152**	**100.0**	**95834**	**100.0**	**116308**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. - 6:59 p.m.) accounted for the largest percentage (28.7%) of collisions occurring in a 24 hour period. The least collision-prone time period was the early morning (3:00 a.m. - 6:59 a.m.).


Collision Occurrence By Month
Alberta 2002
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 2002
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

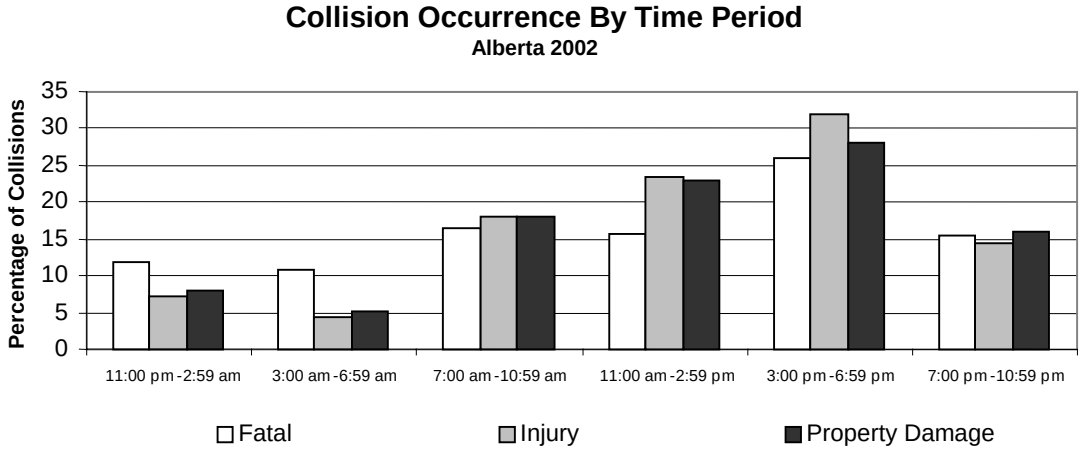

Collision Occurrence By Time Period
Alberta 2002
Percentage of Collisions
35
30
25
20
15
10
5
0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Figure 3

Table 2.4

Collisions During 2002 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	1	49	231
Family Day Long Weekend (February 15-18)	3	194	887
Easter Long Weekend (March 28 - April 1)	4	404	1598
Victoria Day Long Weekend (May 17-20)	5	231	820
Canada Day Long Weekend (June 28 – July 1)	3	319	1026
August Long Weekend (August 2-5)	8	287	988
Labour Day Long Weekend (August 30 - September 2)	4	291	1056
Thanksgiving Long Weekend (October 11-14)	6	326	1382
Remembrance Day Long Weekend (November 8-11)	9	384	1856
Christmas Season (December 24-29)	8	422	1742
Total	**51**	**2907**	**11586**

Observations

The Remembrance Day Long Weekend recorded the highest number of individuals killed. The Christmas Season recorded the highest number of injuries. The Remembrance Day Long Weekend recorded the highest total number of collisions.

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

*Note: Comparisons should be done with caution. The number of days for each holiday period within the year may vary. From year to year, holiday periods may also vary in length.

Victims

Road User Class

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 4.6% and 2.1% 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

2002

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	197	53.0	17650	60.9	17847	60.8
Passengers	88	23.7	8418	29.0	8506	29.0
Pedestrians	39	10.5	1298	4.5	1337	4.6
Motorcyclists	24	6.5	590	2.0	614	2.1
Bicyclists	7	1.9	558	1.9	565	1.9
Other	8	2.2	370	1.3	378	1.3
Unspecified	9	2.4	105	0.4	114	0.4
Total Casualties	**372**	**100.0**	**28989**	**100.0**	**29361**	**100.0**

Observations

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 4.6% and 2.1% of the total casualties, respectively.

Table 3.2

Age of Casualties

2002

Age In Years	Persons Killed N	Persons Killed %	Person Injured N	Person Injured %	Casualty Rate Per 10,000 Population*
Under 5	6	1.6	327	1.1	17.2
5-9	6	1.6	614	2.1	29.6
10 - 14	8	2.2	907	3.1	40.9
15 - 19	46	12.4	4110	14.2	180.7
20 - 24	42	11.3	4327	14.9	183.6
25 - 29	29	7.8	3106	10.7	133.1
30 - 34	28	7.5	2551	8.8	109.0
35 - 44	58	15.6	5124	17.7	98.5
45 - 54	57	15.3	3773	13.0	86.6
55 - 64	33	8.9	1850	6.4	72.4
65 and over	58	15.6	1681	5.8	54.6
Unspecified	1	0.3	619	2.1	
Total Casualties	**372**	**100.0**	**28989**	**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, 2002, Statistics Canada.

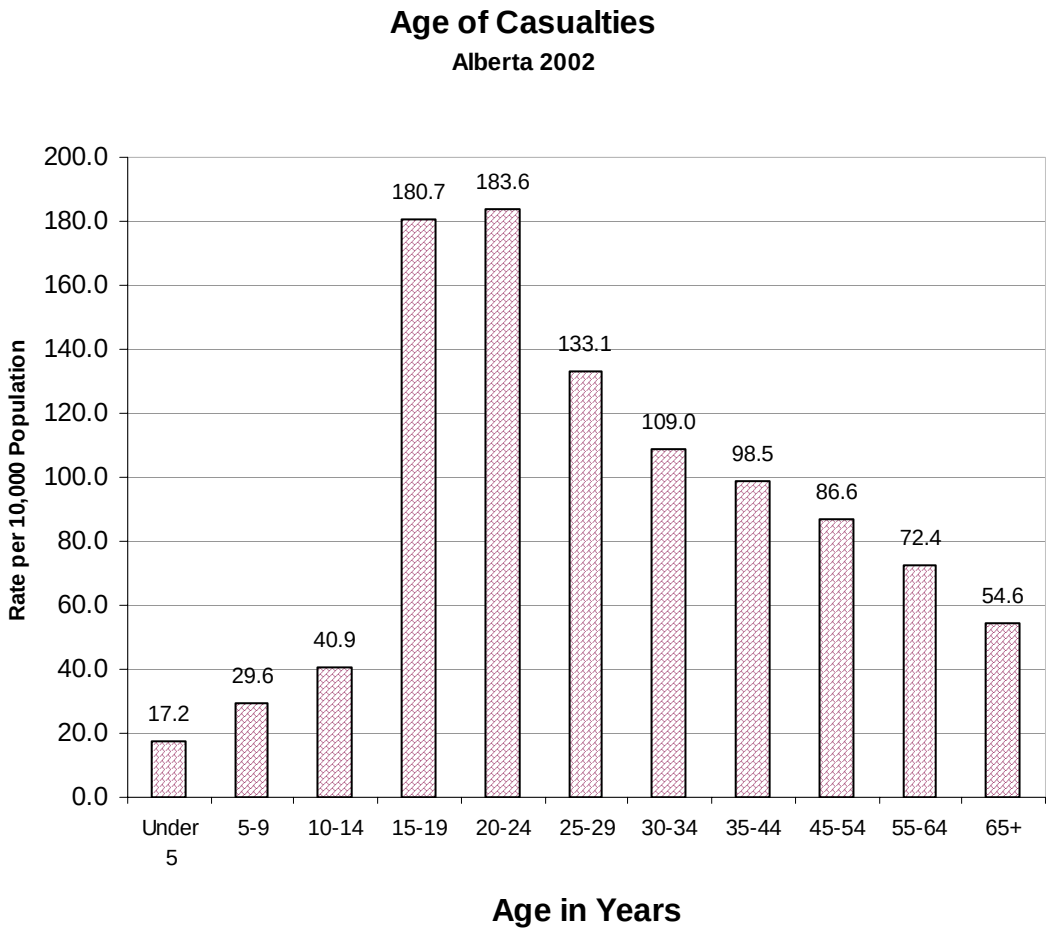

Age of Casualties
Alberta 2002
Rate per 10,000 Population
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
17.2
29.6
40.9
180.7
183.6
133.1
109.0
98.5
86.6
72.4
54.6
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Figure 4

Drivers

Age and Sex of Drivers

Collision rates per 1000 licensed drivers indicated that males 18 to 19 year olds 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 16 to 17 year olds.

Driver Actions

Following too closely (28.9%), running off the road (13.3%) and left turn across path (12.1%) 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

2002

	Males			Females			Total*		
Age of Driver	**N**	**%**	**Per 1000* Licensed Drivers**	**N**	**%**	**Per 1000** Licensed Drivers**	**N**	**%**	**Per 1000** Licensed Drivers**
Under 16	185	0.5	11.6	78	0.2	6.1	265	0.7	9.2
16 – 17	1062	2.8	32.0	743	2.0	25.1	1806	4.8	28.8
18 – 19	1482	4.0	34.9	1003	2.7	26.4	2486	6.7	30.9
20 – 24	3383	9.1	28.7	2106	5.6	19.9	5489	14.7	24.5
25 – 34	4897	13.1	19.5	3039	8.1	13.5	7936	21.3	16.6
35 – 44	4612	12.4	16.9	3242	8.7	12.8	7854	21.0	14.9
45 - 54	3494	9.4	14.8	2232	6.0	10.5	5728	15.3	12.8
55 - 64	1801	4.8	13.0	972	2.6	8.0	2773	7.4	10.7
65 and over	1522	4.1	12.0	716	1.9	7.1	2238	6.0	9.8
Unspecified	173	0.5		55	0.1		744	2.0	
Total Number of Drivers	**22611**	**60.6**		**14186**	**38.0**		**37319**	**100.0**	

Observations

Collision rates per 1000 licensed drivers indicated that males 18 to 19 year olds 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 16 to 17 year olds.

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

**Source: Government Services - Registries. Operator Statistics, December 31, 2002

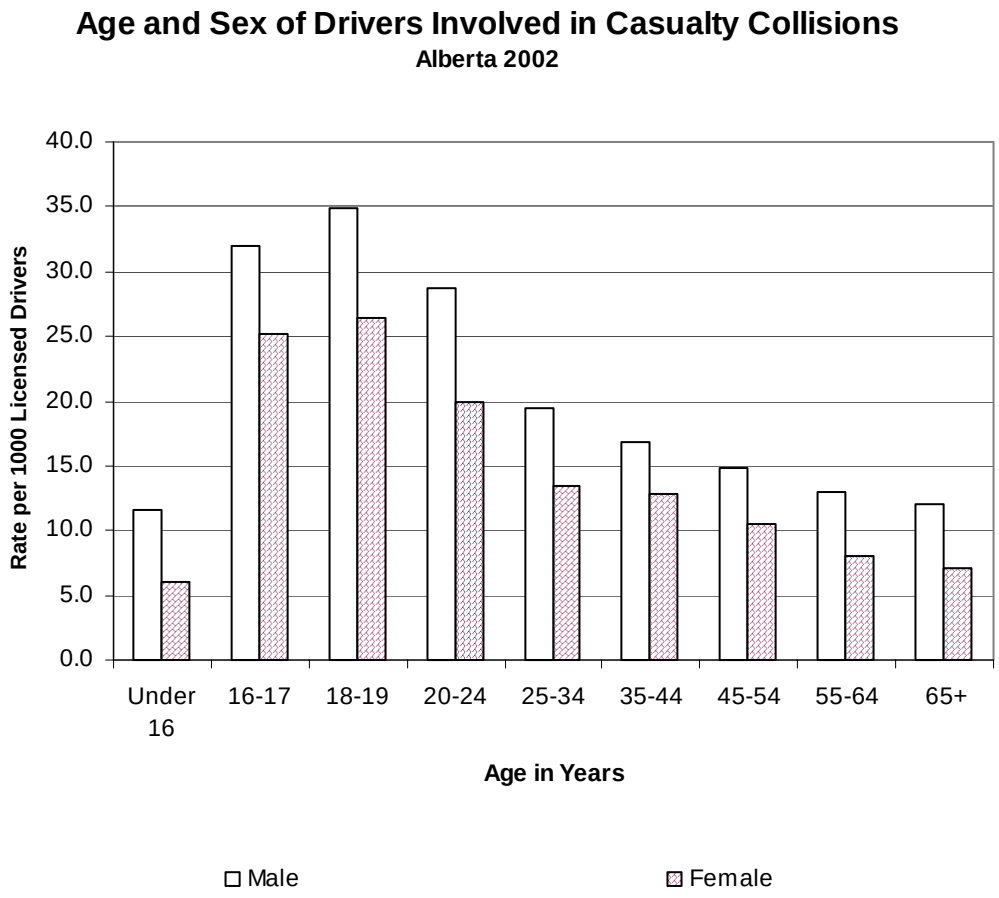

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2002
Rate per 1000 Licensed Drivers
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Under 16
16-17
18-19
20-24
25-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Figure 5

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2002

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	3	1.1	4249	29.4	4252	28.9
Ran Off Road	102	38.6	1857	12.8	1959	13.3
Left Turn Across Path	15	5.7	1770	12.2	1785	12.1
Stop Sign Violation	32	12.1	1185	8.2	1217	8.3
Disobey Traffic Signal	7	2.7	1085	7.5	1092	7.4
Fail to Yield Right of Way to Pedestrian	12	4.5	429	3.0	441	3.0
Improper Lane Change	2	0.8	412	2.8	414	2.8
Left of Center	46	17.4	357	2.5	403	2.7
Improper Turn	2	0.8	349	2.4	351	2.4
Backed Unsafely	--	--	341	2.4	341	2.3
Fail to Yield Right of Way Uncontrolled Intersection	4	1.5	294	2.0	298	2.0
Yield Sign Violation	5	1.9	281	1.9	286	1.9
Improper Passing	2	0.8	131	0.9	133	0.9
Other	32	12.1	1731	12.0	1763	12.0
Total Number of Drivers	**264**	**100.0**	**14471**	**100.0**	**14735**	**100.0**

Observations

Following too closely (28.9 %), running off the road (13.3%) and left turn across path (12.1%) 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 31164 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 16429 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (55.8%) and pickup trucks/vans (20.3%) were the vehicles most frequently involved in total casualty collisions.

Vehicular 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 43.5% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2002

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	181	36.2	20996	56.1	21177	55.8
Pickup Truck/Van	166	33.2	7555	20.2	7721	20.3
Mini-Van/MPV	47	9.4	5909	15.8	5956	15.7
Truck 4500 kg+	20	4.0	887	2.4	907	2.4
Motorcycle	25	5.0	558	1.5	583	1.5
Bicycle	8	1.6	559	1.5	567	1.5
Truck-Tractor	43	8.6	505	1.3	548	1.4
Off Highway Vehicle	5	1.0	113	0.3	118	0.3
Transit Bus	--	--	88	0.2	88	0.2
School Bus	--	--	76	0.2	76	0.2
Emergency Vehicle	1	0.2	54	0.1	55	0.1
Motorized Snow Vehicle	1	0.2	37	0.1	38	0.1
Construction Equipment	--	--	30	0.1	30	0.1
Other Bus	1	0.2	26	0.1	27	0.1
Motorhome	1	0.2	23	0.1	24	0.1
Farm Equipment	1	0.2	22	0.1	23	0.1
Intercity Bus	--	--	6	0.0	6	0.0
Moped	--	--	2	0.0	2	0.0
Other	--	--	5	0.0	5	0.0
Total Number of Vehicles	**500**	**100.0**	**37451**	**100.0**	**37951**	**100.0**

Observations

Passenger cars and pickup trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 1.5% and motorcycles 1.5% of the vehicles involved in casualty collisions. Truck tractors were 1.4% of total vehicles in casualty crashes, but 8.6% of vehicles in fatal crashes.

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

Table 5.2

Vehicular Factors Involved in Casualty Collisions*

2002

	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
Vehicular Factors	**N**	**%**	**N**	**%**	**N**	**%**
No Apparent Defect	375	97.7	30848	99.2	31223	99.2
Defective Brakes	4	1.0	66	0.2	70	0.2
Tires Failed	2	0.5	41	0.1	43	0.1
Lighting Defect	--	--	23	0.1	23	0.1
Improper Load/Shift	--	--	13	0.0	13	0.0
Other	3	0.8	91	0.3	94	0.3
Total Number of Vehicles	**384**	**100.0**	**31082**	**100.0**	**31466**	**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*

2002

Point of Impact	Vehicles In Fatal Collisions N	Vehicles In Fatal Collisions %	Vehicles in Non-Fatal Injury Collisions N	Vehicles in Non-Fatal Injury Collisions %	Total Vehicles in Casualty Collisions N	Total Vehicles in Casualty Collisions %
Centre Front	217	47.1	15533	43.5	15750	43.5
Centre Rear	12	2.6	8714	24.4	8726	24.1
Left Front	32	6.9	2595	7.3	2627	7.3
Right Front	30	6.5	2385	6.7	2415	6.7
Rollover	88	19.1	1733	4.9	1821	5.0
Right Side	26	5.6	1311	3.7	1337	3.7
Left Side	29	6.3	1262	3.5	1291	3.6
Left Rear	5	1.1	899	2.5	904	2.5
Right Rear	6	1.3	867	2.4	873	2.4
Attachment	13	2.8	207	0.6	220	0.6
Undercarriage	2	0.4	122	0.3	124	0.3
Top	1	0.2	84	0.2	85	0.2
Total Number of Vehicles	**461**	**100.0**	**35712**	**100.0**	**36173**	**100.0**

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 43.5% of the impacts involved the centre front, while 24.1% of the impacts involved the centre rear.

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

Environment

Location

The majority of fatal crashes (70.5%) occurred in rural areas, whereas the majority of injury (81.0%) and property damage (80.4%) crashes occurred in urban areas.

Surface Conditions

The majority (63.0%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.8% of fatal collisions and 19.6% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2002

Location	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Property Damage Only Collisions N	Property Damage Only Collisions %	Total Collisions N	Total Collisions %
Urban	95	29.5	16320	81.0	77052	80.4	93467	80.4
Rural	227	70.5	3832	19.0	18782	19.6	22841	19.6
Total Number of Collisions	**322**	**100.0**	**20152**	**100.0**	**95834**	**100.0**	**116308**	**100.0**

Observations

Collisions which occurred in rural areas, accounted for 70.5% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (81.0%) and property damage crashes (80.4%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2002

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Surface Condition	**N**	**%**	**N**	**%**	**N**	**%**
Dry	229	71.1	12677	62.9	12906	63.0
Slush/Snow/Ice	54	16.8	3958	19.6	4012	19.6
Wet	23	7.1	1756	8.7	1779	8.7
Loose Surface Material	6	1.9	351	1.7	357	1.7
Muddy	1	0.3	35	0.2	36	0.2
Other	4	1.2	138	0.7	142	0.7
Unspecified	5	1.6	1237	6.1	1242	6.1
Total Number of Collisions	**322**	**100.0**	**20152**	**100.0**	**20474**	**100.0**

Observations

The majority (63.0%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.8% of fatal collisions and 19.6% 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 2002.
- 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 59.9, a rate 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.
- Vehicular factors were identified for 1.7% 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

1998 - 2002

Number of Motorcycles	**2002**	**2001**	**2000**	**1999**	**1998**
Fatal	25	21	14	11	24
Non-Fatal Injury	558	629	476	447	463
Total Number of Motorcycles Involved in Casualty Collisions	**583**	**650**	**490**	**458**	**487**
Casualties*					
Number Killed	24	21	14	10	26
Number Injured	620	701	540	509	528
Total Casualties in Collisions Involving Motorcycles	**644**	**722**	**554**	**519**	**554**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	4.8	4.2	3.2	2.8	6.4
Non-Fatal Injury Collisions	106.2	126.9	109.3	112.9	123.4

Observations

Based on motorcycle registrations, the involvement rate of motorcycles in fatal collisions has increased but in injury collisions has decreased in 2002.

*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, 2002.

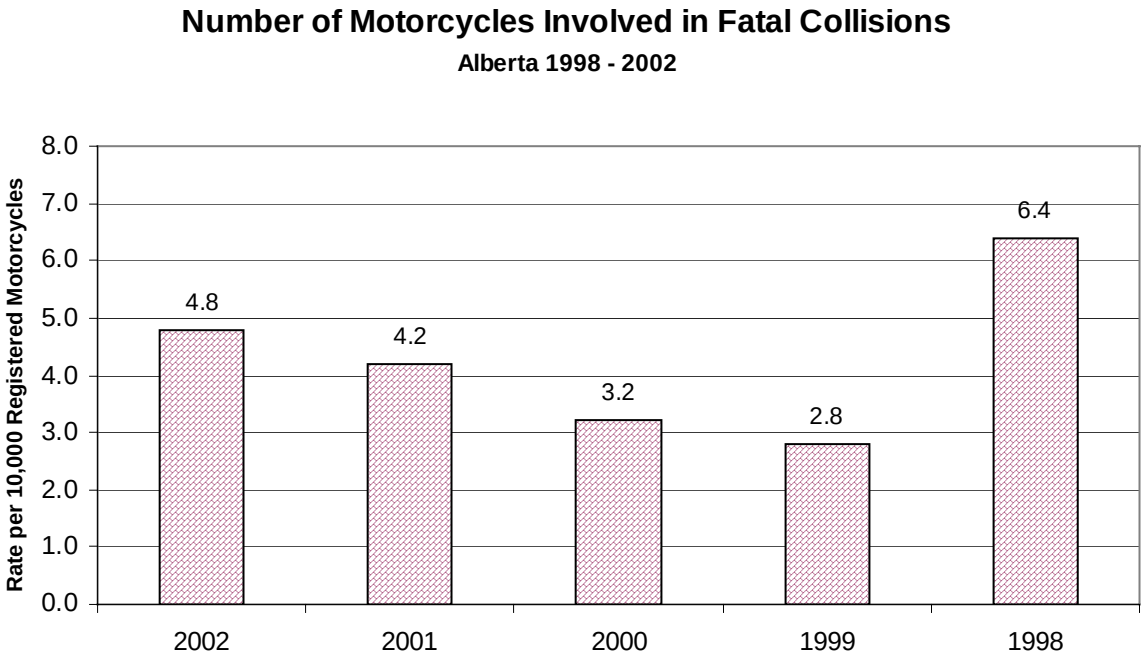

Number of Motorcycles Involved in Fatal Collisions
Alberta 1998 - 2002
Rate per 10,000 Registered Motorcycles
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
4.8
4.2
3.2
2.8
6.4
2002
2001
2000
1999
1998

Figure 6

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2002

Age of Motorcycle Driver	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
	N	%	N	%	N	%	
Under 16	4	0.7	1	0.2	5	0.9	
16 - 17	15	2.6	1	0.2	16	2.8	59.9
18 - 19	46	7.9	2	0.3	48	8.3	43.4
20 - 24	132	22.7	2	0.3	134	23.1	17.4
25 - 34	125	21.5	7	1.2	132	22.7	3.9
35 - 44	96	16.5	16	2.8	112	19.3	1.8
45 - 54	93	16.0	5	0.9	98	16.9	1.5
55 - 64	24	4.1	1	0.2	25	4.3	1.1
65 and over	7	1.2	--	--	7	1.2	0.7
Unspecified	--	--	--	--	4	0.7	
Total Number of Motorcycle Drivers	**542**	**93.3**	**35**	**6.0**	**581**	**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 kilometres 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, 2002.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2002

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	81	37.7	13.3
Followed Too Closely	23	10.7	28.9
Left of Center	8	3.7	2.7
Improper Lane Change	8	3.7	2.8
Disobey Traffic Signal	7	3.3	7.4
Improper Passing	7	3.3	0.9
Left Turn Across Path	6	2.8	12.1
Stop Sign Violation	5	2.3	8.3
Improper Turn	3	1.4	2.4
Failed to Yield Right of Way to Pedestrian	2	0.9	3.0
Failed to Yield Right of Way Uncontrolled Intersection	1	0.5	2.0
Yield Sign Violation	1	0.5	1.9
Other	63	29.3	14.3
Total Number of Motorcycle Drivers	**215**	**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 472 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 257 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers* Involved in Casualty Collisions

2002

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	475	93.7	93.8
Had Been Drinking	20	3.9	2.2
Alcohol Impaired	8	1.6	2.5
Total Alcohol Involvement	**28**	**5.5**	**4.6**
Fatigue/Asleep	2	0.4	0.9
Other	2	0.4	0.6
Total Number of Motorcycle Drivers	**507**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 6.3% 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 Vehicular Factors* in Casualty Collisions

2002

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	510	98.3	99.2
Tires Failed	6	1.2	0.1
Lighting Defect	2	0.4	0.1
Other	1	0.2	0.3
Total Number of Motorcycles	**519**	**100.0**	

Observations

Vehicular factors were identified for 1.7% 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 vehicular 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

2002

Month	N	%
January	1	0.2
February	2	0.3
March	2	0.3
April	25	4.4
May	74	12.9
June	127	22.2
July	93	16.3
August	115	20.1
September	92	16.1
October	31	5.4
November	7	1.2
December	3	0.5
Total Number of Collisions	**572**	**100.0**

Observations

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

Table 7.7

Casualty Collisions Involving Motorcycles:

Road Surface Condition

2002

Road Surface Condition	N	%
Dry	491	85.8
Loose Surface Material	25	4.4
Wet	21	3.7
Muddy	2	0.3
Slush/Snow/Ice	1	0.2
Other	7	1.2
Unspecified	25	4.4
Total Number of Collisions	**572**	**100.0**

Observations

The majority of casualty collisions involving motorcycles occurred on dry roads. Loose material on the road surface was involved in 4.4% of motorcycle casualty crashes. Wet roads were the scene of 3.7% of motorcycle casualty collisions.

Special Types of Vehicles

Truck Tractors

- In 2002 there were 49 persons killed and 744 injured in collisions involving truck tractors. This represents an increase in casualties from 2001.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change, or make an improper turn. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, disobey a traffic signal or make an unsafe left turn.
- Truck tractor drivers were less likely to consume alcohol before the crash than were drivers in total casualty collisions.
- Vehicular 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

1998-2002

Number of Truck Tractors	**2002**	**2001**	**2000**	**1999**	**1998**
Fatal	43	43	60	41	48
Non-Fatal Injury	505	507	512	445	523
Total Number of Truck Tractors Involved in Casualty Collisions	**548**	**550**	**572**	**486**	**571**
Casualties*					
Number Killed	49	52	76	48	57
Number Injured	744	686	740	606	687
Total Casualties in Collisions Involving Truck Tractors	**793**	**738**	**816**	**654**	**744**

Observations

In 2002 there were 49 persons killed and 744 injured in collisions involving truck tractors. This represents an increase in casualties from 2001. The total number of truck tractors involved in casualty crashes decreased in 2002 standing at 548 compared to the five-year high of 572 recorded in 2000.

*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

Casualty Collisions Involving Truck Tractors:
Improper Actions* of Truck Tractor Drivers Involved in Casualty Collisions
2002

Improper Driver Actions	N	%	Driver Actions in Total Casualty Collisions (All Types of Vehicles) %
Ran Off Road	69	34.2	13.3
Followed Too Closely	38	18.8	28.9
Stop Sign Violation	19	9.4	8.3
Left Turn Across Path	14	6.9	12.1
Improper Lane Change	13	6.4	2.8
Improper Turn	11	5.4	2.4
Left of Center	9	4.5	2.7
Disobey Traffic Signal	4	2.0	7.4
Improper Passing	3	1.5	0.9
Backed Unsafely	3	1.5	2.3
Failed to Yield Right of Way – Uncontrolled Intersection	1	0.5	2.0
Failed to Yield Right of Way to Pedestrian	1	0.5	3.0
Other	17	8.4	12.0
Total Number of Drivers	**202**	**100.0**	

Observations

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

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

Note: There was a total of 455 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 253 were indicated as driving properly at the time of the collision.

Table 7.10

Casualty Collisions Involving Truck Tractors:

Condition* of Truck Tractor Drivers Involved in Casualty Collisions

2002

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Types of Vehicles) %
Normal	444	95.5	93.8
Had Been Drinking	4	0.9	2.2
Alcohol Impaired	3	0.6	2.5
Total Alcohol Involvement	**7**	**1.5**	**4.6**
Fatigued/Asleep	10	2.2	0.9
Impaired by Drugs	1	0.2	0.1
Other	3	0.6	0.6
Total Number of Drivers	**465**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 4.5% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions (1.5% compared to 4.6%). 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

Casualty Collisions Involving Truck Tractors:

Vehicular Factors* of Truck Tractors Involved in Casualty Collisions

2002

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Types of Vehicles) %
No Apparent Defect	456	97.2	99.2
Improper Load/Shift	5	1.1	0.0
Tires Failed	3	0.6	0.1
Defective Brakes	3	0.6	0.2
Lighting Defect	1	0.2	0.1
Other	1	0.2	0.3
Total Number of Truck Tractors	**469**	**100.0**	

Observations

Vehicular factors were identified for 2.7% of truck tractors involved in casualty collisions. Vehicular factors were more likely to be present in truck tractor collisions than in total casualty collisions.

*Based on those cases where vehicular factor was specified on the collision report form. This information 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

2002

Month	N	%
January	63	12.0
February	48	9.1
March	44	8.4
April	26	4.9
May	27	5.1
June	40	7.6
July	54	10.3
August	36	6.8
September	47	8.9
October	54	10.3
November	42	8.0
December	45	8.6
Total Number of Collisions	**526**	**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 April.

Special Types of Vehicles

Trains

- In 2002, 6 people were killed and 38 people were injured in crashes in which a train was involved. The number of casualties involving trains has increased from 2001.
- The largest number of casualty collisions involving trains occurred in the month of February.
- A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

Table 7.13

Trains Involved in Casualty Collisions

1998 - 2002

Number of Trains	2002	2001	2000	1999	1998
Fatal	5	6	3	3	5
Non-Fatal Injury	32	25	20	19	26
Total Number of Trains Involved in Casualty Collisions	**37**	**31**	**23**	**22**	**31**
Casualties*					
Number Killed	6	6	4	4	5
Number Injured	38	30	34	27	50
Total Casualties in Collisions Involving Trains	**44**	**36**	**38**	**31**	**55**

Observations

The number of trains involved in casualty collisions increased from 2001. The number of casualties resulting from these collisions has increased.

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

Table 7.14

Casualty Collisions Involving Trains:

Month of Occurrence

2002

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	1	20.0	1	3.1	2	5.4
February	1	20.0	5	15.6	6	16.2
March	--	--	5	15.6	5	13.5
April	--	--	2	6.3	2	5.4
May	--	--	1	3.1	1	2.7
June	1	20.0	1	3.1	2	5.4
July	--	--	3	9.4	3	8.1
August	--	--	2	6.3	2	5.4
September	--	--	4	12.5	4	10.8
October	1	20.0	3	9.4	4	10.8
November	1	20.0	4	12.5	5	13.5
December	--	--	1	3.1	1	2.7
Total Number of Collisions	**5**	**100.0**	**32**	**100.0**	**37**	**100.0**

Observations

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

Table 7.15

Casualty Collisions Involving Trains:

Actions* of Drivers Involved in Casualty Collisions with Trains

2002

	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
Driver Actions	**N**	**%**	**N**	**%**	**N**	**%**
Driving Properly	--	--	2	9.5	2	7.7
Yield Sign Violation	1	20.0	--	--	1	3.8
Disobey Traffic Signal	1	20.0	11	52.4	12	46.2
Failed to Yield Right of Way – Uncontrolled Intersection	2	40.0	--	--	2	7.7
Stop Sign Violation	1	20.0	6	28.6	7	26.9
Other	--	--	2	9.5	2	7.7
Total Number of Drivers	**5**	**100.0**	**21**	**100.0**	**26**	**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 from October to December. December accounted for the largest number of collisions, while August 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 p.m. to 6:59 p.m.).
- 38.2% 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, 15.5% had consumed alcohol before the collision, compared to 27.0% involved in fatal collisions.
- Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for pedestrians 20-24 years of age.

Table 8.1

Casualty Collisions Involving Pedestrians:

Month of Occurrence

2002

Month of Collision	N	%
January	123	9.8
February	99	7.9
March	88	7.0
April	78	6.2
May	80	6.3
June	87	6.9
July	98	7.8
August	77	6.1
September	106	8.4
October	127	10.1
November	143	11.3
December	152	12.1
Unspecified	2	0.2
Total Number of Collisions	**1260**	**100.0**

Observations

Pedestrian casualty collisions were more likely to occur from October to December. December accounted for the largest number of collisions, while August experienced the least number of pedestrian crashes.

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2002

Day of Week	N	%
Monday	177	14.0
Tuesday	179	14.2
Wednesday	195	15.5
Thursday	201	16.0
Friday	224	17.8
Saturday	158	12.5
Sunday	124	9.8
Unspecified	2	0.2
Total Number of Collisions	**1260**	**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

2002

Time Period	N	%
11:00 p.m. - 2:59 a.m.	93	7.4
3:00 a.m. - 6:59 a.m.	50	4.0
7:00 a.m. - 10:59 a.m.	218	17.3
11:00 a.m. - 2:59 p.m.	256	20.3
3:00 p.m. - 6:59 p.m.	405	32.1
7:00 p.m. - 10:59 p.m.	223	17.7
Unspecified	15	1.2
Total Number of Collisions	**1260**	**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

2002

Location	N	%
Urban	1212	96.2
Rural	48	3.8
Total Number of Collisions	**1260**	**100.0**

Observations

The majority of pedestrian casualty collisions (96.2%) occurred in urban areas. Only 3.8% occurred in rural areas.

Table 8.5

Casualty Collisions Involving Pedestrians:

Actions* of Drivers Involved in Casualty Collisions with Pedestrians

2002

Driver Actions	N	%
Driving Properly	399	38.3
Failed to Yield Right of Way To Pedestrian	398	38.2
Backed Unsafely	83	8.0
Ran Off Road	22	2.1
Disobey Traffic Signal	18	1.7
Left Turn Across Path	15	1.4
Stop Sign Violation	11	1.1
Improper Turn	10	1.0
Failed to Yield Right of Way Uncontrolled Intersection	7	0.7
Left of Centre	6	0.6
Followed Too Closely	5	0.5
Improper Lane Change	5	0.5
Yield Sign Violation	2	0.2
Improper Passing	2	0.2
Other	58	5.6
Total Number of Drivers	**1041**	**100.0**

Observations

38.3% of the drivers involved in pedestrian crashes were recorded as driving properly. However, 38.2% of the drivers involved in pedestrian casualty collisions failed to yield the right of way to the pedestrian.

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

Table 8.6

Age of Pedestrian Casualties

2002

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	--	73	73	5.5	3.5
10 – 14	1	129	130	9.7	5.8
15 – 19	4	196	200	15.0	8.7
20 – 24	1	140	141	10.5	5.9
25 – 29	1	97	98	7.3	4.2
30 – 34	3	101	104	7.8	4.4
35 – 44	8	208	216	16.2	4.1
45 – 54	3	131	134	10.0	3.0
55 – 64	6	78	84	6.3	3.2
65 and over	12	110	122	9.1	3.8
Unspecified	--	13	13	1.0	
Total Number of Pedestrian Casualties	**39**	**1298**	**1337**	**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, 2002, Statistics Canada.

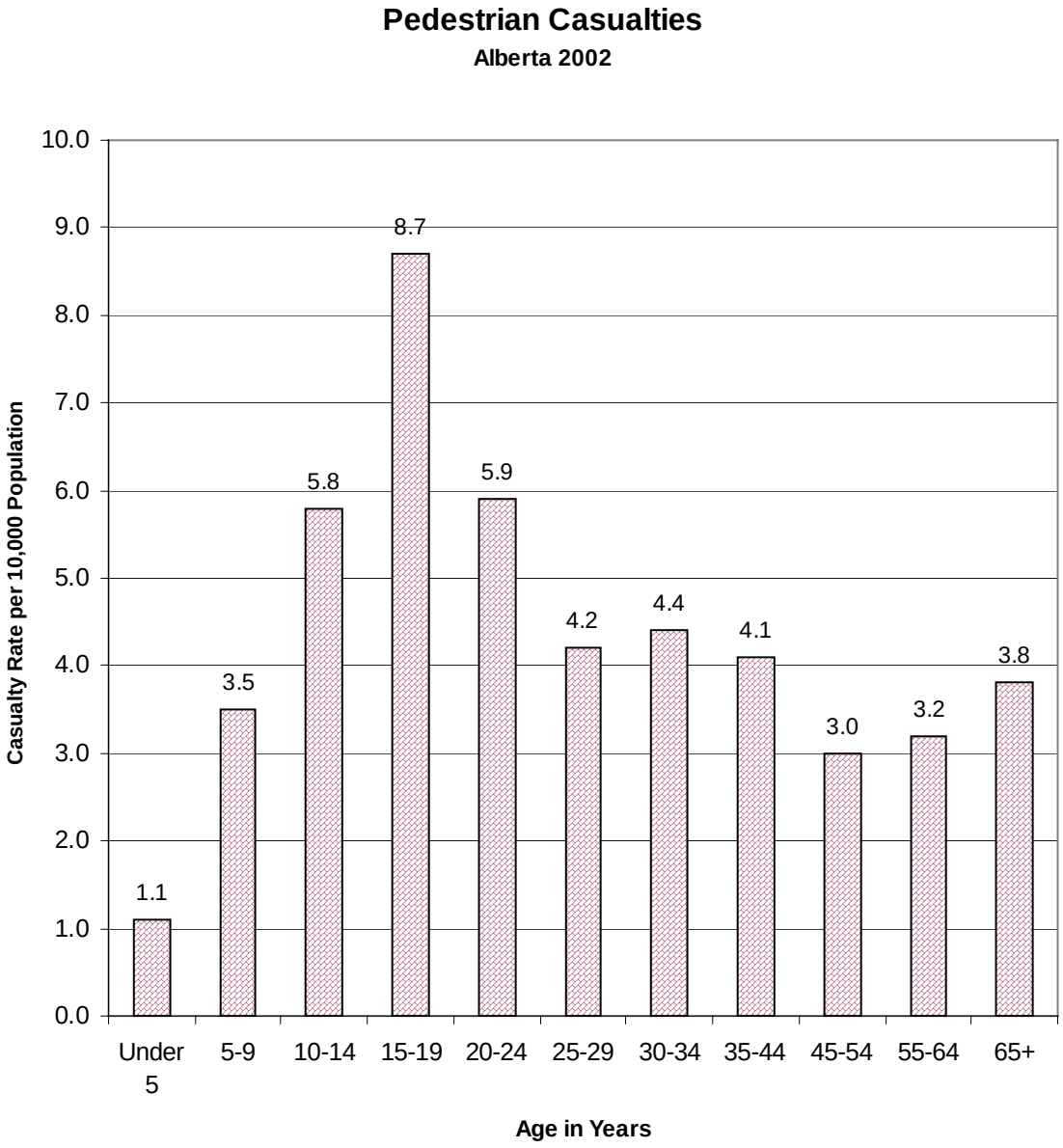

Pedestrian Casualties
Alberta 2002
Casualty Rate per 10,000 Population
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1.1
3.5
5.8
8.7
5.9
4.2
4.4
4.1
3.0
3.2
3.8
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Figure 7

Table 8.7

Condition of Pedestrians* Involved in Casualty Collisions

2002

	Pedestrians in Fatal Collisions		Pedestrians in Non-Fatal Injury Collisions		Total Pedestrians in Casualty Collisions	
Condition of Pedestrian	**N**	**%**	**N**	**%**	**N**	**%**
Normal	27	73.0	833	82.9	860	82.5
Had Been Drinking	9	24.3	97	9.7	106	10.2
Alcohol Impaired	1	2.7	59	5.9	60	5.8
Total Alcohol Involvement	**10**	**27.0**	**156**	**15.5**	**166**	**15.9**
Drugs	--	--	3	0.3	3	0.3
Other	--	--	13	1.3	13	1.2
Total Number of Pedestrians	**37**	**100.0**	**1005**	**100.0**	**1042**	**100.0**

Observations

Of pedestrians involved in injury collisions, 15.5% had consumed alcohol before the collision, compared to 27.0% 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

2002

Age in Years	N	%	Rate per 10,000 Population**
10-14	--	--	--
15 - 19	15	9.0	0.7
20 - 24	34	20.5	1.4
25 - 29	20	12.0	0.8
30 - 34	21	12.7	0.9
35 - 44	48	28.9	0.9
45 - 54	16	9.6	0.4
55 - 64	4	2.4	0.2
65 and over	4	2.4	0.1
Unspecified	4	2.4	
Total Number of Pedestrian Casualties	**166**	**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, 2002, 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 (34.6%) 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 fail to yield right-of-way at an uncontrolled intersection or be left of the centre line.
- 4.3% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2002

Month	N	%
January	10	1.8
February	15	2.7
March	5	0.9
April	30	5.3
May	71	12.5
June	84	14.8
July	108	19.1
August	79	14.0
September	76	13.4
October	45	8.0
November	21	3.7
December	22	3.9
Total Number of Collisions	**566**	**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

2002

Day of Week	N	%
Monday	102	18.0
Tuesday	83	14.7
Wednesday	101	17.8
Thursday	86	15.2
Friday	80	14.1
Saturday	60	10.6
Sunday	54	9.5
Total Number of Collisions	**566**	**100.0**

Observations

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

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2002

Time Period	N	%
11:00 p.m. - 2:59 a.m.	14	2.5
3:00 a.m. - 6:59 a.m.	15	2.7
7:00 a.m. - 10:59 a.m.	94	16.6
11:00 a.m. - 2:59 p.m.	136	24.0
3:00 p.m. - 6:59 p.m.	196	34.6
7:00 p.m. - 10:59 p.m.	106	18.7
Unspecified	5	0.9
Total Number of Collisions	**566**	**100.0**

Observations

The largest proportion of casualty crashes (34.6%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

Table 9.4

Age and Sex of Bicyclists Involved in Casualty Collisions

2002

Age of Bicyclist	Male		Female		Total*	
	N	%	N	%	N	%
Under 5	2	0.4	1	0.2	3	0.5
5 - 9	30	5.3	7	1.2	37	6.5
10 - 14	70	12.3	25	4.4	96	16.9
15 - 19	56	9.9	19	3.4	75	13.2
20 - 24	58	10.2	22	3.9	80	14.1
25 - 29	43	7.6	15	2.6	58	10.2
30 - 34	39	6.9	13	2.3	52	9.2
35 - 44	73	12.9	7	1.2	80	14.1
45 - 54	34	6.0	13	2.3	47	8.3
55 - 64	13	2.3	4	0.7	17	3.0
65 and over	9	1.6	1	0.2	10	1.8
Unspecified	8	1.4	--	--	12	2.1
Total Number of Bicyclists	**435**	**76.7**	**127**	**22.4**	**567**	**100.0**

Observations

The majority of bicycle casualty collisions involved male bicyclists. The 10-14 year old age group was most frequently involved in these collisions.

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

Table 9.5

Improper Actions of Bicyclists Involved in Casualty Collisions*

2002

Improper Actions of Bicyclist	N	%	Driver Actions In Total Casualty Collisions (All Vehicle Types) %
Failed to Yield Right of Way Uncontrolled Intersection	53	22.9	2.0
Left of Center	23	10.0	2.7
Disobey Traffic Signal	17	7.4	7.4
Stop Sign Violation	17	7.4	8.3
Left Turn Across Path	11	4.8	12.1
Ran Off Road	7	3.0	13.3
Improper Turn	7	3.0	2.4
Improper Passing	5	2.2	0.9
Followed Too Closely	4	1.7	28.9
Yield Sign Violation	3	1.3	1.9
Improper Lane Change	2	0.9	2.8
Failed to Yield Right of Way to Pedestrian	1	0.4	3.0
Other	81	35.1	12.0
Total Number of Bicyclists	**231**	**100.0**	**100.0**

Observations

Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right-of-way at an uncontrolled intersection or be left of the centre line.

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

Note: There was a total of 386 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 155 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2002

Condition of Bicyclist	N	%
Normal	467	94.7
Had Been Drinking	13	2.6
Alcohol Impaired	8	1.6
Total Alcohol Involvement	**21**	**4.3**
Drugs	2	0.4
Fatigued	1	0.2
Other	2	0.4
Total Number of Bicyclists	**493**	**100.0**

Observations

4.3% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

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

Traffic Safety Issues

Alcohol Involvement

- A total of 4.4% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 20.7% 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 over four times as many male drivers as female drivers who had consumed alcohol prior to the collision.
- In 2002, 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, 1998-2002.

Table 10.1

Condition of Drivers in Casualty Collisions*

2002

	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
Condition of Driver	**N**	**%**	**N**	**%**	**N**	**%**
Normal	300	76.5	28495	94.0	28795	93.8
Had Been Drinking	38	9.7	625	2.1	663	2.2
Alcohol Impaired	43	11.0	721	2.4	764	2.5
Total Alcohol Involvement	**81**	**20.7**	**1346**	**4.4**	**1427**	**4.6**
Impaired by Drugs	1	0.3	40	0.1	41	0.1
Fatigued/Asleep	8	2.0	262	0.9	270	0.9
Other	2	0.5	179	0.6	181	0.6
Total Number of Drivers	**392**	**100.0**	**30322**	**100.0**	**30714**	**100.0**

Observations

Of drivers involved in injury collisions, 4.4% had consumed alcohol before the crash, compared to 20.7% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 4.6% of drivers involved in casualty collisions were judged to have consumed alcohol before the crash.

*Based on those cases where driver condition was specified on the collision report form.
These numbers do not include bicyclists (see Table 9.6, page 65).


Involvement of Drinking Drivers in Casualty Collisions
Alberta 1998 - 2002
% Involvement of Drinking Drivers
25
20
15
10
5
0
20.7
4.4
21
5.0
20.2
4.9
22.8
5.6
22.6
5.9
2002
2001
2000
1999
1998
Driver Condition
Fatal Collisions
Injury Collisions

Figure 8

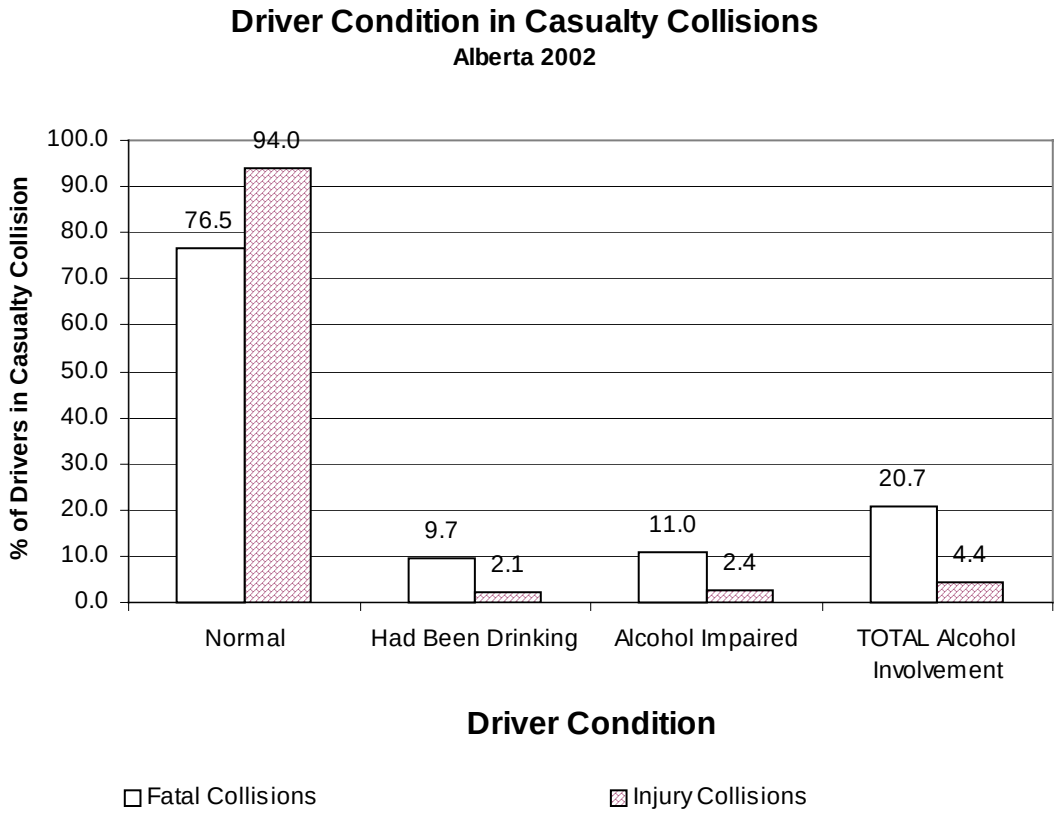

Driver Condition in Casualty Collisions
Alberta 2002
% of Drivers in Casualty Collision
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
76.5
94.0
9.7
2.1
11.0
2.4
20.7
4.4
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2002

Age in Years	Male N	Male %	Rate Per 1000** Licensed Drivers	Female N	Female %	Rate Per 1000** Licensed Drivers	Total* N	Total* %	Rate Per 1000** Licensed Drivers
Under 16	2	0.1	0.1	5	0.4	0.4	7	0.5	0.2
16 - 17	33	2.3	1.0	13	0.9	0.4	46	3.2	0.7
18 - 19	99	6.9	2.3	21	1.5	0.6	121	8.5	1.5
20 - 21	132	9.3	2.9	24	1.7	0.6	156	10.9	1.8
22 - 24	151	10.6	2.1	27	1.9	0.4	178	12.5	1.3
25 - 29	167	11.7	1.3	30	2.1	0.3	197	13.8	0.8
30 - 34	141	9.9	1.1	32	2.2	0.3	173	12.1	0.7
35 - 44	211	14.8	0.8	66	4.6	0.3	277	19.4	0.5
45 - 54	131	9.2	0.6	36	2.5	0.2	167	11.7	0.4
55 - 64	49	3.4	0.4	10	0.7	0.1	59	4.1	0.2
65 and over	26	1.8	0.2	1	0.1	0.0	27	1.9	0.1
Unspecified	4	0.3	--	--	--	--	19	1.3	--
Total Drivers	**1146**	**80.3**		**265**	**18.6**		**1427**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over four times as many male drivers as female drivers. In terms of involvement per 1,000 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, 2002.

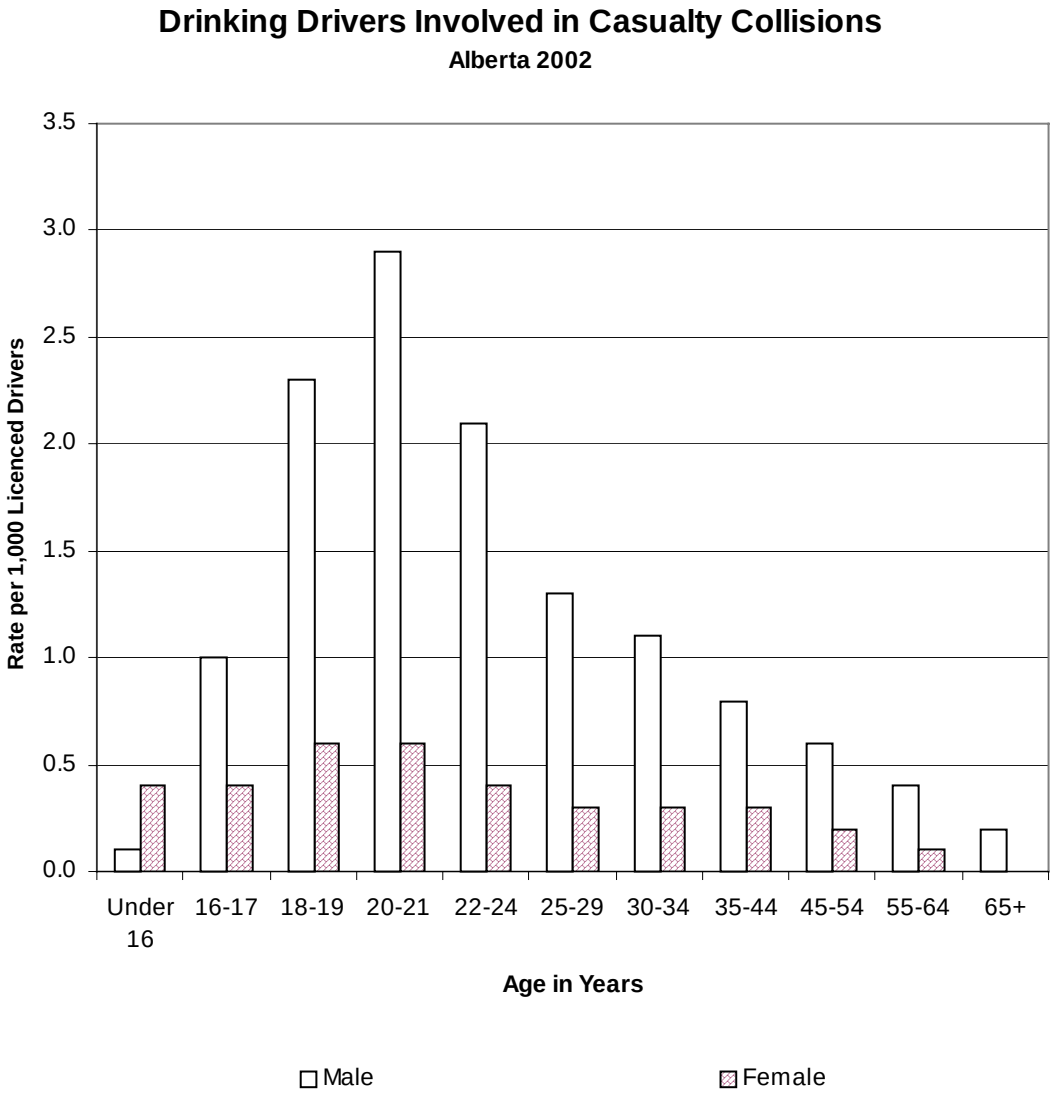

Drinking Drivers Involved in Casualty Collisions
Alberta 2002
Rate per 1,000 Licenced Drivers
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Under 16
16-17
18-19
20-21
22-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Figure 10

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2002

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Month	**N**	**%**	**N**	**%**	**N**	**%**
January	8	10.3	94	7.1	102	7.3
February	3	3.8	101	7.6	104	7.4
March	6	7.7	104	7.9	110	7.8
April	5	6.4	94	7.1	99	7.1
May	6	7.7	98	7.4	104	7.4
June	11	14.1	124	9.4	135	9.6
July	7	9.0	133	10.0	140	10.0
August	9	11.5	135	10.2	144	10.3
September	4	5.1	132	10.0	136	9.7
October	6	7.7	105	7.9	111	7.9
November	5	6.4	111	8.4	116	8.3
December	8	10.3	93	7.0	101	7.2
Total Number of Collisions	**78**	**100.0**	**1324**	**100.0**	**1402**	**100.0**

Observations

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

Table 10.4

Alcohol-Involved Casualty Collisions:

Day of Week

2002

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Day of Week	**N**	**%**	**N**	**%**	**N**	**%**
Monday	6	7.7	108	8.2	114	8.1
Tuesday	5	6.4	102	7.7	107	7.6
Wednesday	6	7.7	130	9.8	136	9.7
Thursday	10	12.8	173	13.1	183	13.1
Friday	16	20.5	241	18.2	257	18.3
Saturday	21	26.9	320	24.2	341	24.3
Sunday	14	17.9	248	18.7	262	18.7
Unspecified	--	--	2	0.2	2	0.1
Total Number of Collisions	**78**	**100.0**	**1324**	**100.0**	**1402**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions occurred on Saturday (26.9%). The highest number of non-fatal injury collisions also occurred on Saturday (24.2%). The smallest number of alcohol-involved casualty collisions occurred on Tuesday.

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2002

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Time of Day	**N**	**%**	**N**	**%**	**N**	**%**
11:00 p.m. - 2:59 a.m.	21	26.9	462	34.9	483	34.5
3:00 a.m. - 6:59 a.m.	15	19.2	193	14.6	208	14.8
7:00 a.m. - 10:59 a.m.	2	2.6	54	4.1	56	4.0
11:00 a.m. - 2:59 p.m.	4	5.1	65	4.9	69	4.9
3:00 p.m. - 6:59 p.m.	12	15.4	199	15.0	211	15.0
7:00 p.m. - 10:59 p.m.	19	24.4	324	24.5	343	24.5
Unspecified	5	6.4	27	2.0	32	2.3
Total Number of Collisions	**78**	**100.0**	**1324**	**100.0**	**1402**	**100.0**

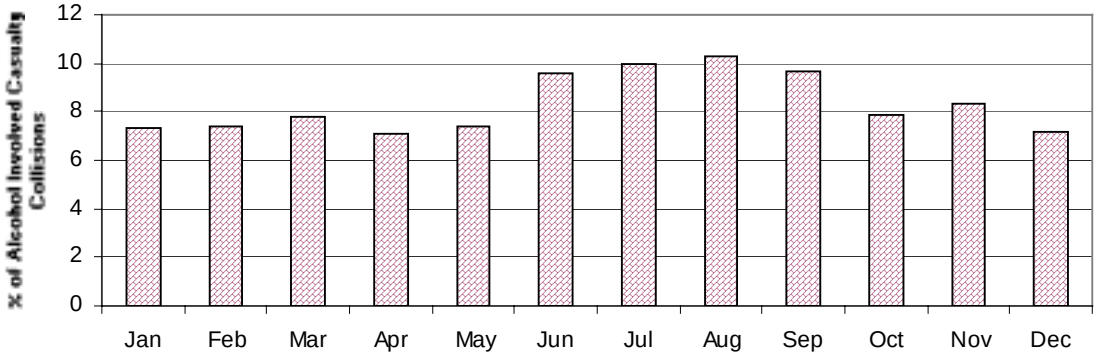
Observations

The late night/early morning time period (11:00 p.m. - 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (34.5%). The morning hours (7:00 a.m. - 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (4.0%).

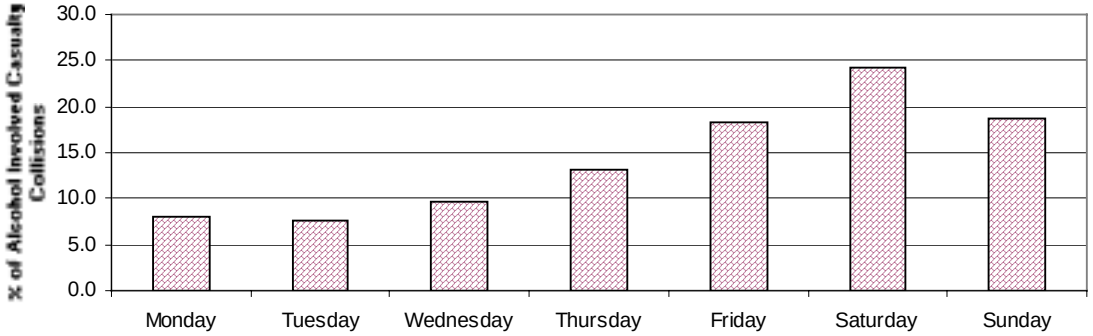
Revised October 10, 2003

Alcohol Involved Casualty Collisions
Alberta 2002

By Month of Occurrence



By Day of Week



By Time Period

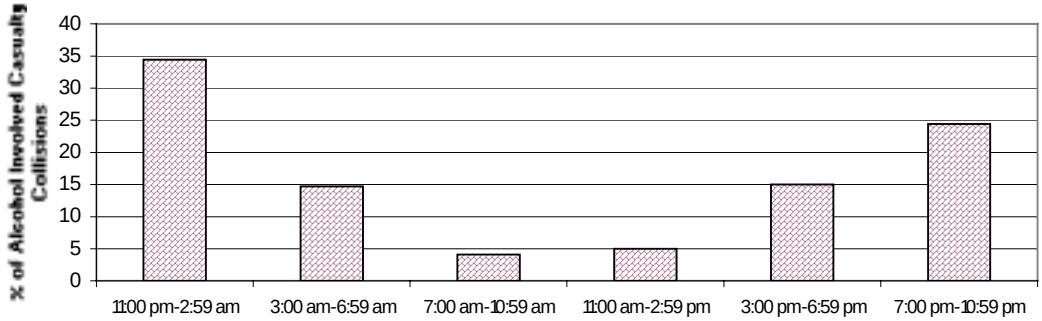


Figure 11 - Revised October 10, 2003

Traffic Safety Issues

Restraint Use

- Collision involved restraint users had a much lower injury rate (14.0%) than those not using restraints (38.8%).
- Non-restraint users were more than two and one-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)

2002

Injury Severity of Occupants	Percentage of Occupants Using Restraints	Percentage of Occupants Not Using Restraints
	%	%
Fatal Injury	0.1	2.4
Major Injury	1.1	11.1
Minor Injury	12.8	25.4
Total Occupants Sustaining Non-Fatal Injuries	**14.0**	**38.8**
No Apparent Injury	86.0	61.2
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (14.0) than those not using restraints (38.8%). Non-restraint users were more than two and one-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 indicate they intend to seek medical attention).

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