Alberta

Traffic Collision Statistics

2000

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2000 Overview

- The number of **traffic collisions increased 9.7%** over the past year from 95246 collisions in 1999 to 104463 in 2000.
- The number of **traffic injuries increased 4.0%** over the past year from 25451 injuries in 1999 to 26464 in 2000.
- The number of **traffic fatalities increased 4.9%** over the past year from 347 fatalities in 1999 to 364 in 2000.
- **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 Friday.
- **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.**
- **76.9% of pedestrians** involved in **fatal collisions had consumed alcohol prior to the collision** compared to **14.6% of pedestrians in injury collisions.**
- **20.2%** of drivers involved in fatal collisions **had consumed alcohol** prior to the crash compared to **4.9%** of drivers in injury collisions.
- Collision involved restraint users had a much lower injury rate (14.9%) than those not using restraints (37.6%).

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 2000. 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.

2000 Traffic Collision Summary

Introduction

During 2000, 104463 collisions were recorded on Alberta roadways. Property damage collisions (over $1000) represented 82.2% (85905) of this total while 17.5% (18246) were non-fatal injury collisions. Fatal collisions accounted for 0.3% (312) of the total reported collisions.

Five Year Trends

The fatality rate, in terms of 10,000 population for 2000 is unchanged from 1999 and stands at 1.2. The fatal collision rate is also unchanged at 1.0.

The non-fatal injury rate is up from 1999, in terms of population, licensed drivers and registered vehicles. The non-fatal injury collision rate in terms of population, licensed drivers and registered vehicles is also up from 1999.

In terms of 10,000 population, property damage and total collision rates have increased, standing at 286.6 and 348.5, respectively.

Provincial Comparisons

In order to get a clear picture of Alberta's traffic injuries in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance, casualty rates per 10,000 population were examined.

Of the five other provinces for which information was available three had higher fatality rates than Alberta in terms of 10,000 population. However, Alberta recorded the highest injury rate, followed by Prince Edward Island and Saskatchewan.

Table 1.1

Alberta Traffic Collisions

1996 - 2000

Severity of Collision	2000	1999	1998	1997	1996
Fatal Collisions	312	305	358	357	299
Non-Fatal Injury Collisions	18246	17398	16987	16231	14988
Property Damage Collisions	85905	77543	81256	75777	78545
Total Reportable Collisions	**104463**	**95246**	**98601**	**92365**	**93832**
Number Killed	364	347	429	429	349
Number Injured	26464	25451	24935	23916	22268
Total Number of Casualties	**26828**	**25798**	**25364**	**24345**	**22617**

Observations

In 2000, the overall number of collisions increased 9.7% when compared to 1999. In 2000, injury collisions increased 4.9% and fatal crashes increased by 2.3%. The number of fatalities increased by 4.9% from 1999 to 2000, and the number of injuries increased by 4.0%. In terms of the past five years, overall collisions were lowest in 1997 and highest in 2000.

Table 1.2

Traffic Collision Rates

1996 - 2000

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers*					Rate Per 10,000 Registered Vehicles*				
	2000	**1999**	**1998**	**1997**	**1996**	**2000**	**1999**	**1998**	**1997**	**1996**	**2000**	**1999**	**1998**	**1997**	**1996**
Fatal Collisions	1.0	1.0	1.2	1.3	1.1	1.4	1.4	1.7	1.7	1.5	1.4	1.4	1.7	1.7	1.5
Number Killed	1.2	1.2	1.5	1.5	1.3	1.6	1.6	2.0	2.1	1.7	1.6	1.6	2.0	2.1	1.8
Non-Fatal Injury Collisions	60.9	58.7	58.3	57.0	53.9	82.0	80.0	80.0	78.5	74.2	81.0	79.6	79.7	78.7	75.2
Number Injured	88.3	85.8	85.5	84.0	80.1	118.9	117.0	117.5	115.7	110.2	117.5	116.4	117.0	115.9	111.7
Property Damage Only Collisions	286.6	261.6	278.8	266.2	282.4	386.1	356.5	382.9	366.4	388.8	381.3	354.6	381.2	367.3	394.1
Total Reportable Collisions	**348.5**	**321.3**	**338.3**	**324.4**	**337.4**	**469.5**	**437.9**	**464.6**	**446.7**	**464.5**	**463.7**	**435.6**	**462.5**	**447.8**	**470.9**

Observations

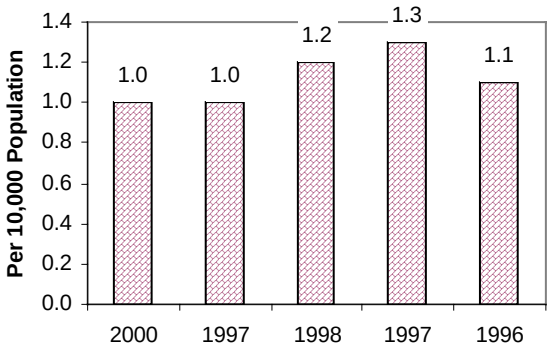
In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates are unchanged from 1999.

The non-fatal injury rate, has increased in 2000 in terms of population, licensed drivers and registered vehicles. The non-fatal injury collision rate has also increased in 2000.

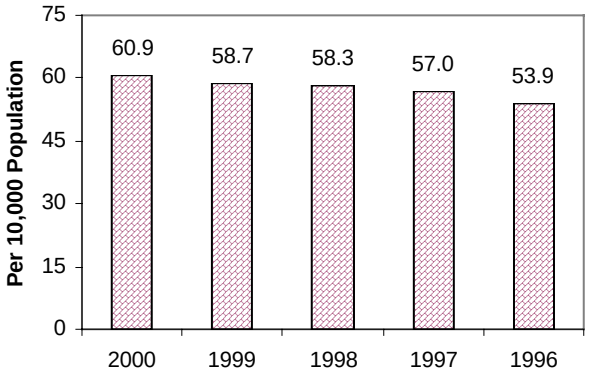
Property damage and total collision rates increased in 2000.

*Sources:
Population - Statistics Canada as of July 1, 2000.
Licensed Drivers – Government Services - Registries, as of December 31, 2000.
Registered Vehicles – Government Services - Registries, as of December 31, 2000.

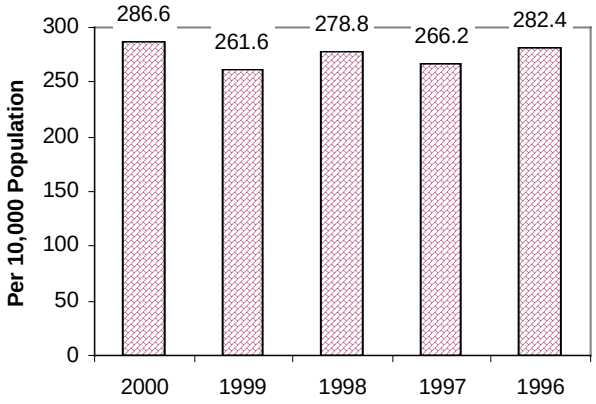
Fatal Collision Rates
Alberta 1996 - 2000



Injury Collision Rates
Alberta 1996-2000



Property Damage Collision Rates
Alberta 1996 - 2000



Overall Collision Rates
Alberta 1996 - 2000

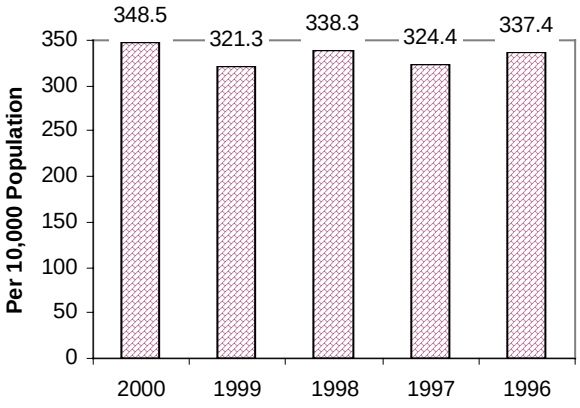


Figure 1

Table 1.3

Provincial Comparison of Casualty Rates Per 10,000 Population

1996 - 2000

	2000		1999		1998		1997		1996	
	Fatal	**Injury**	**Fatal**	**Injury**	**Fatal**	**Injury**	**Fatal**	**Injury**	**Fatal**	**Injury**
Alberta	1.2	88.3	1.2	85.8	1.5	85.5	1.5	84.0	1.3	80.1
British Columbia [1]	*	*	1.0	68.9	1.0	74.6	1.0	80.1	1.0	104.0
Saskatchewan	1.5	76.3	1.8	78.0	1.4	70.4	1.6	73.9	1.3	67.1
Manitoba	*	*	1.0	84.8	1.1	83.7	1.0	79.9	0.8	91.6
Ontario	*	*	0.8	73.0	0.7	*	0.8	75.0	0.8	78.5
Quebec [2]	1.0	69.8	1.0	65.8	1.0	64.1	1.1	64.4	1.2	64.5
New Brunswick	1.5	71.4	1.5	71.4	1.3	69.4	1.4	67.1	1.2	62.7
Nova Scotia	0.9	0.0	1.0	73.1	0.9	69.9	0.9	68.1	1.2	66.8
Prince Edward Island	1.4	85.2	1.4	78.9	1.5	67.2	1.5	65.7	1.4	61.5
Newfoundland	*	*	0.8	55.1	0.6	47.3	0.6	48.1	0.8	45.7

Observations

In order to get a clear picture of Alberta's traffic injuries in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance, casualty rates per 10,000 population were examined.

Of the five other provinces for which information was available three had higher fatality rates than Alberta in terms of 10,000 population. However, Alberta recorded the highest injury rate, followed by Prince Edward Island and Saskatchewan.

*Figures not available at time of printing.

(1) These figures represent only those casualty collisions attended and reported by the police. They underestimate the actual numbers of casualties.
(2) Figures for 1999 and 2000 are not comparable to previous years due to reporting changes.

Sources: Casualty statistics supplied by each province and may be subject to revision. Population estimates, as of July 1, 2000, Statistics Canada.

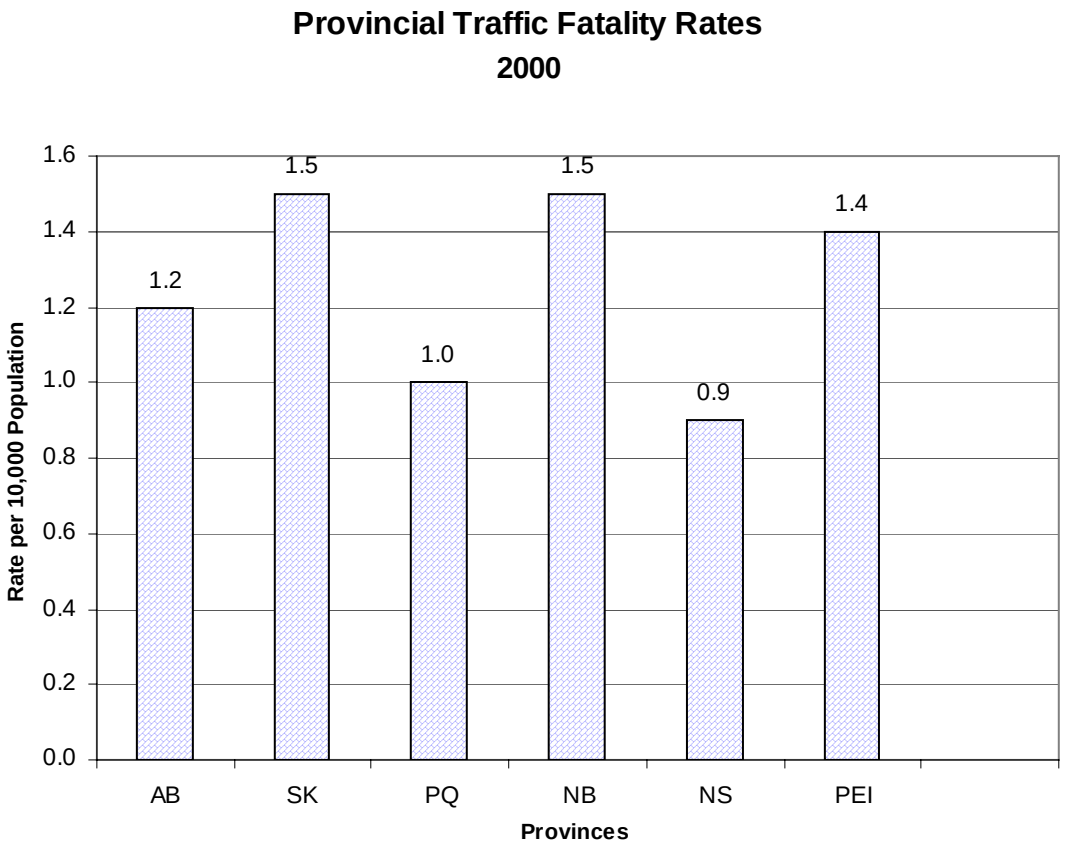

Provincial Traffic Fatality Rates
2000
Rate per 10,000 Population
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.2
1.5
1.0
1.5
0.9
1.4
AB
SK
PQ
NB
NS
PEI
Provinces

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 also 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. The largest number of fatal crashes also occurred on Friday.

Time

The afternoon rush hour period (3:00 p.m. - 6:59 p.m.) accounted for the highest proportion of collisions. The least collision-prone time period was the early morning (3:00 a.m. - 6:59 a.m.).

Holidays

The Canada Day Long Weekend recorded the highest number of individuals killed. The five day Christmas season recorded the highest number of injuries as well as the highest number of total collisions.

Table 2.1

Collision Occurrence by Month

2000

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	21	6.7	1597	8.8	9299	10.8	10917	10.5
February	16	5.1	1374	7.5	7253	8.4	8643	8.3
March	21	6.7	1318	7.2	6653	7.7	7992	7.7
April	19	6.1	1227	6.7	5514	6.4	6760	6.5
May	18	5.8	1441	7.9	5448	6.3	6907	6.6
June	26	8.3	1583	8.7	6287	7.3	7896	7.6
July	39	12.5	1532	8.4	6314	7.3	7885	7.5
August	27	8.7	1530	8.4	6037	7.0	7594	7.3
September	32	10.3	1659	9.1	6351	7.4	8042	7.7
October	28	9.0	1459	8.0	6743	7.8	8230	7.9
November	36	11.5	1645	9.0	8685	10.1	10366	9.9
December	29	9.3	1876	10.3	11119	12.9	13024	12.5
Unspecified	---	---	5	0.0	202	0.2	207	0.2
Total Number of Collisions	**312**	**100.00**	**18246**	**100.0**	**85905**	**100.0**	**104463**	**100.0**

Observations

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

Table 2.2

Collision Occurrence by Day of Week

2000

	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
Day of Week	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Monday	35	11.2	2553	14.0	11445	13.3	14033	13.4
Tuesday	26	8.3	2610	14.3	11823	13.8	14459	13.8
Wednesday	41	13.1	2794	15.3	12769	14.9	15604	14.9
Thursday	46	14.7	2799	15.3	13216	15.4	16061	15.4
Friday	67	21.5	3091	16.9	14776	17.2	17934	17.2
Saturday	55	17.6	2414	13.2	12218	14.2	14687	14.1
Sunday	42	13.5	1973	10.8	9395	10.9	11410	10.9
Unspecified	---	---	12	0.1	263	0.3	275	0.3
Total Number of Collisions	**312**	**100.0**	**18246**	**100.0**	**85905**	**100.0**	**104463**	**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 also occurred on Friday.

Table 2.3

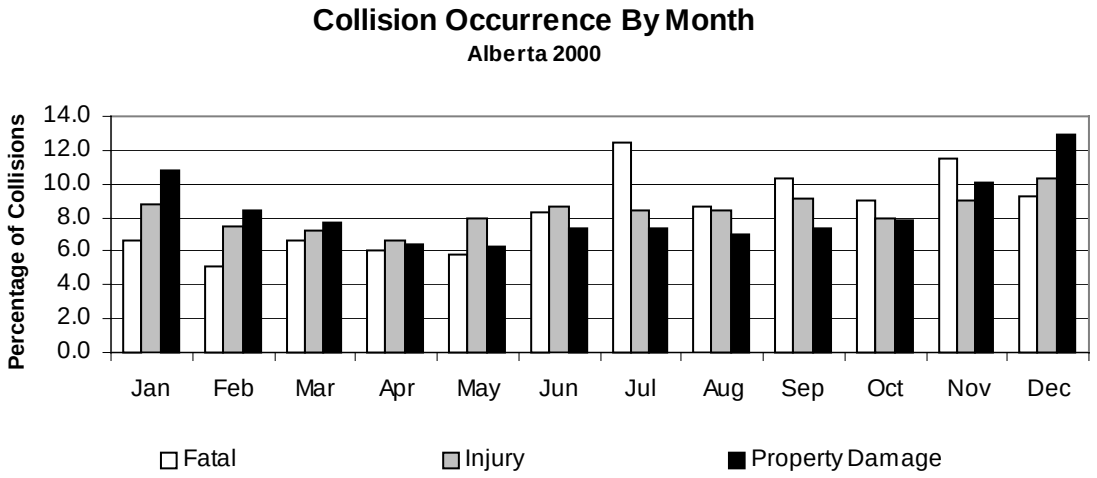
Collision Occurrence by Time Period

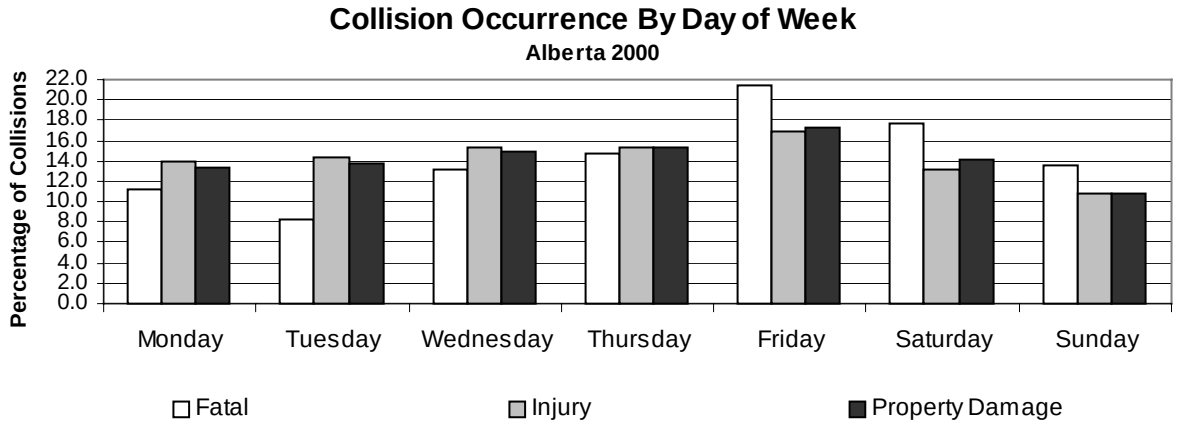
2000

	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.	57	18.3	1308	7.2	6959	8.1	8324	8.0
3:00 a.m.- 6:59 a.m.	32	10.3	830	4.5	4341	5.1	5203	5.0
7:00 a.m.- 10:59 a.m.	38	12.2	3059	16.8	14790	17.2	17887	17.1
11:00 a.m.- 2:59 p.m.	58	18.6	4209	23.1	19799	23.0	24066	23.0
3:00 p.m.- 6:59 p.m.	65	20.8	5930	32.5	24178	28.1	30173	28.9
7:00 p.m.- 10:59 p.m.	52	16.7	2740	15.0	14143	16.5	16935	16.2
Unspecified	10	3.2	170	0.9	1695	2.0	1875	1.8
Total Number of Collisions	**312**	**100.0**	**18246**	**100.0**	**85905**	**100.0**	**104463**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. - 6:59 p.m.) accounted for the largest percentage (28.9%) 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 2000
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 2000
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

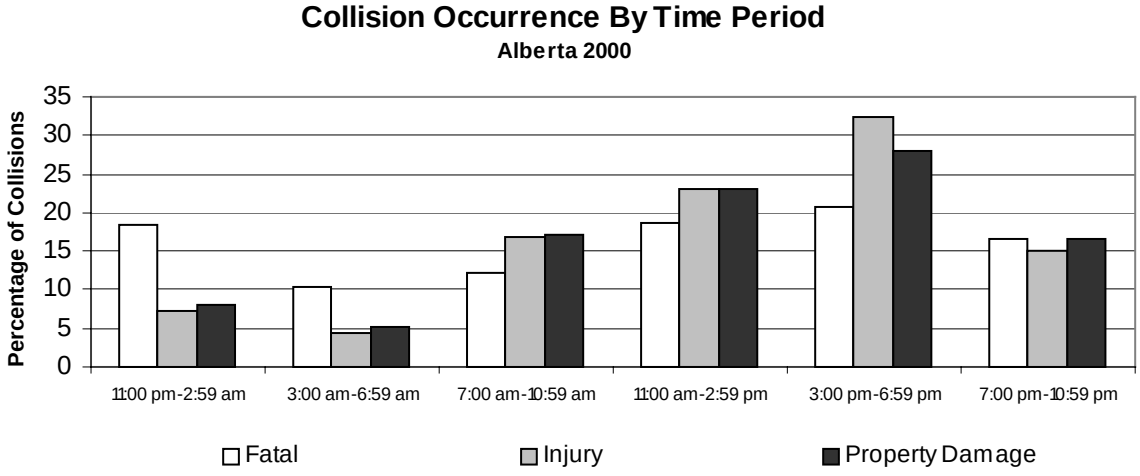

Collision Occurrence By Time Period
Alberta 2000
Percentage of Collisions
35
30
25
20
15
10
5
0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Figure 3

Table 2.4

Collisions During 2000 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	2	58	242
Family Day Long Weekend (February 18-21)	2	229	987
Easter Long Weekend (April 20-24)	6	286	887
Victoria Day Long Weekend (May 19-22)	3	260	754
Canada Day (June 30 – July 3)	7	305	950
August Long Weekend (August 4-7)	2	292	1016
Labour Day Long Weekend (September 1-4)	6	329	988
Thanksgiving Long Weekend (October 6-9)	3	226	954
Remembrance Day (November 10-13)	4	331	1460
Christmas Season (December 22-26)	2	385	1856
Total	**37**	**2701**	**10094**

Observations

The Canada Day Long Weekend recorded the highest number of individuals killed. The five day Christmas season recorded the highest number of injuries as well as the highest number of total 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 bicyclists accounted for 4.5% and 2.2% 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

2000

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	177	48.6	15904	60.1	16081	59.9
Passengers	109	29.9	7961	30.1	8070	30.1
Pedestrians	38	10.4	1179	4.5	1217	4.5
Bicyclists	4	1.1	583	2.2	587	2.2
Motorcyclists	14	3.8	514	1.9	528	2.0
Other	12	3.3	227	0.9	239	0.9
Unspecified	10	2.7	96	0.4	106	0.4
Total Casualties	**364**	**100.0**	**26464**	**100.0**	**26828**	**100.0**

Observations

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and bicyclists accounted for 4.5% and 2.2% of the total casualties, respectively.

Table 3.2

Age of Casualties

2000

Age In Years	Persons Killed N	Persons Killed %	Person Injured N	Person Injured %	Casualty Rate Per 10,000 Population*
Under 5	3	0.8	372	1.4	19.3
5 - 9	5	1.4	621	2.3	29.5
10 - 14	8	2.2	877	3.3	40.2
15 - 19	48	13.2	3920	14.8	178.8
20 - 24	34	9.3	3817	14.4	172.8
25 - 29	39	10.7	2848	10.8	128.3
30 - 34	33	9.1	2445	9.2	107.3
35 - 44	54	14.8	4775	18.0	90.9
45 - 54	45	12.4	3229	12.2	81.1
55 - 64	37	10.2	1579	6.0	69.1
65 and over	58	15.9	1446	5.5	49.9
Unspecified	---	---	535	2.0	
Total Casualties	**364**	**100.0**	**26464**	**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, 2000, Statistics Canada.

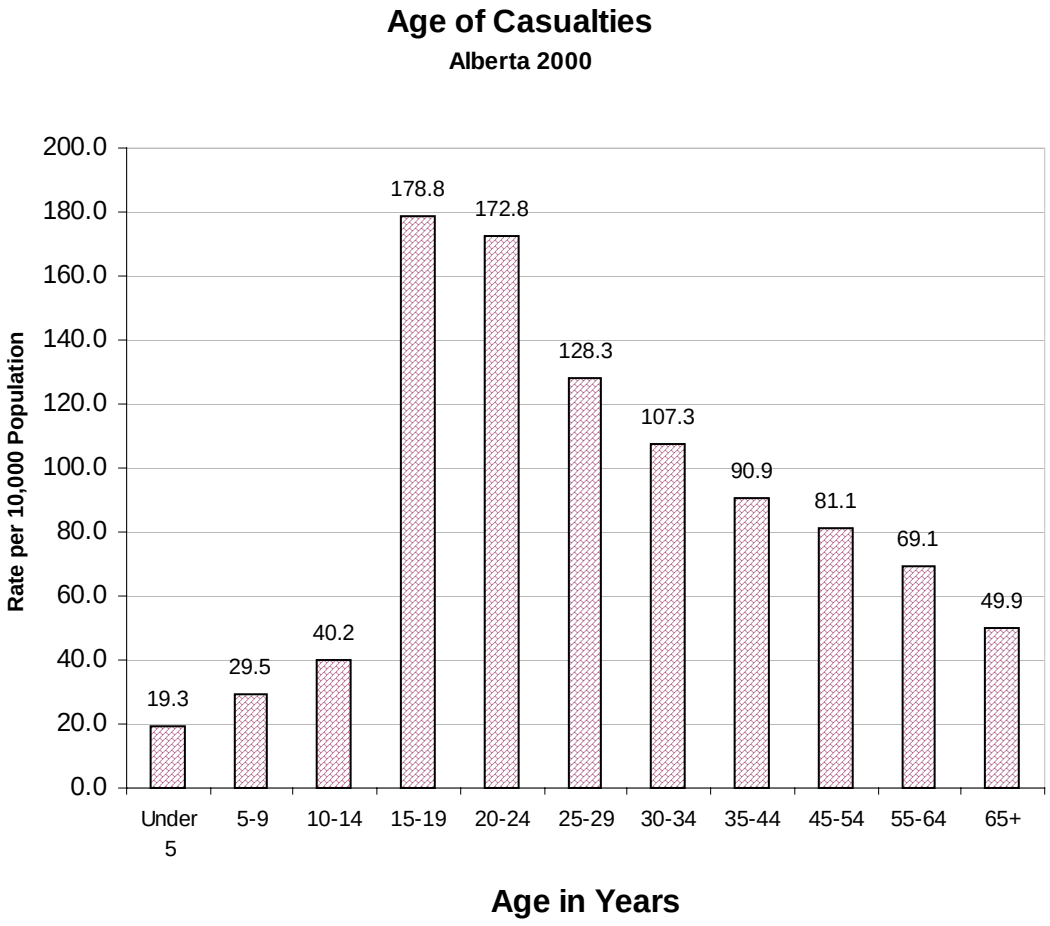

Age of Casualties
Alberta 2000
Rate per 10,000 Population
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
19.3
29.5
40.2
178.8
172.8
128.3
107.3
90.9
81.1
69.1
49.9
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Figure 4

Drivers

Age and Sex of Drivers

Collision rates per 1000 licensed drivers indicated that 16-19 year olds were more likely to be involved in a casualty collision than any other age group.

Driver Actions

Following too closely (26.5%), running off the road (13.2%) and left turn across path (11.8%) 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

2000

	Males			Females			Total*		
Age of Driver	**N**	**%**	**Per 1000* Licensed Drivers**	**N**	**%**	**Per 1000** Licensed Drivers**	**N**	**%**	**Per 1000** Licensed Drivers**
Under 16	219	0.6	14.2	88	0.3	7.1	308	0.9	11.1
16 – 17	997	2.9	30.4	728	2.1	25.7	1725	5.1	28.2
18 – 19	1500	4.4	37.2	871	2.6	24.0	2372	7.0	31.0
20 – 24	3025	8.9	27.0	1846	5.4	18.6	4873	14.3	23.0
25 – 34	4543	13.4	18.8	2905	8.6	13.3	7448	21.9	16.2
35 – 44	4448	13.1	16.0	2879	8.5	11.2	7330	21.6	13.7
45 - 54	3074	9.0	14.1	1893	5.6	9.7	4969	14.6	12.0
55 - 64	1611	4.7	13.2	780	2.3	7.4	2391	7.0	10.5
65 and over	1331	3.9	11.1	576	1.7	6.2	1908	5.6	8.9
Unspecified	150	0.4		53	0.2		655	1.9	
Total Number of Drivers	**20898**	**61.5**	**17.7**	**12619**	**37.1**	**12.1**	**33979**	**100.0**	

Observations

Collision rates per 1000 licensed drivers indicated that 18 to19 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 16 to 17 year olds.

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

**Source: Government Services - Registries. Operator Statistics, December 31, 2000

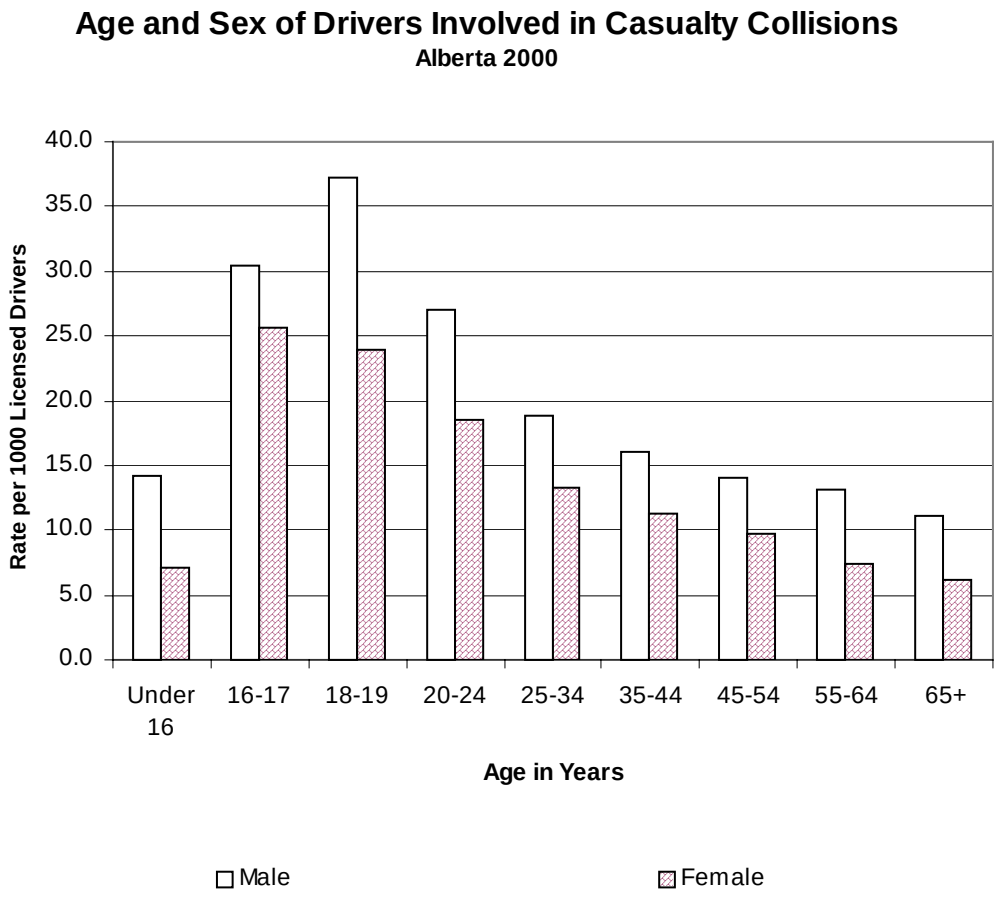

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2000
Rate per 1000 Licensed Drivers
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Under 16
16-17
18-19
20-24
25-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Figure 5

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2000

	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
Improper Actions	**N**	**%**	**N**	**%**	**N**	**%**
Followed Too Closely	4	1.7	3500	27.0	3504	26.5
Ran Off Road	87	36.6	1657	12.8	1744	13.2
Left Turn Across Path	15	6.3	1546	11.9	1561	11.8
Stop Sign Violation	35	14.7	1186	9.1	1221	9.2
Disobey Traffic Signal	8	3.4	1081	8.3	1089	8.2
Left of Centre	53	22.3	322	2.5	375	2.8
Fail to Yield Right of Way to Pedestrian	4	1.7	370	2.9	374	2.8
Improper Lane Change	3	1.3	338	2.6	341	2.6
Backed Unsafely	2	0.8	337	2.6	339	2.6
Improper Turn	1	0.4	289	2.2	290	2.2
Fail to Yield Right of Way Uncontrolled Intersection	2	0.8	287	2.2	289	2.2
Yield Sign Violation	3	1.3	275	2.1	278	2.1
Improper Passing	5	2.1	149	1.1	154	1.2
Other	16	6.7	1641	12.6	1657	12.5
Total Number of Drivers	**238**	**100.0**	**12978**	**100.0**	**13216**	**100.0**

Observations

Following too closely (26.5 %), running off the road (13.2%) and left turn across path (11.8%) 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.

Note: There was a total of 28162 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 14946 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (56.0%) and pickup trucks/vans (22.8%) 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 45.2% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2000

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	168	33.1	19184	56.3	19352	56.0
Pickup Truck/Van	162	32.0	7703	22.6	7865	22.8
Mini-Van/MPV	52	10.3	4461	13.1	4513	13.1
Truck 4500 kg+	27	5.3	723	2.1	750	2.2
Bicycle	4	0.8	589	1.7	593	1.7
Truck-Tractor	60	11.8	512	1.5	572	1.7
Motorcycle	14	2.8	476	1.4	490	1.4
Transit Bus	1	0.2	114	0.3	115	0.3
School Bus	4	0.8	73	0.2	77	0.2
Off Highway Vehicle	3	0.6	64	0.2	67	0.2
Emergency Vehicle	--	--	46	0.1	46	0.1
Construction Equipment	2	0.4	28	0.1	30	0.1
Other Bus	3	0.6	19	0.1	22	0.1
Motorhome	3	0.6	18	0.1	21	0.1
Farm Equipment	3	0.6	18	0.1	21	0.1
Motorized Snow Vehicle	1	0.2	19	0.1	20	0.1
Intercity Bus	--	--	4	0.0	4	0.0
Moped	--	--	3	0.0	3	0.0
Total Number of Vehicles	**507**	**100.0**	**34054**	**100.0**	**34561**	**100.0**

Observations

Passenger cars and pickup trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 1.7% and motorcycles 1.4% of the vehicles involved in casualty collisions. Truck tractors were 1.7% of total vehicles in casualty crashes, but 11.8% 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*

2000

	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
Vehicular Factors	**N**	**%**	**N**	**%**	**N**	**%**
No Apparent Defect	402	97.8	27841	99.2	28243	99.2
Defective Brakes	2	0.5	75	0.3	77	0.3
Tires Failed	1	0.2	27	0.1	28	0.1
Lighting Defect	1	0.2	21	0.1	22	0.1
Improper Load/Shift	1	0.2	13	0.0	14	0.0
Other	4	1.0	80	0.3	84	0.3
Total Number of Vehicles	**411**	**100.0**	**28057**	**100.0**	**28468**	**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*

2000

Point of Impact	Vehicles In Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Centre Front	219	45.2	14060	45.2	14279	45.2
Centre Rear	16	3.3	7065	22.7	7081	22.4
Left Front	39	8.0	2121	6.8	2160	6.8
Right Front	21	4.3	2072	6.7	2093	6.6
Rollover	89	18.4	1400	4.5	1489	4.7
Left Side	26	5.4	1242	4.0	1268	4.0
Right Side	35	7.2	1203	3.9	1238	3.9
Right Rear	4	0.8	785	2.5	789	2.5
Left Rear	11	2.3	738	2.4	749	2.4
Attachment	18	3.7	218	0.7	236	0.7
Undercarriage	6	1.2	126	0.4	132	0.4
Top	1	0.2	59	0.2	60	0.2
Total Number of Vehicles	**485**	**100.0**	**31089**	**100.0**	**31574**	**100.0**

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 45.2% of the impacts involved the centre front, while 22.4% 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 (72.4%) occurred in rural areas, whereas the majority of injury (81.2%) and property damage (80.6%) crashes occurred in urban areas.

Surface Conditions

The majority (62.2%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.3% of fatal collisions and 20.7% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2000

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	86	27.6	14821	81.2	69280	80.6	84187	80.6
Rural	226	72.4	3425	18.8	16625	19.4	20276	19.4
Total Number of Collisions	**312**	**100.0**	**18246**	**100.0**	**85905**	**100.0**	**104463**	**100.0**

Observations

Collisions which occurred in rural areas accounted for 72.4% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (81.2%) and property damage crashes (80.6%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2000

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Surface Condition	**N**	**%**	**N**	**%**	**N**	**%**
Dry	215	68.9	11324	62.1	11539	62.2
Slush/Snow/Ice	51	16.3	3774	20.7	3825	20.6
Wet	16	5.1	1736	9.5	1752	9.4
Loose Surface Material	16	5.1	344	1.9	360	1.9
Muddy	1	0.3	27	0.1	28	0.2
Other	4	1.3	80	0.4	84	0.5
Unspecified	9	2.9	961	5.3	970	5.2
Total Number of Collisions	**312**	**100.0**	**18246**	**100.0**	**18558**	**100.0**

Observations

The majority (62.2%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.3% of fatal collisions and 20.7% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- Based on motorcycle registrations, the involvement rate of motorcycles in fatal collisions has increased in 2000. The involvement rate for non-fatal injury collisions has decreased since 1999.

- 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 and 17 year old motorcycle drivers had an involvement rate per 1000 licensed driver of 71.2, a rate almost five times greater than that of the 20-24 year old motorcycle drivers.

- Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn or disobey a traffic control device.

- 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 1.4% 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

1996 - 2000

Number of Motorcycles	**2000**	**1999**	**1998**	**1997**	**1996**
Fatal	14	11	24	7	11
Non-Fatal Injury	476	447	463	385	334
Total Number of Motorcycles Involved in Casualty Collisions	**490**	**458**	**487**	**392**	**345**
Casualties*					
Number Killed	14	10	26	8	11
Number Injured	540	509	528	454	397
Total Casualties in Collisions Involving Motorcycles	**554**	**519**	**554**	**462**	**408**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	3.2	2.8	6.4	2.0	3.2
Non-Fatal Injury Collisions	109.3	112.9	123.4	109.0	98.0

Observations

Based on motorcycle registrations, the involvement rate of motorcycles in fatal collisions has increased and the involvement rate in injury collisions has decreased in 2000.

*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, 2000.

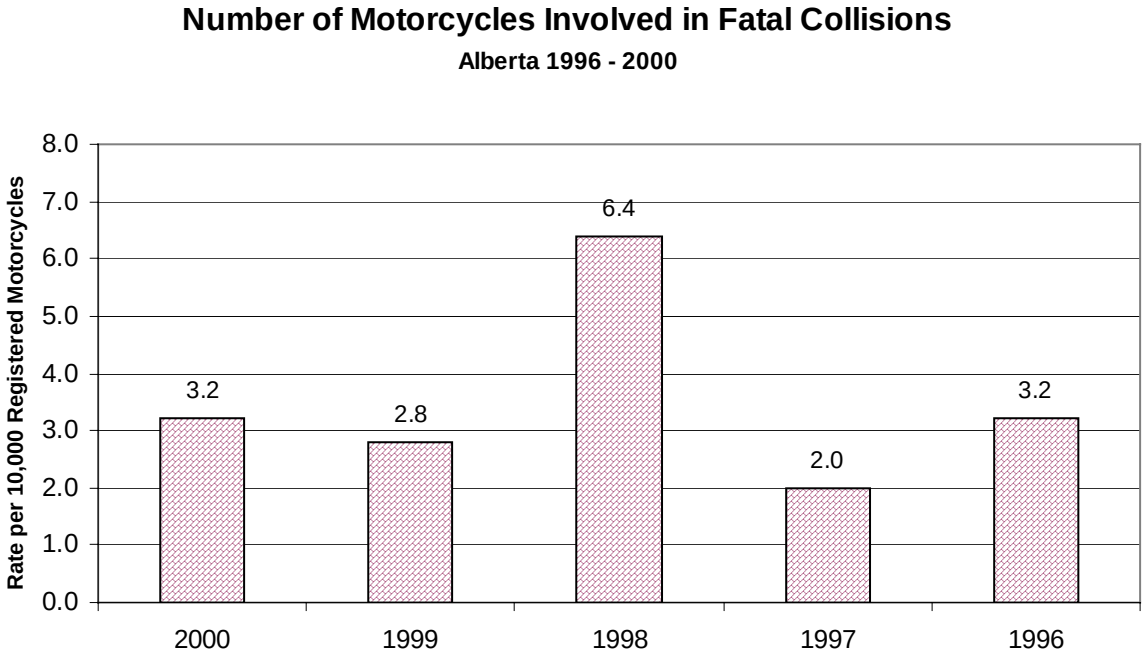

Number of Motorcycles Involved in Fatal Collisions
Alberta 1996 - 2000
Rate per 10,000 Registered Motorcycles
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
3.2
2.8
6.4
2.0
3.2
2000
1999
1998
1997
1996

Figure 6

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2000

Age of Motorcycle Driver	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
	N	%	N	%	N	%	
Under 16	6	1.2	--	--	6	1.2	
16 - 17	22	4.5	--	--	22	4.5	71.2
18 - 19	43	8.8	1	0.2	44	9.0	43.1
20 - 24	104	21.2	2	0.4	106	21.6	14.6
25 - 34	109	22.2	8	1.6	117	23.9	3.5
35 - 44	84	17.1	9	1.8	93	19.0	1.4
45 - 54	73	14.9	2	0.4	75	15.3	1.4
55 - 64	19	3.9	1	0.2	20	4.1	1.2
65 and over	2	0.4	--	--	2	0.4	0.2
Unspecified	1	0.2	---	---	5	1.0	
Total Number of Motorcycle Drivers	**463**	**94.5**	**23**	**4.7**	**490**	**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 and 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, 2000.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2000

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	82	40.4	13.2
Followed Too Closely	29	14.3	26.5
Improper Passing	8	3.9	1.2
Left of Center	5	2.5	2.8
Stop Sign Violation	5	2.5	9.2
Disobey Traffic Signal	5	2.5	8.2
Improper Turn	5	2.5	2.2
Left Turn Across Path	4	2.0	11.8
Improper Lane Change	4	2.0	2.6
Failed to Yield Right of Way Uncontrolled Intersection	2	1.0	2.2
Yield Sign Violation	2	1.0	2.1
Other	52	25.6	17.9
Total Number of Motorcycle Drivers	**203**	**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 disobey a traffic control device.

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

Note: There was a total of 403 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 200 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers* Involved in Casualty Collisions

2000

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	386	90.6	93.6
Had Been Drinking	26	6.1	2.6
Alcohol Impaired	12	2.8	2.6
Total Alcohol Involvement	**38**	**8.9**	**5.2**
Fatigued/Asleep	1	0.2	0.8
Other	1	0.2	0.5
Total Number of Motorcycle Drivers	**426**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 9.4% 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

2000

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	437	98.6	99.2
Defective Brakes	1	0.2	0.3
Tires Failed	1	0.2	0.1
Other	4	0.9	0.4
Total Number of Motorcycles	**443**	**100.0**	

Observations

Vehicular factors were identified for 1.4% 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

2000

Month	N	%
January	---	---
February	1	0.2
March	14	2.9
April	35	7.3
May	65	13.6
June	77	16.1
July	114	23.8
August	74	15.5
September	62	13.0
October	29	6.1
November	5	1.0
December	--	--
Unspecified	2	0.4
Total Number of Collisions	**478**	**100.0**

Observations

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

Table 7.7

Casualty Collisions Involving Motorcycles:

Road Surface Condition

2000

Road Surface Condition	N	%
Dry	417	87.2
Wet	28	5.9
Loose Surface Material	18	3.8
Slush/Snowy/Icy	1	0.2
Other	1	0.2
Unspecified	13	2.7
Total Number of Collisions	**478**	**100.0**

Observations

The majority of casualty collisions involving motorcycles occurred on dry roads. Wet roads were the scene of 5.9% of motorcycle casualty collisions. Loose material on the road surface was involved in 3.8% of motorcycle casualty crashes.

Special Types of Vehicles

Truck Tractors

- In 2000 there were 76 persons killed and 740 injured in collisions involving truck tractors. This represents an increase in casualties from 1999.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change or pass improperly. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, violate a stop sign or disobey a traffic control device.
- 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 December.

Table 7.8

Truck Tractors Involved in Casualty Collisions

1996- 2000

Number of Truck Tractors	**2000**	**1999**	**1998**	**1997**	**1996**
Fatal	60	41	48	68	35
Non-Fatal Injury	512	445	523	545	464
Total Number of Truck Tractors Involved in Casualty Collisions	**572**	**486**	**571**	**613**	**499**
Casualties*					
Number Killed	76	48	57	86	45
Number Injured	740	606	687	741	645
Total Casualties in Collisions Involving Truck Tractors	**816**	**654**	**744**	**827**	**690**

Observations

In 2000 there were 76 persons killed and 740 injured in collisions involving truck tractors. This represents an increase in casualties from 1999. The total number of truck tractors involved in casualty crashes increased in 2000 standing at 572 compared to the five-year high of 613 recorded in 1997.

*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
2000

Improper Driver Actions	N	%	Driver Actions in Total Casualty Collisions (All Types of Vehicles) %
Ran Off Road	63	34.4	13.2
Followed Too Closely	26	14.2	26.5
Left Turn Across Path	16	8.7	11.8
Stop Sign Violation	10	5.5	9.2
Disobey Traffic Signal	9	4.9	8.2
Improper Lane Change	9	4.9	2.6
Improper Turn	6	3.3	2.2
Left of Center	5	2.7	2.8
Improper Passing	5	2.7	1.2
Backed Unsafely	5	2.7	2.6
Failed to Yield Right of Way – Uncontrolled Intersection	3	1.6	2.2
Yield Sign Violation	1	0.5	2.1
Other	25	13.7	15.3
Total Number of Drivers	**183**	**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 pass improperly. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, violate a stop sign or disobey a traffic control device.

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

Note: There was a total of 469 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 286 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

2000

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Types of Vehicles) %
Normal	456	95.4	93.6
Had Been Drinking	3	0.6	2.6
Alcohol Impaired	5	1.0	2.6
Total Alcohol Involvement	**8**	**1.7**	**5.2**
Fatigued/Asleep	11	2.3	0.8
Other	3	0.6	0.5
Total Number of Drivers	**478**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 1.7% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions. However, they were more likely to have been fatigued or asleep at the time of the crash.

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

Table 7.11

Casualty Collisions Involving Truck Tractors:

Vehicular Factors* of Truck Tractors Involved in Casualty Collisions

2000

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Types of Vehicles) %
No Apparent Defect	479	97.0	99.2
Defective Brakes	5	1.0	0.3
Improper Load/Shift	3	0.6	0.0
Tires Failed	2	0.4	0.1
Lighting Defect	1	0.2	0.1
Other	4	0.8	0.3
Total Number of Truck Tractors	**494**	**100.0**	

Observations

Vehicular factors were identified for 3.0% 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

2000

Month	N	%
January	40	7.3
February	49	8.9
March	43	7.8
April	31	5.7
May	35	6.4
June	56	10.2
July	40	7.3
August	55	10.0
September	46	8.4
October	40	7.3
November	40	7.3
December	73	13.3
Total Number of Collisions	**548**	**100.0**

Observations

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

Special Types of Vehicles

Trains

- In 2000, 4 people were killed and 34 people were injured in crashes in which a train was involved. The number of casualties involving trains has increased from 1999.
- The largest number of casualty collisions involving trains occurred in the month of December.
- A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

Table 7.13

Trains Involved in Casualty Collisions

1996 - 2000

Number of Trains	2000	1999	1998	1997	1996
Fatal	3	3	5	3	5
Non-Fatal Injury	20	19	26	29	33
Total Number of Trains Involved in Casualty Collisions	**23**	**22**	**31**	**32**	**38**
Casualties*					
Number Killed	4	4	5	4	6
Number Injured	34	27	50	39	42
Total Casualties in Collisions Involving Trains	**38**	**31**	**55**	**43**	**48**

Observations

The number of trains involved in casualty collisions increased slightly from 1999. The number of casualties resulting from these collisions has also increased.

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

Table 7.14

Casualty Collisions Involving Trains:

Month of Occurrence

2000

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	--	--	2	10.0	2	8.7
February	--	--	1	5.0	1	4.3
March	--	--	1	5.0	1	4.3
April	--	--	2	10.0	2	8.7
May	--	--	2	10.0	2	8.7
June	--	--	--	--	--	--
July	1	33.3	2	10.0	3	13.0
August	--	--	1	5.0	1	4.3
September	--	--	--	--	--	--
October	1	33.3	3	15.0	4	17.4
November	--	--	2	10.0	2	8.7
December	1	33.3	4	20.0	5	21.7
Total Number of Collisions	**3**	**100.0**	**20**	**100.0**	**23**	**100.0**

Observations

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

Table 7.15

Casualty Collisions Involving Trains:

Actions* of Drivers Involved in Casualty Collisions with Trains

2000

	Drivers in Fatal Collisions		Driver in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
Driver Actions	**N**	**%**	**N**	**%**	**N**	**%**
Disobey Traffic Signal	1	50.0	7	41.2	8	42.1
Failed to Yield Right of Way Uncontrolled Intersection	--	--	1	5.9	1	5.3
Stop Sign Violation	--	--	4	23.5	4	21.1
Ran Off Road	1	50.0	--	--	1	5.3
Driving Properly	--	--	4	23.5	4	21.1
Follow to Close	--	--	1	5.9	1	5.3
Total Number of Drivers	**2**	**100.0**	**17**	**100.0**	**19**	**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 September to November. November accounted for the largest number of collisions, while March experienced the least number of pedestrian crashes.
- Pedestrian casualty collisions were most likely to occur on Friday and least likely to occur on Sunday.
- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period (3:00 p.m. to 6:59 p.m.).
- 33.7% 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, 14.6% had consumed alcohol before the collision, compared to 76.9% 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 20-29 years of age.

Table 8.1

Casualty Collisions Involving Pedestrians:

Month of Occurrence

2000

Month of Collision	N	%
January	107	9.1
February	81	6.9
March	68	5.8
April	76	6.5
May	72	6.1
June	86	7.3
July	99	8.4
August	94	8.0
September	124	10.6
October	123	10.5
November	128	10.9
December	114	9.7
Total Number of Collisions	**1172**	**100.0**

Observations

Pedestrian casualty collisions were more likely to occur from September to November. November accounted for the largest number of collisions, while March experienced the least number of pedestrian crashes.

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2000

Day of Week	N	%
Monday	145	12.4
Tuesday	168	14.3
Wednesday	179	15.3
Thursday	191	16.3
Friday	210	17.9
Saturday	158	13.5
Sunday	121	10.3
Total Number of Collisions	**1172**	**100.0**

Observations

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

Table 8.3

Casualty Collisions Involving Pedestrians:

Time Period

2000

Time Period	N	%
11:00 p.m. - 2:59 a.m.	111	9.5
3:00 a.m. - 6:59 a.m.	51	4.4
7:00 a.m. - 10:59 a.m.	185	15.8
11:00 a.m. - 2:59 p.m.	237	20.2
3:00 p.m. - 6:59 p.m.	360	30.7
7:00 p.m. - 10:59 p.m.	221	18.9
Unspecified	7	0.6
Total Number of Collisions	**1172**	**100.0**

Observations

Pedestrian casualty collisions were most likely to occur during the evening rush-hour period from 3:00 p.m. to 6:59 p.m. These collisions were least likely to occur during the early morning hours (3:00 a.m. to 6:59 a.m.).

Table 8.4

Casualty Collisions Involving Pedestrians:

Location

2000

Location	N	%
Urban	1114	95.1
Rural	58	4.9
Total Number of Collisions	**1172**	**100.0**

Observations

The majority of pedestrian casualty collisions (95.1%) occurred in urban areas. Only 4.9% occurred in rural areas.

Table 8.5

Casualty Collisions Involving Pedestrians:

Actions* of Drivers Involved in Casualty Collisions with Pedestrians

2000

Driver Actions	N	%
Driving Properly	415	42.2
Failed to Yield Right of Way To Pedestrian	331	33.7
Backed Unsafely	88	9.0
Ran Off Road	18	1.8
Disobey Traffic Signal	15	1.5
Stop Sign Violation	10	1.0
Improper Turn	10	1.0
Improper Passing	8	0.8
Followed Too Closely	8	0.8
Left Turn Across Path	6	0.6
Failed to Yield Right of Way Uncontrolled Intersection	5	0.5
Left of Centre	4	0.4
Yield Sign Violation	2	0.2
Improper Lane Change	1	0.1
Other	62	6.3
Total Number of Drivers	**983**	**100.0**

Observations

42.2% of the drivers involved in pedestrian crashes were recorded as driving properly. However, 33.7% of the drivers involved in pedestrian casualty collisions failed to yield the right of way to the pedestrian.

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

Table 8.6

Age of Pedestrian Casualties

2000

Age in Years	Pedestrians Killed N	Pedestrians Injured N	Total Pedestrian Casualties N	%	Pedestrian Casualty Rate Per 10,000 Population*
Under 5	1	33	34	2.8	1.8
5 – 9	--	75	75	6.2	3.5
10 – 14	1	109	110	9.0	5.0
15 – 19	3	164	167	13.7	7.5
20 – 24	1	135	136	11.2	6.1
25 – 29	2	110	112	9.2	5.0
30 – 34	5	73	78	6.4	3.4
35 – 44	6	176	182	15.0	3.4
45 – 54	5	119	124	10.2	3.1
55 – 64	6	75	81	6.7	3.5
65 and over	8	86	94	7.7	3.1
Unspecified	--	24	24	2.0	
Total Number of Pedestrian Casualties	**38**	**1179**	**1217**	**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, 2000, Statistics Canada.

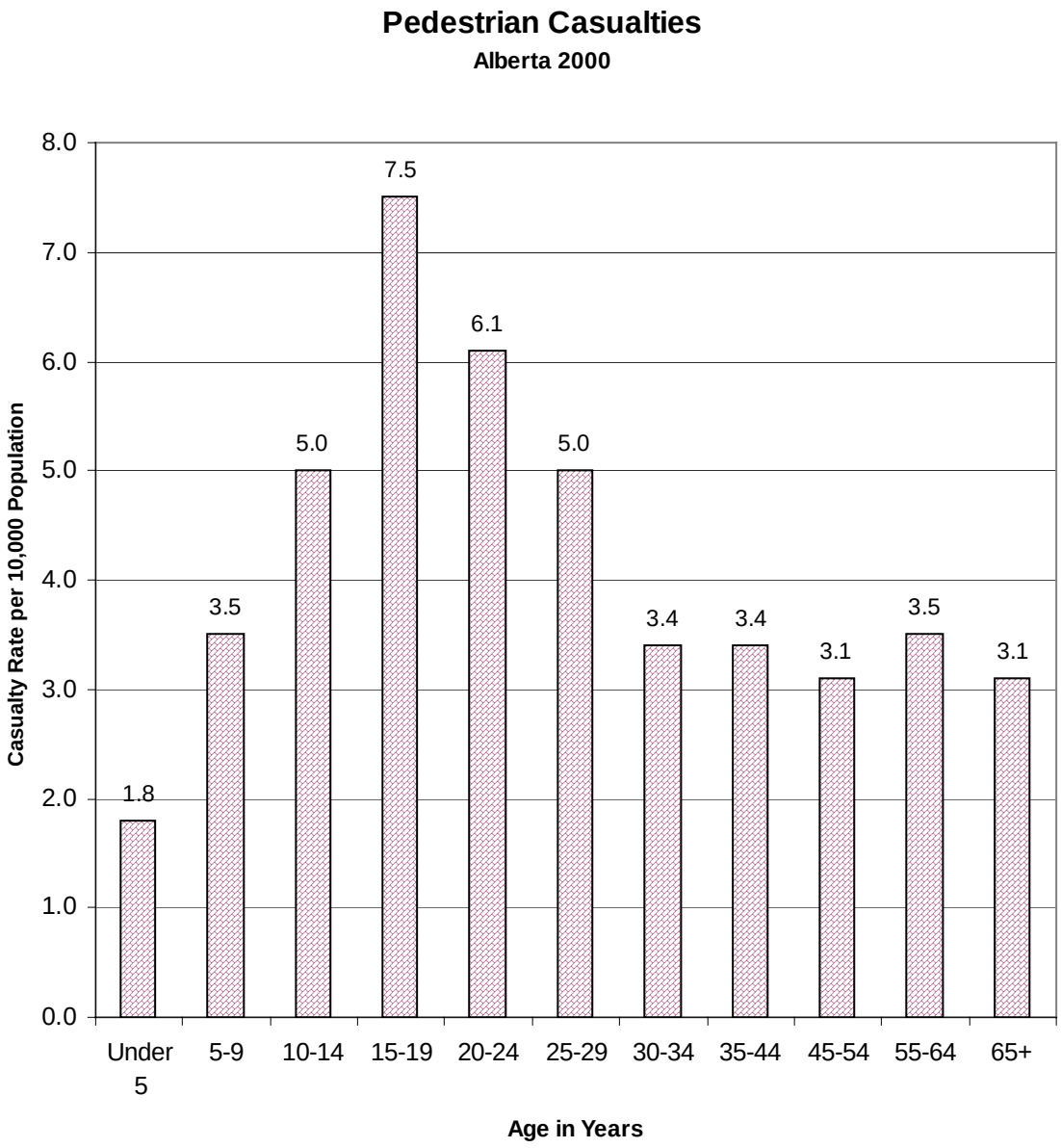

Pedestrian Casualties
Alberta 2000
Casualty Rate per 10,000 Population
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1.8
3.5
5.0
7.5
6.1
5.0
3.4
3.4
3.1
3.5
3.1
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Figure 7

Table 8.7

Condition of Pedestrians* Involved in Casualty Collisions

2000

	Pedestrians in Fatal Collisions		Pedestrians in Non-Fatal Injury Collisions		Total Pedestrians in Casualty Collisions	
Condition of Pedestrian	**N**	**%**	**N**	**%**	**N**	**%**
Normal	6	23.1	812	83.9	818	82.3
Had Been Drinking	13	50.0	65	6.7	78	7.8
Alcohol Impaired	7	26.9	76	7.9	83	8.4
Total Alcohol Involvement	**20**	**76.9**	**141**	**14.6**	**161**	**16.2**
Drugs	--	--	1	0.1	1	0.1
Fatigued	--	--	2	0.2	2	0.2
Other	--	--	12	1.2	12	1.2
Total Number of Pedestrians	**26**	**100.0**	**968**	**100.0**	**994**	**100.0**

Observations

Of pedestrians involved in injury collisions, 14.6% had consumed alcohol before the collision, compared to 76.9% 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

2000

Age in Years	N	%	Rate per 10,000 Population**
10-14	--	--	--
15 - 19	19	11.8	0.9
20 - 24	24	14.9	1.1
25 - 29	25	15.5	1.1
30 - 34	19	11.8	0.8
35 - 44	40	24.8	0.8
45 - 54	15	9.3	0.4
55 - 64	13	8.1	0.6
65 and over	2	1.2	0.1
Unspecified	4	2.5	
Total Number of Pedestrian Casualties	**161**	**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 20-29 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, 2000, Statistics Canada.

Bicyclists

- Casualty collisions involving bicycles were more likely to occur in the month of July.
- Weekdays experienced the most casualty collisions involving bicycles. As well, the largest number of these crashes (39.4%) occurred during the evening rush-hour period.
- Young bicyclists, 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, be left of centre or disobey a traffic signal.
- 4.3% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2000

Month	N	%
January	10	1.7
February	11	1.9
March	19	3.2
April	44	7.5
May	72	12.3
June	90	15.3
July	101	17.2
August	81	13.8
September	77	13.1
October	51	8.7
November	26	4.4
December	5	0.9
Total Number of Collisions	**587**	**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

2000

Day of Week	N	%
Monday	100	17.0
Tuesday	81	13.8
Wednesday	107	18.2
Thursday	91	15.5
Friday	97	16.5
Saturday	57	9.7
Sunday	54	9.2
Total Number of Collisions	**587**	**100.0**

Observations

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

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2000

Time Period	N	%
11:00 p.m. - 2:59 a.m.	22	3.7
3:00 a.m. - 6:59 a.m.	12	2.0
7:00 a.m. - 10:59 a.m.	102	17.4
11:00 a.m. - 2:59 p.m.	117	19.9
3:00 p.m. - 6:59 p.m.	231	39.4
7:00 p.m. - 10:59 p.m.	97	16.5
Unspecified	6	1.0
Total Number of Collisions	**587**	**100.0**

Observations

The largest proportion of casualty crashes (39.4%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

Table 9.4

Age and Sex of Bicyclists Involved in Casualty Collisions

2000

Age of Bicyclist	Male		Female		Total*	
	N	%	N	%	N	%
Under 5	3	0.5	1	0.2	4	0.7
5 - 9	41	6.9	17	2.9	58	9.8
10 - 14	90	15.2	26	4.4	116	19.6
15 - 19	59	9.9	23	3.9	82	13.8
20 - 24	63	10.6	27	4.6	90	15.2
25 - 29	42	7.1	12	2.0	54	9.1
30 - 34	19	3.2	15	2.5	34	5.7
35 - 44	56	9.4	13	2.2	69	11.6
45 - 54	38	6.4	8	1.3	46	7.8
55 - 64	8	1.3	2	0.3	10	1.7
65 and over	5	0.8	3	0.5	8	1.3
Unspecified	14	2.4	2	0.3	22	3.7
Total Number of Bicyclists	**438**	**73.9**	**149**	**25.1**	**593**	**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*

2000

Improper Actions of Bicyclist	N	%	Driver Actions In Total Casualty Collisions (All Vehicle Types) %
Failed to Yield Right of Way Uncontrolled Intersection	41	14.7	2.2
Disobey Traffic Signal	31	11.2	8.2
Left of Center	31	11.2	2.8
Stop Sign Violation	21	7.6	9.2
Improper Lane Change	11	4.0	2.6
Left Turn Across Path	10	3.6	11.8
Yield Sign Violation	6	2.2	2.1
Ran Off Road	5	1.8	13.2
Improper Passing	4	1.4	1.2
Failed to Yield Right of Way to Pedestrian	4	1.4	2.8
Improper Turn	3	1.1	2.2
Followed Too Closely	3	1.1	26.5
Other	108	38.8	15.1
Total Number of Bicyclists	**278**	**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, be left of centre or disobey a traffic signal.

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

Note: There was a total of 438 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 160 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2000

Condition of Bicyclist	N	%
Normal	484	94.9
Had Been Drinking	16	3.1
Alcohol Impaired	6	1.2
Total Alcohol Involvement	**22**	**4.3**
Other	4	0.8
Total Number of Bicyclists	**510**	**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 4.9% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 20.2% 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 21 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 2000, 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, 1996-2000.

Table 10.1

Condition of Drivers in Casualty Collisions*

2000

	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
Condition of Driver	**N**	**%**	**N**	**%**	**N**	**%**
Normal	301	77.8	25679	93.8	25980	93.6
Had Been Drinking	36	9.3	684	2.5	720	2.6
Alcohol Impaired	42	10.9	668	2.4	710	2.6
Total Alcohol Involvement	**78**	**20.2**	**1352**	**4.9**	**1430**	**5.2**
Impaired by Drugs	2	0.5	18	0.1	20	0.1
Fatigued/Asleep	5	1.3	204	0.7	209	0.8
Other	1	0.3	119	0.4	120	0.4
Total Number of Drivers	**387**	**100.0**	**27372**	**100.0**	**27759**	**100.0**

Observations

Of drivers involved in injury collisions, 4.9% had consumed alcohol before the crash, compared to 20.2% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 5.2% 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).

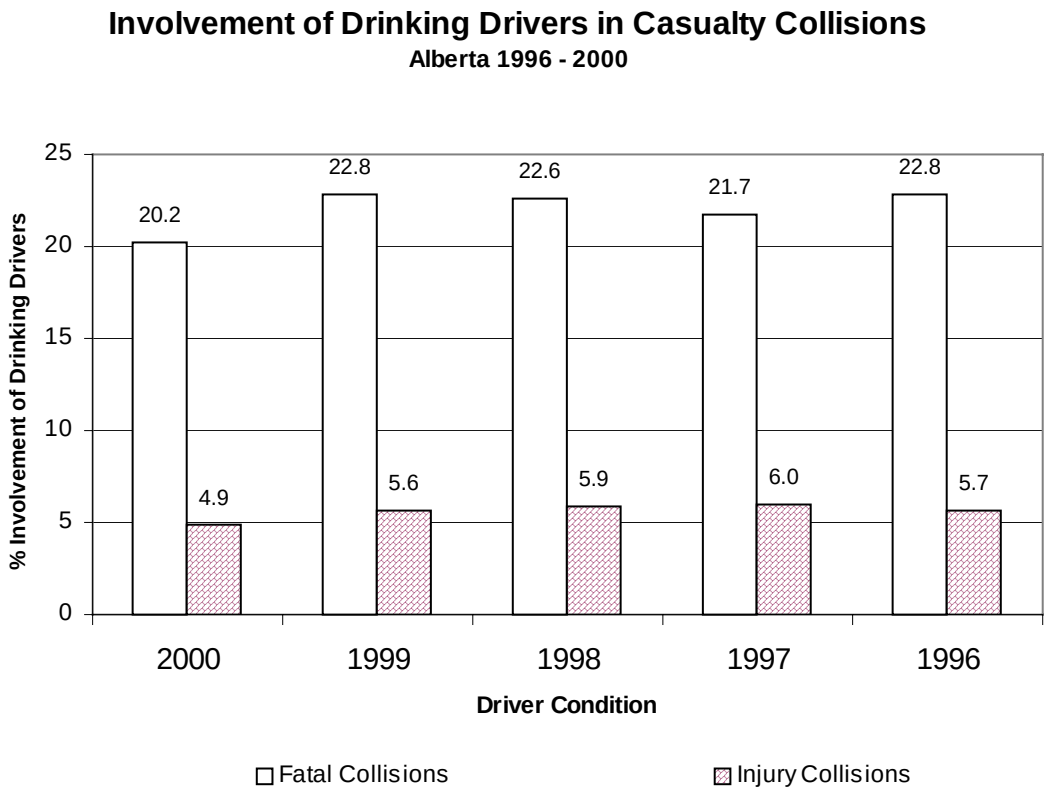

Involvement of Drinking Drivers in Casualty Collisions
Alberta 1996 - 2000
% Involvement of Drinking Drivers
25
20
15
10
5
0
20.2
4.9
22.8
5.6
22.6
5.9
21.7
6.0
22.8
5.7
2000
1999
1998
1997
1996
Driver Condition
Fatal Collisions
Injury Collisions

Figure 8

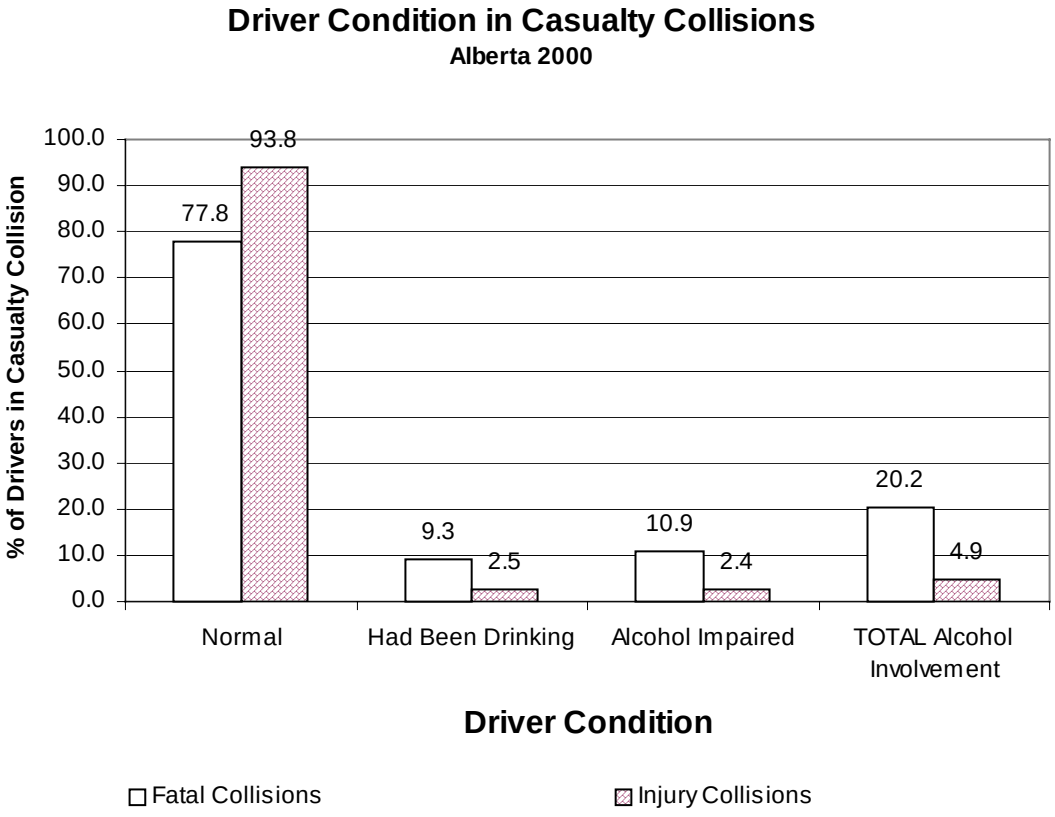

Driver Condition in Casualty Collisions
Alberta 2000
% of Drivers in Casualty Collision
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
77.8
93.8
9.3
2.5
10.9
2.4
20.2
4.9
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2000

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	8	0.6	0.5	4	0.3	0.3	12	0.8	0.4
16 - 17	38	2.7	1.2	17	1.2	0.6	55	3.8	0.9
18 - 19	130	9.1	3.2	24	1.7	0.7	154	10.8	2.0
20 - 21	103	7.2	2.4	10	0.7	0.3	113	7.9	1.4
22 - 24	132	9.2	1.9	30	2.1	0.5	162	11.3	1.2
25 - 29	176	12.3	1.5	34	2.4	0.3	210	14.7	0.9
30 - 34	152	10.6	1.3	29	2.0	0.3	181	12.7	0.8
35 - 44	241	16.9	0.9	65	4.5	0.3	306	21.4	0.6
45 - 54	122	8.5	0.6	27	1.9	0.1	150	10.5	0.4
55 - 64	41	2.9	0.3	7	0.5	0.1	48	3.4	0.2
65 and over	16	1.1	0.1	3	0.2	0.0	19	1.3	0.1
Unspecified	3	0.2	--	2	0.1	--	20	1.4	--
Total Drivers	**1162**	**81.3**		**252**	**17.6**		**1430**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over four times as many male drivers as female drivers. The majority were male drivers between 25 and 44 years of age. In terms of involvement per 1,000 licensed drivers, males 18-21 years of age were more likely to have consumed alcohol prior to a casualty collision than any other age group.

Drinking drivers include those indicated on the collision report form as having been drinking prior to the crash and those who were alcohol-impaired at the time of the crash. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

*Includes only drivers whose age and/or sex was specified on the collision report form. Total includes drinking drivers whose sex was not specified on the collision report form.

**Source: Government - Registries. Operator Statistics, December 31, 2000.

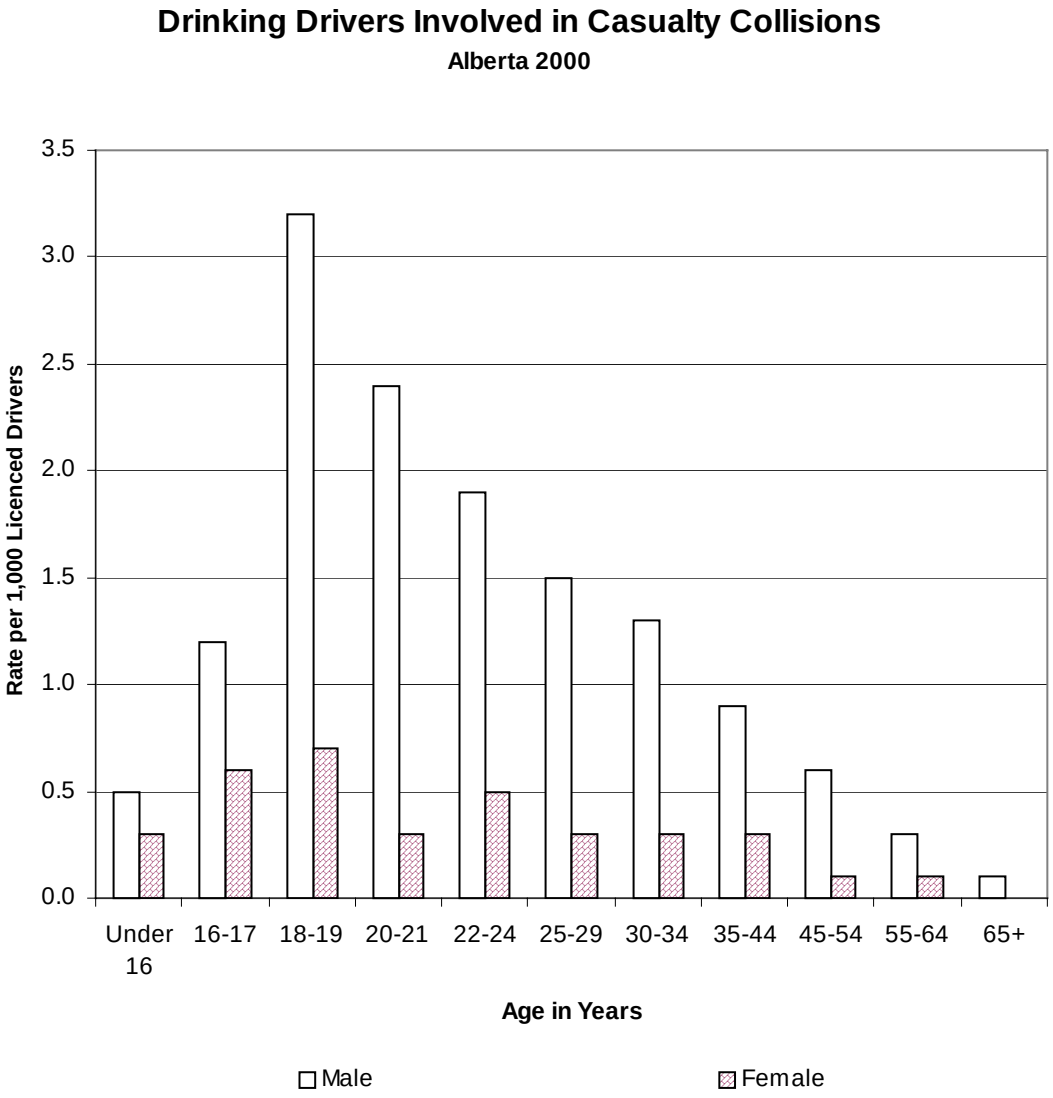

Drinking Drivers Involved in Casualty Collisions
Alberta 2000
Rate per 1,000 Licenced Drivers
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Under 16
16-17
18-19
20-21
22-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Figure 10

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2000

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Month	**N**	**%**	**N**	**%**	**N**	**%**
January	3	3.9	79	5.9	82	5.8
February	2	2.6	95	7.1	97	6.9
March	6	7.8	82	6.2	88	6.2
April	3	3.9	97	7.3	100	7.1
May	6	7.8	119	8.9	125	8.9
June	8	10.4	112	8.4	120	8.5
July	9	11.7	121	9.1	130	9.2
August	6	7.8	138	10.4	144	10.2
September	9	11.7	128	9.6	137	9.7
October	12	15.6	109	8.2	121	8.6
November	4	5.2	123	9.2	127	9.0
December	9	11.7	129	9.7	138	9.8
Unspecified	--	--	1	0.1	1	0.1
Total Number of Collisions	**77**	**100.0**	**1333**	**100.0**	**1410**	**100.0**

Observations

The month of August 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

2000

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Day of Week	**N**	**%**	**N**	**%**	**N**	**%**
Monday	5	6.5	137	10.3	142	10.1
Tuesday	1	1.3	122	9.2	123	8.7
Wednesday	7	9.1	125	9.4	132	9.4
Thursday	12	15.6	171	12.8	183	13.0
Friday	28	36.4	223	16.7	251	17.8
Saturday	15	19.5	321	24.1	336	23.8
Sunday	9	11.7	232	17.4	241	17.1
Unspecified	--	--	2	0.2	2	0.1
Total Number of Collisions	**77**	**100.0**	**1333**	**100.0**	**1410**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions occurred on Friday (36.4%). The highest number of non-fatal injury collisions occurred on Saturday (24.1%). The smallest number of alcohol-involved casualty collisions occurred on Tuesday and Wednesday.

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2000

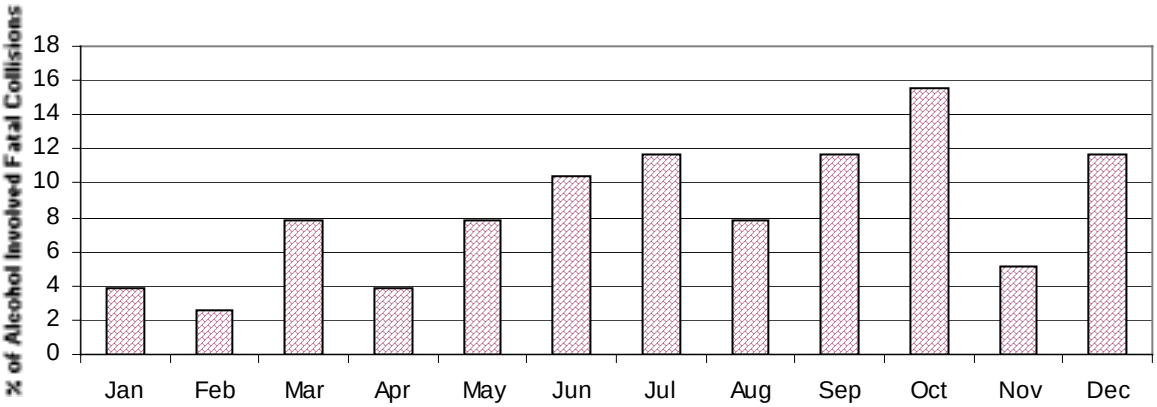
	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Time of Day	**N**	**%**	**N**	**%**	**N**	**%**
11:00 p.m. - 2:59 a.m.	30	39.0	408	30.6	438	31.1
3:00 a.m. - 6:59 a.m.	8	10.4	213	16.0	221	15.7
7:00 a.m. - 10:59 a.m.	4	5.2	57	4.3	61	4.3
11:00 a.m. - 2:59 p.m.	4	5.2	69	5.2	73	5.2
3:00 p.m. - 6:59 p.m.	9	11.7	179	13.4	188	13.3
7:00 p.m. - 10:59 p.m.	19	24.7	371	27.8	390	27.7
Unspecified	3	3.9	36	2.7	39	2.8
Total Number of Collisions	**77**	**100.0**	**1333**	**100.0**	**1410**	**100.0**

Observations

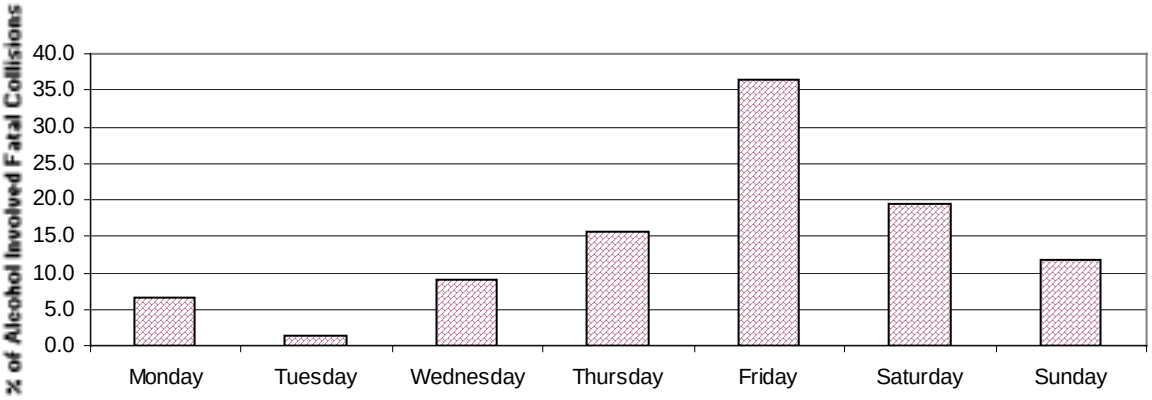
The late night/early morning time period (11:00 p.m. - 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (31.1%). The morning hours (7:00 a.m. - 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (4.3%).

Alcohol Involved Fatal Collisions
Alberta 2000

By Month of Occurrence



By Day of Week



By Time Period

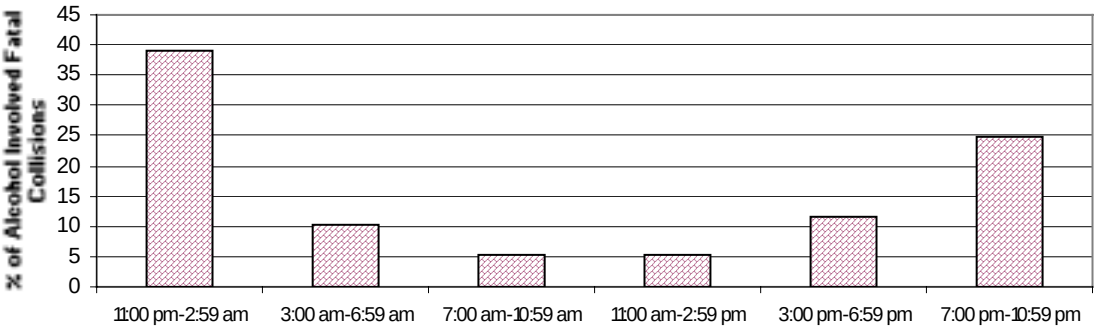


Figure 11

Traffic Safety Issues

Restraint Use

- Collision involved restraint users had a much lower injury rate (14.9%) than those not using restraints (37.6%).
- Non-restraint users were 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)

2000

Injury Severity of Occupants	Percentage of Occupants Using Restraints	Percentage of Occupants Not Using Restraints
	%	%
Fatal Injury	0.1	2.0
Major Injury	1.1	9.9
Minor Injury	13.8	27.7
Total Occupants Sustaining Non-Fatal Injuries	**14.9**	**37.6**
No Apparent Injury	85.0	60.4
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (14.9%) than those not using restraints (37.6%). Non-restraint users were 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.