

***Alberta***

***Traffic Collision Statistics***

***2008***



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For further information contact:  
Alberta Transportation  
Office of Traffic Safety  
Main Floor, Twin Atria Building  
4999 – 98 Avenue  
Edmonton, Alberta T6B 2X3  
780-427-8901  
[www.transportation.alberta.ca](http://www.transportation.alberta.ca)



## 2008 Overview

- The number of **traffic fatalities decreased 10.5%** over the past year from 458 fatalities in 2007 to 410 in 2008.
- The number of **traffic injuries decreased 10.3%** over the past year from 24530 injuries in 2007 to 22015 in 2008.
- The number of **traffic collisions increased 2.7%** over the past year from 153901 collisions in 2007 to 158055 in 2008.
- **The highest number of fatal collisions** occurred in **August, September, and October**. **The highest number of injury collisions** occurred in **December**.
- **Friday** was the most collision-prone day of the week.
- **The most collision-prone period of time was the afternoon rush-hour.**
- **Casualty rates** were highest for persons between the **ages of 15 and 24**.
- **Male drivers** between the **ages of 18 and 19** had the highest involvement rate of all drivers involved in casualty collisions.
- **Following too closely, running off the road and left turn across path** were the most frequently identified **improper driver actions** contributing to casualty collisions.
- **Fatal collisions** occurred most frequently in **rural areas**, whereas **injury and property damage collisions** occurred more frequently in **urban areas**.
- **50.0% of pedestrians** involved in **fatal collisions had consumed alcohol** prior to the collision compared to **14.0% of pedestrians in injury collisions**.
- **22.5% of drivers** involved in **fatal collisions had consumed alcohol** prior to the crash compared to **5.3% of drivers in injury collisions**.
- **Collision involved restraint users had a much lower injury rate (8.0%)** than those not using restraints (32.8%)



## **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 2008. 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.





**Table of Contents**

	<b>Page</b>
2008 Overview .....	i
Preface .....	iii
List of Tables .....	vii
List of Figures.....	ix
Glossary .....	xi
2008 Traffic Collision Summary .....	1
When the Collisions Occurred.....	7
Victims.....	13
Drivers .....	17
Vehicles.....	21
Environment .....	25
Special Types of Vehicles	
Motorcycles .....	29
Truck Tractors .....	39
Trains.....	45
Pedestrians .....	49
Bicyclists.....	59
Traffic Safety Issues	
Alcohol Involvement .....	67
Restraint Use.....	77



**List of Tables**

	Page
Table 1.1	Alberta Traffic Collisions 2004-2008 .....2
Table 1.2	Traffic Collision Rates 2004-2008.....3
Table 1.3	Provincial Comparison of Casualty Rates Per Billion Vehicle Kilometres Travelled 2004-2007 .....5
Table 2.1	Collision Occurrence by Month 2008.....8
Table 2.2	Collision Occurrence by Day of Week 2008 .....9
Table 2.3	Collision Occurrence by Time Period 2008 .....10
Table 2.4	Collisions During 2008 Holidays .....12
Table 3.1	Injuries and Fatalities by Road User Class 2008.....14
Table 3.2	Age of Casualties 2008.....15
Table 4.1	Age and Sex of Drivers Involved in Casualty Collisions: Per 1,000 Licensed Drivers 2008.....18
Table 4.2	Improper Actions of Drivers Involved in Casualty Collisions 2008 .....20
Table 5.1	Types of Vehicles Involved in Casualty Collisions 2008.....22
Table 5.2	Vehicle Factors Involved in Casualty Collisions 2008 .....23
Table 5.3	Point of Impact on Vehicles Involved in Casualty Collisions 2008 .....24
Table 6.1	Location of Collisions 2008.....26
Table 6.2	Casualty Collision Occurrence by Surface Condition 2008 .....27
Table 7.1	Motorcycles Involved in Casualty Collisions 2004-2008.....30
Table 7.2	Age and Sex of Motorcycle Drivers Involved in Casualty Collisions 2008.....32
Table 7.3	Improper Actions of Motorcycle Drivers Involved in Casualty Collisions 2008.....33
Table 7.4	Condition of Motorcycle Drivers Involved in Casualty Collisions 2008 .....34
Table 7.5	Motorcycle Vehicle Factors in Casualty Collisions 2008 .....35
Table 7.6	Casualty Collisions Involving Motorcycles: Month of Occurrence 2008 .....36
Table 7.7	Casualty Collisions Involving Motorcycles: Road Surface Condition 2008.....37

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Table 7.8	Truck Tractors Involved in Casualty Collisions 2004-2008.....	40
Table 7.9	Improper Actions of Truck Tractor Drivers Involved in Casualty Collisions 2008.....	41
Table 7.10	Condition of Truck Tractor Drivers Involved in Casualty Collisions 2008.....	42
Table 7.11	Vehicle Factors of Truck Tractors Involved in Casualty Collisions 2008.....	43
Table 7.12	Casualty Collisions Involving Truck Tractors: Month of Occurrence 2008.....	44
Table 7.13	Trains Involved in Casualty Collisions 2004-2008.....	46
Table 7.14	Casualty Collisions Involving Trains: Month of Occurrence 2008.....	47
Table 7.15	Actions of Drivers Involved in Casualty Collisions with Trains 2008.....	48
Table 8.1	Casualty Collisions Involving Pedestrians: Month of Occurrence 2008.....	50
Table 8.2	Casualty Collisions Involving Pedestrians: Day of Week 2008.....	51
Table 8.3	Casualty Collisions Involving Pedestrians: Time Period 2008.....	52
Table 8.4	Casualty Collisions Involving Pedestrians: Location 2008.....	53
Table 8.5	Actions of Drivers Involved in Casualty Collisions with Pedestrians 2008.....	54
Table 8.6	Age of Pedestrian Casualties 2008.....	55
Table 8.7	Condition of Pedestrians Involved in Casualty Collisions 2008.....	57
Table 8.8	Age of Drinking Pedestrians Involved in Casualty Collisions 2008.....	58
Table 9.1	Casualty Collisions Involving Bicycles: Month of Occurrence 2008.....	60
Table 9.2	Casualty Collisions Involving Bicycles: Day of Week 2008.....	61
Table 9.3	Casualty Collisions Involving Bicycles: Time Period 2008.....	62
Table 9.4	Age of Bicycle Casualties 2008.....	63
Table 9.5	Improper Actions of Bicyclists Involved in Casualty Collisions 2008.....	64
Table 9.6	Condition of Bicyclists Involved in Casualty Collisions 2008.....	65
Table 10.1	Condition of Drivers in Casualty Collisions 2008.....	68
Table 10.2	Age and Sex of Drinking Drivers in Casualty Collisions 2008.....	71
Table 10.3	Alcohol-Involved Casualty Collisions: Month of Occurrence 2008.....	73
Table 10.4	Alcohol-Involved Casualty Collisions: Day of Week 2008.....	74
Table 10.5	Alcohol-Involved Casualty Collisions: Time Period 2008.....	75
Table 10.6	Restraint Use of Vehicle Occupants and Injury Severity 2008 (Use vs. Non-Use)....	78

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**List of Figures**

	Page
Figure 1	Alberta Traffic Collision Rates Per 10,000 Population 2004-2008 ..... 4
Figure 2	Provincial Traffic Fatality Rates 2007 ..... 6
Figure 3	Collision Occurrence by Month/Day of Week/Time Period 2008..... 11
Figure 4	Age of Casualties 2008 ..... 16
Figure 5	Age and Sex of Drivers Involved in Casualty Collisions 2008 ..... 19
Figure 6	Number of Motorcycles Involved in Fatal Collisions 2004-2008 ..... 31
Figure 7	Pedestrian Casualties 2008 ..... 56
Figure 8	Involvement of Drinking Drivers in Casualty Collisions 2004-2008 ..... 69
Figure 9	Driver Condition in Casualty Collisions 2008 ..... 70
Figure 10	Drinking Drivers Involved in Casualty Collisions 2008..... 72
Figure 11	Alcohol-Involved Casualty Collisions by Month/Day of Week/Time Period 2008 ..... 76



## **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.





## **2008 Traffic Collision Summary**

### ***Introduction***

During 2008, 158055 collisions were recorded on Alberta roadways. Property damage collisions (over \$1000) represented 89.5% (141527) of this total while 10.2% (16153) were non-fatal injury collisions. Fatal collisions accounted for 0.2% (375) of the total reported collisions.

### ***Five Year Trends***

In terms of population, licensed drivers and registered vehicles the fatal collision rate and fatality rate have decreased from 2007.

The non-fatal injury collision and injury rates have also decreased in 2008 in terms of population, licensed drivers, and registered vehicles.

Property damage collision rates increased in 2008 in terms of population, licensed drivers and registered vehicles.

### ***Provincial Comparisons***

In order to get a picture of Alberta's traffic casualties in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance casualty rates per billion vehicle kilometres travelled were examined.

Figures for 2008 provincial comparisons were not available at the time of printing; therefore, figures for 2007 were used. Based on this comparison of rates per billion vehicle kilometres travelled, of the eleven provinces and territories for which information was available, five had a higher fatality rate than Alberta in 2007. With regard to injury rate, in 2007, of the ten provinces and territories for which information was available, five jurisdictions had a higher injury rate than Alberta.

**Table 1.1****Alberta Traffic Collisions****2004 – 2008**

<b>Severity of Collisions</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
Fatal Collisions	375	402	404	392	339
Non-Fatal Injury Collisions	16153	17857	18831	17726	17248
Property Damage Collisions	141527	135642	123357	106088	94966
<b>Total Reportable Collisions</b>	<b>158055</b>	<b>153901</b>	<b>142592</b>	<b>124206</b>	<b>112553</b>
Number Killed	410	458	453	466	387
Number Injured	22015	24530	25964	24504	24249
<b>Total Number of Casualties</b>	<b>22425</b>	<b>24988</b>	<b>26417</b>	<b>24970</b>	<b>24636</b>

**Observations**

In 2008, the overall number of collisions increased 2.7% when compared to 2007. In 2008, injury collisions decreased by 9.5% and fatal crashes decreased by 6.7%. The number of fatalities decreased by 10.5% from 2007 to 2008, and the number of injuries decreased by 10.3%. In terms of the past five years, overall collisions were lowest in 2004 and highest in 2008.

**Table 1.2****Traffic Collision Rates**

2004 – 2008

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers					Rate Per 10,000 Registered Vehicles				
	2008	2007	2006	2005	2004	2008	2007	2006	2005	2004	2008	2007	2006	2005	2004
Fatal Collisions	1.0	1.1	1.2	1.2	1.0	1.4	1.5	1.6	1.6	1.4	1.2	1.4	1.5	1.5	1.4
Number Killed	1.1	1.3	1.3	1.4	1.2	1.5	1.8	1.8	1.9	1.6	1.4	1.6	1.6	1.8	1.6
Non-Fatal Injury Collisions	45.1	50.9	55.0	53.4	53.2	60.5	68.6	74.5	72.6	72.2	53.3	61.1	68.0	68.2	69.7
Number Injured	61.4	69.9	75.9	73.8	74.9	82.4	94.3	102.8	100.3	101.5	72.7	83.9	93.8	94.3	98.0
Property Damage Collisions	394.8	386.3	360.6	319.3	293.2	529.8	521.4	488.3	434.4	397.6	467.1	464.2	445.4	408.1	383.7
<b>Total Reportable Collisions</b>	<b>440.9</b>	<b>438.4</b>	<b>416.8</b>	<b>373.9</b>	<b>347.4</b>	<b>591.7</b>	<b>591.5</b>	<b>564.4</b>	<b>508.6</b>	<b>471.2</b>	<b>521.6</b>	<b>526.7</b>	<b>514.9</b>	<b>477.8</b>	<b>454.8</b>

**Observations**

In terms of population, licensed drivers and registered vehicles the fatality and injury rates have decreased in 2008.

The rate for property damage collisions has increased in 2008 in terms of population, licensed drivers and registered vehicles.

\*In 2008, Statistics Canada updated the Alberta population estimates for 2004 - 2007 to align with the 2006 Standard Geographical Classification (SGC). As a result, collision rates for 2004 - 2007 in this report are based on the updated population estimates and may differ from previous publications in this series.

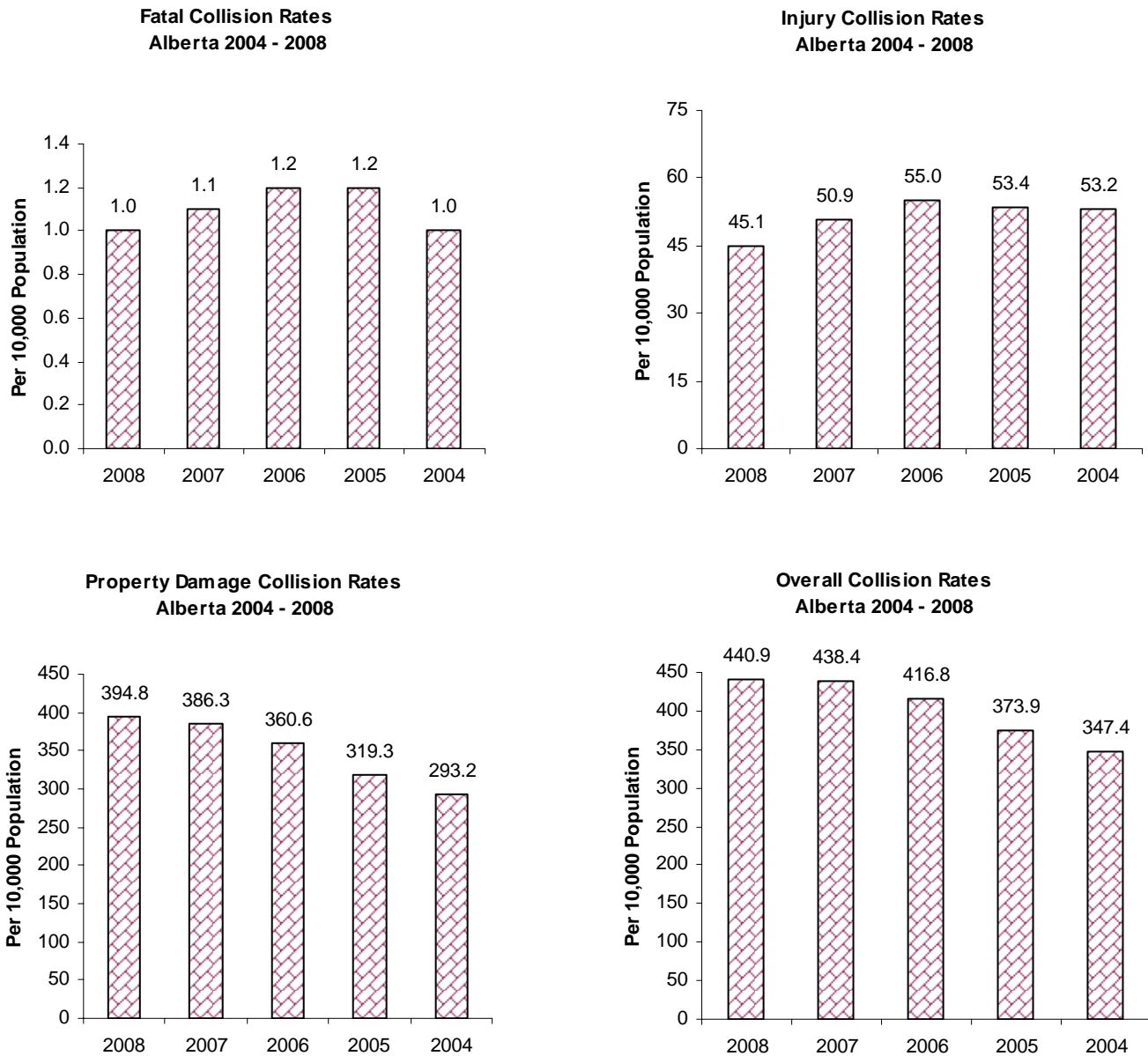
## Sources:

Population – Statistics Canada as of July 1, 2008

Licensed Drivers – Service Alberta – Registries Services, as of December 31, 2008

Registered Vehicles – Service Alberta – Registries Services, as of December 31, 2008

**Figure 1**



NOTE: In 2008, Statistics Canada updated the Alberta population estimates for 2004 - 2007 to align with the 2006 Standard Geographical Classification (SGC). As a result, collision rates for 2004 - 2007 in this report are based on the updated population estimates and may differ from previous publications in this series.

**Table 1.3****Provincial Comparison of Casualty Rates  
Per Billion Vehicle Kilometres Travelled\*****2004 – 2007**

	2007		2006		2005		2004	
	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries
Canada	8.3	564.0	8.9	604.0	9.3	668.0	8.8	680.8
Alberta	9.6	513.2	10.0	570.7	10.6	555.1	9.9	621.5
British Columbia	11.6	725.5	12.9	789.5	13.9	873.3	12.4	842.4
Saskatchewan	10.6	509.0	12.2	604.4	13.2	612.8	11.0	647.1
Manitoba	7.9	617.1	9.9	729.1	10.3	788.4	9.5	890.8
Ontario	N/A	N/A	6.0	525.2	6.3	571.5	6.6	599.8
Quebec	8.6	669.5	10.3	711.1	10.6	871.2	9.0	778.0
New Brunswick	11.0	459.5	12.3	452.3	13.6	508.5	9.6	572.9
Nova Scotia	9.3	N/A	8.4	470.8	7.1	487.7	9.4	533.2
Prince Edward Island	5.6	565.6	25.0	803.6	11.3	565.7	22.6	759.5
Newfoundland	9.4	519.0	8.5	501.3	9.8	537.1	9.7	699.1
Yukon	10.3	427.0	24.2	434.5	12.3	396.4	9.4	397.4
Northwest Territories	13.9	435.0	5.3	294.3	5.4	505.7	9.6	485.2
Nunavut	N/A	N/A	N/A	N/A	N/A	N/A	33.7	2222.2

**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 eleven provinces and territories for which information was available, four had a higher fatality rate than Alberta in 2007. With regard to injury rate, in 2007, of the ten provinces and territories for which information was available, four jurisdictions had a higher injury rate than Alberta.

\*Figures for 2008 were not available at time of printing.

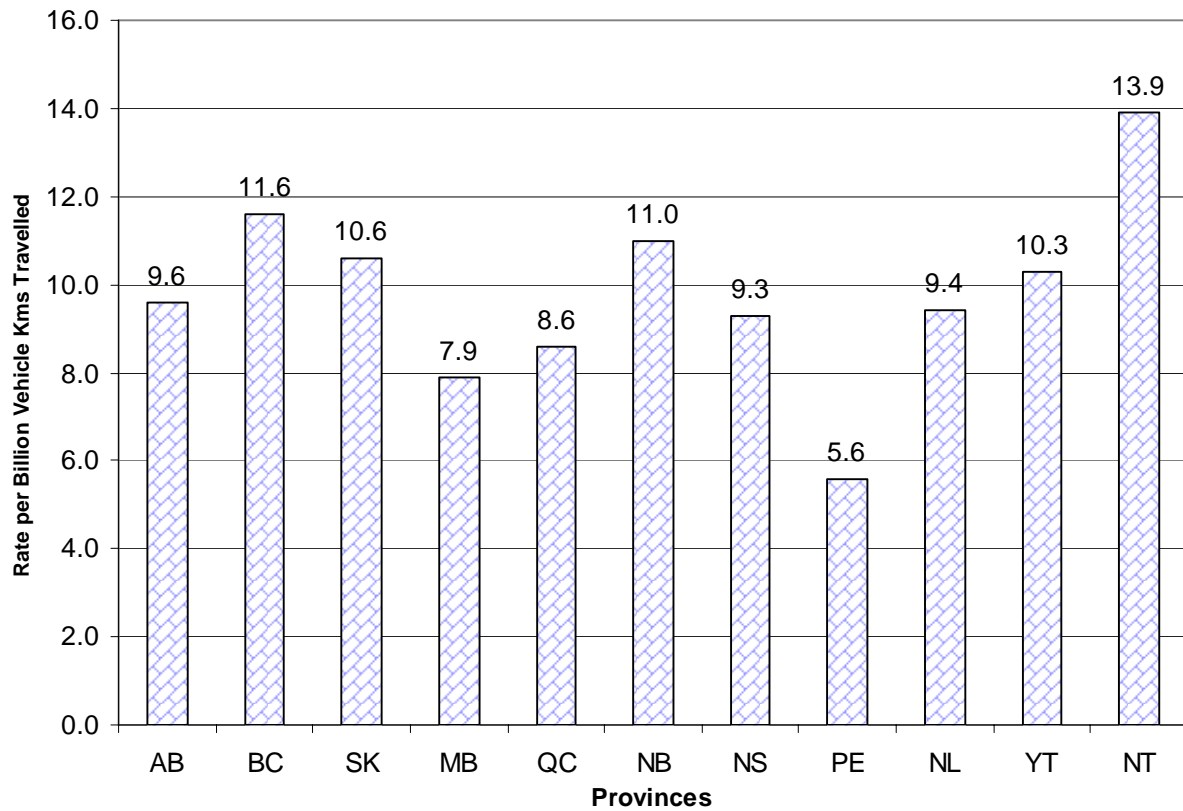
Sources: Transport Canada Canadian Motor Vehicle Traffic Collision Statistics TP3322 and Statistics Canada, "Canadian Vehicle Survey", catalogue No. 53-223-XIE.

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, buses, off-road vehicles (e.g., snowmobiles, dune buggies, amphibious vehicles) and special equipment (e.g. cranes, street cleaners, snowplows and backhoes) registered in Canada anytime during the survey reference period that have not been scrapped or salvaged.

Figure 2

### Provincial Traffic Fatality Rates 2007



## ***When the Collisions Occurred***

### **Month**

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

### **Day of Week**

The daily distribution of collisions indicated that Friday was the most collision-prone day of the week.

### **Time**

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

### **Holidays**

The Labour Day Long Weekend recorded the highest number of fatalities and injuries. The Christmas Season recorded the highest total number of collisions.

**Table 2.1**

<b>Collision Occurrence by Month</b>								
<b>2008</b>								
<b>Month</b>	<b>Fatal Collisions</b>		<b>Non-Fatal Injury Collisions</b>		<b>Property Damage Collisions</b>		<b>Total Collisions</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
January	27	7.2	1514	9.4	14672	10.4	16213	10.3
February	19	5.1	1346	8.3	13257	9.4	14622	9.3
March	23	6.1	1127	7.0	10169	7.2	11319	7.2
April	29	7.7	1174	7.3	10646	7.5	11849	7.5
May	29	7.7	1227	7.6	9324	6.6	10580	6.7
June	25	6.7	1339	8.3	10359	7.3	11723	7.4
July	38	10.1	1374	8.5	10367	7.3	11779	7.5
August	41	10.9	1341	8.3	9676	6.8	11058	7.0
September	41	10.9	1411	8.7	10135	7.2	11587	7.3
October	41	10.9	1374	8.5	11127	7.9	12542	7.9
November	34	9.1	1350	8.4	12528	8.9	13912	8.8
December	28	7.5	1573	9.7	18945	13.4	20546	13.0
Unspecified	--	--	3	0.0	322	0.2	325	0.2
<b>Total Number of Collisions</b>	<b>375</b>	<b>100.0</b>	<b>16153</b>	<b>100.0</b>	<b>141527</b>	<b>100.0</b>	<b>158055</b>	<b>100.0</b>

**Observations**

The months of August, September, and October experienced more fatal crashes than other months. The highest number of reported injury and property damage collisions were in December.



**Table 2.2****Collision Occurrence by Day of Week****2008**

Day of Week	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Monday	47	12.5	2241	13.9	19850	14.0	22138	14.0
Tuesday	40	10.7	2323	14.4	20613	14.6	22976	14.5
Wednesday	52	13.9	2353	14.6	20588	14.5	22993	14.5
Thursday	39	10.4	2436	15.1	20675	14.6	23150	14.6
Friday	62	16.5	2796	17.3	24081	17.0	26939	17.0
Saturday	69	18.4	2255	14.0	19806	14.0	22130	14.0
Sunday	66	17.6	1742	10.8	15483	10.9	17291	10.9
Unspecified	--	--	7	0.0	431	0.3	438	0.3
<b>Total Number of Collisions</b>	<b>375</b>	<b>100.0</b>	<b>16153</b>	<b>100.0</b>	<b>141527</b>	<b>100.0</b>	<b>158055</b>	<b>100.0</b>

**Observations**

The daily distribution of collisions indicated that overall Friday was the most collision-prone day of the week.

**Table 2.3****Collision Occurrence by Time Period****2008**

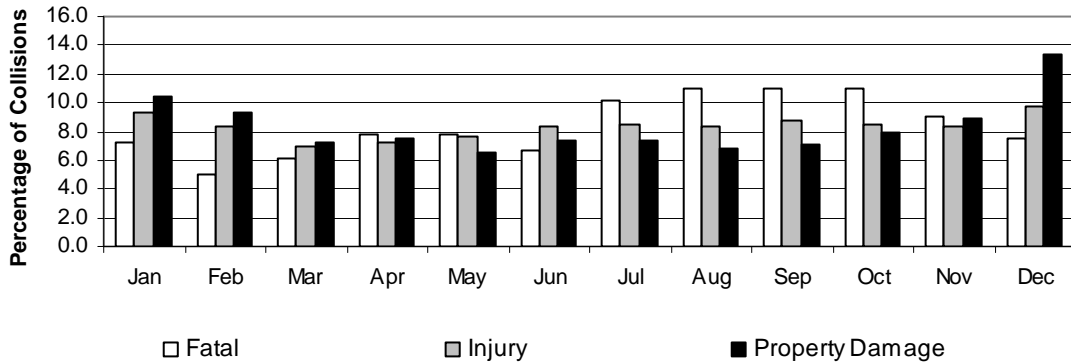
Time Period	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
11:00 p.m. - 2:59 a.m.	61	16.3	1124	7.0	9756	6.9	10941	6.9
3:00 a.m. - 6:59 a.m.	37	9.9	950	5.9	7853	5.5	8840	5.6
7:00 a.m. - 10:59 a.m.	70	18.7	2854	17.7	25427	18.0	28351	17.9
11:00 a.m. - 2:59 p.m.	56	14.9	3643	22.6	34054	24.1	37753	23.9
3:00 p.m. - 6:59 p.m.	73	19.5	4985	30.9	40519	28.6	45577	28.8
7:00 p.m. - 10:59 p.m.	76	20.3	2431	15.0	20963	14.8	23470	14.8
Unspecified	2	0.5	166	1.0	2955	2.1	3123	2.0
<b>Total Number of Collisions</b>	<b>375</b>	<b>100.0</b>	<b>16153</b>	<b>100.0</b>	<b>141527</b>	<b>100.0</b>	<b>158055</b>	<b>100.0</b>

**Observations**

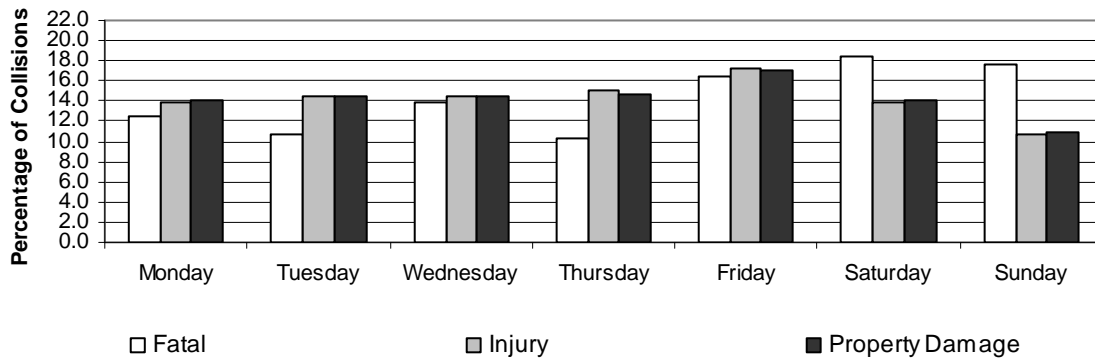
The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the largest percentage (28.8%) of collisions occurring in a 24 hour period. The least collision-prone time period was the early morning (3:00 a.m. – 6:59 a.m.).

**Figure 3**

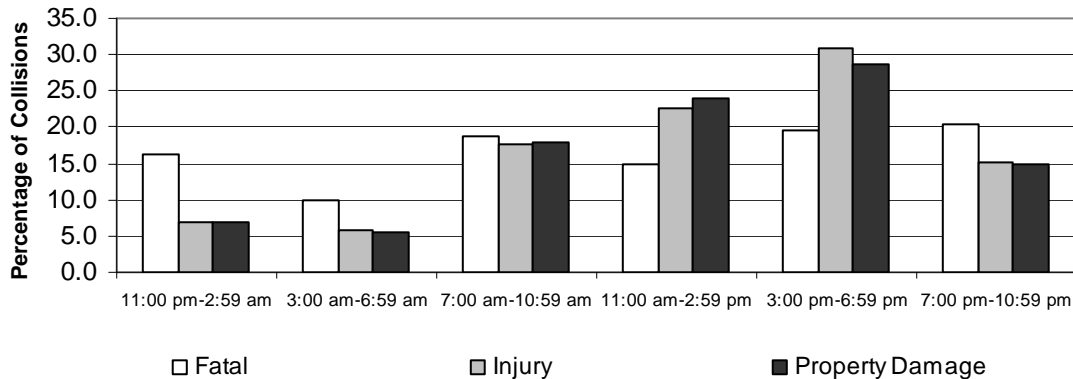
**Collision Occurrence By Month**  
Alberta 2008



**Collision Occurrence By Day of Week**  
Alberta 2008



**Collision Occurrence By Time Period**  
Alberta 2008



**Table 2.4****Collisions During 2008 Holidays**

<b>Holidays</b>	<b>Number Killed</b>	<b>Number Injured</b>	<b>Total Collisions*</b>
	<b>N</b>	<b>N</b>	<b>N</b>
New Year's Day (January 1)	1	43	413
Family Day Long Weekend (February 15-18)	4	242	1618
Easter Long Weekend (March 20-24)	4	250	1515
Victoria Day Long Weekend (May 16-19)	5	227	1217
Canada Day (July 1)	5	44	277
August Long Weekend (August 1-4)	5	211	1184
Labour Day Long Weekend (August 29-September 1)	9	252	1374
Thanksgiving Long Weekend (October 10-13)	5	216	1461
Remembrance Day (November 11)	1	37	301
Christmas Season (December 24-28)	4	246	1977
<b>TOTAL</b>	<b>43</b>	<b>1768</b>	<b>11337</b>

**Observations**

The Labour Day Long Weekend recorded the highest number of fatalities and injuries. The Christmas Season recorded the highest total number of collisions.

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

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

## **Victims**

### **Road User Class**

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 5.8% and 3.9% of the total casualties, respectively.

### **Age of Casualties**

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children 14 and under.

**Table 3.1****Injuries and Fatalities by Road User Class****2008**

Road User Class	Persons Killed		Persons Injured		Total Casualties	
	N	%	N	%	N	%
Drivers	228	55.6	13162	59.8	13390	59.7
Passengers	77	18.8	5715	26.0	5792	25.8
Pedestrians	34	8.3	1260	5.7	1294	5.8
Motorcyclists	42	10.2	830	3.8	872	3.9
Bicyclists	5	1.2	538	2.4	543	2.4
Other	16	3.9	367	1.7	383	1.7
Unspecified	8	2.0	143	0.6	151	0.7
<b>Total Casualties</b>	<b>410</b>	<b>100.0</b>	<b>22015</b>	<b>100.0</b>	<b>22425</b>	<b>100.0</b>

**Observations**

The majority of traffic victims were drivers (59.7%) and passengers (25.8%) of vehicles. Pedestrians and motorcyclists accounted for 5.8% and 3.9% of the total casualties, respectively.

**Table 3.2****Age of Casualties****2008**

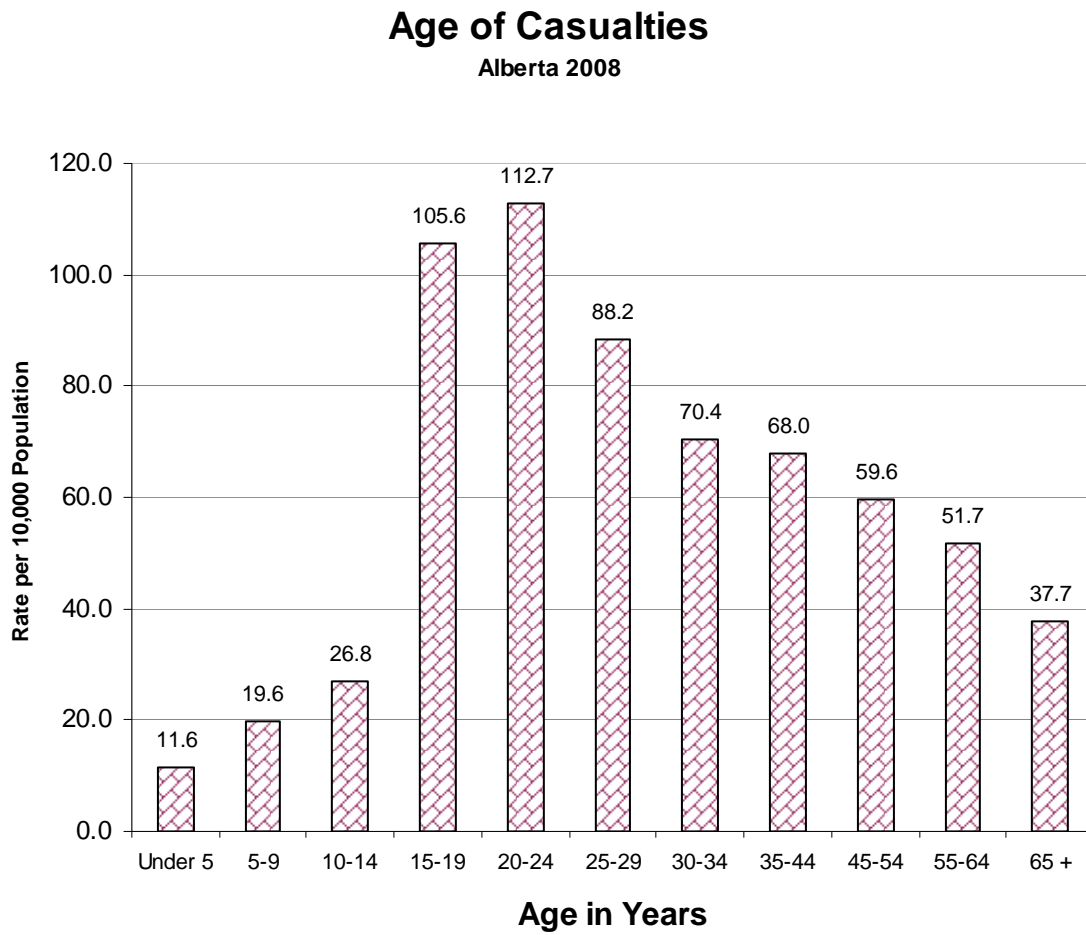
Age in Years	Persons Killed		Persons Injured		Total Casualties		Casualty Rate Per 10,000 Population*
	N	%	N	%	N	%	
Under 5	2	0.5	256	1.2	258	1.2	11.6
5-9	1	0.2	409	1.9	410	1.8	19.6
10-14	4	1.0	591	2.7	595	2.7	26.8
15-19	39	9.5	2587	11.8	2626	11.7	105.6
20-24	66	16.1	3160	14.4	3226	14.4	112.7
25-29	40	9.8	2546	11.6	2586	11.5	88.2
30-34	27	6.6	1892	8.6	1919	8.6	70.4
35-44	59	14.4	3610	16.4	3669	16.4	68.0
45-54	71	17.3	3233	14.7	3304	14.7	59.6
55-64	46	11.2	1828	8.3	1874	8.4	51.7
65 and over	55	13.4	1357	6.2	1412	6.3	37.7
Unspecified	--	--	546	2.5	546	2.4	
<b>Total Casualties</b>	<b>410</b>	<b>100.0</b>	<b>22015</b>	<b>100.0</b>	<b>22425</b>	<b>100.0</b>	

**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, 2008, Statistics Canada

Figure 4





## **Drivers**

### **Age and Sex of Drivers**

Collision rates per 1000 licensed drivers indicate that males 18 to 19 years old were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions was males 16 to 17 years old.

### **Driver Actions**

Following too closely (28.2%), running off the road (16.7%) and left turn across path (12.5%) were the most frequently identified improper driver actions contributing to casualty collisions.

**Table 4.1****Age and Sex of Drivers Involved in Casualty Collisions:**

Per 1,000 Licensed Drivers

2008

Age of Driver	N	Male		Female		Total*		Rate Per 1000** Licensed Drivers	
		%	Rate Per 1000** Licensed Drivers	%	Rate Per 1000** Licensed Drivers	%	Rate Per 1000** Licensed Drivers		
Under 16	163	0.6	11.1	59	0.2	4.9	222	0.8	8.3
16-17	600	2.1	19.2	432	1.5	15.9	1032	3.6	17.7
18-19	1031	3.6	24.5	576	2.0	15.8	1607	5.6	20.5
20-24	2507	8.7	18.8	1566	5.4	13.4	4077	14.2	16.3
25-34	3977	13.8	13.5	2406	8.4	9.2	6384	22.2	11.5
35-44	3328	11.6	12.2	2042	7.1	8.3	5373	18.7	10.3
45-54	3157	11.0	11.1	1801	6.3	6.9	4958	17.2	9.1
55-64	1705	5.9	9.1	969	3.4	5.8	2674	9.3	7.5
65 and over	1267	4.4	8.3	563	2.0	4.4	1830	6.4	6.5
Unspecified	111	0.4		31	0.1		644	2.2	
<b>Total Number of Drivers</b>	<b>17846</b>	<b>62.0</b>		<b>10445</b>	<b>36.3</b>		<b>28801</b>	<b>100.0</b>	

**Observations**

Collision rates per 1000 licensed drivers indicated that males 18 to 19 years old were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions was males 16 to 17 years old.

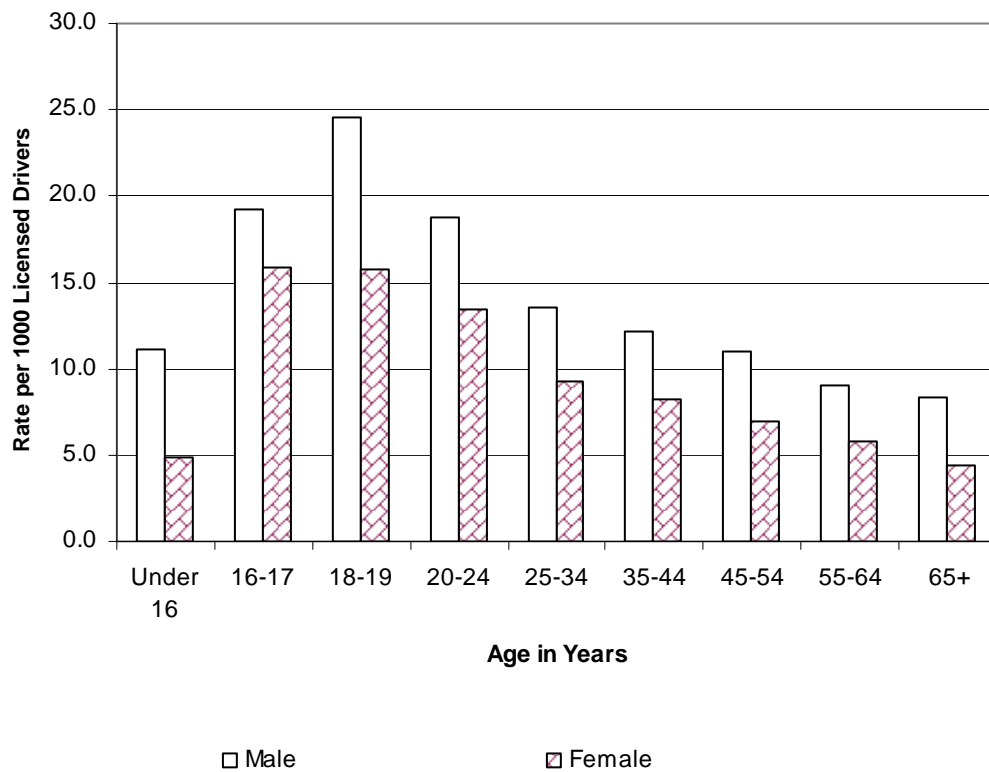
\*Total includes drivers whose sex was not specified on the collision report form. Includes bicyclists.

\*\*Source: Licensed Drivers – Service Alberta – Registries Services, as of December 31, 2008.

**Figure 5**

**Age and Sex of Drivers Involved in Casualty Collisions**

Alberta 2008



**Table 4.2****Improper Actions of Drivers Involved in Casualty Collisions\*****2008**

Improper Actions	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Followed Too Closely	4	1.3	3222	28.9	3226	28.2
Ran Off Road	141	45.8	1778	15.9	1919	16.7
Left Turn Across Path	12	3.9	1421	12.7	1433	12.5
Stop Sign Violation	35	11.4	946	8.5	981	8.6
Disobey Traffic Signal	11	3.6	838	7.5	849	7.4
Failed to Yield Right of Way to Pedestrian	5	1.6	467	4.2	472	4.1
Left of Centre	52	16.9	348	3.1	400	3.5
Improper Lane Change	2	0.6	341	3.1	343	3.0
Improper Turn	7	2.3	319	2.9	326	2.8
Backed Unsafely	1	0.3	308	2.8	309	2.7
Yield Sign Violation	3	1.0	239	2.1	242	2.1
Failed to Yield Right of Way - Uncontrolled Intersection	4	1.3	222	2.0	226	2.0
Improper Passing	14	4.5	144	1.3	158	1.4
Other	17	5.5	558	5.0	575	5.0
<b>Total Number of Drivers</b>	<b>308</b>	<b>100.0</b>	<b>11151</b>	<b>100.0</b>	<b>11459</b>	<b>100.0</b>

**Observations**

Following too closely (28.2%), running off the road (16.7%) and left turn across path (12.5%) were the most frequently identified improper driver actions contributing to casualty collisions.

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

**Note:** There was a total of 24029 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 12570 were indicated as driving properly at the time of the collision.

## **Vehicles**

### **Types of Vehicles**

Passenger cars (45.3%), minivans/MPV (21.8%) and pick-up trucks/vans (20.2%) were the vehicles most frequently involved in total casualty collisions.

### **Vehicle Factors**

Overall 0.8% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common defect was defective brakes.

### **Point of Impact**

The most common point of impact in casualty collisions involved the front of the vehicle. Approximately 44.0% of the impacts involved the centre front.

**Table 5.1****Types of Vehicles Involved in Casualty Collisions\*****2008**

Type of Vehicle	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
Passenger Car	158	27.2	13174	45.7	13332	45.3
Mini-Van/MPV	85	14.6	6341	22.0	6426	21.8
Pick-up Truck/Van	167	28.7	5761	20.0	5928	20.2
Truck 4500 kg+	45	7.7	1190	4.1	1235	4.2
Motorcycle	43	7.4	807	2.8	850	2.9
Tractor-Trailer	55	9.5	498	1.7	553	1.9
Bicycle	7	1.2	540	1.9	547	1.9
Off-Highway Vehicle	12	2.1	202	0.7	214	0.7
Transit Bus	2	0.3	118	0.4	120	0.4
School Bus	3	0.5	56	0.2	59	0.2
Construction Equipment	2	0.3	41	0.1	43	0.1
Emergency Vehicle	--	--	39	0.1	39	0.1
Motorhome	--	--	18	0.1	18	0.1
Farm Equipment	2	0.3	14	0.0	16	0.1
Other Bus	--	--	15	0.1	15	0.1
Motorized Snow Vehicle	--	--	9	0.0	9	0.0
Intercity Bus	--	--	6	0.0	6	0.0
Moped	--	--	4	0.0	4	0.0
Other	--	--	1	0.0	1	0.0
<b>Total Number of Vehicles</b>	<b>581</b>	<b>100.0</b>	<b>28834</b>	<b>100.0</b>	<b>29414</b>	<b>100.0</b>

**Observations**

Passenger cars, mini-van/MPV and pick-up trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 1.9% and motorcycles 2.9% of the vehicles involved in casualty collisions. Tractor-Trailers were 1.9% of total vehicles in casualty crashes, but 9.5% of vehicles in fatal crashes.

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

**Table 5.2****Vehicle Factors Involved in Casualty Collisions\*****2008**

Vehicle Factors	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
No Apparent Defect	442	98.9	23436	99.2	23878	99.2
Defective Brakes	2	0.4	55	0.2	57	0.2
Tires Failed	1	0.2	30	0.1	31	0.1
Lighting Defect	--	--	17	0.1	17	0.1
Improper Load/Shift	--	--	5	0.0	5	0.0
Other	2	0.4	89	0.4	91	0.4
<b>Total Number of Vehicles</b>	<b>447</b>	<b>100.0</b>	<b>23632</b>	<b>100.0</b>	<b>24079</b>	<b>100.0</b>

**Observations**

Overall 0.8% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common defect was defective brakes.

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

**Table 5.3****Point of Impact on Vehicles Involved in Casualty Collisions\*****2008**

Point of Impact	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
Centre Front	261	47.4	11986	43.9	12247	44.0
Centre Rear	17	3.1	5663	20.7	5680	20.4
Right Front	39	7.1	2005	7.3	2044	7.3
Left Front	33	6.0	2010	7.4	2043	7.3
Rollover	95	17.2	1833	6.7	1928	6.9
Left Side	36	6.5	1057	3.9	1093	3.9
Right Side	35	6.4	1036	3.8	1071	3.8
Left Rear	12	2.2	673	2.5	685	2.5
Right Rear	9	1.6	669	2.4	678	2.4
Attachment	6	1.1	218	0.8	224	0.8
Top	6	1.1	82	0.3	88	0.3
Undercarriage	2	0.4	79	0.3	81	0.3
<b>Total Number of Vehicles</b>	<b>551</b>	<b>100.0</b>	<b>27311</b>	<b>100.0</b>	<b>27862</b>	<b>100.0</b>

**Observations**

The most common point of impact in casualty collisions involved the front of the vehicle. 44.0% of the impacts involved the centre front, while 20.4% of the impacts involved the centre rear.

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



## ***Environment***

### **Location**

The majority of fatal crashes (69.6%) occurred in rural areas, whereas the majority of injury (75.7%) and property damage (81.9%) crashes occurred in urban areas.

### **Surface Conditions**

The majority (61.4%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 13.1% of fatal collisions and 22.0% of non-fatal injury collisions.

**Table 6.1****Location of Collisions****2008**

<b>Location</b>	<b>Fatal Collisions</b>		<b>Non-Fatal Injury Collisions</b>		<b>Property Damage Collisions</b>		<b>Total Collisions</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Urban	114	30.4	12223	75.7	115965	81.9	128302	81.2
Rural	261	69.6	3930	24.3	25562	18.1	29753	18.8
<b>Total Number of Collisions</b>	<b>375</b>	<b>100.0</b>	<b>16153</b>	<b>100.0</b>	<b>141527</b>	<b>100.0</b>	<b>158055</b>	<b>100.0</b>

**Observations**

Collisions which occurred in rural areas accounted for 69.6% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (75.7%) and property damage crashes (81.9%).

**Table 6.2****Casualty Collision Occurrence by Surface Condition****2008**

<b>Surface Condition</b>	<b>Fatal Collisions</b>		<b>Non-Fatal Injury Collisions</b>		<b>Total Casualty Collisions</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Dry	269	71.7	9874	61.1	10143	61.4
Slush/Snow/Ice	49	13.1	3554	22.0	3603	21.8
Wet	21	5.6	1193	7.4	1214	7.3
Loose Surface Material	15	4.0	308	1.9	323	2.0
Muddy	--	--	34	0.2	34	0.2
Other	1	0.3	70	0.4	71	0.4
Unspecified	20	5.3	1120	6.9	1140	6.9
<b>Total Number of Collisions</b>	<b>375</b>	<b>100.0</b>	<b>16153</b>	<b>100.0</b>	<b>16528</b>	<b>100.0</b>

**Observations**

The majority (61.4%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 13.1% of fatal collisions and 22.0% of non-fatal injury collisions.



## ***Special Types of Vehicles***

### **Motorcycles**

- In 2008, based on motorcycle registrations, the involvement rate of motorcycles has increased in fatal collisions and decreased in injury collisions from 2007.
- 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 44.3, 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, make an unsafe left turn or commit a stop sign violation.
- Compared to drivers involved in all types of vehicle casualty collisions, motorcycle drivers were more likely to have consumed alcohol before the crash.
- Vehicle factors were identified for 1.5% 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****2004 – 2008**

<b>Number of Motorcycles</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
Fatal	43	34	31	22	26
Non-Fatal Injury	807	773	764	718	661
<b>Total Number of Motorcycles Involved in Casualty Collisions</b>	<b>850</b>	<b>807</b>	<b>795</b>	<b>740</b>	<b>687</b>
<b>Casualties*</b>					
Number Killed	42	32	32	21	25
Number Injured	852	833	830	771	715
<b>Total Casualties in Collisions Involving Motorcycles</b>	<b>894</b>	<b>865</b>	<b>862</b>	<b>792</b>	<b>740</b>
<b>Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**</b>					
Fatal Collisions	4.4	4.0	4.2	3.4	4.4
Non-Fatal Injury Collisions	82.4	90.5	103.1	110.9	110.9

**Observations**

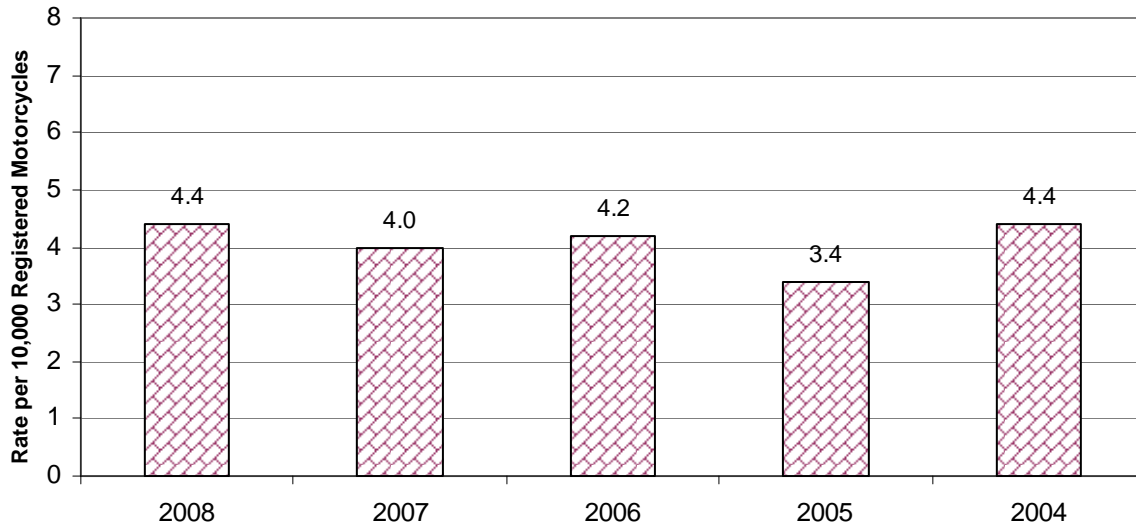
Based on motorcycle registrations in 2008, the involvement rate of motorcycles has increased in fatal collisions and decreased in injury collisions from 2007.

\*This refers to the total number of people killed and injured in collisions in which a motorcycle was involved. It does not refer to the number of motorcyclists killed and injured.

\*\* Source: Based on vehicle registration statistics, Service Alberta – Registries Services, December 31, 2008.

Figure 6

**Number of Motorcycles Involved in Fatal Collisions**  
Alberta 2004 - 2008



**Table 7.2****Age and Sex of Motorcycle Drivers Involved in Casualty Collisions****2008**

<b>Age of Motorcycle Driver</b>	<b>Male</b>		<b>Female</b>		<b>Total*</b>		<b>Rate Per 1,000 Licensed Motorcycle Drivers**</b>
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	
Under 16	5	0.6	1	0.1	6	0.7	
16-17	9	1.1	--	--	9	1.1	44.3
18-19	24	2.8	1	0.1	25	3.0	24.7
20-24	118	13.9	15	1.8	134	15.8	13.6
25-34	195	23.0	10	1.2	206	24.3	5.1
35-44	151	17.8	19	2.2	170	20.1	3.1
45-54	176	20.8	18	2.1	194	22.9	2.4
55-64	70	8.3	7	0.8	77	9.1	1.6
65 and over	19	2.2	2	0.2	21	2.5	1.4
Unspecified	1	0.1	--	--	4	0.5	
<b>Total Number of Motorcycle Drivers</b>	<b>768</b>	<b>90.8</b>	<b>73</b>	<b>8.6</b>	<b>846</b>	<b>100.0</b>	

**Observations**

The majority of motorcycle casualty collisions involved male drivers. Based on involvement per 1,000 licensed operators, motorcycle drivers under the age of 25 were most likely to be involved in collisions. In particular, 16-17 year old motorcycle drivers had the highest involvement rate per 1,000 licensed motorcyclists. These age and sex comparisons are limited due to the lack of driving exposure data. That is, in order to make valid age comparisons, it is important to take into account the number of kilometers driven annually by each age and sex group of motorcycle operators.

**Note:** In Alberta, Class 6 (motorcycle) licenses are not issued to operators under 16 years of age.

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

\*\*Source: Licensed Drivers – Service Alberta – Registries Services, as of December 31, 2008.



**Table 7.3****Improper Actions of Motorcycle Drivers Involved in Casualty Collisions\*****2008**

Improper Actions of Motorcycle Driver	Driver Actions in Total Casualty Collisions (All Vehicle Types)		
	N	%	%
Ran Off Road	119	44.6	16.7
Followed Too Closely	47	17.6	28.2
Improper Passing	22	8.2	1.4
Left of Centre	10	3.7	3.5
Improper Turn	9	3.4	2.8
Disobey Traffic Signal	8	3.0	7.4
Left Turn Across Path	8	3.0	12.5
Improper Lane Change	6	2.2	3.0
Stop Sign Violation	6	2.2	8.6
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.1	2.0
Yield Sign Violation	1	0.4	2.1
Failed to Yield Right of Way to Pedestrian	1	0.4	4.1
Backed Unsafely	1	0.4	2.7
Other	26	9.7	5.0
<b>Total Number of Motorcycle Drivers</b>	<b>267</b>	<b>100.0</b>	

**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 656 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 389 were indicated as driving properly at the time of the collision.

**Table 7.4****Condition of Motorcycle Drivers Involved in Casualty Collisions\*****2008**

<b>Condition of Motorcycle Driver</b>	<b>N</b>	<b>%</b>	<b>Driver Condition in</b>
			<b>Total Casualty Collisions (All Vehicle Types)</b>
			<b>%</b>
Normal	659	91.1	92.4
Had Been Drinking	39	5.4	2.6
Alcohol Impaired	18	2.5	3.0
<b>Total Alcohol Involvement</b>	<b>57</b>	<b>7.9</b>	<b>5.7</b>
Other	7	1.0	2.0
<b>Total Number of Motorcycle Drivers</b>	<b>723</b>	<b>100.0</b>	

**Observations**

The motorcycle driver's condition was a contributory factor for 8.9% of the involved motorcycle drivers. Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to have consumed alcohol prior to the crash.

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

**Table 7.5****Motorcycle Vehicle Factors in Casualty Collisions\*****2008**

<b>Vehicle Factors</b>	<b>N</b>	<b>%</b>	<b>Vehicle Factors in Total Casualty Collisions (All Vehicle Types)</b>	
				<b>%</b>
No Apparent Defect	726	98.5		99.2
Tires Failed	2	0.3		0.1
Lighting Defect	1	0.1		0.1
Defective Brakes	1	0.1		0.2
Other	7	0.9		0.4
<b>Total Number of Motorcycles</b>	<b>737</b>	<b>100.0</b>		

**Observations**

Vehicle factors were identified for 1.5% of the motorcycles involved in casualty collisions, compared to 0.8% for all types of vehicles involved in casualty collisions.

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

**Table 7.6****Casualty Collisions Involving Motorcycles:****Month of Occurrence****2008**

<b>Month</b>	<b>N</b>	<b>%</b>
January	1	0.1
February	1	0.1
March	11	1.3
April	36	4.4
May	133	16.1
June	149	18.0
July	156	18.9
August	136	16.5
September	105	12.7
October	71	8.6
November	25	3.0
December	1	0.1
Unspecified	1	0.1
<b>Total Number of Collisions</b>	<b>826</b>	<b>100.0</b>

**Observations**

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

**Table 7.7****Casualty Collisions Involving Motorcycles:****Road Surface Condition****2008**

<b>Road Surface Condition</b>	<b>N</b>	<b>%</b>
Dry	703	85.1
Wet	38	4.6
Loose Surface Material	33	4.0
Slush/Snow/Ice	4	0.5
Muddy	2	0.2
Other	3	0.4
Unspecified	43	5.2
<b>Total Number of Collisions</b>	<b>826</b>	<b>100.0</b>

**Observations**

The majority (85.1%) of casualty collisions involving motorcycles occurred on dry roads. Wet roads were the scene of 4.6% of motorcycle casualty collisions. Loose material on the road surface was involved in 4.0% of motorcycle casualty crashes.



## ***Special Types of Vehicles***

### **Truck Tractors**

- In 2008, there were 61 persons killed and 657 injured in collisions involving truck tractors. This represents a decrease in fatalities and injuries from 2007.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road or make an improper lane change. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make an unsafe left turn, or fail to yield the right of way to a pedestrian.
- Truck tractor drivers were less likely to consume alcohol before the crash than were drivers in total casualty collisions.
- Vehicle factors were more likely to be present in truck tractor casualty collisions than in total casualty collisions.
- The occurrence of casualty collisions involving truck tractors was highest in the month of February.

**Table 7.8****Truck Tractors Involved in Casualty Collisions****2004 – 2008**

<b>Number of Truck Tractors</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
Fatal	55	73	64	45	59
Non-Fatal Injury	498	577	642	601	574
<b>Total Number of Truck Tractors Involved in Casualty Collisions</b>	<b>553</b>	<b>650</b>	<b>706</b>	<b>646</b>	<b>633</b>
<b>Casualties*</b>					
Number Killed	61	81	67	58	69
Number Injured	657	754	813	802	753
<b>Total Casualties in Collisions Involving Truck Tractors</b>	<b>718</b>	<b>835</b>	<b>880</b>	<b>860</b>	<b>822</b>

**Observations**

In 2008, there were 61 persons killed and 657 injured in collisions involving truck tractors. This represents a decrease in fatalities and injuries from 2007. The total number of truck tractors involved in casualty crashes was highest in 2006 at 706.

\*This refers to the total number of people killed and injured in collisions in which a truck tractor was involved. It does not refer to the number of truck tractor drivers killed and injured.



**Table 7.9****Improper Actions of Truck Tractor Drivers Involved in Casualty Collisions\*****2008**

<b>Improper Actions of Truck Tractor Driver</b>			<b>Driver Actions in Total Casualty Collisions (All Vehicle Types)</b>
	<b>N</b>	<b>%</b>	<b>%</b>
Ran Off Road	76	37.4	16.7
Followed Too Closely	41	20.2	28.2
Improper Lane Change	13	6.4	3.0
Stop Sign Violation	11	5.4	8.6
Left of Centre	11	5.4	3.5
Left Turn Across Path	10	4.9	12.5
Disobey Traffic Signal	9	4.4	7.4
Improper Turn	6	3.0	2.8
Improper Passing	5	2.5	1.4
Backed Unsafely	4	2.0	2.7
Yield Sign Violation	4	2.0	2.1
Failed to Yield Right of Way - Uncontrolled Intersection	3	1.5	2.0
Failed to Yield Right of Way to Pedestrian	1	0.5	4.1
Other	9	4.4	5.0
<b>Total Number of Drivers</b>	<b>203</b>	<b>100.0</b>	

**Observations**

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

\*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. 266 were indicated as driving properly at the time of the collision.

**Table 7.10****Condition of Truck Tractor Drivers Involved in Casualty Collisions\*****2008**

<b>Driver Condition</b>	<b>N</b>	<b>%</b>	<b>Driver Condition in</b>
			<b>Total Casualty Collisions (All Vehicle Types)</b>
			<b>%</b>
Normal	438	96.7	92.4
Had Been Drinking	3	0.7	2.6
Alcohol Impaired	2	0.4	3.0
<b>Total Alcohol Involvement</b>	<b>5</b>	<b>1.1</b>	<b>5.7</b>
Fatigued/Asleep	6	1.3	0.8
Impaired by Drugs	--	--	0.3
Other	4	0.9	0.8
<b>Total Number of Drivers</b>	<b>453</b>	<b>100.0</b>	

**Observations**

The condition of the truck tractor driver was a contributory factor for 3.3% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions (1.1% compared to 5.7%). However, they were more likely to have been fatigued or asleep at the time of the crash.

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

**Table 7.11****Vehicle Factors of Truck Tractors Involved in Casualty Collisions\*****2008**

<b>Vehicle Factors</b>	<b>N</b>	<b>%</b>	<b>Vehicle Factors in Total Casualty Collisions (All Vehicle Types)</b>	
				<b>%</b>
No Apparent Defect	466	98.5		99.2
Tires Failed	2	0.4		0.1
Improper Load/Shift	1	0.2		0.0
Defective Brakes	--	--		0.2
Lighting Defect	--	--		0.1
Other	4	0.8		0.4
<b>Total Number of Truck Tractors</b>	<b>473</b>	<b>100.0</b>		

**Observations**

Vehicle factors were identified for 1.5% of truck tractors in casualty collisions. Vehicle factors were more likely to be present in truck tractor collisions than in total casualty collisions.

\*Based on those cases where a vehicle factor was specified on the collision report form. This does not indicate whether or not a mechanical inspection of the collision-involved truck tractor was conducted.

**Table 7.12****Casualty Collisions Involving Truck Tractors:****Month of Occurrence****2008**

<b>Month</b>	<b>N</b>	<b>%</b>
January	44	8.3
February	78	14.7
March	31	5.8
April	51	9.6
May	33	6.2
June	37	7.0
July	39	7.3
August	51	9.6
September	38	7.2
October	43	8.1
November	34	6.4
December	52	9.8
<b>Total Number of Collisions</b>	<b>531</b>	<b>100.0</b>

**Observations**

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

## ***Special Types of Vehicles***

### **Trains**

- In 2008, 3 people were killed and 27 people were injured in crashes in which a train was involved. The number of casualties involving trains has decreased from 2007.
- The largest number of casualty collisions involving trains occurred in the months of October and December.
- A large percentage of drivers involved in casualty collisions with a train disobeyed a traffic control device.

**Table 7.13****Trains Involved in Casualty Collisions****2004 – 2008**

<b>Number of Trains</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>
Fatal	3	4	3	5	2
Non-Fatal Injury	21	18	23	23	21
<b>Total Number of Trains Involved in Casualty Collisions</b>	<b>24</b>	<b>22</b>	<b>26</b>	<b>28</b>	<b>23</b>
<b>Casualties*</b>					
Number Killed	3	5	3	5	2
Number Injured	27	30	30	28	35
<b>Total Casualties in Collisions Involving Trains</b>	<b>30</b>	<b>35</b>	<b>33</b>	<b>33</b>	<b>37</b>

**Observations**

The number of trains involved in casualty collisions increased from 2007. The number of casualties resulting from these collisions has decreased.

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

**Table 7.14****Casualty Collisions Involving Trains:****Month of Occurrence****2008**

<b>Month</b>	<b>Fatal Collisions</b>		<b>Non-Fatal Injury Collisions</b>		<b>Total Casualty Collisions</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
January	--	--	--	--	--	--
February	--	--	4	19.0	4	16.7
March	--	--	--	--	--	--
April	--	--	1	4.8	1	4.2
May	--	--	1	4.8	1	4.2
June	--	--	2	9.5	2	8.3
July	--	--	--	--	--	--
August	--	--	1	4.8	1	4.2
September	1	33.3	2	9.5	3	12.5
October	1	33.3	4	19.0	5	20.8
November	--	--	2	9.5	2	8.3
December	1	33.3	4	19.0	5	20.8
<b>Total Number of Collisions</b>	<b>3</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>	<b>24</b>	<b>100.0</b>

**Observations**

The largest number of casualty collisions involving trains occurred in the months of October and December.

**Table 7.15****Actions of Drivers Involved in Casualty Collisions with Trains\*****2008**

Driver Actions	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Driving Properly	--	--	1	6.3	1	5.3
Disobey Traffic Signal	2	66.7	7	43.8	9	47.4
Stop Sign Violation	1	33.3	5	31.3	6	31.6
Yield Sign Violation	--	--	1	6.3	1	5.3
Failed to Yield Right of Way - Uncontrolled Intersection	--	--	1	6.3	1	5.3
Other	--	--	1	6.3	1	5.3
<b>Total Number of Drivers</b>	<b>3</b>	<b>100.0</b>	<b>16</b>	<b>100.0</b>	<b>19</b>	<b>100.0</b>

**Observations**

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

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



## ***Pedestrians***

- Pedestrian casualty collisions were more likely to occur in October and November. April experienced the least number of pedestrian crashes.
- Pedestrian casualty collisions were most likely to occur on Friday and least likely to occur on Sunday.
- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period (3:00-6:59 p.m.).
- 41.0% of the drivers in casualty collisions involving a pedestrian were recorded as failing to yield the right of way to the pedestrian.
- The casualty rate per population was highest for pedestrians between the ages of 15 and 19.
- Of pedestrians involved in injury collisions, 14.0% had consumed alcohol before the collision, compared to 50.0% 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****2008**

<b>Month of Collision</b>	<b>N</b>	<b>%</b>
January	118	9.4
February	92	7.3
March	89	7.1
April	77	6.1
May	95	7.6
June	98	7.8
July	89	7.1
August	97	7.7
September	123	9.8
October	129	10.3
November	142	11.3
December	105	8.4
<b>Total Number of Collisions</b>	<b>1254</b>	<b>100.0</b>

**Observations**

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

**Table 8.2****Casualty Collisions Involving Pedestrians:****Day of Week****2008**

<b>Day of Week</b>	<b>N</b>	<b>%</b>
Monday	163	13.0
Tuesday	193	15.4
Wednesday	205	16.3
Thursday	193	15.4
Friday	230	18.3
Saturday	156	12.4
Sunday	114	9.1
<b>Total Number of Collisions</b>	<b>1254</b>	<b>100.0</b>

**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****2008**

<b>Time Period</b>	<b>N</b>	<b>%</b>
11:00 p.m. - 2:59 a.m.	107	8.5
3:00 a.m. - 6:59 a.m.	57	4.5
7:00 a.m. - 10:59 a.m.	245	19.5
11:00 a.m. - 2:59 p.m.	275	21.9
3:00 p.m. - 6:59 p.m.	370	29.5
7:00 p.m. - 10:59 p.m.	192	15.3
Unspecified	8	0.6
<b>Total Number of Collisions</b>	<b>1254</b>	<b>100.0</b>

**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****2008**

<b>Location</b>	<b>N</b>	<b>%</b>
Urban	1199	95.6
Rural	55	4.4
<b>Total Number of Collisions</b>	<b>1254</b>	<b>100.0</b>

**Observations**

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

**Table 8.5****Actions of Drivers Involved in Casualty Collisions with Pedestrians\*****2008**

<b>Driver Actions</b>	<b>N</b>	<b>%</b>
Driving Properly	352	34.2
Failed to Yield Right of Way To Pedestrian	421	41.0
Backed Unsafely	100	9.7
Improper Turn	25	2.4
Ran Off Road	23	2.2
Disobey Traffic Signal	15	1.5
Left Turn Across Path	12	1.2
Stop Sign Violation	12	1.2
Failed to Yield Right of Way - Uncontrolled Intersection	12	1.2
Followed Too Closely	10	1.0
Yield Sign Violation	5	0.5
Improper Passing	4	0.4
Improper Lane Change	4	0.4
Left of Centre	3	0.3
Other	30	2.9
<b>Total Number of Drivers</b>	<b>1028</b>	<b>100.0</b>

**Observations**

34.2% of the drivers involved in pedestrian casualty crashes were recorded as driving properly. However, 41.0% of the drivers involved in pedestrian casualty collisions failed to yield the right of way to the pedestrian.

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

**Table 8.6****Age of Pedestrian Casualties****2008**

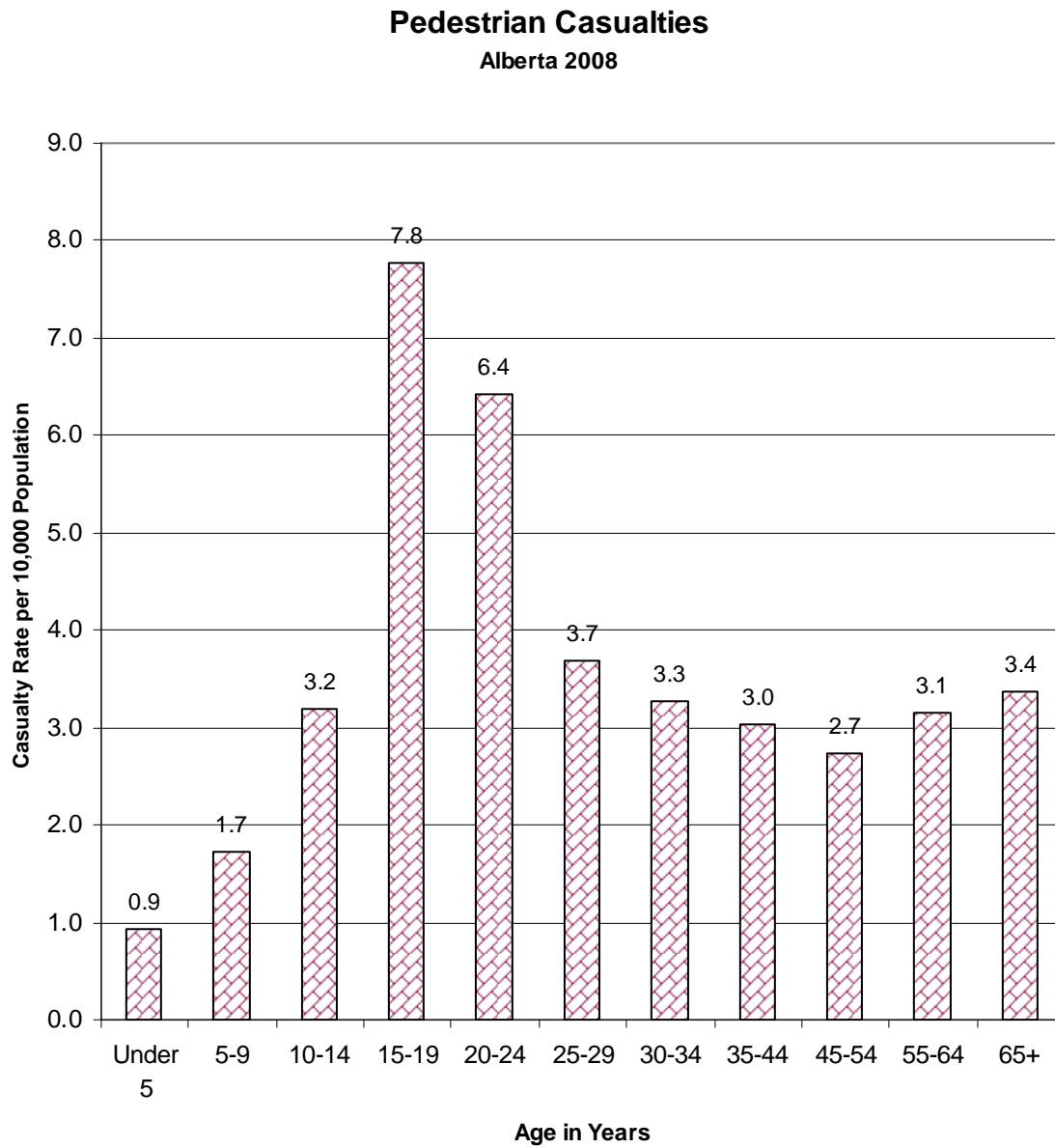
Age in Years	Pedestrians Killed	Pedestrians Injured	Total Pedestrian Casualties		Pedestrian Casualty Rate Per 10,000 Population*
	N	N	N	%	
Under 5	1	20	21	1.6	0.9
5 - 9	--	36	36	2.8	1.7
10 - 14	--	71	71	5.5	3.2
15 - 19	4	189	193	14.9	7.8
20 - 24	3	181	184	14.2	6.4
25 - 29	4	104	108	8.3	3.7
30 - 34	2	87	89	6.9	3.3
35 - 44	6	157	163	12.6	3.0
45 - 54	3	149	152	11.7	2.7
55 - 64	1	113	114	8.8	3.1
65 and over	10	116	126	9.7	3.4
Unspecified	--	37	37	2.9	
<b>Total Number of Pedestrian Casualties</b>	<b>34</b>	<b>1260</b>	<b>1294</b>	<b>100.0</b>	

**Observations**

The casualty rate per population was highest for pedestrians between the ages of 15 and 19. The lowest casualty rate was recorded for children under 5 years of age.

\*Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2008, Statistics Canada

**Figure 7**





**Table 8.7****Condition of Pedestrians Involved in Casualty Collisions\*****2008**

Condition of Pedestrian	Pedestrians in Fatal Collisions		Pedestrians in Non-Fatal Injury Collisions		Total Pedestrians in Casualty Collisions	
	N	%	N	%	N	%
Normal	11	45.8	864	84.5	875	83.6
Had Been Drinking	7	29.2	73	7.1	80	7.6
Alcohol Impaired	5	20.8	70	6.8	75	7.2
<b>Total Alcohol Involvement</b>	<b>12</b>	<b>50.0</b>	<b>143</b>	<b>14.0</b>	<b>155</b>	<b>14.8</b>
Impaired by Drugs	--	--	8	0.8	8	0.8
Other	1	4.2	8	0.8	9	0.9
<b>Total Number of Pedestrians</b>	<b>24</b>	<b>100.0</b>	<b>1023</b>	<b>100.0</b>	<b>1047</b>	<b>100.0</b>

**Observations**

Of pedestrians involved in injury collisions, 14.0% had consumed alcohol before the collision, compared to 50.0% involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol increased.

\*Based only on those cases where pedestrian condition was specified on the collision report form.

**Table 8.8****Age of Drinking Pedestrians Involved in Casualty Collisions\*****2008**

<b>Age in Years</b>	<b>N</b>	<b>Rate per 10,000 Population**</b>	
		<b>%</b>	
Under 10	--	--	
10 - 14	1	0.6	0.0
15 - 19	18	11.6	0.7
20 - 24	34	21.9	1.2
25 - 29	18	11.6	0.6
30 - 34	13	8.4	0.5
35 - 44	34	21.9	0.6
45 - 54	21	13.5	0.4
55 - 64	10	6.5	0.3
65 and over	5	3.2	0.1
Unspecified	1	0.6	
<b>Total Number of Pedestrian Casualties</b>	<b>155</b>	<b>100.0</b>	

**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, 2008, Statistics Canada.

## ***Bicyclists***

- Casualty collisions involving bicycles were more likely to occur in the month of September.
- Weekdays experienced the most casualty collisions involving bicycles. As well, the largest number of these crashes (38.4%) occurred during the evening rush-hour period.
- Young bicyclists, 10-14 years of age had the highest casualty rate per 10,000 population.
- Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to disobey a traffic signal or fail to yield right-of-way at an uncontrolled intersection.
- 4.2% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

**Table 9.1****Casualty Collisions Involving Bicycles:****Month of Occurrence****2008**

<b>Month of Collision</b>	<b>N</b>	<b>%</b>
January	6	1.1
February	10	1.8
March	23	4.2
April	35	6.4
May	59	10.8
June	81	14.9
July	77	14.2
August	84	15.4
September	86	15.8
October	61	11.2
November	21	3.9
December	1	0.2
<b>Total Number of Collisions</b>	<b>544</b>	<b>100.0</b>

**Observations**

The highest number of casualty crashes involving bicycles occurred during the month of September.

**Table 9.2****Casualty Collisions Involving Bicycles:****Day of Week****2008**

<b>Day of Week</b>	<b>N</b>	<b>%</b>
Monday	87	16.0
Tuesday	85	15.6
Wednesday	90	16.5
Thursday	83	15.3
Friday	87	16.0
Saturday	62	11.4
Sunday	49	9.0
Unspecified	1	0.2
<b>Total Number of Collisions</b>	<b>544</b>	<b>100.0</b>

**Observations**

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

**Table 9.3****Casualty Collisions Involving Bicycles:****Time Period****2008**

<b>Time Period</b>	<b>N</b>	<b>%</b>
11:00 p.m. - 2:59 a.m.	17	3.1
3:00 a.m. - 6:59 a.m.	13	2.4
7:00 a.m. - 10:59 a.m.	97	17.8
11:00 a.m. - 2:59 p.m.	100	18.4
3:00 p.m. - 6:59 p.m.	209	38.4
7:00 p.m. - 10:59 p.m.	103	18.9
Unspecified	5	0.9
<b>Total Number of Collisions</b>	<b>544</b>	<b>100.0</b>

**Observations**

The largest proportion of casualty crashes (38.4%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

**Table 9.4****Age of Bicycle Casualties****2008**

Age in Years	Persons Killed		Persons Injured		Total Bicyclist Casualties		Casualty Rate Per 10,000 Population*
	N	%	N	%	N	%	
Under 5	--	--	5	0.9	5	0.9	0.2
5-9	--	--	28	5.2	28	5.2	1.3
10-14	--	--	82	15.2	82	15.1	3.7
15-19	--	--	82	15.2	82	15.1	3.3
20-24	--	--	57	10.6	57	10.5	2.0
25-29	--	--	44	8.2	44	8.1	1.5
30-34	--	--	36	6.7	36	6.6	1.3
35-44	2	40.0	66	12.3	68	12.5	1.3
45-54	1	20.0	76	14.1	77	14.2	1.4
55-64	1	20.0	28	5.2	29	5.3	0.8
65 and over	1	20.0	15	2.8	16	2.9	0.4
Unspecified	--	--	19	3.5	19	3.5	
<b>Total Casualties</b>	<b>5</b>	<b>100.0</b>	<b>538</b>	<b>100.0</b>	<b>543</b>	<b>100.0</b>	

**Observations**

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

\*Based on estimates of the Alberta population by age groups and sex, July 1, 2008, Statistics Canada

**Table 9.5****Improper Actions of Bicyclists Involved in Casualty Collisions****2008**

<b>Improper Actions of Bicyclists</b>	<b>N</b>	<b>%</b>	<b>Driver Actions in</b>
			<b>Total Casualty Collisions (All Vehicle Types)</b>
			<b>%</b>
Disobey Traffic Signal	53	23.9	7.4
Failed to Yield Right of Way - Uncontrolled Intersection	29	13.1	2.0
Stop Sign Violation	20	9.0	8.6
Left of Centre	16	7.2	3.5
Improper Passing	11	5.0	1.4
Left Turn Across Path	10	4.5	12.5
Yield Sign Violation	7	3.2	2.1
Improper Lane Change	6	2.7	3.0
Ran Off Road	6	2.7	16.7
Followed Too Closely	5	2.3	28.2
Improper Turn	4	1.8	2.8
Failed to Yield Right of Way to Pedestrian	1	0.5	4.1
Other	54	24.3	5.0
<b>Total Number of Bicyclists</b>	<b>222</b>	<b>100.0</b>	

**Observations**

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

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

**Note:** There was a total of 394 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 172 were indicated as driving properly at the time of the collision.



**Table 9.6****Condition of Bicyclists Involved in Casualty Collisions\*****2008**

<b>Condition of Bicyclist</b>	<b>N</b>	<b>%</b>
Normal	424	94.2
Had Been Drinking	14	3.1
Alcohol Impaired	5	1.1
<b>Total Alcohol Involvement</b>	<b>19</b>	<b>4.2</b>
Impaired by Drugs	5	1.1
Other	2	0.4
<b>Total Number of Bicyclists</b>	<b>450</b>	<b>100.0</b>

**Observations**

4.2% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

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



## **Traffic Safety Issues**

### **Alcohol Involvement**

- A total of 5.3% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 22.5% 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 more than five times as many male drivers as female drivers who had consumed alcohol prior to the collision.
- In 2008, alcohol related casualty crashes were most likely to have occurred in November, 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, 2004 - 2008.

**Table 10.1****Condition of Drivers in Casualty Collisions\*****2008**

Condition of Driver	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Normal	336	75.5	20789	92.7	21125	92.4
Had Been Drinking	39	8.8	559	2.5	598	2.6
Alcohol Impaired	61	13.7	634	2.8	695	3.0
<b>Total Alcohol Involvement</b>	<b>100</b>	<b>22.5</b>	<b>1193</b>	<b>5.3</b>	<b>1293</b>	<b>5.7</b>
Impaired by Drugs	5	1.1	61	0.3	66	0.3
Fatigued/Asleep	3	0.7	190	0.8	193	0.8
Other	1	0.2	187	0.8	188	0.8
<b>Total Number of Drivers</b>	<b>445</b>	<b>100.0</b>	<b>22420</b>	<b>100.0</b>	<b>22865</b>	<b>100.0</b>

**Observations**

Of drivers involved in injury collisions, 5.3% had consumed alcohol before the crash, compared to 22.5% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 5.7% of drivers involved in casualty collisions were judged to have consumed alcohol before the crash.

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

Figure 8

**Involvement of Drinking Drivers in Casualty Collisions**  
Alberta 2004 - 2008

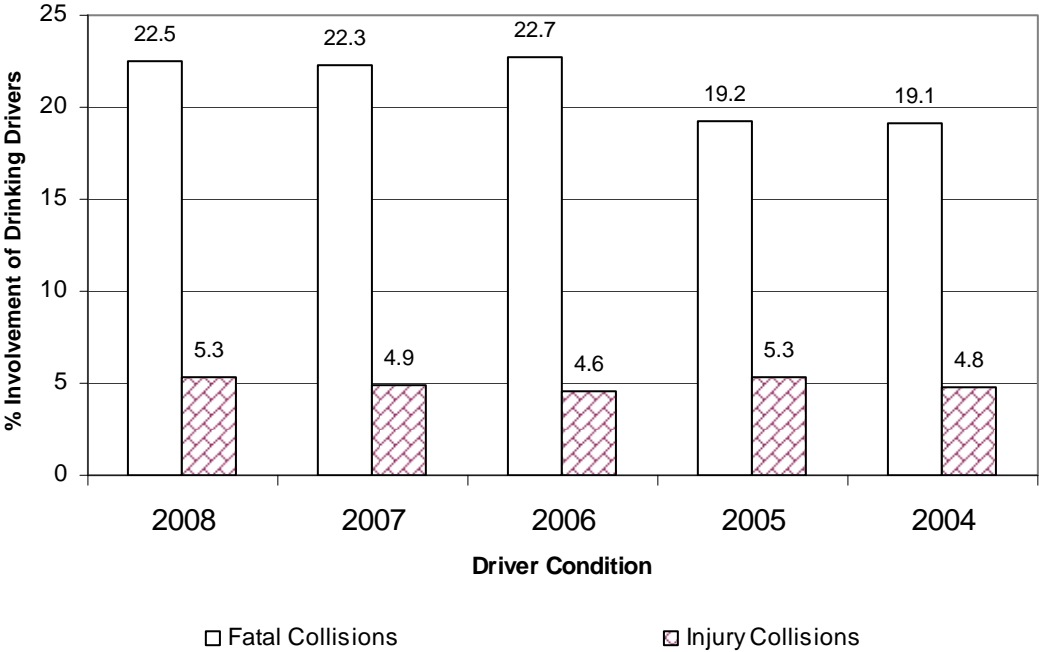
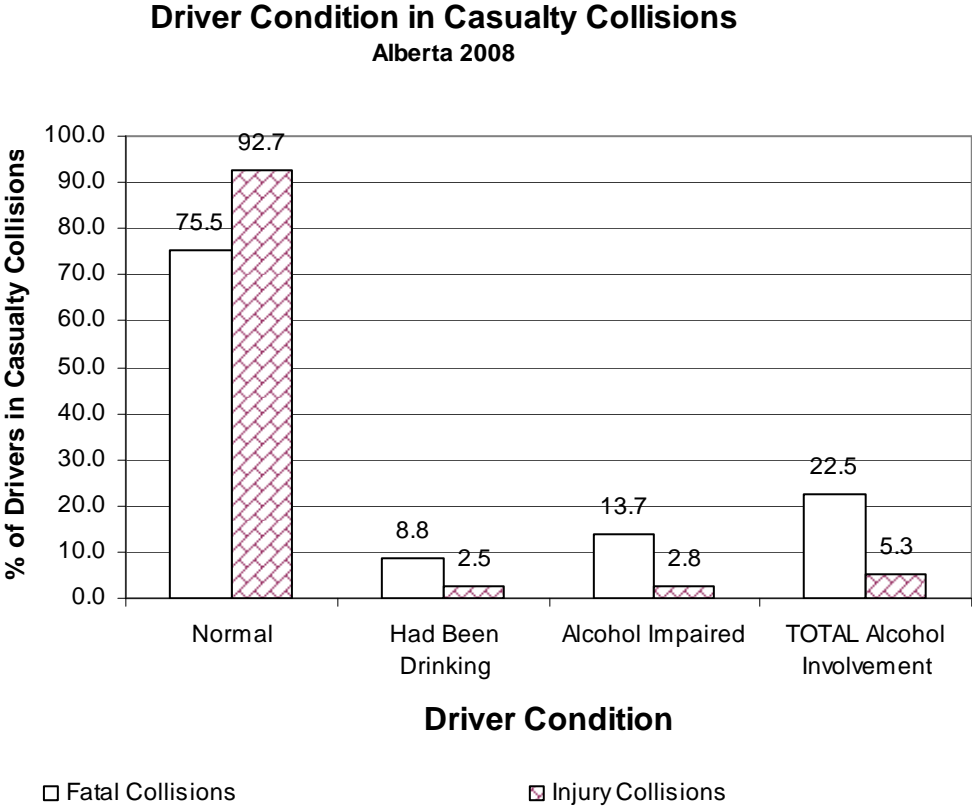


Figure 9



**Table 10.2****Age and Sex of Drinking Drivers in Casualty Collisions\*****2008**

Age in Years	Male		Rate Per 1,000** Licensed Drivers	Female		Rate Per 1,000** Licensed Drivers	Total*		Rate Per 1,000** Licensed Drivers
	N	%		N	%		N	%	
Under 16	--	--		2	0.2	0.2	2	0.2	0.1
16 - 17	31	2.4	1.0	11	0.9	0.4	42	3.2	0.7
18 - 19	108	8.4	2.6	18	1.4	0.5	126	9.7	1.6
20 - 21	111	8.6	2.4	22	1.7	0.5	133	10.3	1.5
22 - 24	138	10.7	1.6	29	2.2	0.4	167	12.9	1.0
25 - 29	198	15.3	1.3	25	1.9	0.2	223	17.2	0.8
30 - 34	110	8.5	0.8	19	1.5	0.2	129	10.0	0.5
35 - 44	177	13.7	0.6	34	2.6	0.1	211	16.3	0.4
45 - 54	138	10.7	0.5	26	2.0	0.1	164	12.7	0.3
55 - 64	53	4.1	0.3	4	0.3	0.0	57	4.4	0.2
65 and over	16	1.2	0.1	4	0.3	0.0	20	1.5	0.1
Unspecified	3	0.2		--	--		19	1.5	
<b>Total Drivers</b>	<b>1083</b>	<b>83.8</b>		<b>194</b>	<b>15.0</b>		<b>1293</b>	<b>100.0</b>	

**Observations**

Of those collision-involved drivers who had consumed alcohol, there were over five times as many male drivers as female drivers. In terms of involvement per 1,000 licensed drivers, males 18-24 years of age were more likely to have consumed alcohol prior to a casualty collision than any other age group.

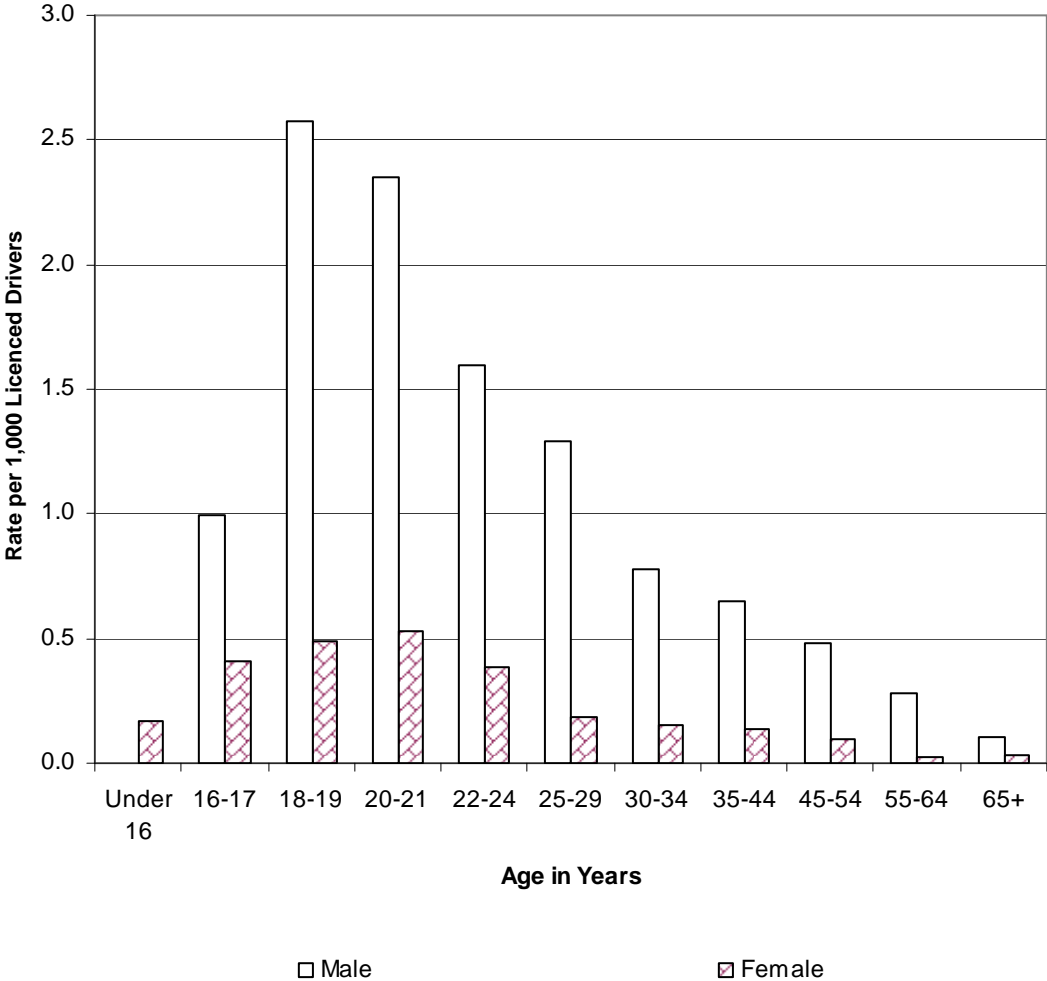
Drinking drivers include those indicated on the collision report form as having been drinking prior to the crash and those who were alcohol-impaired at the time of the crash. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

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

\*\*Source: Licensed Drivers – Service Alberta – Registries Services, as of December 31, 2008.

Figure 10

### Drinking Drivers Involved in Casualty Collisions Alberta 2008





**Table 10.3****Alcohol-Involved Casualty Collisions:****Month of Occurrence****2008**

<b>Month</b>	<b>Fatal Collisions</b>		<b>Non-Fatal Injury Collisions</b>		<b>Total Casualty Collisions</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
January	5	5.0	77	6.5	82	6.4
February	2	2.0	83	7.0	85	6.6
March	8	8.0	105	8.9	113	8.8
April	11	11.0	100	8.4	111	8.6
May	12	12.0	94	7.9	106	8.3
June	5	5.0	106	9.0	111	8.6
July	11	11.0	97	8.2	108	8.4
August	10	10.0	110	9.3	120	9.3
September	15	15.0	109	9.2	124	9.7
October	11	11.0	110	9.3	121	9.4
November	8	8.0	123	10.4	131	10.2
December	2	2.0	70	5.9	72	5.6
<b>Total Number of Collisions</b>	<b>100</b>	<b>100.0</b>	<b>1184</b>	<b>100.0</b>	<b>1284</b>	<b>100.0</b>

**Observations**

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

**Table 10.4****Alcohol-Involved Casualty Collisions:****Day of Week****2008**

<b>Day of Week</b>	<b>Fatal Collisions</b>		<b>Non-Fatal Injury Collisions</b>		<b>Total Casualty Collisions</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Monday	13	13.0	112	9.5	125	9.7
Tuesday	10	10.0	100	8.4	110	8.6
Wednesday	6	6.0	117	9.9	123	9.6
Thursday	10	10.0	127	10.7	137	10.7
Friday	12	12.0	198	16.7	210	16.4
Saturday	29	29.0	304	25.7	333	25.9
Sunday	20	20.0	226	19.1	246	19.2
<b>Total Number of Collisions</b>	<b>100</b>	<b>100.0</b>	<b>1184</b>	<b>100.0</b>	<b>1284</b>	<b>100.0</b>

**Observations**

The highest number of alcohol-involved fatal collisions and non-fatal injury collisions occurred on Saturday (29.0% and 25.7% respectively). The smallest number of alcohol-involved casualty collisions occurred on Tuesday (8.6%).

**Table 10.5****Alcohol-Involved Casualty Collisions:****Time Period****2008**

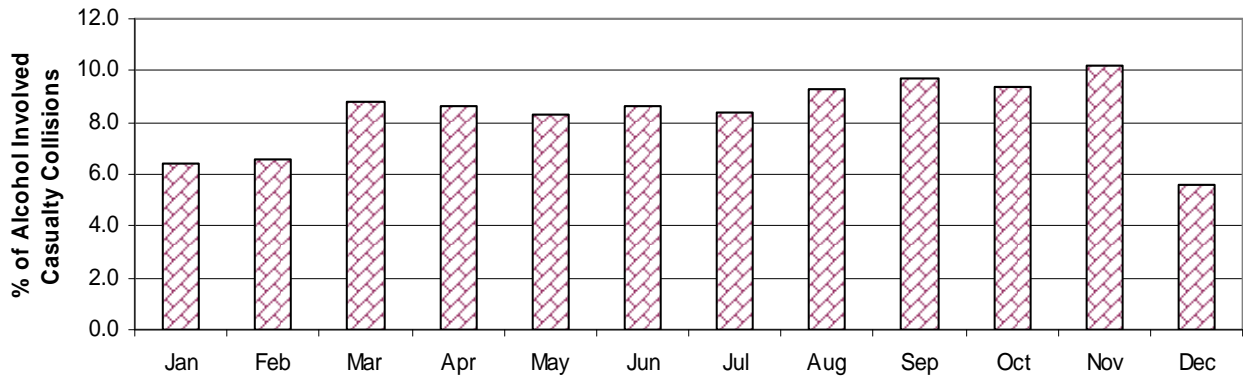
Time Period	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
11:00 p.m. - 2:59 a.m.	36	36.0	388	32.8	424	33.0
3:00 a.m. - 6:59 a.m.	20	20.0	169	14.3	189	14.7
7:00 a.m. - 10:59 a.m.	3	3.0	57	4.8	60	4.7
11:00 a.m. - 2:59 p.m.	4	4.0	53	4.5	57	4.4
3:00 p.m. - 6:59 p.m.	14	14.0	181	15.3	195	15.2
7:00 p.m. - 10:59 p.m.	21	21.0	316	26.7	337	26.2
Unspecified	2	2.0	20	1.7	22	1.7
<b>Total Number of Collisions</b>	<b>100</b>	<b>100.0</b>	<b>1184</b>	<b>100.0</b>	<b>1284</b>	<b>100.0</b>

**Observations**

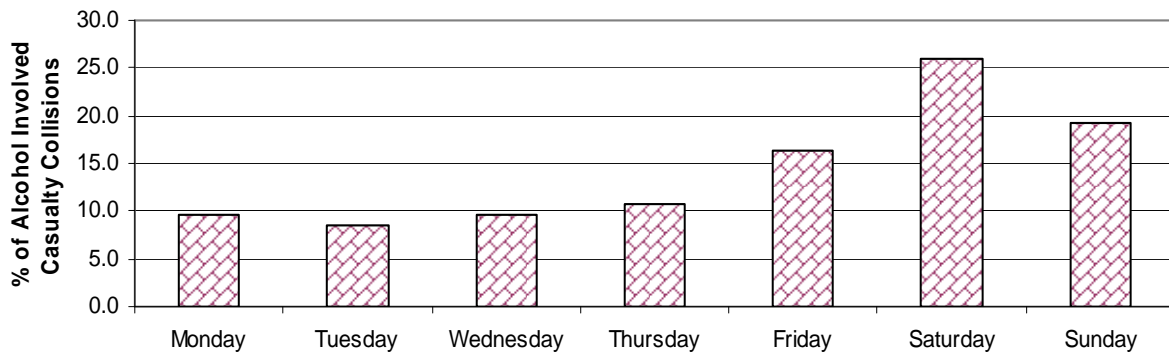
The late night/early morning time period (11:00 p.m. – 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (33.0%). The late morning/early afternoon hours (11:00 a.m. – 2:59 p.m.) were least likely to record alcohol-involved casualty crashes (4.4%).

**Figure 11**

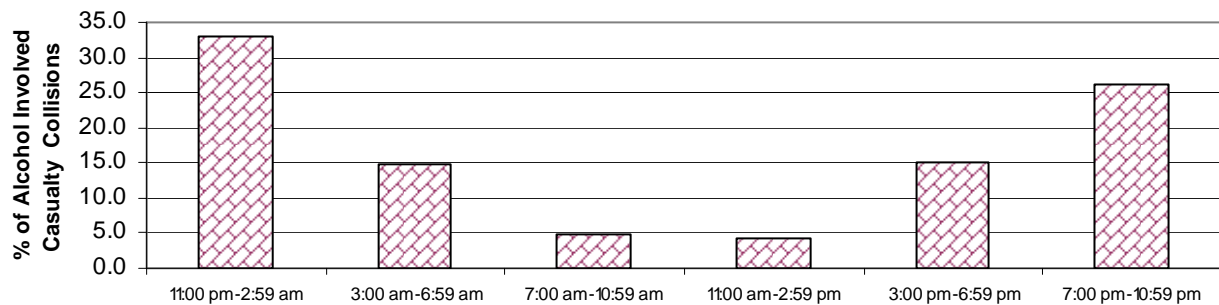
**By Month of Occurrence**



**By Day of Week**



**By Time Period**



## **Traffic Safety Issues**

### **Restraint Use**

- Collision-involved restraint users had a much lower injury rate (8.0%) than those not using restraints (32.8%).
- Occupants using a restraint reduce the likelihood of sustaining an injury and the severity of injury decreases.

**Table 10.6****Restraint Use of Vehicle Occupants  
and Injury Severity\* (Use versus Non-Use)****2008**

<b>Injury Severity of Occupants</b>	<b>Percentage of Occupants Using Restraints %</b>	<b>Percentage of Occupants Not Using Restraints %</b>
Fatal Injury	0.1	3.8
Major Injury	0.8	10.6
Minor Injury	7.1	18.4
<b>Total Occupants Sustaining Injuries</b>	<b>8.0</b>	<b>32.8</b>
No Apparent Injury	92.0	67.2
<b>Total Occupants</b>	<b>100.0</b>	<b>100.0</b>

**Observations**

Collision involved restraint users had a much lower injury rate (8.0%) than those not using restraints (32.8%). This table illustrates the moderating effect of seat belt use on injury severity. Occupants using a restraint reduce the likelihood of sustaining an injury and the severity of injury decreases.

**Injury Severity**

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

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

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

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