

Government of Alberta ■

**ALBERTA
TRAFFIC COLLISIONS INVOLVING
OFF-HIGHWAY VEHICLES**

2004 - 2008

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COLLISION REPORTING AND OFF HIGHWAY VEHICLES

For the purpose of collision reporting off-highway vehicles are defined as follows. Off-highway/2 wheels - a motorcycle specifically designed for off-road recreational use and insured as an off-highway vehicle. Includes vehicles commonly referred to as mini-bikes, dirt bikes and trail bikes. Off-highway/3 wheels - a motor vehicle designed primarily for recreational use off-highway but include trappers or farmers using the vehicle for trapping/agricultural purposes. Off-highway/4 wheels - Includes dune or sport buggies, and 4-wheel drive motor vehicles operated off-road. Off-highway (other) - Vehicles designed primarily for recreational use off-highway and not described above. Also includes vehicles with six or more wheels and amphibious machines moving on tracks. Please note that this report does not include collisions involving motorized snow vehicles which are reported in a separate report titled "Alberta Traffic Collisions Involving Motorized Snow Vehicles 1999 – 2008".

The Alberta Collision Information System (ACIS) captures information on off-highway vehicles involved in reportable traffic collisions. That is, collisions that occur on a roadway and result in death, injury and/or total property damage exceeding \$1,000. For the purpose of collision reporting, a roadway means any provincial highway (#1 – 999), rural road, street, avenue, parkway, lane, alley, bridge (privately or publicly owned) where the public is ordinarily permitted to drive or park vehicles. This would include sidewalks, boulevards, and ditches adjacent to and parallel with the roadway.

ACIS information does not include collisions which occurred on private property. Consequently, the ACIS statistics provided in this report may not provide a complete representation of the total number of off-highway vehicle fatalities and injuries. While ACIS only records information about collisions occurring on public property, the collision trends are congruent with those reported by the Alberta Centre for Injury Control and Research (ACICR) (see Appendix 1) who, through the Medical Examiner's Office, track the total number of off-highway vehicle fatalities occurring on both public and private property in Alberta. This suggests that ACIS information, which focuses on those collisions occurring on public property, does provide an accurate representation of off-highway vehicle collisions in Alberta from which conclusions may be made.

SUMMARY OF COLLISION INFORMATION

TOTAL COLLISIONS AND CASUALTIES

From 2004 to 2008 there were 1062 collisions involving 1116 off-highway vehicles. These 1062 collisions were comprised of 47 fatal, 690 injury, and 325 property damage collisions (Table 1 and Figure 1).

The majority (69.4%) of all off-highway collisions reported resulted in either death or injury (Table 1).

Over the past five years, there have been 48 fatalities and 862 injuries reported in collisions involving off-highway vehicles (Table 1 and Figure 2).

Of the 48 fatalities reported, 43 were operators or passengers of off-highway vehicles, 4 were pedestrians, and 1 was an occupant of another vehicle involved in a collision with an off-highway vehicle.

Of the 862 injuries reported, 836 were incurred by operators and passengers of off-highway vehicles, and 26 by pedestrians and occupants of other vehicles involved in collisions with off-highway vehicles.

The years with the highest number of fatalities and injuries were 2006 and 2008, respectively (Table 1 and Figures 3 & 4). Conversely, the years with the least number of fatalities and injuries reported were 2004 and 2005, respectively (Table 1 and Figures 3 & 4).

COLLISION TIMES AND LOCATIONS

The highest proportion of off-highway vehicle collisions occurred in May (16.0%). May was also the month in which most fatal (21.3%) and injury (17.7%) collisions occurred. The month with the highest number of property damage collisions was August (12.9%) (Table 2).

The daily distribution of off-highway vehicle collisions indicated that Saturday and Sunday were the most collision-prone days of the week (51.4%) (Table 3).

The afternoon hours of 3 p.m. to 6:59 p.m. experienced 36.2% of all collisions involving an off-highway vehicle (Table 4).

The majority of collisions (57.1%) involving off-highway vehicles occurred on rural range/township roads, and 8.5% occurred on rural, numbered highways. Collisions in urban areas accounted for 34.5% of all collisions reported (Table 5).

Among the nine Traffic Safety Regions (see Appendix 2 for locations), the regions reporting the highest number of casualty crashes include the Aspen Region (25.8%), the David Thompson Region (21.4%) and the Peace Country Region (17.8%). Together, these three regions account for 65.0% of all casualty collisions involving an off-highway vehicle (Table 6 and Figures 5 & 6).

Of the 324 property damage collisions reported in the nine Traffic Safety Regions, over half (52.8%) occurred within the Aspen Region (22.2%), the David Thompson Region (17.0%), and the Capital Region (13.6%) (Table 6 and Figure 7).

VEHICLES

The two most common points of impact on off-highway vehicles were rollover (33.7%) and front centre (26.3%) (Table 7).

Two thirds (66.9%) of off-highway vehicle collisions were single vehicle crashes (Table 8).

Of the 28.2% collisions that involved a vehicle other than an off-highway vehicle, the majority (84.4%) of other vehicles were passenger type vehicles (i.e., pick-up, car, or mini-van) (Tables 8 and 9).

OPERATORS AND DRIVERS

Males accounted for 79.5% of off-highway vehicle operators involved in collisions (Table 10).

One third (34.8%) of off-highway vehicle operators involved in collisions were aged 15-24. Furthermore, 9.5% of operators were under 15 years of age (Table 11).

In casualty collisions, 26.0% of off-highway vehicle operators had consumed alcohol prior to the collision. In fatal collisions, 56.4% of operators had been drinking prior to the crash (Table 12).

Approximately half (48.1%) of the operators who had consumed alcohol prior to the collision were under the age of 30. Specifically, operators aged 20-24 were the most likely age group to have been drinking prior to the crash (Table 13).

Two thirds (62.0%) of off-highway vehicle operators made an improper action that contributed to the collision; the most common errors included running off the road (26.2%) and failure to yield the right of way at an uncontrolled intersection (4.3%) (Table 14).

The majority (86.3%) of the drivers of other vehicles involved in casualty collisions with off-highway vehicles were reported as driving properly at the time of the crash (Table 15).

VICTIMS

One-third (34.2%) of off-highway vehicle casualties were under 20 years of age (Table 16).

Only 20.9% of off-highway vehicle operators and passengers who were killed were wearing a helmet at the time of the crash. Overall, only 36.5% of off-highway vehicle casualties wore a helmet (Table 17).

Half (52.6%) of off-highway vehicle casualties sustained their injuries in rollover collisions (Table 18). Specifically, 42.5% of fatalities, 53.4% of major injuries and 52.9% of minor injuries occurred in rollover collisions.

Table 1
ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
2004 – 2008

Severity of Collisions	2008	2007	2006	2005	2004	COLLISIONS
Fatal Collisions	12	9	11	10	5	47
Injury Collisions	191	126	128	116	129	690
Property Damage Collisions	97	71	80	46	31	325
Total Number of Collisions	300	206	219	172	165	1062
						TOTAL CASUALTIES
Casualties*						
Number Killed	12	9	12	10	5	48
Number Injured	237	161	165	142	157	862
Total Casualties in Collisions Involving Off-Highway Vehicles	249	170	177	152	162	910
						TOTAL OFF-HIGHWAY VEHICLES
Number of Off-Highway Vehicles	2008	2007	2006	2005	2004	
Number of Off-Highway Vehicles in Fatal Collisions	12	9	12	11	5	49
Number of Off-Highway Vehicles in Injury Collisions	202	136	137	123	137	735
Number of Off-Highway Vehicles in Property Damage Collisions	101	72	81	47	31	332
Total Number of Off-Highway Vehicles in Collisions	315	217	230	181	173	1116

Observations

From 2004 to 2008 there were 1062 collisions involving 1116 off-highway vehicles. The majority (69.4%) of these collisions resulted in death or injury. The highest number of fatalities were recorded in 2006 and 2008.

* These statistics refer to the total number of people killed and injured in collisions involving off-highway vehicles; they are not limited to off-highway vehicle operators and passengers.

Figure 1
Off-Highway Vehicle Collisions by Collision Severity*
2004-2008

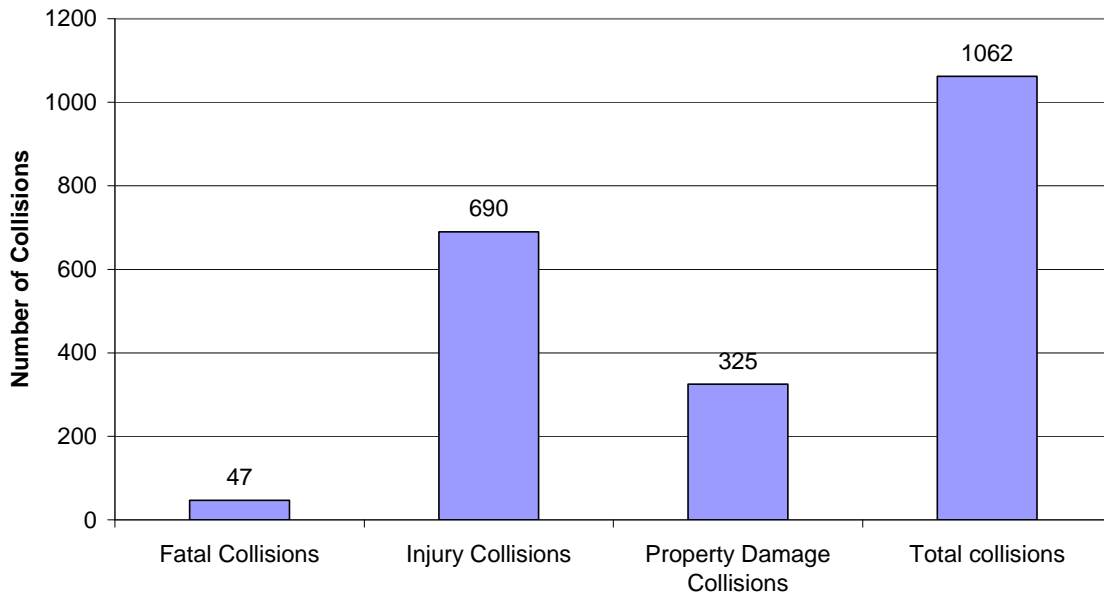
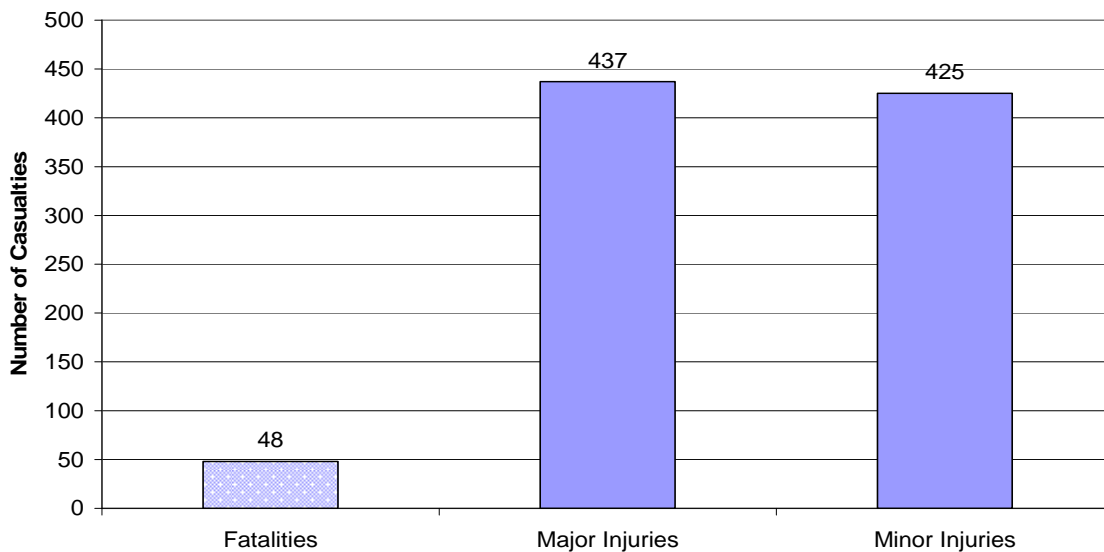


Figure 2
Fatalities and Injuries in Collisions Involving Off-Highway Vehicles*
2004-2008



* Statistics refer to the total number of people killed and injured in collisions involving off-highway vehicles; they are not limited to off-highway vehicle operators and passengers.

Figure 3
Fatalities in Collisions Involving Off-Highway Vehicles*
2004-2008

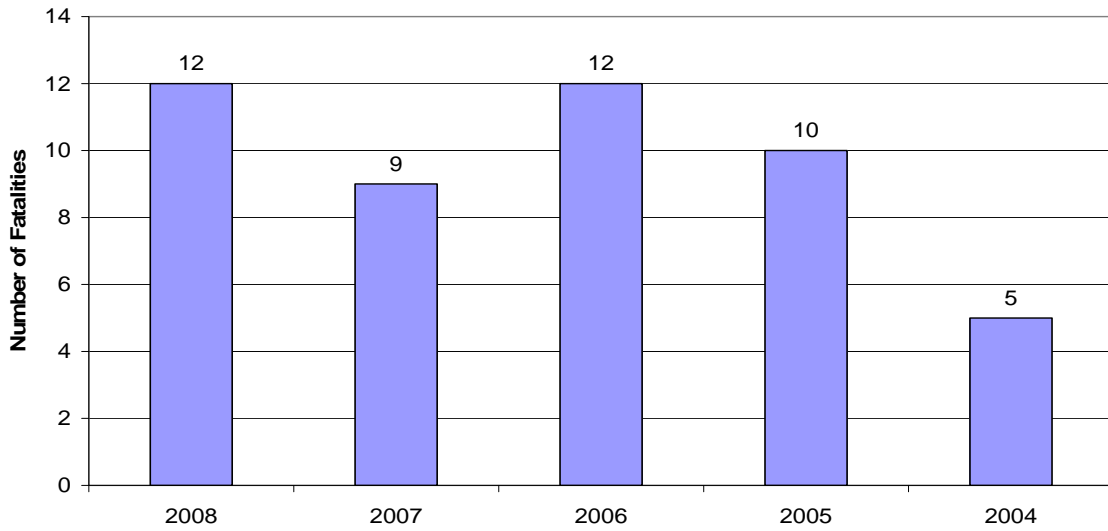
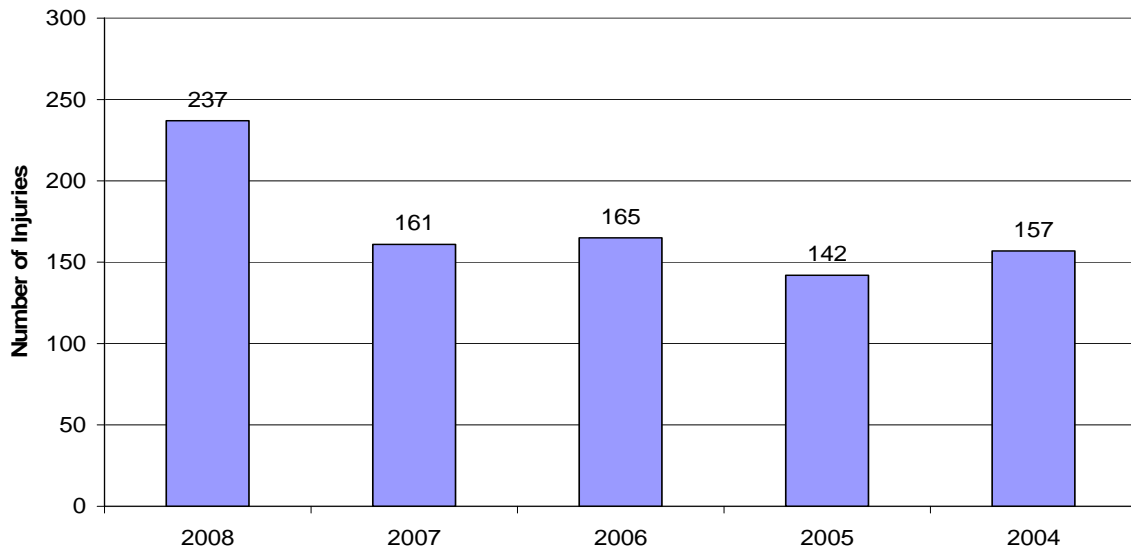


Figure 4
Injuries in Collisions Involving Off-Highway Vehicles*
2004-2008



* Statistics refer to the total number of people killed and injured in collisions involving off-highway vehicles; they are not limited to off-highway vehicle operators and passengers.

Table 2

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
MONTH OF OCCURRENCE
2004 – 2008**

Month	Fatal Collisions		Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	1	2.1	23	3.3	23	7.1	47	4.4
February	4	8.5	25	3.6	19	5.8	48	4.5
March	2	4.3	29	4.2	20	6.2	51	4.8
April	3	6.4	48	7.0	28	8.6	79	7.4
May	10	21.3	122	17.7	38	11.7	170	16.0
June	5	10.6	97	14.1	37	11.4	139	13.1
July	7	14.9	97	14.1	37	11.4	141	13.3
August	7	14.9	87	12.6	42	12.9	136	12.8
September	6	12.8	78	11.3	25	7.7	109	10.3
October	2	4.3	49	7.1	22	6.8	73	6.9
November	--	--	22	3.2	16	4.9	38	3.6
December	--	--	13	1.9	18	5.5	31	2.9
Total Number of Collisions	47	100.0	690	100.0	325	100.0	1062	100.0

Observations

The month in which most fatal (21.3%) and injury (17.7%) collisions occurred was May. The month with the highest number of property damage collisions was August (12.9%).

Table 3

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
OCCURRENCE BY DAY OF WEEK
2004 - 2008**

Day of Week	Fatal Collisions		Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Monday	2	4.3	64	9.3	40	12.3	106	10.0
Tuesday	2	4.3	42	6.1	23	7.1	67	6.3
Wednesday	8	17.0	56	8.1	40	12.3	104	9.8
Thursday	5	10.6	45	6.5	28	8.6	78	7.3
Friday	5	10.6	104	15.1	50	15.4	159	15.0
Saturday	17	36.2	220	31.9	73	22.5	310	29.2
Sunday	8	17.0	157	22.8	71	21.8	236	22.2
Unspecified	--	--	2	0.3	--	--	2	0.2
Total Number of Collisions	47	100.0	690	100.0	325	100.0	1062	100.0

Observation

Half (51.4%) of the collisions involving an off-highway vehicle occurred on Saturday and Sunday.

Table 4

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
TIME PERIOD OF OCCURRENCE
2004 – 2008**

Time of Day	Fatal Collisions		Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
11:00 p.m. - 2:59 a.m.	10	21.3	64	9.3	15	4.6	89	8.4
3:00 a.m. - 6:59 a.m.	3	6.4	21	3.0	8	2.5	32	3.0
7:00 a.m. - 10:59 a.m.	1	2.1	27	3.9	29	8.9	57	5.4
11:00 a.m. - 2:59 p.m.	9	19.1	124	18.0	89	27.4	222	20.9
3:00 p.m. - 6:59 p.m.	10	21.3	257	37.2	117	36.0	384	36.2
7:00 p.m. - 10:59 p.m.	11	23.4	182	26.4	59	18.2	252	23.7
Unspecified	3	6.4	15	2.2	8	2.5	26	2.4
Total Number of Collisions	47	100.0	690	100.0	325	100.0	1062	100.0

Observation

The afternoon period of 3:00 p.m. to 6:59 p.m. experienced 36.2% of all collisions involving an off-highway vehicle.

Table 5

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
LOCATION
2004 – 2008**

Location	Fatal Collisions		Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Urban	11	23.4	190	27.5	165	50.8	366	34.5
Rural Highways Numbered 1-986	8	17.0	70	10.1	12	3.7	90	8.5
Other Rural Roads	28	59.6	430	62.3	148	45.5	606	57.1
Total Number of Collisions	47	100.0	690	100.0	325	100.0	1062	100.0

Observations

More than half (57.1%) of collisions involving off-highway vehicles occurred on rural range/township roads.

Table 6

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
BY TRAFFIC SAFETY REGION
2004 – 2008**

Traffic Safety Region	Fatal Collisions		Injury Collisions		Total Casualty Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%	N	%
1 - Chinook	1	2.1	23	3.3	24	3.3	16	4.9	40	3.8
2 - Palliser	--	--	12	1.7	12	1.6	5	1.5	17	1.6
3 - Calgary	2	4.3	28	4.1	30	4.1	36	11.1	66	6.2
4 - David Thompson	9	19.1	149	21.6	158	21.4	55	17.0	213	20.1
5 - East Central	4	8.5	26	3.8	30	4.1	19	5.9	49	4.6
6 - Capital	6	12.8	79	11.4	85	11.5	44	13.6	129	12.2
7 - Aspen	10	21.3	180	26.1	190	25.8	72	22.2	262	24.7
8 - Peace Country	8	17.0	123	17.8	131	17.8	36	11.1	167	15.7
9 - Nothern Lights	7	14.9	70	10.1	77	10.4	41	12.7	118	11.1
Total Number of Collisions	47	100.0	690	100.0	737	100.0	324	100.0	1061	100.0

Observations

Regions reporting the highest number of casualty crashes include the Aspen Region (25.8%), the David Thompson Region (21.4%) and the Peace Country Region (17.8%).

Figure 5
Off-Highway Vehicle Fatal Collisions by Traffic Safety Region
2004-2008

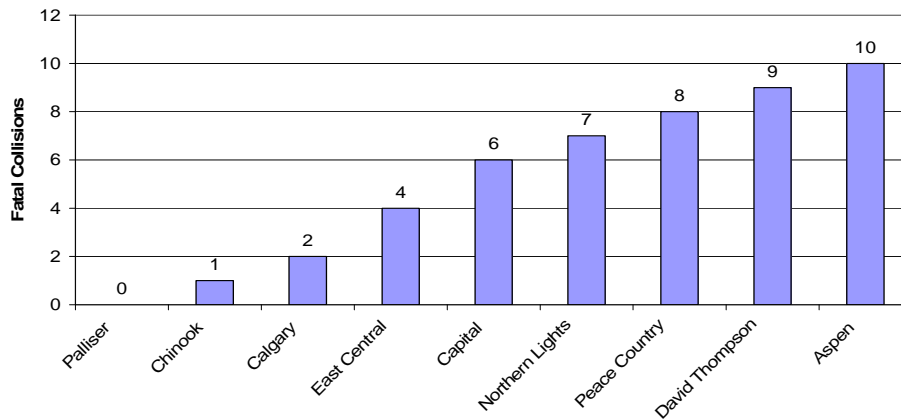


Figure 6
Off-Highway Vehicle Injury Collisions by Traffic Safety Region
2004-2008

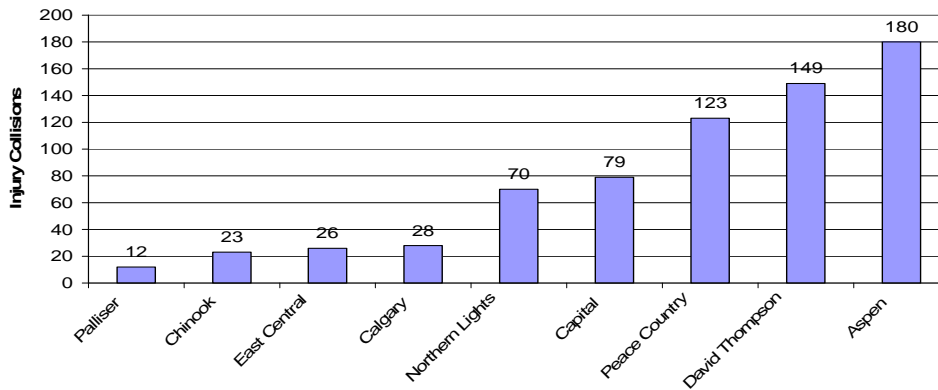


Figure 7
Off-Highway Vehicle Property Damage Collisions by Traffic Safety Region
2004-2008

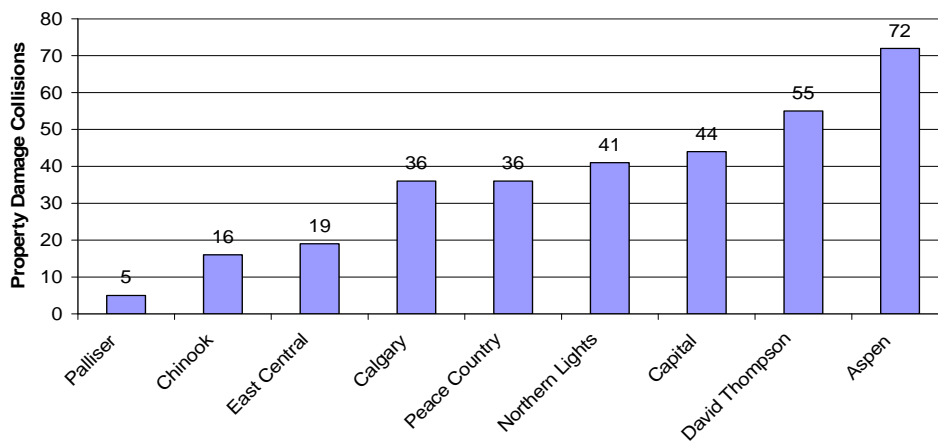


Table 7

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
POINT OF IMPACT ON OFF-HIGHWAY VEHICLES
2004 - 2008**

Point of Impact	Fatal Collisions		Injury Collisions		Property Damage Collisions		Total Off Highway Vehicles	
	N	%	N	%	N	%	N	%
Rollover	17	34.7	305	41.5	54	16.3	376	33.7
Front Center	16	32.7	188	25.6	90	27.1	294	26.3
Right Front	--	--	23	3.1	22	6.6	45	4.0
Left Front	3	6.1	19	2.6	14	4.2	36	3.2
Rear Center	1	2.0	20	2.7	17	5.1	38	3.4
Left Center	4	8.2	12	1.6	7	2.1	23	2.1
Left Rear	1	2.0	8	1.1	6	1.8	15	1.3
Roof	1	2.0	13	1.8	2	0.6	16	1.4
Undercarriage	--	--	7	1.0	7	2.1	14	1.3
Right Center	1	2.0	10	1.4	1	0.3	12	1.1
Right Rear	1	2.0	7	1.0	4	1.2	12	1.1
Attachment	--	--	1	0.1	4	1.2	5	0.4
Unspecified	4	8.2	122	16.6	104	31.3	230	20.6
Total Off-Highway Vehicles	49	100.0	735	100.0	332	100.0	1116	100.0

Observation

The most common points of impact on off-highway vehicles were rollover (33.7%) and front centre (26.3%).

Table 8

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
NUMBER OF VEHICLES INVOLVED
2004 - 2008**

Number of Vehicles	Fatal Collisions		Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Single - Off-Highway Vehicle	36	76.6	551	79.9	123	37.8	710	66.9
Multi - Off-Highway Vehicles	2	4.3	44	6.4	6	1.8	52	4.9
Multi - Other Vehicles	9	19.1	95	13.8	196	60.3	300	28.2
Total Number of Collisions	47	100.0	690	100.0	325	100.0	1062	100.0

Observation

The majority (66.9%) of off-highway vehicle collisions were single vehicle crashes.

Table 9

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
OTHER VEHICLES INVOLVED*
2004 - 2008**

Type of Vehicle	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Vehicles in Property Damage Collisions		Total Other Vehicles in Collisions	
	N	%	N	%	N	%	N	%
Pick-up Truck/Van	2	25.0	27	33.3	44	40.0	73	36.7
Passenger Car	2	25.0	22	27.2	41	37.3	65	32.7
Mini-Van/MPV	1	12.5	12	14.8	17	15.5	30	15.1
Truck 4500 kg+	2	25.0	11	13.6	5	4.5	18	9.0
Truck Tractor	1	12.5	3	3.7	1	0.9	5	2.5
Motorcycle	--	--	3	3.7	1	0.9	4	2.0
Other	--	--	3	3.7	1	0.9	4	2.0
Total Other Vehicles	8	100.0	81	100.0	110	100.0	199	100.0

Observation

The majority (84.4%) of vehicles involved in collisions with off-highway vehicles were passenger type vehicles (i.e., pick-up, car, or mini-van).

* Based on those cases where type of vehicle was specified on the collision report form.
Note: Does not include 107 parked vehicles involved in collisions with off-highway vehicles.

Table 10

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
SEX OF OFF-HIGHWAY VEHICLE OPERATORS*
2004 - 2008**

Sex of Operator	Off-Highway Vehicle Operators in Fatal Collisions		Off-Highway Vehicle Operators in Injury Collisions		Off-Highway Vehicle Operators in Property Damage Collisions		Total Off-Highway Vehicle Operators in Collisions	
	N	%	N	%	N	%	N	%
Male	45	93.8	585	80.6	230	74.7	860	79.5
Female	2	4.2	127	17.5	35	11.4	164	15.2
Unspecified	1	2.1	14	1.9	43	14.0	58	5.4
Total Off-Highway Vehicle Operators	48	100.0	726	100.0	308	100.0	1082	100.0

Observation

The majority (79.5%) of off-highway vehicle operators involved in collisions were male.

* Does not include 34 parked off-highway vehicles involved in collisions.

Table 11

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
AGE OF OFF-HIGHWAY VEHICLE OPERATORS*
2004 - 2008**

Age of Operator	Off-Highway Vehicle Operators in Fatal Collisions		Off-Highway Vehicle Operators in Injury Collisions		Off-Highway Vehicle Operators in Property Damage Collisions		Total Off-Highway Vehicle Operators in Collisions	
	N	%	N	%	N	%	N	%
Under 10	1	2.1	11	1.5	3	1.0	15	1.4
10 – 14	4	8.3	72	9.9	12	3.9	88	8.1
15 – 19	9	18.8	131	18.0	45	14.6	185	17.1
20 – 24	7	14.6	135	18.6	50	16.2	192	17.7
25 – 29	5	10.4	81	11.2	32	10.4	118	10.9
30 – 34	3	6.3	55	7.6	25	8.1	83	7.7
35 – 39	4	8.3	51	7.0	31	10.1	86	7.9
40 – 44	2	4.2	53	7.3	21	6.8	76	7.0
45 – 49	4	8.3	45	6.2	14	4.5	63	5.8
50 – 54	2	4.2	42	5.8	10	3.2	54	5.0
55 – 59	--	--	17	2.3	7	2.3	24	2.2
60 – 64	3	6.3	9	1.2	6	1.9	18	1.7
65 +	3	6.3	9	1.2	5	1.6	17	1.6
Unspecified	1	2.1	15	2.1	47	15.3	63	5.8
Total Off-Highway Vehicle Operators	48	100.0	726	100.0	308	100.0	1082	100.0

Observations

One third (34.8%) of off-highway vehicle operators involved in collisions were aged 15-24. Furthermore, 9.5% of operators were under 15 years of age.

* Does not include 34 parked off-highway vehicles involved in collisions.

Table 12

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
CONDITION OF OFF-HIGHWAY VEHICLE OPERATORS*
INVOLVED IN CASUALTY COLLISIONS
2004 - 2008**

Operator Condition	Off-Highway Vehicle Operators in Fatal Collisions		Off-Highway Vehicle Operators in Injury Collisions		Total Off-Highway Vehicle Operators in Casualty Collisions	
	N	%	N	%	N	%
Apparently Normal	17	43.6	439	75.2	456	73.2
Had Been Drinking	14	35.9	100	17.1	114	18.3
Alcohol Impaired	8	20.5	40	6.8	48	7.7
Total Alcohol Involvement	22	56.4	140	24.0	162	26.0
Other	--	--	5	0.9	5	0.8
Total Off-Highway Vehicle Operators	39	100.0	584	100.0	623	100.0

Observations

One fourth (26.0%) of off-highway vehicle operators involved in casualty collisions had consumed alcohol prior to the collision. In fatal collisions, 56.4% of off-highway vehicle operators had consumed alcohol prior to the crash.

* Based on those cases where driver condition was specified on the collision report form.
Note: Does not include 10 parked off-highway vehicles involved in casualty collisions.

Table 13

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
AGE OF DRINKING OFF-HIGHWAY VEHICLE OPERATORS*
INVOLVED IN CASUALTY COLLISIONS**
2004 - 2008**

Age of Operator	N	%
Under 15	1	0.6
15 – 17	12	7.4
18 – 19	13	8.0
20 – 24	29	17.9
25 – 29	23	14.2
30 – 34	16	9.9
35 – 39	24	14.8
40 – 44	12	7.4
45 – 49	15	9.3
50 – 54	10	6.2
55+	3	1.9
Unspecified	4	2.5
Total Drinking Off-Highway Vehicle Operators in Casualty Collisions	162	100.0

Observations

Approximately half (48.1%) of all operators who had consumed alcohol prior to the crash were under the age of 30. Specifically, operators aged 20-24 were the most likely age group to have been drinking prior to the crash.

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

**Includes those operators 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 charged is not taken into consideration by the collision report form.

Note: Does not include ten parked off-highway vehicles involved in casualty collisions.

Table 14

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
ACTION OF OFF-HIGHWAY VEHICLE OPERATORS*
INVOLVED IN CASUALTY COLLISIONS
2004 - 2008**

Operator Actions	Off-Highway Vehicle Operators in Fatal Collisions		Off-Highway Vehicle Operators in Injury Collisions		Total Off-Highway Vehicle Operators in Casualty Collisions	
	N	%	N	%	N	%
Driving Properly	3	8.3	174	40.5	177	38.0
Ran Off Road	14	38.9	108	25.1	122	26.2
Failed to Yield Right of Way - Uncontrolled Intersection	2	5.6	18	4.2	20	4.3
Improper Turn	--	--	14	3.3	14	3.0
Followed Too Closely	--	--	12	2.8	12	2.6
Left of Centre	1	2.8	10	2.3	11	2.4
Left Turn Across Path	1	2.8	7	1.6	8	1.7
Stop Sign Violation	2	5.6	5	1.2	7	1.5
Backed Unsafely	--	--	3	0.7	3	0.6
Failed to Yield Right of Way to Pedestrian	1	2.8	2	0.5	3	0.6
Yield Sign Violation	--	--	1	0.2	1	0.2
Improper Lane Change	--	--	1	0.2	1	0.2
Other	12	33.3	75	17.4	87	18.7
Total Off-Highway Vehicle Operators in Casualty Collisions	36	100.0	430	100.0	466	100.0

Observations

The majority (62.0%) of off-highway vehicle operators involved in casualty collisions made an improper driver action; the most common errors included running off the road (26.2%) and failure to yield the right of way at an uncontrolled intersection (4.3%).

* Based on those cases where driver action was specified on the collision report form.
Note: Does not include ten parked off-highway vehicles involved in casualty collisions.

Table 15

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
ACTIONS OF OTHER DRIVERS*
INVOLVED IN CASUALTY COLLISIONS
2004 - 2008**

Actions of Other Drivers	Other Drivers in Fatal Collisions		Other Drivers in Injury Collisions		Total Other Drivers in Casualty Collisions	
	N	%	N	%	N	%
Driving Properly	7	87.5	62	86.1	69	86.3
Followed Too Closely	1	12.5	3	4.2	4	5.0
Left Turn Across Path	--	--	2	2.8	2	2.5
Improper Passing	--	--	2	2.8	2	2.5
Improper Turn	--	--	1	1.4	1	1.3
Backed Unsafely	--	--	1	1.4	1	1.3
Other	--	--	1	1.4	1	1.3
Total Other Drivers in Casualty Collisions	8	100.0	72	100.0	80	100.0

Observations

The majority (86.3%) of drivers of other vehicles involved in a casualty collision with an off-highway vehicle were reported as driving properly at the time of the collision.

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

Note: Does not include 16 parked vehicles involved in casualty collisions with off-highway vehicles.

Table 16

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
AGE OF OFF-HIGHWAY VEHICLE CASUALTIES*
2004 - 2008**

Age of Casualties	Number Killed		Major Injury		Minor Injury		Total Off Highway Vehicle Casualties	
	N	%	N	%	N	%	N	%
Under 10	--	--	8	1.9	18	4.4	26	3.0
10 – 14	5	11.6	42	9.8	53	13.0	100	11.4
15 – 19	6	14.0	81	18.9	88	21.6	175	19.9
20 – 24	6	14.0	80	18.6	70	17.2	156	17.7
25 – 29	6	14.0	46	10.7	34	8.4	86	9.8
30 – 34	1	2.3	37	8.6	29	7.1	67	7.6
35 – 44	7	16.3	57	13.3	42	10.3	106	12.1
45 – 54	6	14.0	52	12.1	41	10.1	99	11.3
55 – 64	3	7.0	14	3.3	14	3.4	31	3.5
65 +	3	7.0	5	1.2	4	1.0	12	1.4
Unspecified	--	--	7	1.6	14	3.4	21	2.4
Total Off-Highway Vehicle Casualties	43	100.0	429	100.0	407	100.0	879	100.0

Observation

One-third (34.2%) of off-highway vehicle casualties were under 20 years of age.

* Includes only those cases where injury severity was specified on the collision report form. Does not include the 31 other persons who were injured as a result of the collision but who were not operators or passengers of off-highway vehicles.

Table 17

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES*
HELMET USE OF OFF-HIGHWAY VEHICLE CASUALTIES
2004 - 2008**

Helmet Use	Fatal Injury		Major Injury		Minor Injury		Total Off-Highway Vehicle Casualties	
	N	%	N	%	N	%	N	%
Helmet Not Used	30	69.8	234	54.5	225	55.3	489	55.6
Helmet Used	9	20.9	165	38.5	147	36.1	321	36.5
Unspecified	4	9.3	30	7.0	35	8.6	69	7.8
Total Off-Highway Vehicle Casualties	43	100.0	429	100.0	407	100.0	879	100.0

Observations

Only 20.9% of off-highway vehicle operators and passengers who were killed were wearing a helmet at the time of the crash. Overall, only 36.5% of off-highway vehicle casualties wore a helmet (Table 17).

* Includes only those cases where injury severity was specified on the collision report form. Does not include the 31 other persons who were injured as a result of the collision but who were not operators or passengers of off-highway vehicles.

Table 18

**ALBERTA
COLLISIONS INVOLVING OFF-HIGHWAY VEHICLES
POINT OF IMPACT ON OFF-HIGHWAY VEHICLE*
BY INJURY SEVERITY
2004 - 2008**

Point of Impact	Fatal Injury		Major Injury		Minor Injury		Total Off-Highway Vehicle Casualties	
	N	%	N	%	N	%	N	%
Rollover	17	42.5	196	53.4	176	52.9	389	52.6
Front Center	13	32.5	104	28.3	104	31.2	221	29.9
Right Front	--	--	14	3.8	13	3.9	27	3.6
Left Front	3	7.5	11	3.0	12	3.6	26	3.5
Left Center	3	7.5	8	2.2	4	1.2	15	2.0
Rear Center	1	2.5	8	2.2	7	2.1	16	2.2
Roof	1	2.5	7	1.9	6	1.8	14	1.9
Left Rear	1	2.5	6	1.6	3	0.9	10	1.4
Right Center	--	--	6	1.6	2	0.6	8	1.1
Undercarriage	--	--	4	1.1	3	0.9	7	0.9
Right Rear	1	2.5	2	0.5	3	0.9	6	0.8
Attachment	--	--	1	0.3	--	--	1	0.1
Total Off-Highway Vehicle Casualties	40	100.0	367	100.0	333	100.0	740	100.0

Observations

Half (52.6%) of off-highway vehicle casualties sustained their injuries in rollover collisions. More specifically, 42.5% of fatalities, 53.4% of major injuries, and 52.9% of minor injuries occurred in rollover collisions.

* Includes only those cases where point of impact was specified on the collision report form. Does not include the 31 other persons who were injured as a result of the collision but who were not operators or passengers of off-highway vehicles.

Appendix 1: ACICR Statistics*

From 2002 to 2008, there were a total of 100 off-highway vehicle fatalities reported in Alberta.

The year with the greatest number of off-highway vehicle deaths reported was 2006. During this year 22 fatalities were reported. Conversely, the year with the least number of fatalities reported was 2003; 8 fatalities were reported for this year.

Of those off-highway vehicle operators and passengers who were killed 65% were not wearing a helmet. From 2002 - 2008, of those who died of a head injury, 80% were not wearing a helmet at the time of the collision, which compares to 81% for 2002 - 2007.

The leading cause of an off-highway vehicle related death was a rollover or a flip of the vehicle.

Almost all (89%) off-highway vehicle fatalities were male. Nearly one in five people killed were under 16 years of age. Among all off-highway vehicle related fatalities, riders between the ages of 20 and 34 had the highest number of deaths.

Of the deceased individuals tested for alcohol consumption, 59% tested positive.

* Statistics provided by Alberta Centre for Injury Control & Research.

Appendix 2: Alberta Traffic Safety Regions

Region 1 – Chinook Region

Region 2 – Palliser Region

Region 3 – Calgary Region

Region 4 – David Thompson Region

Region 5 – East Central Region

Region 6 – Capital Region

Region 7 – Aspen Region

Region 8 – Peace Country Region

Region 9 – Northern Lights Region

