

OCCUPATIONAL FATALITIES IN ALBERTA

Occupational Fatalities and
Fatality Rates

2001 to 2010



**WORK SAFE
ALBERTA**

Fall 2011

**Government
of Alberta** ■

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HIGHLIGHTS

From 2001 to 2010

- There were 1,302 occupational fatalities accepted by the Workers' Compensation Board – Alberta (WCB) for compensation.
- The provincial fatality rate has decreased from 98 fatalities per million person-years worked in 2001 to 78 fatalities per million person-years in 2010. The average fatality rate over the last ten years was 85 fatalities per million person-years worked.
- There were 371 motor vehicle incident fatalities, 408 workplace incident fatalities and 523 occupational disease fatalities.
- The Construction and Construction Trade Services sector had the highest number of fatalities at 453. The Agriculture and Forestry sector had the highest fatality rate at 318 fatalities per million person-years worked.
- The Business, Personal and Professional Services sector had the lowest fatality rate at 18 per million person-years worked.
- Nearly two-thirds of motor vehicle incident fatalities were a result of highway incidents. The General Trucking Services industry had the highest number of accepted motor vehicle fatalities.
- About 18.1 percent of workplace incident fatalities were a result of being struck by an object. The Mobile Equipment Operations and General Trucking Services industries had the highest number of accepted workplace incident fatalities.
- The Industrial Construction industry had the highest number of accepted occupational disease fatalities.

In 2010

- There were 136 fatalities accepted by the WCB for compensation. Forty-three of the total fatalities were workplace incidents, 31 were motor vehicle incidents and 62 were a result of occupational diseases.
- The provincial fatality rate was 78 fatalities per million person-years worked. Removing occupational disease fatalities from the total produces a fatality rate of 42 fatalities per million person-years worked in 2010.

Occupational Fatalities in Alberta

The Ministry of Employment and Immigration prepares this annual report to provide analysis of workplace fatalities to meet the demand from industry and safety associations, labour organizations, employers and workers for incorporating this information into their strategic plans for enhancing workplace health and safety. This includes estimations of the risk at the provincial, industry sector and sub-sector level as well as general descriptions about the incidents and injured workers.

The *Occupational Fatalities in Alberta* report presents analysis of aggregate fatality data to allow for the tracking of workplace health and safety performance over time. This is important for evaluating past and present performance, and in providing strategic information for the direction of workplace health and safety policy. The analysis contained in this report provides a comprehensive picture of workplace fatalities in the province, allowing for a prevention focus to be made based on probabilities, rather than possibilities.

A few notes about this report:

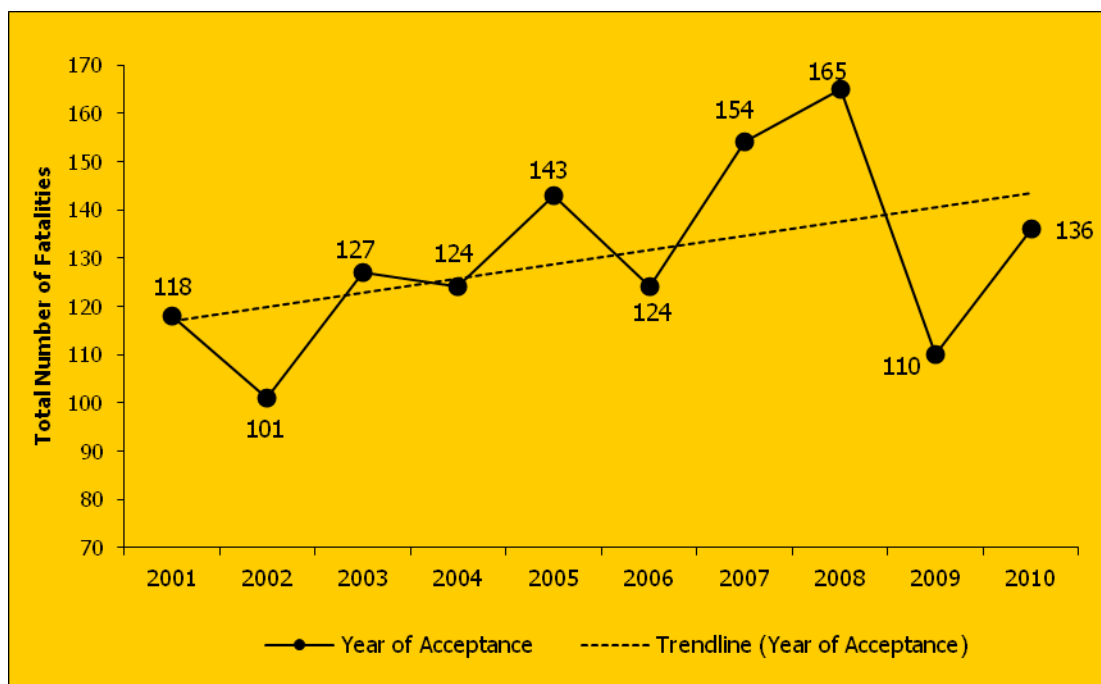
- A WCB accepted occupational fatality is defined as the death of a worker, resulting from a work-related incident or exposure, which has been accepted by the WCB for compensation. Some fatalities accepted in a particular year may actually have occurred in previous years, so the numbers of fatalities based on the year of acceptance are different from those based on the year of occurrence.
- The data used in this analysis were obtained from the WCB between the years 2001 and 2010.
- The person-years worked estimates in the *Occupational Fatalities in Alberta 2001 to 2010* report have been provided by the WCB back to 2006, thus previous years' *Occupational Fatalities in Alberta* reports' person-years estimates and therefore rates will not be comparable.
- The fatality rate is calculated by dividing the number of accepted fatalities by the person-years worked estimate (workers covered by WCB) and multiplying the result by one million. The result is expressed as fatalities per million person-years worked. Fatalities that occur under the jurisdiction of the Government of Canada are excluded before the calculation of the provincial fatality rate.
- Estimates of year-to-year change for rates presented in this report are calculated using unrounded figures and may not match those produced from rounded figures. Percentages displayed in tables may also not sum to a hundred, due to rounding.
- Analyses by occupation group are based on the 2001 National Occupational Classification (NOC). The NOC 2001 provides a standardized framework reflecting the Canadian labour market. For further information please see <http://www5.hrsdc.gc.ca/NOC>.
- Occupational fatalities listed throughout this report are based on the Z795-03 Coding of Work Injury or Disease Information produced by the Canadian Standards Association (CSA) standards for categorizing occupational injury and disease. For further information see <http://www.shopcsa.ca/onlinestore/GetCatalogItemDetails.asp?mat=2416404>.
- Terms, definitions and formulas used throughout this report are described in Appendix A.

PROVINCIAL SUMMARY

Between 2001 and 2010, the WCB accepted 1,302 occupational fatalities for compensation.

In 2010, the Alberta Workers Compensation Board (WCB) accepted 136 fatalities for compensation. Between 2001 and 2010, the board accepted 1,302 occupational fatalities for compensation (see Chart 1.1).

Chart 1.1 Fatalities Accepted by the WCB – Alberta: 2001-2010¹



Data Source: WCB data, Prepared by Data Development and Evaluation

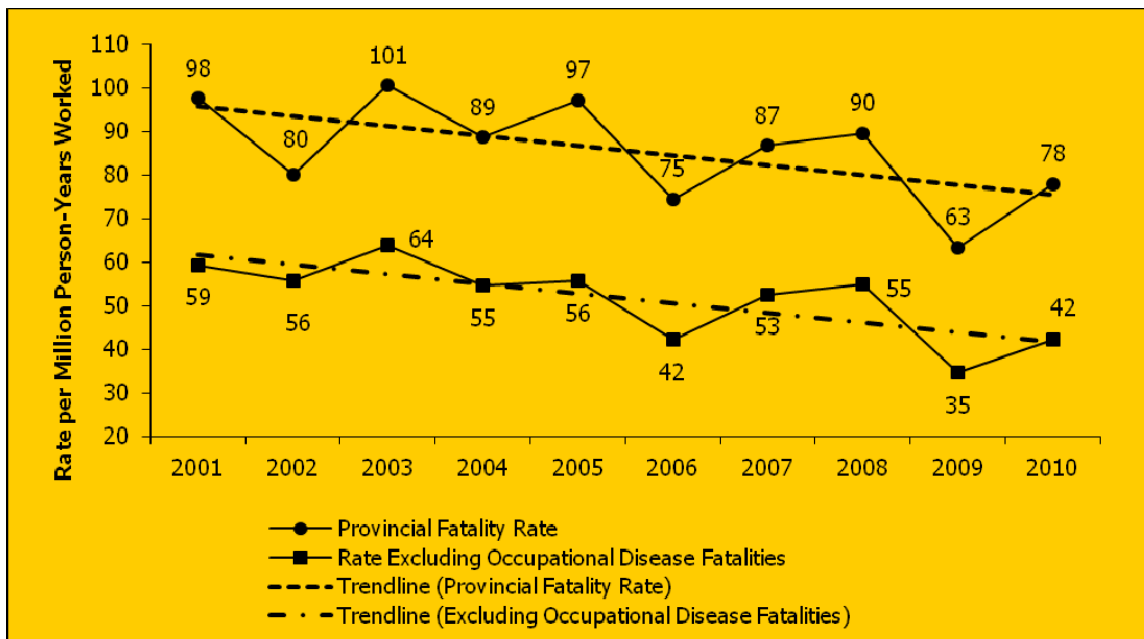
Some fatalities accepted in a particular year may actually have occurred in previous years, so the numbers of fatalities based on the year of acceptance are different from those based on the year of occurrence. Although 1,302 fatalities were accepted by WCB from 2001 to 2010, 1,266 fatalities actually occurred during this period. The number of fatalities based on the year of occurrence may be underestimated as some fatalities that occurred in recent years may not be accepted by the WCB until a future date. Therefore, unless otherwise specified, analysis throughout this report is based on year of acceptance.

¹ Trend lines are used to graphically display trends in data. They show the general movement of the number of fatalities through time.

The trend line in Chart 1.1 indicates that since 2001, there has been an upward movement in the number of fatalities. This does not take in to account however, the change in the number of people working in Alberta, which has increased by 46.7% in the last ten years.

The fatality rate provides an estimate of the number of fatalities in a particular year compared to the size of the working population in a particular year. It is calculated by dividing the number of accepted fatalities in the year by the number of estimated person-years worked² (workers covered by the WCB). The result is then expressed as fatalities “per million person-years worked”. Since 2001, the person-years worked figures have grown from 1,178,582 to 1,729,355. Between 2001 and 2010, the provincial fatality rate decreased from a high of 101 fatalities per million person-years worked in 2003 to a low of 63 fatalities per million person-years in 2009. The trend line presented in Chart 1.2 shows that the number of fatalities, when compared with the working population, is slowly declining.

Chart 1.2 Provincial Fatality Rate³ – Alberta: 2001-2010



Data Source: WCB data, Prepared by Data Development and Evaluation

² Person-years estimates have been provided by the WCB back to 2006. One person-year is equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

³ Fatality rates are expressed as fatalities per million person-years worked. Fatalities occurring under Government of Canada jurisdiction are excluded from the calculation of the fatality rates.

The provincial fatality rate also includes occupational disease fatalities, which are mostly diseases known to be primarily work-related such as asbestosis and coal workers' pneumoconiosis. Occupational diseases are frequently diagnosed several years after the initial or crucial exposure to the toxic substance, and in such cases, it is difficult to determine when the fatal exposure occurred. The provincial fatality rate, therefore, should not be interpreted to reflect present worksite hazardous conditions or exposures. The fatality rate excluding occupational disease fatalities is presented in Chart 1.2 and follows a similar trend to the provincial fatality rate although fluctuates between a high of 64 fatalities per million person-years worked in 2003 and a low of 35 fatalities per million person-years worked in 2009.

OCCUPATIONAL FATALITIES BY MAJOR INDUSTRY SECTOR

The Construction and Construction Trade Services sector had the highest number of fatalities. The Agriculture and Forestry sector had the highest fatality rate.

There are eight major industry sectors covering 394 specific WCB industries. Fatality rates vary across different industry sectors due mainly to the types of work activity performed. In order to reduce year-to-year variations, a ten-year period, split into two five-year periods, was used to create the fatality rates for each sector by dividing the total number of accepted fatalities in a sector by the total number of person-years worked during that period.

Five of the industry sectors have seen a decrease in their fatality rates between these two five-year periods while other three have seen an increase in fatality rate (see Note 2.1).

Note 2.1

In 2003, the WCB inserted a “presumptive clause” for firefighters (included in the Public Administration, Education and Health Services sector). This clause presumes that certain primary site cancers following minimum periods of exposure are work-related, thereby automatically entitling those workers to workers’ compensation benefits (*WCB Insight, Summer 2003*).

Table 2.1 Occupational Fatality Rates by Industry Sector – Alberta: 2001-2010

Major Industry Sector	2001 - 2005		2006 - 2010		Ten-year Total	
	Number of Fatalities	Fatality Rate	Number of Fatalities	Fatality Rate	Number of Fatalities	Fatality Rate
Agriculture and Forestry	13	257	19	380	32	318
Business, Personal and Professional Services	18	15	33	20	51	18
Construction and Construction Trade Services	199	200	254	163	453	180
Manufacturing and Processing	74	84	87	92	161	88
Mining and Petroleum Development	80	177	64	84	144	119
Public Administration, Education and Health Services	52	44	58	41	110	42
Transportation, Communication and Utilities	112	209	105	153	217	178
Wholesale and Retail	45	36	51	33	96	34
Unspecified Sector	20	N/A	18	N/A	38	N/A

Data Source: WCB data, Prepared by Data Development and Evaluation

The Construction and Construction Trade Services sector accounted for almost a third of all of occupational fatalities over the last ten years (see Table 2.1 and Note 2.2). In 2010, it accounted for 43.3 percent of fatalities compared to 18.4 percent of the total person-years worked in the province (see Table 2.2).⁴

The Agriculture and Forestry sector had the highest fatality rate at 318 fatalities per million person-years worked. This was 3.7 times the average provincial rate over the last ten years, 85 fatalities per million person-years worked. However, caution must be used in considering the fatality rate for Agriculture and Forestry. Most of the industries in this sector do not have workers' compensation coverage. The person-years and accepted fatalities reflect only those with coverage and therefore underestimate the true number. Between 2001 and 2010, the WCB accepted 32 fatalities in the Agriculture and Forestry sector. The number reported in the Alberta Farm Fatalities Statistics for this period is 181.⁵ This number includes all fatality incidents on farm sites. Reported fatality rates are more representative for sectors where the majority of the industries have workers' compensation coverage.

As measured over the last ten years, the average provincial fatality rate was 85 per million person-years worked. The Agriculture and Forestry sector, the Construction and Construction Trade Services sector, the Transportation, Communication and Utilities sector, the Manufacturing and Processing sector and the Mining and Petroleum Development sector had occupational fatality rates higher than the provincial average rate. The Business, Personal and Professional Services sector, the Public Administration, Education and Health Services sector and the Wholesale and Retail sector had rates lower than the provincial rate (see Table 2.1).

Note 2.2

The International Labour Organization (ILO) estimates that in industrialized countries, construction workers are three to four times more likely than other workers to die from accidents at work (ILO, *World Day for Safety and Health at Work 2009 – Facts on safety and health at work issues, April 2009*).

⁴ For further information on person-years comparison by sector see the *Occupational Injuries and Diseases in Alberta 2010 Summary* publication (<http://www.employment.alberta.ca/SFW/129.html>).

⁵ For comprehensive statistics relating to fatalities occurring on Alberta's farms, visit the Agriculture, Food and Rural Development website at [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/aet5237](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/aet5237)

Table 2.2 Occupational Fatalities by Industry Sector – Alberta:
2006-2010

Major Industry Sector	2006	2007	2008	2009	2010	Number of Fatalities	Percent
Agriculture and Forestry	3	5	2	5	4	19	2.8%
Business, Personal and Professional Services	6	9	11	1	6	33	4.8%
Construction and Construction Trade Services	46	51	64	34	59	254	36.9%
Manufacturing and Processing	15	22	18	17	15	87	12.6%
Mining and Petroleum Development	13	10	13	13	15	64	9.3%
Public Administration, Education and Health Services	8	14	15	13	8	58	8.4%
Transportation, Communication and Utilities	21	28	23	12	21	105	15.2%
Wholesale and Retail	10	11	13	10	7	51	7.4%
Unspecified Sector	2	4	6	5	1	18	2.6%
Total	124	154	165	110	136	689	100%

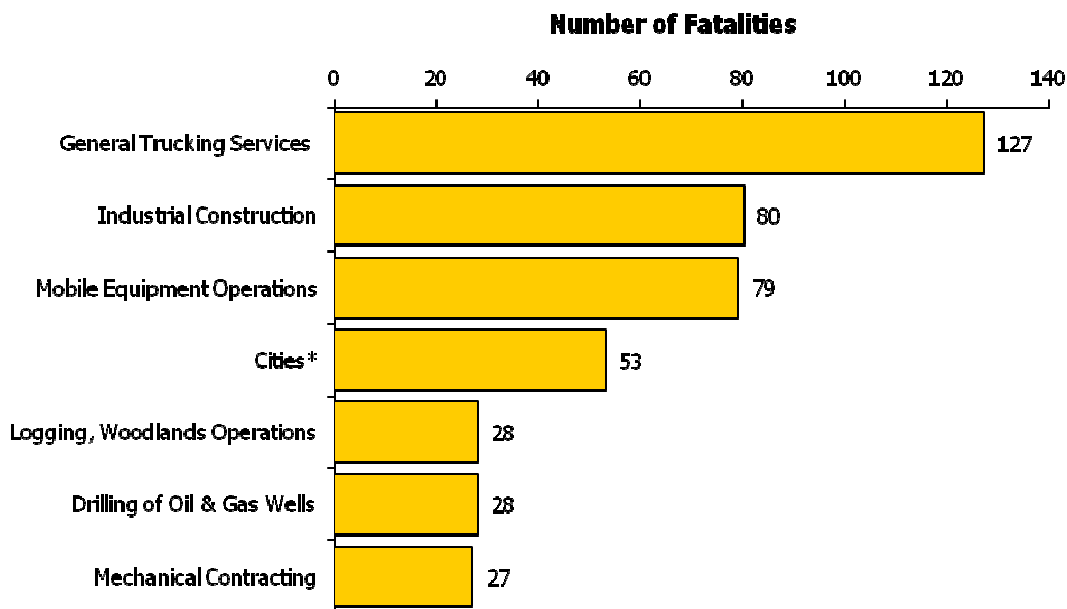
Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

OCCUPATIONAL FATALITIES BY INDUSTRY

Seven WCB industries accounted for 32.4 percent of all occupational fatalities between 2001 and 2010.

Seven specific industries had more than 26 fatalities between 2001 and 2010, accounting for 32.4 percent of all fatalities. The General Trucking Services industry had 127 fatalities, the highest of any single industry, followed by Industrial Construction with 80 fatalities (see Chart 3.1).

Chart 3.1 Fatalities Accepted by the WCB: Top Seven Industries – Alberta: 2001-2010



*Cities indicate many departments including administration, sanitation, health, engineering, maintenance, recreation, fire, police, transit etc. Ambulance services are included as part of the overall operations of a city.

Data Source: WCB data, Prepared by Data Development and Evaluation

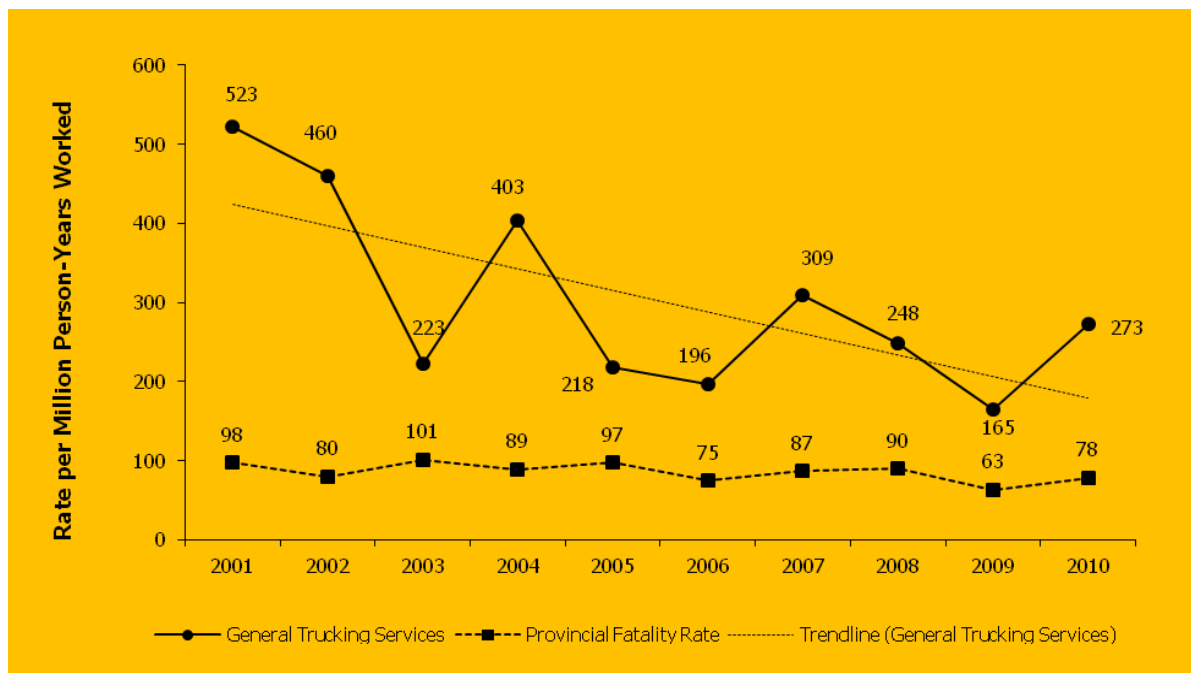
The fatalities in the General Trucking Services industry were predominantly motor vehicle incidents, accounting for 66.9 percent of all the fatalities in this industry (see Table 3.1).

Table 3.1 General Trucking Services Industry Fatalities by Type - Alberta: 2001-2010

Year	Motor Vehicle Incident	Workplace Incident	Occupational Disease	Total Number of Fatalities
2001	13	4	2	19
2002	7	8	2	17
2003	7	1	0	8
2004	14	1	0	15
2005	5	2	2	9
2006	7	1	1	9
2007	11	5	0	16
2008	7	5	1	13
2009	5	3	0	8
2010	9	3	1	13
Total	85 (66.9%)	33 (26.0%)	9 (7.1%)	127

Data Source: WCB data, Prepared by Data Development and Evaluation

Chart 3.2 General Trucking Services Fatality Rate - Alberta: 2001-2010



Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Fatality rates for the General Trucking Services industry vary from year to year (see Chart 3.2), although the trendline displays a decline over this period.

Industries with the second and third highest number of fatalities were the Industrial Construction industries and the Mobile Equipment Operations industries. Workplace incident fatalities accounted for the largest proportion of fatalities in the Mobile Equipment Operations industry at 44.3 percent (see Table 3.2).

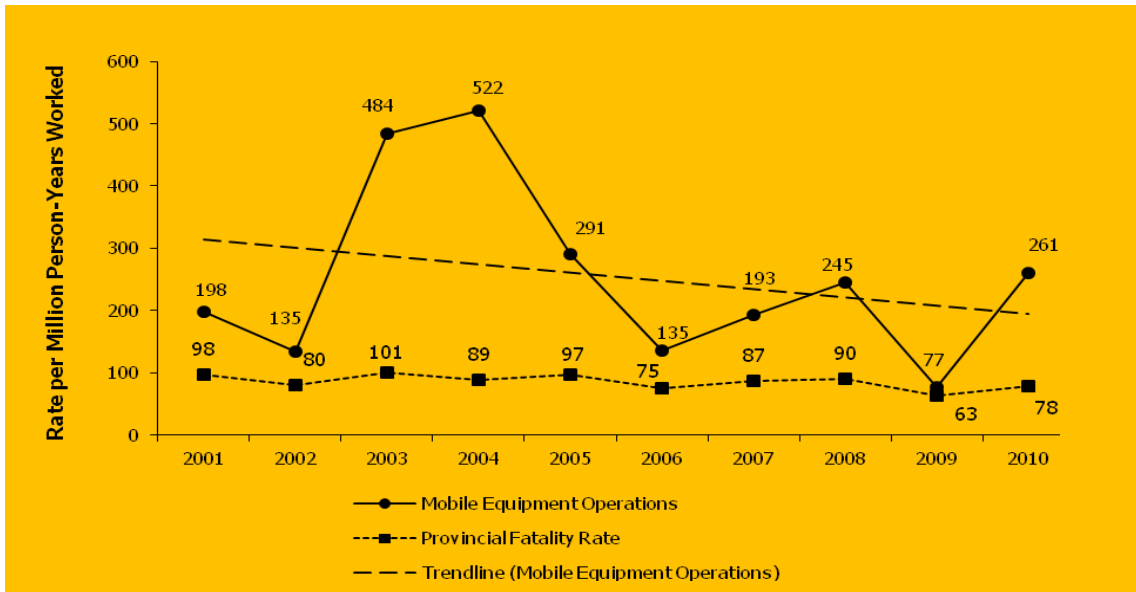
Table 3.2 Mobile Equipment Operations Industry Fatalities by Type
– Alberta: 2001-2010

Year	Motor Vehicle Incident	Workplace Incident	Occupational Disease	Total Number of Fatalities
2001	2	1	1	4
2002	2	1	0	3
2003	6	5	0	11
2004	6	8	0	14
2005	6	3	0	9
2006	1	2	2	5
2007	1	4	3	8
2008	3	5	3	11
2009	0	3	0	3
2010	7	3	1	11
Total	34 (43.0%)	35 (44.3%)	10 (12.7%)	79

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

The fatality rates for the Mobile Equipment Operations industry fluctuate from a low of 77 fatalities per million person-years worked in 2009 to a high of 522 per million person-years worked in 2004 (see Chart 3.3).

Chart 3.3 Mobile Equipment Operations Industry Fatality Rate - Alberta: 2001-2010



Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

DEMOGRAPHICS OF INJURED WORKERS

Occupational Fatalities by Age Group

Occupational fatalities in Alberta are not evenly distributed across age groups. In 2010, workers aged 45 years and older accounted for about 74.3 percent of fatalities. Young workers (those under 25) accounted for 5.9 percent of fatalities and workers aged 25 to 44 accounted for 19.9 percent of the fatalities. A ten year comparison of occupational fatalities by age group is given in Table 4.1.

As many fatalities are the result of past working conditions, removing occupational disease fatalities from the total allows for a better comparison by age. Workers aged 45 years and older accounted for 52.7 percent of the motor vehicle and workplace incidents in 2010. Young workers (those under 25) accounted for 10.8 percent. Workers aged 25 to 44 accounted for 36.5 percent of the motor vehicle and workplace incidents.

Table 4.1 Occupational Fatalities by Age Group – Alberta: 2001 - 2010

Age Group	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
12-14 Years	0	0	0	0	1	0	0	0	0	0	1
15-24 Years	9	6	8	13	10	4	8	8	5	8	79
25-44 Years	39	35	38	36	35	34	35	43	24	27	346
45+ Years	69	60	81	75	97	86	111	114	81	101	875
Unspecified	1	0	0	0	0	0	0	0	0	0	1
Total	118	101	127	124	143	124	154	165	110	136	1,302

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

OCCUPATIONAL FATALITIES BY TYPE

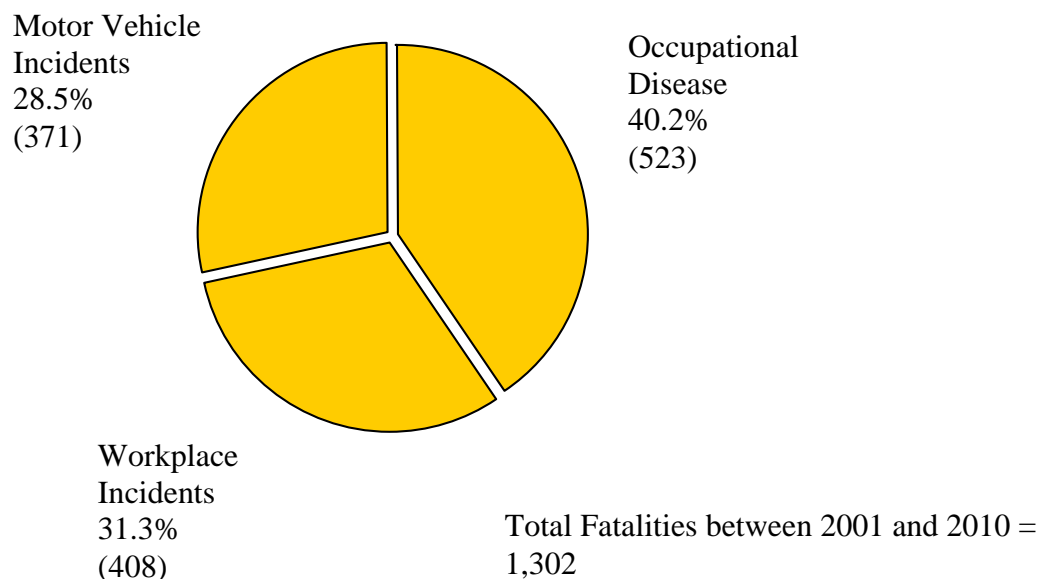
Between 2001 and 2010, the WCB accepted 371 motor vehicle incident fatalities, 408 workplace incident fatalities and 523 occupational disease fatalities.

All fatalities are classified by type based on WCB classification standards. Occupational fatalities are classified into three general types:

- motor vehicle incidents
- workplace incidents
- occupational diseases

Occupational Health and Safety Officers investigate workplace incidents while local police authorities usually investigate motor vehicle incidents and workers' physicians report deaths due to occupational disease.

Chart 5.1 Fatalities Accepted by the WCB, by Type – Alberta: 2001 - 2010



Data Source: WCB data, Prepared by Data Development and Evaluation

Ten-Year Trend Analysis by Type

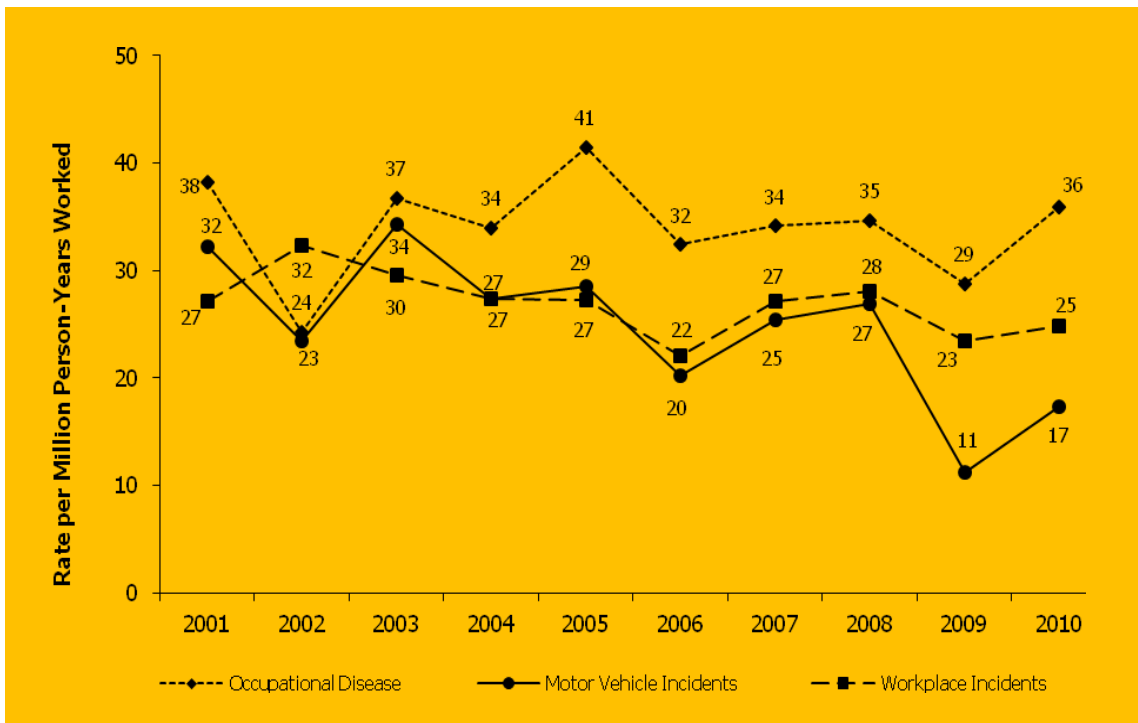
Table 5.1 displays the number of fatalities by type over the last ten years. There has been an increase in the number of occupational disease fatality claims. In 2001, occupational disease fatalities represented 38.1 percent of all accepted fatalities. In 2010, they represented 45.6 percent. The fatalities rates are shown in Charts 5.2 and 5.3 which plot the fatality rate by type using trendlines.

Table 5.1 Fatalities Accepted by the WCB, by Type - Alberta: 2001 - 2010

Year	Motor Vehicle Incidents	%	Workplace Incidents	%	Occupational Disease	%	Total Fatalities
2001	40	33.9%	33	28.0%	45	38.1%	118
2002	30	29.7%	40	39.6%	31	30.7%	101
2003	44	34.6%	37	29.1%	46	36.2%	127
2004	37	29.8%	38	30.6%	49	39.5%	124
2005	42	29.4%	40	28.0%	61	42.7%	143
2006	33	26.6%	37	29.8%	54	43.5%	124
2007	44	28.6%	47	30.5%	63	40.9%	154
2008	50	30.3%	52	31.5%	63	38.2%	165
2009	20	18.2%	41	37.3%	49	44.5%	110
2010	31	22.8%	43	31.6%	62	45.6%	136
Total	371	28.5%	408	31.3%	523	40.2%	1,302

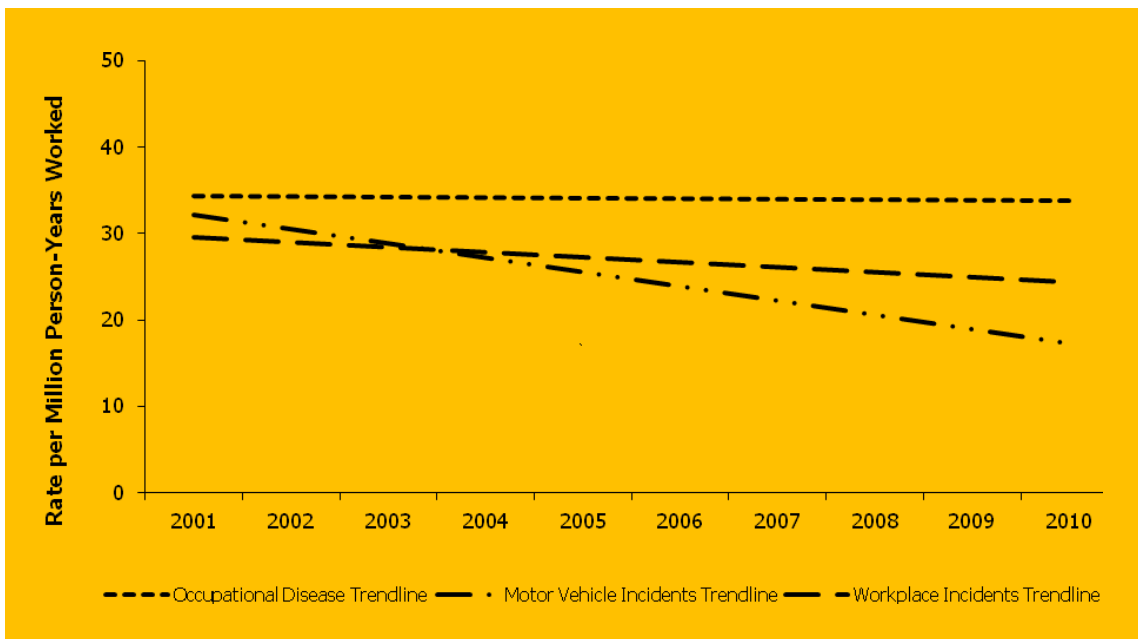
Note: Data prior to 2002 do not include the latent fatality adjustment.
Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Chart 5.2 Fatality Rate by Type – Alberta: 2001-2010



Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Chart 5.3 Fatality Rate Trendline by Type – Alberta: 2001-2010



Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Two new categories have been introduced in the reporting of fatalities from 2002: latent workplace incident and latent motor vehicle incident fatalities. Latent fatalities consist of workers who were involved in a workplace incident or exposure, or a motor vehicle incident that did not become a fatality until a much later date, often years later. Usually, other contributing factors also cause a latent fatality, although these contributing factors are the result of the initial injury or exposure. A motor vehicle incident where a worker received leg injuries requiring surgery is a good example of this. Complications during surgery result in a blood clot causing a fatal stroke. Thus, the injury is classified latent because the original injury caused the requirement for surgery. Beginning in 2002, these incidents were included with either motor vehicle or workplace incident categories in accordance with their original injury. Table 5.2 displays the number of latent fatalities from 2002 to 2010.

Table 5.2 Latent Fatalities Accepted by the WCB – Alberta: 2002-2010

Year	Number of Latent Motor Vehicle Incidents	Number of Latent Workplace Incidents	Total
2002	1	10	11
2003	0	12	12
2004	3	3	6
2005	3	6	9
2006	0	10	10
2007	1	7	8
2008	3	8	11
2009	3	10	13
2010	2	9	11
Total	16	75	91

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Motor Vehicle Incidents

Motor vehicle incidents typically involve non-industrial vehicles operating on public roads, where the fatally injured worker was either the driver or the passenger. This type of occupational fatality includes aircraft, train, helicopter, and water vehicle incidents. Occupational fatalities involving industrial vehicles are classified as workplace incidents. Therefore, the number of motor vehicle incident fatalities may not fully reflect the occupational fatalities related to motor vehicles.

There were 193 fatalities accepted from 2001 to 2005 and 178 fatalities from 2006 to 2010 (see Table 5.3).

Table 5.3 Motor Vehicle Incident Fatalities by Type of Event – Alberta: 2001 - 2010

Type of Event or Exposure	2001-2005	2006-2010	Number of Fatalities	Percent
Highway Incident	128	122	250	67.4%
Aircraft Incident	9	15	24	6.5%
Pedestrian Incident*	7	7	14	3.8%
Non-highway Incident**	5	4	9	2.4%
Railway Incident	3	0	3	0.8%
Other	41	30	71	19.1%
Total	193	178	371	100.0%

*Includes all non-passengers struck by vehicle or mobile equipment

**Does not include rail, air or water incidents but includes motor vehicle incidents occurring off the highway e.g. Industrial or commercial premises or parking lots

Data Source: WCB Data, Prepared by Data Development and Evaluation

Chart 5.4 summarizes motor vehicle incident by type of event. Of all motor vehicle fatalities over the last ten years highway incidents accounted for 67.4 percent. Railway incidents are the lowest motor vehicle incidents over the past ten years.

Chart 5.5 compares occupational highway incident fatalities with provincial traffic fatalities.

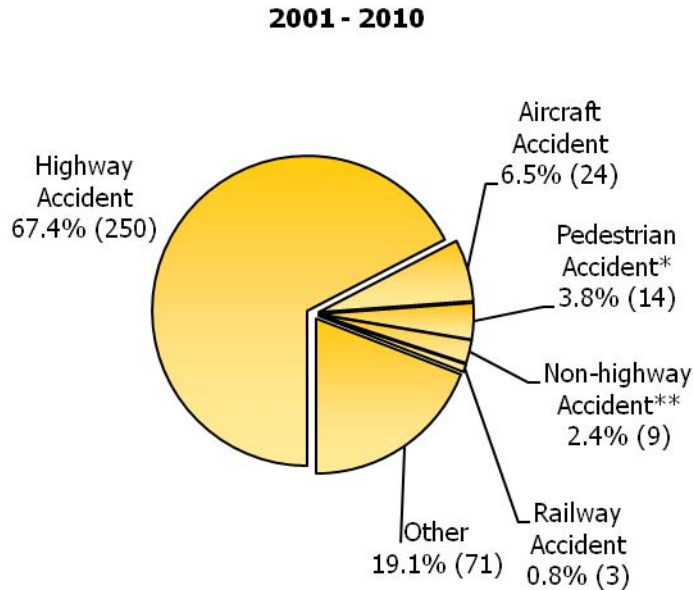
Note 5.1

The 2010 Alberta Traffic Collision Statistics Report released information on 344 traffic fatalities in Alberta and 13,552 non-fatal injury collisions.

Highlights of the report include:

- Following too closely, running off the road and left turn across path were the most frequently identified improper driver actions contributing to casualty collisions.
- 21.8 percent of drivers involved in fatal collisions had consumed alcohol prior to the crash.

Chart 5.4 Motor Vehicle Incident Fatalities by Type of Event - Alberta: 2001-2010



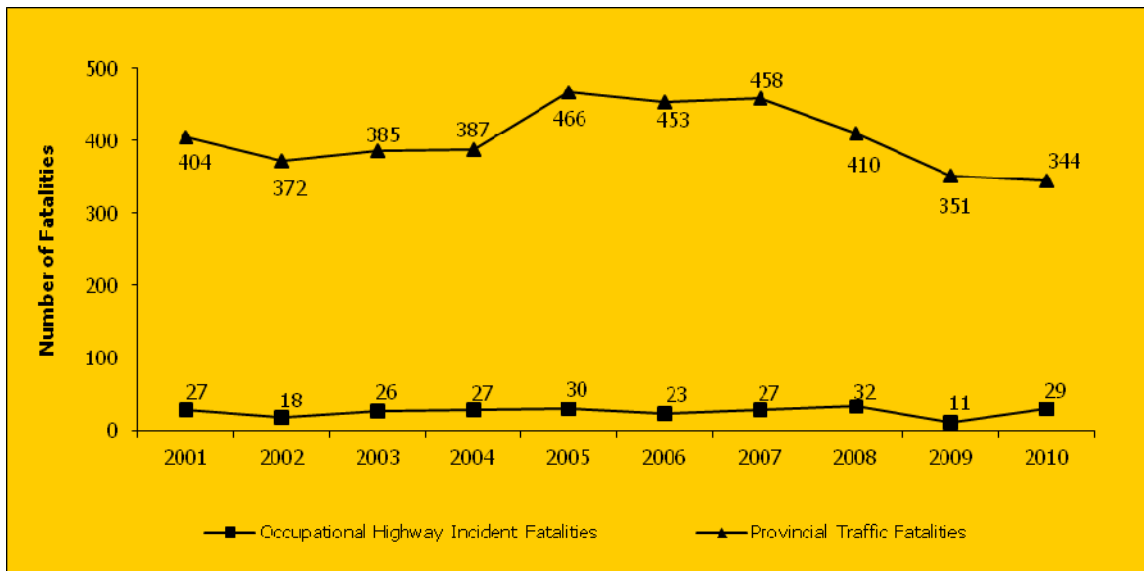
Total Fatalities: 371

*Includes all non-passengers struck by vehicle or mobile equipment

**Does not include rail, air or water incidents but includes motor vehicle incidents occurring off the highway e.g. Industrial or commercial premises or parking lots

Data Source: WCB data, Prepared by Data Development and Evaluation

Chart 5.5 Occupational Highway Incident Fatalities and Provincial Traffic Fatalities - Alberta: 2001-2010



Data Source: WCB Data, Prepared by Data Development and Evaluation. 2010 Alberta Traffic Collision Statistics - Alberta Transportation

Motor Vehicle Incident Fatalities by Industry

Between 2001 and 2010, 22.9 percent of the occupational motor vehicle incident fatalities occurred in the General Trucking Services industry and 9.2 percent occurred in the Mobile Equipment Operations industry (see Table 5.4).

For the General Trucking Services industry, 2001 and 2004 had the highest number of motor vehicle incident fatalities, at 13 and 14 fatalities each. The lowest number of motor vehicle incident fatalities in the General Trucking Services was recorded in 2005 and 2009, with five fatalities in each year (see Chart 5.6).

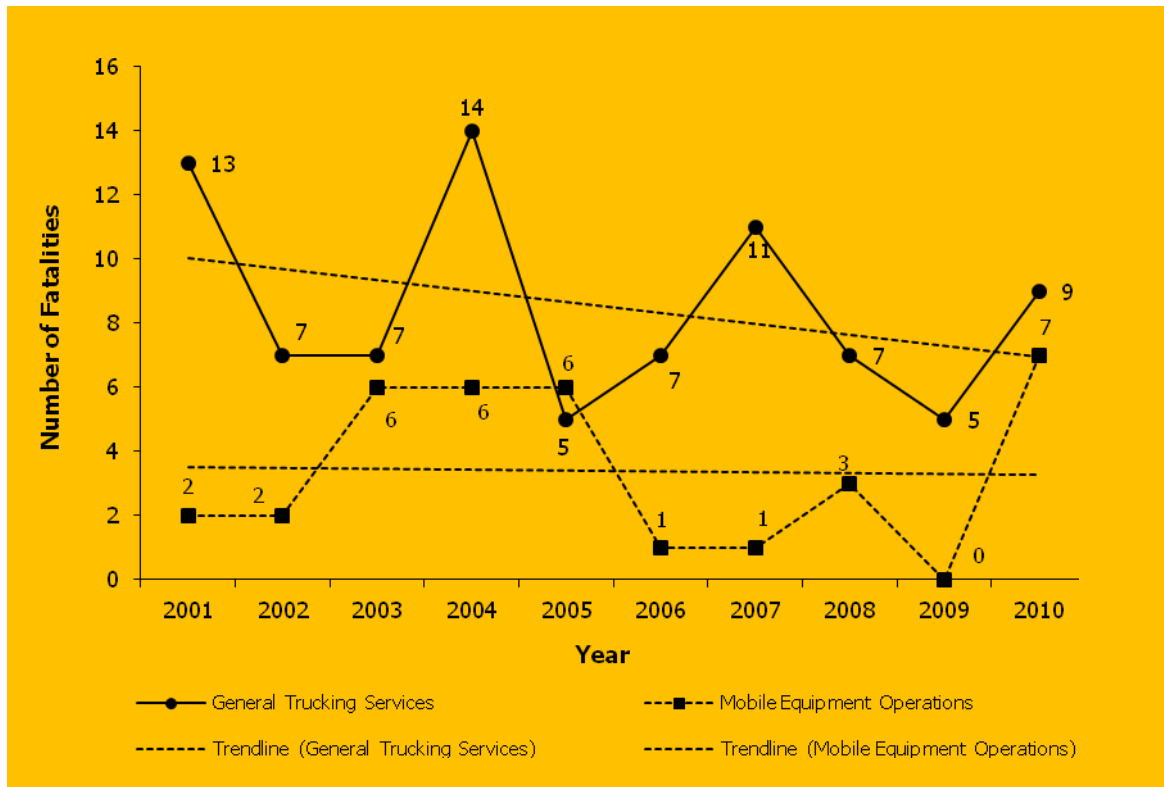
The highest number of motor vehicle incident fatalities in the Mobile Equipment Operations industry occurred in 2003, 2004 and 2005, at six in each year. In 2009, there were no motor vehicle incident fatalities (see Chart 5.6).

Table 5.4 Motor Vehicle Incident Fatalities by Industry – Alberta: 2001-2010

Industry	Number of Fatalities	%
General Trucking Services	85	22.9%
Mobile Equipment Operations	34	9.2%
Oilfield Trucking Services	12	3.2%
Well Servicing with Service Rigs	9	2.4%
Oil and Gas Upstream	9	2.4%
Other	222	59.8%
Total	371	100.0%

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Chart 5.6 General Trucking Services and Mobile Equipment Operations Industries Motor Vehicle Incident Fatalities – Alberta: 2001-2010



Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Motor Vehicle Incident Fatalities by Age Group

Between 2001 and 2010, 49.1 percent of all motor vehicle incident fatalities in Alberta involved workers aged 25-44 years old. This age group accounted for 46.5 percent of those in employment⁶ in Alberta over that time period. Workers aged 45 years and older accounted for 41.0 percent of the fatalities and 36.3 percent of those in employment, while workers aged 15-24 years were involved in 10.0 percent of motor vehicle incident fatalities and accounted for 17.2 percent of those in employment. Table 5.5 provides details of the motor vehicle incident fatalities by age group from 2001 to 2010.

⁶ Statistics Canada Labour Force Survey (2010 Historical Review).

Table 5.5 Motor Vehicle Incident Fatalities by Age Group – Alberta: 2001-2010

Age Group	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
15-24 Years	7	2	6	5	3	2	4	3	2	3	37
25-44 Years	20	15	20	19	21	21	19	25	8	14	182
45 Years and Older	13	13	18	13	18	10	21	22	10	14	152
Total	40	30	44	37	42	33	44	50	20	31	371

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Motor Vehicle Incident Fatalities by Occupation

Table 5.6 displays the eleven occupations that had four or more motor vehicle fatalities since 2001. Truck drivers accounted for 30.7 percent of all motor vehicle fatalities.

Table 5.6 Motor Vehicle Incident Fatalities by Occupation – Alberta: 2001-2010

Occupation	Number of Fatalities
Truck Drivers	114
Air Pilots, Flight Engineers and Flying Instructors	9
Construction Trades Helpers and Labourers	9
Heavy Equipment Operators (Except Crane)	9
Oil and Gas Well Drilling Workers and Services Operators	7
Labourers in Chemical Products Processing and Utilities	7
Underground Mine Service and Support Workers	5
Contractors and Supervisors, Heavy Construction Equipment Crews	5
Taxi and Limousine Drivers and Chauffeurs	5
Firefighters	6
Other Labourers in Processing, Manufacturing and Utilities	4

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Workplace Incidents

Workplace incidents consist of cases where the worker died at a worksite or as a result of injuries sustained at a worksite. Between 2001 and 2010, 31.3 percent or 408 of the total fatalities were workplace incidents. In 2010, there were 43 workplace incident fatalities, representing 31.6% of all fatalities (see Table 5.1).

Workplace Incident Fatalities by Type of Event

In total, there were 188 fatalities from 2001 to 2005 and 220 fatalities from 2006 to 2010, an increase of 17.0 percent. Between 2001 and 2010, three primary events caused most workplace incident fatalities: contact with objects and equipment, 30.9 percent; falls, 18.4 percent; and transportation accidents, 11.3 percent⁷ (see Table 5.7 and Chart 5.7). Being struck by an object was the most common cause in the contact with objects and equipment category, accounting for 18.1 percent of workplace incident fatalities.

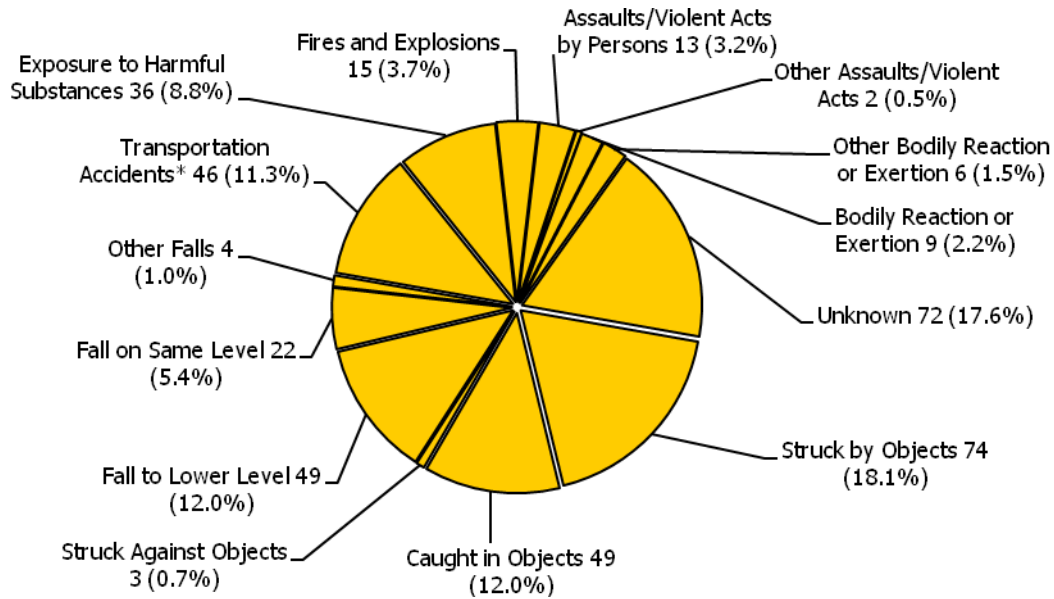
Table 5.7 Workplace Incident Fatalities by Type of Event – Alberta: 2001-2010

Type of Event or Exposure	2001-2005	2006-2010	Number of Fatalities	%
Contact with Objects and Equipment	59	67	126	30.9%
Struck by Objects	38	36	74	18.1%
Caught in Objects	20	29	49	12.0%
Struck Against Objects	1	2	3	0.7%
Falls	34	41	75	18.4%
Fall to Lower Level	24	25	49	12.0%
Fall on Same Level	9	13	22	5.4%
Other Falls	1	3	4	1.0%
Transportation Accidents	16	30	46	11.3%
Exposure to Harmful Substances	13	23	36	8.8%
Fires and Explosions	9	6	15	3.7%
Assaults and Violent Acts	10	5	15	3.7%
Assaults/Violent Acts by Persons	8	5	13	3.2%
Other Assaults/Violent Acts	2	0	2	0.5%
Overexertion	1	7	8	2.0%
Bodily Reaction or Exertion	1	8	9	2.2%
Other Bodily Reaction/Exertion	0	6	6	1.5%
Unknown	45	27	72	17.6%
Total	188	220	408	100.0%

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

⁷ Transportation accidents include all events that involve industrial vehicles, transportation vehicles, or powered mobile industrial equipment. Motor vehicle incidents that were discussed in the previous section are transportation incidents that involve non-industrial vehicles and are not included in these totals.

Chart 5.7 Workplace Incident Fatalities by Type of Event – Alberta: 2001-2010



Total Fatalities: 408

*Transportation accidents include all events that involve industrial vehicles, transportation vehicles or powered mobile industrial equipment. Motor vehicle incidents presented in Table 5.3 and Chart 5.4 are not included in these figures.
Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Workplace Incident Fatalities by Industry

Table 5.8 displays the nine industries with seven or more workplace incident fatalities between 2001 and 2010. These industries accounted for 40.9 percent of workplace incident fatalities accepted in the past ten years.

Table 5.8 Workplace Incident Fatalities by Industry – Alberta: 2001-2010

Industry	Number of Fatalities	Percent
Mobile Equipment Operations	35	8.6%
General Trucking Services	33	8.1%
Drilling of Oil and Gas Wells	20	4.9%
Industrial Construction	23	5.6%
Pipeline Construction	12	2.9%
Logging, Woodlands Operations	17	4.2%
Steel/Metal Fabrication	11	2.7%
Oilfield Downhole Services	9	2.2%
Well Servicing with Service Rigs	7	1.7%
Other	241	59.1%
Total	408	100.0%

Data Source: WCB Data, Prepared by E&I, Data Development and Evaluation

Workplace Incident Fatalities by Age Group

Between 2001 and 2010, 37.5 percent of workplace incident fatalities in Alberta involved workers aged 25-44 years old with this age group accounting for 46.5 percent of those in employment⁸. Workers aged 45 years and older accounted for 51.7 percent of workplace incident fatalities and 36.3 percent of those in employment. Workers aged 15-24 years accounted for 10.3 percent of workplace incident fatalities. This age group accounted for 17.2 percent of those in employment. Table 5.9 provides details of the workplace incident fatalities by age group from 2001 to 2010.

⁸ Statistics Canada Labour Force Survey (2010 Historical Review)

Table 5.9 Workplace Incident Fatalities by Age Group – Alberta: 2001-2010

Age Group	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
12-14 Years	0	0	0	0	1	0	0	0	0	0	1
15-24 Years	2	4	2	8	7	2	4	5	3	5	42
25-44 Years	16	18	17	16	12	11	16	18	16	13	153
45 Years and Older	14	18	18	14	20	24	27	29	22	25	211
Unspecified	1	0	0	0	0	0	0	0	0	0	1
Total	33	40	37	38	40	37	47	52	41	43	408

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Workplace Incidents Fatalities by Occupation

Table 5.10 displays the eight occupations that had nine or more workplace incident fatalities since 2001. The eight occupations together accounted for 35.3 percent of all the fatalities related to workplace incidents. The highest workplace incident fatalities were observed in the field of Truck Driver accounting for a total of 44 fatalities over the last ten years.

Table 5.10 Workplace Incident Fatalities by Occupation – Alberta: 2001-2010

Occupation	Number of Fatalities
Truck Driver	44
Construction Trades Helpers and Labourers	23
Other Labourers in Processing, Manufacturing and Utilities	16
Oil and Gas Drilling, Servicing and Related Labourers	16
Heavy Equipment Operators (Except Crane)	13
Oil and Gas Well Drilling Workers and Services Operators	13
Welders and Related Machine Operators	10
Material Handlers	9
Other	264
Total	408

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Occupational Disease

Occupational disease fatalities consist mostly of recognized occupational diseases, that is, diseases known to be primarily or exclusively work-related (for example, asbestosis and coal workers' pneumoconiosis). This category also includes heart attacks suffered on the job. Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases, it is difficult to determine when the fatal exposure occurred.

Between 2001 and 2010, 40.2 percent or 523 fatalities resulted from occupational disease (see Chart 5.1). In 2010, there were 62 such fatalities representing 45.6% of all fatalities (see Table 5.1). The general rise in occupational disease fatalities over the past ten years can largely be attributed to an increase in asbestos related diseases including asbestosis and mesothelioma.

Occupational Disease Fatalities by Industry

Between 2001 and 2010, Industrial Construction, Cities⁹ and Mechanical Insulation were the leading industries with occupational disease fatalities (see Table 5.11). Together, these three industries accounted for 24.3 percent of all occupational disease fatalities in Alberta.

Table 5.11 Occupational Disease Fatalities by Industry – Alberta: 2001-2010

Industry	Number of Fatalities	Percent
Industrial Construction	52	9.9%
Cities*	47	9.0%
Mechanical Contracting	25	4.8%
Mechanical Insulation	28	5.4%
Steel/Metal Fabrication	13	2.5%
Drywall, Lath, Plaster, Stucco, etc.	15	2.9%
Upstream Oil and Gas	12	2.3%
Mobile Equipment Operations	10	1.9%
Construction Trade Services - NEC	13	2.5%
Electric Wiring	17	3.3%
Other	291	55.6%
Total	523	100.0%

*Cities indicate many departments including administration, sanitation, health, engineering, maintenance, recreation, fire, police, transit etc. Ambulance services are included as part of the overall operations of a city.

NEC=Net elsewhere classified

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

⁹This industry includes urban municipalities incorporated as cities under the *Municipal Government Act*.

Occupational Disease Fatalities by Age Group

There are two methods of analyzing occupational disease fatalities by age. Table 5.12 displays occupational disease fatalities between 2001 and 2010, by age at death and Table 5.13 presents by age at exposure or when the initial information was supplied to WCB.

Over the last ten years, 97.9 percent of occupational fatalities were workers aged 45 or over at age of death, compared with 95.6 percent at age of exposure (see Tables 5.12 and 5.13).

Table 5.12 Occupational Disease Fatalities by Age at Death – Alberta: 2001-2010

Age Group	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
25-44 Years	3	2	1	1	2	2	0	0	0	0	11
45 Years and Older	42	29	45	48	59	52	63	63	49	62	512
Total	45	31	46	49	61	54	63	63	49	62	523

Data Source: WCB data, Prepared by E&I, Data Development and Evaluation

Table 5.13 Occupational Disease Fatalities by Age at Exposure – Alberta: 2001-2010

Age Group	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
15-24 Years	0	0	0	0	0	0	0	0	0	0	0
25-44 Years	6	3	2	2	2	2	3	2	0	1	23
45 Years and Older	39	28	44	47	59	52	60	61	49	61	500
Total	45	31	46	49	61	54	63	63	49	62	523

Data Source: WCB Data, Prepared by E&I, Data Development and Evaluation

Occupational Disease Fatalities by Occupation

Table 5.14 presents the occupations with nine or more occupational fatalities since 2001. Firefighters, Plumbers, Electricians (Except Industrial and Power System), Welders and Related Machine Operators, and Construction Trade Helpers and Labourers had greater than 15 fatalities.

Table 5.14 Occupational Disease Fatalities by Occupation - Alberta: 2001-2010

Occupation	Number of Fatalities
Firefighters	32
Plumbers	31
Electricians (Except Industrial and Power System)	21
Welders and Related Machine Operators	20
Construction Trades Helpers and Labourers	18
Carpenters	14
Insulators	14
Truck Drivers	11
Other Labourers in Processing, Manufacturing and Utilities	10
Sheet Metal Workers	9
Construction Millwrights and Industrial Mechanics (Except Textile)	9
Other	334

Data Source: WCB Data, Prepared by E&I, Data Development and Evaluation

REFERENCES

- Agriculture and Rural Development. "2010 Alberta Farm Fatalities", March 2011.
- Alberta Employment and Immigration. "Occupational Injuries and Diseases in Alberta 2010 Summary."
- Alberta Transportation. "Alberta Traffic Collision Statistics: 2010."
- Canadian Standards Association. Z795-03: Coding of Work Injury or Disease Information, June 2003.
- Statistics Canada. Labour Force Historical Review 2010.

APPENDIX A: TERMS, DEFINITIONS AND FORMULAS

WCB Accepted Fatality An occupational fatality is the death of a worker which resulted from a work-related incident or exposure that has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

Person-Years Worked Person-years worked are estimates provided by the WCB. One person-year is equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked. The person-years worked estimates in the *Occupational Fatalities in Alberta 2001 to 2010* report have been provided by the WCB back to 2006, thus previous years' *Occupational Fatalities in Alberta* reports' person-years estimates and therefore rates will not be comparable.

Fatality Rate The fatality rate is calculated by dividing the number of accepted fatalities by the person-years worked estimate and multiplying the result by one million. The result is expressed as fatalities per million person-years worked. Fatalities that are found under the jurisdiction of the Government of Canada are excluded before the calculation of the fatality rate.

$$\text{Fatality Rate} = \frac{\text{Number of Fatalities}}{\text{Person-years worked}} \times 1,000,000$$

Industry Coverage This report focuses on all industry activity in Alberta covered by the WCB and by the provincial legislation for occupational health and safety. Most industry sectors are included but notable exceptions consist of the Government of Canada, and parts of the agriculture and finance sectors. Several professional groups (i.e. the teaching and medical professions) are also excluded as are some industries.

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www.worksafe.alberta.ca

Workplace Health and Safety Contact Centre:

Telephone: 780-415-8690, toll free by calling 1-866-415-8690

<http://www.employment.alberta.ca/SFW/2874.html>

Certificate of Recognition (COR) Program:

<http://www.employment.alberta.ca/SFW/334.html>