



Estimating the Presence of Alcohol and Drug Impairment in Traffic Crashes and their Costs to Canadians: 1999 to 2006

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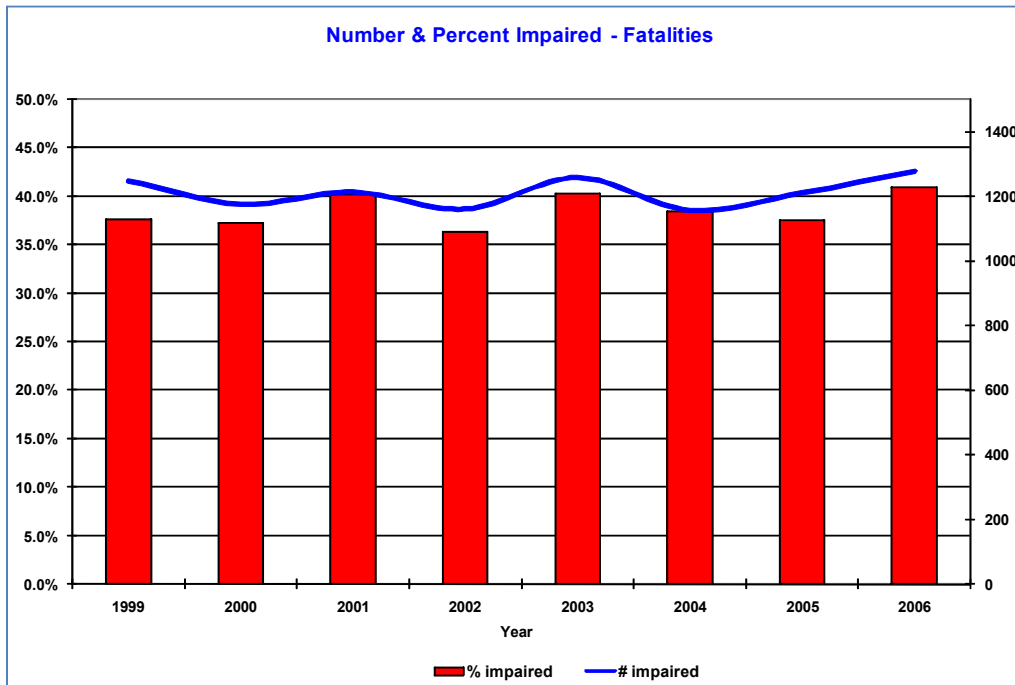
February, 2009

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Executive Summary



Over the eight-year period between 1999 and 2006, it is estimated that impaired driving killed **9,698** persons, injured **572,187**, and caused damage to **1,891,001** vehicles in all crashes, translating into **1,010** fatal crashes, **391,123** injury-only crashes and **1,244,079** property-damage only (PDO) crashes, totaling **1,643,284** crashes in all.. In turn, this cost Canadians between **\$15.5 billion** (Real Dollar Estimate model) and **\$90.2 billion** (Willingness to Pay model) dollars, depending on the costing model and assumptions used. To put this another way, that represents a cost of between about **\$469.00** and **\$2,726.00** per Canadian.

In an average year in Canada, impaired driving killed **1,212** persons, injured **71,532**, and caused damage to **236,375** vehicles, translating into **1,010** fatal crashes, **48,890** injury-only crashes and **155,510** property-damage only (PDO) crashes, totaling an average of **205,410** crashes in all. In turn, on average, this cost Canadians between **\$1.90 billion** (Real Dollar Estimate model) and **\$11.28 billion** (Willingness to Pay model) dollars, depending on the costing model and assumptions used. To put this another way, that represents a cost of between about **\$59.00** and **\$341.00** per Canadian.

Turning to 2006, the most recent year of data, it is estimated that, for Canada, impaired driving, including impairment by drugs other than alcohol, resulted in **1,278 fatalities**, **75,374 injuries** and, including property-damage-only, a total of **216,480 crashes**, at a cost of **between \$2.2 and \$12.8 billion dollars**, depending upon the costing model used.

While these figures can only be considered as order-of-magnitude approximations, the issue of more precisely determining the magnitude of impaired driving crashes and attendant costs is important and worthy of consideration by researchers and policy makers alike.

Estimating the Presence of Alcohol and Drug Impairment in Traffic Crashes and their Costs to Canadians: 1999 to 2006¹

The Model for Estimation:

Knowledge of the extent of harm caused by traffic crashes, and by the sub-set of crashes caused by impairment, is important in the development of public policy and the allocation of countermeasure resources.

The more serious a crash, the more likely it will be reported to or otherwise become known to various authorities such as the police, motor vehicle branches, insurance companies, and the coroner, and the more likely it will be investigated by one or more of those bodies. Consequently, Canadian data on motor vehicle fatalities, and whether or not the fatally injured person(s) had measurable blood alcohol content (BAC), is largely complete, valid and reliable. That is, we have very good information the number of persons killed in crashes, and whether or not they were possibly impaired by alcohol. On the other hand, the data on whether or not a fatally injured person might have been impaired by drugs is incomplete, primarily due to a lack of testing and testing sensitivity.

As crashes become less serious, there is less likelihood that they will be reported, recorded, or investigated. In order to assess the magnitude of the traffic crash and impairment-caused traffic crash problem, there is a need to find a way to estimate the number of less severe crashes, and whether or not they might have been caused by impairment by alcohol and/ or drugs.

Historically, crashes reported to the police have been used as a measure of crash frequencies and types, with the police forwarding crash reports to provincial Motor Vehicle Branches for compilation and statistical analyses. However, a comparison of the frequencies of these reports with data from insurance company crash counts shows an underreporting of less serious crashes in the police-generated data (Mercer & Marshall, 2002). This could be because of a lack of policing resources, a reluctance on the part of drivers to report crashes to the police (but a desire for financial compensation from insurance companies) or both. Certainly, some proportion of crashes will never be reported to anyone and will just be settled privately, but insurance-based counts seem to gather many more crash instances than do police data counts.

An examination of insurance-based and other data sources suggests that there may be a roughly stable relationships among the number of motor-vehicle related fatalities to the number of injuries to the number of property damage only (PDO) events, such that there appears to be about 118 injuries, and 650 PDO events for each fatality (Mercer & Marshall, 2002). Using these multipliers, one can move from the very good information on the frequencies of fatalities, to an estimation of the frequencies of less serious crashes.

¹ In 2002 MADD Canada commissioned Applied Research and Evaluation Services (ARES – www.ares.ubc.ca) at the University of British Columbia to consider the extent and cost of impaired driving crashes in Canada for the year 1999 (Mercer & Marshall, 2002). That full report is at http://www.madd.ca/english/research/magnitude_report2k2.doc and explains in detail how the model of that estimate was constructed. None of the assumptions around the model have changed for this brief report.

Similarly, an examination of BAC levels associated with different levels of crash-related injury severity (from no injury to fatality) can produce a rough estimation of the proportion likely impaired by alcohol in less severe crashes for every one percent impaired by alcohol in fatal crashes. An examination of these relationships showed that as crash severity lessened, the likelihood of impairment being a cause lessened. From the examination of the BAC data, it has been suggested that for every one percent of fatal injuries associated with an impaired crash, about half of one percent of injury-only crashes were likely to be associated with alcohol-impairment, and about three-tenths of one percent of PDO events were likely to be associated with alcohol-impairment (Mercer & Marshall, 2002). To put this another way, if the percent of alcohol-impaired crashes went up by 10%, the percent of alcohol-impaired injury crashes would go up by 5% and the percent of PDO crashes would go up by 3%. Again, using these multipliers, one can move from very good information on the frequencies of impairment-related fatalities to an estimation of the frequency of impairment in less serious crashes.

Finally, from an examination of studies of the impairing role of drugs as well as alcohol in crashes it has been suggested that where there is a positive BAC, about 75% of the instances involve alcohol alone, about 25% of the instances where alcohol was involved there were likely also drugs involved, and that there was an additional 10% of persons likely impaired by drugs over and above those impaired by alcohol alone or alcohol and drugs (Mercer & Marshall, 2002).

Calculation of Frequencies:

In order to estimate the extent of fatal, injury and PDO events, it was assumed that there were 118 injuries and 650 PDO events for every fatal event. Those multipliers were applied to the known number of motor vehicle-related fatal events in Canada as reported by: the Traffic Injury Research Foundation (Mayhew *et al.*, 2001) for 1999; the Canadian Council of Motor Transport Administrators (CCMTA) Standing Committee on Road Safety Research Policies paper The Alcohol-Crash Problem in Canada: 2000 for 2000; the CCMTA paper The Alcohol-Crash Problem in Canada: 2001 for 2001; the CCMTA paper The Alcohol-Crash Problem in Canada: 2002 for 2002, the CCMTA paper The Alcohol-Crash Problem in Canada: 2003 for 2003, the CCMTA paper The Alcohol-Crash Problem in Canada: 2004 for 2004, The Alcohol-Crash Problem in Canada: 2005 for 2005 and The Alcohol-Crash Problem in Canada: 2006 for 2006.

Table 1: Estimated Fatalities, Injuries & PDO Vehicles, Canada, 1999 to 2006

Year	Fatalities	Injuries @118	PDO veh. @ 650
1999	3,315	391,170	2,154,750
2000	3,162	373,116	2,055,300
2001	3,021	356,478	1,963,650
2002	3,197	377,246	2,078,050
2003	3,124	368,632	2,030,600
2004	3,013	355,534	1,958,450

Year	Fatalities	Injuries @118	PDO veh. @ 650
2005	3,226	380,668	2,096,900
2006	3,122	368,396	2,029,300

Again, working from the above sources, the percent of persons killed in motor vehicle-related crashes, on-road or off-road, where alcohol was involved was used as a starting point to estimate the numbers injured and PDO events, using the notion that for every 1% fatal there would be 0.5% injured and 0.3% in PDO events. That resulted in:

Table 2: Estimated % Alcohol-Involved - Fatalities, Injuries & PDO Vehicles, Canada, 1999 to 2006

Year	Fatalities	Injuries @0.5%	PDO veh. @ 0.3%
1999	34.20%	17.10%	10.26%
2000	33.80%	16.90%	10.14%
2001	36.50%	18.25%	10.95%
2002	33.00%	16.50%	9.90%
2003	36.6%	18.29%	10.98%
2004	34.9%	17.45%	10.47%
2005	34.1%	17.05%	10.23%
2006	37.2%	18.60%	11.16%

As noted above, it has been estimated that about 10% of fatal crashes involve impairment by drugs (licit and illicit) alone. Assuming that the drugs-plus-alcohol frequencies are a sub-set of the instances where alcohol has been found², the estimations overall impairment can be drawn by multiplying the cells in Table 3 by 1.1

Table 3: Estimated % Impaired - Fatalities, Injuries & PDO Vehicles, Canada, 1999 to 2006

Year	Fatalities	Injuries	PDO veh.
1999	37.62%	18.81%	11.29%
2000	37.18%	18.59%	11.15%
2001	40.15%	20.08%	12.05%
2002	36.30%	18.15%	10.89%
2003	40.25%	20.12%	12.07%

² As a combination of alcohol and drugs can be more impairing than the same level of alcohol alone, instances of undetected drugs-plus-alcohol may have alcohol levels too low to be included in any counts of impairment, as it is rare that drivers are examined for drugs. Consequently, this assumption is likely conservative. See Mercer & Jeffery, (1995).

Year	Fatalities	Injuries	PDO veh.
2004	38.39%	19.20%	11.52%
2005	37.51%	18.76%	11.25%
2006	40.92%	20.46%	12.28%

Finally, the estimated percent impaired (Table 3) can be applied to the estimated number of fatalities, injuries, and PDO vehicles (Table 1) to give an estimated number of victims and PDO vehicles, shown in Table 4.

Table 4: Estimated # Impaired - Fatalities, Injuries & PDO Vehicles, Canada, 1999 to 2006

Year	Fatalities	Injuries	PDO veh.
1999	1,247	73,579	243,185
2000	1,176	69,362	229,248
2001	1,213	71,563	236,522
2002	1,161	68,470	226,300
2003	1,257	74,181	245,174
2004	1,157	68,245	225,555
2005	1,210	71,413	235,901
2006	1,278	75,374	249,117
All	9,698	572,187	1,891,001
Average	1,212	71,523	236,375

The insurance company-generated ratios of 1.2 fatalities per fatal crash, 1.11 injuries per fatal crash, 1.44 injuries per injury crash and 1.52 vehicles per PDO crash were used to move to the crash as the units of analysis, as shown in Table 5³.

Table 5: Estimated # Impaired Crashes - Fatalities, Injuries & PDO, Canada, 1999 to 2006

Year	Fatal	Injury	PDO.	Sum
1999	1,039	50,295	159,990	211,325
2000	980	47,413	150,821	199,214
2001	1,011	48,917	155,606	205,534

3. That is:

- A. (number of fatalities divided by fatalities per fatal crash) = number of fatal crashes.
- B. ((number of fatal crashes multiplied by number of injuries per fatal crash) subtracted from (number of injuries)) divided by number of injuries per injury crash = number of injury crashes
- C. number of PDO vehicles divided by number of vehicles per PDO crash = number of PDO crashes

Year	Fatal	Injury	PDO.	Sum
2002	967	46,803	148,881	196,652
2003	1,048	50,707	161,298	213,053
2004	964	46,649	148,391	196,004
2005	1,008	48,815	155,198	205,022
2006	1,065	51,522	163,893	216,480
All	8,081	391,123	1,244,079	1,643,284
Average	1,010	48,890	155,510	205,410

Using these crash frequency estimations, three costing models can be used (in 1999, 2000, 2001, 2003, 2004, 2005 and 2006 dollars⁴) to estimate the order-of-magnitude of impaired-related crashes in Canada in each of these years.

Calculation of Costs:

Broadly, there are three kinds of questions that are asked about the result of a traffic crash:

1. How much will this cost me in real dollars spent? (Real Dollar Estimate -- RDE)
2. How much will this cost me in terms of lost goods, opportunity, or productivity? (Discounted Future Earnings --DFE)
3. How much would I pay for this not to have happened? (Willingness to Pay -- WTP)

Each model approaches the question of crash costs differently, especially in the calculation of the value of a fatal crash. The RDE figures are based on estimates from the Insurance Corporation of British Columbia (Mercer, & Halabisky, 1999), while the DFE and WTP estimates came from an Ontario study by Vodden *et al.* (1994).

Table 6: Crash costs by Costing Model in 1999 \$

Model	fatal	injury-only	PDO
Real Dollar Estimate	\$280,340	\$25,215	\$1,581
Deferred Future Earnings	\$984,412	\$23,779	\$7,265
Willingness to Pay	\$7,473,138	\$32,101	\$7,265

Table 7: Crash costs by Costing Model in 1999 to 2006

Year	Model	fatal	Injury-only	PDO	sum
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⁴ Inflation went from: 1999 to 2000 = 3.71% increase; 2000 to 2001 = 2.73% increase; 2001 to 2002 = 2.55%, 2002 to 2003 = 2.16% increase, 2003 to 2004 2.29%, 2.13 2004 to 2005 and 1.39% 2006 to 2006..

See http://www.bankofcanada.ca/en/inflation_calc.htm

Year	Model	fatal	Injury-only	PDO	sum
1999	Real Dollar Estimate	\$291,344,046	\$1,268,200,800	\$252,944,486	\$1,812,489,332
	Deferred Future Earnings	\$1,023,052,632	\$1,195,976,475	\$1,162,328,712	\$3,381,357,820
	Willingness to Pay	\$7,766,477,349	\$1,614,535,550	\$1,162,328,712	\$10,543,341,611
2000	Real Dollar Estimate	\$284,836,544	\$1,239,874,089	\$247,294,683	\$1,772,005,316
	Deferred Future Earnings	\$1,000,201,585	\$1,169,262,977	\$1,136,366,775	\$3,305,831,337
	Willingness to Pay	\$7,593,004,221	\$1,578,473,057	\$1,136,366,775	\$10,307,844,053
2001	Real Dollar Estimate	\$301,896,460	\$1,314,134,739	\$262,106,077	\$1,878,137,276
	Deferred Future Earnings	\$1,060,107,362	\$1,239,294,466	\$1,204,427,989	\$3,503,829,817
	Willingness to Pay	\$8,047,777,361	\$1,673,013,653	\$1,204,427,989	\$10,925,219,004
2002	Real Dollar Estimate	\$296,214,744	\$1,289,402,617	\$257,173,219	\$1,842,790,580
	Deferred Future Earnings	\$1,040,156,055	\$1,215,970,844	\$1,181,760,556	\$3,437,887,455
	Willingness to Pay	\$7,896,317,537	\$1,641,527,400	\$1,181,760,556	\$10,719,605,494
2003	Real Dollar Estimate	\$327,851,526	\$1,427,115,377	\$284,640,229	\$2,039,607,133
	Deferred Future Earnings	\$1,151,248,401	\$1,345,840,831	\$1,307,976,764	\$3,805,065,996
	Willingness to Pay	\$8,739,672,182	\$1,816,848,334	\$1,307,976,764	\$11,864,497,280
2004	Real Dollar Estimate	\$308,523,832	\$1,342,983,239	\$267,859,952	\$1,919,367,023
	Deferred Future Earnings	\$1,083,379,334	\$1,266,500,038	\$1,230,868,155	\$3,580,747,526
	Willingness to Pay	\$8,224,445,930	\$1,709,740,431	\$1,230,868,155	\$11,165,054,516
2005	Real Dollar Estimate	\$329,637,212	\$1,435,276,972	\$286,114,262	\$2,051,028,446
	Deferred Future Earnings	\$1,157,518,823	\$1,353,537,622	\$1,314,750,228	\$3,825,806,673
	Willingness to Pay	\$8,787,273,930	\$1,827,238,790	\$1,314,750,228	\$11,929,262,948
2006	Real Dollar Estimate	\$352,848,643	\$1,535,926,125	\$306,342,690	\$2,195,117,459
	Deferred Future	\$1,239,025,606	\$1,448,454,782	\$1,407,703,760	\$4,095,184,149

Year	Model	fatal	Injury-only	PDO	sum
	Earnings				
	Willingness to Pay	\$9,406,030,544	\$1,955,374,362	\$1,407,703,760	\$12,769,108,667

Table 8: Crash costs by Costing Model 1999 to 2006 Total and Average

Year	Model	fatal	Injury-only	PDO	sum
All	Real Dollar Estimate	\$2,493,153,007	\$10,852,913,960	\$2,164,475,599	\$15,510,542,566
	Deferred Future Earnings	\$8,754,689,797	\$10,234,838,035	\$9,946,182,940	\$28,935,710,772
	Willingness to Pay	\$66,460,999,055	\$13,816,751,577	\$9,946,182,940	\$90,223,933,572
Ave- rage	Real Dollar Estimate	\$311,644,126	\$1,356,614,245	\$270,559,450	\$1,938,817,821
	Deferred Future Earnings	\$1,094,336,225	\$1,279,354,754	\$1,243,272,867	\$3,616,963,846
	Willingness to Pay	\$8,307,624,882	\$1,727,093,947	\$1,243,272,867	\$11,277,991,696

Conclusion:

The model developed in Estimating the Presence of Alcohol and Drug Impairment in Traffic Crashes and their Cost to Canadians: A Discussion Paper (Mercer & Marshall, 2002) was applied to data from Mayhew et. al. (2001) for 1999 data and to The Alcohol-Crash Problem in Canada (CCMTA) for the data for 2000, 2001, 2002, 2003, 2004, 2005 and 2006 to estimate the extent and cost of impaired driving in Canada.

Over the eight-year period between 1999 and 2006, it is estimated that impaired driving killed **9,698** persons, injured **572,187**, and caused damage to **1,891,001** vehicles in all crashes, translating into **1,010** fatal crashes, **391,123** injury-only crashes and **1,244,079** property-damage only (PDO) crashes, totaling **1,643,284** crashes in all.. In turn, this cost Canadians between **\$15.5 billion** (Real Dollar Estimate model) and **\$90.2 billion** (Willingness to Pay model) dollars, depending on the costing model and assumptions used. To put this another way, that represents a cost of between about **\$469.00** and **\$2,726.00** per Canadian.

While having only eight years of data-points, the phenomenon appears to be relatively stable. For example, looking at the estimate of the proportion of fatalities from 1999 to 2006 they are 38%, 37%, 40%, 36%, 40%, 38%, 38% and 41% respectively, with no discernable trend. Admittedly, the drop from 2001 to 2002 represents about a 10% reduction in the total proportion⁵, and 2002 is the lowest of the years, but this may simply be a function of 2001 having been unusually high.

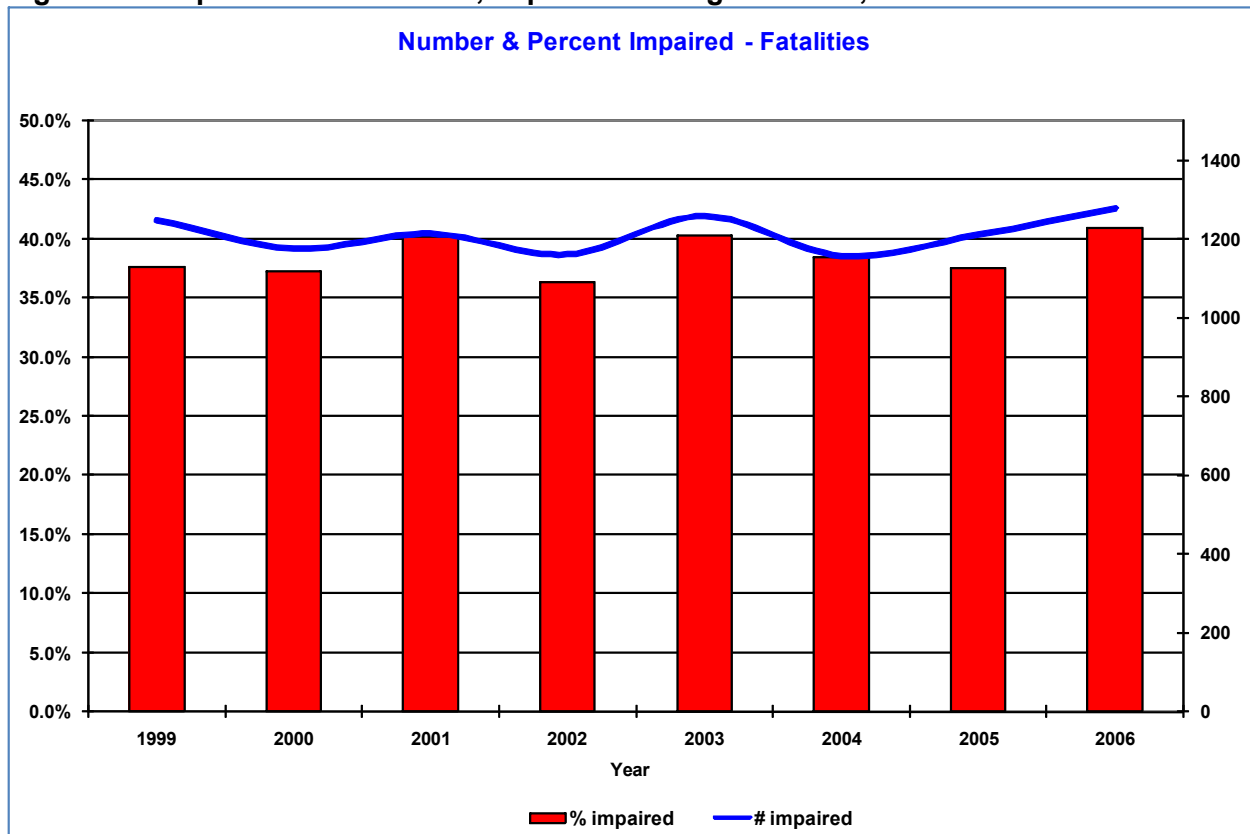
Because of this apparent stability, it seems reasonable to express these impaired driving statistics in terms of “average years”. Thus, it is estimated that in an average year in Canada, impaired driving killed **1,212** persons, injured **71,532**, and caused damage to **236,375** vehicles in all crashes, translating into **1,010** fatal crashes, **48,890** injury-only crashes and **155,510** property-

⁵ i.e., $((40\% - 36\%) / 40\%) * 100 = 10\%$

damage only (PDO) crashes, totaling an average of **205,410** crashes in all. In turn, on average, this cost Canadians between **\$1.90 billion** (Real Dollar Estimate model) and **\$11.28 billion** (Willingness to Pay model) dollars, depending on the costing model and assumptions used. To put this another way, that represents a cost of between about **\$59.00** and **\$341.00** per Canadian.

Turning to 2006, the most recent year of data, it is estimated that, for Canada, impaired driving, including impairment by drugs other than alcohol, resulted in **1,278 fatalities**, **75,374 injuries** and, including property-damage-only, a total of **216,480 crashes**, at a cost of **between \$2.2 and \$12.8 billion dollars**, depending upon the costing model used.

Figure 1: Proportion and Number, Impaired Driving Fatalities, 1999 to 2006



While these figures can only be considered as order-of-magnitude approximations, the issue of more precisely determining the magnitude of impaired driving crashes and attendant costs is important and worthy of consideration by researchers and policy makers alike.

Appendix A: Provincial Break-Downs

As noted in the body of the text, these figures can only be considered as order-of-magnitude approximations. Applied to the entire country, they can give an idea of the scope and cost of impaired driving crashes. However, when applied at the Provincial level, they become substantially less reliable, as there are likely differences among the Provinces in terms of the ratio of injuries to fatalities, as well as to medical, repair and other costs associated with crashes. Nonetheless, arguably, there is some worth in applying these calculations to crashes at the Provincial level, to obtain some notion of the costs of these crashes to those jurisdictions. Consequently, with a strong caution as to not over-interpret the data, the crash number and costing calculations described above are presented for the 2006 data:

Table 9: Estimated Fatalities, Injuries & PDO Vehicles, 2006

Jurisdiction	Fatalities	Injuries @118	PDO veh. @ 650
British Columbia	458	54,044	297,700
Alberta	477	56,286	310,050
Saskatchewan	157	18,526	102,050
Manitoba	144	16,992	93,600
Ontario	885	104,430	575,250
Quebec	692	81,656	449,800
New Brunswick	113	13,334	73,450
Nova Scotia	93	10,974	60,450
Prince Edward Island	28	3,304	18,200
Newfoundland & Labrador	48	5,664	31,200
Yukon, NW Territory & Nunavut	27	3,186	17,550
Canada	3,122	368,396	2,029,300

Table 10: Estimated % Alcohol-Involved - Fatalities, Injuries & PDO Vehicles, 2006

Jurisdiction	Fatalities	Injuries @0.5%	PDO veh. @ 0.3%
British Columbia	36.70%	18.35%	11.01%
Alberta	43.40%	21.70%	13.02%
Saskatchewan	47.90%	23.95%	14.37%
Manitoba	44.60%	22.30%	13.38%
Ontario	34.30%	17.15%	10.29%

Jurisdiction	Fatalities	Injuries @0.5%	PDO veh. @ 0.3%
Quebec	31.30%	15.65%	9.39%
New Brunswick	33.90%	16.95%	10.17%
Nova Scotia	44.90%	22.45%	13.47%
Prince Edward Island	52.40%	26.20%	15.72%
Newfoundland & Labrador	34.10%	17.05%	10.23%
Yukon, NW Territory & Nunavut	44.40%	22.20%	13.32%
Canada	37.2%	18.60%	11.16%

Table 11: Estimated % Impaired - Fatalities, Injuries & PDO Vehicles, 2006

Jurisdiction	Fatalities	Injuries	PDO veh.
British Columbia	40.37%	20.19%	12.11%
Alberta	47.74%	23.87%	14.32%
Saskatchewan	52.69%	26.35%	15.81%
Manitoba	49.06%	24.53%	14.72%
Ontario	37.73%	18.87%	11.32%
Quebec	34.43%	17.22%	10.33%
New Brunswick	37.29%	18.65%	11.19%
Nova Scotia	49.39%	24.70%	14.82%
Prince Edward Island	57.64%	28.82%	17.29%
Newfoundland & Labrador	37.51%	18.76%	11.25%
Yukon, NW Territory & Nunavut	48.84%	24.42%	14.65%
Canada	40.92%	20.46%	12.28%

Table 12: Estimated # Impaired - Fatalities, Injuries & PDO Vehicles, 2006

Jurisdiction	Fatalities	Injuries	PDO veh.
British Columbia	185	10,909	36,054
Alberta	228	13,435	44,405
Saskatchewan	83	4,881	16,131
Manitoba	71	4,168	13,776
Ontario	334	19,701	65,113

Jurisdiction	Fatalities	Injuries	PDO veh.
Quebec	238	14,057	46,460
New Brunswick	42	2,486	8,217
Nova Scotia	46	2,710	8,957
Prince Edward Island	16	952	3,147
Newfoundland & Labrador	18	1,062	3,511
Yukon, NW Territory & Nunavut	13	778	2,571
Canada	1,278	75,374	249,117

Table 13: Estimated # Impaired Crashes - Fatalities, Injuries & PDO, 2006

Jurisdiction	Fatal	Injury-only	PDO	all
British Columbia	154	7,457	23,720	31,331
Alberta	190	9,184	29,214	38,588
Saskatchewan	69	3,336	10,613	14,018
Manitoba	59	2,849	9,063	11,971
Ontario	278	13,467	42,837	56,582
Quebec	199	9,609	30,566	40,373
New Brunswick	35	1,699	5,406	7,140
Nova Scotia	38	1,852	5,893	7,783
Prince Edward Island	13	651	2,070	2,735
Newfoundland & Labrador	15	726	2,310	3,051
Yukon, NW Territory & Nunavut	11	532	1,692	2,235
Canada	1,065	51,522	163,893	216,480

Table 14: Crash costs by Costing Model, 2006

Jurisdiction,	Model	fatal	injury-only	PDO	sum
British Columbia	Real Dollar Estimate	\$51,067,448	\$222,293,125	\$44,336,686	\$317,697,259
	Deferred Future Earnings	\$179,322,996	\$209,633,481	\$203,735,624	\$592,692,101
	Willingness to Pay	\$1,361,325,841	\$282,999,469	\$203,735,624	\$1,848,060,934
Alberta	Real Dollar Estimate	\$62,895,666	\$273,780,554	\$54,605,928	\$391,282,148
	Deferred Future Earnings	\$220,857,703	\$258,188,689	\$250,924,773	\$729,971,165
	Willingness to Pay	\$1,676,635,489	\$348,547,672	\$250,924,773	\$2,276,107,935
Saskatchewan	Real Dollar Estimate	\$22,847,978	\$99,455,695	\$19,836,582	\$142,140,255
	Deferred Future Earnings	\$80,230,520	\$93,791,670	\$91,152,923	\$265,175,113
	Willingness to Pay	\$609,067,901	\$126,616,191	\$91,152,923	\$826,837,014
Manitoba	Real Dollar Estimate	\$19,512,367	\$84,936,007	\$16,940,610	\$121,388,984
	Deferred Future Earnings	\$68,517,545	\$80,098,882	\$77,845,369	\$226,461,796
	Willingness to Pay	\$520,149,155	\$108,131,301	\$77,845,369	\$706,125,825
Ontario	Real Dollar Estimate	\$92,225,285	\$401,450,386	\$80,069,861	\$573,745,531
	Deferred Future Earnings	\$323,848,458	\$378,587,695	\$367,936,458	\$1,070,372,611
	Willingness to Pay	\$2,458,487,117	\$511,083,039	\$367,936,458	\$3,337,506,614
Quebec	Real Dollar Estimate	\$65,805,629	\$286,447,424	\$57,132,354	\$409,385,407
	Deferred Future Earnings	\$231,076,018	\$270,134,178	\$262,534,187	\$763,744,382
	Willingness to Pay	\$1,754,207,559	\$364,673,756	\$262,534,187	\$2,381,415,502
New Brunswick	Real Dollar Estimate	\$11,638,332	\$50,660,868	\$10,104,384	\$72,403,584
	Deferred Future Earnings	\$40,867,925	\$47,775,720	\$46,431,592	\$135,075,237

Jurisdiction,	Model	fatal	injury-only	PDO	sum
	Willingness to Pay	\$310,247,784	\$64,495,917	\$46,431,592	\$421,175,292
Nova Scotia	Real Dollar Estimate	\$12,686,502	\$55,223,481	\$11,014,403	\$78,924,387
	Deferred Future Earnings	\$44,548,566	\$52,078,491	\$50,613,308	\$147,240,365
	Willingness to Pay	\$338,189,279	\$70,304,539	\$50,613,308	\$459,107,126
Prince Edward Island	Real Dollar Estimate	\$4,457,609	\$19,403,667	\$3,870,089	\$27,731,365
	Deferred Future Earnings	\$15,652,862	\$18,298,624	\$17,783,808	\$51,735,293
	Willingness to Pay	\$118,828,295	\$24,702,642	\$17,783,808	\$161,314,744
Newfoundland & Labrador	Real Dollar Estimate	\$4,972,883	\$21,646,621	\$4,317,450	\$30,936,953
	Deferred Future Earnings	\$17,462,244	\$20,413,841	\$19,839,515	\$57,715,600
	Willingness to Pay	\$132,564,172	\$27,558,127	\$19,839,515	\$179,961,813
Yukon, NW Territory & Nunavut	Real Dollar Estimate	\$3,642,163	\$15,854,086	\$3,162,121	\$22,658,370
	Deferred Future Earnings	\$12,789,430	\$14,951,193	\$14,530,554	\$42,271,176
	Willingness to Pay	\$97,090,621	\$20,183,701	\$14,530,554	\$131,804,877
Canada	Real Dollar Estimate	\$352,848,643	\$1,535,926,125	\$306,342,690	\$2,195,117,459
	Deferred Future Earnings	\$1,239,025,606	\$1,448,454,782	\$1,407,703,760	\$4,095,184,149
	Willingness to Pay	\$9,406,030,544	\$1,955,374,362	\$1,407,703,760	\$12,769,108,667

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