

# Collision Cost Study

## Report Summary

Prepared For:



CAPITAL REGION INTERSECTION SAFETY PARTNERSHIP

February 2010



# Counting Up the Costs: Motor Vehicle Collisions in the Capital Region

## Introduction

Motor vehicle collisions are costly – not just to the people involved but to society as a whole. Costs to individuals and families can be considerable, especially when there are major injuries or fatalities. Many of these costs can't be measured in dollars alone. How do you put a value on human life?

The costs to society are similarly high and often difficult to measure. While we can add up the costs for emergency response and health care services, other costs are harder to quantify. How do you count the cost to society when a promising future is altered or a life is cut short?

With over 60,000 motor vehicle collisions in the Capital Region every year, we need to understand the costs if we want people to take real action to reduce collisions.

The Capital Region Intersection Safety Partnership (CRISP) has worked together since 2001 to promote traffic intersection safety and injury prevention.

The stakeholders include:

- Alberta Motor Association
- Edmonton Police Services
- Strathcona County RCMP Detachment
- Strathcona County
- Alberta Health Services
- St. Albert RCMP Detachment
- City of St. Albert
- City of Edmonton

CRISP contracted Paul de Leur, PhD, PEng., a road safety engineer, to quantify the costs associated with motor vehicle collisions. Additional contributions were made by Laura Thue, PhD, Senior Research Coordinator, Office of Traffic Safety, Edmonton and Brian Ladd, MNRM, M.Sc., Population Health Consultant, Alberta Health Services. A detailed and comprehensive Collision Cost Study technical report was presented to CRISP in 2009.

## Study Purpose and Approach

The purpose of the Collision Cost Study was to recommend a collision costing model that would be most appropriate to the Capital Region, given the availability and accuracy of local data. Not only would the recommended model allow CRISP to calculate the direct costs associated with motor vehicle collisions, it would also enable its members to calculate other less tangible and indirect costs.

To achieve this purpose, the consultant conducted a literature review to identify methods and costing models used by other jurisdictions. These methods and models were then critically reviewed to assess their suitability to the Capital Region. The next step was to make sure input data required by a given model was available and reliable. Finally, the consultant recommended a specific method for applying the selected costing method and calculated collision costs.

## Classification of Collision Severity

This study used two different approaches to classify collision severity. The first approach classifies collisions into three groups: Fatal, Injury and Property Damage Only (PDO). The second approach is based on the injuries of victims and classifies collisions into four groups: Fatalities, Major Injuries, Minor Injuries and PDO. Both of these approaches are used in Alberta, and data are readily available.

## Collisions in the Capital Region

The Office of Traffic Safety for the Province of Alberta provided the collision data used to develop a collision costing model for the Capital Region. The total number of collisions in the Capital Region in 2007\* was aggregated from police data in each of the following communities:

Devon	Leduc	St. Albert
Edmonton	Sherwood Park	Stony Plain
Fort Saskatchewan	Spruce Grove	

This raw collision data was then adjusted to account for:

- Changes in the number of fatal collisions when death occurs later in hospital;
- Discrepancies between police reported injury collisions and hospital records; and,
- Differences in collision reports when police do not attend a collision (as in the case of minor injury and PDO collisions).

Table 1 shows the total, adjusted number of fatal, injury and PDO collisions in the Capital Region in 2007. These numbers were used to calculate costs in this study.

**Table 1: Adjusted Collision Data for Capital Region (2007)**

Collision Type	Collision Severity Classification 1 (Collision)			
	Fatal	Injury	PDO	TOTAL
Collisions	43	8,517	51,822	60,382
Fatalities	44			44
Injuries	207	13,540		13,746
Major Injury	66	891		956
Minor Injury	141	12,649		12,790

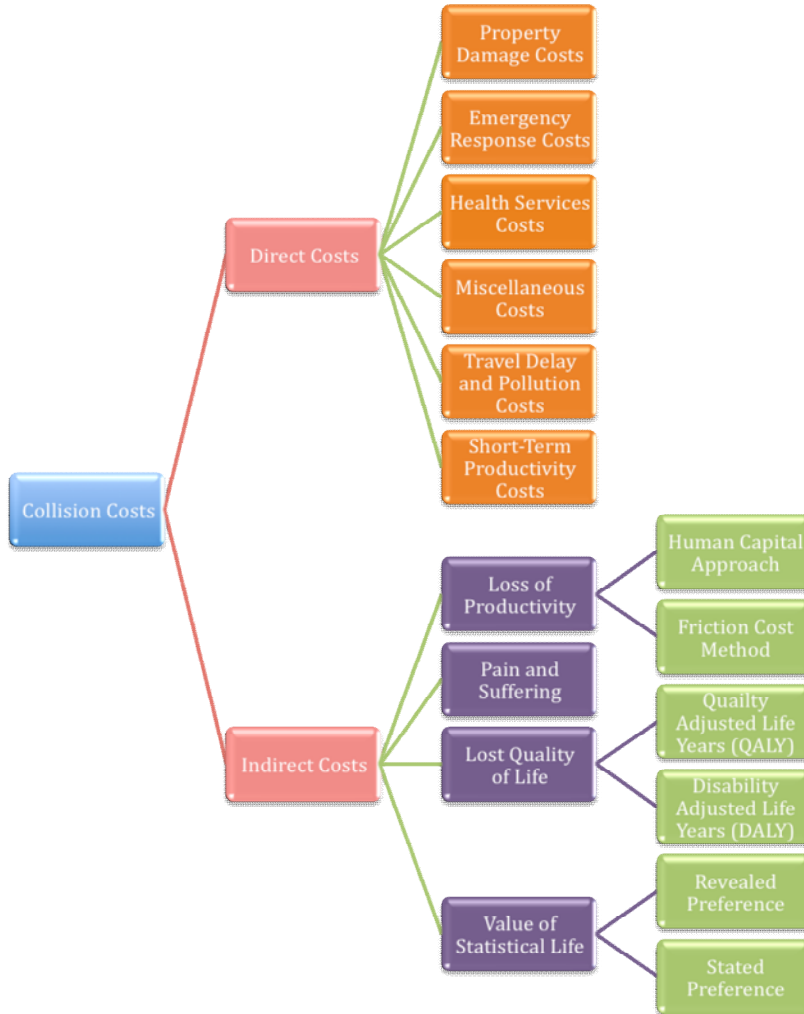
## Collision Cost Evaluation Methods

There is no ideal approach to collision cost evaluation. In fact, there is a wide range of methods used by other jurisdictions and an equally wide range of collision cost values. For example, cost estimates for a fatal collision range from \$1 million to \$20 million, depending on the method used and quality of the data. Cost values can also be influenced by the interests of the agency doing the calculation.

\* The most recent year for which motor vehicle statistics were available at the time of this study.

The costs associated with motor vehicle collisions are often categorized as Direct or Internal and Indirect or External. Figure 1 provides a summary of collision cost evaluation methods.

**Figure 1: Summary of Collision Cost Evaluation Methods**



## Understanding the Costs

### Direct Costs

Direct costs represent the losses to the people involved in collisions and to insurance companies, employers and taxpayers who often bear the greatest proportion of direct costs. These costs are typically easy to calculate from existing data sources and include:

- Property damage
- Emergency response
- Health services
- Legal and funeral
- Travel delay and environmental costs
- Productivity lost at work

**Table 2: Adding Up the Direct Cost of Collisions** summarizes the assumptions and estimates used to calculate the costs in each of these categories. It also briefly describes how costs are calculated and points to the pages in the technical report where more detailed information can be found. Finally, it shows the direct costs by collision type for fatal, injury and property damage only (PDO) collisions.\*

The total direct cost of EACH collision by collision type is calculated as follows:

Fatal:	\$181,335
Injury:	\$39,524
PDO:	\$10,902

The total direct cost of ALL collisions in the Capital Region in 2007 is calculated as follows:

Fatal:	\$7,797,405
Injury:	\$336,625,908
PDO:	\$564,963,444

### Indirect Costs

Indirect costs are those costs borne by people close to the person involved in a collision or by society as a whole. These costs are much harder to count than are the direct costs. Yet, it is these costs that we feel most deeply as individuals and society. Indirect costs include human capital costs and willingness-to-pay.

**Human capital costs** include both the long-term income that a person would have earned if they had not been involved in a collision and the cost of pain, suffering and grief experienced by those closest to the collision victim.

*Lost future income* (also called discounted future earnings) is an estimate of the present-value of the long-term income that would have been earned by a person who dies or is permanently disabled by a collision. To calculate long-term income loss, we make the following assumptions:

#### Income loss for fatal collision victim

Meaningful incomes are earned by persons between the ages of 16 and 65. Average salary levels will vary by age group and gender. 78% of fatal collisions involve a male driver and 22% of fatal collisions involve a female driver.

#### Income loss for permanently disabled collision victim

A totally disabled collision victim cannot return to work. A person with a partial, permanent disability will have a 17.2% earning potential loss compared to a person who cannot return to work.

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\* The same costs for collisions classified by victim (fatalities, major injury, minor injury, PDO) can be found in the technical report.

Household productivity loss for caregiver.

A spouse or other family member may quit a job or reduce employment to care for a person who has become permanently disabled.

Caregivers are more likely to be female (as more males are involved in serious collisions).

The average long-term income loss for victims and caregivers impacted by fatal and injury collisions are estimated as follows:

Victim of fatal collision dies:	\$1,414,927
Victim permanently disabled in fatal collision:	\$108,513
Victim permanently disabled in injury collision:	\$17,314
Caregiver affected by a fatal collision:	\$76,741
Caregiver affected by an injury collision:	\$13,154

*Pain, grief and suffering* are the significant costs “paid” by those directly affected by fatal and injury collisions. The approaches used to calculate these costs can be very abstract and subjective. This study used a method developed by the Transportation Research Laboratory (TRL) in the United Kingdom. That method estimates pain, suffering and grief as a percentage of total direct costs of each collision type.

For fatal collisions, TRL estimates 38% of direct costs or \$68,907 for the Capital Region.

For injury collisions, TRL estimates 28% of direct costs or \$11,067 for the Capital Region.

**Willingness-to-pay** is a measure of the value that people put on their own lives and on the lives of people close to them. It refers to the amount of money a person is willing to pay to reduce the risk of injury or death for themselves and others. Willingness-to-pay is determined through the use of questionnaires and sophisticated statistical techniques. Based on the results of Canadian studies, willingness-to-pay costs by type of collision for the Capital Region are estimated as follows:

Fatal Collision:	\$5,362,458
Injury Collision:	\$95,032
PDO Collision:	\$0

## Conclusion

This study provided a comprehensive review of collision costing methods and recommended the best methods to be used to calculate the cost of collisions in the Capital Region. In most cases, it was necessary to make some assumptions and to estimate some costs to arrive at an “average cost” by collision type. For this reason, one cannot say that these costs are “actual” or “undisputed” – but they do provide a good understanding of the cost of collisions in the Capital Region. And that cost is huge – over \$1 billion every year in direct costs and at least that much or more in indirect costs. The impact of collision costs is felt by everyone – drivers, pedestrians, policy-makers, service providers and society as a whole

**Table 2: Adding Up the Direct Costs of Collisions for Capital Region (2007)**

Cost Category: Property Damage	Assumptions	Estimates	How the Cost is Calculated	Estimated average cost per collision by severity		
				Fatal	Injury	PDO
Cost to repair or replace a damaged vehicle	<ul style="list-style-type: none"> <li>Property damage costs are covered through insurance claims.</li> <li>Situations where insurance does not cover the cost are a very small proportion and have negligible impacts on overall costs.</li> </ul>	Average vehicle repair costs are estimated as follows (Insurance Bureau of Canada): Demolished Vehicle: \$21,772 Severe Damage: \$11,668 Moderate Damage: \$4,952 Light damage: \$1,080	Multiply the number of vehicles damaged by the estimated repair costs. Add the costs for each type of collision by severity. Divide the total cost by the total number of collisions of that type. See pp. 29-32	\$26,456	\$16,092	\$6,272
Insurance company administration costs	<ul style="list-style-type: none"> <li>Insurance company administration costs for injuries (and fatal collisions) are linked to the collision severity level and the associated amount of damage.</li> </ul>	Average insurance company administration costs per vehicle are estimated as follows (Insurance Bureau of Canada): Demolished Vehicle: \$2,177 Severe Damage: \$875 Moderate Damage: \$248 Light Damage: \$27	<ul style="list-style-type: none"> <li>Multiply the number of vehicles damaged by the estimated administration costs. Add the costs for each type of collision by severity. Divide the total cost by the total number of collisions of that type. See p. 33</li> </ul>	\$3,312	\$1,180	\$120
Out of pocket expenses	<ul style="list-style-type: none"> <li>A person involved in a collision incurs expenses that are not covered by auto insurance.</li> <li>A demolished vehicle has more out-of-pocket expenses than a vehicle with minimal damage.</li> </ul>	Average out of pocket expenses for all collision types is estimated at \$1,051 (Statistics Canada).	Multiply the number of vehicles damaged by the estimated out of pocket expenses. Add the costs for each type of collision by severity. Divide the total cost by the total number of collisions of that type. See pp 33-35	\$1,323	\$898	\$403
Towing and storage	<ul style="list-style-type: none"> <li>The percentage of vehicles that require a tow varies by collision severity</li> </ul>	Estimated towing costs as follows: Fatal collision: 86% Injury collision: 63% PDO collision: 46% Average cost of towing and storage is estimated at \$400 (Sampling: towing companies & literature review)	Multiply the percentage of vehicles that require a tow by the number of collisions by type. Multiply each result by the average tow charge. Divide the total cost by the total number of collisions of that type. See p. 36	\$602	\$586	\$311



**Table 2: Adding Up the Direct Costs of Collisions for Capital Region (2007)**

Cost Category: Emergency Response	Assumptions	Estimates	How the Cost is Calculated	Estimated average cost per collision by severity		
				Fatal	Injury	PDO
Police attendance or response to a collision	<ul style="list-style-type: none"> <li>Several assumptions are made to assign police resources to collisions by severity levels, including: attendance rate, average number of staff attending, average attendance time, administration time and court time.</li> </ul>	<ul style="list-style-type: none"> <li>Average hourly rate for police-attended collisions is estimated at \$167.57 (Office of Traffic Safety).</li> <li>Average hourly rate for non-police attended collisions is estimated at \$42.23 (Transport Canada).</li> </ul>	Multiply the total number of hours for both police-attended and non-police attended collisions by the number of collisions by severity. Multiply each of these results with the appropriate average hourly rate. Add these two cost totals. Divide the overall total by the number of collisions by severity. See pp. 37-38	\$5,884	\$537	\$169
Fire/rescue and ambulance attendance	<ul style="list-style-type: none"> <li>Several assumptions are made to develop the collision cost estimates for both ambulance and fire and rescue, including: attendance rate by collision severity, number of events attended and unit cost.</li> <li>Attendance rates by each type of unit vary by collision severity, with higher attendance rates associated with higher severity levels.</li> </ul>	<p>Average unit costs are estimated as follows (Office of Traffic Safety):</p> <p>Ambulance: \$365            Fire (pumper): \$334            Fire (aerial): \$667</p>	To get the number of events attended, multiply the average attendance rate for each type of unit by the number of collisions by severity. Multiply the number of events attended by an estimated "severity factor" and the unit cost. Divide the total cost by the number of events attended for each type of unit and each type of collision. See pp. 38-39	\$626	\$278	\$0
Coroner/medical examiner expenses (fatal collisions)	<ul style="list-style-type: none"> <li>Costs are associated with fatal collisions only.</li> <li>Assumptions are made about the wages for coroners and the amount of time required to attend and respond to fatal collisions.</li> </ul>	<ul style="list-style-type: none"> <li>Average number of coroner/medical examiner hours associated with each fatal collision is estimated at 24.</li> <li>Average hourly rate for coroner/medical examiner is estimated at \$73.76.</li> </ul>	Multiply the number of fatalities by the average number of coroner hours. Multiply this number by the average hourly rate and by an estimated "operating factor." Divide the total by the number of fatal collisions. See p. 39	\$1,844	\$0	\$0

**Table 2: Adding Up the Direct Costs of Collisions for Capital Region (2007)**

Cost Category: Health Services	Assumptions	Estimates	How the Cost is Calculated	Estimated average cost per collision by severity		
				Fatal	Injury	PDO
Emergency department (ED) costs	<ul style="list-style-type: none"> <li>• 50% of fatal collisions result in an emergency department visit; however, not all fatal collisions result in someone dying at the site. Some victims die later, either at the emergency department or after admission to an intensive care unit.</li> <li>• 100% of major injury collisions are assumed to require a trip to the emergency department.</li> <li>• 75% of minor injury collisions are assumed to require a trip to the emergency department.</li> </ul>	<ul style="list-style-type: none"> <li>• Average cost of an emergency department visit is estimated at \$231 (Alberta Health Care Insurance Plan).</li> </ul>	To get the estimated number of ED visits by collision severity, multiply the number of collisions by the rate of collisions of that type that require an ED visit. Multiply the estimated number of ED visits for each collision type by the average cost of an emergency department visit. Divide the total by the estimated number of ED visits by collision type. See p. 41	\$1,064	\$348	\$0
Intensive care unit (ICU) costs	<ul style="list-style-type: none"> <li>• 50% of victims from a fatal collision are transferred to an ICU after visit to an ED.</li> <li>• 100% of victims from major injury collisions are transferred to an ICU after visit to an ED.</li> <li>• People involved in minor injury collisions do not spend time in an ICU.</li> </ul>	<ul style="list-style-type: none"> <li>• Average time spent in an ICU before death occurs (for a fatal collision) is estimated to be 8 days.</li> <li>• Average time a victim from a major injury collision spends in an ICU is estimated to be 4.7 days.</li> <li>• Average cost of an ICU visit is estimated to be \$4,049 per day (AHCIP).</li> </ul>	To get the estimated number of ICU visits by collision severity, multiply the number of collisions by the rate of collisions of that type that require an ICU visit. Multiply the estimated number of ICU visits by the average cost of an ICU day for each collision type (number of days multiplied by cost per day). Divide the total by the estimated number of ICU visits by collision type. See p. 42	\$46,970	\$2,489	\$0
Acute care hospital costs	<ul style="list-style-type: none"> <li>• 0% of victims from fatal collisions require acute care.</li> <li>• 100% of victims from major injury collision require acute care.</li> <li>• Victims of minor injury collisions do not require acute care.</li> </ul>	<ul style="list-style-type: none"> <li>• Average time a victim from a major injury collision spends in acute care is estimated to be 4.7 days.</li> <li>• Average cost of acute care is estimated to be \$1,261 per day (AHCIP).</li> </ul>	To get the estimated number of acute care visits by collision severity, multiply number of collisions by rate of collisions of that type that require acute care. Multiply estimated number of acute care visits by the average cost of an acute care visit for each collision type (number of days multiplied by cost per day). Divide total by the estimated number of acute care visits by collision type.	\$9,374	\$775	\$0

**Table 2: Adding Up the Direct Costs of Collisions for Capital Region (2007)**

Cost Category: Health Services	Assumptions	Estimates	How the Cost is Calculated	Estimated average cost per collision by severity		
				Fatal	Injury	PDO
Rehabilitation costs	<ul style="list-style-type: none"> <li>The probability of total or partial disability by collision severity is used to estimate the number of persons who will become disabled as a result of a collision.</li> <li>People who are totally disabled by a collision require about 43 rehabilitation hospital days.</li> <li>People who are partially disabled by a collision require about 19 rehabilitation hospital days.</li> <li>These costs do not include aids or equipment.</li> <li>Outpatient visit costs were not available for this study.</li> </ul>	<ul style="list-style-type: none"> <li>Average cost of rehabilitation hospital care is estimated to be \$972 per day (AHCIP)</li> <li>Total rehabilitation hospital costs for a totally disabled person is \$41,796.</li> <li>For a partially disabled person the total cost is \$9,348.</li> </ul>	Multiply the number of collisions by type by the probability of total disability. Multiply the result by the average cost of rehabilitation for each collision type (number of days multiplied by unit cost per day). Repeat the same calculations for partial disability. Add together the results for total disability and partial disability. Divide the total by the total number of collisions by collision type. See pp. 44-45	\$6,571	\$1,101	\$0
Long-term care costs	<ul style="list-style-type: none"> <li>Long-term care includes the care and services that are provided within a designated facility, beyond the initial period of acute care &amp; rehabilitation.</li> <li>People who are totally disabled by a collision require continuing care 365 days per year.</li> <li>People who are partially disabled by a collision do not require long-term care.</li> </ul>	<ul style="list-style-type: none"> <li>Average life expectancy at time of collision is 28.8 years.</li> <li>Average cost of long-term care is estimated to be \$343 per day (Alberta Health Care Insurance Plan).</li> <li>A net present value factor of 0.187 is used for long-term care costs, based on a discount rate of 6% and 28.8 years (i.e., <math>i=6\%</math> and <math>n=28.8</math>).</li> </ul>	Multiply the number of collisions by type by the probability of total disability. Multiply the result by the average life expectancy of 28.8 years and then by the average annual cost of rehabilitation for each collision type (365 days per year multiplied by unit cost per day). Multiply the result by the net present value factor of 0.187. Divide the total by the total number of collisions by type. See pp. 44-45	\$19,100	\$2,525	\$0

**Table 2: Adding Up the Direct Costs of Collisions for Capital Region (2007)**

Cost Category	Legal	Assumptions	Estimates	How the Cost is Calculated	Estimated average cost per collision by severity		
					Fatal	Injury	PDO
Cost of corrections		<ul style="list-style-type: none"> <li>Includes operating expenditures for federal and provincial correctional facilities and related costs.</li> <li>Proportion of collisions by type that require corrections: Fatal: 50% Injury: 15% PDO: 0%</li> </ul>	Average cost of corrections is estimated to be 36.1% of the total police cost.	Multiply the total police cost by the proportion of collisions requiring corrections by collision type. Multiply the result by the average cost of corrections (36.1%). Divide the total by the total number of collisions by type. <i>See pp. 47-48</i>	\$1,061	\$29	\$0
Court costs		<ul style="list-style-type: none"> <li>Includes all operating costs for the court system, including salaries and benefits.</li> <li>Proportion of collisions by type that require court: Fatal: 50% Injury: 15% PDO: 0%</li> </ul>	Average court costs are estimated to be 14.7% of the total policing cost.	Multiply the total police cost by the proportion of collisions requiring court by collision type. Multiply the result by the average court cost (14.7%). Divide the total by the total number of collisions by type. <i>See p. 48</i>	\$434	\$12	\$0
Legal aid and prosecution costs		<ul style="list-style-type: none"> <li>Includes payments to private law firms and legal aid staff for the provision of legal advice and representation.</li> <li>Proportion of collisions by type that require legal aid and prosecution: Fatal: 50% Injury: 15% PDO: 0%</li> </ul>	Average legal aid and prosecution costs are estimated to be 13.1% of the total policing cost.	Multiply the total police cost by the proportion of collisions requiring legal aid and prosecution by collision type. Multiply the result by the average legal aid and prosecution cost (13.1%). Divide the total by the total number of collisions by type. <i>See p. 49</i>	\$386	\$11	\$0
Funeral costs		<ul style="list-style-type: none"> <li>75% of persons involved in a fatal collision have a traditional funeral.</li> <li>25% of fatal collision victims are cremated (lower cost than traditional funeral).</li> </ul>	<ul style="list-style-type: none"> <li>Average cost for a traditional funeral is estimated to be \$10,500.</li> <li>Average cost of cremation is estimated to be 25% the cost of a traditional funeral, or \$2,625.</li> </ul>	Multiply the total number of fatal collisions by 75% and then by the average cost of a traditional funeral (\$10,500). Multiply the total number of fatal collisions by 25% and then by the average cost of cremation (\$2,625). Add these two results together. Divide the total by the number of fatal collisions. <i>See p. 50</i>	\$8,887	\$0	\$0

**Table 2: Adding Up the Direct Costs of Collisions for Capital Region (2007)**

Cost Category: Travel Delay/ Environment	Assumptions	Estimates	How the Cost is Calculated	Estimated average cost per collision by severity		
				Fatal	Injury	PDO
Traffic delay cost to individual or employer	<ul style="list-style-type: none"> <li>The number of persons affected by a delayed vehicle varies by time of day, from 1.1 during morning commute to 1.4 during off-peak travel.</li> <li>Estimated average vehicle delay by collision severity: Fatal: 1.67 hours Injury: 0.49 hours PDO: 0.19 hours</li> <li>Estimated number of vehicles per hour (vph) affected by time of day and type of roadway (local, arterial, etc.): Local road: 1200 vph Collector road: 2200 vph Arterial road: 4000 vph Expressway: 6000 vph</li> </ul>	<ul style="list-style-type: none"> <li>The value of a work trip is estimated to be \$23.90 per hour.</li> <li>The value of a non-work trip is estimated to be \$11.95 (50% of a work trip).</li> </ul>	<p>This is a detailed calculation that involves average vehicle delay, distributed by hour of day and collision severity level, and then multiplied by number of persons affected and the value of a trip (work and non-work). Divide the total by the total number of collisions by type.</p> <p>See pp. 50-52</p>	\$16,903	\$4,926	\$1,937
Extra fuel consumption costs	<ul style="list-style-type: none"> <li>Based on amount of traffic delay (calculated above).</li> </ul>	<ul style="list-style-type: none"> <li>Average fuel consumption rate is estimated at 3.25 liters per hour.</li> <li>Average cost of fuel is estimated at \$0.85 / liter.</li> </ul>	<p>Multiply the amount of traffic delay in hours by the average fuel consumption rate. Multiply the result by the average cost of fuel. Divide the total by the total number of collisions by type.</p> <p>See p. 52</p>	\$2,069	\$603	\$236
Extra pollution costs	<ul style="list-style-type: none"> <li>Based on amount of traffic delay (calculated above).</li> </ul>	<ul style="list-style-type: none"> <li>Average pollution rate is estimated to be 245 kg per hour per vehicle.</li> <li>Average pollution cost is estimated to be \$70 per tonne (\$0.07/kg)</li> </ul>	<p>Multiply the amount of traffic delay in hours by the average pollution rate. Multiply the result by the average pollution cost. Divide the total by the total number of collisions by type.</p> <p>See p. 53</p>	\$12,843	\$3,743	\$1,464

**Table 2: Adding Up the Direct Costs of Collisions for Capital Region (2007)**

Cost Category: Short-term productivity	Assumptions	Estimates	How the Cost is Calculated	Estimated average cost per collision by severity		
				Fatal	Injury	PDO
Lost productivity due to collisions	<ul style="list-style-type: none"> <li>Based on the number of work days that are lost before return to the workplace or replacement of a person involved in a collision.</li> <li>Assumes 74.4% of the population is engaged in the workforce.</li> </ul>	<ul style="list-style-type: none"> <li>Average number of work days lost are estimated to be: Fatality: 20 work days Major injury: 45 work days Minor injury: 6.5 work days PDO: 0.25 work days</li> <li>Average daily value of a work day is estimated to be \$256.40.</li> </ul>	Multiply the average number of work days lost by collision type. Multiply the result by the percentage of the population assumed to be in the workforce. Multiply the result by the average daily value of a work day. Divide the total by the total number of collisions by type. See pages 54-55	\$15,300 (injuries)  \$3,975 (fatalities)	\$3,165	\$0
<b>TOTAL DIRECT COST FOR EACH COLLISION</b>				<b>\$181,335</b>	<b>\$39,524</b>	<b>\$10,902</b>
<b>TOTAL COLLISIONS FOR EACH SEVERITY TYPE</b>				<b>43</b>	<b>8,517</b>	<b>51,822</b>
<b>TOTAL DIRECT COST OF ALL COLLISIONS IN THE CAPITAL REGION (2007)</b>				<b>\$7,797,405</b>	<b>\$336,625,908</b>	<b>\$564,963,444</b>