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ICBC 2012 REVENUE REQUIREMENTS  
EXHIBIT B-6

March 12, 2012

British Columbia Utilities Commission  
Sixth Floor  
900 Howe Street  
Vancouver, BC V6Z 2N3

Attention: Ms. Alanna Gillis, Acting Commission Secretary

**Re: ICBC's Responses to Information Requests No. 1 on ICBC's Revenue Requirements Application for the 2012 Policy Year**

Dear Ms. Gillis:

Attached are ICBC's responses to the following Information Requests No. 1 on ICBC's Revenue Requirements Application for the 2012 Policy Year:

- British Columbia Utilities Commission (BCUC), February 8, 2012 (Exhibit A-4).
- Automobile Insurance Committee, Canadian Bar Association (AIC), February 15, 2012 (Exhibit C2-2).
- BC Old Age Pensioners Organization et al. (BCOAPO), February 15, 2012 (Exhibit C14-3).
- Canadian Direct Insurance (CDI), February 15, 2012 (Exhibit C3-2).
- Mr. Don Rosenbloom (DR), February 15, 2012 (Exhibit C13-2).
- Mr. Frank Duck (DUCK), February 15, 2012 (Exhibit C10-3).
- Insurance Bureau of Canada (IBC), February 15, 2012 (Exhibit C7-3).
- Voice for Economic Justice (VEJ), February 13, 2012 (Exhibit C11-2).

Yours truly,

June Elder  
Manager, Regulatory Affairs

Cc: Registered Intervenors  
Donnie Wing, CA, Senior Vice President, Corporate Affairs, ICBC

Attachment

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.1.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 3
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**2012.1 RR BCUC.1.1 Reference: APPLICATION  
Exhibit B-1, Chapter 1, p. iv  
Government Directions**

**ICBC on p. iv states:**

**“The 2011 Government Directive regarding Basic Rate Stability and Capitalization is important in the context of this Application for two reasons: ...ii. This will have the effect of allowing ICBC to use Basic capital above the regulatory minimum to reduce a portion of the actuarial rate indication”.**

**1.1 Please provide ICBC’s interpretation of the 2011 Government Directive. Should any and all Basic capital above 100% MCT serve to reduce a portion of the actuarial rate indication? Please elaborate.**

**1.1.1 Is it ICBC’s intent to target a 100% MCT placing the balance of Basic Capital that would have increased MCT over 100% towards the rate indication?**

**1.1.2 Should ICBC be adjusting its Capital Management Plan to reflect this direction? Why or why not?**

**Response:**

**1.1**

ICBC’s Basic Insurance Capital Management Plan (the Capital Management Plan) already contemplates the use of capital between 100% and 130% MCT to reduce the actuarial rate indication, but not in the way that information request 2012.1 RR BCUC.1.1 implies.

ICBC’s current capital management framework consists of the Capital Management Plan as filed in the 2007 Revenue Requirements Application, and as modified by the January 2008 Decision on Revenue Requirements, the 2010 Government Directive regarding Basic Excess Capital, and the 2011 Government Directive regarding Basic Rate Stability and Capitalization. While the original Commission-approved Capital Management Plan was primarily focused on achieving and maintaining the target MCT level in a relatively stable and predictable manner, the Government Directives now modify the Capital Management Plan to make more capital available until January 31, 2015 for the purpose of enhancing rate stability and predictability. The modifications do this in the following way:

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- A capital maintenance provision is included according to the Capital Management Plan as originally accepted by the Commission. The calculation of the capital maintenance provision is described further in the response to information request 2012.1 RR BCUC.21.1.
- If the most recent quarter's Basic MCT ratio is above the management target of 130%, a capital release provision is included, calculated as specified in the 2010 Government Directive.
- If the most recent quarter's Basic MCT ratio is between the regulatory minimum (100% MCT) and the management target of 130%, no capital build provision as contemplated by the Capital Management Plan is included. This is the provision of the 2011 Government Directive, effective until January 31, 2015, that makes the capital above 100% of MCT available for enhancing relative rate stability and predictability.

The third bullet item applies to the Application presently before the Commission. In the absence of the 2011 Government Directive, the Capital Management Plan would otherwise require ICBC to include in the actuarial rate indication a capital build provision to increase the MCT ratio towards the 130% MCT capital management target.

**1.1.1**

No, ICBC is not targeting 100% MCT. Targeting 100% MCT would be contrary to the existing regulatory framework because it would imply that ICBC must include a capital release provision equal to the amount of capital in excess of 100% MCT. The management MCT target of 130% remains in the Capital Management Plan. The Capital Management Plan would thus contemplate a capital build, but for the Government Directives. The Government Directives remove the capital build provision specified by the Capital Management Plan when capital levels are between 100% and 130% MCT. In effect, by not enabling a capital build provision until January 31, 2015, the 2011 Government Directive is delaying the rebuilding of the capital levels, and capital levels will be depleted for a period of time until the full impact of the policy year 2012 rates flow through.

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**1.1.2**

ICBC is not contemplating a change to the Capital Management Plan for the reasons described in the response to information request 2012.1 RR BCUC.1.1.1, above. Moreover, ICBC cannot change the Capital Management Plan to incorporate a capital release provision as the Government Directives contemplate that ICBC should continue to apply the approved Capital Management Plan with the exception of the variations required by the Government Directives.

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**2012.1 RR BCUC.2.1 Reference: APPLICATION  
Exhibit B-1, Chapter 1, p.vii  
Stable and Predictable Rates**

**ICBC in paragraph 15 states:**

**“Special Direction IC2 directs the Commission to ensure that increases or decreases in Basic insurance rates are phased in in such a way that those rates remain relatively stable and predictable. Despite the requested rate increase, ICBC believes that this requirement is met by approving the rate increase on both an interim and permanent basis.”**

**Please explain the criteria for ICBC to conclude that the proposed rate increase meets the requirement of “stable” and “predictable” rates.**

**Response:**

The term used in *Special Direction IC2 to the BC Utilities Commission, BC Regulation 307/2004, as amended (Special Direction IC2)* is “relatively stable and predictable”, and the reference to “relatively” is important. As discussed in ICBC’s letter of December 13, 2011 relatively stable and predictable rates are “relative” in the sense that they must account for the degree to which ICBC can influence the costs and other requirements, and should be considered over the long-term.

ICBC is able to influence some of the cost elements that drive rates. In particular, ICBC can contain operating costs by prudent management, and can positively impact claims costs to some extent through claims management initiatives. ICBC’s management of Basic capital can also contribute to keeping rates relatively stable and predictable, when the objective of financial stability is satisfied. The Basic Insurance Capital Management Plan (the Capital Management Plan) is designed to phase in rate increases and decreases where the capital levels are either in excess of, or below, the required levels.

Despite best efforts and the ability of ICBC to influence some of the cost elements that drive rates and the use of the Capital Management Plan, in certain years the indicated rate change will be higher or lower due to the inherent volatility of the insurance business. There are minimum capital levels required for financial sustainability, and financial sustainability cannot be sacrificed for short-term rate stabilization. The requirement in *Special Direction IC2* for the

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Commission to consider stability and predictability in a relative sense recognizes the inherent volatility of the insurance business and the need for long-term financial sustainability. Since higher and lower annual rate changes will inevitably occur, and since the *Special Direction IC2* requires that these changes be reflected according to accepted actuarial practice, in these cases rate stability must also be considered over a longer period of time such as five or ten years.

In the latest two years, ICBC has applied for a rate decrease of 1.9% and a rate increase of 11.2%. Each of these proposed annual rate changes has been considerably different from the average rate change, as viewed over a longer period of time. The variability is, to a significant degree, the product of investment markets and changes in claims frequency that are beyond the control of ICBC. ICBC has, however, cut operating expenses and used capital in a way that has reduced the volatility from what it would have been in the absence of these measures (i.e., it is relatively stable and predictable). There are limits on the extent to which capital can be used due to ICBC's need for sufficient capital to cover its liabilities in an adverse circumstance and the requirement of *Special Direction IC2* that recognizes the importance of financial sustainability. Moreover, despite the variability in the single year's rate indication, the 5-year average rate change was 1.6% at the time of the 2010 Streamlined Revenue Requirements Application, and is 1.8% for the current Application, including the proposed 11.2% increase. ICBC considers that despite the unusual single-year changes, these rate changes meet the criteria of "relatively stable and predictable" when viewed in context of the full set of Basic insurance rate changes experienced by customers in recent years.

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**2012.1 RR BCUC.2.2-3 Reference: APPLICATION  
Exhibit B-1, Chapter 1, p.vii  
Stable and Predictable Rates**

**ICBC in paragraph 15 states:**

**“Special Direction IC2 directs the Commission to ensure that increases or decreases in Basic insurance rates are phased in in such a way that those rates remain relatively stable and predictable. Despite the requested rate increase, ICBC believes that this requirement is met by approving the rate increase on both an interim and permanent basis.”**

**2.2 In the August 2010 Decision, the Commission approved a 2.4% rate decrease. This Application for policy year 2012 seeks approval of an 11.2% increase in Basic Insurance rates. In ICBC’s view, what should be the range or limit for “stable” and “predictable” rates until policyholders experience a rate shock?**

**2.3 In general, what threshold of increase or decrease would ICBC consider to not meet the relatively stable and predictable threshold? Please discuss any underlying factors for consideration.**

**Response:**

It is a generally accepted objective of rate regulation to strive for relative stability and predictability of rates (Bonbright, James C., Albert L. Danielson and David R. Kamerschen (1988) *Principles of Public Utilities Ratemaking*, 2<sup>nd</sup> ed., Public Utilities Reports, page 383). This is often characterized in the negative of “avoiding rate shock”. However, there is no universally accepted quantitative threshold of what constitutes rate shock, and there is no regulatory principle that prohibits rate shock in all circumstances at the expense of other legitimate objectives. It is recognized that there is a tension among the criteria of a sound rate structure, and they must be considered in context. (Bonbright, pages 383 to 388). ICBC has, in the past, sought to limit changes in rates to 10% per year. ICBC continues to believe that this is a desirable objective, but is not one that can or should be enforced as a cap on rate changes where increases are required for other valid reasons. ICBC is cognizant that the 11.2% increase sought exceeds this rule of thumb measure. For the reasons above, ICBC believes that in the present circumstances the priority must be on the Commission adhering to the requirement in *Special Direction IC2 to the BC Utilities Commission, BC Regulation 307/2004, as amended* to fix rates in accordance with accepted actuarial practice and that ensure that capital remains above 100% MCT, thus protecting the financial sustainability of Basic insurance.

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**2012.1 RR BCUC.2.4 Reference: APPLICATION  
Exhibit B-1, Chapter 1, p.vii  
Stable and Predictable Rates**

**ICBC in paragraph 15 states:**

**“Special Direction IC2 directs the Commission to ensure that increases or decreases in Basic insurance rates are phased in in such a way that those rates remain relatively stable and predictable. Despite the requested rate increase, ICBC believes that this requirement is met by approving the rate increase on both an interim and permanent basis.”**

**Since *Special Direction IC2* directs the Commission to ensure that Basic Insurance rates remain relatively stable and predictable, please provide an estimated rate indication for policy year 2013, given the latest information available at this time. Using Figure 3.2 as guidance, please briefly explain each component of the indicated rate change for policy year 2013.**

**Response:**

Estimates of future actuarial rate indication are based on a simplified model, and are not based on a full actuarial analysis. The actual policy year 2013 (effective February 1, 2013 through January 31, 2014) actuarial rate indication will depend on the future emergence of a number of assumptions including the following key assumptions: the level of loss costs, interest rates, ICBC’s Basic insurance MCT level, and the approved rate change for policy year 2012. If these key assumptions emerge according to current forecasts (Scenario A), which include an increase in interest rates in 2013 and the resumption of a downward trend for bodily injury (BI) claims frequency, the estimated rate change for policy year 2013 would be +2.2%.

If interest rates remain low rather than rising in 2013 (Scenario B), the policy year 2013 actuarial rate indication would be higher by +1.0 percentage points. If BI claims frequency continues to remain flat (Scenario C), rather than decreasing as assumed in ICBC current trend assumption, this would represent a change in the future loss cost trend as discussed in 2012.1 RR BCUC.38.2 and would have an additional impact of +7.2 percentage points. If both interest rates remain low and frequency flattens (Scenario D), the additional impact would be +8.2 percentage points.

The estimated policy year 2013 actuarial rate indications for each scenario are listed below. Components of the indicated rate changes are shown in Attachment A – Components of Estimated Policy Year 2013 Actuarial Rate Indications and the assumptions are discussed in more detail in Attachment B – Assumptions for Components of Estimated Policy Year 2013 Actuarial Rate Indications.

	<b>Estimated Policy Year 2013 Actuarial Rate Indication</b>
Scenario A	2.2%
Scenario B	3.2%
Scenario C	9.4%
Scenario D	10.4%

The actual policy year 2013 actuarial rate indication will depend on the emergence of these key assumptions as well as the emergence of any other factors that impact ICBC's revenue requirements. The policy year 2013 actuarial rate indication will be based on information as known to ICBC at the time that ICBC files the revenue requirements application for the policy year 2013 and may be significantly different than the assumptions used in this response.



# **2012.1 RR BCUC.2.4 – Attachment A – Components of Estimated Policy Year 2013 Actuarial Rate Indications**



## Attachment A – Components of Estimated Policy Year 2013 Actuarial Rate Indications

Line No.	Components	Rate Impact (percentage points of PY 2013 indicated rate change)			
		Scenario A	Scenario B	Scenario C	Scenario D
1	PY 2012 Loss Cost Forecast Variance	0.9%	0.9%	5.5%	5.5%
2	Loss Trend to PY 2013	1.7%	1.7%	4.3%	4.3%
3	Investment Income	-0.8%	0.2%	-0.8%	0.2%
4	Impact of IFRS Changes	0.0%	0.0%	0.0%	0.0%
5	Operating Expense (excluding IFRS Changes)	0.0%	0.0%	0.0%	0.0%
6	Capital Provision	0.1%	0.1%	0.1%	0.1%
7	Trend in Average Premium	0.2%	0.2%	0.2%	0.2%
8	Rate Deficiency from Prior Year	0.0%	0.0%	0.0%	0.0%
9	Other	0.1%	0.1%	0.1%	0.1%
<b>10</b>	<b>PY 2013 Indicated Rate Level Change</b>	<b>2.2%</b>	<b>3.2%</b>	<b>9.4%</b>	<b>10.4%</b>

The major differences between the four scenarios are:

Scenario A assumes an increase in interest rates in 2013, and the resumption of a downward trend for bodily injury claims frequency.

Scenario B assumes interest rates remain low in 2013, and the resumption of a downward trend for bodily injury claims frequency.

Scenario C assumes an increase in interest rates in 2013, and bodily injury claims frequency continues to be flat.

Scenario D assumes interest rates remain low in 2013, and bodily injury claims frequency continues to be flat.



# **2012.1 RR BCUC.2.4 – Attachment B – Assumptions for Components of Estimated Policy Year 2013 Actuarial Rate Indications**



### **1. PY 2012 Loss Cost Forecast Variance**

If the loss trends continue as is currently forecast in the year-end 2011 rate indication update (as discussed in the response to information request 2012.1 RR BCUC.5.1), the PY 2012 loss cost forecast variance would be +0.9 percentage points. If bodily injury claims frequency continues to be flat (scenarios C and D), the forecast variance would instead be +5.5 percentage points. The actual forecast variance may differ from the above two scenarios, depending on the influence of actual emergence of loss costs in the coming year on next year's forecast.

### **2. Loss Trend to PY 2013**

If the annual long-term loss cost trend continues as is currently forecast with year-end 2011 rate indication update, the impact of one year of loss trend to PY 2013 would be +1.7 percentage points. If bodily injury claims frequency continues to be flat (scenario C and D), the impact would be +4.3 percentage points. The actual impact may differ from the above two scenarios, depending on the influence of actual emergence of loss costs in the coming year on next year's forecast.

### **3. Investment Income**

The new money rate is expected to increase to 4.15% for PY 2013 from 3.76% for PY 2012 and the forecast amount of Basic equity is lower; under this scenario, the impact of investment income on the PY 2013 indicated rate change would be -0.8 percentage points, made up of an expected -1.0 percentage points impact from higher new money rate that is offset by an expected +0.2 percentage points impact from investment income on Basic equity. If the new money rate remains low (scenario B), the impact of investment income would be +0.2 percentage points. The actual impact may be different, depending on next year's forecast of 2013 interest rates and the actual amount of ICBC's Basic equity.



#### **4. Impact of IFRS Changes**

There will be no impact of IFRS changes in PY 2013 indicated rate change, because IFRS has been fully implemented as of January 1, 2012.

#### **5. Operating Expense (excluding IFRS Changes)**

The impact of operating expense (excluding IFRS changes) on the PY 2013 indicated rate change is expected to be 0.0 percentage points. ICBC intends to continue maintaining operating expense below the level of inflation.

#### **6. Capital Provision**

The impact of the capital provision on the PY 2013 indicated rate change is expected to be 0.0 percentage points. No capital build provision is expected as directed by the Government directive of November 25, 2011 with respect to Basic Rate Stability and Capitalization approved by Order in Council 560/11, November 30, 2011 (2011 Government Directive regarding Basic Rate Stability and Capitalization). The actual impact may be different, if the actual Basic MCT level falls below 100%.

#### **7. Trend in Average Premium**

The impact of average premium trend on the PY 2013 indicated rate change is expected to be +0.2 percentage points, based on the long-term annual average premium trend, due to a combination of shifts in rate classes as the proportion of seniors increases and shifts in discount levels as existing customers migrate to greater levels of discount on average. The actual impact may be different, if actual experience emerges differently than forecast.



**8. Rate Deficiency from Prior Year**

Rate deficiency exists if only a portion of the actuarial rate indication is taken. When estimating future indicated rate changes, ICBC must include any rate deficiency from the prior year. The impact of rate deficiency from the prior year on the PY 2013 indicated rate change is expected to be 0.0 percentage points, assuming the 11.2% PY 2012 indicated rate change will be approved by the Commission. The actual impact will be greater than zero, if the approved rate change is less than 11.2%. Please refer to the response to information request 2012.1 RR BCOAPO.2.2 for an example of this situation.

**9. Other**

This line item includes miscellaneous revenue, broker fees, unallocated loss adjustment expenses, and rounding difference. All components combined are expected to contribute to a +0.1 percentage points impact on the PY 2013 indicated rate change.

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**2012.1 RR BCUC.2.5 Reference: APPLICATION  
Exhibit B-1, Chapter 1, p.vii  
Stable and Predictable Rates**

**ICBC in paragraph 15 states:**

**“Special Direction IC2 directs the Commission to ensure that increases or decreases in Basic insurance rates are phased in in such a way that those rates remain relatively stable and predictable. Despite the requested rate increase, ICBC believes that this requirement is met by approving the rate increase on both an interim and permanent basis.”**

**Would a multi-year revenue requirement and rate request provide better stability and rate predictability than a one year application?**

**Response:**

ICBC considers there to be a difference between multi-year revenue requirement applications, which contemplate setting annual rates for multiple years, and combining the revenue requirements of two or more years and putting in place a single rate for the period based on the combined revenue requirement. ICBC normally sets rates on an annual basis, which corresponds to the length of most Basic insurance policies and is contemplated in the 2009 Application for a Streamlined Regulatory Process (which requires a consideration of the required rate level to be filed each May). Therefore ICBC has approached this question on the basis that it is referring to the scenario of a multi-year rate application that contemplates setting annual rates for multiple years.

The primary rationale for proceeding with a multi-year revenue requirements application that contemplates annual rates is regulatory efficiency, and not rate stability or predictability. Regardless of the use of a multi-year rate setting model, ICBC believes that relatively stable and predictable rates are achieved as a result of prudent management and targeted employment of Basic excess capital. In theory, a multi-year application should result in the same rates as the total of the one year applications that it would replace, although in some cases it may result in rates being less stable and predictable and it could create more volatility in the capital levels. Two examples are used below to illustrate why this is the case.

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As is discussed further in the response to information request 2012.1 RR BCUC.40.4, the Commission cannot set rates that it knows are insufficient to maintain the MCT above 100%. In a multi-year rate setting model, this means that rates for each future year must be set adequately in order to avoid the risk that Basic capital falls below the regulatory minimum level of a 100% MCT ratio. For example, if ICBC's current Application addressed Basic insurance rates for multiple future policy years, and the required rate changes beyond 2012 were analysed and forecast to be increases of less than 11.2%, ICBC would still be proposing an 11.2% rate increase in 2012, followed by smaller increases in future years. Moreover, ICBC would not put before the Commission an application to set the rates of any future year at a level that would have a high likelihood of resulting in ICBC's capital levels dropping below a 100% MCT ratio.

The use of a multi-year rate application may set certain expectations for future rate increases. If adjustments to rates are subsequently required prior to the multi-year rate plan running its course, this would tend to create a perception of less stable and predictable rates than if the same rates were implemented under a series of single-year rate applications where no prior expectations had been set. For example, it is unlikely that a multi-year rate application submitted in 2010 would have anticipated the increases in frequency of bodily injury claims and deterioration in the investment climate that came to pass in 2011. As a result, in order to generate adequate revenue for the 2012 policy year and remain in stable financial condition, ICBC would have needed to apply for an additional rate increase beyond what would have been included in a multi-year application in 2010. Due to being an application for an exception to a previously scheduled rate increase, such an additional rate application would most likely be perceived as more unusual and less predictable than the same rates applied for in a single-year application. Due to the inherent variability of the insurance business, it is likely that exceptions would occur with relative frequency. This is particularly true for the outer years of a multi-year application, which would be estimates associated with a greater level of uncertainty.

Since a multi-year rate setting model would rely on the use of Basic capital for any smoothing of rate increases across multiple future years, it is not clear that this would provide relatively more stable and predictable rates than the single-year model. Under the 2010 Government Directive regarding Basic Excess Capital and the 2011 Government Directive regarding Basic Rate Stability and Capitalization, ICBC is using Basic capital to manage Basic insurance rate

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pressures. In 2010, for example, ICBC did not release any excess capital, which would have resulted in a both a larger rate decrease for 2010 and consequently lower capital levels and a greater need to apply for increased rates in 2012. In the current Application, ICBC has not included any provision in the rates to rebuild capital to the management target level, which would have resulted in a larger rate increase being applied for.

Overall, ICBC believes that such a model would not clearly result in relatively more stable and predictable rates. On the contrary, it may create a heightened perception of unstable rates by highlighting exceptions that would be expected to occur with relative frequency due to normal insurance variability. Regardless of the use of a multi-year rate setting model, ICBC believes that relatively stable and predictable rates are achieved as a result of prudent management and targeted use of Basic excess capital. A multi-year rate setting model would not in itself result in rates being more stable and predictable. In theory, a multi-year application should result in the same rates as the total of the one year applications it would replace, although in some cases it may result in rates being less stable and predictable.

**2012.1 RR BCUC.3.1 Reference: APPLICATION  
Exhibit B-1, Chapter 1, Appendix A, pp. 1 to 2  
Refunds greater than \$20**

**In paragraph 5, ICBC proposes that a refund of the interim increase greater than or equal to \$20 per policy will be refunded to eligible policyholders by cheque, or by credit, with details described in paragraphs 6 through 9 in the same section.**

**For an average policy holder without an active payment plan, what % variation in the interim rate increase would be equivalent to \$20?**

**Response:**

ICBC writes approximately 1.5 million Basic insurance policies without an active payment plan. The average premium for these non-payment plan customers is currently \$526 and the interim rate change of +11.2% adds \$59 for an average interim rate of \$585. For calculation details, please refer to Attachment A – \$20 Refund for Non-Payment Plan.

Given the \$59 interim rate increase for this subset of customers, a \$20 threshold is triggered at 34% of the rate variance. Alternatively, given an average premium of \$526, a rate increase of \$20 is equivalent to a +3.8% increase, as shown in the table below.

	Written Premium	Written Exposure	Average Premium	Interim Rate Change (11.2%)	Variation of Rate Increase = \$20	What Rate Increase = \$20?
	(1)	(2)	(3) = (1) / (2)	(4) = (3) x 11.2%	(5) = \$20 / (4)	(6) = \$20 / (3)
Non-Pmt Plan	\$787,622,521	1,497,299	\$526	\$59	34%	3.8%



## **2012.1 RR BCUC.3.1 – Attachment A – \$20 Refund for Non-Payment Plan**



## \$20 Refund for Non-Payment Plan

	Written Premium	Written Exposure	Average Premium	Interim Rate Change (11.2%)	Rate Increase = \$20	What Rate Increase = \$20?
	(1)	(2)	(3) = (1) / (2)	(4) = (3) x 11.2%	(5) = \$20 / (4)	(6) = \$20 / (3)
Payment Plan	\$934,052,038	1,355,539	\$689	\$77	26%	2.9%
<b>Non-Pmt Plan</b>	<b>\$787,622,521</b>	<b>1,497,299</b>	<b>\$526</b>	<b>\$59</b>	<b>34%</b>	<b>3.8%</b>
Total	\$1,721,674,559	2,852,838	\$603	\$68	30%	3.3%

### Notes:

Data is as of Feb 28, 2012 for period between July 01, 2010 and June 30, 2011

Data is autoplan only, and excludes fleets

Data includes personal, commercial, storage and trailer policies

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**2012.1 RR BCUC.3.1.1 Reference: APPLICATION  
Exhibit B-1, Chapter 1, Appendix A, pp. 1 to 2  
Refunds greater than \$20**

**In paragraph 5, ICBC proposes that a refund of the interim increase greater than or equal to \$20 per policy will be refunded to eligible policyholders by cheque, or by credit, with details described in paragraphs 6 through 9 in the same section.**

**If the refund for all customers was larger than \$20, what is ICBC's estimate of the cost to process and deliver refunds? Please show your calculations.**

**Response:**

If the refund for all customers was greater than \$20, the estimated cost to ICBC would be approximately \$1,493,540 to process and deliver the refunds. This assumes that 2 million (six months of interim rates) customers would be impacted, and the following costs: 1) \$.67232 per item (cheque stock - \$.02814, envelope - \$.01918, postage - \$.5900, printing - \$.03500); and 2) total labor cost of \$148,900 (project management, printing, and inserting). A cost not included in this estimate is the interest that ICBC would pay customers on the refunded amount.

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**2012.1 RR BCUC.4.1-3 Reference: APPLICATION  
Exhibit B-1, Chapter 1, Appendix A, pp. 1 to 2  
Mechanism to Bill Customers**

**Footnote 2 on p. 1 states:**

**“ICBC does not currently have a mechanism to bill customers if the approved permanent rate is higher than the approved interim rate but will work towards developing a system that has this capability by the time of an affected customer’s next policy renewal date.”**

**4.1 Please explain why the existing system was developed to only have the capability to deal with refunds, but does not have the mechanism to bill customers if the approved permanent rate is higher than the approved interim rate.**

**4.2 Please explain the timeline and resources required to complete a fully functional system to appropriately bill customers for differences between the interim and permanent rates.**

**4.3 If the final approved permanent rate is higher than the approved interim rate, how would ICBC implement the difference in rates? What is the impact on policyholders? What are the costs associated with billing or system process changes?**

**Response:**

**4.1**

The existing system, the Customer Credit Refund System (CCRS), was developed in 2007 after ICBC applied for its very first interim Basic insurance rate increase. This system was specifically built to afford ICBC the ability to refund customers, via cheque or credit, should the Commission not have upheld the approved interim Basic insurance rate. At that time, it was not contemplated that the Commission would consider approving a permanent rate that is higher than the proposed interim Basic insurance rate. In order to save on system development costs, the CCRS was designed then to facilitate refunds to customers, with the caveat that it may be modified to bill customers for any incremental premiums should the need arise.

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**4.2**

For ICBC to augment the current CCRS with the ability to appropriately bill customers for the difference in Basic insurance rates, an estimated 656 effort days over a 3-month period would be required.

**4.3**

If the Commission approves a permanent Basic insurance rate in 2012 that is higher than the interim Basic insurance rate, ICBC will retroactively bill customers the difference between Basic insurance rates. The costs to make the required system changes to CCRS are estimated to be \$308,000. The impact on policyholders would be minimal.

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**2012.1 RR BCUC.5.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section A, pp. 3-2 to 3-4  
Rate Indication Calculation and Drivers**

**In paragraph 6, ICBC notes that the actuarial analysis contained in this Chapter is primarily based on information available up to August 31, 2011 and the New Money Rate based on information available up to September 13, 2011.**

**5.1 Please explain the impacts of events that have developed since these dates (e.g. interest rate fluctuations, BI frequency, etc.).**

**5.1.1 Please update the rate indication based on the most current information available.**

**5.1.1.1 Please also update Figure 3.2 on p. 3-3 which shows the components of the indicated rate change.**

**Response:**

**5.1**

Since the time of the actuarial rate level indication analysis included in the Application, key events have developed in the following ways:

- 1) The forecasted Basic loss cost for policy year 2012 has increased. This is primarily driven by an increase in the forecast for bodily injury frequency, which has increased by 0.04 percentage points, from 1.39% to 1.43%. Please refer to the response to information request 2012.1 RR BCUC.36.1 for a complete discussion of the updated loss trend models.
- 2) The New Money Rate has declined by 63 base points, from 3.76% to 3.13%, and the Yield on Basic Equity has declined by 60 base points, from 4.60% to 4.00%.
- 3) The outlook amount of Basic Equity at the end of 2011 has declined by \$156 million from \$1,286 million in the August 2011 outlook to \$1,130 million due to higher Basic loss for the year and reduced unrealized investment gains.

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In order to respond to this information request, ICBC has produced an updated actuarial rate level indication analysis which takes into account the impact of these key events. Due to the time constraints required to complete this analysis in response to the information request, it has not been subject to the same level of review as the actuarial rate level analysis included in the Application. Overall, the impact of events that have developed since the time of the actuarial rate level analysis included in the Application is estimated to increase the required rate level change by +3.3 percentage points.

It should also be noted that this updated actuarial rate level indication analysis includes the results to date of investigative analysis which is ongoing, as described in the response to information request 2012.1 RR BCUC.38.1. The investigation is still underway as ICBC is working to more fully understand the factors which have been contributing to the recent increases in bodily injury claim frequency. ICBC would prefer more time to complete its investigation before producing an update to its rate indication analysis.

Chapter 3, Figure 3.2 from the Application is reproduced below, with an additional column added to show the components of an updated actuarial rate indication analysis. The third column shows the difference between the impact of each component on the rate indication for policy year 2012 in the Application, and in the updated actuarial rate indication.

**Updated Figure 3.2**

Line No.	Components	Impact (percentage points of PY 2012 indicated rate change)		
		2012 Application (a)	Updated Indication (b)	Difference (b)-(a)
1	PY 2010 Loss Cost Forecast Variance	5.5	6.5	+1.0
2	Loss Trend to PY 2012	1.9	2.0	+0.1
3	Investment Income and Premium Financing Plan Revenue	2.5	4.7	+2.2
4	Impact of IFRS changes	0.4	0.4	0.0
5	Operating Expense (excluding IFRS changes)	0.0	0.0	0.0
6	Capital Provision	0.3	0.2	-0.1
7	Trend in Average Premium	0.4	0.5	+0.1
8	Other	0.2	0.2	0.0
<b>9</b>	<b>PY 2012 Indicated Rate Level Change</b>	<b>11.2</b>	<b>14.5</b>	<b>+3.3</b>

As provided in the response to information request 2012.1 RR BCUC.20.3, ICBC's forecast Basic MCT, which assumes that an increase in Basic insurance rates of 11.2% is adequate and will be approved by the Commission, is 107% for calendar year-end 2012. But, in light of the key events and updated rate indication outlined above, the 11.2% rate change will not fully cover costs and Basic capital is expected to drop below the 107%. The estimated sensitivity of a 1% change in the rate is the equivalent of 2% in the Basic MCT level per year, so that the forecast MCT ratio remains above 100%.

**2012.1 RR BCUC.6.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section A, p. 3-3, Figure 3.2 and Exhibit A.0.1  
Overview of Impact on PY 2012 Indicated Rate Change**

Figure 3.2 shows the components of the indicated rate change and Exhibit A.0.1 provides a summary of the components that make up the required premium for PY 2012. Figure 3.2 is reproduced below:

**Figure 3.2 – Overview of Impact on PY 2012 Indicated Rate Change**

Line No.	Components	Impact (percentage points of PY 2012 indicated rate change)
1	PY 2010 Loss Cost Forecast Variance	+5.5
2	Loss Trend to PY 2012	+1.9
3	Investment Income and Premium Financing Plan Revenue	+2.5
4	Impact of IFRS changes	+0.4
5	Operating Expense (excluding IFRS changes)	+0.0
6	Capital Provision	+0.3
7	Trend in Average Premium	+0.4
8	Other	+0.2
<b>9</b>	<b>PY 2012 Indicated Rate Level Change</b>	<b>+11.2</b>

Please demonstrate the calculations for the percentage points of PY 2012 indicated rate change as presented in Figure 3.2, with references to the information presented in Exhibit A.0.1, for each line item 1 through 9. Please show all calculations.

**Response:**

The rate impact from each component is calculated in a two-step process:

Step 1 – Calculate the change from policy year 2010 on a per-policy basis: For each component, the per-policy amount is calculated by dividing the total amount by the number of policies. This is done for both policy year 2010 and policy year 2012 components. The difference in the per-policy amounts between the two policy years can then be measured. Please see Attachment A – Figure 3.2 Calculation Breakdown for the details.

Step 2 – Calculate the rate impact: The per-policy difference in step 1 is first converted to a premium amount by adding the premium tax. The result is measured as a percentage of policy year 2012 average premium to derive the rate impact, as shown in the table below.

### Rate Impact Calculation Breakdown

	(a)	(b)
	Attachment A	$\frac{(a)}{[1-(9)] \times (10)}$
	<b>Change per policy (\$)</b>	<b>Rate Impact</b>
(1) Policy year 2010 Loss Cost Forecast Variance	36.5	+5.5%
(2) Loss trend to policy year 2012	12.8	+1.9%
(3) Investment Income and Premium Financing Plan Revenue <sup>1</sup>	16.8	+2.5%
(4) Impact of IFRS changes	2.9	+0.4%
(5) Operating Expense (excluding IFRS changes)	0.2	+0.0%
(6) Capital Provision	1.8	+0.3%
(7) Trend in Average Premium <sup>1,2</sup>	3.0	+0.4%
<b>Component</b>		<b>Rate Impact</b>
(8) Other <sup>3</sup>		+0.2%
(9) Premium Tax Rate	4.40%	Exhibit A 1.1
(10) Premium per policy (\$)	697	Response to information request 2012.1 RR BCUC.27.1

<sup>1</sup> Both Investment Income and Premium Financing Revenue, and Trend in Average Premium are revenue items. The results from the formula in column (b) have been multiplied by -1.

<sup>2</sup> The premium tax adjustment is not necessary on premium item.

<sup>3</sup> Other is calculated by  $11.2\% - \text{Sum}[(1)..(7)]$



## 2012.1 RR BCUC.6.1 – Attachment A – Figure 3.2 Calculation Breakdown

Attachment A - Figure 3.2 Calculation Breakdown

Line No.			(a)	(b)	Change (c) = (b) - (a)		Reference
			Policy year 2010	Policy year 2012	Revenue	Expense	
(1)		Plate Owner Projected Exposure	2,882,599	2,943,194			Exhibit A.2.1, Line (1)
(2)		Manual Coverage Projected Exposure	52,787	51,427			Exhibit B.4.1, Average 5 years exposures adjusted for exposure growth
(3)	(1) + (2)	Total Projected Exposure	2,935,386	2,994,622			
(4)		Projected Claims Cost (\$ 000's)	1,838,185	2,022,973		184,788	Exhibit A.0.1, Line (a)
(5)	$\frac{(4)}{(3)}$	Claims Cost per policy (\$)	626.2	675.5		<b>49.3</b>	
(6)		Policy year (PY) 2010 Claims Cost (\$ 000's)	1,838,185	1,984,551		146,366	PY 2010: Line (4) PY 2012: Updated PY2010 claims costs based on 2012 filing
(7)	$\frac{(6)}{(3)}$	PY 2010 Claims Cost per policy (\$)	626.2	662.7		<b>36.5</b>	
(8)	(5) - (7)	Loss Trend to policy year 2012 per policy (\$)		12.8		<b>12.8</b>	
(9)		Investment Income and Premium Financing Plan Revenue (\$ 000's)	351,760	308,591	(43,169)		PY 2010: Exhibit A.0.1, Line (q) + (v) + (w) PY 2012: Exhibit A.0.1, Line (q) + (u) + (v)
(10)	$\frac{(9)}{(3)}$	Investment Income and Premium Financing Plan Revenue per policy (\$)	119.8	103.0	<b>(16.8)</b>		
(11)		Impact of IFRS changes (\$ 000's)		8,679		8,679	Figure 7.13 line 5
(12)	$\frac{(11)}{(3)}$	Impact of IFRS changes per policy (\$)		2.9		<b>2.9</b>	
(13)		Operating Expense(\$ 000's)	235,507	242,799		7,292	Exhibit A.0.1, Line (i)
(14)		Operating Expense net of rate change and IFRS changes (\$ 000's) <sup>1</sup>	228,913	234,120		5,208	
(15)	$\frac{(14)}{(3)}$	Provision per policy (\$)	78.0	78.2		<b>0.2</b>	
(16)		Capital Provision (\$ 000's)	30,759	36,777		6,018	Exhibit A.0.1, Line (o)
(17)	$\frac{(16)}{(3)}$	Capital Provision per policy (\$)	10.5	12.3		<b>1.8</b>	
(18)		Projected Premium (\$ 000's)	2,091,961	2,088,291	(3,670)		PY 2010: Exhibit A.0.1, Line (aa) PY 2012: Exhibit A.0.1, Line (z)
(19)		Projected Premium net of rate change and merchant fee adjustments (\$ 000's) <sup>2</sup>	2,041,754	2,073,833	32,079		
(20)	$\frac{(19)}{(3)}$	Adjusted Premium per policy (\$)	696	693	<b>(3.0)</b>		

<sup>1</sup> Policy year 2010 operating expense needs to be reduced by 2.8% per the Commission's decision on the 2010 Streamlined Revenue Requirements Application. Policy Year 2012 operating expense needs to be reduced by \$8,679,000 IFRS changes (row 11). Policy year 2010 operating expense does not have IFRS changes.

<sup>2</sup> Policy year 2010 premium needs to be reduced by 2.4% per the Commission's decision on the 2010 Streamlined Revenue Requirements Application. Policy year 2012 premium needs to be reduced by \$14,458,000 as merchant fee adjustment (Exhibit H.4 Line 19). Policy year 2010 premium has the merchant fee offset whereas policy year 2012 premium does not.

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**2012.1 RR BCUC.7.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section A, p. 3-5  
Rate Indication Calculation and Drivers**

In paragraph 17, ICBC states:

**“Average premium is trending lower due to a combination of shifts in rate classes as the proportion of seniors increases and shifts in discount levels as existing customers migrate to greater levels of discount on average.”**

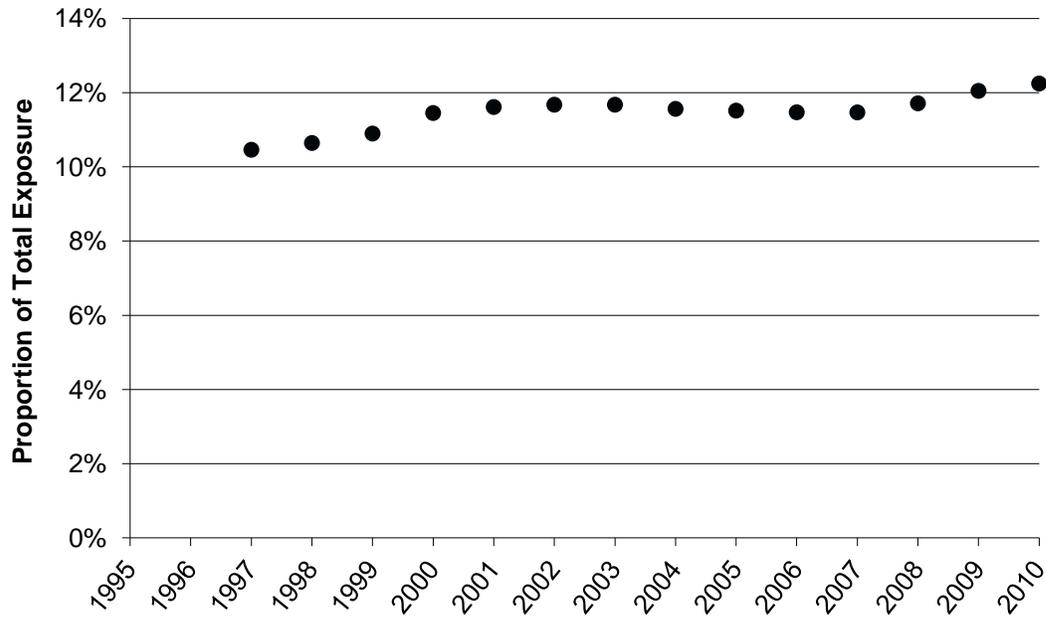
**Please provide references in the Exhibit Set B analysis supporting the claim that the proportion of seniors is increasing and that existing customers are migrating to greater levels of discount on average.**

**Response:**

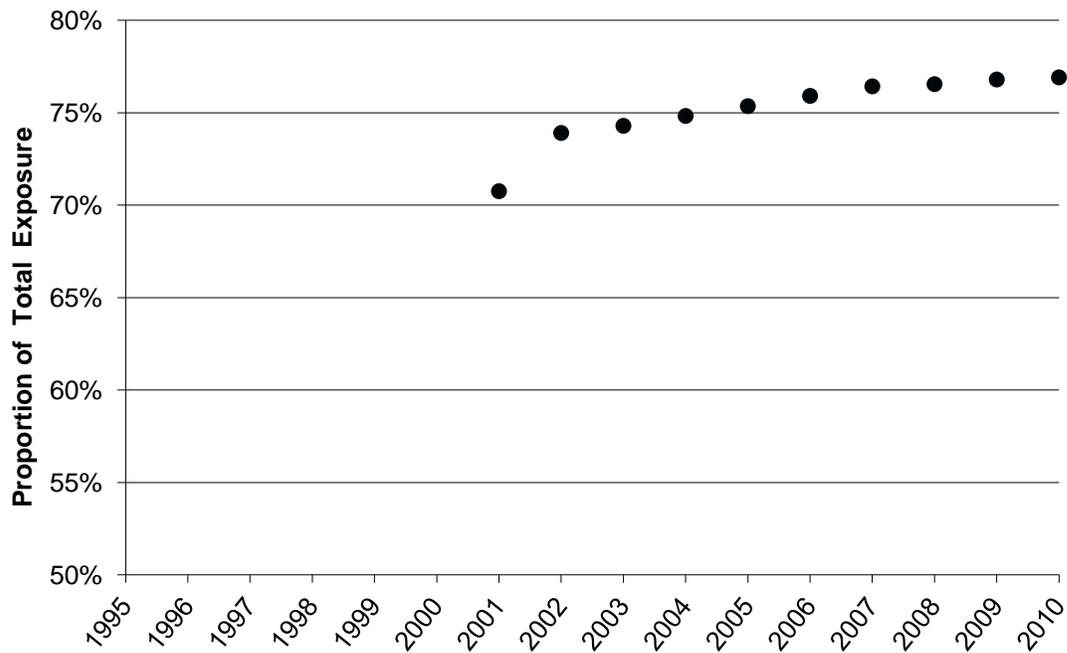
As stated in Chapter 3 of the Application, “Average premium is trending lower due to a combination of shifts in rate classes as the proportion of seniors increases and shifts in discount levels as existing customers migrate to greater levels of discount on average”. Seniors customers and the highest level on the Claim-Rated Scale (CRS) are examples of those with high levels of discount. Seniors receive a 25% premium discount in addition to their CRS discount, and the highest level of CRS discount is 43%.

The charts below show that the proportion of senior customers has been increasing since 2008, and the proportion of customers with the highest level on the CRS has been increasing since 2002. Please see the response to information request 2012.1 RR AIC.3 for the actual numbers of policies that correspond to these proportions.

### Seniors



### 43% CRS Discount



**Proportion of Total Exposure**

<b>Year</b>	<b>Seniors</b>	<b>43% CRS Discount</b>
<b>1997</b>	10.5%	
<b>1998</b>	10.6%	
<b>1999</b>	10.9%	
<b>2000</b>	11.5%	
<b>2001</b>	11.6%	70.8%
<b>2002</b>	11.7%	73.9%
<b>2003</b>	11.7%	74.3%
<b>2004</b>	11.6%	74.8%
<b>2005</b>	11.5%	75.4%
<b>2006</b>	11.5%	75.9%
<b>2007</b>	11.5%	76.4%
<b>2008</b>	11.7%	76.5%
<b>2009</b>	12.0%	76.8%
<b>2010</b>	12.2%	76.9%

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**2012.1 RR BCUC.8.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-7  
Basic Loss Cost**

**In paragraph 21, ICBC states that loss costs for PY 2010 were significantly higher than was forecasted in the 2010 Application.**

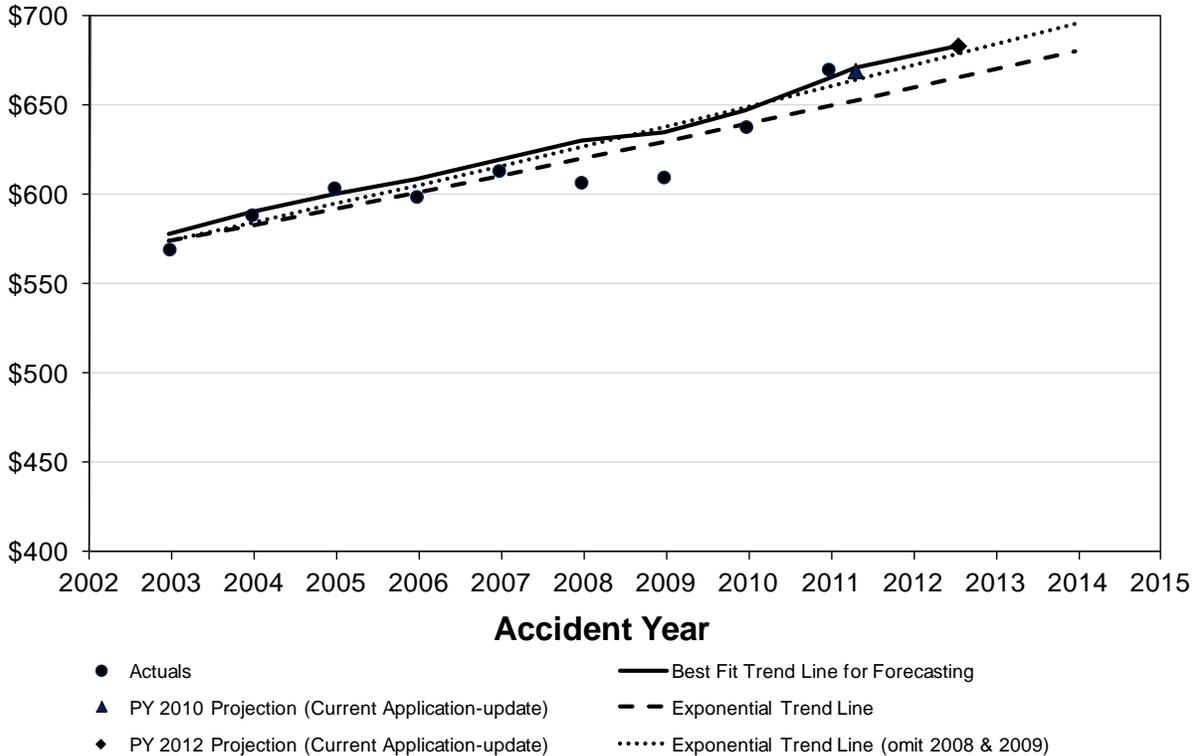
**Please update Figure 3.3 for the current best estimate of PY 2010 and PY 2011 and show the best fit line based on the data points before any adjustments by ICBC.**

**Response:**

The figure below includes updated values for accident year 2011, policy year 2010 (effective November 1, 2010 through October 31, 2011), and policy year 2012 (effective February 1, 2012 through January 31, 2013). No point has been included for the partial policy year 2011 (effective November 1, 2011 through January 31, 2012). The solid line is the line which is considered by the actuaries to be the best fit trend line for the purpose of forecasting, based on year-end 2011 data and including consideration of economic and social influences. This trend line is based on the separate analysis of frequency and severity for each coverage as provided in the response to information request 2012.1 RR BCUC.36.1, and includes amounts for manual coverages, bulk payments, and large claims. It is consistent with the updated actuarial rate indication provided in response to information request 2012.1 RR BCUC.5.1, which takes into account factors that have been identified as contributing to higher bodily injury claims frequency in 2011.

The dashed line represents a simple exponential regression of the annual loss cost points from accident year 2003 through accident year 2011. The dotted line also represents a simple exponential regression of annual loss cost points from accident year 2003 through accident year 2011, but omits the 2008 and 2009 points.

## Basic Loss Cost



The dotted line is provided as a more appropriate simple exponential trend, because it takes into account that the low years of 2008 and 2009 are due to a combination of factors that are not contemplated to occur in the 2012 policy period forecast (e.g., lower travel amounts and drier than average weather). As demonstrated in the response to information request 2012.1 RR BCUC.13.1, the unusually low levels of vehicle travel seen in the recession are no longer present in 2010 and 2011. These unusually low travel amounts are not expected to reoccur in the foreseeable future.

To clarify, no adjustments were made to the loss data shown in the figure. Actuaries are required to consider economic and social influences when selecting trends. As a result, the simple exponential regression depicted by the dashed line would not be selected as the best fit trend line for the purpose of forecasting future Basic loss costs.

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**2012.1 RR BCUC.8.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-7  
Basic Loss Cost**

**In paragraph 21, ICBC states that loss costs for PY 2010 were significantly higher than was forecasted in the 2010 Application.**

**Please explain if ICBC has considered the large increase for PY 2010 as an unusual event, thus not to be included in the trend. Why or why not?**

**Response:**

ICBC does not consider the large increase for policy year 2010 to be unusual, but rather a result of claims frequency returning to the level of the long-term trend line more quickly than was anticipated in the 2010 Streamlined Revenue Requirements Application. The low claims frequency in 2008 and 2009, in contrast, were unusual and the two key factors contributing were unusually dry weather and a declining amount of travel, which were discussed in more detail in Chapter 3, pages 3-9 to 3-10, paragraphs 24 to 26 of the Application. Furthermore, the bodily injury frequency in 2011 has also continued to emerge higher than was expected at the time of the 2010 Streamlined Revenue Requirements Application, which provides further evidence that the policy year 2010 loss costs are not an unusual event that should be excluded from the trend.

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**2012.1 RR BCUC.8.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-7  
Basic Loss Cost**

**In paragraph 21, ICBC states that loss costs for PY 2010 were significantly higher than was forecasted in the 2010 Application.**

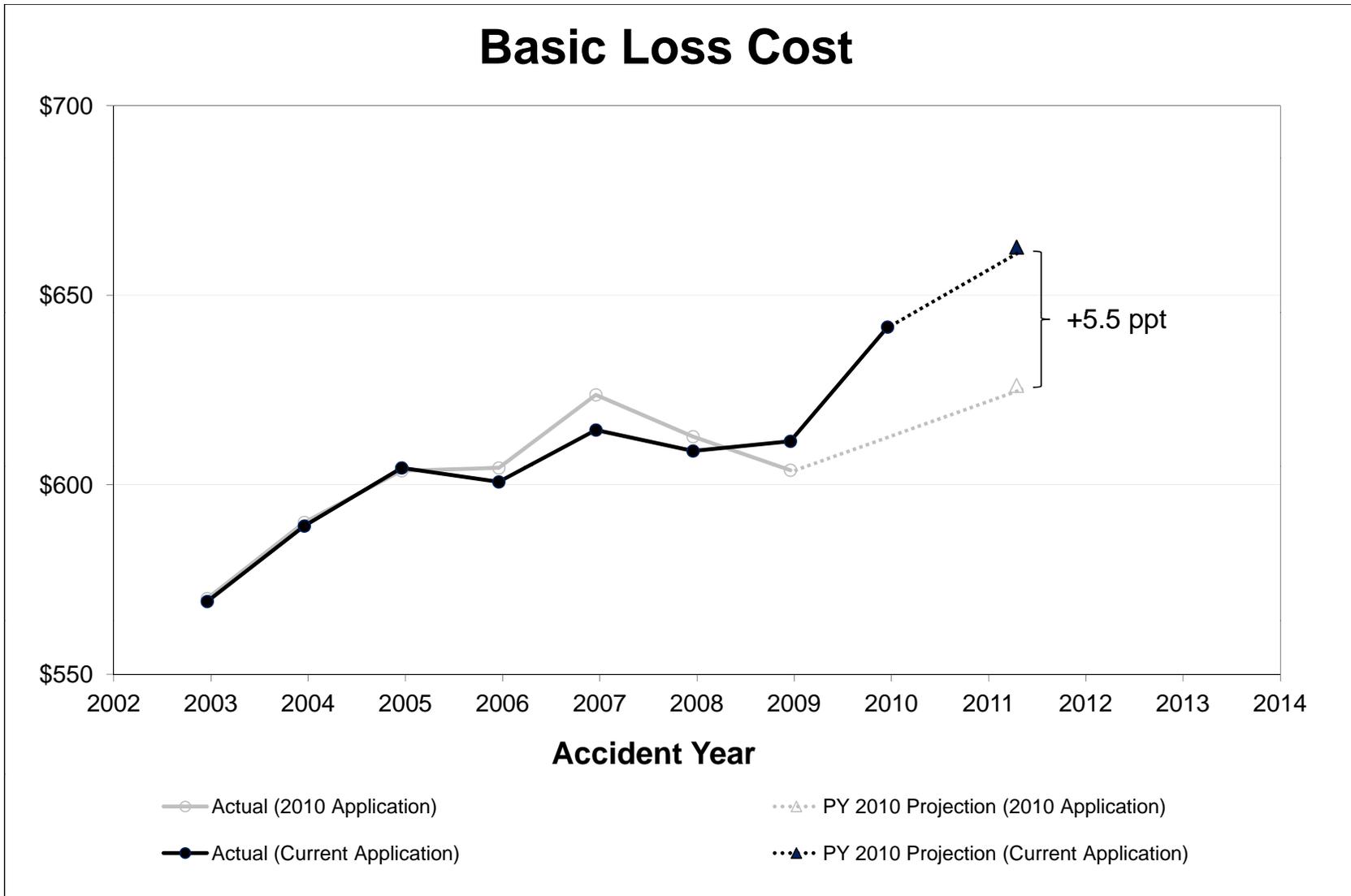
**Please produce an amended Figure 3.3 to the maximum size to fit a page with the vertical axes showing the range from \$550 to \$700 with a data table beneath the graph.**

**Response:**

Please see Attachment A – Figure 3.3 with Table for the amended Figure 3.3.



## **2012.1 RR BCUC.8.3 – Attachment A – Figure 3.3 with Table**



	2003	2004	2005	2006	2007	2008	2009	2010	PY 2010
<b>Actual (2010 Application)</b>	570	590	604	604	624	613	604	-	626
<b>Actual (Current Application)</b>	569	589	604	601	614	609	611	642	663

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**2012.1 RR BCUC.9.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-9  
Bodily Injury Basic Frequency**

**Figure 3.4b shows the BI frequency (Basic) in the current Application and the 2010 Application.**

**Please update Figure 3.4b for the current PY 2010 projection and PY 2011 projection.**

**Response:**

Please refer to Attachment A – BI Frequency for the updated Figure 3.4b based on the results from 2011 year-end analysis. Projections for policy year 2010 (effective November 1, 2010 through October 31, 2011) and policy year 2012 (effective February 1, 2012 through January 31, 2013) are also included in the chart. ICBC has no forecast values for the partial policy year 2011 (effective November 1, 2011 through January 31, 2012).

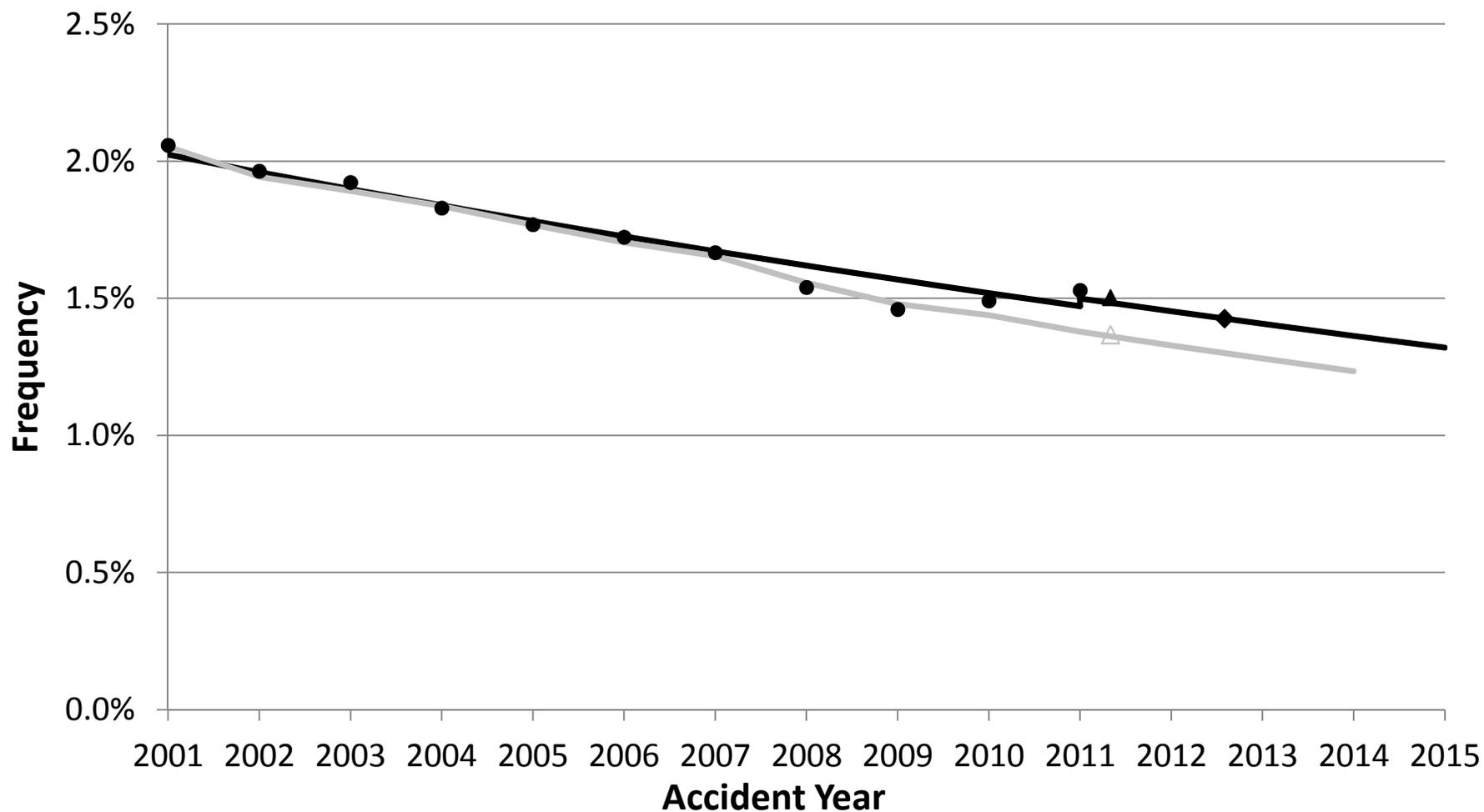
An 11-year exponential (1997 to 2007) model with an upward parallel shift was selected for the modeled bodily injury frequency as of 2011 year-end. The exponential model was chosen to reflect the return to the pre-recession trend rate. The 2011 claims frequency has emerged at a new higher level. ICBC has begun to investigate the drivers of this increase.

At this stage of investigative analysis, some factors have been identified that contribute to the higher claims frequency in 2011 and are expected to continue in the future. The investigation is still underway but results have shown that there is an increase in the number of claims involving non-motorists (cyclists and pedestrians) and low-cost property damage claims with injury. At the same time, ICBC expects that the long-term trend will still be in the downward direction, because of the continued trend toward safer vehicles, continued investment in road safety, and a growing proportion of safer drivers. All of these factors are modeled by an upward parallel shift in the trend line that begins in 2011.



## **2012.1 RR BCUC.9.1 – Attachment A – BI Frequency**

# Bodily Injury Basic Frequency



- ◆ PY 2012 Projection (As of Dec 2011)
- Actual (As of Dec 2011)
- Modeled (As of Dec 2011)
- Modeled (2010 Application)
- ▲ PY 2010 Projection (As of Dec 2011)
- △ PY 2010 Projection (2010 Application)

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**2012.1 RR BCUC.9.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-9  
Bodily Injury Basic Frequency**

**Figure 3.4b shows the BI frequency (Basic) in the current Application and the 2010 Application.**

**Please produce an amended Figure 3.4b to the maximum size to fit a page with the vertical axes showing the range from 1.0% to 2.2% with a data table beneath the graph.**

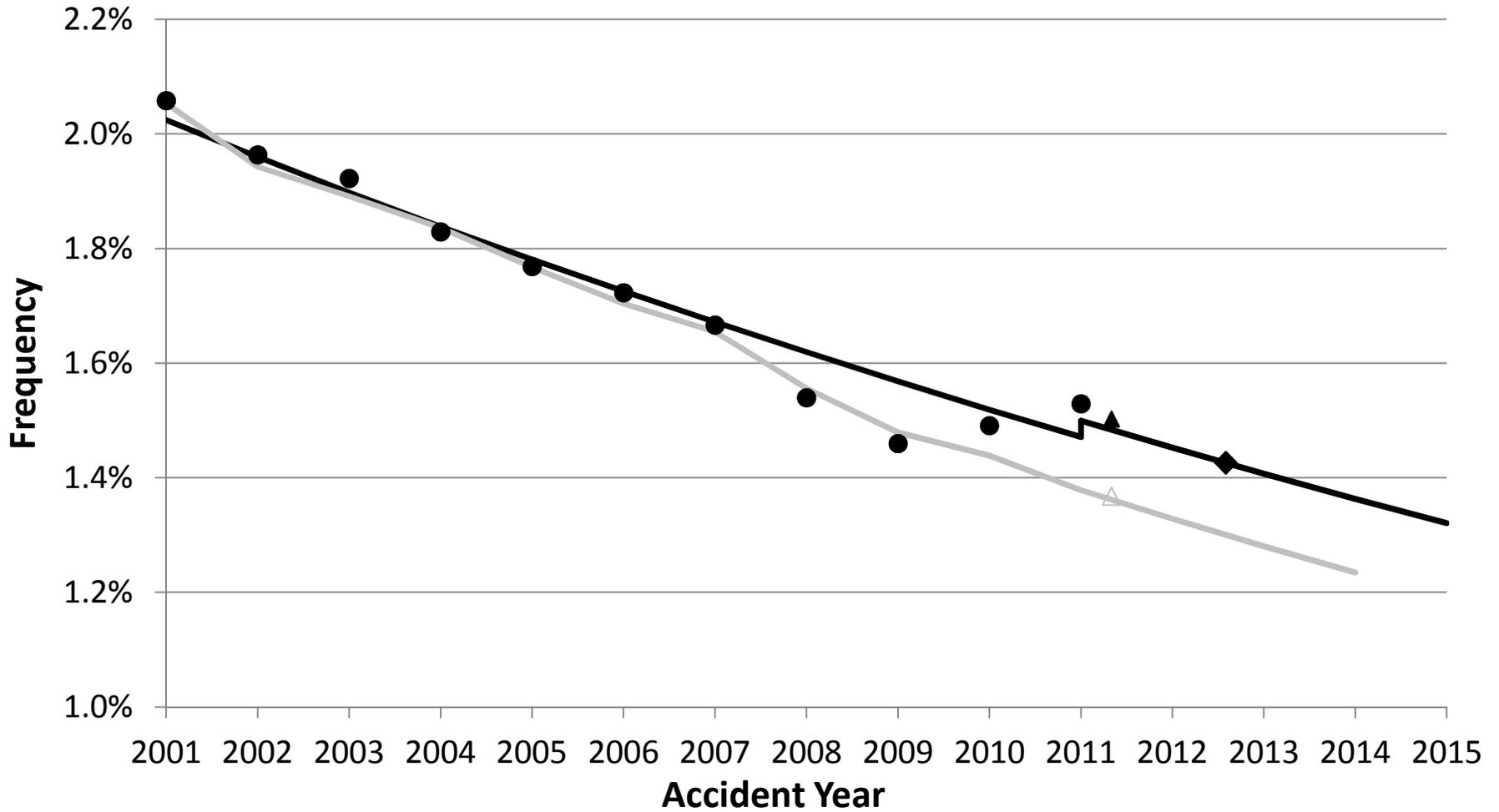
**Response:**

The updated Figure 3.4b has been rescaled as requested, and a corresponding data table has been provided in Attachment A – Bodily Injury Basic Frequency. Please see to the response to information request 2012.1 RR BCUC.9.1 for a discussion of the modeled bodily injury frequency as of 2011 year-end.



## **2012.1 RR BCUC.9.2 – Attachment A – Bodily Injury Basic Frequency**

# Bodily Injury Basic Frequency



● Actual (As of Dec 2011)

— Modeled (As of Dec 2011)

— Modeled (2010 Application)

◆ PY 2012 Projection (As of Dec 2011)

▲ PY 2010 Projection (As of Dec 2011)

△ PY 2010 Projection (2010 Application)

**Bodily Injury Basic Frequency**

<b>Average Accident Date</b>	<b>Actual (As of Dec 2011)</b>	<b>Modeled (As of Dec 2011)</b>	<b>Modeled (2010 Application)</b>
2001.5	2.06%	2.02%	2.05%
2002.5	1.96%	1.96%	1.94%
2003.5	1.92%	1.90%	1.89%
2004.5	1.83%	1.84%	1.84%
2005.5	1.77%	1.78%	1.77%
2006.5	1.72%	1.73%	1.70%
2007.5	1.67%	1.67%	1.65%
2008.5	1.54%	1.62%	1.56%
2009.5	1.46%	1.57%	1.48%
2010.5	1.49%	1.52%	1.44%
2011.5	1.53%	1.50%	1.38%
2012.5		1.45%	1.33%
2013.5		1.41%	1.28%
2014.5		1.36%	1.23%
2015.5		1.32%	

	<b>Average Accident Date</b>	<b>Frequency</b>
<b>PY 2012 Projection (As of Dec 2011)</b>	<b>2013.08</b>	1.43%
<b>PY 2010 Projection (As of Dec 2011)</b>	<b>2011.83</b>	1.50%
<b>PY 2010 Projection (2010 Application)</b>	<b>2011.83</b>	1.37%

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**2012.1 RR BCUC.9.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-9  
Bodily Injury Basic Frequency**

**Figure 3.4b shows the BI frequency (Basic) in the current Application and the 2010 Application.**

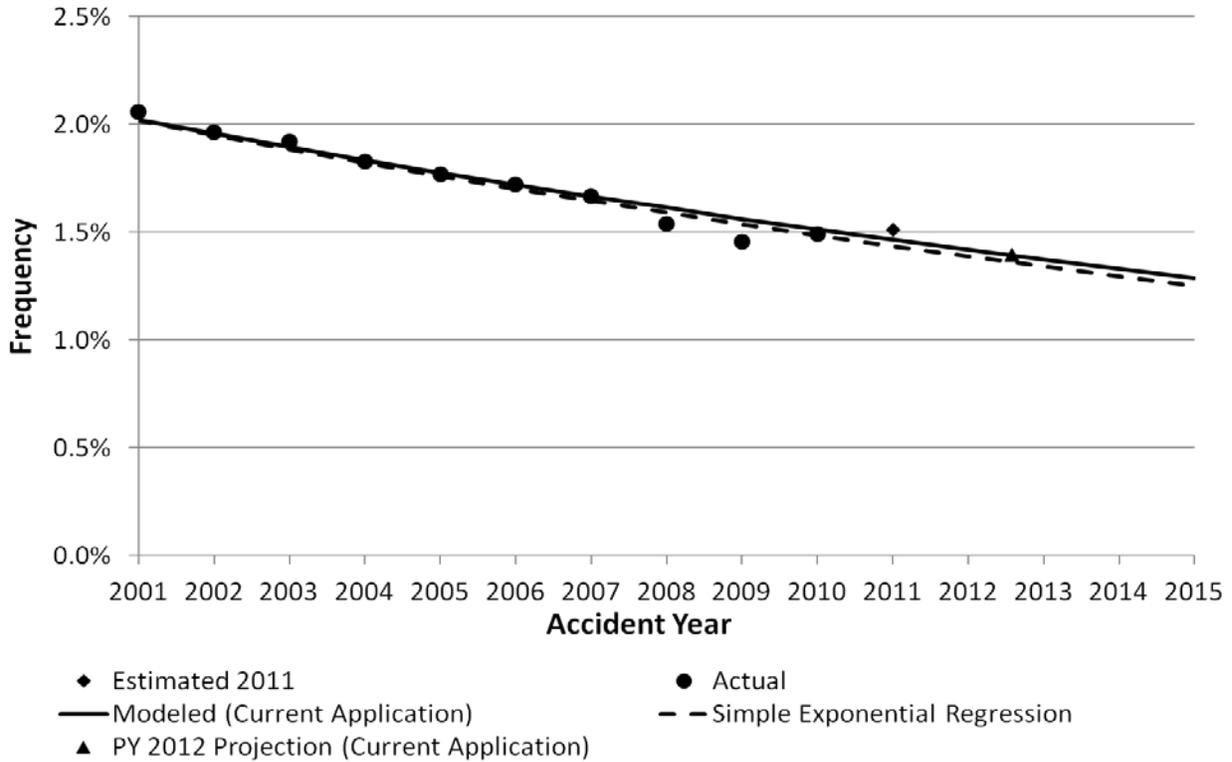
**Please plot the best fit trend line using the data points before any adjustments and explain any after adjustments made by ICBC.**

**Response:**

The trend line provided in Chapter 3, Figure 3.4b in the Application is the line which is considered by the actuaries to be the best fit trend line for the purpose of forecasting, based on the data in the Application and including consideration of economic and social influences. This trend line is based on the separate analysis of Personal and Commercial frequency and reflects the return to the pre-recession trend line that has been observed in 2010 and 2011.

The figure below is based on Chapter 3, Figure 3.4b in the Application. The dashed line has been added, which represents a simple exponential regression analysis (calculated separately for Personal and Commercial frequency) over 1996 through 2011. No adjustments have been made to the loss data that underlies both trend lines.

## Bodily Injury Basic Frequency



The simple exponential regression includes the unusually low experience during the quarters of recession in 2008 and 2009, which was influenced by factors such as declining vehicle travel amounts during the period. As demonstrated in the response to information request 2012.1 RR BCUC.13.1, the unusually low levels of vehicle travel seen in the recession are no longer present in 2010 and 2011. Actuaries are required to consider economic and social influences when selecting trends. Because these unusually low travel amounts are not expected to reoccur in the foreseeable future, the simple exponential regression would not be selected as the best fit trend line for the purpose of forecasting future claims frequency. Also, as described in the response to information request 2012.1 RR BCUC.9.1 there is emerging evidence of other factors contributing to an upward shift in the trend line, furthering the case against a simple exponential regression model.

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**2012.1 RR BCUC.10.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-10, Figure 3.5  
Precipitation Compared to Average**

**Please confirm that Figure 3.5 and associated discussion of precipitation levels refers to precipitation within British Columbia.**

**Response:**

The data used for Figure 3.5 refers to precipitation levels within BC. These precipitation levels are measured at the Vancouver International Airport weather station and obtained from Environment Canada.

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**2012.1 RR BCUC.10.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-10, Figure 3.5  
Precipitation Compared to Average**

**Has ICBC analyzed the relationship of precipitation levels on a more detailed level by claims territory? If so, please discuss the results, if any.**

**Response:**

ICBC has analyzed the relationship of precipitation levels on a more detailed level. A study was conducted in 2010 that looked at the correlation of precipitation amounts between the Vancouver International Airport (YVR) weather station and other weather stations in BC. The study shows that precipitation amounts in most other regions of BC are highly correlated with precipitation amounts at YVR. It also shows that most of ICBC's policyholders reside in these regions with highly correlated precipitation amounts when compared with YVR. Based on these results, ICBC has concluded that precipitation at YVR is a good proxy for BC precipitation.

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**2012.1 RR BCUC.11.1-2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-9  
Precipitation Impact on BI Frequency**

**On p. 3-9, ICBC notes that the return to the long-term frequency trend line in 2010 was related to the absence of two key factors that contributed to the reduced claims frequency in 2008 and 2009: unusually dry weather and a declining amount of travel.**

**11.1 Is there a trend to dryer weather or shorter, warmer winters that ICBC should account for in its trend analysis in this Application?**

**11.2 As shown in Figure 3.5, 2007 was the only year with significantly higher than average precipitation and yet it appears to be on trend. Should the BI frequency be up in 2007 if ICBC considers precipitation accounts for the drop in BI frequency in 2008 and 2009? If ICBC made adjustments for dryer weather in 2008 and 2009, why didn't the trend analysis adjust for wetter weather in 2007?**

**Response:**

**11.1**

There is no trend to drier weather or shorter, warmer winters accounted for in ICBC's trend analysis in the Application, due to ICBC's limited ability to predict future weather conditions. The precipitation forecast used in the Application is based on the average of 1971 to 2000 precipitation levels as measured at Vancouver International Airport (YVR) weather station.

**11.2**

Bodily injury (BI) claims frequencies are influenced by weather conditions, as well as many other factors. For example, in addition to low precipitation, the decline in vehicle travel also contributed to the unusually low frequency in 2008 and 2009. Similarly, frequency experience in 2007 was driven by many factors. The high precipitation alone is not enough to conclude that there would be a higher claims frequency in 2007. In fact, the claims frequency experienced in 2007 is slightly below the simple regression line fitted to the data prior to 2007. If ICBC had based its frequency selection on such a model, the forecast BI frequency for policy year 2012 would have been +0.013 percentage points higher than the 1.39% forecast in the Application.

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**2012.1 RR BCUC.12.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-9, Figure 3.4b  
BI Frequency**

**Is soft tissue claim frequency increasing and contributing to overall BI frequency increase?**

**Response:**

Soft tissue injury claim frequency is no longer decreasing and is therefore contributing to the flattening of the bodily injury claims frequency trend.

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**2012.1 RR BCUC.12.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-9, Figure 3.4b  
BI Frequency**

**Are fraudulent claims also on the rise during this recession?**

**Response:**

ICBC’s claims systems currently are not able to accurately calculate the incidence of fraudulent claims per year; therefore ICBC is not able to determine whether there is an increase in the incidence of fraud during the recession.

ICBC tracks the number of investigations undertaken by the Special Investigation Unit (SIU) based on referrals from adjusters, police, or ICBC’s TIPS line.

The total number of investigations in each of the last three years is as follows:

	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Total Number of SIU Investigations</b>	2,879	2,922	3,177

The increase in investigations is in part due to the creation of the Intelligence and Cyber Unit. The Unit focuses on investigations utilizing publicly accessible information on the internet.

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**2012.1 RR BCUC.12.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-9, Figure 3.4b  
BI Frequency**

**12.3 What is the estimated cost of fraudulent claims per year?**

**12.3.1 If significant, how is ICBC reducing the incidence of fraudulent claims?**

**Response:**

ICBC's Claims systems currently are not able to accurately calculate the estimated cost of fraudulent claims. ICBC estimates that 10 to 5% of insurance claims contain an element of fraud or exaggeration and this is consistent with industry estimates.

ICBC takes allegations of fraud seriously and follows up on tips and information. ICBC is committed to combating fraud and providing customers with the best insurance coverage at the lowest possible rates. ICBC attempts to reduce the incidence of fraudulent claims through identification and investigation of potential fraud on individual files, as well as by deterrence.

Adjusters are responsible for the thorough and appropriate investigation to identify and handle potential fraud on individual claims. If the investigation requires more depth investigation and expertise, the adjuster refers the investigation to ICBC's Special Investigation Unit (SIU) to further the investigation.

In addition to traditional methods of investigation, the SIU piloted a "cyber unit" in 2009. This unit helps to combat exaggerated and fraudulent claims by searching publicly accessible information on the internet. The Intelligence and Cyber Unit became a permanent work unit in 2011.

In addition, the SIU is accountable for investigating more systematic fraud, such as staged accidents and supplier fraud.

**2012.1 RR BCUC.13.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-10, para. 26 and Figures 3.6/3.7  
BI Frequency**

“Since travel amounts returned to a more normal pattern of growth in 2010, this contributed to the return of the 2010 claims frequency to the long-term trend line as shown previously in Figure 3.4b.”

**13.1 Please revise Figures 3.6 and 3.7 to show annual mileage so a year to year comparison can be made.**

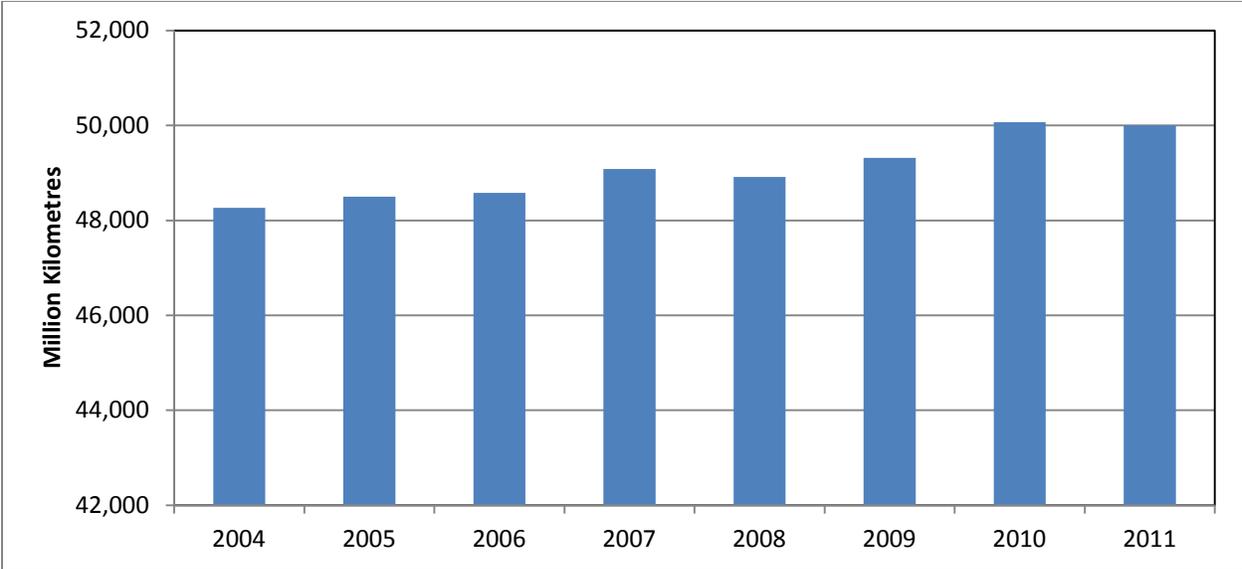
**13.1.1 Please comment on the 2010 data shown in Figures 3.6 and 3.7. Does the 2010 data appear to be considerably higher when compared to earlier years?**

**Response:**

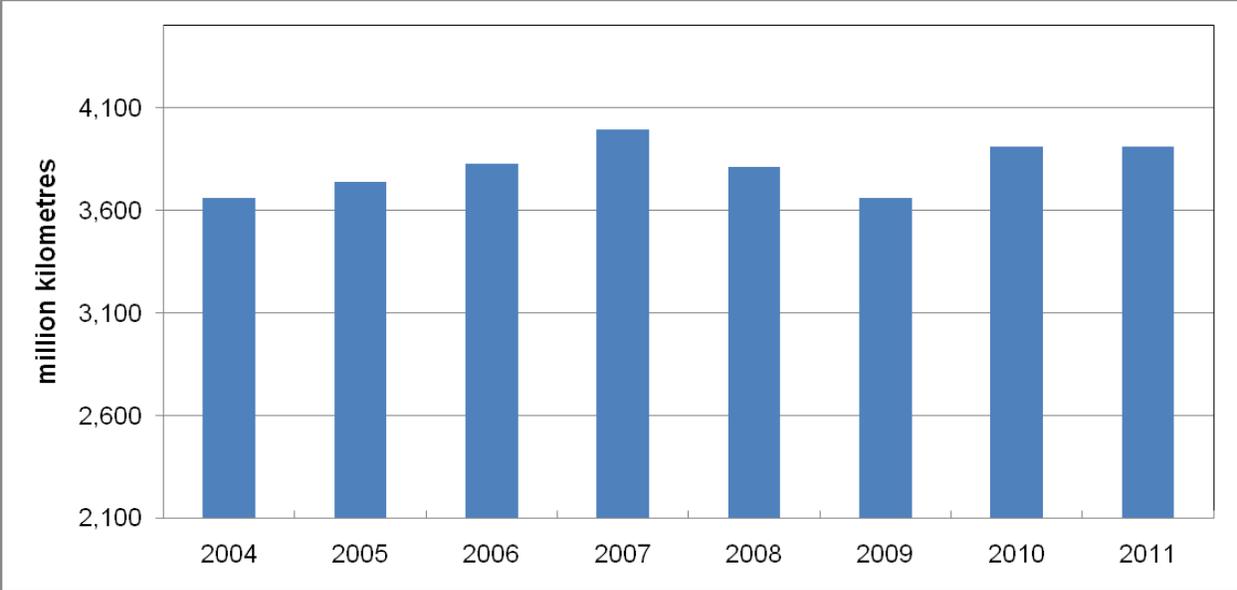
**13.1**

Figures 3.6 and 3.7 from the Revenue Requirements Application for the 2012 policy year have been revised to show annual rather than monthly mileage estimates for 2004 through 2010. They have also been updated to include the annual estimates for 2011.

**Figure 3.6 Updated Estimated Annual Kilometres Travel in BC - Gasoline Vehicles**



**Figure 3.7 Updated Estimated Annual Kilometres Travel in BC - Diesel Vehicles**



**13.1.1**

The updated Figures 3.6 and 3.7 above show that estimated mileage for gasoline and diesel vehicles increased sharply in 2010, as the recessionary impact on vehicle travel began to dissipate. The reversal of the recessionary impact on diesel travel is particularly strong.

It should be noted that vehicle travel is not used directly in ICBC’s claims trend selections. It is used simply to provide a better understanding of the impact of events such as the 2008 and 2009 recession on a factor (vehicle travel) that could influence the frequency of ICBC claims. The travel estimates obtained for 2010 and 2011 support the hypothesis that vehicle travel has returned to levels in line with pre-recession trends, and that the 2008 and 2009 lulls in travel were temporary. This, in turn, supports the choice of a 2012 claims frequency forecast based on the long-term frequency trend line.

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**2012.1 RR BCUC.13.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-10, para. 26 and Figures 3.6/3.7  
BI Frequency**

**“Since travel amounts returned to a more normal pattern of growth in 2010, this contributed to the return of the 2010 claims frequency to the long-term trend line as shown previously in Figure 3.4b.”**

**13.2 What effect on mileage did the 2010 Olympics have?**

**13.2.1 Please explain whether ICBC has factored the 2010 Olympics into the trend analysis, why or why not? What is the impact of the 2010 Olympics in ICBC’s trend analysis, if any?**

**Response:**

**13.2**

A 2010 study undertaken by the City of Vancouver and the University of British Columbia to estimate changes in travel amounts, modes, and patterns estimated that vehicle travel into and out of the downtown core while the Olympics were in progress was reduced by about 30%. However, this assessment did not include vehicle travel within the downtown core, nor did it look at vehicle travel outside of the downtown core. The provincially-based travel estimates that were included in the Application and updated in information request 2012.1 RR BCOAPO.7.1 show that estimated kilometres travelled by gasoline-powered vehicles during February 2010 (while the Olympics were on in Vancouver) were higher than in February 2009 or in February 2011. Estimated travel by diesel-powered vehicles in February 2010 was also higher than in February 2009 or February 2011. This suggests that whatever impact the Olympics had on travel in the Lower Mainland was short-term and localized, and did not notably reduce overall travel measured at the provincial level.

**13.2.1**

During trend analysis, ICBC reviews claims experience and considers factors that can have significant impacts on trends. There has not been a noticeable impact from the Olympics on bodily injury (BI) claims frequency experience. The return of the 2010 claims frequency to the long-term trend line supports the selection of an exponential model to forecast future frequency

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trend. The Olympics, therefore, was considered but not used directly in forecasting the BI frequency trend.

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**2012.1 RR BCUC.13.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-10, para. 26 and Figures 3.6/3.7  
BI Frequency**

**“Since travel amounts returned to a more normal pattern of growth in 2010, this contributed to the return of the 2010 claims frequency to the long-term trend line as shown previously in Figure 3.4b.”**

**Please expand Figures 3.6 and 3.7 to include 2011 to support the assumption that travel amounts have returned to a more normal pattern of growth.**

**Response:**

Figures 3.6 and 3.7 have been updated to include estimates for 2011 in the response to information request 2012.1 RR BCUC.13.1.

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**2012.1 RR BCUC.13.4 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-10, para. 26 and Figures 3.6/3.7  
BI Frequency**

**“Since travel amounts returned to a more normal pattern of growth in 2010, this contributed to the return of the 2010 claims frequency to the long-term trend line as shown previously in Figure 3.4b.”**

**What forecast mileage is used for 2012 in estimating the 2012 BI frequency?**

**Response:**

ICBC does not forecast 2012 mileage. To be clear, ICBC’s bodily injury (BI) frequency model and its forecast of the 2012 bodily injury claims frequency do not depend on mileage. ICBC estimates historical mileage for the sole purpose of validating the actuaries’ assumption that driving amounts have returned to pre-recession levels. It is the assumption of driving amounts having returned to pre-recession levels that has led the actuaries to select a BI trend line that is in line with the pre-recession long-term downward trend line.

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**2012.1 RR BCUC.14.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.1, p. 3-13, Figure 3.8  
BI Severity**

**Figure 3.8 shows the severity of bodily injury claims.**

**Please update Figure 3.8 to include the most recent estimates of PY 2010 and PY 2011 and show the figures expanded to fit a full page (vertical axis from \$15,000 to \$40,000) with a data table beneath the graph.**

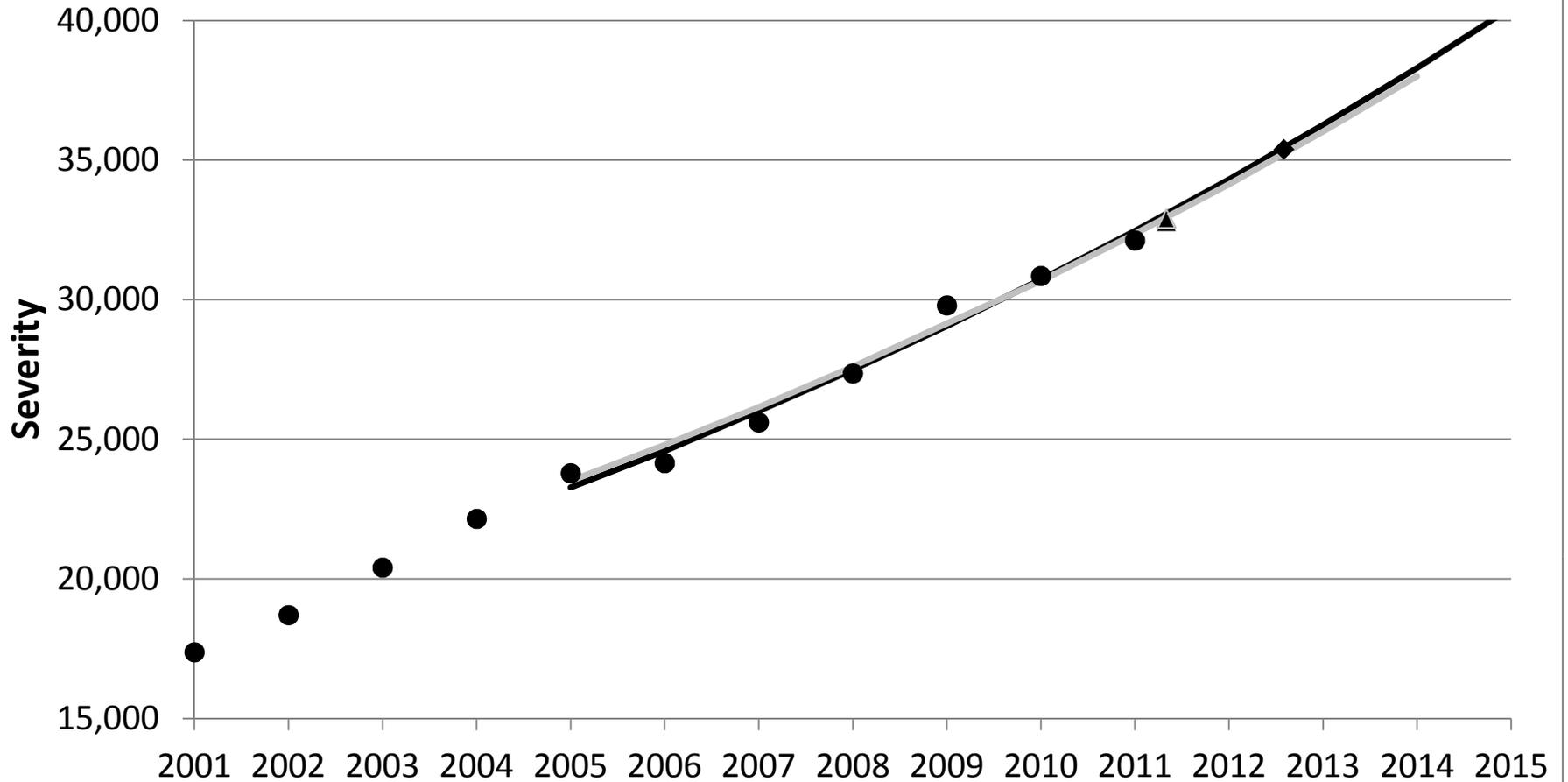
**Response:**

Please refer to Attachment A – Bodily Injury Severity for the updated Figure 3.8 based on the results from 2011 year-end analysis. Projections for policy year 2010 (effective November 1, 2010 through October 31, 2011) and policy year 2012 (effective February 1, 2012 through January 31, 2013) are also included in the chart. ICBC has not forecast values for the partial policy year 2011 (effective November 1, 2011 through January 31, 2012). The updated figure has been rescaled as requested, and a corresponding data table has been provided.



# 2012.1 RR BCUC.14.1 – Attachment A – Bodily Injury Severity

# Bodily Injury Basic Severity



## Accident Year

◆ PY 2012 Projection

● Actual (As of Dec 2011)

— Modeled (As of Dec 2011)

— Modeled (2010 Application)

▲ PY 2010 Projection (As of Dec 2011)

△ PY 2010 Projection (2010 Application)

**Bodily Injury Basic Severity**

<b>Average Accident Date</b>	<b>Actual (As of Dec 2011)</b>	<b>Modeled (As of Dec 2011)</b>	<b>Modeled (2010 Application)</b>
2002.5	18,702		
2003.5	20,404		
2004.5	22,153		
2005.5	23,783	23,278	23,512
2006.5	24,150	24,574	24,797
2007.5	25,604	26,011	26,148
2008.5	27,361	27,496	27,603
2009.5	29,797	29,064	29,151
2010.5	30,852	30,720	30,670
2011.5	32,123	32,456	32,353
2012.5		34,307	34,138
2013.5		36,254	36,018
2014.5		38,298	37,996
2015.5		40,456	

	<b>Average Accident Date</b>	<b>Severity</b>
<b>PY 2012 Projection (As of Dec 2011)</b>	<b>2013.08</b>	35,391
<b>PY 2010 Projection (As of Dec 2011)</b>	<b>2011.83</b>	32,796
<b>PY 2010 Projection (2010 Application)</b>	<b>2011.83</b>	32,908

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**2012.1 RR BCUC.15.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.2, p. 3-15, Para. 33  
Bi Frequency**

**On p. 3-15, ICBC in footnote 4 states:**

**“The estimated 2011 point is shown as a diamond in Figure 3.4b. This point represents the expected frequency for accident year 2011 at the time of the actuarial analysis of claims costs underlying this Application, but is distinguished from 2010 and prior years because it is an early estimate for a year that is not yet complete.”**

**Please state the bodily injury claims frequency assumed in footnote 4 and the actual BI frequency for 2011. Given the year end information now available to ICBC would it be appropriate to adjust the PY 2012 loss cost trend? Please explain.**

**Response:**

The expected bodily injury (BI) claims frequency for accident year 2011 at the time of the actuarial analysis of claims costs underlying this Application is 1.51%. The BI frequency as at December 31, 2011 is 1.53%.

The actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. The updated loss trend models based on the most current information available have been provided in the response to information request 2012.1 RR BCUC.36.1, and are used in the updated actuarial rate indication provided in the response to information request 2012.1 RR BCUC.5.1. The updated loss trend models include consideration of the increased BI claim frequency observed in 2011.

It would not be appropriate to adjust the policy year 2012 loss cost trend because the underlying components of the 2011 loss cost would be at different points in time. The 2011 BI frequency would be as at December 31, 2011 and BI severity would be as at the actuarial analysis of claims costs underlying this Application.

**2012.1 RR BCUC.16.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section B.3, p. 3-16, Para. 35  
Premium Financing Plan Revenue**

On p. 3-16, ICBC states:

**“The net revenue from premium financing is based on the expected amount of borrowings and the prime rate. The result of the updated estimates for premium financing plan revenue is an impact of +0.3 percentage points of the PY 2012 rate indication.”**

**Please show the calculations and provide explanations that lead to the +0.3 percentage points increase of the PY 2012 rate indication due to premium financing.**

**Response:**

ICBC provides a payment plan to policyholders who choose to finance their premiums. ICBC charges the participants a fee for this service. The service fee net of the borrowing cost ICBC incurs is the premium financing plan revenue. For the policy year 2012, this revenue is projected to be \$31 million in respect of Basic insurance. This amount is included in the actuarial rate level analysis in order to offset the required premium, and lower the rates for all policyholders.

Attachment A – Premium Financing Revenue Change shows that the premium financing plan revenue has decreased by \$1.76 per policy from policy year 2010 to policy year 2012. The margin between the service fee charged to participants and the borrowing cost incurred by ICBC is expected to be narrower in 2012, and the net revenue has declined as a result. The following table demonstrates that the \$1.76 decrease leads to a 0.3 percentage points increase in the policy year 2012 actuarial rate indication:

		<b>Value</b>	<b>Reference</b>
(1)	Premium Financing Plan Revenue Decrease per Policy (\$)	1.76	Attachment A
(2)	Premium per policy (\$)	697	2012.1. RR BCUC.27.1
(3)	Premium Tax Rate	4.40%	Chapter 3, Exhibit A 1.1
(4)	Rate Impact = (1) / [(2) x [1-(3)]]	+0.3%	



## **2012.1 RR BCUC.16.1 – Attachment A – Premium Financing Revenue Change**

**Premium Financing Plan Revenue for policy year (PY) 2010 and 2012**

<b>Line No.</b>			<b>(a)* PY 2010</b>	<b>(b) PY 2012</b>	<b>(c) (a)-(b)</b>	<b>Reference</b>
(1)		Premium Financing Plan Revenue (\$ 000's)	35,641	31,078	(4,563)	Exhibit A.0.1 row (q)
(2)		Projected Exposure	2,935,386	2,994,622	59,236	2012.1 RR BCUC.6.1 Attachment A Row (3)
(3)	(1)/(2)	Premium Financing Plan Revenue per Policy (\$)	12.14	10.38	1.76	

\* PY2010 data are from the similar exhibits in 2010 Application

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**2012.1 RR BCUC.17.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, pp. 3-16 to 3-20 and 3-27 to 3-29; Exhibit E.2  
Impacts of Road Safety Programs**

**On p. 3-28, ICBC notes the Intersection Safety Camera (ISC) program is being upgraded and expanded during 2011. After historical accident year loss and ALAE amounts are estimated to their ultimate values and trended to PY 2012 level, a prospective adjustment for upgrades to the ISC program is made.**

**Exhibit E.2 shows the impact of ISC upgrades, estimated based on expected crash reduction targets for existing and new ISC sites, including a net savings of \$7.9 million for the expected PY 2012 loss and ALAE.**

**Please confirm whether the ISC program is the only prospective adjustment made by ICBC. If there are more, please provide a detailed explanation for each adjustment.**

**Response:**

Yes, Intersection Safety Camera program is the only prospective adjustment in the policy year 2012 actuarial rate indication analysis.

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**2012.1 RR BCUC.17.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, pp. 3-16 to 3-20 and 3-27 to 3-29; Exhibit E.2  
Impacts of Road Safety Programs**

**On p. 3-28, ICBC notes the Intersection Safety Camera (ISC) program is being upgraded and expanded during 2011. After historical accident year loss and ALAE amounts are estimated to their ultimate values and trended to PY 2012 level, a prospective adjustment for upgrades to the ISC program is made.**

**Exhibit E.2 shows the impact of ISC upgrades, estimated based on expected crash reduction targets for existing and new ISC sites, including a net savings of \$7.9 million for the expected PY 2012 loss and ALAE.**

**Please explain the calculations in Exhibit E.2 that lead to the adjustment of \$7.9 million. Based on the forecast costs of the ISC program and the return of \$7.9 million in 2012, what return on investment will be realized for this program? Please show the calculations.**

**Response:**

Please see Chapter 3, Exhibit E.2 for the detailed calculation of the \$7.9 million. The calculation involves two major steps. In step 1, Intersection Safety Camera (ISC) savings for accident years 2012 to 2014 are estimated; in step 2, ISC savings for policy year 2012 are derived based on the result from step 1.

Step 1: Estimate ISC savings for accident years 2012 to 2014

The ISC program was upgraded for 60 sites that already had a camera, and expanded for 80 sites that did not have a camera. The frequency reductions in future years for these two types of sites are expected to be different, as displayed in Chapter 3, Exhibit E.2, lines (c) and (d).

The total reduction in claims costs is simply the product of the four quantities, as illustrated in lines (f) and (g):

Line (a): total number of sites.

Line (b): number of crashes per site.

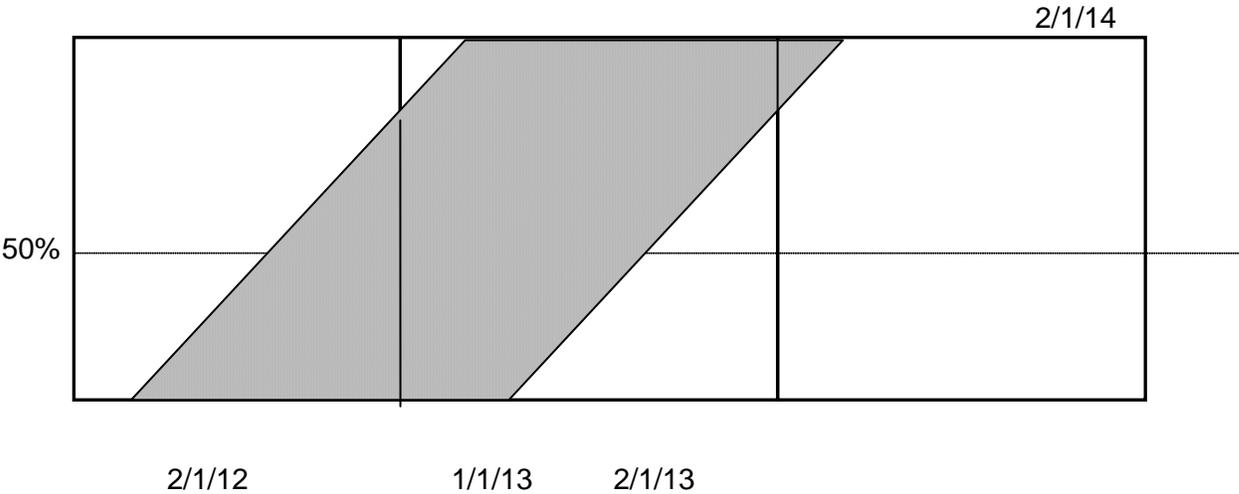
Line (c) or (d): percentage of reduction in frequency.

Line (e): average cost per crash.

However, not all the reduction in claims costs for future years can be attributed to the upgrading and expansion of ISC program. Other crash prevention programs that have been in place will continue to operate and generate benefits. These benefits (in line (i)) should be subtracted from the total reduction in claims costs. The net amount is the benefits from ISC upgrading and expansion, as line (j) shows.

Step 2: Estimate ISC savings for policy year 2012

Policy year 2012 covers the policies written between February 1, 2012 and January 31, 2013. Equivalently, it covers accidents that occur between February 1, 2012 and January 31, 2014, because a typical policy term is 12 months. Therefore, the ISC saving for policy year 2012 is contributed by calendar years 2012 to 2014. The contribution from each year can be directly linked to the portion of policies for which coverage has been provided, expressed pictorially as the figure below.



The x-axis represents time, and the y-axis represents the percentage of the policies for which coverage has been provided. The total of the shaded area is 100%. The shaded area in each year represents the fractions of the policies that attributed to that year. The shaded area for year 2012 is the area of the triangle with length and height both being 11/12, namely,  $(1/2) \times (11/12)^2 = 121/288$ . Similarly, the shaded area belonging to year 2014 is:  $(1/2) \times (1/12)^2$

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= 1/288. The shaded area for year 2012 is simply the remainder:  $(1 - 121/288 - 1/288) = 83/144$ . These three fractions are displayed in line (k).

The ISC saving for each of the three years is simply the product of the saving amount and the associated fraction for that year. The sum of these three products, in line (l), forms the ISC saving for policy year 2012, which is \$7.9 million.

The \$7.9 million prospective loss adjustment for the ISC upgrade for policy year 2012 is based upon the data presented in Chapter 3, Exhibit E.2. This Exhibit shows on row (j) the estimated benefits associated with each accident year in the 5 year period from 2010 through 2014, which are then used to calculate the savings of \$7.9 million associated with policy year 2012.

The same data can be used to calculate the return on investment for the 5 year period 2010 through 2014. The planned costs for the ISC upgrade during this period are \$24,202,846 and the estimated claims cost prevention benefits are \$30,387,525. Based on the following formula:  $ROI = (Benefit - Cost)/Cost$ , the return on investment realized is estimated to be 26%. Please see Attachment A – Intersection Safety Camera (ISC) Estimated Return on Investment 2010 – 2014 for detailed calculations.

It is not uncommon for the benefits of a new safety program to be greater initially and then settle over time. Other jurisdictions have seen similar moderation with their red-light camera programs. The ISC program is being evaluated for crash benefits and the results, including the overall return on investment, will be filed with the Commission in 2014.



# **2012.1 RR BCUC.17.2 – Attachment A – Intersection Safety Camera (ISC) Estimated Return on Investment 2010 – 2014**

**Insurance Corporation of British Columbia  
Intersection Safety Camera (ISC) Estimated Return on Investment**

**(I) Site Statistics**

Site Type	Existing	New
(a) # of Sites	60	80
(b) Crashes / Site	101	80

**(II) Frequency Reduction**

Period	1	2	3	4	5
(c) Existing Sites	5%	5%	5%	5%	5%
(d) New Sites	14%	11%	6%	5%	5%

**(III) Severity Trend**

Accident Year	2010	2011	2012	2013	2014
(e) Avg. Cost / Crash	\$11,600	\$12,000	\$12,400	\$12,800	\$13,400

**(IV) Estimated Claims Cost Prevention Benefits (\$ 000's)**

Accident Year	2010	2011	2012	2013	2014	
(f) Existing Sites	\$1,241	\$3,384	\$3,757	\$3,878	\$4,060	
(g) New Sites	\$326	\$8,053	\$8,958	\$5,642	\$4,342	
(h) Total Benefits	<b>\$1,567</b>	<b>\$11,436</b>	<b>\$12,715</b>	<b>\$9,521</b>	<b>\$8,402</b>	
(i) Existing Benefits	(1,378)	(2,839)	(2,924)	(3,012)	(3,102)	<b>TOTAL (2010 - 2014)</b>
(j) Net Benefits	<b>\$189</b>	<b>\$8,597</b>	<b>\$9,791</b>	<b>\$6,509</b>	<b>\$5,301</b>	<b>\$30,388</b>
(k) Fraction in PY 2012			121/288	83/144	1/288	
(l) Savings In PY 2012			\$4,114	\$3,752	\$18	

(m) **Total Savings in PY 2012** **\$7,884**

**(V) ISC Program Costs (\$ 000's)**

Year	2010	2011	2012	2013	2014	<b>TOTAL (2010 - 2014)</b>
(n) Program Costs	(\$8,270)	(\$12,218)	(\$1,243)	(\$1,230)	(\$1,241)	<b>(\$24,203)</b>

**(VI) Return on Investment**

Year	2010	2011	2012	2013	2014	<b>TOTAL (2010 - 2014)</b>
(o) Net Benefit	(\$8,081)	(\$3,621)	\$8,548	\$5,279	\$4,059	<b>\$6,185</b>
(p) Benefit / Cost	0.02	0.70	7.87	5.29	4.27	1.26
(q) ROI	-98%	-30%	687%	429%	327%	26%

Formulas:

(f) = (a) x (b) x (c) x (e), taking into account the initial upgrades in 2010 and live operation beginning in 2011

(g) = (a) x (b) x (d) x (e), taking into account the time elapsed from installation of each camera

(h) = (f) + (g)

(i) = (h) x (l)

(j) = (h) + (i)

(l) = (j) x (k)

(m) = Sum of Row (l)

(n) = From previous ISC estimates for costs

(o) = (j) + (n)

(p) = (j) / - (n)

(q) = (p) - 1

**2012.1 RR BCUC.18.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section E.5.2, p. 3-28, Para. 84; Exhibit E.1  
Large Claim Costs and Bulk Costs**

**Exhibit E.1 shows the estimated provision for bulk costs and large claim events.**

**Please explain Exhibit E.1 to show the impact on the proposed 11.2% rate indication.**

**Response:**

Bulk payments and large claim events are not included in the loss trend models but are expected to be incurred in future calendar years. Exhibit E.1 looks at the historical contribution of bulk payments and large claim events to total claims costs in order to determine the appropriate factors for policy year 2012 losses. Exhibits A.2.1 and A.2.2 use these factors to project the provision for bulk payments and large claims that is included in the actuarial rate level indication analysis.

Attachment A – Bulk and Large Claims Provision shows that the provision has decreased by \$0.80 per policy.

The following table demonstrates that the \$0.80 decrease leads to a -0.1 percentage points change in the policy year 2012 actuarial rate indication:

		<b>Value</b>	<b>Reference</b>
(1)	Change in Bulk and Large Claims Provision (\$)	-0.80	Attachment A
(2)	Premium per policy (\$)	697	2012.1. RR BCUC.27.1
(3)	Premium Tax Rate	4.4%	Chapter 3, Exhibit A 1.1
(4)	Rate Impact = (1) / [(2) x [1-(3)]]	-0.1%	



## **2012.1 RR BCUC.18.1 – Attachment A – Bulk and Large Claims Provision**

**Bulk and Large Claims Provision for policy year (PY) 2010 and 2012**

Line No.			(a)* PY 2010	(b) PY 2012	(c) (b)-(a)	Reference
(1)		Bulk and Large Claims Provision(\$ 000's)	10,146	7,957	(2,189)	Exhibit A.2.1 to 2.2 line (6)
(2)		Projected Exposure	2,935,386	2,994,622	59,236	2012.1 RR BCUC.6.1 Attachment A Row (3)
(3)	(1)/(2)	Bulk and Large Claims Provision per Exposure (\$)	3.46	2.66	(0.80)	

\* PY2010 data are from the similar exhibits in 2010 Application

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**2012.1 RR BCUC.18.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Section E.5.2, p. 3-28, Para. 84; Exhibit E.1  
Large Claim Costs and Bulk Costs**

**Exhibit E.1 shows the estimated provision for bulk costs and large claim events.**

**Please include Accident Year 2011 if available. Would the 2011 data impact the proposed 11.2% rate indication?**

**Response:**

If accident year 2011 bulk and large claims costs data are included, the actuarial rate indication would not change. Please see Attachment A – Exhibit E.1 as at December 31, 2011 with Accident Year 2011.



# **2012.1 RR BCUC.18.2 – Attachment A – Exhibit E.1 as at December 31, 2011 with Accident Year 2011**

Insurance Corporation of British Columbia

Exhibit E.1

**Loading for Bulk and KOL-37 Payments, and Capped Large Claims  
Plate Owner Basic**

(\$ 000's)

Accident Year (AY)		2007	2008	2009	2010	2011	Average
(1) Weights		20%	20%	20%	20%	20%	
<b>Bodily Injury</b>							
(2) Accident Year Losses and ALAE (excluding bulk)	Exhibit C.0.1	1,148,471	1,160,767	1,207,282	1,297,336	1,401,632	1,243,098
(3) Bulk Claims	ICBC internal database	3,809	4,655	1,971	3,106	3,287	3,366
(4) Accident Year Losses and ALAE (including bulk)	(2) + (3)	1,152,281	1,165,422	1,209,253	1,300,443	1,404,919	1,246,463
(5) Accident Year Losses with Capped Large Claims	ICBC internal database	1,148,471	1,160,767	1,207,282	1,297,336	1,401,632	1,243,098
(6) Provision for Bulk and Large Claims	(4) ÷ (5)	1.0033	1.0040	1.0016	1.0024	1.0023	1.0027
<b>Property Damage*</b>							
(7) Accident Year Losses and ALAE (excluding bulk)	Exhibit C.0.1	368,572	371,262	358,326	362,976	378,830	367,993
(8) Bulk & KOL-37 Claims	ICBC internal database	1,802	2,595	2,170	2,405	1,499	2,094
(9) Accident Year Losses and ALAE (including bulk)	(7) + (8)	370,375	373,857	360,495	365,381	380,329	370,087
(10) Accident Year Losses with Capped Large Claims	ICBC internal database	368,070	369,963	357,792	362,477	378,138	367,288
(11) Provision for Bulk and Large Claims	(9) ÷ (10)	1.0063	1.0105	1.0076	1.0080	1.0058	1.0076
<b>Accident Benefits - Medical Rehabilitation</b>							
(12) Accident Year Losses and ALAE (excluding bulk)	Exhibit C.0.1	81,422	82,915	80,894	86,397	89,846	84,295
(13) Bulk Claims	ICBC internal database	78	138	0	0	0	43
(14) Accident Year Losses and ALAE (including bulk)	(12) + (13)	81,500	83,053	80,894	86,397	89,846	84,338
(15) Accident Year Losses with Capped Large Claims	ICBC internal database	81,191	81,790	80,814	86,397	89,846	84,008
(16) Provision for Bulk and Large Claims	(14) ÷ (15)	1.0038	1.0155	1.0010	1.0000	1.0000	1.0040
<b>Accident Benefits - Weekly Benefits</b>							
(17) Accident Year Losses and ALAE (excluding bulk)	Exhibit C.0.1	35,781	35,112	28,966	31,103	32,028	32,598
(18) Bulk Claims	ICBC internal database	0	0	0	0	0	0
(19) Accident Year Losses and ALAE (including bulk)	(17) + (18)	35,781	35,112	28,966	31,103	32,028	32,598
(20) Accident Year Losses with Capped Large Claims	ICBC internal database	35,781	35,112	28,966	31,103	32,028	32,598
(21) Provision for Bulk and Large Claims	(19) ÷ (20)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
<b>Death Benefits</b>							
(22) Accident Year Losses and ALAE (excluding bulk)	Exhibit C.0.1	3,840	3,436	3,943	3,182	2,984	3,477
(23) Bulk Claims	ICBC internal database	0	0	0	0	0	0
(24) Accident Year Losses and ALAE (including bulk)	(22) + (23)	3,840	3,436	3,943	3,182	2,984	3,477
(25) Accident Year Losses with Capped Large Claims	ICBC internal database	3,840	3,436	3,936	3,182	2,984	3,476
(26) Provision for Bulk and Large Claims	(24) ÷ (25)	1.0000	1.0000	1.0018	1.0000	1.0000	1.0004

\* Property Damage Ultimate Losses are as of November 30, 2011

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**2012.1 RR BCUC.19.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-30, Figure 3.13  
Sensitivity Analysis**

**Please update Figure 3.13 to include a decrease in BI annual future frequency trend by 1 ppt and decrease in BI annual future severity trend by 1 ppt.**

**Response:**

If the future bodily injury (BI) frequency trend were to decrease by 1 percentage point (ppt) per year, this would have an impact of -1.6 ppt on the Basic insurance actuarial rate indication.

If the future BI severity trend were to decrease by 1 ppt per year, this would have an impact of -1.5 ppt on the Basic insurance actuarial rate indication.

Please see Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application and information requests.



# 2012.1 RR BCUC.19.1 – Attachment A – Sensitivity Analysis

**Sensitivity summary from 2012.1 RR Round 1 information requests**

<b>Line No.</b>	<b>Scenario</b>	<b>Impact on Rate Indication</b>	<b>Information Request</b>
1	Include Accident Year 2011 bulk cost and large claims events	0.0 ppt	2012.1 RR BCUC.18.2
2	Decrease BI annual future frequency trend by 1 ppt	-1.6 ppt	2012.1 RR BCUC.19.1
3	Decrease BI annual future severity trend by 1 ppt	- 1.5 ppt	2012.1 RR BCUC.19.1
4	Update New Money Rate to 3.13%	+1.7 ppt	2012.1 RR BCUC.48.2
5	Update Yield on Basic Equity to 4.00%	+0.4 ppt	2012.1 RR BCUC.51.2
6	Increase Operating Expense by \$10 million	+0.3 ppt	2012.1 RR BCUC.87.5
7	Decrease Operating Expense by \$10 million	-0.3 ppt	2012.1 RR BCUC.87.5
8	Change Yield on Basic Equity from 4.60% to 5.60%	-0.6 ppt	2012.1 RR CDI.9.2
9	Update New Money Rate to 3.13% and Yield on Basic Equity to 4.00% (Updates as of yearend)	+2.1 ppt	2012.1 RR DUCK.1.a
10	Revert New Money Rate back to 5.06% and Yield on Basic Equity back to 4.69% (Prior to the September update of interest rates)	-3.3 ppt	2012.1 RR DUCK.1.b
"ppt" stands for "percentage point(s)"			

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**2012.1 RR BCUC.20.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-30, para. 96; Exhibit G.2  
Capital Provision**

**“In order to account for the growth in required capital over time, the Capital Management Plan calls for the capital maintenance to be set at \$36.8 million.”**

**Please provide an explanation for the increase in Exhibit G.2 line (i) from 3% in the previous filing to 3.5% in the current filing.**

**Response:**

Line (i) in Exhibit G.2 represents the growth in capital required, which is based on the combined impacts of long-term exposure growth and loss cost trends. The long-term exposure growth is relatively stable and is consistent with the growth assumption used in the 2010 Streamlined Revenue Requirements Application. However, the estimate of long-term loss cost trend is higher now, as compared to the estimate in the 2010 Streamlined Revenue Requirements Application. The main factor contributing to the higher long-term loss cost trend is bodily injury (BI) claims frequency. ICBC has revised the BI claims frequency model in this Application because the actual experience in 2010 and 2011 supports the return of frequency to the long-term trend line.

**2012.1 RR BCUC.20.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-30, para. 96; Exhibit G.2  
Capital Provision**

**“In order to account for the growth in required capital over time, the Capital Management Plan calls for the capital maintenance to be set at \$36.8 million.”**

**Please expand Exhibit G.2 line (a) to show each component of the capital available and capital required that make up the September 30, 2011 MCT of 120%, and expand to include the December 31, 2011 MCT score.**

**Response:**

The following table expands Exhibit G.2 line (a) 2011 MCT ratio at September 30, 2011 to show each component of the capital available and capital required that make up the MCT ratio of 120%. The table also shows an expanded view of the MCT ratio at December 31, 2011 of 115%.

**Basic Insurance MCT**

\$ millions

	<u>Sept 30, 2011</u>	<u>Dec 31, 2011</u>
<b>Capital Available</b>		
Retained earnings	\$ 1,088	949
Other components of equity	<u>78</u>	<u>181</u>
Capital available	<u>1,166</u>	<u>1,130</u>
<b>Capital Required</b>		
Balance sheet assets	403	418
Net unpaid claims	484	482
Premium deficiency	-	2
Premiums written / unearned premiums	<u>84</u>	<u>82</u>
Minimum capital required	<u>\$ 971</u>	<u>\$ 984</u>
<b>MCT percentage</b>	<u>120%</u>	<u>115%</u>

In accordance with *Special Direction IC2 to the British Columbia Utilities Commission, BC Regulation 307/2004, as amended*, the MCT ratio is based on the Guideline for MCT for Federally Regulated Property and Casualty Insurance Companies issued by the Office of the Superintendent of Financial Institutions Canada.

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The decrease in capital available by \$36 million is due mainly to the Basic insurance net loss experienced in the last quarter of 2011. Under International Financial Reporting Standards, ICBC now recognizes all actuarial gains and losses from the pension and post-retirement benefits plans in equity via other comprehensive income. At September 30, 2011, these actuarial losses were included in other components of equity. At December 31, 2011, it was determined that these actuarial gains and losses should flow through to retained earnings.

At December 31, 2011, the Basic insurance portion of the actuarial losses recognized to retained earnings was \$102 million, \$59 million from December 31, 2010 and \$43 million from December 31, 2011. These actuarial losses decrease retained earnings and increase other components of equity.

Capital required for balance sheet assets is higher at December 31, 2011, due to a change in the asset mix and associated margins.

**2012.1 RR BCUC.20.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-30, para. 96; Exhibit G.2  
Capital Provision**

**“In order to account for the growth in required capital over time, the Capital Management Plan calls for the capital maintenance to be set at \$36.8 million.”**

**Please demonstrate the MCT changes effective January 1, 2012 by expanding question 20.2 to include a January 1, 2012 MCT calculation as well as the expected December 31, 2012 MCT calculation.**

**Response:**

The table in the response to information request 2012.1 RR BCUC.20.2 has been expanded to include January 1, 2012 and December 31, 2012 MCT calculations. The Office of the Superintendent of Financial Institutions Canada (OSFI) has introduced revisions for the Minimum Capital Test (MCT) Guidelines, effective January 1, 2012.

**Basic Insurance MCT**

\$ millions

	<u>Sept 30, 2011</u>	<u>Dec 31, 2011</u>	<u>Jan 1, 2012</u>	<u>Dec 31, 2012</u>
<b>Capital Available</b>				
Retained earnings	\$ 1,088	949	949	851
Other components of equity	<u>78</u>	<u>181</u>	<u>181</u>	<u>208</u>
Capital available	<u>1,166</u>	<u>1,130</u>	<u>1,130</u>	<u>1,059</u>
<b>Capital Required</b>				
Balance sheet assets	403	418	420	451
Net unpaid claims	484	482	437	450
Premium deficiency	-	2	2	-
Premiums written / unearned premiums	<u>84</u>	<u>82</u>	<u>82</u>	<u>91</u>
Minimum capital required	<u>\$ 971</u>	<u>\$ 984</u>	<u>\$ 941</u>	<u>\$ 992</u>
<b>MCT percentage</b>	<u>120%</u>	<u>115%</u>	<u>120%</u>	<u>107%</u>

In accordance with *Special Direction IC2 to the British Columbia Utilities Commission, BC Regulation 307/2004, as amended*, the MCT ratio is based on the Guideline for MCT for Federally Regulated Property and Casualty Insurance Companies issued by the Office of the Superintendent of Financial Institutions Canada.

The MCT for January 1, 2012 and December 31, 2012 in the table incorporates an estimate of MCT calculated under the revised MCT Guidelines for 2012. The revisions to the MCT Guidelines are estimated to increase the Basic MCT ratio by approximately 5%, primarily due to a reduction to the margin required for the unpaid claims liability. The MCT ratio of 102% for

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2012, as referred to at the January 23, 2012 Workshop, does not reflect the revised MCT Guidelines for 2012. Incorporating the 2012 MCT Guidelines would bring it in line with the current 2012 Basic MCT ratio forecast of 107%. More detail on the revision to the MCT Guidelines is explained in the response to information request 2012.1 RR BCUC.43.1.

**2012.1 RR BCUC.21.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, p. 3-5, Para. 16; Exhibit Set G  
Capital Maintenance**

On p. 3-5, ICBC notes the change to the capital maintenance provision as compared to PY 2010 has an impact of +0.3 percentage points on the PY 2012 indicated rate change. Exhibit Set G provides a summary of the calculation of the capital provision.

Please explain the line items in Tables G.1 and G.2 to show in detail how ICBC calculates the capital maintenance provision impact of +0.3 percentage points on the PY 2012 indicated rate change. Please show calculations with line and number references.

**Response:**

The capital maintenance provision is calculated in Exhibit G.2. Exhibit G.1 shows the allocation of the capital provision to the Basic insurance coverages, which is used to produce actuarial rate indications for the individual coverages, but this allocation has no impact on the overall Basic insurance actuarial rate indication.

Attachment A – Capital Maintenance Provision Comparison shows the calculations of the capital maintenance provision for policy years 2010 and 2012, using the figures in Exhibit G.2. It also shows that the capital maintenance provision has increased by \$1.80 per policy. The following table demonstrates how the \$1.80 increase per policy leads to a +0.3 percentage points rise in the policy year 2012 actuarial rate indication:

		<b>Value</b>	<b>Reference</b>
(1)	Capital maintenance provision increase per policy	1.80	Attachment A
(2)	Premium per policy (\$)	697	2012.1. RR BCUC.27.1
(3)	Premium Tax Rate	4.4%	Chapter 3, Exhibit A 1.1
(4)	Rate Impact = (1) / [(2) x [1-(3)]]	0.3%	



# **2012.1 RR BCUC.21.1 – Attachment A – Capital Maintenance Provision Comparison**

**Insurance Corporation of British Columbia**

**Capital Maintenance Provision**

	(a)	(b)	(c) = (b)-(a)	<u>Reference / Formula</u>
	<u>Policy Year</u>			
	<u>2010</u>	<u>2012</u>		
(1) Minimum Capital Required (\$ 000's)	972,339	971,364		Exhibit G.2 row (b)*
(2) Transient Target MCT Ratio	106.0%	109.0%		100% + 1.5% x (Policy Year - 2006)
(3) Transient Required Capital Target	1,030,679	1,058,787		(1) * (2)
(4) Growth in Capital Required	3.0%	3.5%		Exhibit G.2 row (i)*
(5) Capital Maintenance Provision (\$ 000's)	30,759	36,778		(3) * (4)
(6) Projected Exposure	2,935,386	2,994,622		2012.1 RR BCUC.6.1 Attachment A Row (3)
(7) Capital Maintenance Provision per exposure (\$)	10.48	12.28	1.80	(5) / (6)

\* Policy Year 2010 information from Exhibit G.2 of the 2010 Streamlined Revenue Requirements Application  
 Policy Year 2012 information from Exhibit G.2 of the Revenue Requirements Application for the 2012 Policy Year

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**2012.1 RR BCUC.22.1 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-1 to 3A-5  
Prospective Adjustments Criteria**

**On p. 3A-1, ICBC notes that five criteria are used by ICBC to determine whether a prospective change with an impact on future claims costs has a meaningful and quantifiable effect in the prospective policy year. Prospective changes that meet these criteria will be taken into account on an expected value basis in the estimation of claims costs related to policies to be written in a future period, which is a key part of the actuarial rate level indication analysis.**

**22.1 The criteria used to assess prospective adjustments appear to be very conservative while the criteria used to modify factors such as the BI frequency trend appear to be flexible. Would ICBC agree with this observation? Why or why not?**

**22.1.1 Given the above observation, would these assessment criteria generally increase the PY 2012 rate indication? Please discuss.**

**Response:**

**22.1**

ICBC does not agree with the observation that adjusting for historical factors that affect trends is more flexible than adjusting for future factors. It is equally important to make a prospective adjustment for quantifiable impacts that are expected to occur (e.g., Intersection Safety Camera program) as it is to give consideration to factors that have occurred and are not expected to reoccur during the prospective policy period (e.g., low travel amounts seen during the recession). In both cases, ICBC actuaries take an evidence based approach that is consistent with accepted actuarial practice.

There may be a perception of more flexibility in the treatment of historical factors, but this is simply due to the nature of history; it has been observed so that evidence is available. Future events are less likely to be known in advance, and evidence is harder to come by.

In either case, there is limited flexibility, as accepted actuarial practice requires an actuary to give consideration to known factors, either historical or future, that could affect trends. ICBC actuaries base their approach on evidence, and not on speculation.

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**22.1.1**

ICBC maintains that its actuarial rate indication is biased neither high nor low, but rather represents the best estimate of the rate level that is required to cover all costs associated with Basic insurance for the policy year. With respect to the criteria by which prospective adjustments are assessed, ICBC considers that they are appropriate and not conservative, and that they are in accord with accepted actuarial practice.

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**2012.1 RR BCUC.22.2 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-1 to 3A-5  
Prospective Adjustments Criteria**

**On p. 3A-1, ICBC notes that five criteria are used by ICBC to determine whether a prospective change with an impact on future claims costs has a meaningful and quantifiable effect in the prospective policy year. Prospective changes that meet these criteria will be taken into account on an expected value basis in the estimation of claims costs related to policies to be written in a future period, which is a key part of the actuarial rate level indication analysis.**

**On p. 3A-5, ICBC notes that an informal threshold significance of \$5 million has been used. This is equivalent to an impact of 0.25% of the Basic rate level. Could there be several programs below this threshold that in aggregate would result in a meaningful impact on the Basic rate level? Please discuss.**

**Response:**

Although an informal threshold is used to assist in determining the significance of prospective changes, this does not represent a firm cutoff and is not intended to exclude prospective costs or savings solely based on their dollar value. No candidate events would be excluded from consideration as prospective adjustments solely based on the criterion of significance. It is ICBC's intent to ensure that any significant and estimable impact from future events is accounted for in the actuarial rate indication analysis.

If there were several future events which could result in incremental claims costs or savings, ICBC would determine the appropriate action to take in order to ensure that any significant impact from these future events is accounted for. This could include estimating the future impact of multiple programs as a group, or focusing efforts on the programs which are most amenable to estimation. The specific approach would depend on the particular circumstances involved.

This situation is not currently the case with respect to the Application.

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**2012.1 RR BCUC.23.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Appendix 3 A, Section C.3.4, p. 3A-13  
Prospective Adjustments**

**ICBC indicates that based on the analysis of crashes and covariate trends over time, construction of the Sea-to-Sky Highway showed no statistically significant reduction in crashes.**

**On p. 3A-13, ICBC also notes that there were 5.5 (12.8%) fewer casualty crashes and 0.5 (0.5%) fewer Property Damage Only (PDO) crashes per quarter after completion of the Sea-to-Sky Highway Improvement Project, and that these differences were not statistically significant.**

**Please demonstrate how 12.8% fewer casualty crashes and 0.5% fewer PDO crashes after completion of the Sea-to-Sky Highway Improvement Project is not statistically significant.**

**Response:**

Standard hypothesis testing procedures were used to determine whether the observed changes in crash counts after the completion of the Sea-to-Sky Highway Improvement Project were statistically significant. To decide whether outcomes such as 5.5 fewer casualty crashes per quarter and 0.5 fewer property damage only (PDO) crashes per quarter are statistically significant, the probability of such events occurring by chance is computed. Specific test statistics are used to compute the probabilities. These statistics take into account the magnitude of the observed change, the number of quarters included in the analysis, and the amount of variability in the data from quarter to quarter. Small probability values (for example, values less than 0.05), indicate that the observed outcomes are inconsistent with a hypothesis of no effect, and would lead to a conclusion of statistical significance. The criterion value of 0.05 is a value commonly used by statisticians to make these kinds of decisions.

In ICBC's study of the Sea-to-Sky Highway Improvement Project it observed 5.5 (12.8%) fewer casualty crashes and 0.5 (0.5%) fewer PDO crashes after the project was completed. Applying the standard statistical procedures outlined above, ICBC was unable to conclude that these reductions were not chance occurrences. For casualty crashes, the probability that the observed reduction of 5.5 crashes occurred by chance was found to be 0.32 and for the PDO crashes it was 0.96. Both values are larger than the criterion value of 0.05 indicating that they are not statistically significant.

The actual calculations to determine the statistical significance for casualty and PDO crashes are provided in the following table:

Statistical Information	Casualty Crashes	PDO Crashes	Calculations
Mean After	37.3	97.9	
Number of Observations After	5	5	
Mean Before	42.8	98.4	
Number of Observations Before	5	5	
Mean Difference	-5.5	-0.5	(1)
Pooled Standard Error	5.2	9.7	(2)
Test Statistic	t=-1.07	t=-.05	(1)/(2)
p-value	0.32	0.96	Based on a t distribution with (8 degrees of freedom)

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**2012.1 RR BCUC.24.1 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, Section C.3, pp. 3A-8 to 3A-16  
Safety Report, Sea to Sky Highway: Section 1 Summary of Safety Performance  
Evaluation, by Paul de Leur, Ph.D., P.Eng.  
Sea-to-Sky Highway Improvement Project**

On p. 3A-16, ICBC concludes that it was appropriate not to make prospective adjustment for the Sea-to-Sky Highway Improvement Project in the claims forecast. At this time insufficient evidence is available to conclude that an effect attributable to the Sea-to-Sky Highway Improvement Project has occurred, and the observed changes in crash rates would not have had a significant effect on claims costs.

A safety report by Paul de Leur, Ph.D., P.Eng., titled “Sea to Sky Highway: Section 1 Summary of Safety Performance Evaluation” (Report) uses prediction models and collision modification factors to estimate the number of collisions that are expected to occur on the highway. The Report notes that the collision prediction models were developed in BC, using BC-specific data and as such, are applicable for use on the Sea to Sky Highway.

The Report provides the following Summary of Results:

*“Summary of Results:*

*Four options for Section 1 of the Sea to Sky Highway Improvement Project were evaluated, with Options B (4-Upslope Lanes) and Option D (2-way, 2-lane tunnel) emerging as options for further discussion. Option B assumed that 90% of the traffic would use the new alignment and 10% would use the old existing alignment. Option D assumed that for the first 20 years of service, that 80% of the traffic would use the tunnel and 20 percent would use the old existing alignment. After 20 years and due to the capacity restrictions, that this split would shift to 70/30.*

*Using these traffic volume assumptions, it was determined that Option B is expected to have \$22.9M in collision costs (present value), while Option D is expected to have \$37.8M in collision costs (present value), indicating that Option B is preferable from a safety perspective. The difference in safety performance between Option B and Option D can largely be attributed to the number of lanes, with the four-lane facility expected to perform better than a two-lane facility. In addition, due to the limiting capacity of the two lanes associated with Option D, more traffic uses the existing surface alignment through Horseshoe Bay, and this traffic will be subjected to a road with less desirable road design features (as compared to Option B), which results in an increase the expected number of collisions.”*

Source: [http://www.th.gov.bc.ca/seatosky/safety/Summary\\_Safety\\_STS\\_Section\\_1.pdf](http://www.th.gov.bc.ca/seatosky/safety/Summary_Safety_STS_Section_1.pdf)

Please confirm, or explain otherwise, that ICBC in its prospective adjustments assessment of the Sea-to-Sky Highway Improvement Project has considered the above

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**safety report by Paul de Leur in assessing potential collision costs reduction for PY 2012.**

**Response:**

The referenced report by Paul de Leur was produced for the Ministry of Transportation in 2004 and, as far as is known, was not shared with ICBC. Since ICBC was not aware of the report, it was not considered in the assessment of the Sea-to-Sky Highway.

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**2012.1 RR BCUC.24.2 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, Section C.3, pp. 3A-8 to 3A-16  
Safety Report, Sea to Sky Highway: Section 1 Summary of Safety Performance  
Evaluation, by Paul de Leur, Ph.D., P.Eng.  
Sea-to-Sky Highway Improvement Project**

On p. 3A-16, ICBC concludes that it was appropriate not to make prospective adjustment for the Sea-to-Sky Highway Improvement Project in the claims forecast. At this time insufficient evidence is available to conclude that an effect attributable to the Sea-to-Sky Highway Improvement Project has occurred, and the observed changes in crash rates would not have had a significant effect on claims costs.

A safety report by Paul de Leur, Ph.D., P.Eng., titled “Sea to Sky Highway: Section 1 Summary of Safety Performance Evaluation” (Report) uses prediction models and collision modification factors to estimate the number of collisions that are expected to occur on the highway. The Report notes that the collision prediction models were developed in BC, using BC-specific data and as such, are applicable for use on the Sea to Sky Highway.

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***Four options for Section 1 of the Sea to Sky Highway Improvement Project were evaluated, with Options B (4-Upslope Lanes) and Option D (2-way, 2-lane tunnel) emerging as options for further discussion. Option B assumed that 90% of the traffic would use the new alignment and 10% would use the old existing alignment. Option D assumed that for the first 20 years of service, that 80% of the traffic would use the tunnel and 20 percent would use the old existing alignment. After 20 years and due to the capacity restrictions, that this split would shift to 70/30.***

***Using these traffic volume assumptions, it was determined that Option B is expected to have \$22.9M in collision costs (present value), while Option D is expected to have \$37.8M in collision costs (present value), indicating that Option B is preferable from a safety perspective. The difference in safety performance between Option B and Option D can largely be attributed to the number of lanes, with the four-lane facility expected to perform better than a two-lane facility. In addition, due to the limiting capacity of the two lanes associated with Option D, more traffic uses the existing surface alignment through Horseshoe Bay, and this traffic will be subjected to a road with less desirable road design features (as compared to Option B), which results in an increase the expected number of collisions.”***

Source: [http://www.th.gov.bc.ca/seatosky/safety/Summary\\_Safety\\_STS\\_Section\\_1.pdf](http://www.th.gov.bc.ca/seatosky/safety/Summary_Safety_STS_Section_1.pdf)

Please provide an analysis or demonstration that considers the available data related to the Sea-to-Sky Highway Improvement Project and the Ministry of Transportation project justification, including data from the ICBC Business Information Warehouse, in

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**combination with similar prediction models and collision modification factors that were analyzed in the above Sea-to-Sky Highway safety report.**

**Response:**

An assessment of the Sea-to-Sky Highway Improvement Project using all of the different data sources mentioned above is not feasible at this time. The de Leur summary report was very brief and did not include any details on the specific prediction models, modification factors, or assumptions used in the analysis. In addition, some of the elements included in the summary report would not be applicable to a claims assessment. Specifically, the dollar amounts used to estimate fatal, injury, and property damage only collision costs far exceed ICBC average claims costs for the same types of incidents. ICBC is attempting to locate a copy of the full report, but it has not yet been obtained.

The de Leur report does, however, describe a common approach for estimating costs and savings expected from planned road improvement projects. It was not used in the current situation due to a lack of relevant traffic volume data during and after the completion of the project. Traffic volume is one of the key variables used to predict crash expectations in this type of collision prediction model. As noted by ICBC in Appendix 3 A of the Application, traffic volume data between Horseshoe Bay and Squamish were incomplete and not available at all in the post-construction period. In fact, no traffic data were available along this section of the highway after 2006. Without appropriate traffic volume data, models of the type referred to in the de Leur report would be no more likely to produce reliable estimates of claims costs or savings than the evaluation approach described in Appendix 3 A.

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**2012.1 RR BCUC.24.3 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, Section C.3, pp. 3A-8 to 3A-16  
Safety Report, Sea to Sky Highway: Section 1 Summary of Safety Performance  
Evaluation, by Paul de Leur, Ph.D., P.Eng.  
Sea-to-Sky Highway Improvement Project**

On p. 3A-16, ICBC concludes that it was appropriate not to make prospective adjustment for the Sea-to-Sky Highway Improvement Project in the claims forecast. At this time insufficient evidence is available to conclude that an effect attributable to the Sea-to-Sky Highway Improvement Project has occurred, and the observed changes in crash rates would not have had a significant effect on claims costs.

A safety report by Paul de Leur, Ph.D., P.Eng., titled “Sea to Sky Highway: Section 1 Summary of Safety Performance Evaluation” (Report) uses prediction models and collision modification factors to estimate the number of collisions that are expected to occur on the highway. The Report notes that the collision prediction models were developed in BC, using BC-specific data and as such, are applicable for use on the Sea to Sky Highway.

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***Using these traffic volume assumptions, it was determined that Option B is expected to have \$22.9M in collision costs (present value), while Option D is expected to have \$37.8M in collision costs (present value), indicating that Option B is preferable from a safety perspective. The difference in safety performance between Option B and Option D can largely be attributed to the number of lanes, with the four-lane facility expected to perform better than a two-lane facility. In addition, due to the limiting capacity of the two lanes associated with Option D, more traffic uses the existing surface alignment through Horseshoe Bay, and this traffic will be subjected to a road with less desirable road design features (as compared to Option B), which results in an increase the expected number of collisions.”***

Source: [http://www.th.gov.bc.ca/seatosky/safety/Summary\\_Safety\\_STS\\_Section\\_1.pdf](http://www.th.gov.bc.ca/seatosky/safety/Summary_Safety_STS_Section_1.pdf)

Please explain how ICBC confirms that the existing criteria used to assess the impact of the Sea-to-Sky Highway Improvement Project are appropriate to consider as a prospective adjustment.

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**Response:**

To ensure that prospective adjustments are based on evidence and not speculative costs and savings, ICBC assesses projects using five criteria to confirm their inclusion in claims forecasts. These criteria include: project timing, causal link with claims outcomes, an expectation of incremental costs or savings (beyond what is already included in the loss trends), and identification of project effects on claims that are estimable and significant.

These criteria are considered by ICBC to be reasonable and appropriate for any event that would likely be considered for a prospective adjustment, whether related to road improvements, new transit systems, driver-based road safety initiatives, claims initiatives, or legislative changes such as the HST. Their systematic application helps to ensure that the prospective adjustment process is based on credible evidence and not subject to speculative costs and savings.

ICBC continues to review and develop its framework for the application of prospective adjustments to new highway improvement projects, and other events. To increase the likelihood that crucial data, such as traffic volume, are collected at appropriate times and locations, plans for estimating projected claims effects need to be developed early in the project development cycle. Appropriate baseline or control measures and data collection processes need to be identified and implemented prior to the onset of the project. This requires a high degree of coordination that is not always attainable when an external agency, rather than ICBC, is sponsoring the project. However, as observed with the Sea-to-Sky Highway Improvement Project, early involvement in the planning process is crucial; it is often too late to find ways to obtain essential data or to control for confounding factors once a project has been completed.

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**2012.1 RR BCUC.24.4 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, Section C.3, pp. 3A-8 to 3A-16  
Safety Report, Sea to Sky Highway: Section 1 Summary of Safety Performance  
Evaluation, by Paul de Leur, Ph.D., P.Eng.  
Sea-to-Sky Highway Improvement Project**

On p. 3A-16, ICBC concludes that it was appropriate not to make prospective adjustment for the Sea-to-Sky Highway Improvement Project in the claims forecast. At this time insufficient evidence is available to conclude that an effect attributable to the Sea-to-Sky Highway Improvement Project has occurred, and the observed changes in crash rates would not have had a significant effect on claims costs.

A safety report by Paul de Leur, Ph.D., P.Eng., titled “Sea to Sky Highway: Section 1 Summary of Safety Performance Evaluation” (Report) uses prediction models and collision modification factors to estimate the number of collisions that are expected to occur on the highway. The Report notes that the collision prediction models were developed in BC, using BC-specific data and as such, are applicable for use on the Sea to Sky Highway.

The Report provides the following Summary of Results:

*“Summary of Results:*

*Four options for Section 1 of the Sea to Sky Highway Improvement Project were evaluated, with Options B (4-Upslope Lanes) and Option D (2-way, 2-lane tunnel) emerging as options for further discussion. Option B assumed that 90% of the traffic would use the new alignment and 10% would use the old existing alignment. Option D assumed that for the first 20 years of service, that 80% of the traffic would use the tunnel and 20 percent would use the old existing alignment. After 20 years and due to the capacity restrictions, that this split would shift to 70/30.*

*Using these traffic volume assumptions, it was determined that Option B is expected to have \$22.9M in collision costs (present value), while Option D is expected to have \$37.8M in collision costs (present value), indicating that Option B is preferable from a safety perspective. The difference in safety performance between Option B and Option D can largely be attributed to the number of lanes, with the four-lane facility expected to perform better than a two-lane facility. In addition, due to the limiting capacity of the two lanes associated with Option D, more traffic uses the existing surface alignment through Horseshoe Bay, and this traffic will be subjected to a road with less desirable road design features (as compared to Option B), which results in an increase the expected number of collisions.”*

Source: [http://www.th.gov.bc.ca/seatosky/safety/Summary\\_Safety\\_STS\\_Section\\_1.pdf](http://www.th.gov.bc.ca/seatosky/safety/Summary_Safety_STS_Section_1.pdf)

What level of information is required to result in a prospective adjustment for the Sea-to-Sky Highway Improvement Project? Please discuss.

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**Response:**

The following information, obtained prior to the completion of the project, would be the minimum required to meet criteria for a Sea-to-Sky Highway prospective adjustment:

- Valid, reliable, and applicable estimates of expected collision effects obtained from other jurisdictions or from the sponsoring agency in BC (for example, from the Ministry of Transportation).

or,

- Valid and reliable measures of traffic volume and speed data at sites along the Sea-to-Sky Highway relevant to the construction project, and at appropriate points in time, and estimates of expected traffic volume and speed impacts following completion.
- Appropriate control or baseline data obtained using suitable comparison highways and prediction models that would adequately capture the expected impacts of the variety of anticipated highway project improvements on relationships between traffic volume, speed, and collision outcomes.

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**2012.1 RR BCUC.25.1 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-16 to 3A-22  
Canada Line Project**

**On p. 3A-22, ICBC concludes that it was appropriate not to make prospective adjustment for the Canada Line project in the claims forecast. The evidence does not support an expectation of claims impacts attributable to the Canada Line.**

**On p. 3-6, ICBC claims that the logic model for evaluating the impact of the Canada Line on crash claims is weak and that evidence does not support a change in traffic volumes related to the completion of the Canada Line. However, as shown in Figure 3A.6, ICBC notes that after completion of the Canada Line, ridership began to increase at a more rapid rate.**

**Please discuss whether the existing criteria to determine prospective adjustments and analysis are appropriate to this project. Would there be alternatives to consider prospective adjustments?**

**Response:**

As discussed in the response to information request 2012.1 RR BCUC.24.3, ICBC considers that the criteria used to assess projects for inclusion as prospective adjustments in claims forecasts are appropriate for any event that would be expected to impact these forecasts, whether related to road improvements, new transit systems such as the Canada Line, driver-based road safety initiatives, claims initiatives, or legislative changes such as the HST. The systematic application of appropriate criteria helps to ensure that the prospective adjustment process is based on credible evidence and not subject to speculative costs and savings. The criteria used by ICBC include: project timing, causal link with claims outcomes, an expectation of incremental costs or savings (beyond what is already included in the trend line), and identification of project effects on claims that are estimable, and significant.

The criteria ICBC uses for prospective adjustments are consistent with accepted actuarial practice, and were developed in order to ensure that the best estimate claims cost forecasts would be unbiased and evidence-based, and not affected by double-counting or speculative estimates of claims costs or savings. While alternative criteria could also be designed to meet this purpose, ICBC believes that any reasonable alternative criteria would include consideration of the same basic elements, in order to arrive at a claims cost forecast that is based on evidence and consistent with accepted actuarial practice.

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**2012.1 RR BCUC.26.1 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-6 and 3A-29  
Exhibit B-1-1, Chapter 10, Section D, p. 10-14  
News Release, B.C.'s distracted driving laws saves lives, Ministry of Public Safety and  
Solicitor General  
PED Ban and Distracted Driving Awareness Campaign**

ICBC on pp. 3A-6 and 3A-29, respectively states:

- ***“PED Ban. Specific effects are not currently estimable in BC or in other jurisdictions. Crucial data required to conduct a credible evaluation are not available in BC at this time, and the research conducted in other jurisdictions is limited and contradictory.”***
- ***“No prospective adjustment for the potential impact of the 2010 PED ban should have been included in the claims forecast for 2010 or 2011. Current research does not yet support any assessment of savings related to the legislation enacted in BC.”***

A news release by the Ministry of Public Safety and Solicitor General dated January 6, 2012 titled “B.C.’s distracted driving law saves lives” states:

***“B.C.’s comprehensive distracted driving law is estimated to have saved 16 lives and brought about a 12 per cent reduction in the number of serious injuries since the law was introduced two years ago...”***

***From Feb. 1, 2010 to July 31, 2011, fatalities related to distracted driving dropped by 12 per cent. Serious injuries related to distracted driving went down 12 per cent when compared to deaths and serious injuries between Feb. 1, 2008 and July 31, 2009...***

***Each year, police, ICBC and road safety partners join together to help raise awareness about the dangers of distracted driving and how we can all help make our roads safer by making smart decisions...”***

Source: [http://www2.news.gov.bc.ca/news\\_releases\\_2009-2013/2012PSSG0002-000007.htm](http://www2.news.gov.bc.ca/news_releases_2009-2013/2012PSSG0002-000007.htm)

Is ICBC aware of the data cited in the above news release of fatalities and serious injuries related to distracted driving?

Response:

Yes, ICBC is aware of the data cited in the January 6, 2012 news release. ICBC provided the data to the Ministry for use in the release. Please see Attachment A – [Request 2010RDS0870-8 Distractions](#). It should also be noted that there was a subsequent news release (please see

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Attachment B – Distraction – Correction, also dated January 6, 2012). This second news release drew attention to the fact that the number of distraction-related fatalities referred to in the original report included all sources of distraction, not just personal electronic device use. BC’s distracted driving strategy is further discussed in the response to information request 2012.1 RR BCUC.26.4.



## **2012.1 RR BCUC.26.1 – Attachment A – Request 2010RDS0870-8 Distractions**



**Insurance Corporation of British Columbia**

*Business Insights - Road Safety*  
Room 610, 221 West Esplanade  
North Vancouver, BC V7M 3J3

**Report #:** 2010RDS0870-8 Version 8  
**Report Title:**

Crashes and victims associated with the following contributing factors - Use of Communication/Video Equipment, Driver Inattentive and Driver Internal/External Distraction

**Approvals:** This report has been approved for release to < **OSMV** >, by the Communications Division at ICBC.

! Please contact your ICBC representative if you want to share any portions of the data within, with other parties for which the report was not originally intended. Any intentional violation of this policy may result in discipline.

**Requested By:** Jamie Campbell on behalf of Neil Arason (OSMV)  
**Requested On:** 29-Dec-11

**Prepared By:** Dana Smatanova  
**Completion Date:** 29-Dec-11

**Data Source:** Business Information Warehouse  
**Data As Of:** Nov. 2011 month end

**Synopsis of Request:** Count of crashes, fatal victims, injured victims and seriously injured victims associated with the following contributing factors - Use of Communication/Video Equipment, Driver Inattentive and Driver Internal/External Distraction.

**Disclaimer:** This report is intended to provide general information only and should not be viewed as an "audited, or otherwise formally validated" report. In addition, this report and all of the information it contains is provided "as is" without warranty of any kind, whether express or implied. Any reliance on this report or on any information it contains, is solely at the user's own risk. ICBC disclaims all responsibility for all consequences of any person acting on, or refraining from acting on, this report or any of the information contained in this report. The provision of this report does not indicate or in any way imply ICBC's support, authorization or endorsement of any use which the user may make of it or of any information contained in it.

**Caveats:** Data Settling:  
Numbers will continue to change, especially for the most recent time periods, because of reporting, and corrections and adjustments.

Locations:  
Accurate and verifiable information is not always available, therefore precise mapping of incidents to locations is not always possible. Counts by location should not be considered comprehensive.

**Title: Crashes and Victims for select contributing factors****Period: Feb. 1 2008 - Jul. 31 2009 vs Feb. 1 2010 - Jul. 31 2011, as of Nov 2011 month end****Location: British Columbia****Reported by: Police**

<b>All Police Attended Crashes - contributing factors not considered</b>				
<b>Year</b>	<b>Crashes</b>	<b>Fatal Victims</b>	<b>Injured Victims</b>	<b>Seriously Injured Victims*</b>
2008-2009^	21,925	521	29,786	2,910
2010-2011^	21,518	456	29,329	2,491

<b>Use of Communication/Video Equipment - 34</b>				
<b>Year</b>	<b>Crashes</b>	<b>Fatal Victims</b>	<b>Injured Victims</b>	<b>Seriously Injured Victims*</b>
2008-2009^	80	1	96	11
2010-2011^	50	1	68	4

<b>Driver Internal/External Distraction - 86</b>				
<b>Year</b>	<b>Crashes</b>	<b>Fatal Victims</b>	<b>Injured Victims</b>	<b>Seriously Injured Victims*</b>
2008-2009^	824	10	1,198	100
2010-2011^	790	16	1,153	89

<b>Driver Inattentive - 85</b>				
<b>Year</b>	<b>Crashes</b>	<b>Fatal Victims</b>	<b>Injured Victims</b>	<b>Seriously Injured Victims*</b>
2008-2009^	8,071	127	11,161	883
2010-2011^	8,482	105	11,773	778

<b>Use of Communication/Video Equipment - 34 Driver Internal/External Distraction - 86 Driver Inattentive - 85</b>				
<b>Year</b>	<b>Crashes</b>	<b>Fatal Victims</b>	<b>Injured Victims</b>	<b>Seriously Injured Victims*</b>
2008-2009^	8,975	138	12,455	994
2010-2011^	9,322	122	12,994	871

**Notes:**

2008-2009^ Feb. 1 2008 to Jul. 31 2009 only.

2010-2011^ Feb. 1 2010 to Jul. 31 2011 only.

Fatal victim counts for 2010 and 2011 are preliminary.

\* Seriously Injured Victims are a subset of Injured Victims.

Property-damage-only crashes are excluded.

Police can assign up to 4 contributing factors per entity (vehicle, cyclist, pedestrian) involved in an accident. This report is hierarchical; if more than one of the subject contributing factors (34, 86 or 85) are assigned, the accident report and its victims are categorized only once in the following order: in 34 first, then 86 and lastly 85.



## **2012.1 RR BCUC.26.1 – Attachment B – Distraction Correction**

## CORRECTION

Jan. 6, 2012

Ministry of Public Safety and Solicitor General

### **B.C.'s distracted driving law saves lives**

In reviewing the information shared publicly regarding distracted driving statistics, the Ministry Public Safety and Solicitor General wishes to clarify that the 16 lives saved from Feb 2010 to July 2011 encompasses the broad range of distracted driving, of which cell phone/electronic device use is a component.

The statistic is not specific to use of cell phones/electronic devices, but includes other factors that may distract drivers such as reading a map or GPS, adjusting stereos or CDs, or tending to children. However, we know that use of cell phones/electronic devices is one of the most serious distractions and has the most significant of consequences.

The ministry is providing this clarification and apologizes for any confusion that may have been caused by the news release.

We are pleased that there has been a reduction in the number of deaths attributed to distracted driving and will continue to work hard to emphasize the importance of reducing any distractions, including use of cell phones/electronic devices.

The collection of data around distracted driving caused by the use of cell phones/electronic devices is challenging, and so looking at only the very small number of cases where police reported “communication/video equipment” as a definite contributing factor under-reports the issue.

We remain committed to this legislation because we know that use of cell phones/electronic device while driving remains a leading cause of preventable deaths and serious injuries.

Contacts:

Marisa Adair  
250 920-8500

Media Line:  
250 213-3602

Connect with the Province of B.C. at [www.gov.bc.ca/connect](http://www.gov.bc.ca/connect)

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**2012.1 RR BCUC.26.2 Reference: PROSPECTIVE ADJUSTMENTS  
Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-6 and 3A-29  
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ICBC on pp. 3A-6 and 3A-29, respectively states:

- ***“PED Ban. Specific effects are not currently estimable in BC or in other jurisdictions. Crucial data required to conduct a credible evaluation are not available in BC at this time, and the research conducted in other jurisdictions is limited and contradictory.”***
- ***“No prospective adjustment for the potential impact of the 2010 PED ban should have been included in the claims forecast for 2010 or 2011. Current research does not yet support any assessment of savings related to the legislation enacted in BC.”***

A news release by the Ministry of Public Safety and Solicitor General dated January 6, 2012 titled “B.C.’s distracted driving law saves lives” states:

***“B.C.’s comprehensive distracted driving law is estimated to have saved 16 lives and brought about a 12 per cent reduction in the number of serious injuries since the law was introduced two years ago...”***

***From Feb. 1, 2010 to July 31, 2011, fatalities related to distracted driving dropped by 12 per cent. Serious injuries related to distracted driving went down 12 per cent when compared to deaths and serious injuries between Feb. 1, 2008 and July 31, 2009...***

***Each year, police, ICBC and road safety partners join together to help raise awareness about the dangers of distracted driving and how we can all help make our roads safer by making smart decisions...”***

Source: [http://www2.news.gov.bc.ca/news\\_releases\\_2009-2013/2012PSSG0002-000007.htm](http://www2.news.gov.bc.ca/news_releases_2009-2013/2012PSSG0002-000007.htm)

**26.2 Should the data cited in the above news release be considered “crucial data” to conduct a “credible evaluation” that were not available in BC at the time of ICBC’s Application filing?**

**26.2.1 If so, please re-evaluate ICBC’s prospective adjustments to the actuarial rate level indication analysis. Please calculate the new actuarial rate indication.**

**26.2.2 If not, please provide reasons to dismiss the data cited in the above news release.**

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## Response:

### 26.2

ICBC agrees that the number of fatal crashes involving driver distraction was lower in the 2010 to 2011 period than in the corresponding 2008 to 2009 period. However, this observation does not represent sufficient data to conduct a credible evaluation of the personal electronic device (PED) ban itself.

There are two requirements for a credible evaluation:

1. The ability to reliably measure the magnitude of a program effect.
2. The ability to attribute the effect to the specific program of interest.

For the following reasons, the data cited in the January 6, 2012 news release are not sufficient to meet these requirements.

First, the identification of crashes involving PED use is very difficult. As noted by the government in a news release issued later that same day (please see response to information request 2012.1 RR BCUC.26.1, Attachment B – Distractions – Correction), the collection of data around distracted driving caused by PED use is challenging. In fact, the number of fatalities reportedly involving the “Use of Communication/Video Equipment” (or PED) by a driver is extremely small (please see response to information request 2012.1 RR BCUC.26.1, Attachment A – Request 2010RDS0870-8 Distractions shows one fatality in each of the pre- and post-comparison periods). Furthermore, as noted in the Application, Chapter 10, page 10-15, the Traffic Accident System (TAS) data is currently the only source of information in BC about the human factors that contributed to any specific crash. A legislative change in 2008 means attendance by police at crashes is now at their discretion, resulting in a marked decrease in the number of police reports submitted to ICBC. While this change has not influenced the reporting of fatal collisions, it has influenced the reporting of non-fatal collisions. As a result, TAS data cannot be relied upon to evaluate general changes in collisions over time.

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Second, in conducting a credible evaluation it is desirable to control for other factors that may have influenced crash outcomes during the included time period (for example, other road safety initiatives, economic factors, weather, or changes in collision reporting). Consideration of other factors at play provides more information than a simple before and after comparison of crash counts. Due to the province-wide application of legislation and differences between BC and other jurisdictions, it is very difficult to identify appropriate comparative groups that would provide the necessary control required for the attribution of effects to the law itself or, more comprehensively, to the combined effects of the law, its enforcement and any education campaigns undertaken to increase awareness and understanding of the risks associated with PED use by drivers.

In the absence of such controls, and with the limited availability of contributing factor data on collisions, a credible evaluation would, at a minimum, need to demonstrate that the targeted driver behaviours (i.e., PED use) had been altered by the program as intended.

### **26.2.2**

ICBC does not dismiss the data discussed in the news release above. For the reasons noted above, the data are not sufficient to meet ICBC's criteria for a credible evaluation of the PED ban. These data do not enable ICBC to estimate or attribute the effects on claims that the PED ban might have.

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**2012.1 RR BCUC.26.3 Reference: PROSPECTIVE ADJUSTMENTS**  
**Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-6 and 3A-29**  
**Exhibit B-1-1, Chapter 10, Section D, p. 10-14**  
**News Release, B.C.'s distracted driving laws saves lives, Ministry of Public Safety and**  
**Solicitor General**  
**PED Ban and Distracted Driving Awareness Campaign**

ICBC on pp. 3A-6 and 3A-29, respectively states:

- ***“PED Ban. Specific effects are not currently estimable in BC or in other jurisdictions. Crucial data required to conduct a credible evaluation are not available in BC at this time, and the research conducted in other jurisdictions is limited and contradictory.”***
- ***“No prospective adjustment for the potential impact of the 2010 PED ban should have been included in the claims forecast for 2010 or 2011. Current research does not yet support any assessment of savings related to the legislation enacted in BC.”***

A news release by the Ministry of Public Safety and Solicitor General dated January 6, 2012 titled “B.C.’s distracted driving law saves lives” states:

***“B.C.’s comprehensive distracted driving law is estimated to have saved 16 lives and brought about a 12 per cent reduction in the number of serious injuries since the law was introduced two years ago...”***

***From Feb. 1, 2010 to July 31, 2011, fatalities related to distracted driving dropped by 12 per cent. Serious injuries related to distracted driving went down 12 per cent when compared to deaths and serious injuries between Feb. 1, 2008 and July 31, 2009...***

***Each year, police, ICBC and road safety partners join together to help raise awareness about the dangers of distracted driving and how we can all help make our roads safer by making smart decisions...”***

Source: [http://www2.news.gov.bc.ca/news\\_releases\\_2009-2013/2012PSSG0002-000007.htm](http://www2.news.gov.bc.ca/news_releases_2009-2013/2012PSSG0002-000007.htm)

Please confirm that ICBC has considered all data related to the PED Ban or BC’s distracted driving law.

Response:

ICBC has considered all of the data and information relevant to an assessment of BC’s personal electronic device legislation of which it is aware.

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**2012.1 RR BCUC.26.4 Reference: PROSPECTIVE ADJUSTMENTS**  
**Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-6 and 3A-29**  
**Exhibit B-1-1, Chapter 10, Section D, p. 10-14**  
**News Release, B.C.'s distracted driving laws saves lives, Ministry of Public Safety and Solicitor General**  
**PED Ban and Distracted Driving Awareness Campaign**

ICBC on pp. 3A-6 and 3A-29, respectively states:

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***Each year, police, ICBC and road safety partners join together to help raise awareness about the dangers of distracted driving and how we can all help make our roads safer by making smart decisions...”***

Source: [http://www2.news.gov.bc.ca/news\\_releases\\_2009-2013/2012PSSG0002-000007.htm](http://www2.news.gov.bc.ca/news_releases_2009-2013/2012PSSG0002-000007.htm)

ICBC on p. 10-14 notes that in January 2010, new provincial legislation took effect that limits/prohibits the use of hand-held cell phones and personal electronic devices while driving. As an enforceable driver behaviour, ICBC supported the introduction of the law by developing a public awareness campaign focusing on the details of the law and the risk the behaviour poses. Does ICBC expect the implementation of the Distracted Driving Awareness Campaign to have any impact on the trend lines of bodily injury frequency and severity? Why or why not?

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**Response:**

ICBC’s Road Safety programs incorporate multi-component approaches that focus on the use of combinations of strategies (for example, education, public awareness, and enforcement). Taken in totality, the combination of the Distracted Driving Awareness Campaign, the personal electronic device (PED) legislation, and police enforcement would be expected to contribute to a reduction in collisions, relative to what would have occurred without these initiatives. However, for the reasons described in the response to information request 2012.1 RR BCUC.26.2 and in Appendix 3 A of the Application, it is not currently possible to estimate the magnitude of the potential impacts of the PED ban on claims trends. For similar reasons it is not possible to isolate and evaluate the specific impacts of the associated Distracted Driving Awareness Campaign. As discussed in the response to information request 2012.1 RR BCUC.118.3, assessing the independent impacts of education and awareness campaigns on crash outcomes is inherently difficult and is not typically undertaken by ICBC.

It should be noted, however, that even if all of the PED program components had an impact on claims trends, that impact would have begun to occur early in 2010, when the ban was introduced. By 2011 and 2012, any continuing effects would be non-incremental and would be captured in current trends. ICBC actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. As a result, even if the amount of claims savings due to the PED program were estimable at the time of the rate indication analysis, no adjustment would have been included for policy year 2012 because the savings would not be incremental to the selected trends.

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**2012.1 RR BCUC.26.4.1 Reference: PROSPECTIVE ADJUSTMENTS**  
**Exhibit B-1, Chapter 3, Appendix 3 A, pp. 3A-6 and 3A-29**  
**Exhibit B-1-1, Chapter 10, Section D, p. 10-14**  
**News Release, B.C.'s distracted driving laws saves lives, Ministry of Public Safety and**  
**Solicitor General**  
**PED Ban and Distracted Driving Awareness Campaign**

ICBC on pp. 3A-6 and 3A-29, respectively states:

- ***“PED Ban. Specific effects are not currently estimable in BC or in other jurisdictions. Crucial data required to conduct a credible evaluation are not available in BC at this time, and the research conducted in other jurisdictions is limited and contradictory.”***
- ***“No prospective adjustment for the potential impact of the 2010 PED ban should have been included in the claims forecast for 2010 or 2011. Current research does not yet support any assessment of savings related to the legislation enacted in BC.”***

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***“B.C.’s comprehensive distracted driving law is estimated to have saved 16 lives and brought about a 12 per cent reduction in the number of serious injuries since the law was introduced two years ago...”***

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***Each year, police, ICBC and road safety partners join together to help raise awareness about the dangers of distracted driving and how we can all help make our roads safer by making smart decisions...”***

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**26.4.1 Please explain if ICBC has considered any potential claims savings that are attributable to the Distracted Driving Awareness Campaign when determining rate indication level analysis or prospective adjustments.**

**26.4.1.1 If so, how does the implementation of the Distracted Driving Awareness Campaign in years 2010 and 2011 affect the PY 2012 rate indication? Please explain the methodology and quantify the accompanying impact on the PY 2012 rate indication.**

**26.4.1.2 If not, please explain why ICBC is not taking into consideration its Distracted Driving Awareness Campaign for the PY 2012 rate indication.**

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**Response:**

**26.4.1**

ICBC has considered any potential claims savings that are attributable to the Distracted Driving Awareness Campaign, as well as the personal electronic device (PED) legislation and associated police enforcement, when determining the rate level indication for policy year 2012, based on the evidence available at the time of the actuarial rate level indication analysis.

**26.4.1.1**

As explained in the response to information request 2012.1 RR BCUC.26.4, any impact from the combination of the Distracted Driving Awareness Campaign, the PED legislation, and police enforcement would have begun to occur early in 2010, when the ban was introduced. ICBC actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. To the extent that there has been an impact from these programs in reducing Basic insurance claims, it has affected the data on which the frequency trends are based. Therefore, by the time of the policy year 2012 actuarial rate indication analysis, any such effect would have been captured in the loss trends. It should be noted that the frequency of bodily injury claims has actually risen in 2010 and 2011, which suggests that other factors have more than countered any favourable impact from the implementation of the PED program, as discussed further in the response to information request 2012.1 RR BCUC.38.1.

For the reasons outlined in the response to information requests 2012.1 RR BCUC.26.2 and 2012.1 RR BCUC.26.4, ICBC is not able to quantify the amount of savings attributable to the Distracted Driving Awareness Campaign that are included in the actuarial rate level indication analysis.

**26.4.1.2**

Please see the response to information request 2012.1 RR BCUC 26.4.1.1 above.

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**2012.1 RR BCUC.27.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Indicated Rate Level Change – Basic**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**Please provide the average premium of a policy (in \$ dollars) that an average policyholder pays at the current rate level and at the proposed PY 2012 rate level. Please show calculations.**

**Response:**

The average premium for policy year 2012 at the current rate level is estimated to be \$697. It is calculated as the projected policy year 2012 premium at current rate level of \$2,088,921,000 from Chapter 3, Exhibit A.0.0, divided by the forecast policy exposures, excluding trailers, of 2,994,621 from Exhibits B.1.1 and B.4.1.

The average premium at the proposed rate is \$775, which is the \$697 calculated above increased by 11.2%.

**2012.1 RR BCUC.27.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Indicated Rate Level Change – Basic**

Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.

27.2 In a table, please show the average premium of a policy (in \$ dollars) that is attributable to Plate Owner Basic third party liability, for each component: (i) Bodily Injury Liability including Underinsured, Uninsured and Unidentified Motorist (BI) and (ii) Property Damage Liability including Underinsured, Uninsured and Unidentified Motorist (PD), at the current rate level and at the proposed PY 2012 rate level.

27.2.1 In a table, please show the average premium of a policy for each BI and PD with historical median and average for the last five years.

**Response:**

ICBC does not record third party liability premium separately for bodily injury and property damage components. The requested historical data is provided for Plate Owner Basic third party liability in the table below.

**Plate Owner Basic Third Party Liability – Average and Median Premium**

	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Average Premium</b>	\$642	\$659	\$661	\$656	\$640
<b>Median Premium</b>	\$621	\$639	\$646	\$639	\$623

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**2012.1 RR BCUC.27.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Indicated Rate Level Change – Basic**

Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.

27.3 In a table, please show the average premium of a policy (in \$ dollars) that is attributable to Plate Owner Basic Part 7, for each component: (i) Medical & Rehabilitation (MR), (ii) Weekly Benefits (WB), and (iii) Death Benefits (DB), at the current rate level and at the proposed PY 2012 rate level.

27.3.1 In a table, please show the average premium of a policy for each MR, WB, and DB with historical median and average for the last five years.

**Response:**

ICBC does not record Part 7 premium separately for Medical & Rehabilitation, Weekly Benefits and Death Benefits components. The requested historical data is provided for Part 7 in the table below.

**Plate Owner Part 7 – Average and Median Premium**

	2007	2008	2009	2010	2011
<b>Average Premium</b>	\$73	\$62	\$56	\$55	\$54
<b>Median Premium</b>	\$71	\$58	\$57	\$56	\$56

**2012.1 RR BCUC.27.4 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Indicated Rate Level Change – Basic**

Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.

27.4 In a table, please show the average premium of a policy (in \$ dollars) that is attributable to each of the six components of coverage (as shown on p. 3-22, paragraph 58), at the current rate level and at the proposed PY 2012 rate level.

27.4.1 In a table, please show the average premium of a policy for each of the six components of coverage with historical median and average for the last five years.

**Response:**

ICBC does not record premium for Manual Basic coverages separately for the six components listed in Chapter 3, page 3-22, paragraph 58. Manual Basic premium is analyzed by two components:

- 1) “Third Party Liability / Part 7 coverage” combining Bodily Injury (BI), Property damage (PD), Accident Benefits (AB), and Death Benefits (DB).
- 2) “Collision and Specified Perils” for Garage policies.

The requested historical data is provided in the tables below:

**Manual Basic Third Party Liability / Part 7 Coverage – Average and Median Premium**

	2007	2008	2009	2010	2011
Average Premium	\$541	\$566	\$621	\$550	\$598
Median Premium	\$57	\$51	\$57	\$47	\$49

**Manual Basic Collision and Specified Perils – Average and Median Premium**

	2007	2008	2009	2010	2011
Average Premium	\$442	\$442	\$430	\$408	\$381
Median Premium	\$386	\$382	\$372	\$353	\$331

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The median premium for Third Party Liability/Part 7 coverage is much smaller than the average premium due to a large number of short-term, low premium policies. These policies represent approximately 60% of all Manual Basic policies count but only 10% of Manual Basic premium.

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**2012.1 RR BCUC.28.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Basic Insurance Premium Calculations**

**This Application presents an overall rate indication of +11.2%. This means that ICBC needs to collect 11.2% more Basic Insurance premium for the Policy Year beginning February 1, 2012 than it would collect by charging the current Basic Insurance rates.**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**Please provide the methodology or formula that ICBC will use to calculate the rate increase if the proposed rate indication of +11.2% (for Total Basic) is approved. Please show examples (any rate \$50 or less vs. any rate \$1,500 or more) with references to ICBC’s Basic Insurance Tariff schedules.**

**Response:**

Please see Attachment A – Basic Insurance Premium Calculations for the formula used by ICBC to apply the Basic insurance rate change, which is applied to four examples.



# 2012.1 RR BCUC.28.1 – Attachment A – Basic Insurance Premium Calculations



### Basic Insurance Premium Calculations

Rate Class	Territory	Coverage	Prior Schedule of Basic Insurance Premiums		Interim Rate Change %	Interim Rate Change \$	Interim Schedule of Basic Insurance Premiums	
			(1)		(2)	(3) = (1) x (2)	(4) = (1) + (3) Rounded to Whole \$	
005	L	Bodily Injury, \$200K	\$466	x	11.2%	=	\$52.19	\$518
		Property Damage, \$200K	\$123	x	11.2%	=	\$13.78	\$137
		No Fault	\$60	x	11.2%	=	\$6.72	\$67
		UMP	\$27	x	11.2%	=	\$3.02	\$30
		<b>Total Basic</b>	<b>\$676</b>					
007/027	D	Bodily Injury, \$200K	\$1,008	x	11.2%	=	\$112.90	\$1,121
		Property Damage, \$200K	\$267	x	11.2%	=	\$29.90	\$297
		No Fault	\$107	x	11.2%	=	\$11.98	\$119
		UMP	\$36	x	11.2%	=	\$4.03	\$40
		<b>Total Basic</b>	<b>\$1,418</b>					
035	S	Bodily Injury, \$200K	\$14	x	11.2%	=	\$1.57	\$16
		Property Damage, \$200K	\$4	x	11.2%	=	\$0.45	\$4
		No Fault	\$13	x	11.2%	=	\$1.46	\$14
		UMP	\$2	x	11.2%	=	\$0.22	\$2
		<b>Total Basic</b>	<b>\$33</b>					
013	H	Bodily Injury, \$200K	\$1,204	x	11.2%	=	\$134.85	\$1,339
		Property Damage, \$200K	\$319	x	11.2%	=	\$35.73	\$355
		No Fault	\$129	x	11.2%	=	\$14.45	\$143
		UMP	\$38	x	11.2%	=	\$4.26	\$42
		<b>Total Basic</b>	<b>\$1,690</b>					

Source: Basic Insurance Tariff, Schedule C: Schedule of Basic Insurance Premiums

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**2012.1 RR BCUC.28.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Basic Insurance Premium Calculations**

**This Application presents an overall rate indication of +11.2%. This means that ICBC needs to collect 11.2% more Basic Insurance premium for the Policy Year beginning February 1, 2012 than it would collect by charging the current Basic Insurance rates.**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**28.2 How does ICBC retain decimal places in its rate change calculations? Please demonstrate a ten-year horizon scenario and include any underlying assumptions.**

**28.2.1 Is the existing calculation methodology appropriate to reflect rate increases or decreases over time? Please elaborate.**

**Response:**

**28.2**

For policies other than the Manual policies addressed in information request 2012.1 RR. BCUC.28.4, the Application was calculated from coverage-level rate relativities maintained at the thousandth-decimal point (i.e., three decimal places). Please see Attachment A – Decimal Retention 10-year Horizon Examples, which demonstrates the impact over a 10-year horizon of steady rate changes. Example 1 displays the impact on a policy with common rating characteristics, and thus a common average premium; example 2 displays the impact on an extraordinary policy with extraordinarily low average premium. The assumptions underlying the demonstrations are stated in rows four through ten of the attachment.

**28.2.1**

The decimal place methodology underlying the Application is sufficient for calculating the aggregate revenue necessary for ICBC’s Basic insurance coverage. Ultimately, regardless of the number of decimal points retained, the coverage rate is rounded to the nearest whole dollar. For a demonstration of the impact please see columns (9), (10), (11), and (12) in Attachment A noted above, under the heading “Coverage Rate rounded to nearest integer”. Rounding to the nearest whole dollar is common insurance industry practice. The effect of rounding is that, on

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average, half of the coverage rates will round up and the other half of the coverage rates will round down and ICBC will receive its aggregate revenue need.

While ICBC believes the methodology underlying the Application is sufficient to reflect rate changes over time, ICBC also believes retaining three more decimal place would improve precision at the individual policy level. Therefore, ICBC will begin storing its coverage rate relativities at the millionth decimal place going forward.



# **2012.1 RR BCUC.28.2 – Attachment A – Decimal Retention 10-Year Horizon Examples**

**Decimal Retention 10-year Horizon - Examples**

**Example 1 - Rate Class 007/027, Territory D**

2.3% = Assumed annual Basic insurance rate change

Assumed starting rate relativity by coverage = Rate Class 007/027, Territory D (example taken from 2012.1 RR BCUC.28.1 Attachment A - Basic Insurance Premium Calculations)

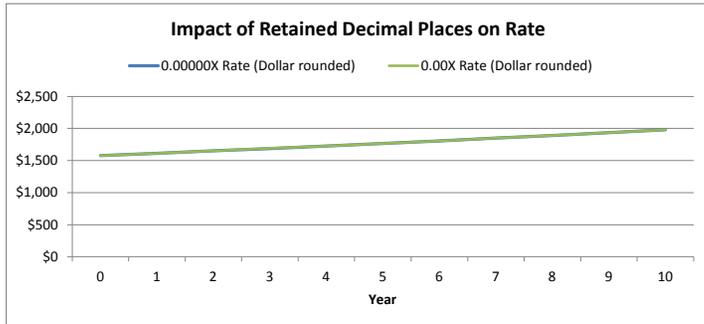
- 1.12100 = Bodily Injury (BI)
- 0.29700 = Property Damage (PD)
- 0.11900 = Part 7 Accident Benefits (AB)
- 0.04000 = Uninsured Motorist Protection (UMP)

**Scenario 1: Rate Relativity Rounded to the Thousandth Decimal, Coverage Rate Rounded to the Dollar**

		Rate Relativity (thousandth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.00X Rate (Dollar rounded)
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)
Assumed Annual Rate Chg	Year	BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP	
0	Year 0	1.121	0.297	0.119	0.040	1121.0000	297.0000	119.0000	40.0000	1,121	297	119	40	1,577
1.0230	Year 1	1.147	0.304	0.122	0.041	1147.0000	304.0000	122.0000	41.0000	1,147	304	122	41	1,614
1.0230	Year 2	1.173	0.311	0.125	0.042	1173.0000	311.0000	125.0000	42.0000	1,173	311	125	42	1,651
1.0230	Year 3	1.200	0.318	0.128	0.043	1200.0000	318.0000	128.0000	43.0000	1,200	318	128	43	1,689
1.0230	Year 4	1.228	0.325	0.131	0.044	1228.0000	325.0000	131.0000	44.0000	1,228	325	131	44	1,728
1.0230	Year 5	1.256	0.332	0.134	0.045	1256.0000	332.0000	134.0000	45.0000	1,256	332	134	45	1,767
1.0230	Year 6	1.285	0.340	0.137	0.046	1285.0000	340.0000	137.0000	46.0000	1,285	340	137	46	1,808
1.0230	Year 7	1.315	0.348	0.140	0.047	1315.0000	348.0000	140.0000	47.0000	1,315	348	140	47	1,850
1.0230	Year 8	1.345	0.356	0.143	0.048	1345.0000	356.0000	143.0000	48.0000	1,345	356	143	48	1,892
1.0230	Year 9	1.376	0.364	0.146	0.049	1376.0000	364.0000	146.0000	49.0000	1,376	364	146	49	1,935
1.0230	Year 10	1.408	0.372	0.149	0.050	1408.0000	372.0000	149.0000	50.0000	1,408	372	149	50	1,979

**Scenario 2: Rate Relativity Rounded to the Millionth Decimal, Coverage Rate Rounded to the Dollar**

		Rate Relativity (millionth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.00000X Rate (Dollar rounded)
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)
Assumed Annual Rate Chg	Year	BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP	
0	Year 0	1.121000	0.297000	0.119000	0.040000	1121.000	297.000	119.000	40.000	1,121	297	119	40	1,577
1.0230	Year 1	1.146783	0.303831	0.121737	0.040920	1146.783	303.831	121.737	40.920	1,147	304	122	41	1,614
1.0230	Year 2	1.173159	0.310819	0.124537	0.041861	1173.159	310.819	124.537	41.861	1,173	311	125	42	1,651
1.0230	Year 3	1.200142	0.317968	0.127401	0.042824	1200.142	317.968	127.401	42.824	1,200	318	127	43	1,688
1.0230	Year 4	1.227745	0.325281	0.130331	0.043809	1227.745	325.281	130.331	43.809	1,228	325	130	44	1,727
1.0230	Year 5	1.255983	0.332762	0.133329	0.044817	1255.983	332.762	133.329	44.817	1,256	333	133	45	1,767
1.0230	Year 6	1.284871	0.340416	0.136396	0.045848	1284.871	340.416	136.396	45.848	1,285	340	136	46	1,807
1.0230	Year 7	1.314423	0.348246	0.139533	0.046903	1314.423	348.246	139.533	46.903	1,314	348	140	47	1,849
1.0230	Year 8	1.344655	0.356256	0.142742	0.047982	1344.655	356.256	142.742	47.982	1,345	356	143	48	1,892
1.0230	Year 9	1.375582	0.364450	0.146025	0.049086	1375.582	364.450	146.025	49.086	1,376	364	146	49	1,935
1.0230	Year 10	1.407220	0.372832	0.149384	0.050215	1407.220	372.832	149.384	50.215	1,407	373	149	50	1,979



		Difference: 0.00X Rate - 0.0000X Rate	
		(14) = (13 Scenario1)	(13 Scenario 2)
Year	0	-	-
Year	1	-	-
Year	2	-	-
Year	3	1	1
Year	4	1	1
Year	5	-	-
Year	6	1	1
Year	7	1	1
Year	8	-	-
Year	9	-	-
Year	10	-	-

**Decimal Retention 10-year Horizon Examples**

**Example 2 - Rate Class O35, Territory S**

2.3% = Assumed annual Basic insurance rate change

Assumed starting rate relativity by coverage = Rate Class 007/027, Territory D (example taken from 2012.1 RR BCUC.28.1 Attachment A - Basic Insurance Premium Calculations)

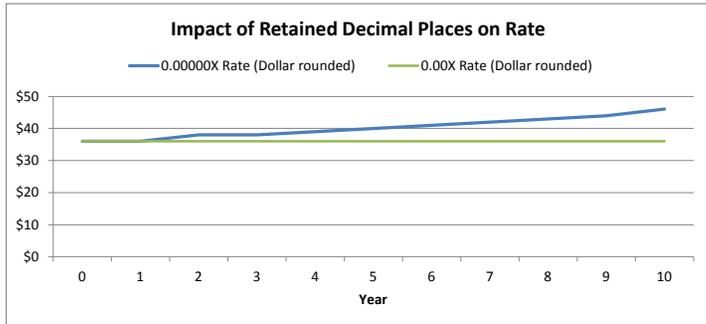
- 0.01600 = Bodily Injury (BI)
- 0.00400 = Property Damage (PD)
- 0.01400 = Part 7 Accident Benefits (AB)
- 0.00200 = Uninsured Motorist Protection (UMP)

**Scenario 1: Rate Relativity Rounded to the Thousandth Decimal, Coverage Rate Rounded to the Dollar**

		Rate Relativity (thousandth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.00X Rate (Dollar rounded)
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)
Year	Assumed Annual Rate Chg	BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP	
Year 0		0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 1	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 2	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 3	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 4	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 5	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 6	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 7	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 8	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 9	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36
Year 10	1.0230	0.016	0.004	0.014	0.002	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36

**Scenario 2: Rate Relativity Rounded to the Millionth Decimal, Coverage Rate Rounded to the Dollar**

		Rate Relativity (millionth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.00000X Rate (Dollar rounded)
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)
Year	Assumed Annual Rate Chg	BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP	
Year 0		0.016000	0.004000	0.014000	0.002000	16.000	4.000	14.000	2.000	16	4	14	2	36
Year 1	1.0230	0.016368	0.004092	0.014322	0.002046	16.368	4.092	14.322	2.046	16	4	14	2	36
Year 2	1.0230	0.016744	0.004186	0.014651	0.002093	16.744	4.186	14.651	2.093	17	4	15	2	38
Year 3	1.0230	0.017129	0.004282	0.014988	0.002141	17.129	4.282	14.988	2.141	17	4	15	2	38
Year 4	1.0230	0.017523	0.004380	0.015333	0.002190	17.523	4.380	15.333	2.190	18	4	15	2	39
Year 5	1.0230	0.017926	0.004481	0.015686	0.002240	17.926	4.481	15.686	2.240	18	4	16	2	40
Year 6	1.0230	0.018338	0.004584	0.016047	0.002292	18.338	4.584	16.047	2.292	18	5	16	2	41
Year 7	1.0230	0.018760	0.004689	0.016416	0.002345	18.760	4.689	16.416	2.345	19	5	16	2	42
Year 8	1.0230	0.019191	0.004797	0.016794	0.002399	19.191	4.797	16.794	2.399	19	5	17	2	43
Year 9	1.0230	0.019632	0.004907	0.017180	0.002454	19.632	4.907	17.180	2.454	20	5	17	2	44
Year 10	1.0230	0.020084	0.005020	0.017575	0.002510	20.084	5.020	17.575	2.510	20	5	18	3	46



Difference: 0.00X Rate - 0.0000X Rate		
(14) = (13 Scenario1) - (13 Scenario 2)		
Year 0		-
Year 1		-
Year 2		(2)
Year 3		(2)
Year 4		(3)
Year 5		(4)
Year 6		(5)
Year 7		(6)
Year 8		(7)
Year 9		(8)
Year 10		(10)

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**2012.1 RR BCUC.28.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Basic Insurance Premium Calculations**

**This Application presents an overall rate indication of +11.2%. This means that ICBC needs to collect 11.2% more Basic Insurance premium for the Policy Year beginning February 1, 2012 than it would collect by charging the current Basic Insurance rates.**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**28.3 Please re-demonstrate IR 28.2 if all decimal places are to be retained in the rate change calculation. Please compare and contrast results.**

**28.3.1 Is retaining all decimal places in the rate change calculation appropriate to reflect rate increases or decreases over time? Please compare and contrast with IR 28.2.1.**

**Response:**

**28.3**

Please see Attachment A – Impact of Decimal Retention – 10-Year Horizon for a demonstration on the impact of decimal place retention. The assumptions underlying each of the two examples are stated in rows four through ten of the attachment.

As discussed in the response to information request 2012.1 RR BCUC.28.2, ICBC will be retaining the millionth decimal place for coverage rate relativities on a go-forward basis. This future state is displayed in the upper panel of Attachment A (per Scenario 1). The lower panel of Attachment A (per Scenario 2) displays coverage rate relativities retained at the billionth decimal place. As seen in column (14) in the lowest right corner of Attachment A, there is no difference in the Basic insurance rate when maintaining decimal places at the millionth decimal place versus the billionth decimal place (i.e., no difference between six decimal places versus nine decimal places).

**28.3.1**

As demonstrated in Attachment A, there is no rate difference when retaining decimal places at the millionth decimal place versus the billionth decimal place. This is in contrast to information

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request 2012.1 RR BCUC.28.2 (specifically, 2012.1 RR BCUC.28.2.1) which exhibited differences from +/- \$1 over a 10-year horizon. Therefore, ICBC believes retaining rate relativities at the millionth decimal place is appropriate to reflect rate changes over time.



## **2012.1 RR BCUC.28.3 – Attachment A – Impact of Decimal Retention – 10-Year Horizon**



**Impact of Decimal Retention 10-year Horizon**  
**Example 1 (Rate Class 007/027, Territory D)**

2.3% = Assumed annual Basic insurance rate change

Assumed starting rate relativity by coverage = Rate Class 007/027, Territory D (example taken from 2012.1 RR BCUC.28.1 Attachment A - Basic Insurance Premium Calculations)

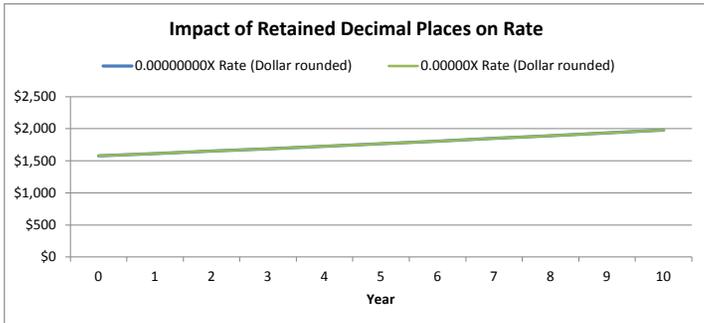
- 1.12100 = Bodily Injury (BI)
- 0.29700 = Property Damage (PD)
- 0.11900 = Part 7 Accident Benefits (AB)
- 0.04000 = Uninsured Motorist Protection (UMP)

**Scenario 1: Rate Relativity Rounded to the Millionth Decimal, Coverage Rate Rounded to the Dollar**

		Rate Relativity (millionth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.00000X Rate (Dollar rounded)
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)
Year	Assumed Annual Rate Chg	BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP	
Year 0		1.121000	0.297000	0.119000	0.040000	1121.0000	297.0000	119.0000	40.0000	1,121	297	119	40	1,577
Year 1	1.0230	1.146783	0.303831	0.121737	0.040920	1146.7830	303.8310	121.7370	40.9200	1,147	304	122	41	1,614
Year 2	1.0230	1.173159	0.310819	0.124537	0.041861	1173.1590	310.8190	124.5370	41.8610	1,173	311	125	42	1,651
Year 3	1.0230	1.200142	0.317968	0.127401	0.042824	1200.1420	317.9680	127.4010	42.8240	1,200	318	127	43	1,688
Year 4	1.0230	1.227745	0.325281	0.130331	0.043809	1227.7450	325.2810	130.3310	43.8090	1,228	325	130	44	1,727
Year 5	1.0230	1.255983	0.332762	0.133329	0.044817	1255.9830	332.7620	133.3290	44.8170	1,256	333	133	45	1,767
Year 6	1.0230	1.284871	0.340416	0.136396	0.045848	1284.8710	340.4160	136.3960	45.8480	1,285	340	136	46	1,807
Year 7	1.0230	1.314423	0.348246	0.139533	0.046903	1314.4230	348.2460	139.5330	46.9030	1,314	348	140	47	1,849
Year 8	1.0230	1.344655	0.356256	0.142742	0.047982	1344.6550	356.2560	142.7420	47.9820	1,345	356	143	48	1,892
Year 9	1.0230	1.375582	0.364450	0.146025	0.049086	1375.5820	364.4500	146.0250	49.0860	1,376	364	146	49	1,935
Year 10	1.0230	1.407220	0.372832	0.149384	0.050215	1407.2200	372.8320	149.3840	50.2150	1,407	373	149	50	1,979

**Scenario 2: Rate Relativity Rounded to the Billionth Decimal, Coverage Rate Rounded to the Dollar**

		Rate Relativity (billionth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.0000000X Rate (Dollar rounded)
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)
Year	Assumed Annual Rate Chg	BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP	
Year 0		1.121000000	0.297000000	0.119000000	0.040000000	1121.000000	297.000000	119.000000	40.000000	1,121	297	119	40	1,577
Year 1	1.0230	1.146783000	0.303831000	0.121737000	0.040920000	1146.783000	303.831000	121.737000	40.920000	1,147	304	122	41	1,614
Year 2	1.0230	1.173159009	0.310819113	0.124536951	0.041861160	1173.159009	310.819113	124.536951	41.861160	1,173	311	125	42	1,651
Year 3	1.0230	1.200141666	0.317967953	0.127401301	0.042823967	1200.141666	317.967953	127.401301	42.823967	1,200	318	127	43	1,688
Year 4	1.0230	1.227744924	0.325281216	0.130331531	0.043808918	1227.744924	325.281216	130.331531	43.808918	1,228	325	130	44	1,727
Year 5	1.0230	1.255983057	0.332762684	0.133329156	0.044816523	1255.983057	332.762684	133.329156	44.816523	1,256	333	133	45	1,767
Year 6	1.0230	1.284870667	0.340416226	0.136395727	0.045847303	1284.870667	340.416226	136.395727	45.847303	1,285	340	136	46	1,807
Year 7	1.0230	1.314422692	0.348245799	0.139532829	0.046901791	1314.422692	348.245799	139.532829	46.901791	1,314	348	140	47	1,849
Year 8	1.0230	1.344654414	0.356255452	0.142742084	0.047980532	1344.654414	356.255452	142.742084	47.980532	1,345	356	143	48	1,892
Year 9	1.0230	1.375581466	0.364449327	0.146025152	0.049084084	1375.581466	364.449327	146.025152	49.084084	1,376	364	146	49	1,935
Year 10	1.0230	1.407219840	0.372831662	0.149383730	0.050213018	1407.219840	372.831662	149.383730	50.213018	1,407	373	149	50	1,979



Difference: 0.00X Rate - 0.0000X Rate		
(14) = (13 Scenario1) - (13 Scenario 2)		
Year	0	-
Year	1	-
Year	2	-
Year	3	-
Year	4	-
Year	5	-
Year	6	-
Year	7	-
Year	8	-
Year	9	-
Year	10	-



## Impact of Decimal Retention 10-year Horizon Example 2 (Rate Class 035, Territory S)

2.3% = Assumed annual Basic insurance rate change

Assumed starting rate relativity by coverage = Rate Class 035, Territory S (example taken from 2012.1 RR BCUC.28.1 Attachment A - Basic Insurance Premium Calculations)

0.01600 = Bodily Injury (BI)

0.00400 = Property Damage (PD)

0.01400 = Part 7 Accident Benefits (AB)

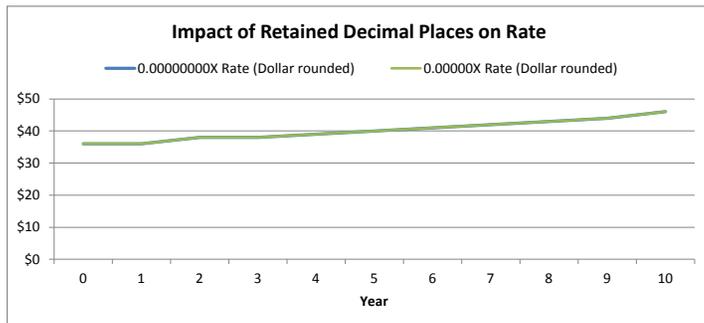
0.00200 = Uninsured Motorist Protection (UMP)

### Scenario 1: Rate Relativity Rounded to the Millionth Decimal, Coverage Rate Rounded to the Dollar

		Rate Relativity (millionth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.00000X Rate (Dollar rounded)	
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)	
Assumed Annual Rate Chg		BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP		
Year	0	0.016000	0.004000	0.014000	0.002000	16.0000	4.0000	14.0000	2.0000	16	4	14	2	36	
Year	1	1.0230	0.016368	0.004092	0.014322	0.002046	16.3680	4.0920	14.3220	2.0460	16	4	14	2	36
Year	2	1.0230	0.016744	0.004186	0.014651	0.002093	16.7440	4.1860	14.6510	2.0930	17	4	15	2	38
Year	3	1.0230	0.017129	0.004282	0.014988	0.002141	17.1290	4.2820	14.9880	2.1410	17	4	15	2	38
Year	4	1.0230	0.017523	0.004380	0.015333	0.002190	17.5230	4.3800	15.3330	2.1900	18	4	15	2	39
Year	5	1.0230	0.017926	0.004481	0.015686	0.002240	17.9260	4.4810	15.6860	2.2400	18	4	16	2	40
Year	6	1.0230	0.018338	0.004584	0.016047	0.002292	18.3380	4.5840	16.0470	2.2920	18	5	16	2	41
Year	7	1.0230	0.018760	0.004689	0.016416	0.002345	18.7600	4.6890	16.4160	2.3450	19	5	16	2	42
Year	8	1.0230	0.019191	0.004797	0.016794	0.002399	19.1910	4.7970	16.7940	2.3990	19	5	17	2	43
Year	9	1.0230	0.019632	0.004907	0.017180	0.002454	19.6320	4.9070	17.1800	2.4540	20	5	17	2	44
Year	10	1.0230	0.020084	0.005020	0.017575	0.002510	20.0840	5.0200	17.5750	2.5100	20	5	18	3	46

### Scenario 2: Rate Relativity Rounded to the Billionth Decimal, Coverage Rate Rounded to the Dollar

		Rate Relativity (billionth decimal place)				Coverage Rate = Rate Relativity x 1000				Coverage Rate rounded to nearest integer				0.00000000X Rate (Dollar rounded)	
		(1)	(2)	(3)	(4)	(5)=(1)x1,000	(6)=(2)x1,000	(7)=(3)x1,000	(8)=(4)x1,000	(9)=(5)Rounded	(10)=(6)Rounded	(11)=(7)Rounded	(12)=(8)Rounded	(13)=(9)+(10)+(11)+(12)	
Assumed Annual Rate Chg		BI	PD	AB	UMP	BI	PD	AB	UMP	BI	PD	AB	UMP		
Year	0	0.016000000	0.004000000	0.014000000	0.002000000	16.000000	4.000000	14.000000	2.000000	16	4	14	2	36	
Year	1	1.0230	0.016368000	0.004092000	0.014322000	0.002046000	16.368000	4.092000	14.322000	2.046000	16	4	14	2	36
Year	2	1.0230	0.016744464	0.004186116	0.014651406	0.002093058	16.744464	4.186116	14.651406	2.093058	17	4	15	2	38
Year	3	1.0230	0.017129587	0.004282397	0.014988388	0.002141198	17.129587	4.282397	14.988388	2.141198	17	4	15	2	38
Year	4	1.0230	0.017523568	0.004380892	0.015333121	0.002190446	17.523568	4.380892	15.333121	2.190446	18	4	15	2	39
Year	5	1.0230	0.017926610	0.004481653	0.015685783	0.002240826	17.926610	4.481653	15.685783	2.240826	18	4	16	2	40
Year	6	1.0230	0.018338922	0.004584731	0.016046556	0.002292365	18.338922	4.584731	16.046556	2.292365	18	5	16	2	41
Year	7	1.0230	0.018760717	0.004690180	0.016415627	0.002345089	18.760717	4.690180	16.415627	2.345089	19	5	16	2	42
Year	8	1.0230	0.019192213	0.004798054	0.016793186	0.002399026	19.192213	4.798054	16.793186	2.399026	19	5	17	2	43
Year	9	1.0230	0.019633634	0.004908409	0.017179429	0.002454204	19.633634	4.908409	17.179429	2.454204	20	5	17	2	44
Year	10	1.0230	0.020085208	0.005021302	0.017574556	0.002510651	20.085208	5.021302	17.574556	2.510651	20	5	18	3	46



Difference: 0.00X Rate - 0.0000X Rate		
(14) = (13 Scenario1) - (13 Scenario 2)		
Year	0	-
Year	1	-
Year	2	-
Year	3	-
Year	4	-
Year	5	-
Year	6	-
Year	7	-
Year	8	-
Year	9	-
Year	10	-

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**2012.1 RR BCUC.28.4 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Basic Insurance Premium Calculations**

**This Application presents an overall rate indication of +11.2%. This means that ICBC needs to collect 11.2% more Basic Insurance premium for the Policy Year beginning February 1, 2012 than it would collect by charging the current Basic Insurance rates.**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**Please repeat IR 28.2 to IR 28.3 in the context of Manual Basic components.**

**Response:**

The coverage rate relativities for ICBC’s Manual policies, be it this Application or prior applications, have been maintained at the ten-thousandth decimal place.

As noted in the response to information request 2012.1 RR BCUC.28.2 (specifically, 2012.1 RR BCUC.28.2.1), the decimal place methodology underlying the Application is sufficient for calculating the aggregate revenue necessary for ICBC’s Basic insurance coverage. Ultimately, regardless of the number of decimal points retained, the coverage rate is rounded to the nearest whole dollar. Rounding to the nearest whole dollar is common insurance industry practice. The effect of rounding is that, on average, half of the coverage rates will round up and the other half of the coverage rates will round down and ICBC will receive its aggregate revenue need.

While ICBC believes the methodology underlying the Application is sufficient to reflect rate changes over time, ICBC also believes retaining three more decimal place would improve precision at the individual policy level. Therefore, ICBC will store its Manual rate relativities at the millionth decimal place going forward.

The response to information request 2012.1 RR BCUC.28.2 compares retaining rate relativities at the thousandth decimal place versus retaining them at the millionth decimal place, and the response to information request 2012.1 RR BCUC.28.3 compares retaining rate relativities at the millionth decimal place versus the billionth decimal place. Both sets of examples use non-

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Manual policies. These demonstrations also hold true for Manual policies. Consequently, ICBC will store its Manual rate relativities at the millionth decimal place going forward.

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**2012.1 RR BCUC.28.5 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Basic Insurance Premium Calculations**

**This Application presents an overall rate indication of +11.2%. This means that ICBC needs to collect 11.2% more Basic Insurance premium for the Policy Year beginning February 1, 2012 than it would collect by charging the current Basic Insurance rates.**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**Please estimate the costs and time needed to implement system changes if ICBC is to retain all decimal places in its rate change calculations in the Basic Insurance Tariff schedules so that the revised tariff rates reflect the approved percentage rate change.**

**Response:**

For the purpose of this response, ICBC has assumed that the estimate refers to retention of the millionth decimal place (i.e., six decimal places). As demonstrated in the response to information request 2012.1 RR BCUC.28.3, there is no rate difference when coverage rate relativities are maintained at the millionth decimal place versus having relativities maintained with additional detail beyond the millionth decimal place. To maintain coverage rate relativities at the millionth decimal place, there is no cost for systems changes and the time to implement is less than one hour. The Basic Insurance Tariff (the Tariff) will continue to display rates that are rounded to the nearest whole dollar, but the coverage rate relativities underlying Schedule C of the Tariff will be maintained at the millionth decimal place.

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**2012.1 RR BCUC.28.6 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Basic Insurance Premium Calculations**

**This Application presents an overall rate indication of +11.2%. This means that ICBC needs to collect 11.2% more Basic Insurance premium for the Policy Year beginning February 1, 2012 than it would collect by charging the current Basic Insurance rates.**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**28.6 Exhibit A.0.0 shows the indicated rate level change of +13.4% and -13.9% for Plate Owner Basic third party liability and Part 7 respectively. The indicated rate level change for Plate Owner Basic Total is +11.2%. Please explain the methodology or formula that ICBC will use to calculate the rate increase if the proposed rate indication of +11.2% (for Total Basic) is approved. Would the methodology or formula depend on individual components of the indicated rate level change?**

**28.6.1 If the methodology or formula to calculate the rate increase is to apply +11.2% across all components, would that method be appropriate to reflect that some components present a negative indicated rate level change (e.g. Part 7)?**

**Response:**

**28.6**

The Total Basic proposed rate indication is the premium weighted average of the indicated rate level changes for the individual components (e.g., Plate Owner third party liability, Plate Owner Part 7, etc.) shown in Exhibit A.0.0. This is the only way that individual components of the indicated rate level change affect the proposed rate increase. ICBC’s approach for a revenue requirements application is to apply the Total Basic proposed rate indication of 11.2% to each rate in the Basic Insurance Tariff. This is consistent with prior revenue requirements applications.

**28.6.1**

The methodology described in the response to information request 2012.1 RR BCUC.28.6 is appropriate for implementing a revenue requirements application actuarial rate indication. The reason projections are completed and shown by coverage component is to increase the

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homogeneity of the data and improve overall rate indication accuracy, consistent with actuarial principles. Historically, ICBC has regarded rate changes that vary by coverage component to be rate design rather than a function of a revenue requirements application.

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**2012.1 RR BCUC.28.7 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.0  
Basic Insurance Premium Calculations**

**This Application presents an overall rate indication of +11.2%. This means that ICBC needs to collect 11.2% more Basic Insurance premium for the Policy Year beginning February 1, 2012 than it would collect by charging the current Basic Insurance rates.**

**Exhibit A.0.0 shows the indicated rate level change – Basic, for policies becoming effective February 1, 2012.**

**In an ICBC news release dated December 1, 2011 titled “ICBC announces basic and optional rate changes”, ICBC claims that “Those [policyholders] who only purchase basic insurance coverage through ICBC will see an average increase of \$68 a year”. Please provide the detail calculations of “an average increase of \$68 a year” with reference to the 11.2% proposed Basic Insurance rate increase and explain any underlying assumptions.**

**Response:**

This calculation is based upon re-rating of Personal\* rate class transactions that were made over the one year period from July 1, 2010 to June 30, 2011 for policies in which the customer elected to purchase Basic insurance coverage only. For each transaction, a rate was calculated at both current and proposed rates. These rates were then averaged and compared, with the following results:

Average Basic premium at current rates:  $\$212,636,631 / 349,390 \text{ Exposures} = \$609$

Average Basic premium at proposed rates:  $\$236,414,298 / 349,390 \text{ Exposures} = \$677$

Average rate change:  $(\$677 - \$609) = \$68$

\* Personal rate classes represent the majority of ICBC customers and include the following rate classes (does not include trailer, commercial vehicle, or miscellaneous policies):

- Private Passenger: 001-005, 007, 021-024, 027
- Motorhomes: 051, 055, 058
- Motorcycles: 310-324
- Collectors: 701-724

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**2012.1 RR BCUC.29.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit A.0.1  
Summary of PY 2012 Required Premium**

**Exhibit A.0.1 shows the summary of the components of required premium for policy year 2012. Please expand the table to show the last four policy years of data.**

**Response:**

Please see Attachment A – Components of Required Premium for Policy Years 2007 to 2012 for the components of the required premium in policy years 2007 to 2010 and policy year 2012, based on ICBC’s actuarial rate level indication analysis for each policy year.

The actuarial rate analysis for policy year 2011 was not finalized and is not included in the response. In early 2011, ICBC undertook preliminary loss cost analysis for policy year 2011 with effective date November 1, 2011. This analysis revealed that an actuarial rate indication would be above the threshold for a streamlined revenue requirement application, and a full application would be required. As explained in the response to information request 2012.1 RR IBC.1.4, ICBC decided to delay the filing to later in 2011 to explore options for reducing the rate increase and to better understand whether the developing trend to higher claims frequency would continue. ICBC’s preliminary rate analysis was therefore shifted to focus on an effective date in early 2012.



# **2012.1 RR BCUC.29.1 – Attachment A – Components of Required Premium for Policy Years 2007 to 2012**

**Summary of the Components of Required Premium  
Policy Years 2007 to 2012**

(\$ 000's)

<b>Policy Effective Date</b>	<b>PY 2007</b> 1-May-2007	<b>PY 2008</b> 1-Jun-2008	<b>PY 2009</b> 1-Oct-2009	<b>PY 2010</b> 1-Nov-2010	<b>PY 2012</b> 1-Feb-2012
<b>Description</b>					
A. Claims and Related Costs					
(a) Loss and ALAE Payments	1,830,982	1,886,486	1,772,646	1,838,185	2,022,973
(b) Claims Expenses (ULAE)	165,095	165,807	164,973	170,530	165,674
(c) Total Claims and Related Costs	1,996,077	2,052,294	1,937,620	2,008,715	2,188,647
B. Expenses					
(d) Operating Expenses					
(e) Road Safety and Loss Management	46,436	51,157	58,322	60,899	55,387
(f) Operating Costs - Administration and Other	49,347	53,689	52,921	61,120	66,608
(g) Operating Costs - Insurance Services	26,811	34,560	31,287	30,079	30,793
(h) Non-Insurance Expense	74,229	83,262	91,298	83,409	90,011
(i) Total Operating Expense	196,823	222,669	233,828	235,507	242,799
(j) Miscellaneous Expense	59,951	70,093	71,340	77,451	95,995
(k) Variable Broker Fee	2,587	2,255	1,883	2,345	2,465
(l) Premium Tax	90,235	92,626	88,950	90,342	102,163
(m) Total Expenses	349,595	387,643	396,001	405,645	443,422
(n) Total Claims and Expenses	2,345,672	2,439,937	2,333,620	2,414,360	2,632,069
(o) Capital Provision	45,664	32,472	22,721	30,759	36,777
(p) Total Projected Costs	2,391,336	2,472,409	2,356,341	2,445,119	2,668,846
C. Miscellaneous Revenue and Investment Income					
(q) Servicing Fees for Financing Plans	30,813	37,914	34,283	35,641	31,078
(r) Driver Penalty Points & Driver Risk Penalty Premiums	17,500	18,000	24,848	25,193	23,735
(s) Short Term Surcharge	12,111	14,038	12,933	14,101	13,827
(t) Multiple Crash Premium	531	630	614	841	816
(u) Investment Income on Basic Equity	30,597	48,133	57,333	65,013	58,869
(v) Investment Income on Policyholder Supplied Funds	248,999	248,550	204,742	251,106	218,644
(w) Total Miscellaneous Revenue and Investment Income	340,551	367,265	334,753	391,895	346,969
(x) Rounding differences	0	0	0	1	2
(y) Required Premium	2,050,785	2,105,144	2,021,589	2,053,225	2,321,879
(z) Projected Premium at Current Rate Level	1,984,673	2,087,791	2,015,555	2,091,961	2,088,291
(aa) Basic Insurance Revenue Surplus / (Deficiency)	(66,112)	(17,353)	(6,034)	38,736	(233,588)
(ab) Indicated Rate Change	3.3%	0.8%	0.3%	-1.9%	11.2%

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**2012.1 RR BCUC.30.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit B.0.1, p. 1  
Economic Forecasts**

**In paragraph 5, ICBC states that economic forecasts are from BC's Budget and Fiscal Plan released by the BC Ministry of Finance on February 15, 2011.**

**Please provide the most recent economic forecasts and ensure they are reflected in the current rate indication recalculation.**

**Response:**

The economic forecasts in the Application are based on the BC Economic Review and Outlook, which forms Part 3 of the 2011 BC Budget and Fiscal Plan. The most recent version of the BC Budget and Fiscal Plan, released on February 21, 2012, can be viewed at [http://www.bcbudget.gov.bc.ca/2012/bfp/2012\\_Budget\\_Fiscal\\_Plan.pdf](http://www.bcbudget.gov.bc.ca/2012/bfp/2012_Budget_Fiscal_Plan.pdf). These economic forecasts are reflected in the updated rate indication provided in the response to information request 2012.1 RR BCUC.5.1.

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**2012.1 RR BCUC.31.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit B.0.1, pp. 3 to 5; Exhibit B.0.2, pp. 3 to 7  
Exposure Model and Average Premium Model**

**Exhibit B.0.1 provides the description of the exposure model and Exhibit B.0.2 provides the description of the average premium model.**

**Please update all figures in Exhibit B.0.1 and Exhibit B.0.2 to include 2011 data points and provide revised statistical fits.**

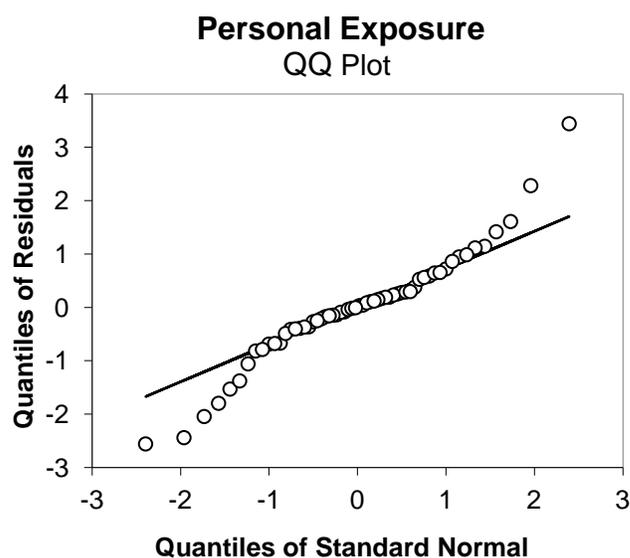
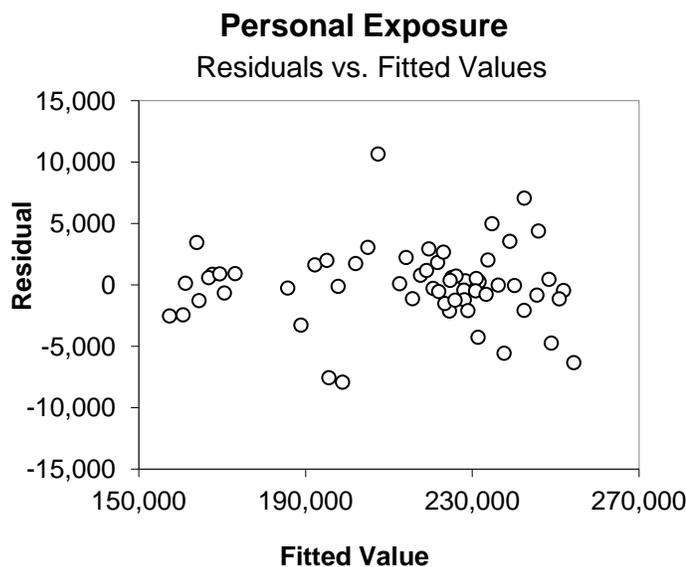
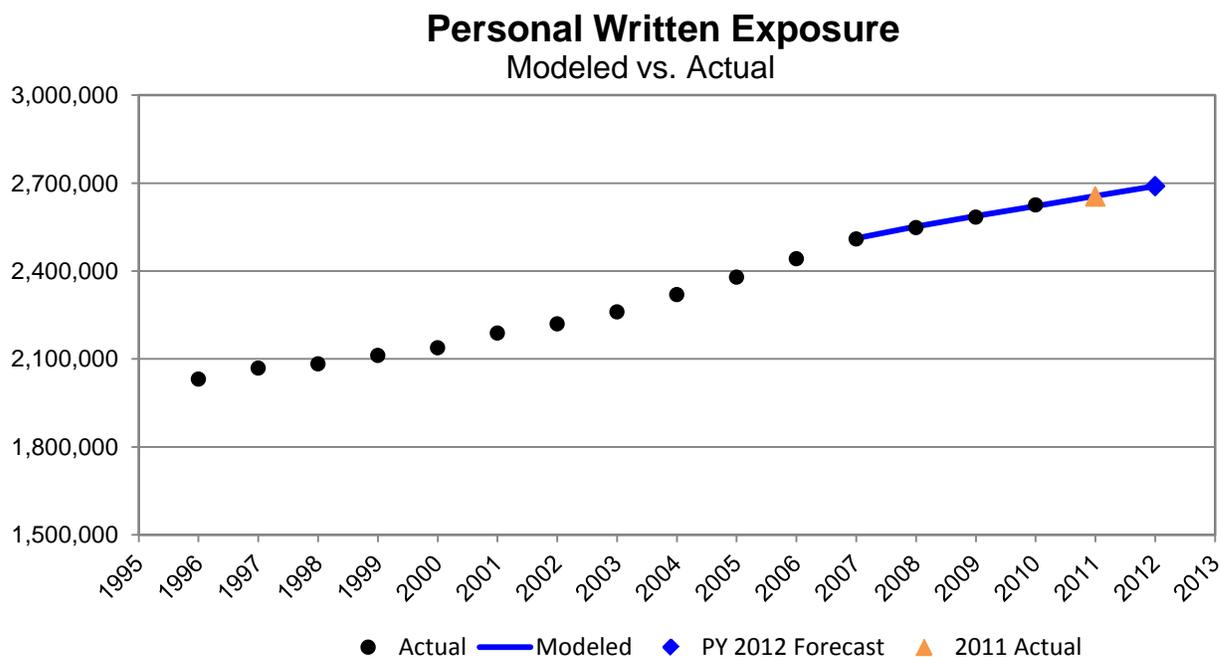
**Response:**

Please refer to Attachment A – Updated Exhibit B.0.1 and Attachment B – Updated Exhibit B.0.2 for the requested figures including 2011 data points and revised statistical fits. The 2011 data points use actual values for January through September and modeled values for October through December since the data for the most recent quarter is still subject to late reporting. This approach of using modeled values for the most recent quarter is consistent with ICBC's standard practice for exposure analysis.



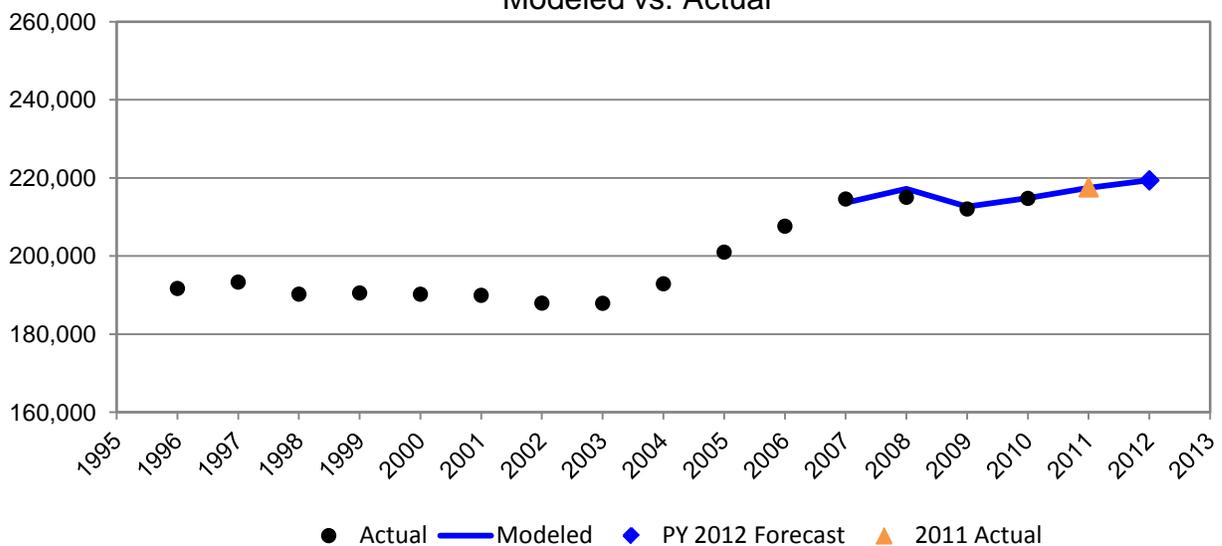
# **2012.1 RR BCUC.31.1 – Attachment A – Updated Exhibit B.0.1**

1. **Exposure – Personal** – Total Personal exposure is forecasted by summing the modeled exposure for the underlying business segments. The combined model has an R<sup>2</sup> value of 99%. The slowing of exposure growth in 2009 is associated with decreases in the number of long commute policies and business use policies. These decreases have levelled off in 2010, and exposure growth has increased slightly in 2011. Exposure is expected to continue to gradually increase in 2012.

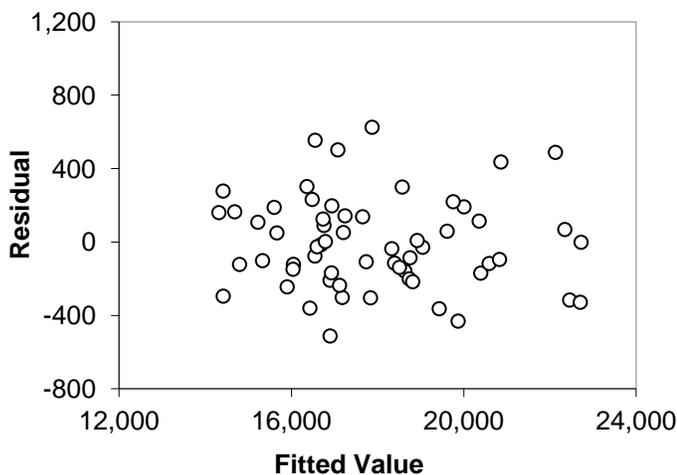


**Exposure – Commercial** – Total Commercial exposure is forecasted by summing the modeled exposure for the underlying business segments. The combined model has an R<sup>2</sup> value of 99%. The small growth of exposure in 2008 and significant decrease in 2009 is noticeable in most Commercial rate class groups. These decreases have levelled off in 2010 and exposure growth has increased slightly in 2011. This gradual increase is expected to continue in 2012. The experience period for most of the Commercial exposure models has been shortened compared to the ones in the Application to better respond to the more gradual increase observed in recent experience.

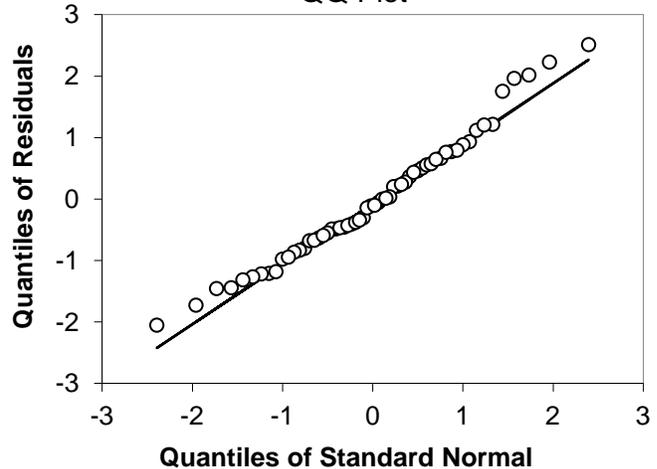
### Commercial Written Exposure Modeled vs. Actual



#### Commercial Exposure Residuals vs. Fitted Values

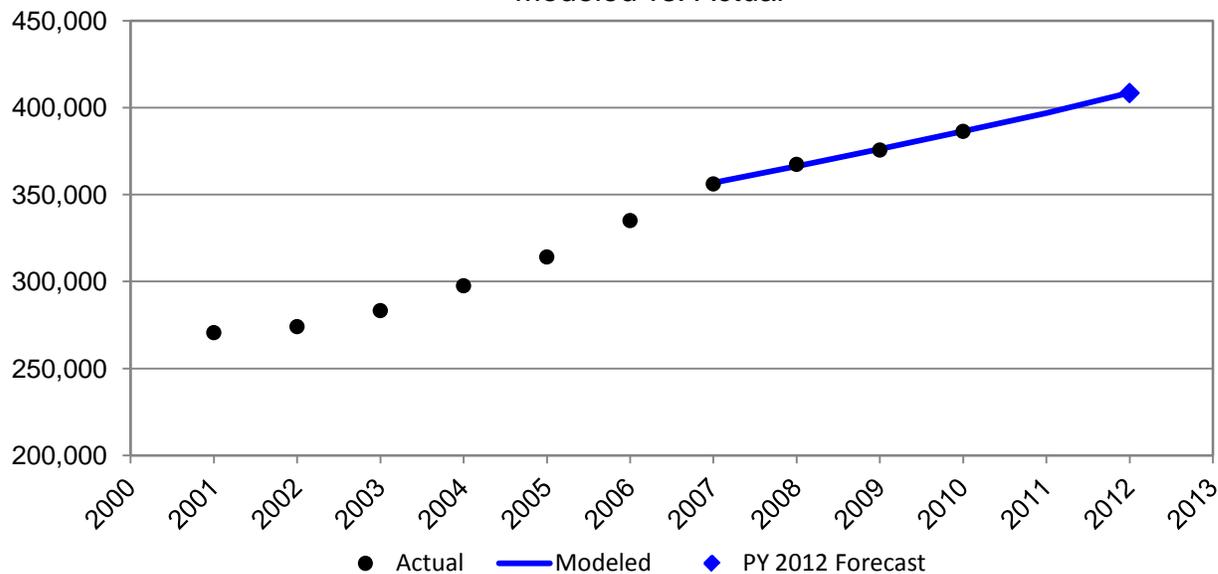


#### Commercial Exposure QQ Plot



2. **Exposure – Trailers** – Total trailers exposure is the sum of Commercial and Personal trailers, which are forecasted separately using simple exponential regression. The combined model has an R<sup>2</sup> value greater than 99%. Since this model is updated only once a year in the first quarter, the 2011 actual is not yet available.

**Trailers Written Exposure**  
Modeled vs. Actual

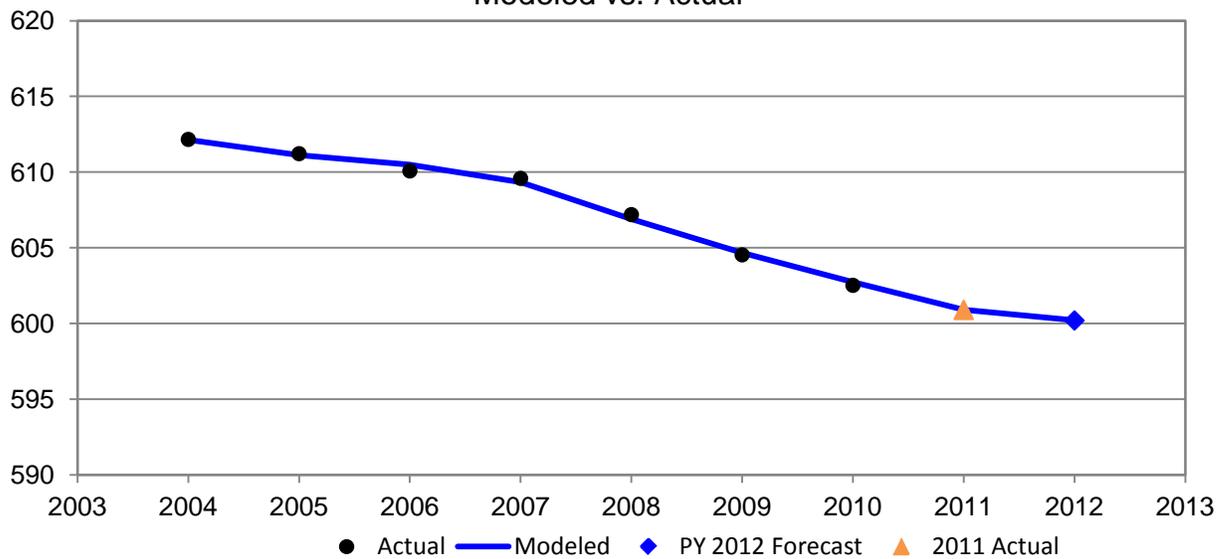




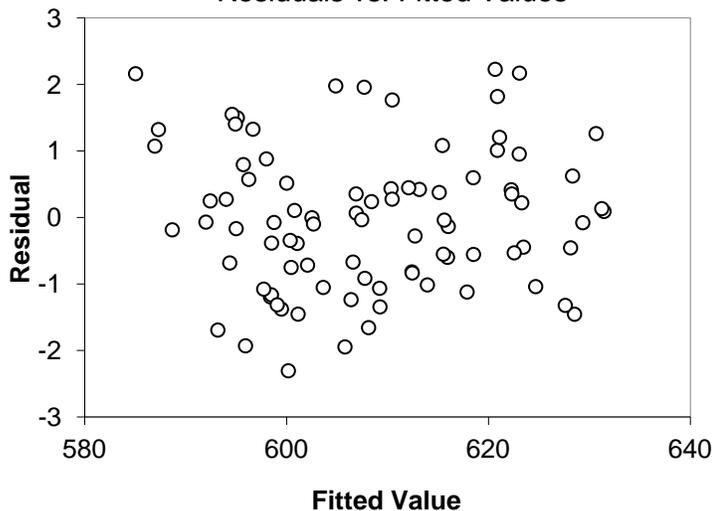
## **2012.1 RR BCUC.31.1 – Attachment B – Updated Exhibit B.0.2**

1. **Average Premium – Personal Third Party Basic and UMP** – Personal Third Party Basic and UMP combined average premium is projected with a multiple linear regression model. The selected model has an  $R^2$  value greater than 99% and an F statistic of 1614. This model is significant at the 99% level for an F statistic of at least 3.0. The 2011 average premium is slightly lower than the 2010 average premium, and the forecast policy year 2012 average premium is expected to continue to decrease gradually.

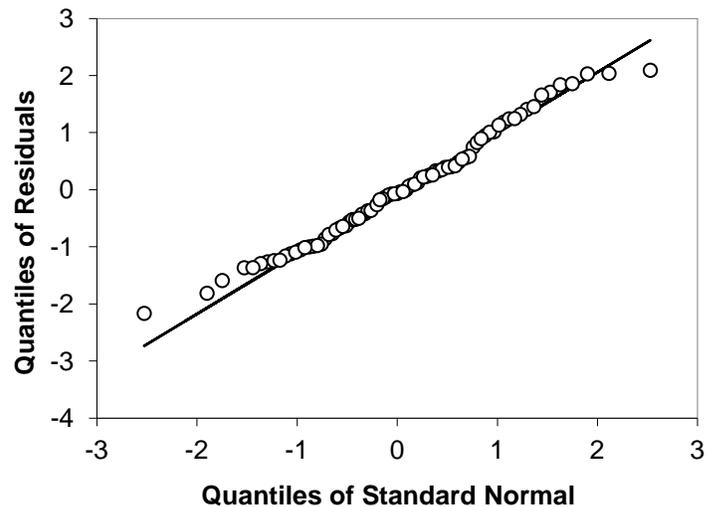
**Personal Third Party Basic and UMP Average Premium  
Modeled vs. Actual**



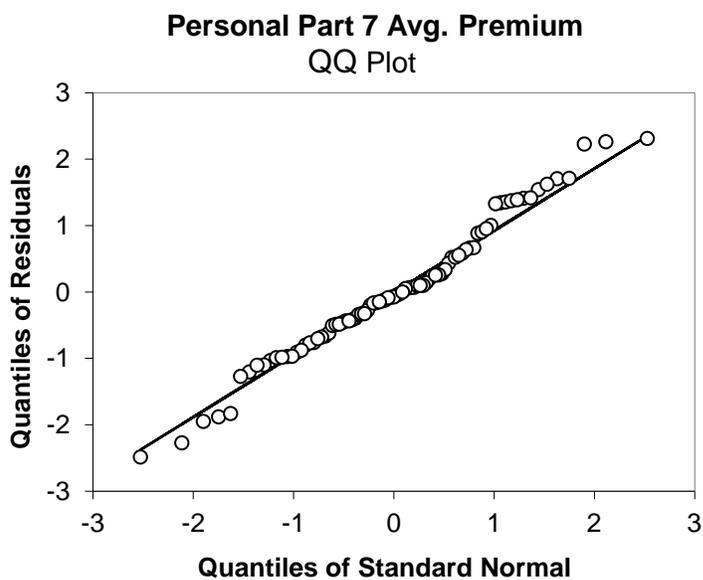
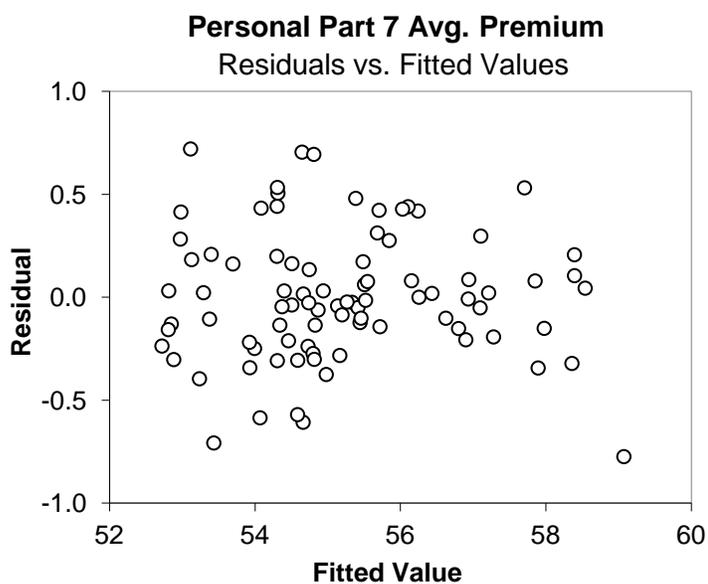
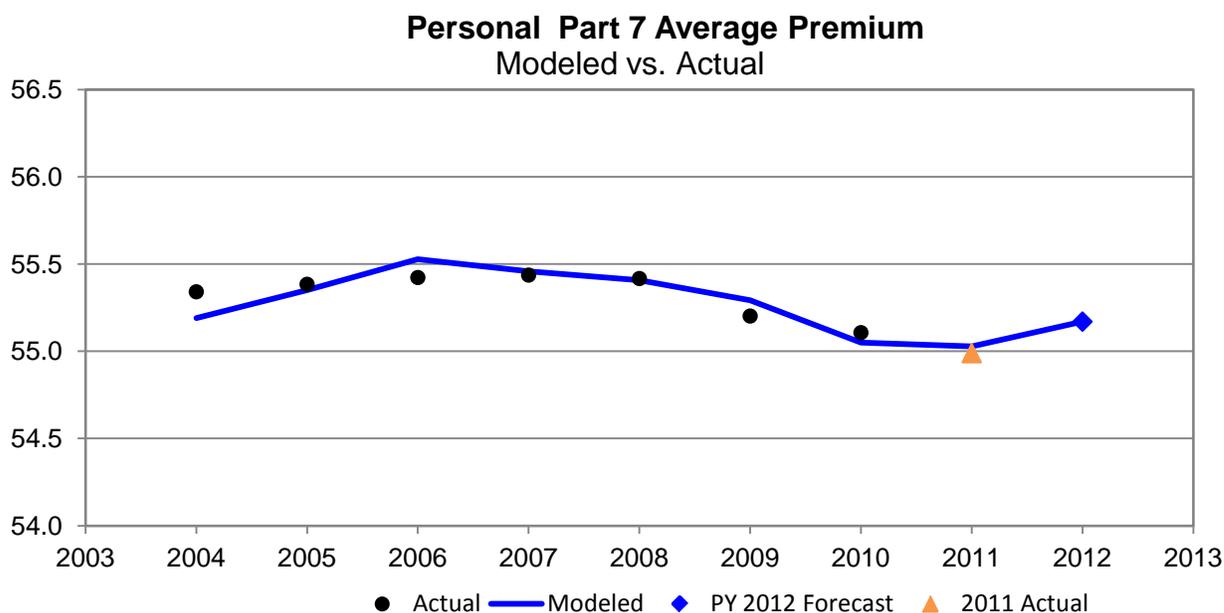
**Personal Third Party Basic Avg. Premium  
Residuals vs. Fitted Values**



**Personal Third Party Basic Avg. Premium  
QQ Plot**

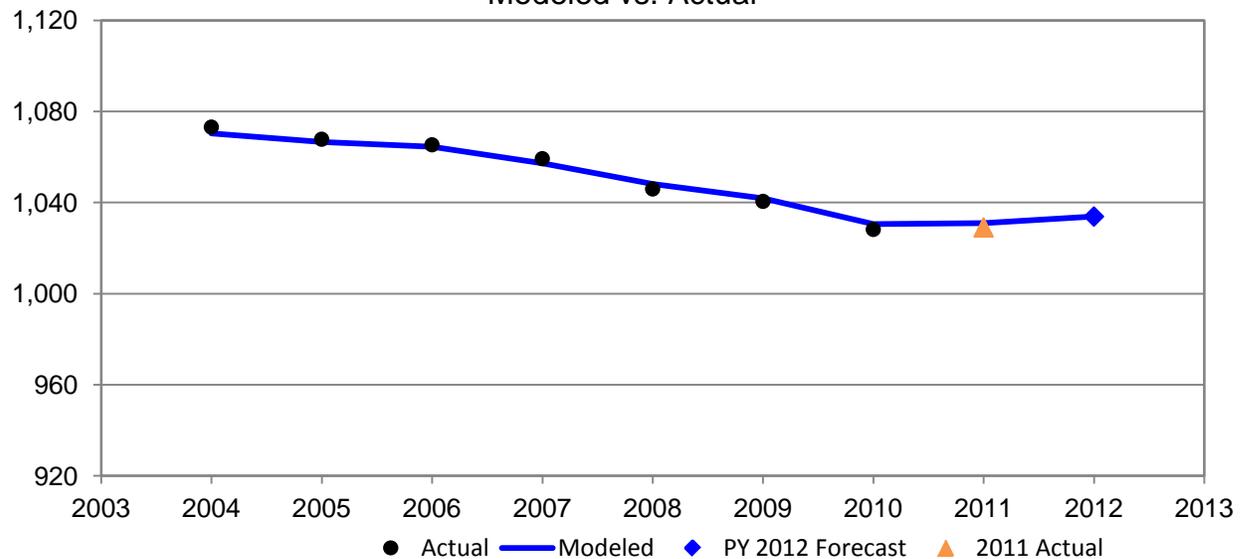


2. **Average Premium – Personal Part 7** – Personal Part 7 average premium is projected with a multiple linear regression model. The selected model has an R<sup>2</sup> value of 96% and an F statistic of 104. This model is significant at the 99% level for an F statistic of at least 2.3. Forecast policy year 2012 Personal Part 7 average premium is expected to increase due to a higher proportion of rate class groups with higher average premium, such as motorcycle, in the 2012 exposure.

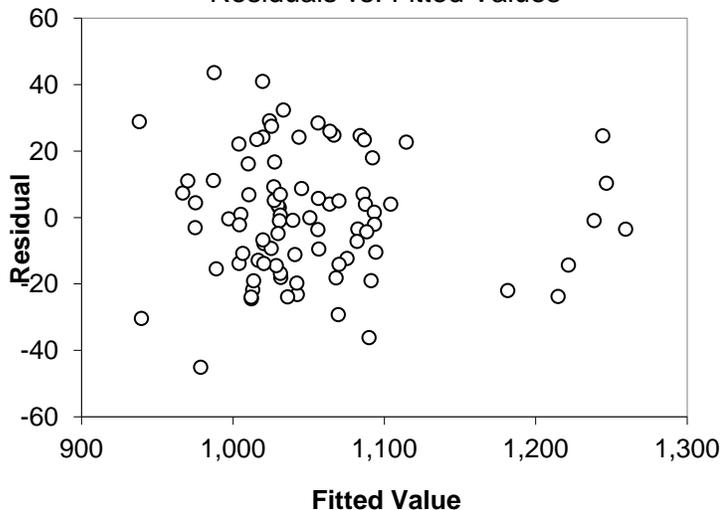


3. **Average Premium – Commercial Third Party Basic and UMP** – Commercial Third Party Basic and UMP combined average premium is projected with a multiple linear regression model. The selected model has an R<sup>2</sup> value of 93% and an F statistic of 69. This model is significant at the 99% level for an F statistic of at least 2.4. Forecast policy year 2012 Commercial Third Party Basic and UMP combined average premium is expected to be slightly higher than 2011 due to an increase in the proportion of rate class groups with higher average premium in the 2012 exposure.

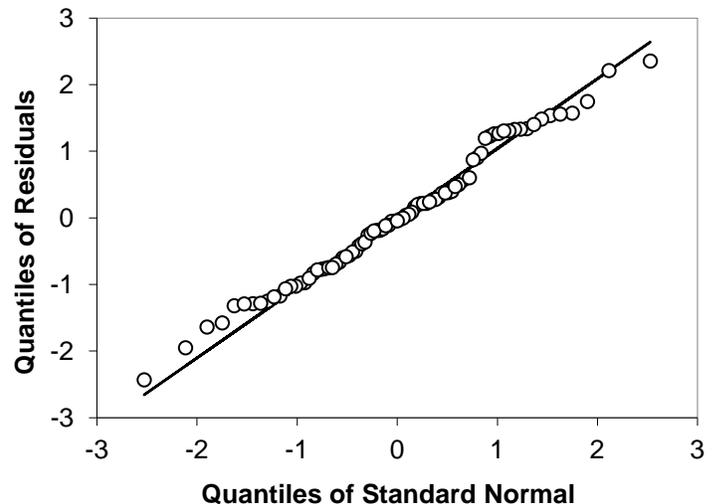
**Commercial Third Party Basic and UMP Average Premium  
Modeled vs. Actual**



**Commercial Third Party Basic Avg. Prem  
Residuals vs. Fitted Values**

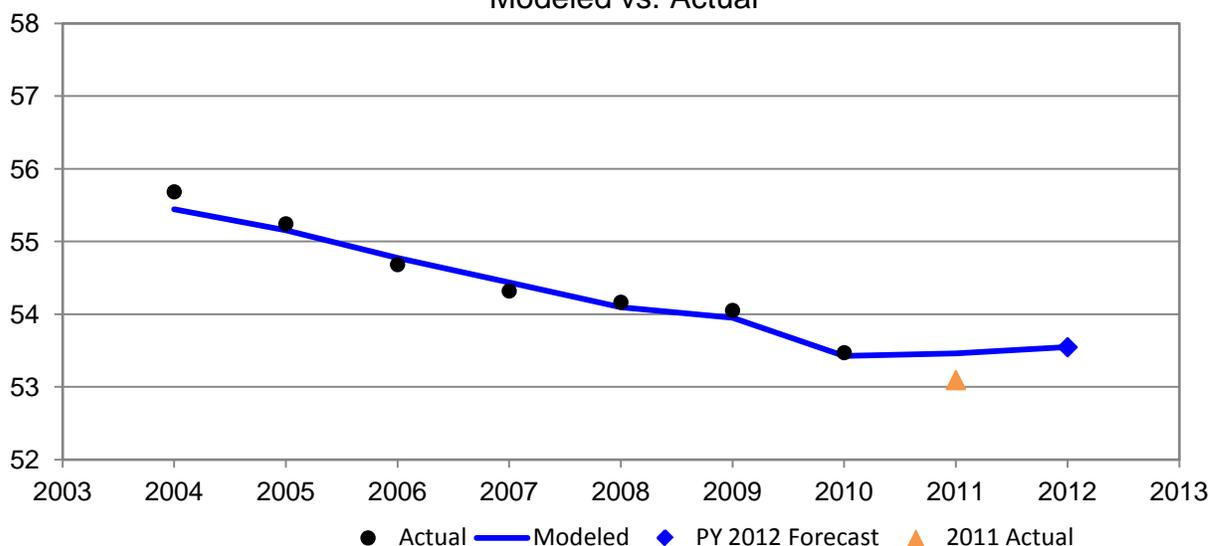


**Commercial Third Party Basic Avg. Prem  
QQ Plot**

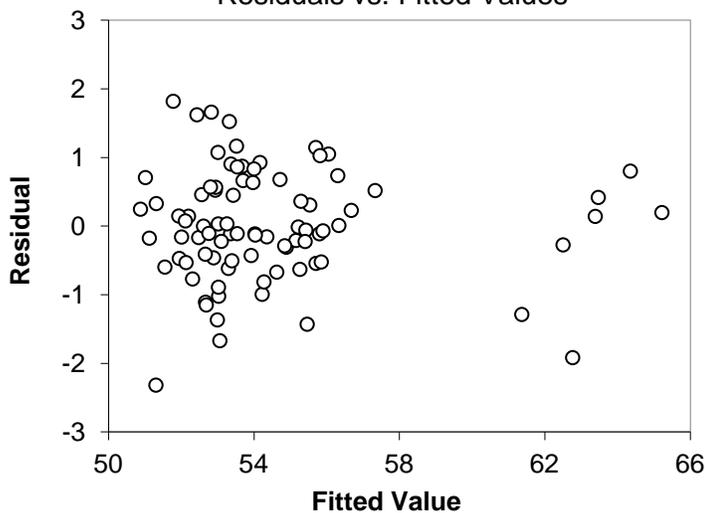


4. **Average Premium – Commercial Part 7** – Commercial Part 7 average premium is projected with a multiple linear regression model. The selected model has an R<sup>2</sup> value of 93% and an F statistic of 75. This model is significant at the 99% level for an F statistic of at least 2.4. Forecast policy year 2012 Commercial Part 7 combined average premium is expected to be higher than 2011 due to an increase in the proportion of rate class groups with higher average premium in the 2012 exposure.

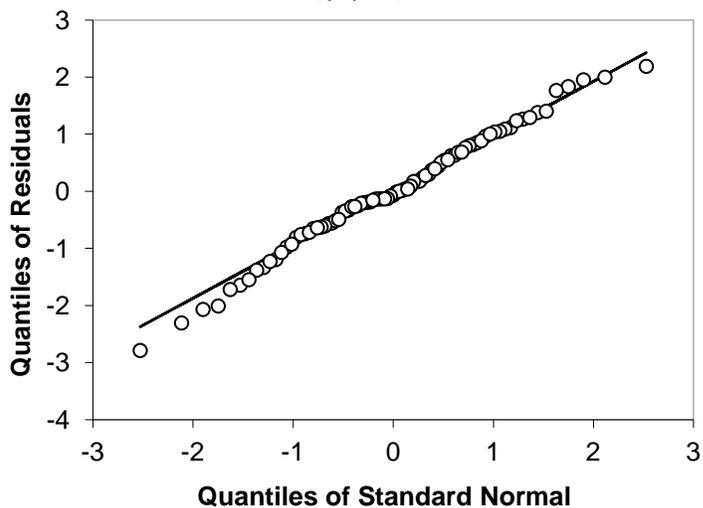
**Commercial Part 7 Average Premium**  
Modeled vs. Actual



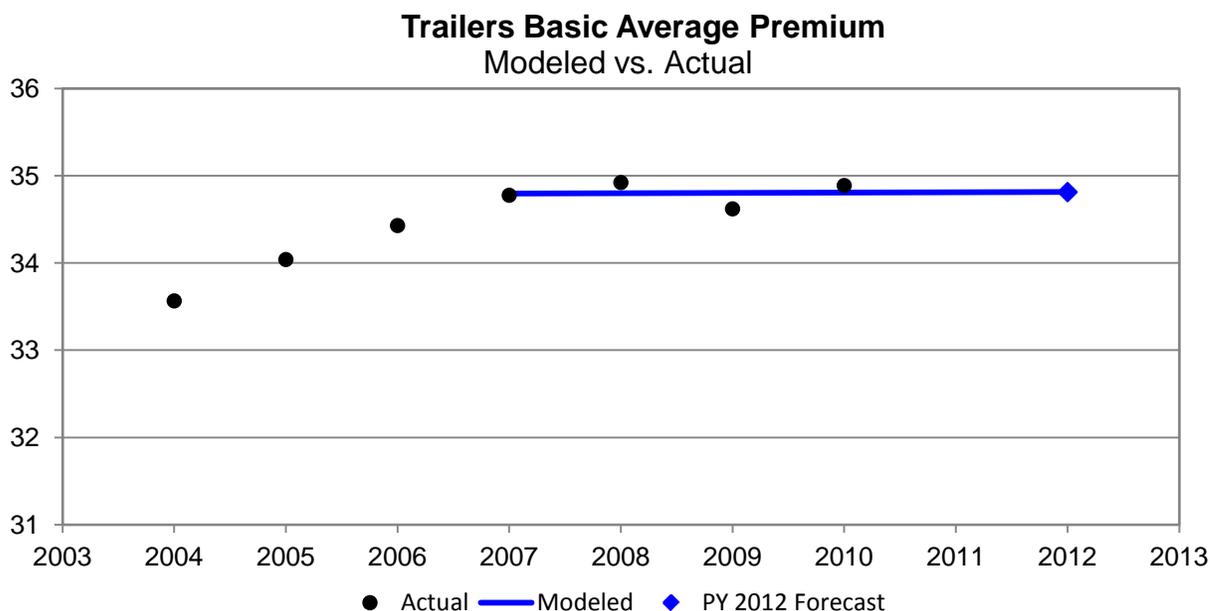
**Commercial Part 7 Avg. Premium**  
Residuals vs. Fitted Values



**Commercial Part 7 Avg. Premium**  
QQ Plot



5. **Average Premium - Trailers** – On October 22, 2010, the Commission approved ICBC’s Application to Standardize Trailer Basic Insurance Premiums, effective January 1, 2011. For each major coverage, one flat rate is charged for Commercial trailers and another flat rate is charged for Personal trailers. The forecast average premium for trailers is an exposure weighted average of the Commercial and Personal flat rates. Forecast exposure weights are from the trailers exposure models. The calculation is done for Third Party Basic and UMP and Part 7 separately. Since this calculation is done only once per year in the first quarter, the 2011 actual is not yet available. The graph below shows combined (Personal and Commercial) trailers Basic average premium for all Basic insurance coverages.



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**2012.1 RR BCUC.32.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit C.0.3  
Summary of ULAE by Accident Year**

**Exhibit C.0.3 shows the ULAE as a percentage of Ultimate Loss and ALAE.**

**Please describe the rationale for the trend selections in Exhibit C.0.3.**

**Response:**

The selections in Chapter 3, Exhibit C.0.3 represent the ratio of unallocated loss adjustment expense (ULAE) to ultimate loss and allocated loss adjustment expense (ALAE). The selections are made by coverage and are based on approaches that are consistent with accepted actuarial practice. ICBC uses the practice of a baseline for these selections to promote consistency and stability, where the baseline is the average of the three most recent accident years. The baseline is selected if there is no reason to deviate from it.

The ULAE ratios for the Property Damage, Death Benefits, and Manual Basic coverages have been relatively stable for the past four years so the baseline of a 3-year average was selected. For Bodily Injury, a downward trend has been observed in the most recent accident year that is expected to continue, so a 4-year exponential trend was selected to reflect this expectation. For Accident Benefits, an increase was observed in the ratio of ULAE to ultimate loss and ALAE two years ago and further increases are not expected to continue. For this reason a 2-year average was selected for Accident Benefits.

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**2012.1 RR BCUC.32.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit C.0.3  
Summary of ULAE by Accident Year**

**Exhibit C.0.3 shows the ULAE as a percentage of Ultimate Loss and ALAE.**

**Please discuss the range of choices of trends (for BI, PD, AB, and DB) that would be considered acceptable actuarial practice and the impact those choices could have on the rate indication.**

**Response:**

When selecting a ratio of unallocated loss adjustment expense (ULAE) to ultimate loss and allocated loss adjustment expense (ALAE) for the future policy year, historical ratios are analyzed for trends and change points, and consideration is given to potential internal or external factors that may affect the ratio. Given the data and circumstances for each coverage, there is a narrow range of choices that would be consistent with accepted actuarial practice, which requires reasonable assumptions that take into account the circumstances of the case, the past experience data, and the relationship of past to expected future experience. For example, a 4-year trend is selected for Bodily Injury (BI) to account for the declining ratio of ULAE to loss and ALAE. This results in a future BI policy year ULAE factor of 6.1%. An actuary could employ a formal trending procedure or select a very short (1-year) average to take into account the declining ratio of ULAE to loss and ALAE. If a 1-year average is selected instead of a 4-year trend, the future BI policy year ULAE factor would be 6.8% and the actuarial rate indication would increase by 0.5 percentage points.

ICBC's actuaries have applied their familiarity with the past experience and the current claims and expense environments in order to select the best estimate of the ratios of ULAE to ultimate loss and ALAE, as described in the response to information request 2012.1 RR BCUC.32.1.

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**2012.1 RR BCUC.33.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit C.0.5, p. 5; Exhibit C.1.0, p. 2  
Paid Development Method and Hindsight Outstanding Severity Method**

**ICBC's discussion on p. 5 of Exhibit C.0.5 and on p. 2 of Exhibit C.1.0 includes the Paid Development Method and the Hindsight Outstanding Severity Method.**

**In simple terms, please explain paragraph 17 and its impact on the PY 2012 rate indication.**

**Response:**

The impact of the adjustments to assumptions that result from the hindsight outstanding severity method is that the policy year 2012 actuarial rate indication is appropriate and is consistent with accepted actuarial practice. Removing these adjustments would not be appropriate.

In computing the amount of ultimate incurred claims, the actuaries use methods that are consistent with accepted actuarial practice. Each actuarial method has certain assumptions that are inherent to that method. Before employing a method, the actuaries examine past and present circumstances that affect the claims data to determine if the method's inherent assumptions still hold true. One example is the claims practices of ICBC. If the method's inherent assumptions still hold true, then the actuaries apply the method and ensure that all the assumptions are appropriate. On the other hand, if such examination determines that the assumptions inherent to that method do not hold true, for example because of changes to claims practices, then the actuaries evaluate whether adjustments can be made to account for the impact of changing claims practices, in order to establish appropriate assumptions. If appropriate assumptions cannot be struck for a method, then the results from the routine application of the method are not used.

More specifically, Chapter 3, Exhibit C.0.3, paragraph 17, can be explained as follows:

1. Claims initiatives have impacted the claims data.
2. The impacts of claims initiatives have made the results of the paid development method less reliable than they would have been in a more stable claims environment.

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3. Actuarial methods that are preferred in these circumstances are those that are less dependent on a requirement for a stable claims environment or where those assumptions affected by changes to the claims environment can be adjusted to account for the impact, so that assumptions become appropriate to the circumstances.
  
4. The hindsight outstanding severity method adjusts the paid development method's outstanding severity assumption in the years where the paid development method yields unreasonable expected outstanding severity.

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**2012.1 RR BCUC.33.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit C.0.5, p. 5; Exhibit C.1.0, p. 2  
Paid Development Method and Hindsight Outstanding Severity Method**

**ICBC's discussion on p. 5 of Exhibit C.0.5 and on p. 2 of Exhibit C.1.0 includes the Paid Development Method and the Hindsight Outstanding Severity Method.**

**In simple terms, please explain paragraph 7 and its impact on the PY 2012 rate indication.**

**Response:**

Chapter 3, Exhibit C.1.0, paragraph 7 discusses why the Hindsight Outstanding Severity Method is needed to yield a reasonable estimate of bodily injury ultimate loss. For more information, please see the response to information request 2012.1 RR BCUC.33.1.

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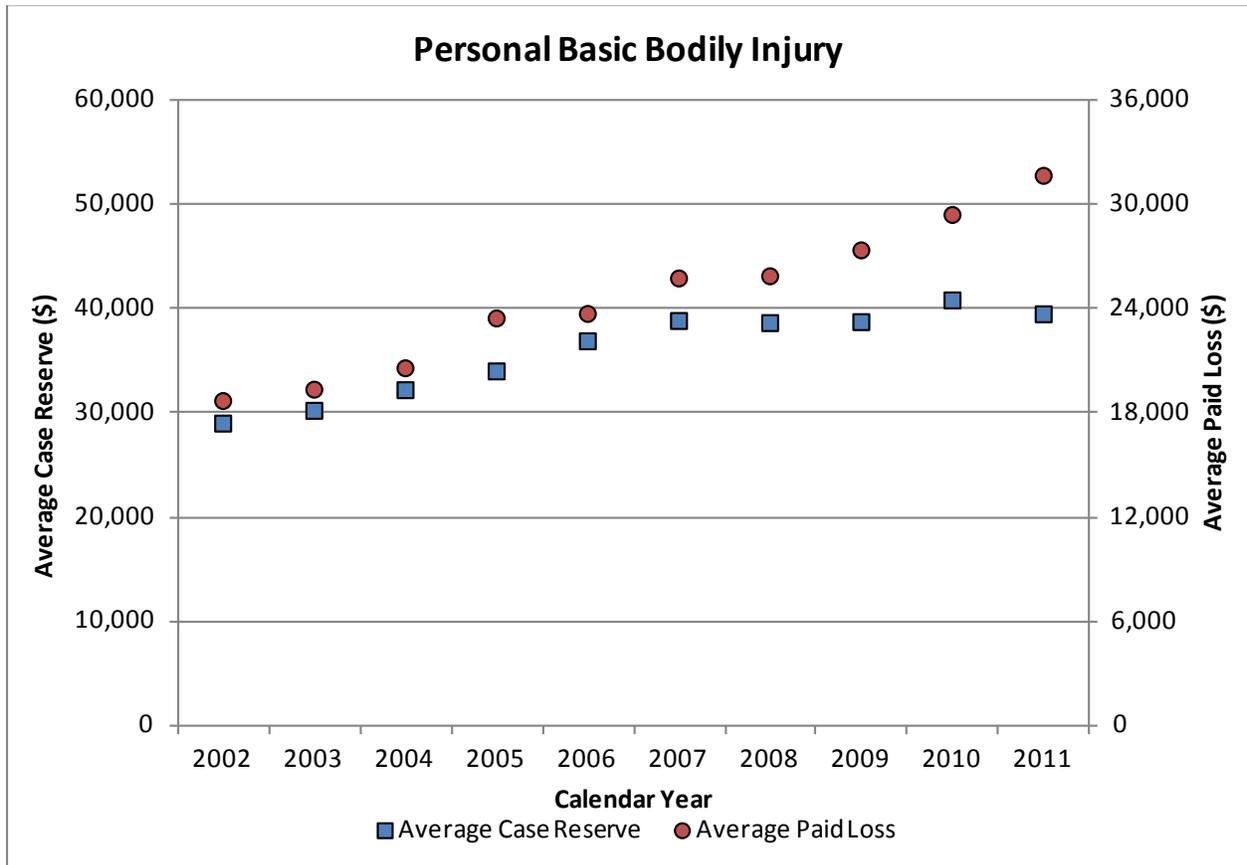
**2012.1 RR BCUC.34.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit C.1.0, Sections 3 & 4, p. 1; Exhibit C.1.3.4/5  
BI Claims Initiatives**

**In the 2010 ICBC streamlined application, BI incurred loss development factors were selected using historical ratios excluding accident years where claim initiatives impacted average case reserves (2006 and forward). As a result, ultimate losses were further adjusted to account for the impact of the claims initiatives. In the current filing, BI incurred loss development factors were selected using historical ratios of only accident years where claim initiatives impacted average case reserves.**

**Please demonstrate the need for additional adjustment of ultimate losses calculated in Exhibit C1.3.5. given that the loss development factors used to derive ultimate losses are now selected using historical ratios of only accident years where claim initiatives impacted average case reserves.**

**Response:**

In computing the amount of ultimate incurred claims, the actuaries use methods that are consistent with accepted actuarial practice. Each actuarial method has certain assumptions that are inherent to that method. Before employing a method, the actuaries examine past and present circumstances that affect the claims data to determine if the method's inherent assumptions still hold true. In this case, the incurred development method for bodily injury assumes that case reserve adequacy is consistent over time considering general economic inflation of claims. Examination of the claims initiatives shows that these initiatives have affected the consistency of case reserves, particularly through changes to claims practices aimed directly at reducing case reserve levels so that case reserves would be adequate but not excessive on a case by case basis. The assumption of consistency in the adequacy level of case reserves is compromised because case reserve adequacy has been changing in the latest four calendar years as compared to earlier calendar years. On the other hand, paid claims severity has continued to rise steadily over that period. The change in the adequacy level of case reserves in light of the paid claims severity can be observed in the graph below. The combination of the knowledge of the claims initiatives and their expected impact on case reserves, coupled with the observed reduction in the adequacy of average case reserves and steady increase in paid severity is evidence that demonstrates the need for an adjustment in order to establish appropriate assumptions for the incurred development method.



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**2012.1 RR BCUC.35.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, p. 2  
Description of Model Types and Model Diagnostics**

**Please describe the impact on claims and premiums during an economic recession versus a recovery.**

**Response:**

Economic recessions can impact claims and premiums, but their impact is not always consistent or predictable because many factors associated with recessions are unique and some, like unemployment, fluctuate both within and between recessions. This leads some industry observers to conclude that “the long-term trend in profitability (claims and operating costs as a percentage of premiums) for America's non-life insurers shows no obvious correlation with the economic cycle.”<sup>1</sup>

Some recession factors may increase claims frequency while others may decrease it. For example, reduced vehicle travel and the associated decrease in traffic volume may lower the frequency of claims. Commercial vehicle usage may drop resulting in lower demand for commercial insurance. On the other hand, increased financial pressures felt by consumers during a depressed economy, or prolonged unemployment may affect claiming behaviour resulting in increased frequency and severity of claims. Some industry reports suggest that fraudulent claims increase during economic downturns.<sup>2</sup>

<sup>1</sup> Flames, Claims and Automobiles, Economist, 1/17/2009, Vol. 390 Issue 8614, page 74.

<sup>2</sup> Claim Officer Survey: Economic Landscape and Operational Performance Metrics, Towers Watson, 2010, page 2.

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**2012.1 RR BCUC.35.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, p. 2  
Description of Model Types and Model Diagnostics**

**In what instances has the recession, or data in 2008 and 2009, been excluded from the econometric models, if any?**

**Response:**

The only trend models where the 2008 and 2009 data points are excluded are the simple exponential models for Personal and Commercial Bodily Injury frequency, Personal Medical Rehabilitation frequency, and Personal Property Damage severity. The more complex econometric models, which include explanatory variables other than the time variable, make no data point exclusions.

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**2012.1 RR BCUC.35.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, p. 2  
Description of Model Types and Model Diagnostics**

**Please discuss the merits of choosing a longer term trend line (more than 12 years) that includes periodic recessions such as those in 2008 and 2009.**

**Response:**

Extending a historical trend to include periodic recessions can be useful if ICBC can assume that the recessions are comparable and if ICBC includes enough of them to be able to adequately model any underlying trends. Unfortunately, even if the trend line was extended to 25 years, it would include only 4 recessions, a number too small to develop credible models. Furthermore, according to economists, these recessions are not comparable.<sup>1</sup> They all have unique characteristics that reflect different conditions, including factors that could influence claims frequency, such as the level of unemployment, particularly prolonged unemployment. Consequently, the impact of each recession, including the most recent one, needs to be judged separately.

<sup>1</sup> "How did the 2008-2010 recession and recovery compare with previous cycles?" Economic Observer, Statistics Canada, January 2011. <http://www.statcan.gc.ca/pub/11-010-x/2011001/part-partie3-eng.htm>.

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**2012.1 RR BCUC.36.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, pp. 4 to 23  
Description of Model Types and Model Diagnostics**

**Please update the figures on pp. 4 to 23 in Exhibit D.0 to include 2011 actuals and revised trend lines with and without adjustments for the 2008 and 2009 data.**

**Response:**

Please see Attachment A – Updated Frequency and Severity Trend Lines for updated figures including 2011 actuals. The trend lines provided in Attachment A are the lines which are considered by the actuaries to be the best fit trend lines for the purpose of forecasting, based on year-end 2011 data and including consideration of economic and social influences.

Please see Attachment B – Simple Exponential Trend Lines for revised frequency trend lines which are based on simple exponential models that includes weight on the 2008 and 2009 data as requested.

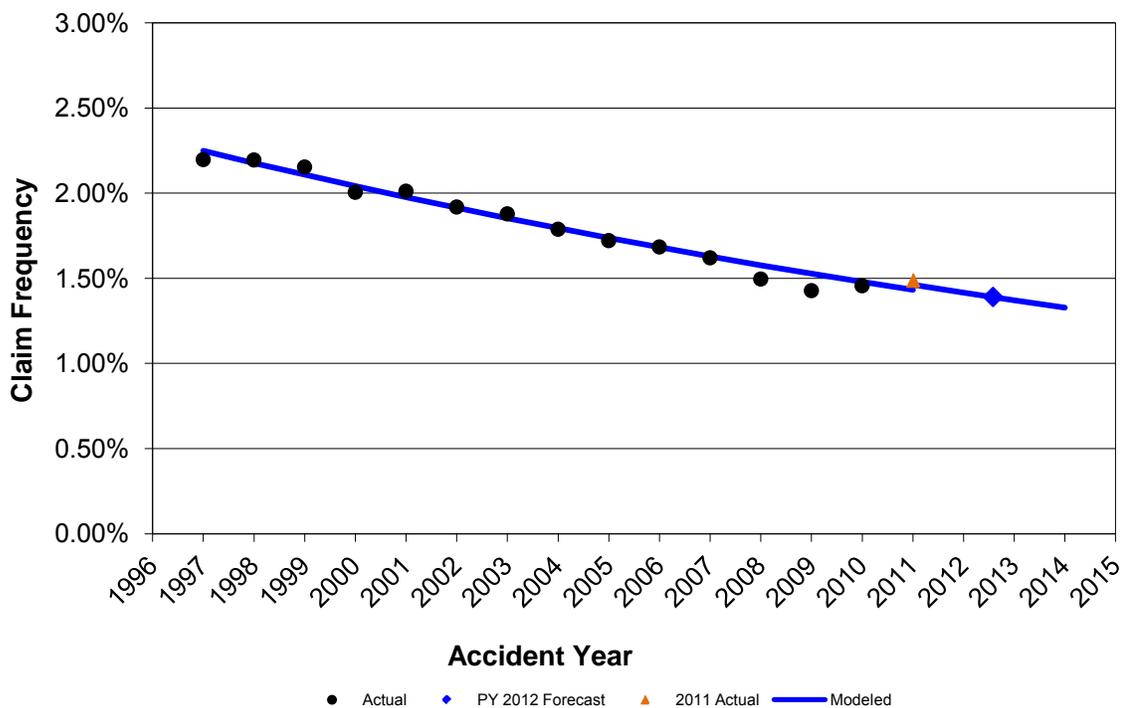
Actuaries are required to consider economic and social influences when selecting trends. The simple exponential trend lines would not be selected as the best fit for the purpose of forecasting in this case due to the influence of the unusually low points observed during the recession in 2008 and 2009.



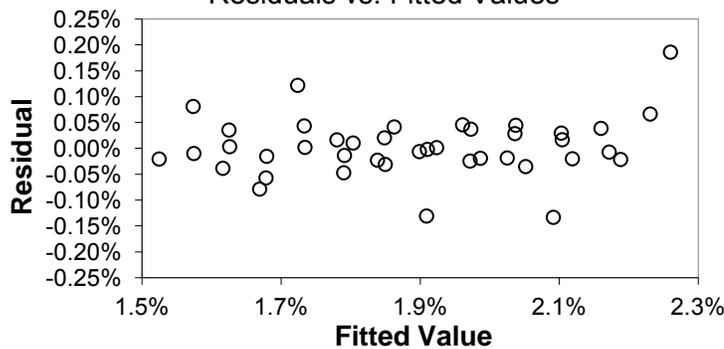
# **2012.1 RR BCUC.36.1 – Attachment A – Updated Frequency and Severity Trend Lines**

1. **Personal Bodily Injury Frequency** – An 11 year exponential (1997 - 2007) model with an upward parallel shift was selected. Please refer to the response to information request 2012.1 RR BCUC.9.1 for the discussion of this shift. The exponential model was chosen to reflect the return to the pre-recession trend rate. The selected model has an  $R^2$  value of 92.5% and an F statistic of 119.5. This model is significant at the 99% level for an F statistic of at least 3.84.

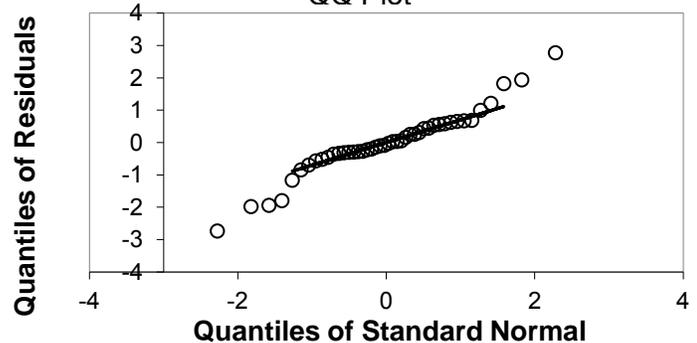
Personal Bodily Injury Frequency  
Modeled vs. Actual



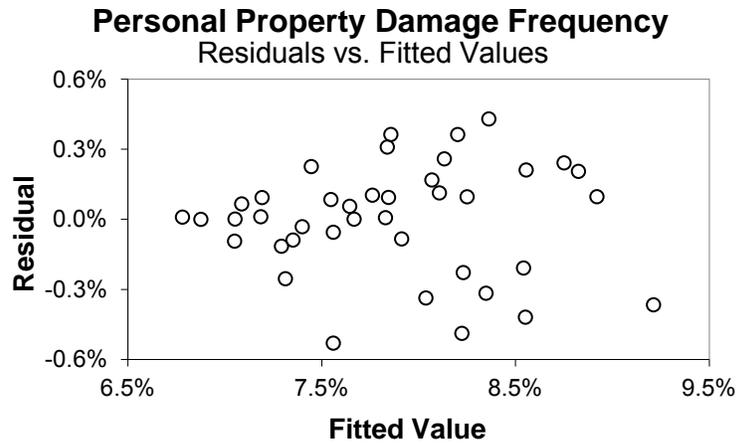
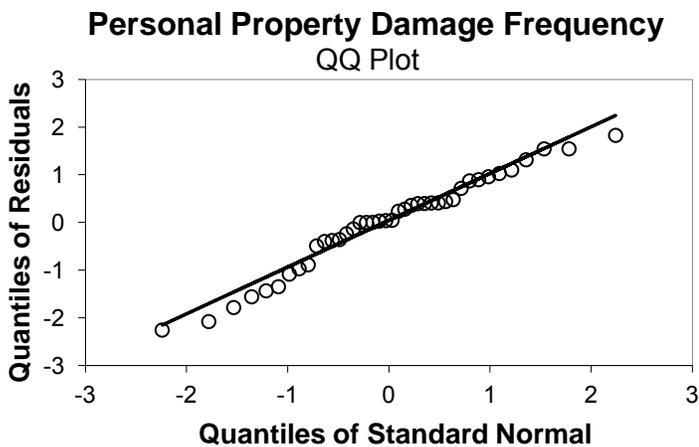
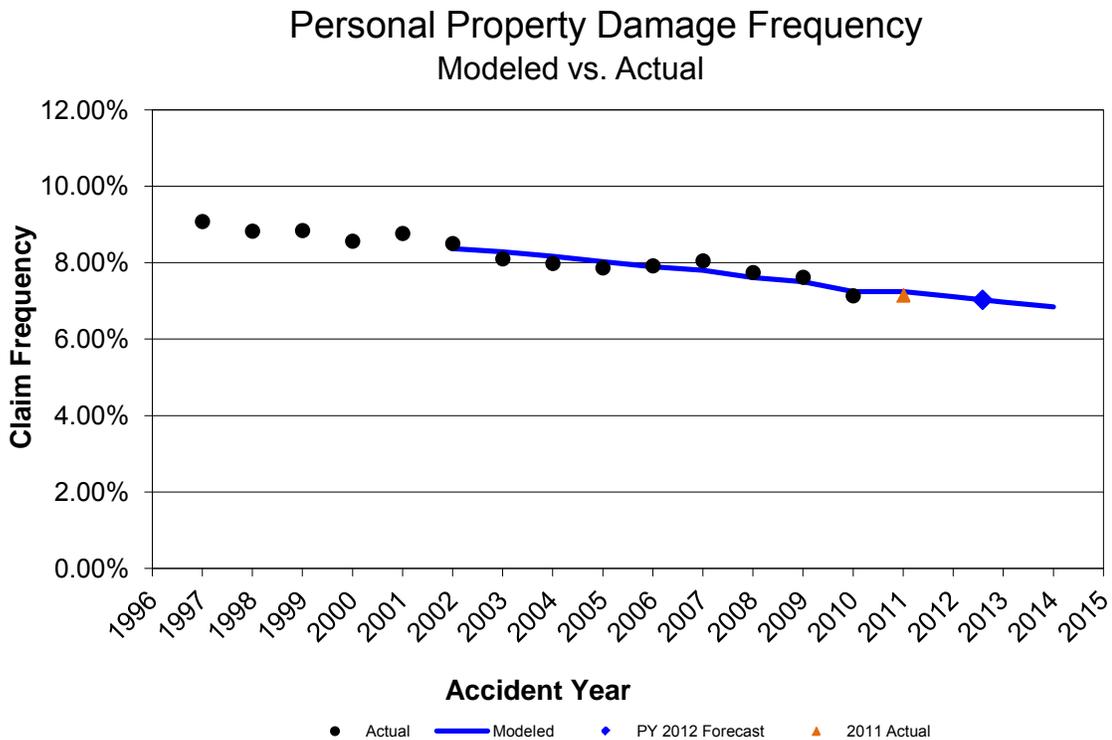
Personal Bodily Injury Frequency  
Residuals vs. Fitted Values



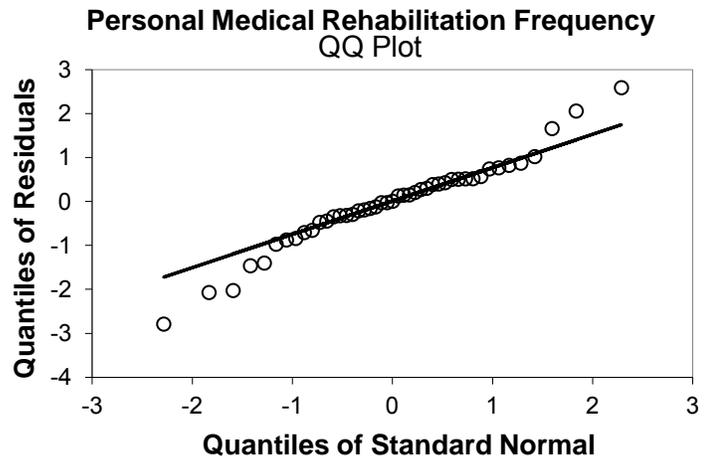
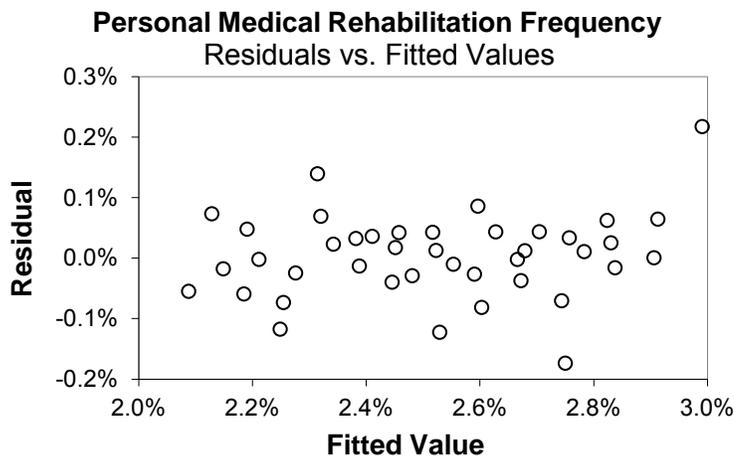
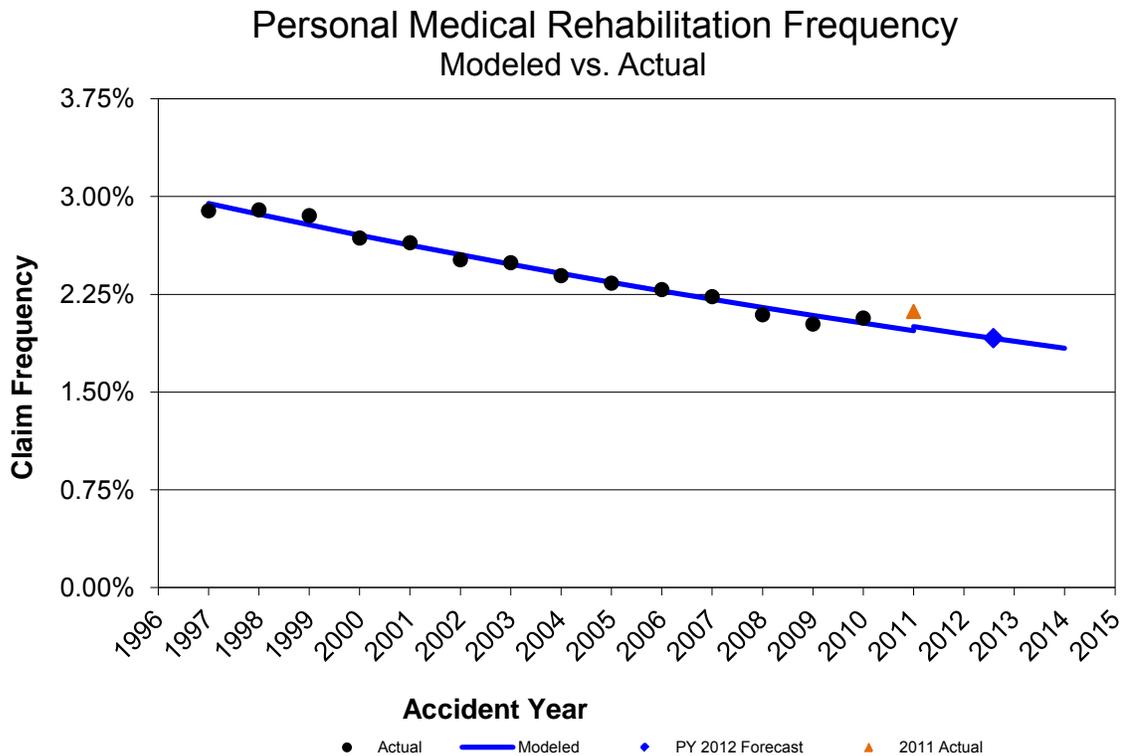
Personal Bodily Injury Frequency  
QQ Plot



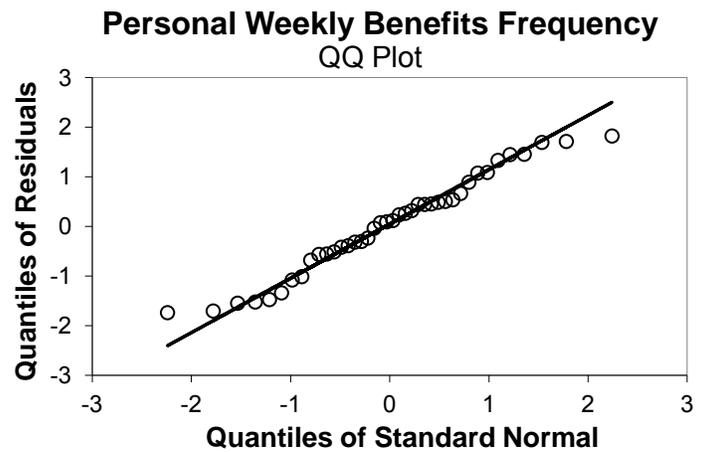
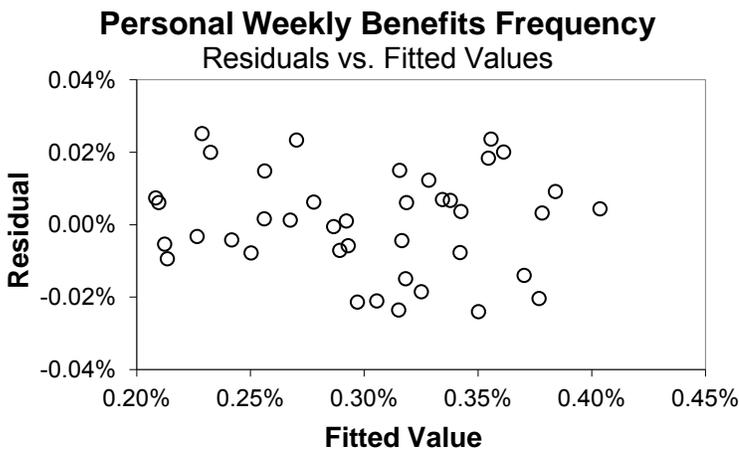
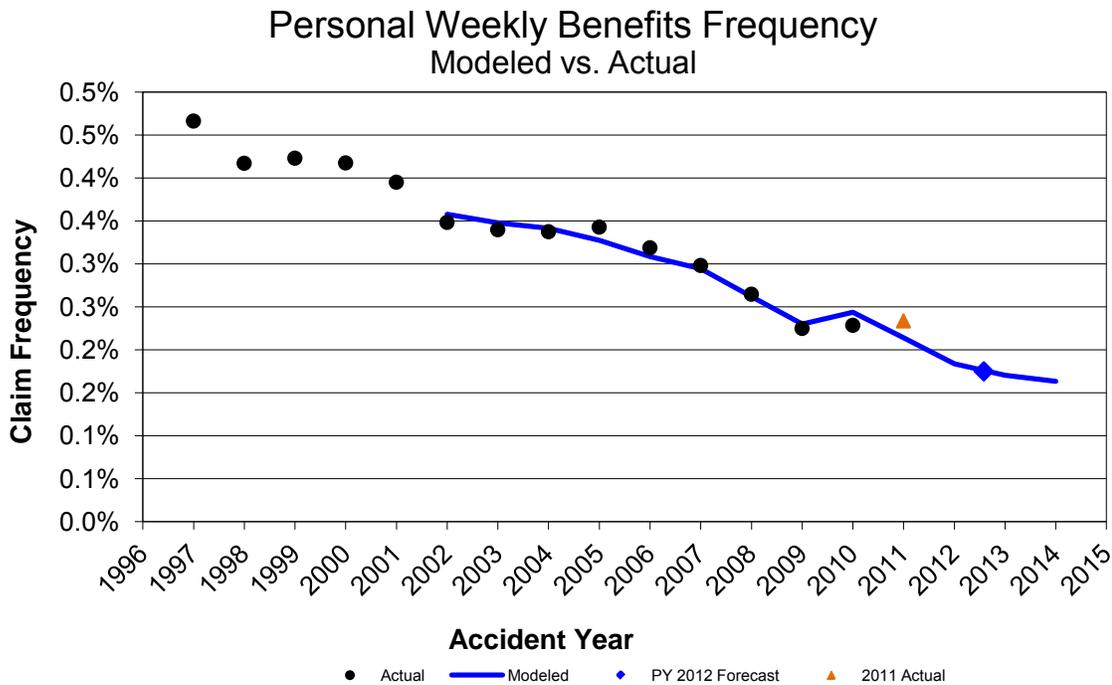
2. **Personal Property Damage Frequency** – a 10 year econometric model was selected. The explanatory variables are the proportion of the BC population aged 55 to 74, total precipitation, and an indicator for the 2010 Olympic Games. The 2010 Olympic Games variable is included to properly fit a low point which occurred in the first quarter of 2010. The selected model has an R<sup>2</sup> value of 86.6% and an F statistic of 35.5. This model is significant at the 99% level for an F statistic of at least 3.4.



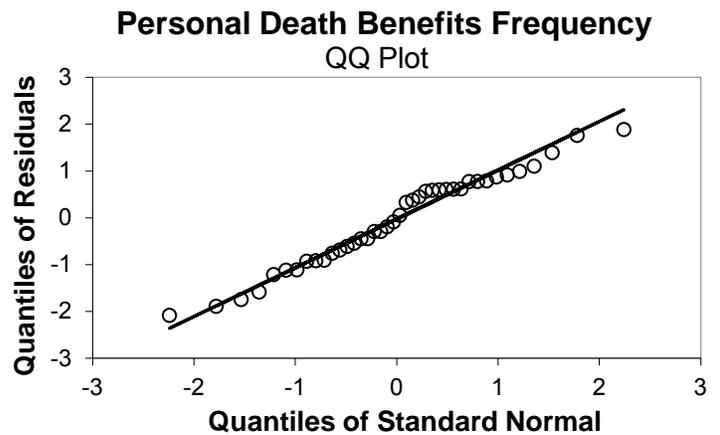
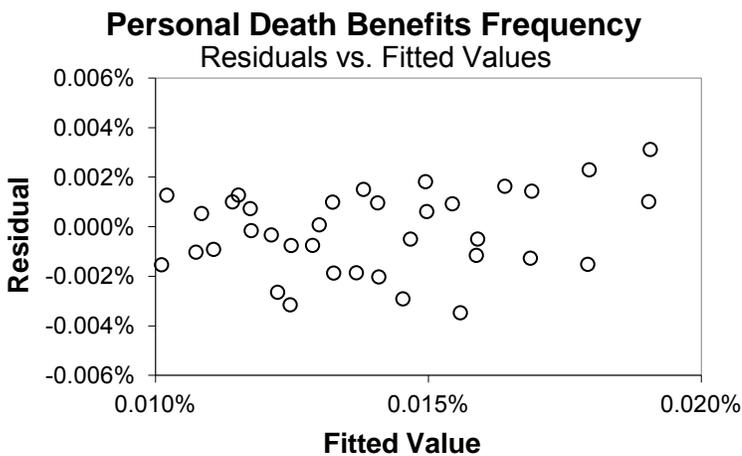
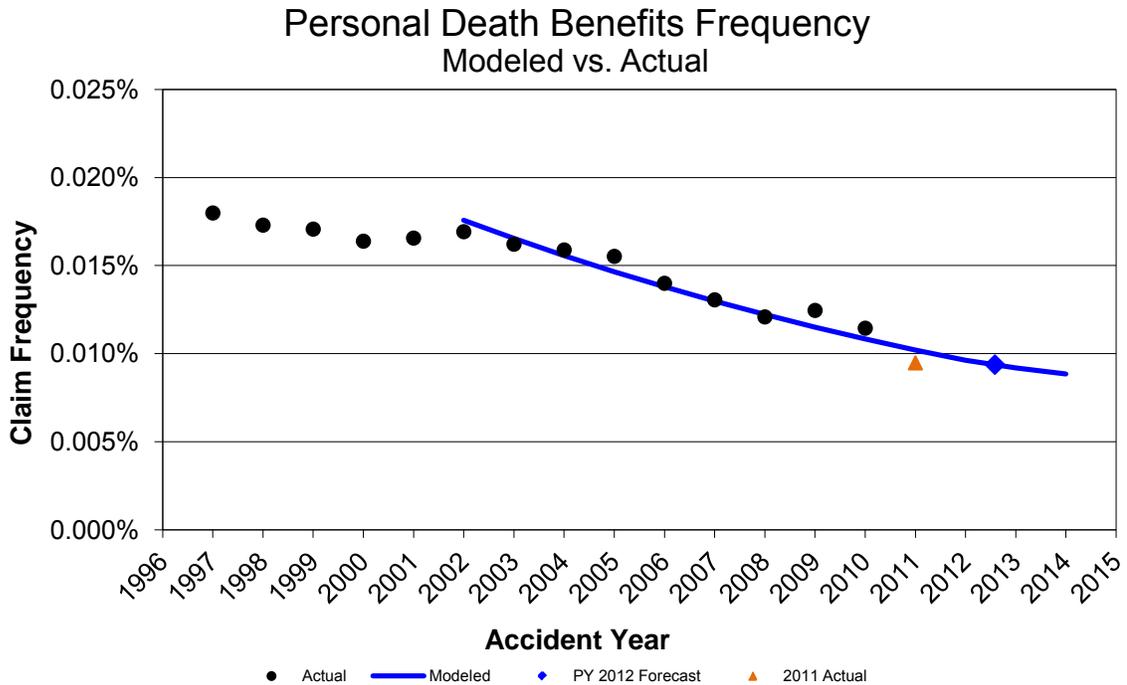
3. **Personal Medical Rehabilitation Frequency** – An 11 year exponential (1997 - 2007) model with an upward parallel shift was selected. Please refer to the response to information request 2012.1 RR BCUC.9.1 for the discussion of this shift. The exponential model was chosen to reflect the return to the pre-recession trend rate. The model has an R<sup>2</sup> value of 93.1% and an F statistic of 132.1. This model is significant at the 99% level for an F statistic of at least 3.8.



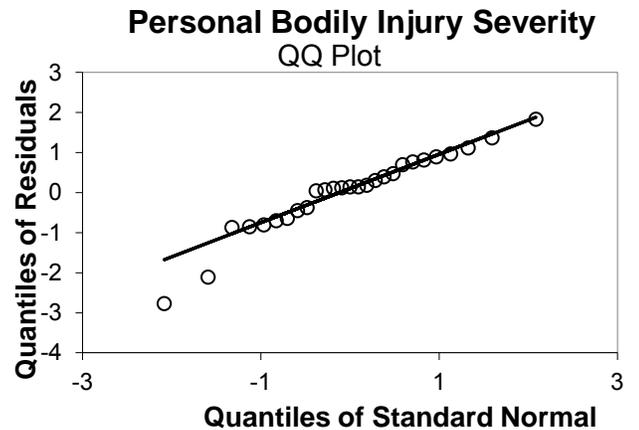
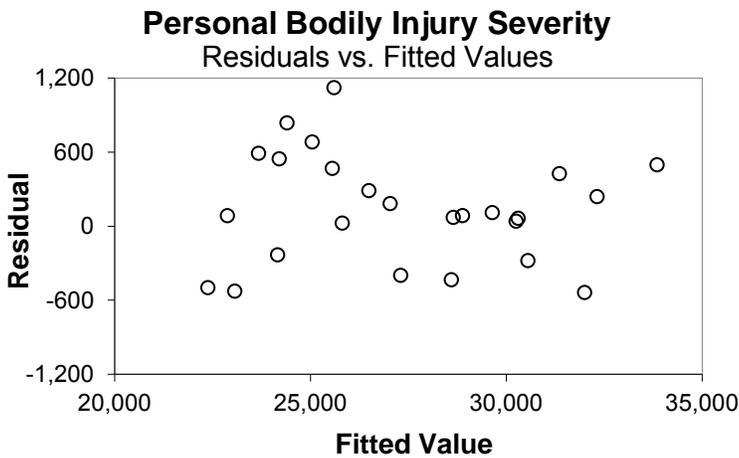
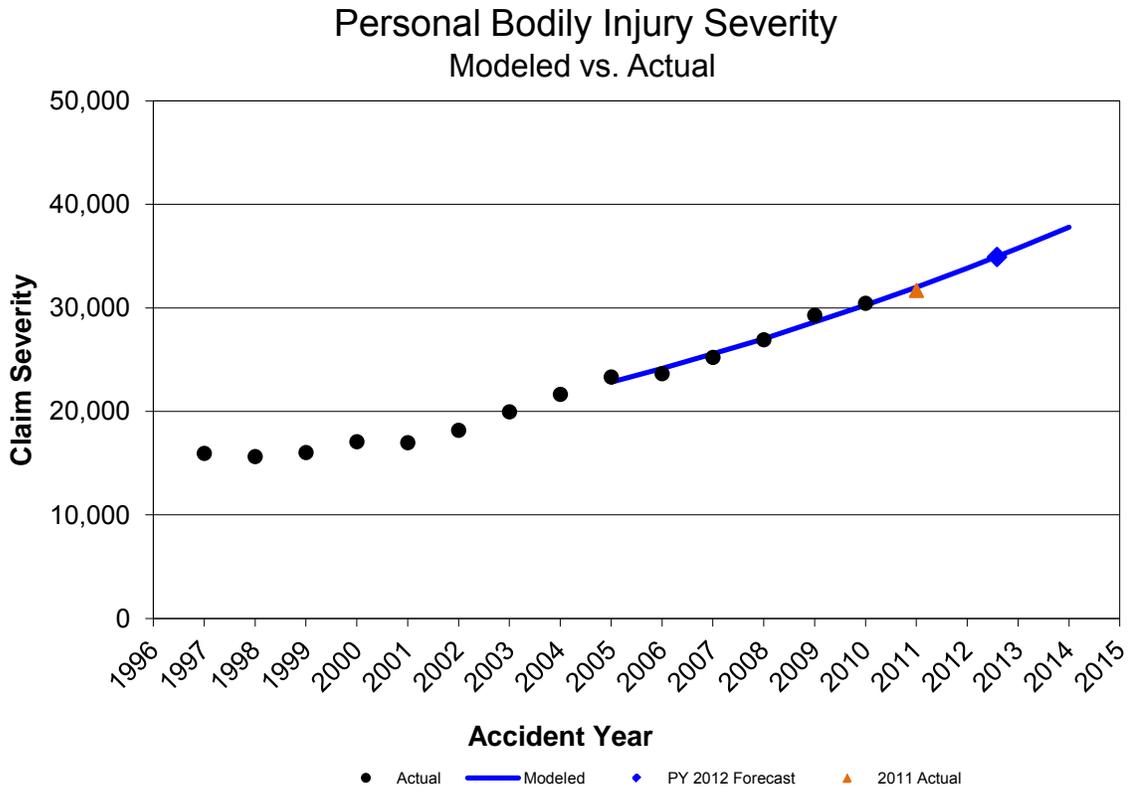
4. **Personal Weekly Benefits Frequency** – a 10 year econometric model was selected. The explanatory variables are GDP growth, the proportion of the BC population aged 65+, and total precipitation. The selected model has an  $R^2$  value of 94.2 % and an F statistic of 89.2. This model is significant at the 99% level for an F statistic of at least 3.4. The long term model is a 12 year exponential (1996-2007). The long term model has an  $R^2$  value of 90.7% and F statistic of 104.7. This model is significant at the 99% level for an F statistic of at least 3.8.



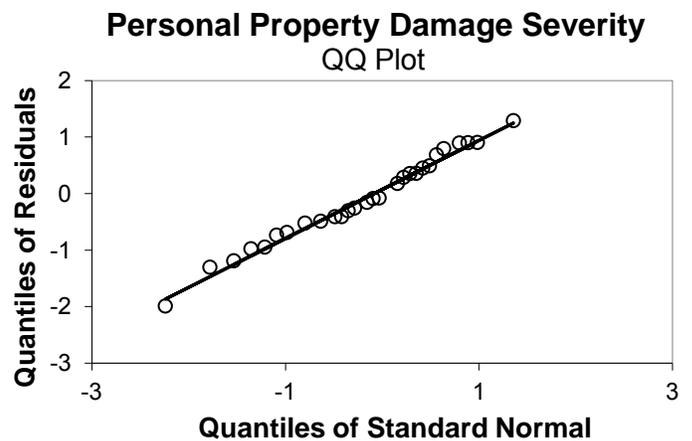
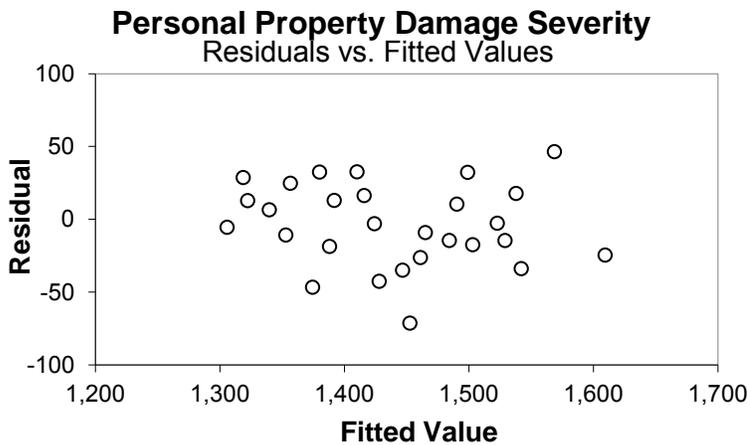
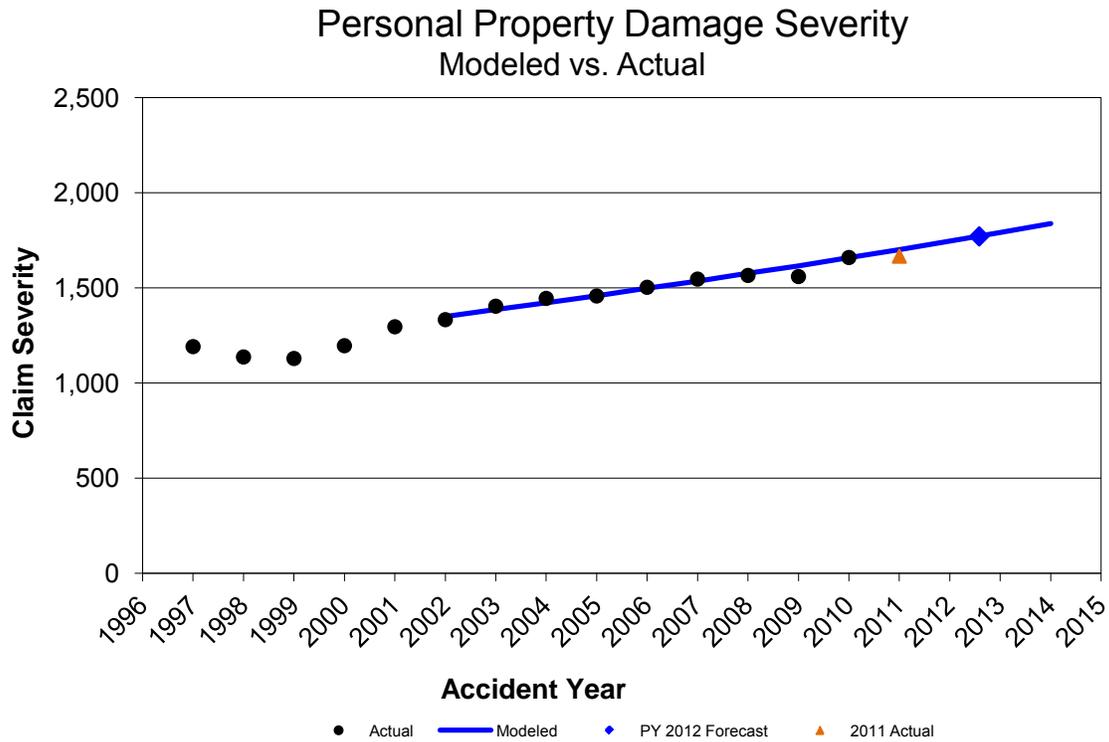
5. **Personal Death Benefits Frequency** – a 10 year exponential model was selected. The selected model has an  $R^2$  value of 72.7% and an F statistic of 23.3. This model is significant at the 99% level for an F statistic of at least 3.9. The long term model is a 15-year exponential model. The long term model has an  $R^2$  value of 67.9% and F statistic of 29.1. This model is significant at the 99% level for an F statistic of at least 3.7.



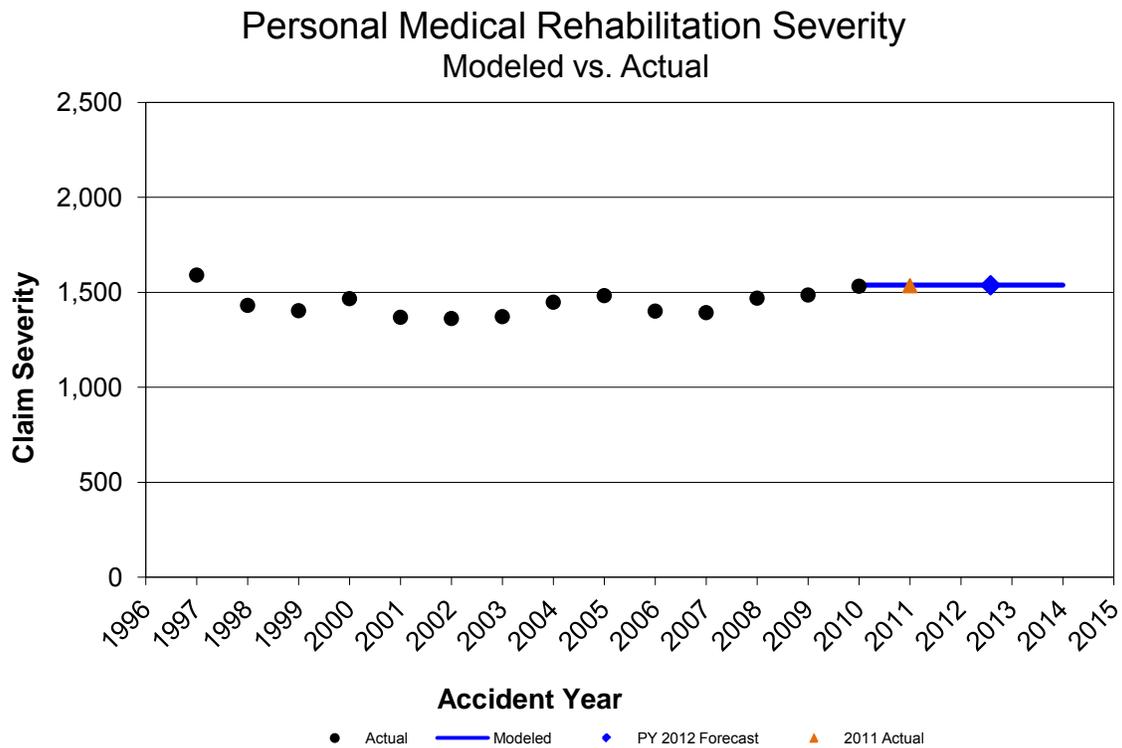
6. **Personal Bodily Injury Severity** – a 7 year exponential model was selected to keep the experience period starting year at 2005. The selected model has an  $R^2$  value of 96.5% and an F statistic of 157.9. This model is significant at the 99% level for an F statistic of at least 4.3. The long term model is a 15 year exponential. The long term model has an  $R^2$  value of 97.3% and F statistic of 486.9. This model is significant at the 99% level for an F statistic of at least 3.7.



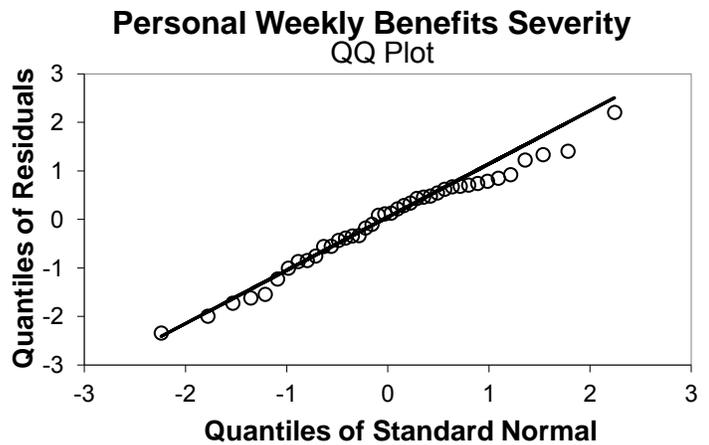
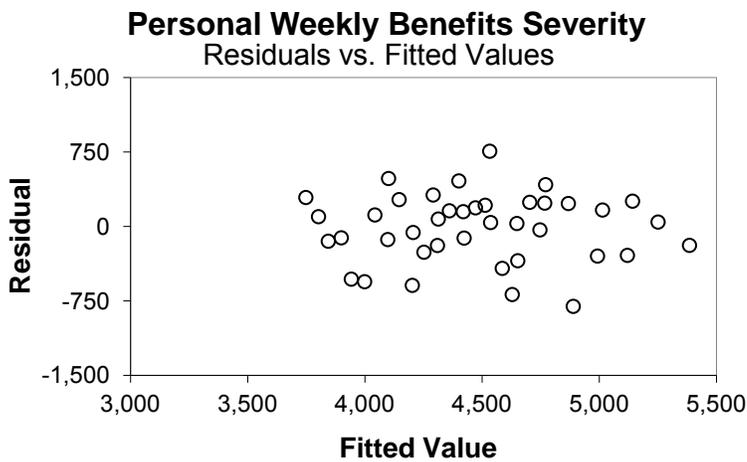
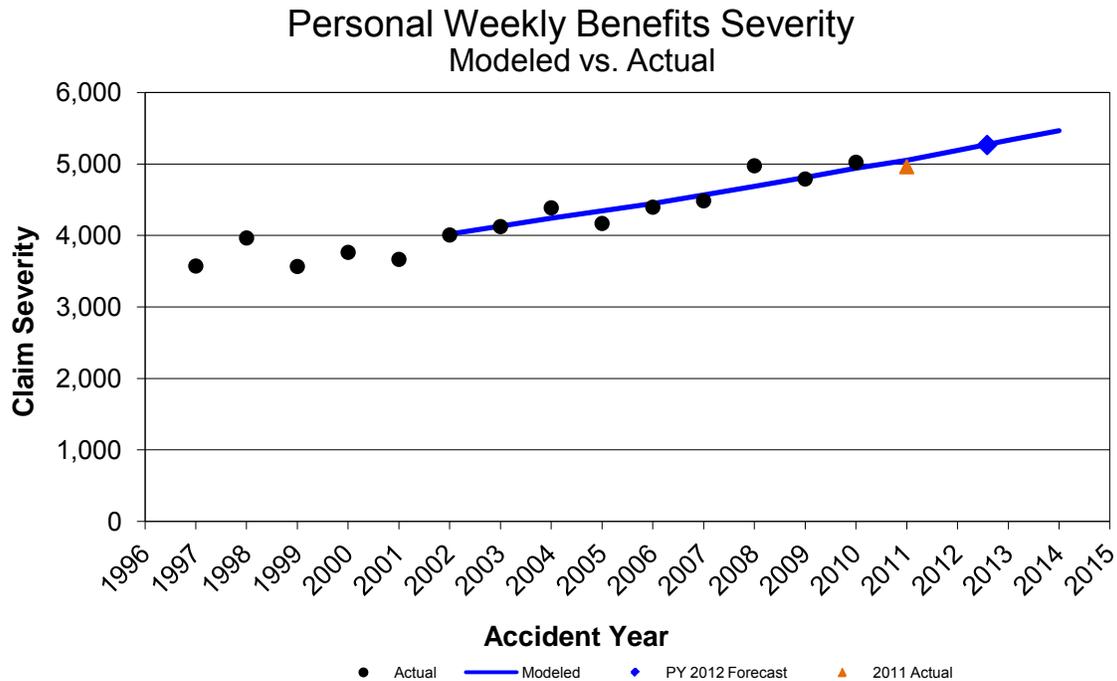
7. **Personal Property Damage Severity** – a 10 year exponential (2001 -2011) model was selected. The selected model has an  $R^2$  value of 90.3% and an F statistic of 81.2. This model is significant at the 99% level for an F statistic of at least 3.9.



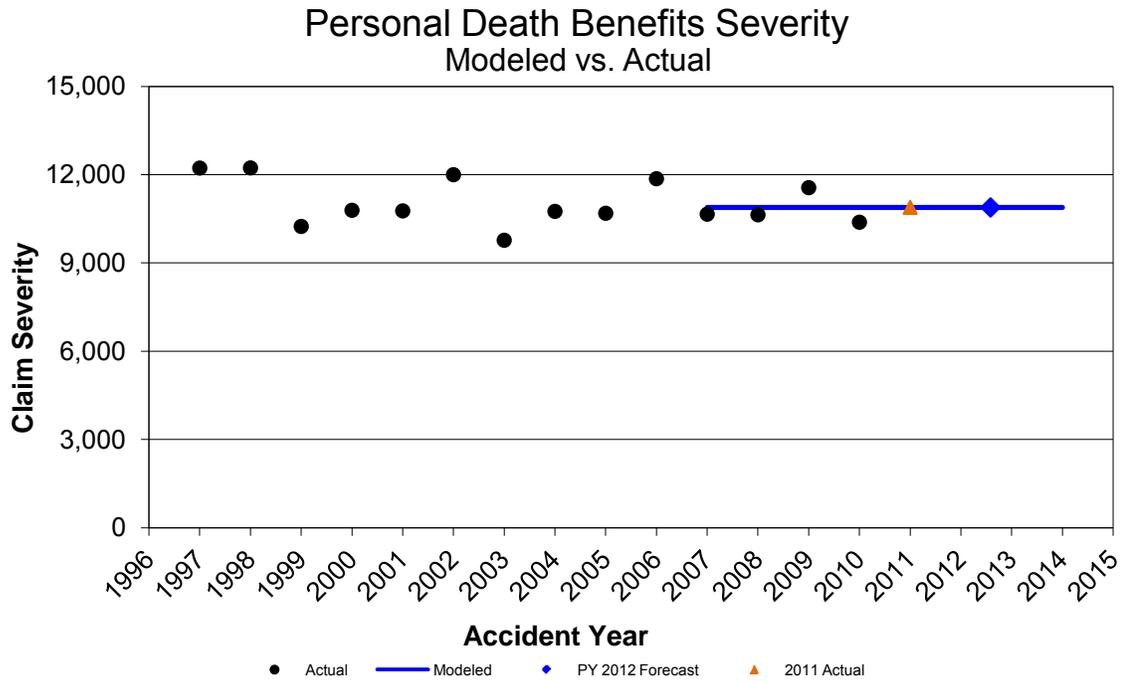
8. **Personal Medical Rehabilitation Severity** – there does not appear to be a stable upward or downward trend, so a 0% trend was selected. The “modeled” value is an average of the latest 2 years (8 quarters).



9. **Personal Weekly Benefits Severity** – a 10 year exponential regression model was selected. The selected model has an  $R^2$  value of 59.1% and an F statistic of 12.7. This model is significant at the 99% level for an F statistic of at least 3.9.

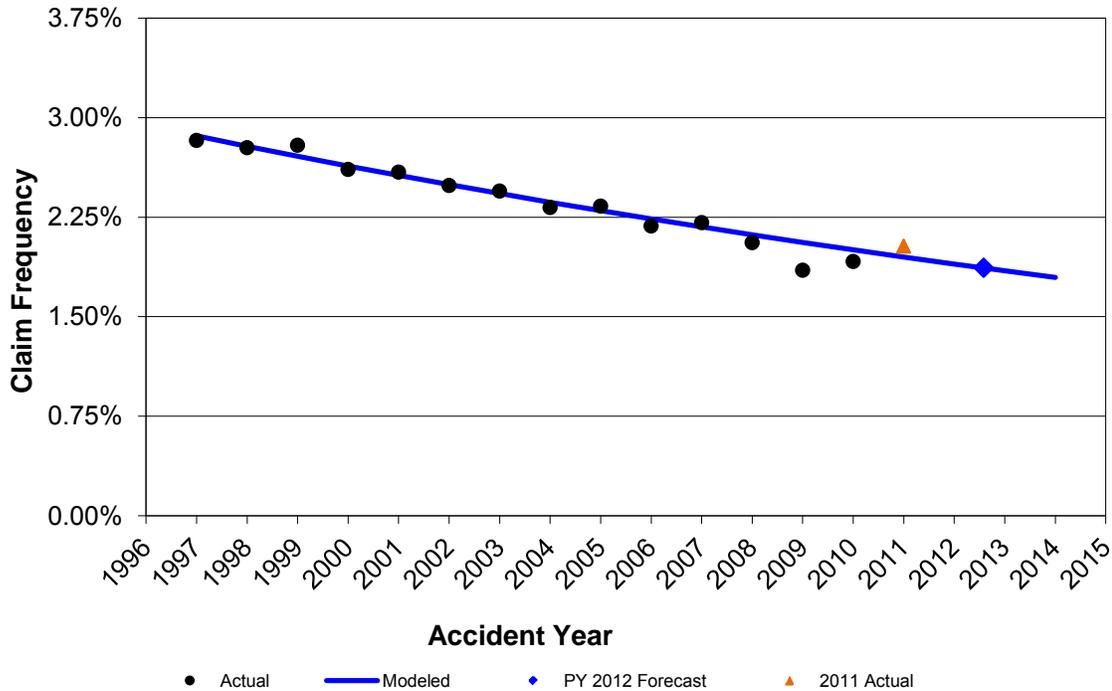


10. **Personal Death Benefits Severity** – there does not appear to be a stable upward or downward trend, so a 0% trend was selected. The ‘modeled’ value is an average of the latest 5 years (20 quarters).

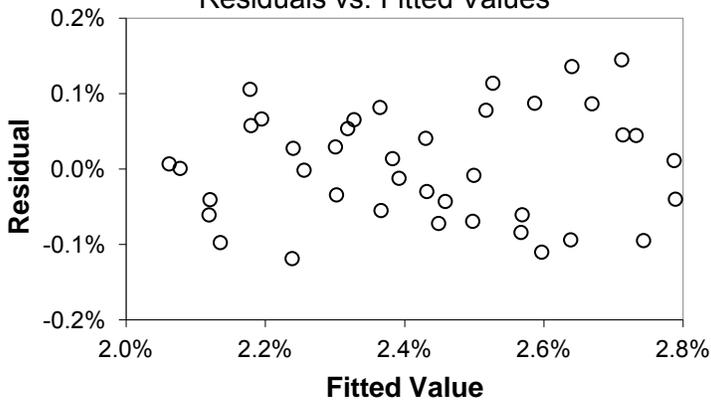


11. **Commercial Bodily Injury Frequency** – an 11 year (1997-2007) exponential model was selected. The exponential model was chosen to reflect the return to the pre-recession trend line. The selected model has an R<sup>2</sup> value of 88.3% and an F statistic of 73.7. This model is significant at the 99% level for an F statistic of at least 3.84.

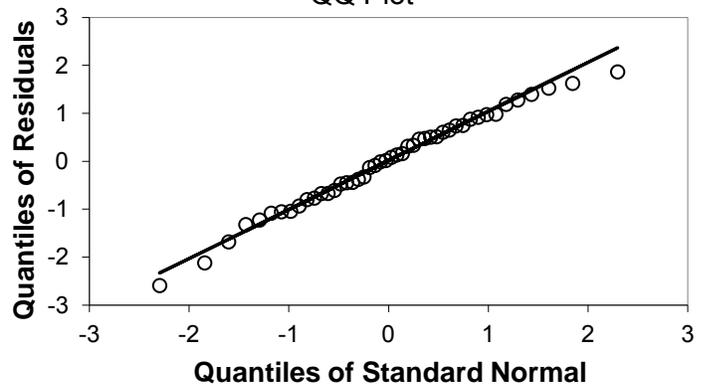
Commercial Bodily Injury Frequency  
Modeled vs. Actual



Commercial Bodily Injury Frequency  
Residuals vs. Fitted Values

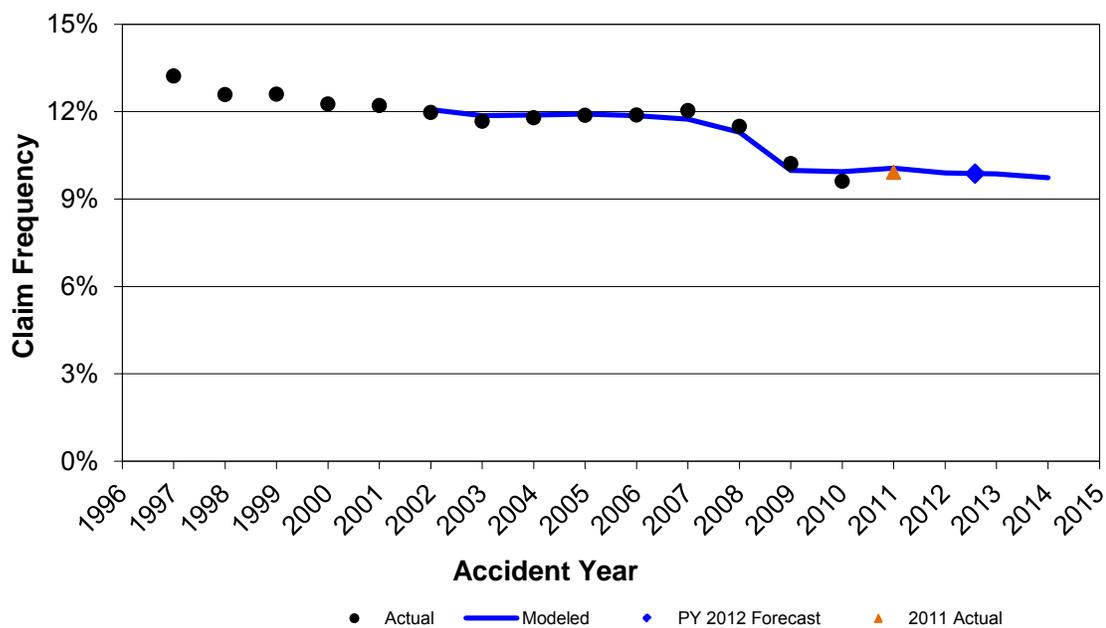


Commercial Bodily Injury Frequency  
QQ Plot

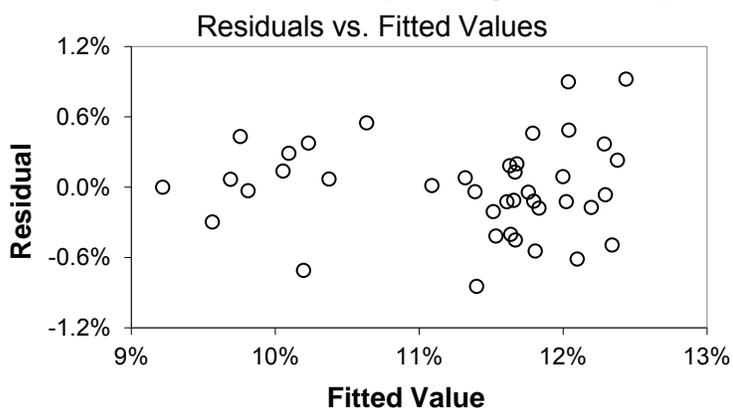


12. **Commercial Property Damage Frequency** – a 10 year econometric model was selected. The explanatory variables are decimal date, gross domestic product (GDP), and an indicator for the 2010 Olympics Games. The 2010 Olympic Games variable was included to fit a low point in the first quarter of 2010, and GDP was used to reflect the impact of the recession on Commercial travel. The selected model has an R<sup>2</sup> value of 84.2% and an F statistic of 29.3. This model is significant at the 99% level for an F statistic of at least 3.4. The long term model is a 15 year exponential model. The long term model has an R<sup>2</sup> value of 72.4% and an F statistic of 36.1. This model is significant at the 99% level for an F statistic of at least 3.7.

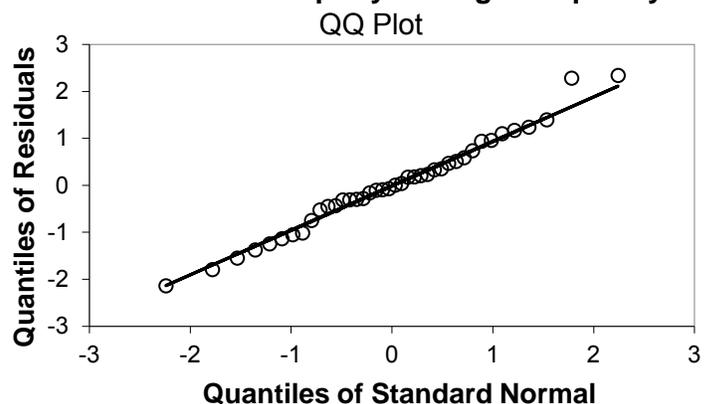
Commercial Property Damage Frequency  
Modeled vs. Actual



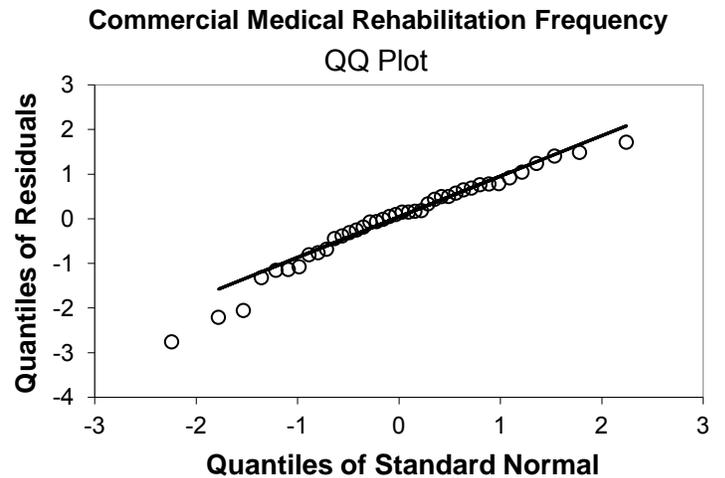
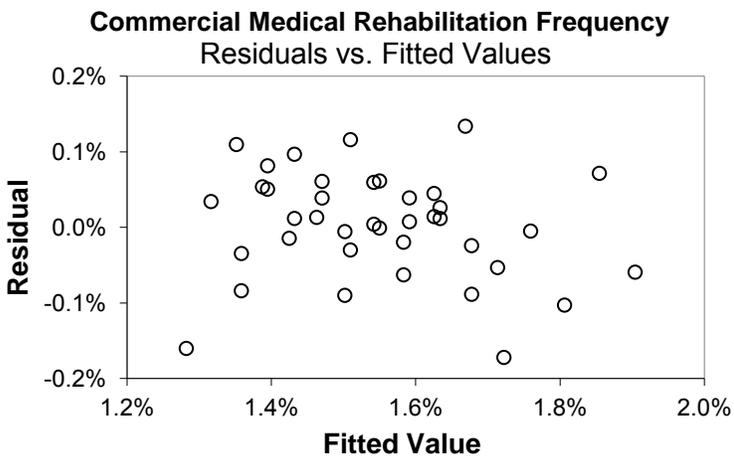
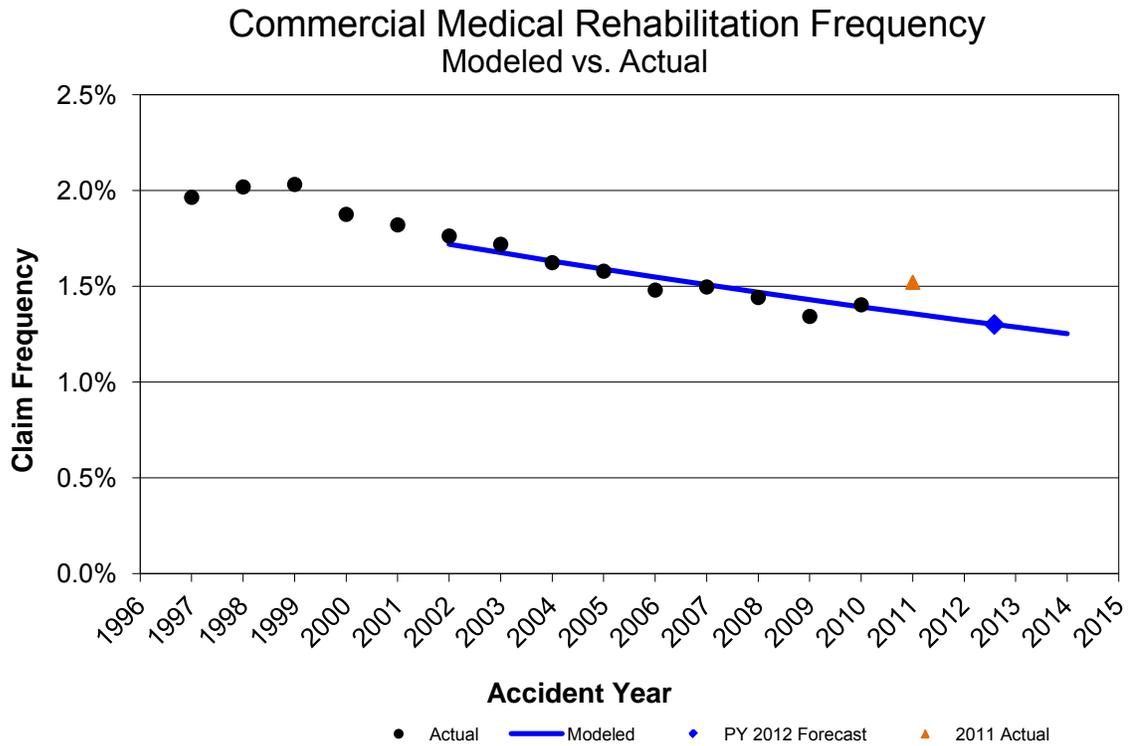
Commercial Property Damage Frequency



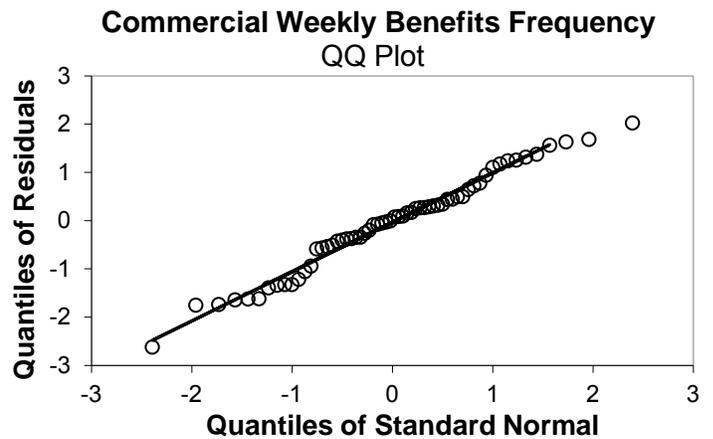
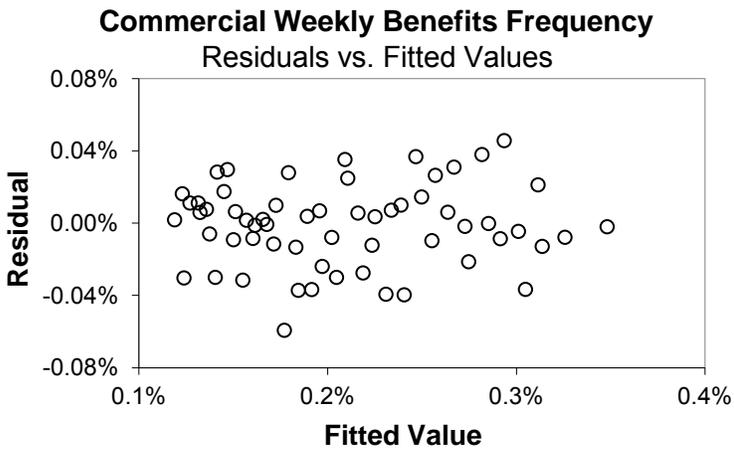
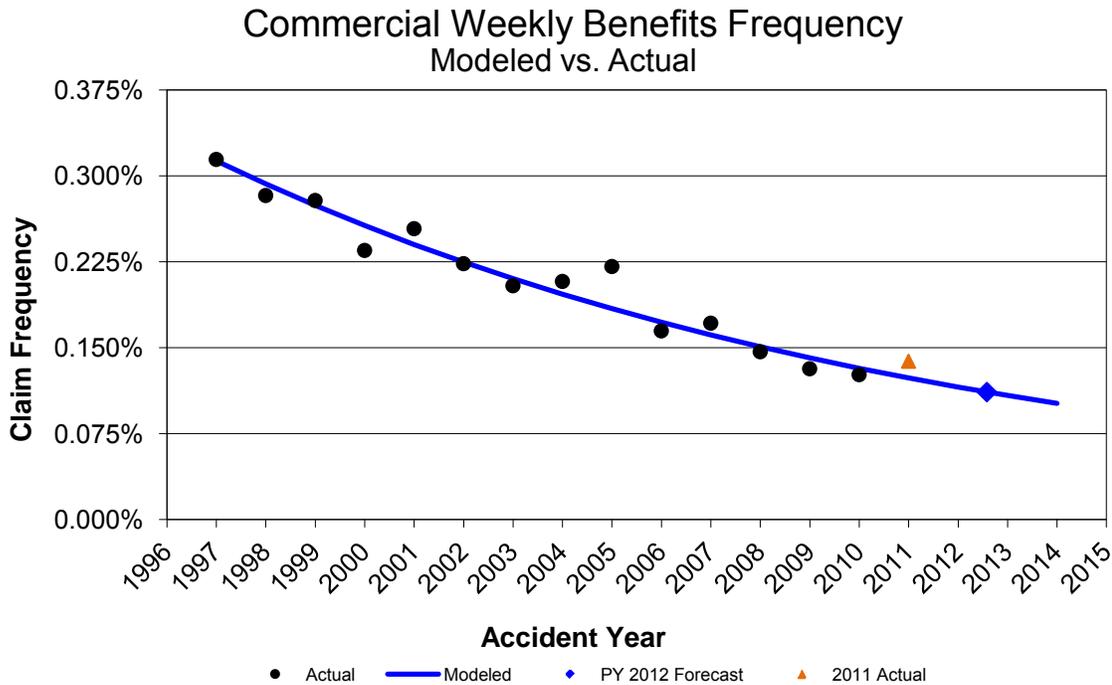
Commercial Property Damage Frequency



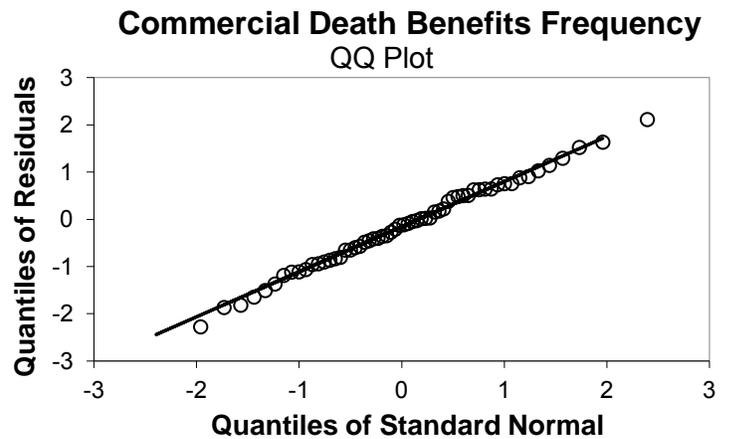
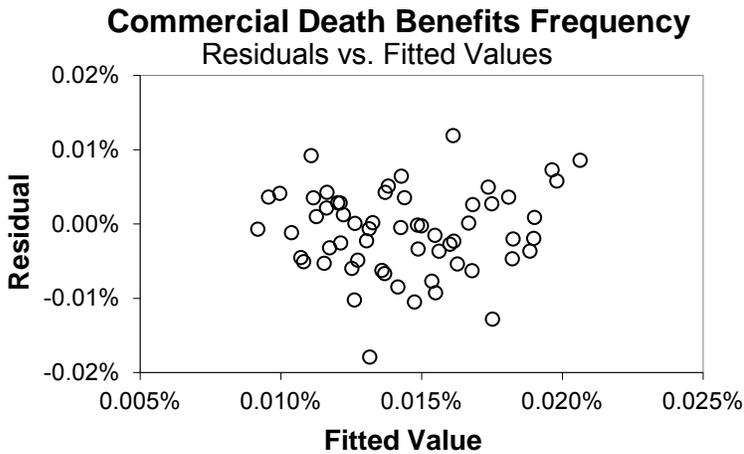
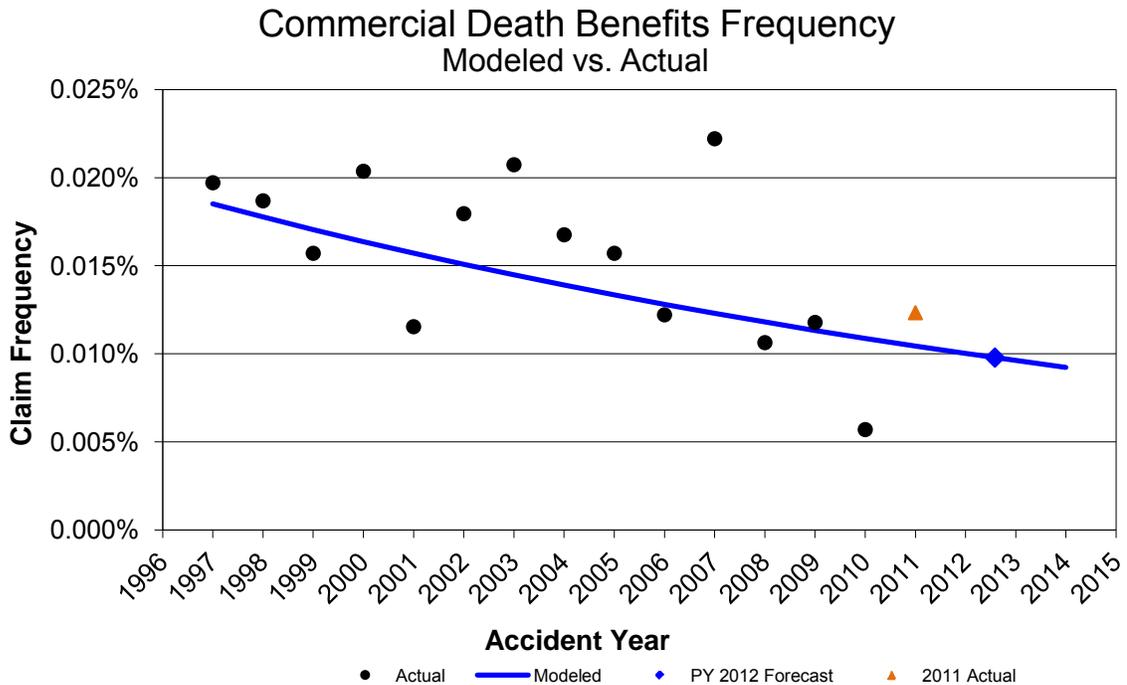
13. **Commercial Medical Rehabilitation Frequency** – a 10 year exponential model was selected. The selected model has an  $R^2$  value of 77.9% and an F statistic of 30.8. This model is significant at the 99% level for an F statistic of at least 3.9.



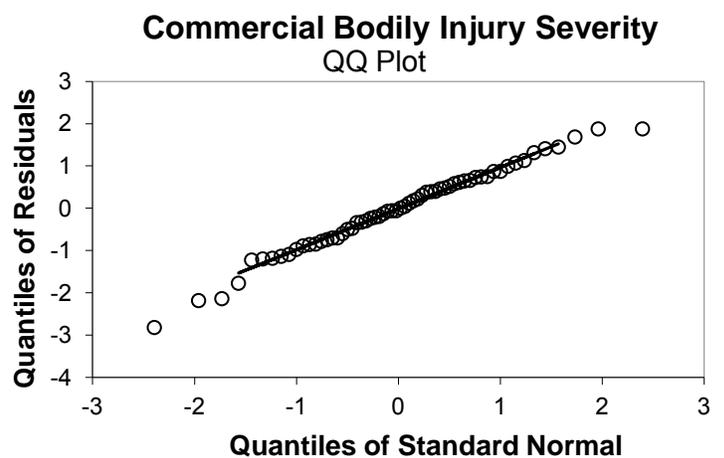
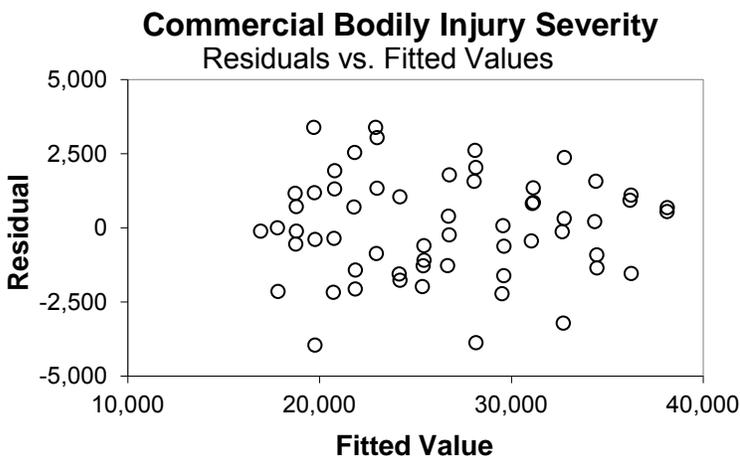
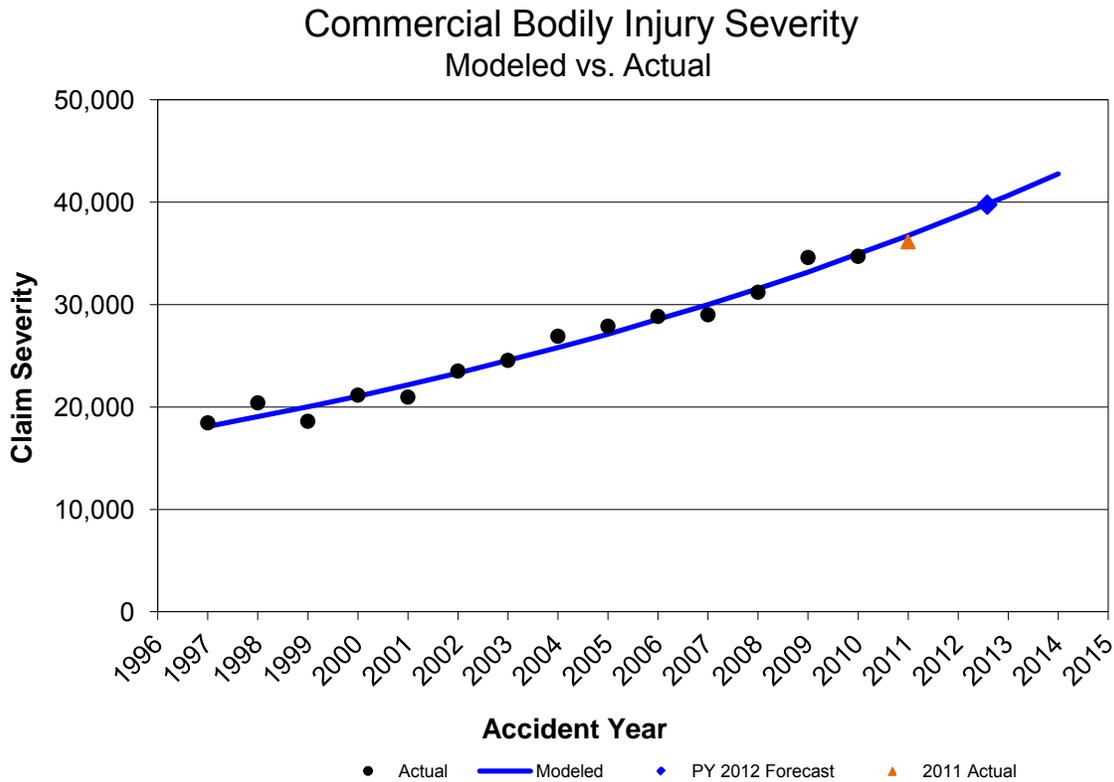
14. **Commercial Weekly Benefits Frequency** – a 15 year exponential model was selected. The selected model has an  $R^2$  value of 86.9% and an F statistic of 91.6. This model is significant at the 99% level for an F statistic of at least 3.7.



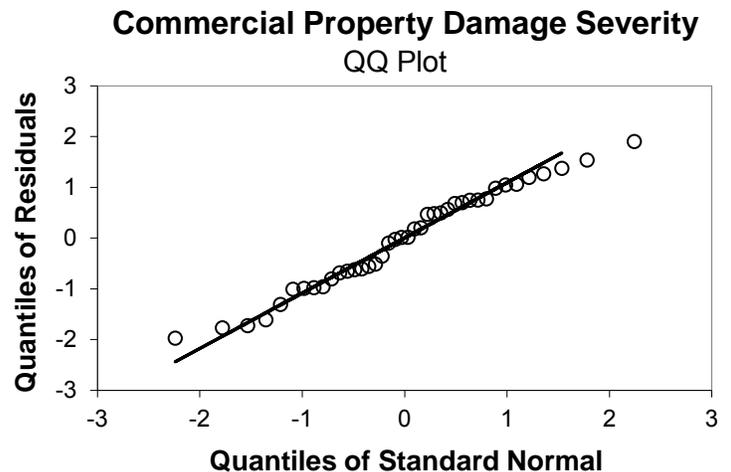
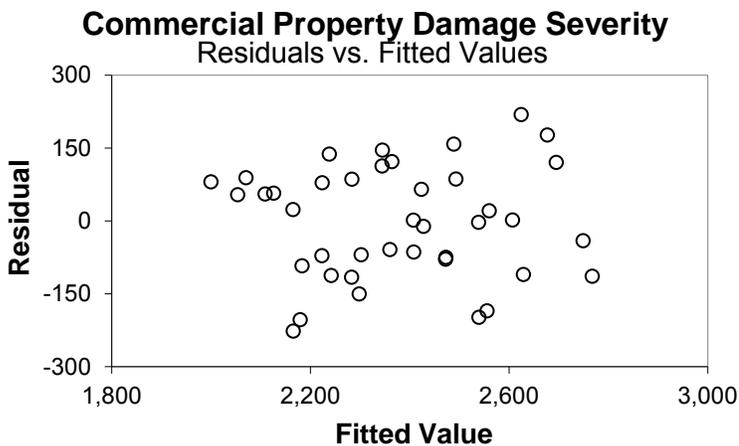
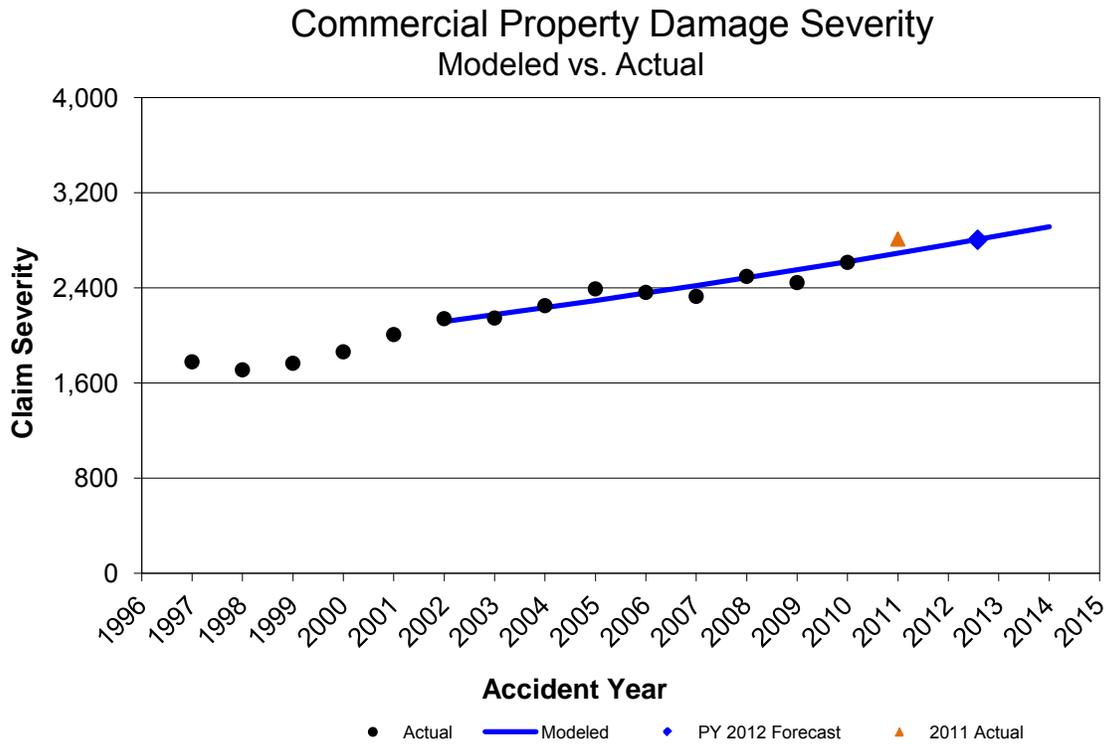
15. **Commercial Death Benefits Frequency** – a 15 year exponential model was selected. The selected model has an  $R^2$  value of 14.1% and an F statistic of 2.26. This model is significant at the 90% level for an F statistic of at least 2.05.



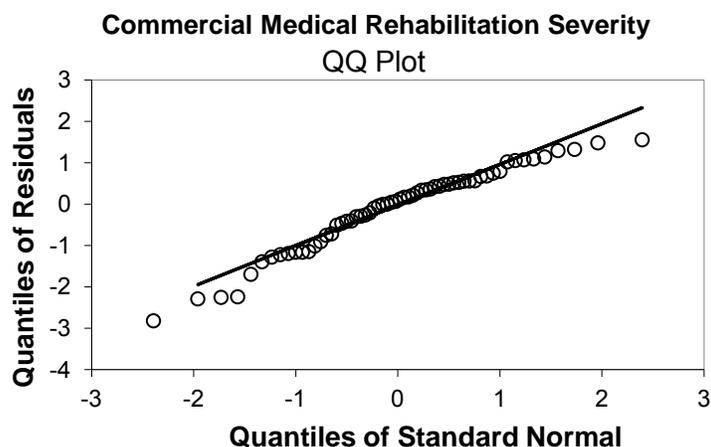
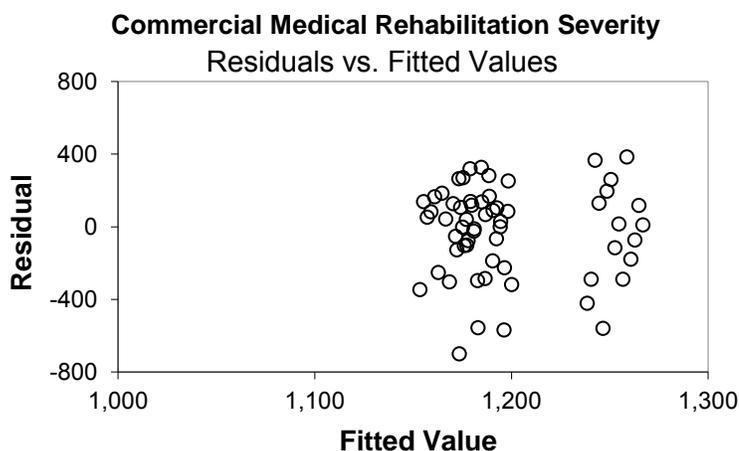
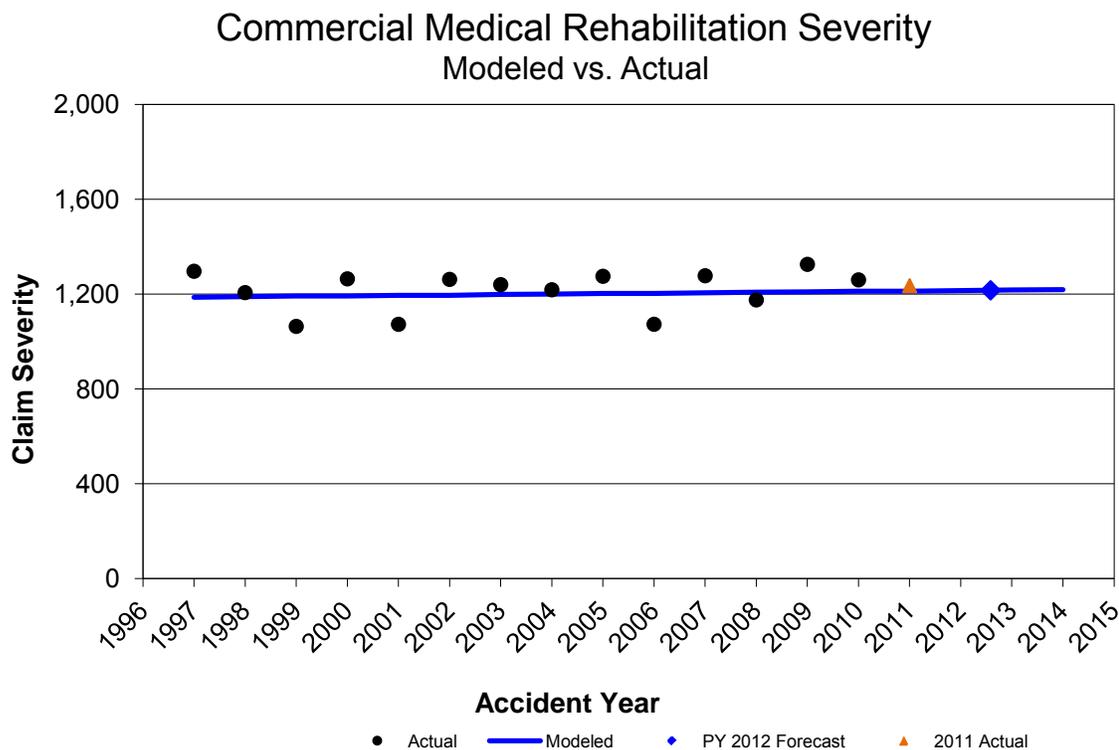
16. **Commercial Bodily Injury Severity** - a 15 year exponential model was selected. The selected model has an  $R^2$  value of 90.0% and an F statistic of 123.4. This model is significant at the 99% level for an F statistic of at least 3.7.



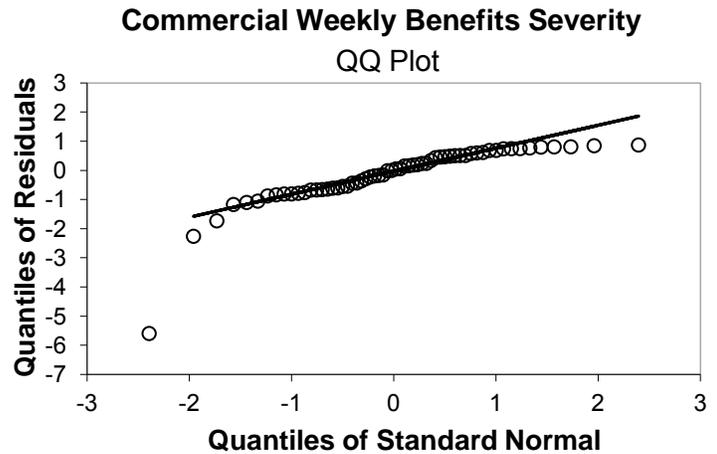
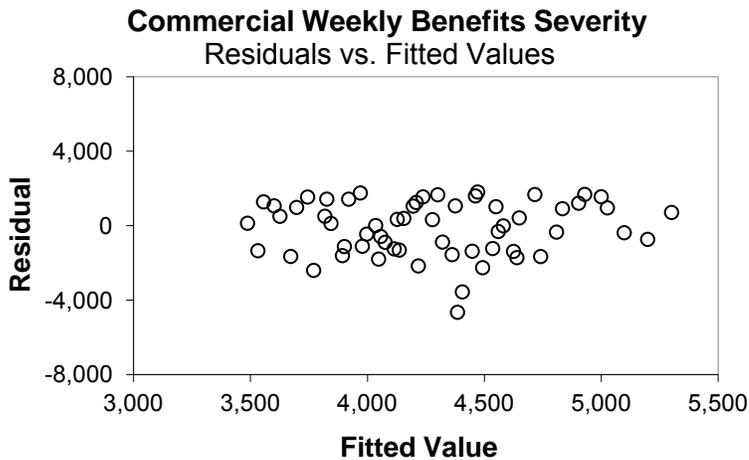
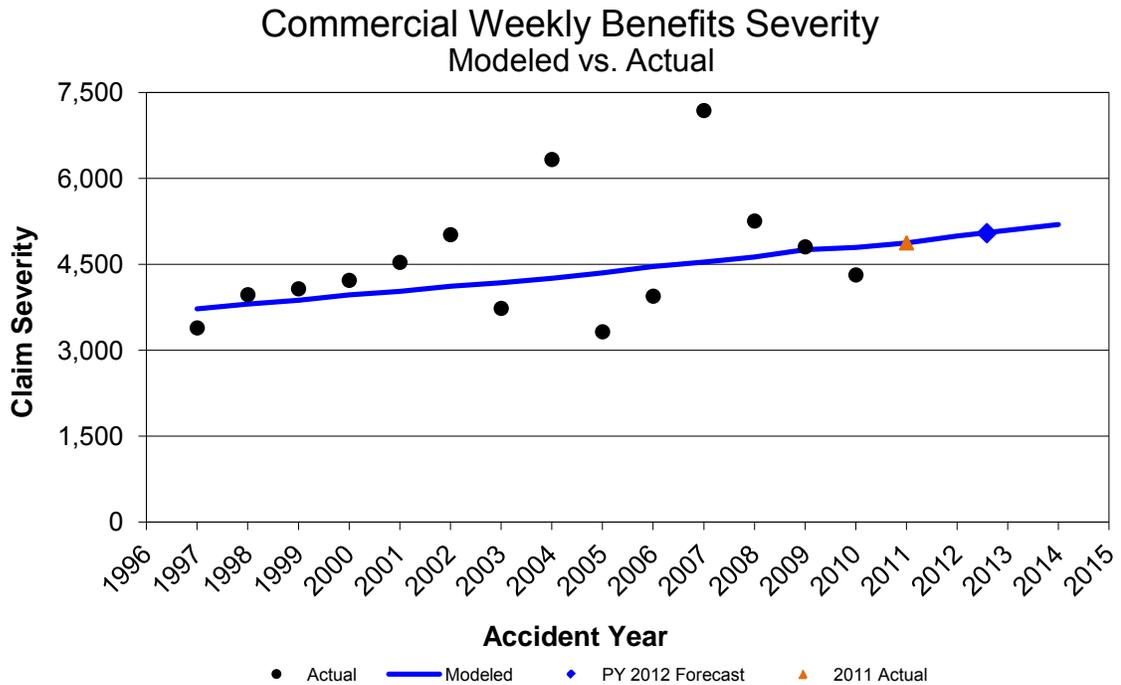
17. **Commercial Property Damage Severity** – a 10 year exponential model was selected. The selected model has an  $R^2$  value of 75.7% and an F statistic of 27.3. This model is significant at the 99% level for an F statistic of at least 3.9.



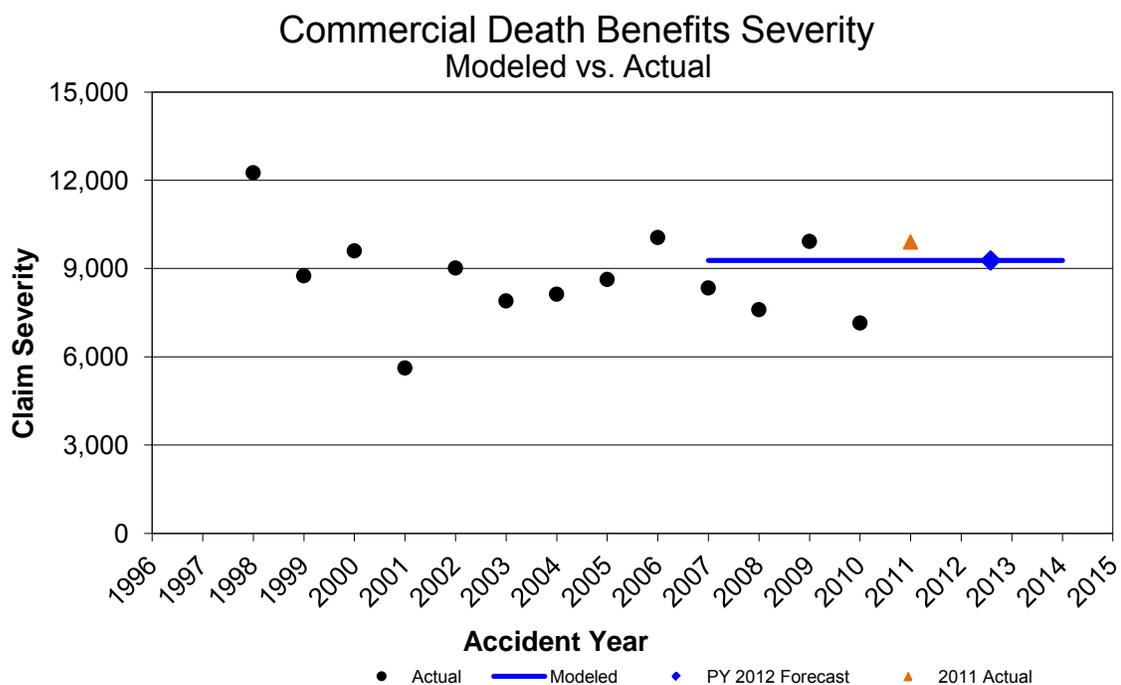
18. **Commercial Medical Rehabilitation Severity** – a 15 year exponential model was selected to produce a more stable prediction. The selected model has an  $R^2$  value of 2.0% and an F statistic of 0.3. This model is significant at the 10% level for an F statistic of at least 0.26.



19. **Commercial Weekly Benefits Severity** – a 15 year exponential model was selected. The selected model has an  $R^2$  value of 7.4% and an F statistic of 1.09. This model is significant at the 60% level for an F statistic of at least 1.03.



20. **Commercial Death Benefits Severity** – there does not appear to be a stable upward or downward trend, so a 0% trend was selected. The ‘modeled’ value is an average of 5 years (20 quarters).

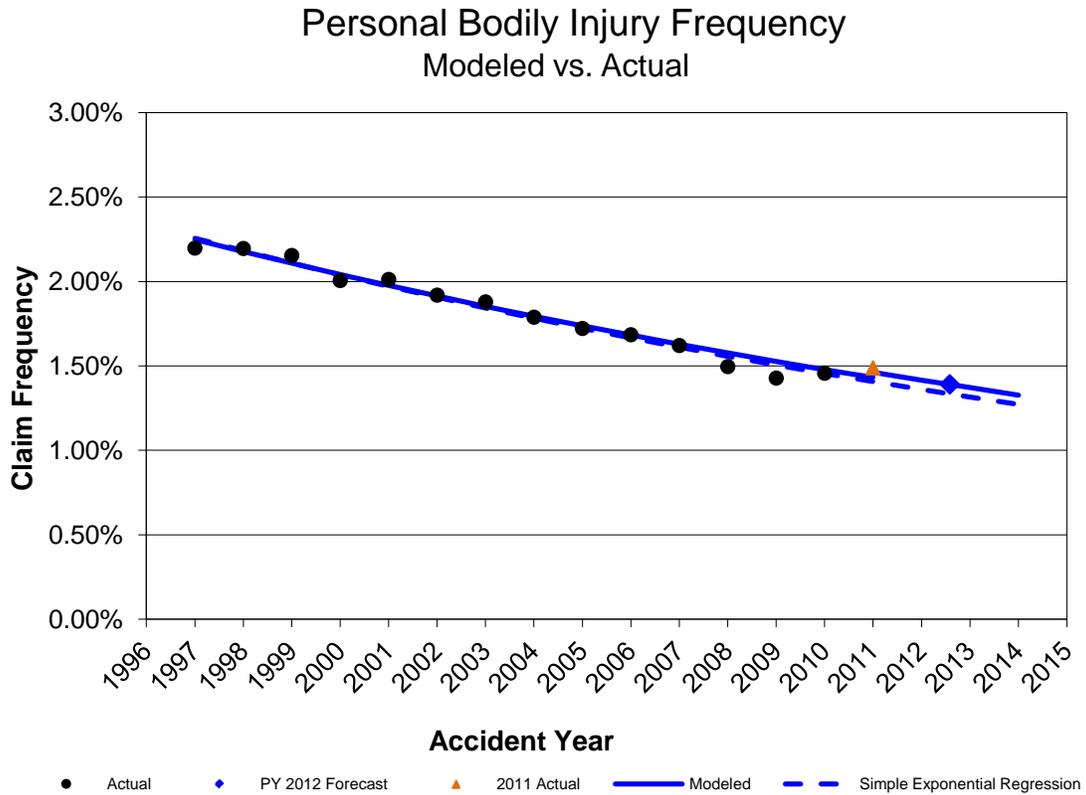




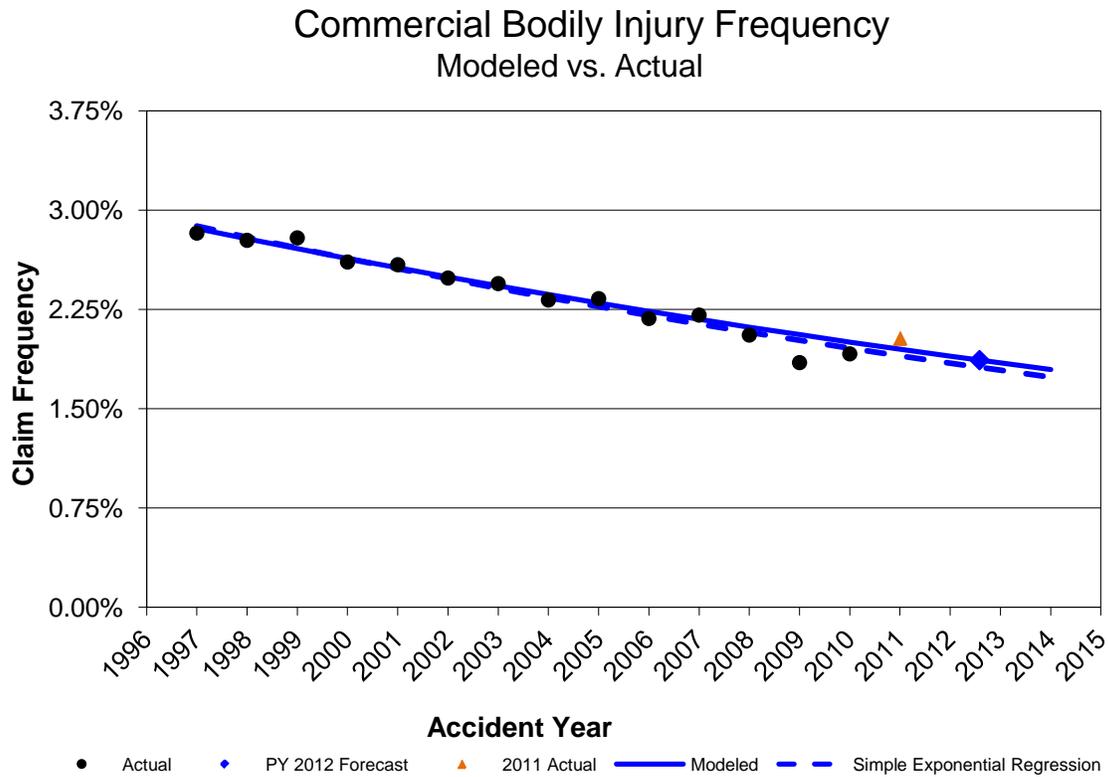
## **2012.1 RR BCUC.36.1 – Attachment B – Simple Exponential Trend Lines**

The figures below are based on the updated trend lines including 2011 actuals in Attachment A - Updated Frequency and Severity Trend Lines. The dashed lines have been added to show the revised trend lines based on simple exponential models that includes weight on the 2008 and 2009 data as requested.

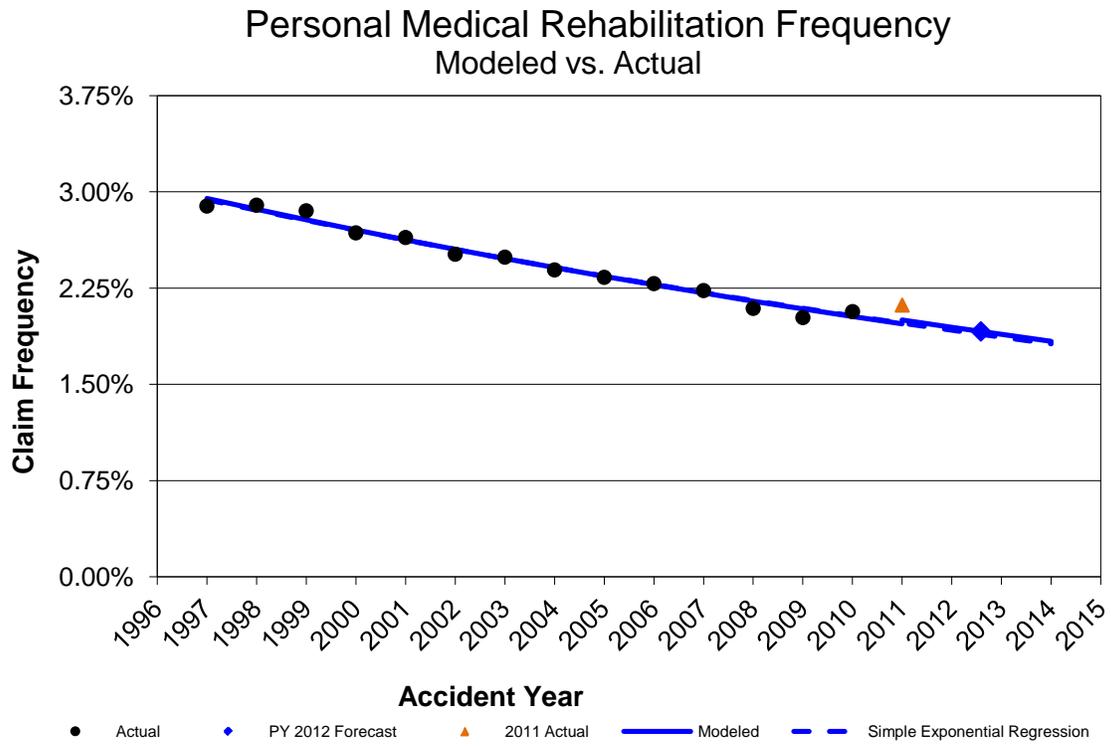
**Personal Bodily Injury Frequency** – The dashed line in the following graph is a 15-year exponential regression from 1997 through 2011.



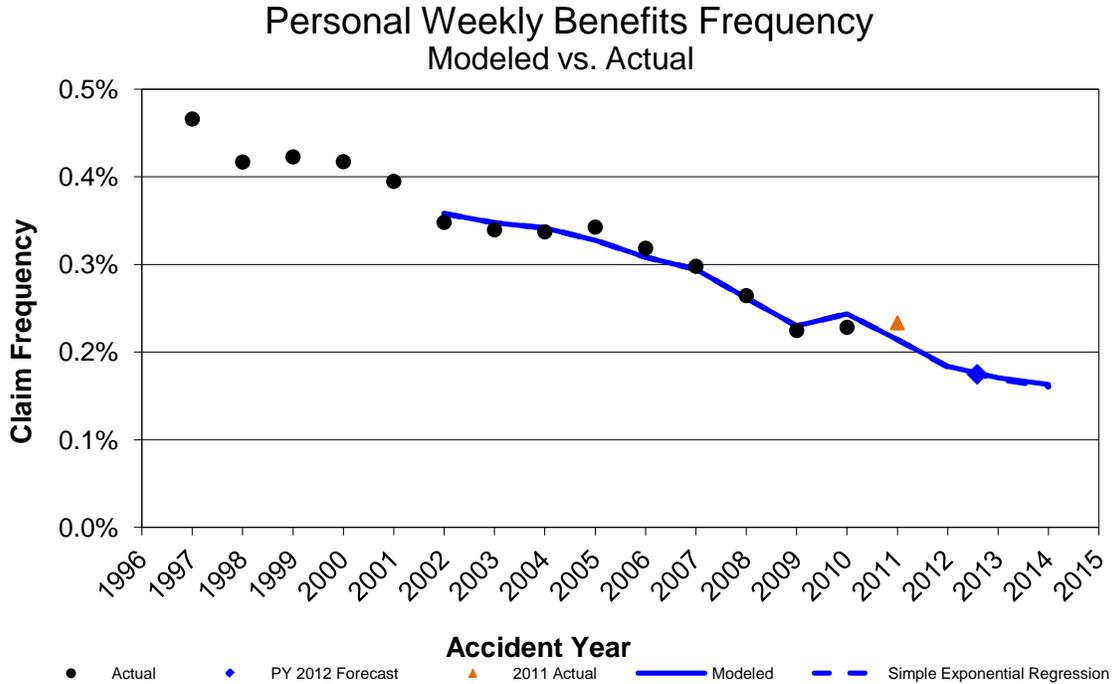
**Commercial Bodily Injury Frequency** – The dashed line in the following graph is a 15-year exponential regression from 1997 through 2011.



**Personal Medical Rehabilitation Frequency** – The dashed line in the following graph is a 15-year exponential regression from 1997 through 2011.



**Personal Weekly Benefits Frequency** – The dashed line in the following graph represents using the same short term model as in Attachment A - Updated Frequency and Severity Trend Lines and a 15-year exponential regression from 1997 through 2011 as the long term model.

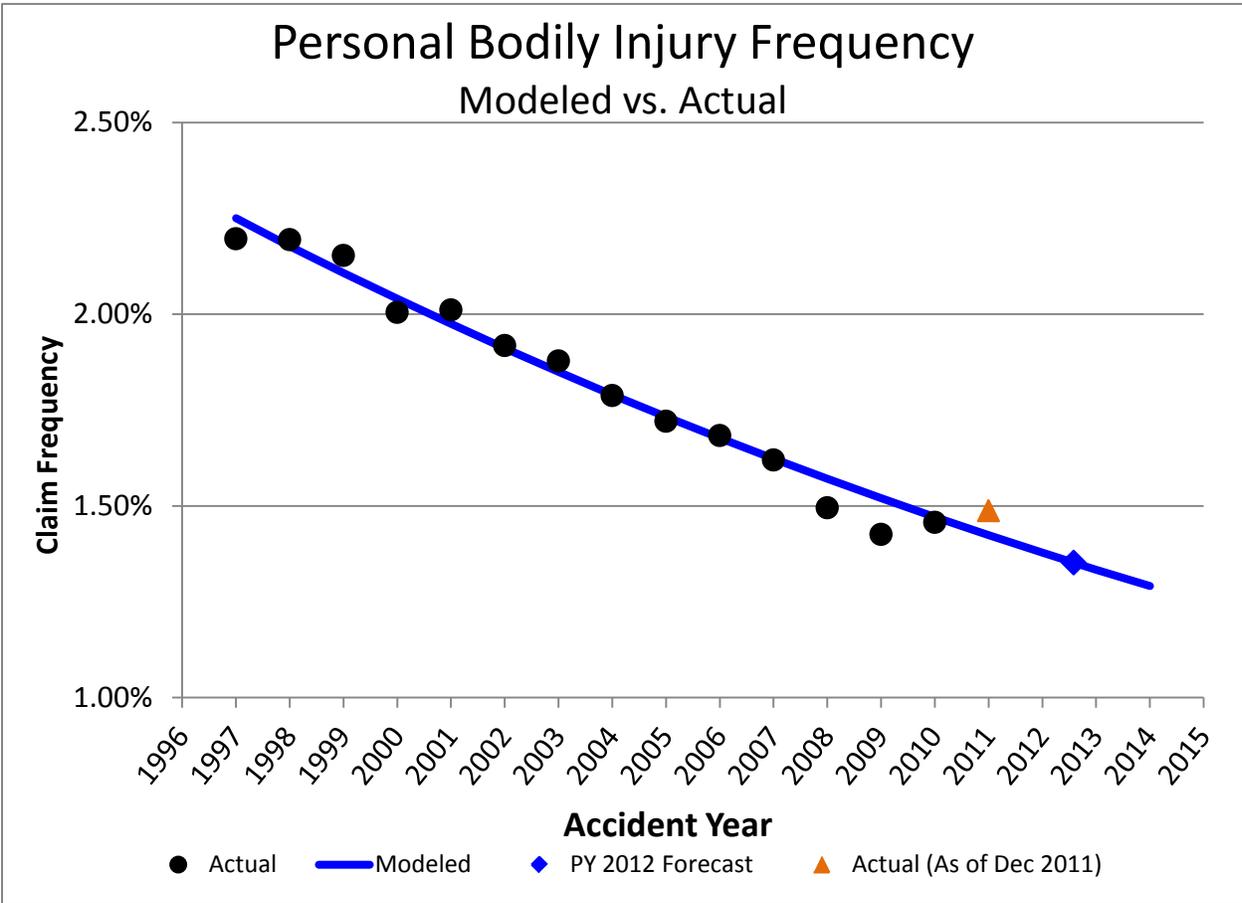


**2012.1 RR BCUC.37.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, p. 4  
Personal Bodily Injury Frequency**

**Please update the graphs on p. 4 - Personal Bodily Injury Frequency Modeled vs. Actual to reflect 2011 actuals with a Y axis scale of 1% to 2.5%.**

**Response:**

Personal bodily injury claims frequency for 2011 has emerged higher than the modeled trend line in the Application. The provided graph is identical to the figure on page 4 of Exhibit D.0 in the Application, with the exception of the triangle, which represents the 2011 actual frequency as of December 2011. The scale of the y-axis has been modified as requested.



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**2012.1 RR BCUC.37.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, p. 4  
Personal Bodily Injury Frequency**

**Please explain the 2008 and 2009 actual results and whether the selected model should be modified based on the inclusion of 2011 actual results.**

**Response:**

The actual bodily injury (BI) claims frequencies for 2008 and 2009 showed a distinct dip below the long-term downward trend. Two key factors contributing to it were unusually dry weather and a declining amount of travel. These factors were discussed in more detail in the Application in Chapter 3, paragraphs 24 to 26. The selected model in the Application excludes the unusually low experience and is considered the best fit trend line for the purpose of forecasting, based on the data in the Application. Therefore, it should not be modified.

The actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. The updated loss trend models based on the most current information available have been provided in the response to information request 2012.1 RR BCUC.36.1, and are used in the updated rate indication provided in the response to information request 2012.1 RR BCUC.5.1. The updated loss trend models include consideration of the increased BI claim frequency observed in 2011.

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**2012.1 RR BCUC.37.3 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, p. 4  
Personal Bodily Injury Frequency**

**Are there other models that could be chosen that would have a higher  $R^2$  value both prior to 2011 actual results and after inclusion of 2011 actual results?**

**Response:**

Yes, a model can always be found to increase the  $R^2$  value (unless it is already 100%), but that does not mean that the model is a better forecasting model. A high  $R^2$  simply indicates that the model fits the historical data very well, but it says nothing about the model's ability to predict the future, especially if the historical data is unstable or the underlying patterns in the data are changing over time. In forecasting, it is more important to first determine an appropriate model and then optimize the model parameters to find the best fit.

Within the insurance context, actuaries are guided by their standards of practice in determining the appropriate trend models. The standards of practice require consideration of economic and social influences as well as the timing of the various influences. Sole reliance upon simple statistics, such as  $R^2$ , without consideration of other potential influences could produce forecasts that would be less meaningful than those provided in the Application.

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**2012.1 RR BCUC.38.1 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, Para. 11  
Economic Recession & Recovery**

**“Frequencies of a few coverages are distinctively lower than the long-term trend line during the recession in 2008 and 2009. 2011 frequency for these coverages has returned to the long-term trend line and is expected to follow the moderate downward trend that was observed prior to 2008.”**

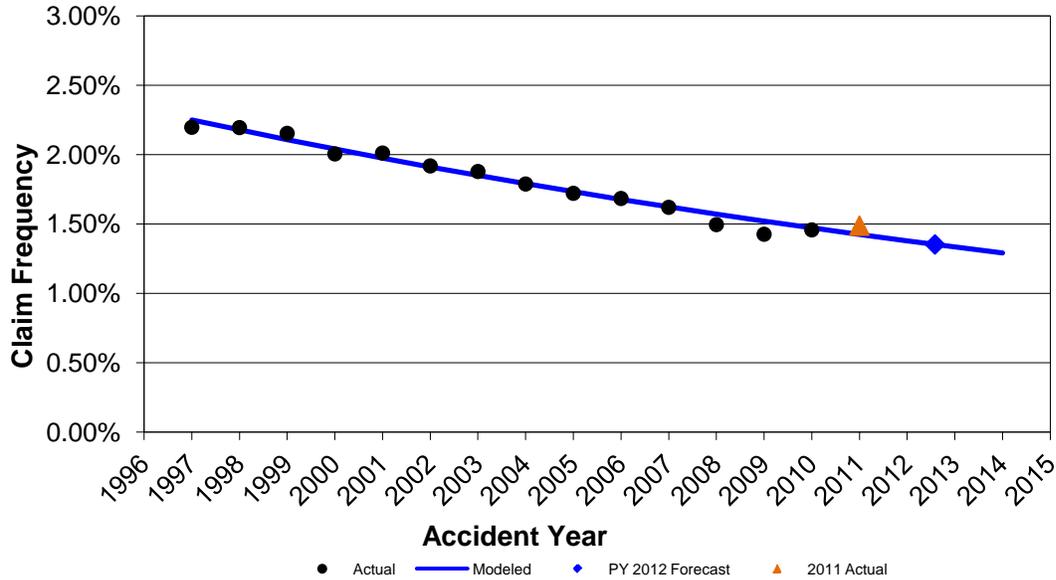
**Please demonstrate that the 2011 frequency for these coverages has returned to the long-term trend line.**

**Response:**

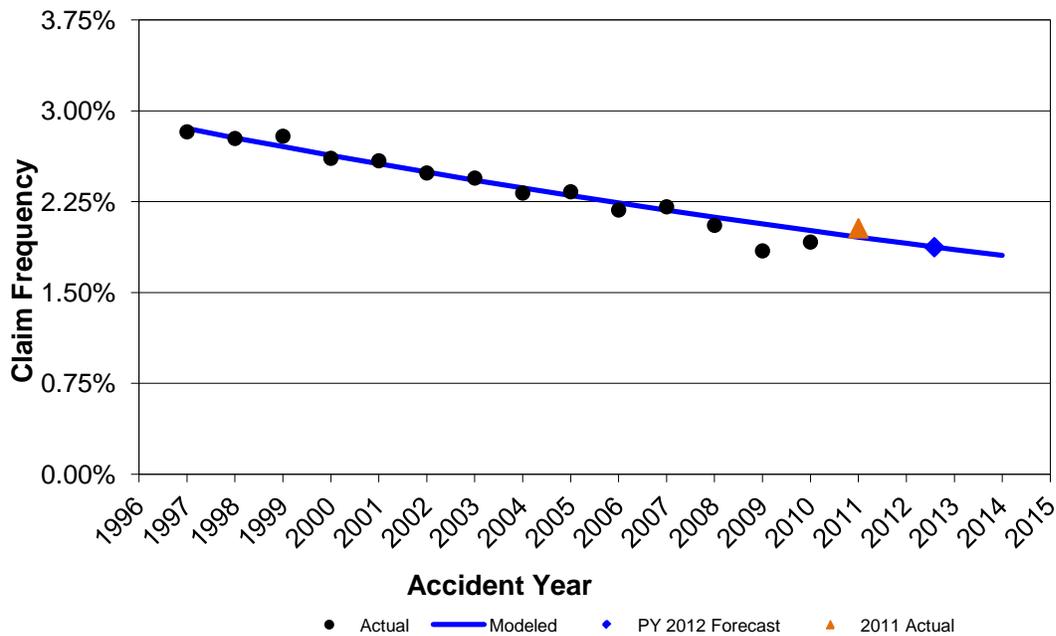
Personal and Commercial frequency graphs for bodily injury are provided below to demonstrate the return to the long-term trend in 2011 after the observed lower frequencies in 2008 and 2009. These graphs are identical to the figures on pages 4 and 14 in Exhibit D.0 of the Application, with the exception of the triangles, which represent the 2011 actual frequencies as of 2011 year-end. In both cases, it can be seen that the 2011 frequency is slightly above both the 2010 frequency and the long-term trend line.

ICBC currently believes that a downward trend will resume following 2011, as the drivers of the long-term downward trend line (e.g., shift to safer vehicles, shift to more experienced drivers, and continued investment in road safety) continue to be present. However, the 2011 year has emerged higher than expected, which is suggestive of new counter-forces on the downward trend line. ICBC has begun to investigate the drivers of this increase. At this stage of investigative analysis, some factors have been identified that contribute to the higher claims frequency in 2011 and are expected to continue in the future. The investigation is still underway but results have shown that there is an increase in the number of claims involving non-motorists (cyclists and pedestrians) and low-cost property damage claims with injury. This is modeled by an upward parallel shift in the trend line that begins in 2011 as described in Attachment A of the response to information request 2012.1 RR BCUC.36.1.

### Personal Bodily Injury Frequency Modeled vs. Actual



### Commercial Bodily Injury Frequency Modeled vs. Actual



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**2012.1 RR BCUC.38.2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, Para. 11  
Economic Recession & Recovery**

**“Frequencies of a few coverages are distinctively lower than the long-term trend line during the recession in 2008 and 2009. 2011 frequency for these coverages has returned to the long-term trend line and is expected to follow the moderate downward trend that was observed prior to 2008.”**

**If the global recession is expected to continue in 2012, what would the changes in models used and forecasts for BI frequency be?**

**Response:**

ICBC is monitoring the bodily injury (BI) claims frequency very closely to see if it continues to flatten out as it had in 2011, or continues on a downward trend line. ICBC monitors the external environment to understand the various forces on claims cost, including aspects of a recession that can impact the claims frequency. At this time, the most recent economic forecasts do not anticipate a return to recession conditions in BC, Canada, or the United States. These forecasts are reflected in the current rate indication recalculation (please see the response to information request 2012.1 RR BCUC.5.1) as requested by the Commission in information request 2012.1 RR BCUC.30.1. In keeping with ICBC’s evidence-based approach, ICBC will not make adjustments to its models based on speculation or hypothesis alone.

As indicated in the response to information request 2012.1 RR BCUC.9.1, ICBC is now assuming for its BI frequency models a downward trend line at the pre-recession rate of decline with an upward parallel shift. The updated models reflect new evidence of increased levels of BI claims involving non-motorists (cyclists and pedestrians) and low-cost property damage claims with injury. If the flattening of BI frequency is sustained, or if the frequency increases in 2012, ICBC would consider this sufficient evidence to deviate from the pre-recession downward trend rate and base its frequency forecast on a shorter term set of data, as well as any other relevant information known to ICBC at the future time when the loss trend models are updated.

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**2012.1 RR BCUC.39.1-2 Reference: ACTUARIAL RATE LEVEL INDICATION ANALYSIS  
Exhibit B-1, Chapter 3, Exhibit D.0, Para. 16  
Personal Bodily Injury Frequency**

**“Personal Bodily Injury Frequency – A 12 year exponential (1997-2008) model was selected.”**

**39.1 What would the model statistics be if a 13 year exponential (1997-2009) model was selected?**

**39.2 What would the model statistics be if a 14 year econometric (1997-2010) model was selected?**

**Response:**

A 12-year exponential (1997 to 2008) model was selected in the Application, which is considered by the actuaries to be the best fit trend line for the purpose of forecasting. The exponential model was chosen to reflect the return to the pre-recession trend line and to fully capture the frequency level that has been observed in 2010.

The response to information request 2012.1 RR BCUC.37.3 is relevant to the interpretation of model statistics, which may not be meaningful without other considerations. Actuaries are required to consider economic and social influences when selecting trends.

**39.1**

If a 13-year exponential (1997 to 2009) model was selected, the R<sup>2</sup> statistic would be 94.5% and the F statistic would be 200. This model projects a steeper downward trend than was selected in the Application due to the influence of the unusually low 2008 and 2009 points at the end of the trending period, and understates the 2010 frequency compared to the actual experience. Hence, this trend would not be selected as the best fit for the purpose of forecasting.

**39.2**

If a 14-year econometric (1997 to 2010) model was selected, the R<sup>2</sup> statistic would be 96.4% and the F statistic would be 185. The explanatory variables used for the model were based on

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the consideration of economic and social conditions: GDP growth, the BC jobless rate, the proportion of the BC population aged 55 to 64, and total precipitation were selected. The BC jobless rate and GDP growth were included in the model to capture the influence of economic conditions on claim frequency; however the variables are insufficient to explain this effect completely. Similar to the model described above, this trend is steep due to the influence of the low 2008 and 2009 points, and does not fully capture the return of the frequency to the long-term trend line experienced in 2010. Therefore, this trend would not be selected as the best fit for the purpose of forecasting.

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**2012.1 RR BCUC.40.1 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
Stable and Predictable Rates**

**The MCT ratio under IFRS was 154.5% at the end of 2010. As of the end of the third quarter of 2011, the MCT ratio has declined to 120%.**

**Please explain the contributing factors that led to this decline in MCT of more than 30% over three quarters in 2011.**

**Response:**

At December 31, 2010, the MCT ratio as restated under IFRS was 154.5%. By the end of the third quarter ended September 30, 2011, the MCT ratio had declined to 120%. The decline of over 30 percentage points over this period is due mainly to a decrease in capital available of \$349 million. Capital available decreased by the actual net loss of \$151 million for the nine months ended September 30, 2011 and by a \$198 million decrease in Other Components of Equity (OCE).

The net loss is primarily caused by three factors: (i) an increase in the net claims incurred costs due to an increase in the frequency of injury claims, (ii) a lower rate used to discount claims, and (iii) reduced investment income due to an impairment recorded in the equity portfolio and lower realized gains on the sale of equities.

The decrease in OCE is mainly due to reduced unrealized equity gains due to the deterioration in the value of the equity portfolio from \$263 million at December 31, 2010 to \$30 million at September 30, 2011. Ongoing volatility in equity markets was experienced throughout 2011 and with the market declines in the third quarter, unrealized gains decreased. The decrease in unrealized equity gains was offset by a \$35 million increase in unrealized gains on bond holdings over the same period.

Capital required decreased by \$10 million during this time, with a decrease in margin required on balance sheet assets due to a lower investment asset balance, offset by an increase in the unpaid claims liabilities.

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**2012.1 RR BCUC.40.2 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**

**Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
Stable and Predictable Rates**

**The MCT ratio under IFRS was 154.5% at the end of 2010. As of the end of the third quarter of 2011, the MCT ratio has declined to 120%**

**What is the ICBC actual MCT level as of the end of 2011 and at January 1, 2012?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.20.3 for the MCT at December 31, 2011 and January 1, 2012.

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**2012.1 RR BCUC.40.3 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
Stable and Predictable Rates**

**The MCT ratio under IFRS was 154.5% at the end of 2010. As of the end of the third quarter of 2011, the MCT ratio has declined to 120%.**

**40.3 What is the MCT ratio trend outlook for the next two years?**

**40.3.1 How will the MCT ratio trend outlook affect Basic Insurance rates in the next two years?**

**Response:**

**40.3**

The responses to information requests 2012.1 RR BCUC.40.3 and 2012.1 RR BCUC.40.3.1 are both based on the outlook prepared in the third quarter of 2011, which was used as the basis for the Application. Assuming the 11.2% Basic insurance rate increase requested in the Application is approved, the outlook for MCT for the next two years at the end of December 31, 2012 is 102% and at the end of December 31, 2013 is 100%. The MCT calculations are based on current guidelines and do not incorporate changes to the MCT calculation effective January 1, 2012. The changes to the MCT calculation are further explained in the response to information request 2012.1 RR BCUC.43.1 and the impact to the MCT at December 31, 2012 is included in the response to information request 2012.1 RR BCUC.20.3. The forecast for 2013 assumes Basic insurance rate changes primarily based on historical claims cost trends. If the Basic insurance rate changes are not approved, the MCT may fall below 100%.

**40.3.1**

Based on the MCT ratio trend outlook for the next two years of 102% at December 31, 2012 and 100% at December 31, 2013, subject to the Commission's approval of requested Basic insurance rate changes, the MCT ratio trend outlook should not impact Basic insurance rates in the next two years. Pursuant to the 2011 Government Directive regarding Basic Rate Stability and Capitalization, ICBC is directed to exclude any capital build provision in Basic insurance

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rates from February 1, 2012 to January 31, 2015, provided the Basic capital remains above the regulatory minimum. Therefore, any required Basic insurance rate changes will be to cover any increase in Basic insurance loss costs and to maintain the required level of Basic capital. However, should the costs to settle claims increase more than expected and investment market volatility continue to negatively impact investment returns, this will add upward pressure to Basic insurance rates.

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**2012.1 RR BCUC.40.4 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**

**Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
Stable and Predictable Rates**

**The MCT ratio under IFRS was 154.5% at the end of 2010. As of the end of the third quarter of 2011, the MCT ratio has declined to 120%.**

**The 2010 Government Directive directs release of Capital when MCT was high and the 2011 Directive requires no build in capital when MCT is low. Does ICBC view that the financial strength and stability of the Basic Insurance business should be given relatively more weight than maintaining stable and predictable rates? Please explain with the recognition of the 2010 and 2011 Government Directives.**

**Response:**

Pursuant to *Special Direction IC2 to the BC Utilities Commission, BC Regulation 307/2004, as amended (Special Direction IC2)*, the Commission must consider both the financial strength and stability of the Basic insurance business and also ensure that rate increases and decreases are implemented in a manner that ensures relatively stable and predictable rates. ICBC notes that the requirement in *Special Direction IC2* is that the Commission considers “relatively stable and predictable” rates. The fact that this objective is stated in relative terms (not absolute, as implied by the question) is important, for the reasons described in ICBC’s response to information request 2012.1 RR BCUC.2.1.

ICBC requires sufficient Basic capital to ensure that its claims and other liabilities are covered in the event of adverse circumstances. When there is excess capital, it is available to be used to enhance rate stability and predictability and the 2010 Government Directive regarding Basic Excess Capital and the 2011 Government Directive regarding Basic Rate Stability and Capitalization require ICBC to make use of capital above 100% in a particular manner that results in greater rate stability and predictability.

However, if the MCT drops below 100%, there is the risk that ICBC’s reserves would not be adequate to cover its liabilities under adverse circumstances and this could result in added pressure on future rates. *Special Direction IC2* recognizes the fundamental importance of financial sustainability by way of requiring the Commission to, “set rates for Basic insurance in a way that will allow the corporation to maintain capital available in relation to its universal

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compulsory insurance business equal to at least 100% of MCT.” The significance of the 100% MCT level for financial sustainability is reinforced by how the Government Directives are structured, i.e., specifying that only capital above that amount can be used for rate stability purposes.

Based on this provision of *Special Direction IC2*, the Commission cannot set rates that it knows are insufficient to maintain the MCT above 100%. To that extent, financial sustainability is more important than the potential for some rate volatility to result if the rates must maintain capital above 100% of MCT. As discussed in the response to information request 2012.1 RR BCUC.2.1, the term “relatively stable and predictable” accounts for volatility inherent in the insurance industry, and rate changes that must occur to maintain the Basic insurance MCT ratio above 100% are thus consistent with *Special Direction IC2*.

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**2012.1 RR BCUC.41.1 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-3; Chapter 3, Section A, p. 3-5  
Capital Provision**

**41.1 In paragraph 2 on p. 4-1, ICBC states that “the rate indication includes only a capital maintenance provision and does not include a provision to build capital.” Please elaborate on the “capital maintenance provision” and specify the MCT level that is to be maintained by ICBC.**

**41.1.1 If the MCT level to be maintained is at least 100% MCT as specified in *Special Direction IC2*, please specify the % MCT level or target range % MCT level that is to be maintained.**

**Response:**

The Minimum Capital Test (MCT) ratio is a ratio of capital available to capital required. Factors such as growth of the BC driving population, increases in claims costs, and growth of investments cause the capital required to grow over time. The capital maintenance provision provides capital to maintain the Basic insurance MCT ratio at a certain level.

The Basic Insurance Capital Management Plan, as approved by the Commission, specifies the calculation of the capital maintenance provision. The provision is calculated based on a transient target MCT ratio that increases each year in increments of 1.5% over 20 years from an MCT ratio of 100% in 2006 to 130% in 2026.

The 2012 transient target MCT ratio to be maintained by the capital maintenance provision in the Application is 109.0% [ $100\% + 1.5\% \times (2012 - 2006)$ ].

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**2012.1 RR BCUC.41.2.1-2 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-3; Chapter 3, Section A, p. 3-5 Capital Provision**

**41.2 ICBC on p. 4-3 states:**

**“The 2011 Government Directive regarding Basic Rate Stability and Capitalization overrides the requirement in the Capital Management Plan to recover 1/5 of the deficiency in capital below the 130% MCT Capital Management Target per year in Basic insurance rates as a capital build provision. It specifies that the capital build provision should not apply during the three year period from February 1, 2012 to January 31, 2015.”**

**After January 31, 2015, would the 130% MCT Capital Management Target be restored and still be applicable to ICBC?**

**41.2.1 If so, how does ICBC plan to achieve the 130% MCT Capital Management Target and at the same time maintain relatively stable and predictable rates?**

**41.2.2 If not, is there a need to restore the 130% MCT Capital Management Target? Are there any other options that ICBC has considered?**

**Response:**

ICBC’s Basic insurance capital management target has not been suspended, but remains at a 130% MCT ratio under the 2010 Government Directive regarding Basic Excess Capital and 2011 Government Directive regarding Basic Rate Stability and Capitalization. The 2010 Government Directive contemplated that “ICBC should continue to apply the Capital Management Plan” with the exception of the provisions specified in that Directive. The 2010 Government Directive does not purport to alter the capital management target. Please also see the response to information request 2012.1 RR BCUC.1.1 for further information on ICBC’s interpretation of the 2011 Government Directive.

The 130% MCT capital management target will remain in place after January 31, 2015 unless there is a government directive to the contrary. After that date, ICBC will maintain relatively stable and predictable rates by basing any required capital build provision on the Basic Insurance Capital Management Plan, which currently calls for building capital at a rate of 1/5 of the deficiency each year.

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**2012.1 RR BCUC.42.1 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**

**Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-3**

**Exhibit B-3, ICBC Reply to Stakeholder Comments on Interim Rate dated December 13, 2011**

**Minimum Capital Test**

**ICBC on page 2 of Exhibit B-3 states:**

**“One of the key requirements of Special Direction IC2 (section 3(1)(b)) is that the Commission set rates at a level that allows ICBC to maintain 100% MCT. Based on the Q3 forecast, the proposed 11.2% increase leaves very little margin above the regulatory minimum MCT level. ICBC has forecast that the MCT with the proposed increase will be 102% at the end of 2012. The MCT would drop below 100% MCT during 2012 if rates were increased by less than 10%.”**

**Please provide references in the Application (Exhibit B-1 or B-1-1) to the above calculations where ICBC has forecast that the MCT with the proposed increase will be 102% at the end of 2012 and that MCT would drop below 100% MCT during 2012 if rates were increased by less than 10%. If calculations are not demonstrated in the Application, please provide the calculations and underlying assumptions.**

**Response:**

The reference that “ICBC has forecast that the MCT with the proposed increase will be 102% at the end of 2012 and that MCT would drop below 100% MCT during 2012 if rates were increased by less than 10%” is not included in the Application. There is a reference to the MCT ratio at the end of 2012 of 102% in the January 23, 2012 Workshop Presentation.

**Basic Insurance MCT**

\$ millions

	<u>Dec 31, 2012</u>
<b>Capital Available</b>	
Retained earnings	\$ 907
Other components of equity	<u>155</u>
Capital available	<u>\$ 1,061</u>
<b>Capital Required</b>	
Balance sheet assets	\$ 457
Net unpaid claims	497
Premium deficiency	-
Premiums written / unearned premiums	<u>92</u>
Minimum capital required	<u>\$ 1,045</u>
<b>MCT percentage</b>	<u><u>102%</u></u>

In accordance with *Special Direction IC2 to the British Columbia Utilities Commission, BC Regulation 307/2004, as amended*, the MCT ratio is based on the Guideline for MCT for Federally Regulated Property and Casualty Insurance Companies issued by the Office of the Superintendent of Financial Institutions Canada.

The above MCT calculation at the end of 2012 is based on the outlook prepared in the third quarter of 2011 which was used as the basis for the Application. Assuming the 11.2% Basic insurance rate increase requested in the Application is approved, the outlook for MCT at the end of December 31, 2012 is 102%. The MCT calculations are based on current guidelines and do not incorporate changes to the MCT calculation effective January 1, 2012. If the rate change is not approved, the MCT ratio may fall below 100%.

The estimated sensitivity of a 1% change in the rate is the equivalent of 2% in MCT. With the proposed Basic insurance rate increase of 11.2%, the forecasted MCT ratio at the end of 2012 is 102%. If the Basic insurance rate change was lower by 1%, the MCT ratio would be about 100%. Therefore if the Basic insurance rate change was less than 10%, the forecasted MCT ratio at the end of 2012 would be below 100%.

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**2012.1 RR BCUC.42.2 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**  
**Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-3**  
**Exhibit B-3, ICBC Reply to Stakeholder Comments on Interim Rate dated December 13, 2011**  
**Minimum Capital Test**

ICBC on page 2 of Exhibit B-3 states:

“One of the key requirements of Special Direction IC2 (section 3(1)(b)) is that the Commission set rates at a level that allows ICBC to maintain 100% MCT. Based on the Q3 forecast, the proposed 11.2% increase leaves very little margin above the regulatory minimum MCT level. ICBC has forecast that the MCT with the proposed increase will be 102% at the end of 2012. The MCT would drop below 100% MCT during 2012 if rates were increased by less than 10%.”

**42.2 Figure 3.13 shows the sensitivity analysis under ten different scenarios with accompanying impact on rate indication. Please provide the sensitivity analysis similar to Figure 3.13 in a scenario for an increase/decrease in MCT level by 1 percentage point.**

**42.2.1 Please show the sensitivity analysis in terms of Capital Maintenance Provision in dollar value (i.e. an increase/decrease in MCT level by 1 percentage point = \$X amount).**

**Response:**

**42.2**

If the Basic MCT ratio were increased by 1 percentage point, the actuarial rate indication would remain the same.

If the Basic MCT ratio were decreased by 1 percentage point, the actuarial rate indication would remain the same.

The level of Basic capital, as measured by the MCT ratio, affects the rate indication through the capital provision, which is made up of two parts. The capital build provision is currently suspended, as directed by the 2011 Government Directive regarding Basic Rate Stability and Capitalization. The capital maintenance provision is based on a target MCT ratio rather than the actual MCT ratio, and is therefore less sensitive to changes in the actual MCT ratio. The sensitivity of the capital maintenance provision is discussed further below.

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Please also see the response to information request 2012.1 RR BCUC.19.1 Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application and information requests.

**42.2.1**

The MCT ratio is defined as the ratio of capital available to capital required. A change in either the amount of capital available (the numerator) or the amount of capital required (the denominator) can change the MCT ratio. The response to information request 2012.1 RR BCUC.41.1 describes how the capital maintenance provision is a function of the capital required. A change in capital available will not affect the capital maintenance provision.

If the Basic MCT ratio were increased by 1 percentage point due to a reduction in capital required, the capital maintenance provision would decrease by \$304,000.

If the Basic MCT ratio were decreased by 1 percentage point due to an increase in capital required, the capital maintenance provision would increase by \$309,000.

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**2012.1 RR BCUC.42.3-4 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-3  
Exhibit B-3, ICBC Reply to Stakeholder Comments on Interim Rate dated December 13, 2011  
Minimum Capital Test**

ICBC on page 2 of Exhibit B-3 states:

**“One of the key requirements of Special Direction IC2 (section 3(1)(b)) is that the Commission set rates at a level that allows ICBC to maintain 100% MCT. Based on the Q3 forecast, the proposed 11.2% increase leaves very little margin above the regulatory minimum MCT level. ICBC has forecast that the MCT with the proposed increase will be 102% at the end of 2012. The MCT would drop below 100% MCT during 2012 if rates were increased by less than 10%.”**

**42.3 Please explain the potential impact on policyholders and ICBC in terms of risks and rate stability if the MCT drops below 100%.**

**42.4 As specified in section 3 (1) (b) of Special Direction IC2, the Commission must do the following:**

**“set rates for the corporation's universal compulsory insurance business in a way that will allow the corporation to maintain capital available in relation to its universal compulsory insurance business equal to at least 100% of MCT”.**

**If MCT drops below 100% on an outlook or forecast basis, how does the Commission set rates that will allow ICBC to maintain at least 100% of MCT?**

**Response:**

**42.3**

The minimum regulatory MCT ratio of 100% was established as the minimum capital reserve that ICBC should hold in order to cover its claims and other liabilities in the event that ICBC experienced adverse financial circumstances. If the MCT were to drop below 100% for whatever reason on an actual, outlook, or forecast basis, the impact to customers is that there would be greater risk that ICBC would not be able to cover its liabilities should it experience an adverse financial circumstance. Hence, in such circumstances it is very important for ICBC to rebuild sufficient capital to achieve and/or remain above the regulatory minimum.

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**42.4**

Section 3(1) b of *Special Direction IC2* means that the Commission would be in contravention of *Special Direction IC2* if it were to fix Basic insurance rates that contemplated Basic capital dropping below a 100% MCT ratio based on the evidence before it on an outlook or forecast basis. By contrast, if the Commission fixes a Basic insurance rate that, on the evidence, will result in the MCT ratio remaining above 100%, but unforeseen circumstances make it fall below 100% on an outlook or forecast basis, then the Commission would not be in contravention of *Special Direction IC2*. However, in the event that ICBC was unable to rectify an unforeseen capital deficiency through other steps within its control, it would still be necessary for the Commission to adjust Basic insurance rates (or add a rider or surcharge) to permit ICBC to restore and/or maintain the regulatory minimum. ICBC believes that if the MCT ratio does fall below 100% this rebuild would have to take place over a relatively short period of time, so as to restore Basic insurance to a more stable financial footing and ensure the Commission's compliance with *Special Direction IC2*. Hence, depending on the size of the deficiency, Basic insurance policyholders could see a near-term increase in Basic insurance rates.

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**2012.1 RR BCUC.42.5 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**

**Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-3**

**Exhibit B-3, ICBC Reply to Stakeholder Comments on Interim Rate dated December 13, 2011**

**Minimum Capital Test**

**ICBC on page 2 of Exhibit B-3 states:**

**“One of the key requirements of Special Direction IC2 (section 3(1)(b)) is that the Commission set rates at a level that allows ICBC to maintain 100% MCT. Based on the Q3 forecast, the proposed 11.2% increase leaves very little margin above the regulatory minimum MCT level. ICBC has forecast that the MCT with the proposed increase will be 102% at the end of 2012. The MCT would drop below 100% MCT during 2012 if rates were increased by less than 10%.”**

**Would ICBC consider transferring capital from Optional to Basic if the MCT falls below 100%?**

**Response:**

Any transfer of capital from the Optional insurance business to the Basic insurance business is a decision that rests with government. In the past, ICBC has only transferred capital from the Optional insurance business to the Basic insurance business at the direction of government. ICBC considers that the Commission must set rates for Basic insurance with reference to Basic insurance capital only and not Optional insurance capital.

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**2012.1 RR BCUC.43.1 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Appendix 4 A  
2011 Government Directive**

**The 2011 government directive states, in part, that “Using more up-to-date information is important in the present context of a lower interest rate environment...” and “government believes that the capital available above the Basic Insurance regulatory minimum should be made available to help manage rates.”**

**What changes to the OSFI MCT calculation are expected in 2012 and what is the expected impact on MCT during 2012? In the discussion, please include any effects related to the unpaid claims margin and the interest rate shock factor.**

**Response:**

The Office of the Superintendent of Financial Institutions Canada (OSFI) has introduced revisions for the Minimum Capital Test (MCT) Guidelines, effective January 1, 2012. Four changes were proposed that will impact ICBC; however, only three were incorporated in the final 2012 MCT Guidelines. The fourth, Foreign Exchange Risk factor\*, has been delayed until 2013.

The following table illustrates the estimated impacts to ICBC’s Basic MCT:

Guideline Revision	Impact on Basic MCT	Estimated Impact on 2012 MCT
1. Exclusion of Provision for Adverse Deviations (PFAD) from Unpaid Claims margin	Reduces capital required, increases MCT	+ 5%
2. Revision to asset factors on bond portfolio	Increase/decrease is dependent on the quality and duration of bond assets held at year end	+/-
3. Interest rate risk factor	Increase to capital required, reduces MCT	none **

\* Foreign exchange risk factor was proposed by OSFI for 2012 but has been postponed until 2013. Estimated impact is a 7% reduction to Basic MCT.

\*\* The impact on MCT for the Interest Rate Risk factor has been estimated as negligible, therefore no value has been currently considered for 2012. Further analysis is being undertaken.

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**2012.1 RR BCUC.43.2 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Appendix 4 A  
2011 Government Directive**

**The 2011 government directive states, in part, that “Using more up-to-date information is important in the present context of a lower interest rate environment...” and “government believes that the capital available above the Basic Insurance regulatory minimum should be made available to help manage rates.”**

**Recognizing the very low interest rate environment that now exists and the limited downside volatility to ICBC’s bond portfolio, should the Commission reconsider the 130% MCT Capital Management Target in the future? Why or why not?**

**Response:**

ICBC is not currently proposing a change to the Basic insurance capital management target, which is set at a 130% MCT ratio. As noted in the response to information request 2012.1 RR BCUC.41.2.1-2, this target will remain in place unless there is a government directive to the contrary.

Recognizing the very low interest rate environment, along with current levels of economic uncertainty and volatility in investment markets, suggests that there is presently a heightened risk of asset value deterioration. Were interest rates to rise from their current historic low levels, the value of ICBC’s bond portfolio would be expected to decline, all else being equal.

The current Basic insurance capital management target of a 130% MCT ratio was based on analysis of plausible adverse scenarios relating to specific risk factors. As a result of the heightened risk of asset value deterioration, there is a potential that the results of an updated analysis would indicate a higher management target MCT ratio. However, at this time such an analysis has not been completed.

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**2012.1 RR BCUC.44.1 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**

**Exhibit B-1, Chapter 4, p. 4-3**

**Transition to IFRS on Actuarial Rate Indication**

**In paragraph 11 on p. 4-3, ICBC states that as of January 1, 2011, IFRS replaced CGAAP for publicly accountable enterprises. As part of the transition process from CGAAP to IFRS, ICBC has restated its CGAAP financial statements for the 2010 fiscal year to an IFRS basis.**

**Please confirm that the transition process from CGAAP to IFRS conforms to the basis of accepted actuarial practice.**

**Response:**

The transition from Canadian Generally Accepted Accounting Principles (CGAAP) to International Financial Reporting Standards (IFRS) is an accounting change, and ICBC's adoption of IFRS is in compliance with the required accounting standards. The process of transition from CGAAP to IFRS conforms to the basis of accepted actuarial practice in Canada. The transition to IFRS has not affected the valuation of the insurance contract liabilities for property and casualty insurance contracts, and the changes to the valuation of employee benefits (i.e., pensions and post-retirement benefits) conform with accepted actuarial practice.

Both CGAAP and IFRS require that booked values for employee benefits accord with accepted actuarial practice in Canada. The Standards of Practice of the Canadian Institute of Actuaries require that the methods and assumptions used by the actuary be appropriate to the basis of accounting of the pension plan's financial statements. As a result, the current valuation of employee benefits both conforms to accepted actuarial practice, and follows the requirements of the transition to IFRS.

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**2012.1 RR BCUC.44.2 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**

**Exhibit B-1, Chapter 4, p. 4-3**

**Transition to IFRS on Actuarial Rate Indication**

**In paragraph 11 on p. 4-3, ICBC states that as of January 1, 2011, IFRS replaced CGAAP for publicly accountable enterprises. As part of the transition process from CGAAP to IFRS, ICBC has restated its CGAAP financial statements for the 2010 fiscal year to an IFRS basis.**

**Given the one-time transition process from CGAAP to IFRS and in consideration of stable and predictable rates, please explain the merits and permissibility of phasing in the IFRS transition costs to set rates in PY 2012.**

**Response:**

The Treasury Board has directed ICBC, in accordance with the *Budget Transparency and Accountability Act*, to adopt International Financial Reporting Standards (IFRS) effective January 1, 2011. As a government business enterprise, ICBC is required to adopt IFRS effective January 1, 2011 in accordance with the Public Sector Accounting Board of Canada's direction. IFRS 1 (First Time Adoption of IFRS) is the standard that applies when an entity first adopts IFRS. An entity adopting IFRS must restate its financial statements and transition adjustments are not permitted to be phased in over a period of time. IFRS also does not permit rate-regulated deferral accounting.

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**2012.1 RR BCUC.45.1-2 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Section C.2, p. 4-6  
Exhibit B-1-1, Chapter 11, Appendix 11 C  
Pension Plans**

Paragraph 21 and footnote 2 on p. 4-6 of the ICBC evidence states:

**“Under IFRS, this Bargaining Unit Plan asset cannot be recognized by ICBC and total equity was reduced by \$136 million as of December 31, 2010, comprising:**

- **\$128 million of total equity that was written off as of January 1, 2010, reducing retained earnings; and**
- **An \$8 million increase in pension expenses, which affected 2010 Net Income. This increase is because ICBC is permitted to recognize only its 50% portion of the net return and interest cost on the Plan’s surplus assets [Footnote 2]...**

**Under IFRS, ICBC can only recognize its 50% share of the Bargaining Unit Plan’s asset and expense or income to reflect the Plan’s unique cost sharing provisions.”**

**45.1 Please confirm that the reduction in Basic equity of \$128 million represents a 50% share.**

**45.2 Were any adjustments to expenses necessary due to this IFRS related change? If not, why not?**

**Response:**

**45.1**

Not confirmed. The \$128 million amount is the reduction of 100% of the Bargaining Unit Plan asset at January 1, 2010 in total equity, not Basic equity.

**45.2**

Yes, there was an adjustment necessary. The \$8 million increase in pension expenses was related to the write-off of the \$128 million Bargaining Unit Plan asset as of January 1, 2010. ICBC could no longer recognize the net return benefit of the surplus assets as an offset to pension expense.

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**2012.1 RR BCUC.45.3 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS**  
**Exhibit B-1, Chapter 4, Section C.2, p. 4-6**  
**Exhibit B-1-1, Chapter 11, Appendix 11 C**  
**Pension Plans**

Paragraph 21 and footnote 2 on p. 4-6 of the ICBC evidence states:

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- **\$128 million of total equity that was written off as of January 1, 2010, reducing retained earnings; and**
- **An \$8 million increase in pension expenses, which affected 2010 Net Income. This increase is because ICBC is permitted to recognize only its 50% portion of the net return and interest cost on the Plan’s surplus assets [Footnote 2]...**

**Under IFRS, ICBC can only recognize its 50% share of the Bargaining Unit Plan’s asset and expense or income to reflect the Plan’s unique cost sharing provisions.”**

**In ICBC’s Annual Report Appendix 11 C, Note 10. Pension Plans and Post Retirement Benefits, p. 59, the following is stated “The COPE Plan had an actuarial valuation as of December 31, 2008 which was extrapolated to December 31, 2010. The next expected valuation date is December 31, 2011.” Please provide the valuation of the COPE Plan when available and indicate the potential impact on the Basic Equity related to the December 31, 2011 valuation. A preliminary valuation is acceptable.**

**Response:**

The valuation of the Bargaining Unit Plan as at December 31, 2011 will be completed and filed during 2012. The filing deadline to the Financial Institutions Commission is September 2012. The valuation results will be available when the Bargaining Unit Plan’s Board of Trustees releases and files the valuation report. A preliminary valuation is not available.

When completed, the results of the Bargaining Unit Plan valuation are not expected to impact 2012 operating expense. However, experience gains and losses may impact the obligation and correspondingly, retained earnings, on the December 31, 2012 balance sheet.

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**2012.1 RR BCUC.45.3.1 Reference: CAPITAL PROVISION AND IMPACTS OF THE CHANGE TO IFRS  
Exhibit B-1, Chapter 4, Section C.2, p. 4-6  
Exhibit B-1-1, Chapter 11, Appendix 11 C  
Pension Plans**

Paragraph 21 and footnote 2 on p. 4-6 of the ICBC evidence states:

**“Under IFRS, this Bargaining Unit Plan asset cannot be recognized by ICBC and total equity was reduced by \$136 million as of December 31, 2010, comprising:**

- **\$128 million of total equity that was written off as of January 1, 2010, reducing retained earnings; and**
- **An \$8 million increase in pension expenses, which affected 2010 Net Income. This increase is because ICBC is permitted to recognize only its 50% portion of the net return and interest cost on the Plan’s surplus assets [Footnote 2]...**

**Under IFRS, ICBC can only recognize its 50% share of the Bargaining Unit Plan’s asset and expense or income to reflect the Plan’s unique cost sharing provisions.”**

**Please provide the impact on the PY 2012 Basic Rate Indication from any changes in the valuation of the COPE plan and how ICBC intends to deal with any potential adjustments to MCT should the valuation require an adjust to Retained Earnings and Other Components of Equity (OCE).**

**Response:**

Please see the response to information request 2012.1 RR BCUC.45.3 regarding the timing and availability of the results of the valuation of the Bargaining Unit Plan as at December 31, 2011.

The results of the aforementioned valuation will be assessed when available for impacts to the MCT ratio and retained earnings. The 2011 Government directive of November 25, 2011 with respect to Basic Rate Stability and Capitalization approved by Order in Council 560/11, November 30, 2011 specifies that the capital build provision should not apply during the 3-year period from February 1, 2012 to January 31, 2015 when the Basic MCT ratio is greater than 100%. For the years ending during this period (December 31, 2012, December 31, 2013, and December 31, 2014) if Basic MCT ratio is greater than 100%, no recovery will be made for actuarial losses recognized in retained earnings. Please see the response to information request 2012.1 RR BCUC.42.3-4, which describes the scenario when the actual or forecasted MCT ratio is or is expected to be less than 100%.

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**2012.1 RR BCUC.46.1 Reference: Capital Provision and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section C.2, p. 4-7  
Basic Excess Capital**

**Paragraph 21 of the ICBC evidence states:**

**“Line 2 Unamortized Actuarial Losses Under CGAAP, the impact to net income of actuarial gains and losses associated with pension plans and post-retirement benefits were “smoothed” (i.e., Corridor method) [Footnote 3] and actuarial gains and losses not recognized in net income were deferred on the Consolidated Statement of Financial Position. Under IFRS, actuarial gains and losses will be recognized directly in OCE. The total equity was reduced by \$188 million as of December 31, 2010, comprising:**

- \$100 million of unamortized actuarial losses that were accumulated under CGAAP in prior years was written off as of January 1, 2010, reducing retained earnings;**
- A \$3 million decrease in pension expenses which affected 2010 Net Income. This \$3 million represents actuarial losses amortized under the CGAAP Corridor method into 2010 Net Income and is not applicable under IFRS; and**
- The recognition of \$91 million of actuarial losses in 2010 OCE under IFRS.**

**As indicated in line 2 of Figure 4.1, the allocation to Basic of the \$188 million reduction was that the Basic equity as of December 31, 2010 is reduced by \$121 million.”**

**Please expand on the \$100 million actuarial losses written off to OCE as of January 1, 2010, providing detailed descriptions of all the calculations required to determine the \$100 million.**

**Response:**

The \$100 million of unamortized actuarial losses were written off to retained earnings, not Other Components of Equity, and represent the following balances accumulated under CGAAP as at January 1, 2010:

- \$72 million of unamortized net actuarial losses for all pension plans; and**
- \$29 million of unamortized net actuarial losses for the post-retirement benefits plan; partially offset by**
- \$1 million of net unamortized plan adjustment gain for the pension plans and post-retirement benefits plan.**

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The above amounts were all reported in the 2010 ICBC Annual Report under Note 10 Pension Plans and Post-Retirement Benefits in the 2009 columns on page 60 in the Notes to the Consolidated Financial Statements. ICBC's 2010 Annual Report can be found in Appendix 11 C to the Application.

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**2012.1 RR BCUC.46.2 Reference: Capital Provision and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section C.2, p. 4-7  
Basic Excess Capital**

**Paragraph 21 of the ICBC evidence states:**

**“Line 2 Unamortized Actuarial Losses Under CGAAP, the impact to net income of actuarial gains and losses associated with pension plans and post-retirement benefits were “smoothed” (i.e., Corridor method) [Footnote 3] and actuarial gains and losses not recognized in net income were deferred on the Consolidated Statement of Financial Position. Under IFRS, actuarial gains and losses will be recognized directly in OCE. The total equity was reduced by \$188 million as of December 31, 2010, comprising:**

- \$100 million of unamortized actuarial losses that were accumulated under CGAAP in prior years was written off as of January 1, 2010, reducing retained earnings;**
- A \$3 million decrease in pension expenses which affected 2010 Net Income. This \$3 million represents actuarial losses amortized under the CGAAP Corridor method into 2010 Net Income and is not applicable under IFRS; and**
- The recognition of \$91 million of actuarial losses in 2010 OCE under IFRS.**

**As indicated in line 2 of Figure 4.1, the allocation to Basic of the \$188 million reduction was that the Basic equity as of December 31, 2010 is reduced by \$121 million.”**

**46.2 What portion of the actuarial losses recognized directly to OCE relate to any changes in the calculation of funding requirements of the Management and Confidential pension plan and post-retirement benefits?**

**46.2.1 Has ICBC made any changes in the last 3 years to the calculations of pensionable earnings for the benefit of any of its Management and Confidential employees and what effect do these changes have in the calculation of the actuarial loss and subsequent adjustment to OCE?**

**46.2.2 If ICBC were to exclude any such pensionable earnings changes made for the benefit of any of its Management and Confidential employees, how would this exclusion impact the MCT calculation and what effect would it have on the PY 2012 Basic Rate indication?**

**Response:**

Subsequent to the filing of the Application, ICBC determined that actuarial gains or losses will be recognized in retained earnings, and not other components of equity. This change has no impact on the actuarial rate indication.

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**46.2**

The actuarial losses recognized directly in retained earnings are a result of the change from Canadian Generally Accepted Accounting Principles (CGAAP) to International Financial Reporting Standards (IFRS) and not related to any changes in the calculation of funding requirements for the Management and Confidential Plan. The Post-Retirement Benefits Plan is an unfunded plan.

**46.2.1**

In 2009, ICBC changed the Management and Confidential Plan to include a portion of Short-Term Incentive Plan (STIP) in the pensionable earnings for service years from 2010 forward. For Management and Confidential employees, the cap is the lesser of (a) 15% of the employee's earnings or (b) the incentive pay amount. For Executives reporting directly to the CEO, the cap is 100% of the employee's at target STIP earnings. This change does not impact pension benefits earned prior to January 1, 2010. Based on current pensionable earnings, this change has increased total pension expense approximately \$2 million per year starting in 2010 and since it currently accounts for a small portion of the obligation, it has not had a significant impact in the calculation of actuarial losses and the subsequent adjustment to retained earnings.

Other than the above, there were no other changes in the last three years to the calculations of pensionable earnings for the benefit of Management and Confidential employees.

**46.2.2**

If ICBC were to exclude the impact of the increased pension expense related to including STIP payments as pensionable earnings (as described above), the Minimum Capital Test ratio would increase, albeit insignificantly, and the policy year 2012 Basic insurance actuarial rate indication would be lower by less than 0.1 percentage points. However, this impact has been offset by

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other savings as total operating costs (including pension expense), and had no impact on the policy year 2012 Basic insurance actuarial rate indication.

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**2012.1 RR BCUC.46.3 Reference: Capital Provision and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section C.2, p. 4-7  
Basic Excess Capital**

**Paragraph 21 of the ICBC evidence states:**

**“Line 2 Unamortized Actuarial Losses Under CGAAP, the impact to net income of actuarial gains and losses associated with pension plans and post-retirement benefits were “smoothed” (i.e., Corridor method) [Footnote 3] and actuarial gains and losses not recognized in net income were deferred on the Consolidated Statement of Financial Position. Under IFRS, actuarial gains and losses will be recognized directly in OCE. The total equity was reduced by \$188 million as of December 31, 2010, comprising:**

- **\$100 million of unamortized actuarial losses that were accumulated under CGAAP in prior years was written off as of January 1, 2010, reducing retained earnings;**
- **A \$3 million decrease in pension expenses which affected 2010 Net Income. This \$3 million represents actuarial losses amortized under the CGAAP Corridor method into 2010 Net Income and is not applicable under IFRS; and**
- **The recognition of \$91 million of actuarial losses in 2010 OCE under IFRS.**

**As indicated in line 2 of Figure 4.1, the allocation to Basic of the \$188 million reduction was that the Basic equity as of December 31, 2010 is reduced by \$121 million.”**

**Please expand on the required recognition of \$91 million of actuarial losses in 2010 OCE under IFRS, providing detailed descriptions of all the calculations required to determine the \$91 million.**

**Response:**

Subsequent to the filing of the Application, ICBC determined that actuarial gains or losses will be recognized in retained earnings, and not other components of equity. This change has no impact on the actuarial rate indication.

The components building up to the \$91 million of actuarial losses recognized in 2010 through retained earnings are as follows:

- **\$155 million loss due to a decrease in the discount rate from 6.61% at December 31, 2009 to 5.61% at December 31, 2010; partially offset by**
- **\$34 million gain on the incremental surplus de-recognition of the Bargaining Unit Plan asset (see below);**

- \$20 million gain due to better than assumed investment experience in 2010; and
- \$10 million gain due to demographic experience from valuations.

Under International Financial Reporting Standards (IFRS), ICBC can only recognize its 50% share of the Bargaining Unit Plan's asset to reflect the Plan's unique cost sharing provisions. As well, under IFRS, an entity can only recognize an asset on its balance sheet to the extent that the entity could access the asset to either reduce its future funding obligations, or as a refund of surplus. ICBC has determined that it would not have future access to any of the asset under the scenarios contemplated by IFRS. Therefore, ICBC is unable to recognize an asset on its balance sheet in respect of its 50% share of the Bargaining Unit Plan and has written it off as at the January 1, 2010 IFRS transition date. At every year-end, an incremental adjustment is required to account for the change in the Bargaining Unit Plan's asset position from the prior year-end adjustment, as follows:

(\$ millions)	50% Share of Bargaining Unit Plan Asset	Annual Write-off of Asset
January 1, 2010 balance	\$ 64	\$ (64)
December 31, 2010 balance	\$ 30	\$ (30)
Incremental gain		<u>\$ 34</u>

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**2012.1 RR BCUC.46.4 Reference: Capital Provision and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section C.2, p. 4-7  
Basic Excess Capital**

**Paragraph 21 of the ICBC evidence states:**

**“Line 2 Unamortized Actuarial Losses Under CGAAP, the impact to net income of actuarial gains and losses associated with pension plans and post-retirement benefits were “smoothed” (i.e., Corridor method) [Footnote 3] and actuarial gains and losses not recognized in net income were deferred on the Consolidated Statement of Financial Position. Under IFRS, actuarial gains and losses will be recognized directly in OCE. The total equity was reduced by \$188 million as of December 31, 2010, comprising:**

- \$100 million of unamortized actuarial losses that were accumulated under CGAAP in prior years was written off as of January 1, 2010, reducing retained earnings;**
- A \$3 million decrease in pension expenses which affected 2010 Net Income. This \$3 million represents actuarial losses amortized under the CGAAP Corridor method into 2010 Net Income and is not applicable under IFRS; and**
- The recognition of \$91 million of actuarial losses in 2010 OCE under IFRS.**

**As indicated in line 2 of Figure 4.1, the allocation to Basic of the \$188 million reduction was that the Basic equity as of December 31, 2010 is reduced by \$121 million.”**

**46.4 In ICBC’s Annual Report Appendix 11 C, Note 10, Pension Plans and Post Retirement Benefits, p. 59, the following is stated “The Management and Confidential Plan had an actuarial valuation as of December 31, 2009 which was extrapolated to December 31, 2010. The next expected valuation date is December 31, 2012.” .... “The post-retirement benefits had an actuarial valuation as of December 31, 2009 which was extrapolated to December 31, 2010”. Please provide any updates to the valuation of the Management and Confidential Plan and Post Retirement Benefits to indicate the potential impact on the Basic Equity related to future valuation. A preliminary valuation is acceptable.**

**46.4.1 Please provide the impact on the PY 2012 Basic Rate Indication from any changes in the valuation of the Management and Confidential Plan and Post Retirement Benefits and how ICBC intends to deal with any potential adjustments to MCT should the valuation require an adjustment to Retained Earnings and OCE.**

**Response:**

Please note that the Post-Retirement Benefits Plan last valuation was actually dated January 1, 2010 and not December 31, 2009.

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**46.4**

The next expected valuation date for the Management and Confidential Plan is as at December 31, 2012 and will be completed and filed during 2013. The next expected valuation date for the Post-Retirement Benefits Plan is as at January 1, 2013, and will be completed during 2013. There have been no updates to the valuations since the last actuarial valuations. Please see the response to information request 2012.1 RR BCUC.75.7.

**46.4.1**

The policy year 2012 Basic insurance actuarial rate indication has been based on extrapolated information based on the last actuarial valuations of the Management and Confidential Plan and the Post-Retirement Benefits Plan as at December 31, 2009 and January 1, 2010 respectively. The next expected valuation dates for the Management and Confidential Plan and the Post-Retirement Benefits Plan are December 31, 2012 and January 1, 2013 respectively, and will be completed during 2013. The results of these next expected valuations will have no impact on the policy year 2012 Basic insurance actuarial rate indication.

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**2012.1 RR BCUC.47.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section B, p. 5-2  
Low Interest Rates**

**In paragraph 5, ICBC states:**

**“Given that the majority of ICBC’s investments are held as bonds, ICBC’s investment results are very sensitive to the general level of interest rates such that an extended period of low interest rates will negatively impact investment income.”**

**With bond yields at historical low levels, does ICBC consider there to be a greater upside to the expected future returns from its bond portfolio compared to the limited downside of lower than forecast bond yields? Please explain the risks of higher or lower than forecast interest rates and bond yields developing during 2012**

**Response:**

Interest rate forecasts indicate that bond yields are expected to stay low in 2012. This is consistent with the messages given by central bankers in Canada, the United States, the United Kingdom, and Europe, who have all made it clear to markets that interest rates under their control will be kept low until such time as a global economic recovery is firmly established. This collective policy stance makes it unlikely that administered interest rates will rise in any significant manner in the foreseeable future.

In theory, there is no limit to how high interest rates could rise in the future, while the downside to interest rates is limited to a zero percent yield.

It is conceivable that interest rates in Canada could potentially move lower toward the zero bound if a destabilizing event such as a series of sovereign debt defaults in the Euro zone caused global investors to move their funds into safer markets like Canada. There is the potential for an event like this to occur in 2012.

Conversely, for interest rates to begin rising in a substantive manner, there would need to be a shift in market expectations towards a view of high and rapidly rising inflation, forcing central banks to raise their policy rates in the near term. While possible, it takes time for market expectations to change and the likelihood of this occurring in 2012 seems low.

**2012.1 RR BCUC.48.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C, pp. 5-4 to 5-8  
Calculation of the New Money Rate**

**48.1 Please update Figures 5.3, 5.4, 5.5, 5.6, 5.7 and 5.8 using the most recent bond yields and inflation data available from the six financial forecasts used to calculate the New Money Rate, as formulated in Figure 5.2.**

**48.1.1 Please provide references to the six financial forecasts used to update the calculation of the New Money Rate.**

**Response:**

**48.1**

**Updated the Revenue Requirements Application for the 2012 Policy Year, Figure 5.3 – Quarterly Forecasts for 2-Year Government of Canada Bond Yields (%) from Financial Forecasts**

<b>Contributor</b>	<b>Q1/2012</b>	<b>Q2/2012</b>	<b>Q3/2012</b>	<b>Q4/2012</b>
Scotiabank	0.95	1.00	1.45	1.80
Bank of Montreal	0.97	0.95	1.15	1.50
National Bank	0.94	1.01	1.13	1.38
TD Bank	0.95	0.95	1.15	1.40
Royal Bank	1.05	1.15	1.25	1.50
Bank of America/Merrill Lynch	0.95	0.70	0.65	0.40

**Updated the Revenue Requirements Application for the 2012 Policy Year, Figure 5.4 – Quarterly Forecasts for 5-Year Government of Canada Bond Yields (%) from Financial Forecasts**

<b>Contributor</b>	<b>Q1/2012</b>	<b>Q2/2012</b>	<b>Q3/2012</b>	<b>Q4/2012</b>
Scotiabank	1.25	1.40	2.00	2.40
Bank of Montreal	1.30	1.30	1.50	1.85
National Bank	1.46	1.57	1.76	1.97
TD Bank	1.25	1.30	1.75	2.10
Royal Bank	1.40	1.65	1.85	2.10
Bank of America/Merrill Lynch	1.35	0.90	1.05	1.20

**Updated the Revenue Requirements Application for the 2012 Policy Year, Figure 5.5 – 3-year Government of Canada Bond Yields (%) Interpolated from Updated Figures 5.3 and 5.4**

Contributor	Q1/2012	Q2/2012	Q3/2012	Q4/2012
Scotiabank	1.05	1.13	1.63	2.00
Bank of Montreal	1.08	1.07	1.27	1.62
National Bank	1.11	1.20	1.34	1.58
TD Bank	1.05	1.07	1.35	1.63
Royal Bank	1.17	1.32	1.45	1.70
Bank of America/Merrill Lynch	1.08	0.77	0.78	0.67
Average for quarter	1.09	1.09	1.30	1.53
Overall 3-year bond yield	Sum of averages for quarters/4 = 5.02/4 = 1.25			

**Updated the Revenue Requirements Application for the 2012 Policy Year, Figure 5.6 – Quarterly Forecasts for 30-Year Government of Canada Bond Yields (%) from Financial Forecasts**

Contributor	Q1/2012	Q2/2012	Q3/2012	Q4/2012
Scotiabank	2.45	2.50	2.90	3.40
Bank of Montreal	2.55	2.55	2.70	3.00
National Bank	2.79	2.88	3.04	3.15
TD Bank	2.40	2.50	3.10	3.60
Royal Bank	2.75	2.90	3.05	3.20
Bank of America/Merrill Lynch	2.65	2.60	2.90	3.00
Average for quarter	2.60	2.66	2.95	3.23
Overall 30-year bond yield	Sum of averages for quarters/4 = 11.43/4 = 2.86			

**Updated the Revenue Requirements Application for the 2012 Policy Year, Figure 5.7 – Annual Forecasts for Canadian CPI from Financial Forecasts**

Contributor	Q4/2012
Scotiabank	1.80
Bank of Montreal	2.20
National Bank	n/a
TD Bank	1.50
Royal Bank	1.80
Bank of America/Merrill Lynch	1.50
Average	1.76

**Updated the Revenue Requirements Application for the 2012 Policy Year, Figure 5.8 – Calculation of the New Money Rate for the 2012 Policy Year**

	<b>Weighting</b>		<b>Formula for Yield</b>	<b>Yields</b>
	72%	x	Forecast 3-year Government of Canada bond yield calculated from multi-dealer survey	1.25%
+	23%	x	Forecast 30-year Government of Canada bond yield from multi-dealer survey + 5.5%	2.86% + 5.50% = 8.36%
+	5%	x	Forecast Canadian inflation from multi-dealer survey + 4.25%	1.76% + 4.25% = 6.01%
<b>New Money Rate for the 2012 policy year *</b>				<b>3.13%</b>

\* Difference between Weighting multiplied by Yields and Calculated New Money Rate is due to rounding.

**48.1.1**

Please see Attachment A – Most Current Forecasts from Six Financial Institutions.



# **2012.1 RR BCUC.48.1.1 – Attachment A – Most Current Forecasts from Six Financial Institutions**

# Global Forecast Update

## New Year — Old Story

**Slower global growth again in 2012.** Global economic activity is expected to moderate again this year, with worldwide output growth forecast to increase 3.6% — roughly 1½ percentage points below the pace set in the first full year of recovery in 2010. This lacklustre performance reflects the compounding effect of a number of factors, most notably increasing fiscal belt-tightening in many advanced nations, prior credit restraint in some key developing countries, and the cascading effect on international trade, credit, and financial conditions associated with the euro zone's lingering sovereign debt crisis. Every region is affected. In Europe, the euro zone has tilted into recession, with only a marginal advance forecast for the U.K. The pace of activity in the U.S. and Canada is expected to average less than 2%. More moderate growth in Mexico and other parts of Latin America is likely. After a weaker-than-expected gain last year, Brazilian output growth is expected to get a boost from accelerating investments and further interest rate cuts. Pro-growth policies will also help to buoy prospects in India and South Korea, with post-crisis rebuilding keeping Japan in the relative fast lane for advanced economies. China's output growth should slip under 9% this year alongside the slowdown in international trade and some cooling off in its hot real estate market.

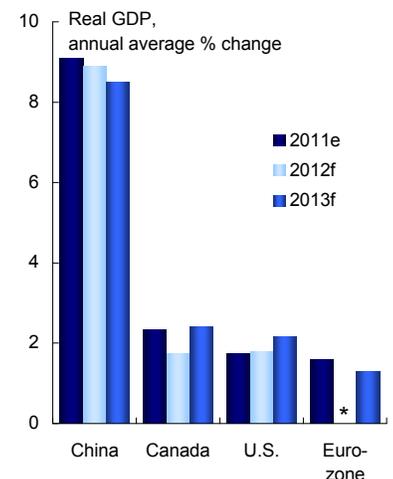
**Downside risks to the outlook persist.** Beyond the recurring short-term fixes to support many of the euro zone members, longer-term prospects critically depend upon the ability of European leaders to persist with far-reaching fiscal and economic structural reforms needed to contain, and eventually reverse, the debt-led contagion. Stabilizing the weakened banking sector is key to the short-run outlook, while competitive adjustments are needed for long-term sustainability. The U.S. economy is susceptible to chronic housing sector woes that are still being magnified by oversupply conditions, lacklustre employment and income gains, and continuing bank lending caution. Political tension over its mega-deficits leaves the U.S. vulnerable to credit risks that are now shaking Europe. The potential for a sharper moderation in growth among the developing world's powerhouses — China and India for example — would have negative implications for commodity markets, a development that would reduce the performances of many resource-dependent exporting countries like Canada and Australia. In addition, credit conditions are expected to firm in many jurisdictions as tighter regulatory guidelines and capital raising initiatives are implemented, and particularly in Europe where banks are under continuing stress.

**Inflation pressures turning down, for now.** The recent moderation in price pressures should persist in the slower growth environment that has enveloped advanced and developing nations alike. The early-2011 run-ups in many important commodity prices — agricultural, energy and mineral products in particular — have backed down in response to slower growth around the world, as well as some relief from weather-related disruptions. Core inflation pressures are expected to remain subdued. Excess capacity in many sectors and countries will help to keep underlying price pressures in check, though skilled labour shortages in certain sectors and regions will limit the amount of compression underway.

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### Slower Global Growth in 2012



\* 0.0 Source: Scotia Economics, Bloomberg, BEA, Statistics Canada, Eurostat.

### Global Inflation Pressures Easing



Source: Scotia Economics, Bloomberg.

**Ultra-low short-term interest rates for at least another year.** Monetary policy will remain very accommodative in the advanced nations where growth and inflation pressures are moderating, and where more and more countries are moving towards fiscal restraint. Further interest rate cuts are likely in the euro zone, where expectations also are rising for continued central bank support to help provide a more durable solution to the region's raging sovereign debt crisis. With heightened downside risks in the global economy, there is the potential for additional unconventional policy in the U.S., U.K., and Japan. Canada has the flexibility to lower its benchmark overnight rate if deteriorating global economic and financial circumstances slow domestic growth even further. Look for the large developing nations of China and Brazil to continue, and in the case of India begin, the process of reducing borrowing costs and easing credit conditions. With ultra-low short-term interest rates helping to anchor flatter yield curves, refinancing activity should continue to provide more cash flow to households and businesses — monies that can be used to bolster spending or saving.

**Longer-term interest rates to stay low for longer.** Notwithstanding rising deficits and debt burdens in the advanced economies, government bond yields in most of these countries have plunged to record lows amid the turbulence surrounding the euro zone's sovereign debt problems. Even so, longer-term bond yields are now being differentiated by credit risk. The yield on 10-year government bonds ranges from around 1% in Japan to around 2% in the U.S., Canada, Germany and the U.K. Bond yields in France, Spain and Italy are just over 3%, 5% and 6½%, respectively. Deficits and debt burdens matter, but the U.S., Canada and Germany have the added fiscal flexibility afforded by continuing, albeit modest, growth. Government bond yields should remain on the historically low side well into 2012. Any normalization of the yield curve through higher longer-term interest rates must await signs of renewed stability in the euro zone, though in the case of the U.S., political inaction on its massive debt burden could eventually work against its current 'safe-haven' status.

**Safety in troubled times.** The U.S. dollar is expected to stay stronger for longer during these unsettled times, particularly with even moderate U.S. growth outperforming many economies. Euro weakness should persist until more substantive policies and financial support are forthcoming. Current yen strength should eventually dissipate as repatriation flows and rebuilding efforts in Japan moderate. The Canadian dollar is likely to remain below parity through the first half of the year, reflecting increased risk aversion and generally softer commodity prices resulting from the reduced pace of global economic activity. This slowdown has triggered slight reversals in the performances of most emerging market currencies as well or, as in the case of China, kept the exchange rate from appreciating further. Many of these factors are expected to unwind as the year progresses, with relative U.S. dollar strength giving way to renewed weakness against the backdrop of a downgraded fiscal outlook, some stabilization in Europe's economic and debt problems, and continued growth in emerging nations.

**Developing economies will continue to help rebalance global growth.** The ongoing stronger economic performance in emerging nations will buoy global activity, and is causing a major shift in global consumption patterns. For example, car sales in emerging nations are expected to surpass purchases in the developed world in 2012, for the first time on record. These nations have also become the key drivers to global trade, with imports to developing nations expanding at double the pace of overall global trade. Demographic trends are reinforcing these developments, with these countries expected to account for virtually all of the increase in the global working age population over the next decade.

**Investment spending should remain supportive of global growth.** Business caution is being reinforced by the global economic slowdown, increased uncertainty surrounding the unfolding debt crisis in Europe, and lingering fiscal and political problems in the United States. In addition, many governments embarking upon fiscal restraint are trimming investment expenditures following in many instances substantial infrastructure stimulus during the downturn. Nevertheless, corporate profitability retains slower but still positive momentum in North America, and balance sheets are relatively sound. Businesses remain focussed on boosting productivity, and taking advantage of opportunities to gain market share through mergers & acquisitions. And governments in the developing economies are expected to continue to boost investment spending on infrastructure and commodity-related projects.

For a broader perspective on foreign exchange trends, please refer to our January 2012 *Foreign Exchange Outlook* at [http://www.scotiacapital.com/English/bns\\_econ/fxout.pdf](http://www.scotiacapital.com/English/bns_econ/fxout.pdf). ■

## Global Forecast Update

North America	2000-10	2011e	2012f	2013f
	(annual % change)			
<b>Canada</b>				
Real GDP	2.2	2.3	1.8	2.4
Consumer Spending	3.2	1.9	1.8	2.2
Residential Investment	4.4	2.9	5.7	3.6
Business Investment	2.5	12.2	6.1	5.7
Government	3.6	1.2	-0.7	-1.0
Exports	0.0	4.5	4.5	5.3
Imports	3.0	6.6	3.4	3.9
Nominal GDP	4.7	5.4	3.2	4.1
GDP Deflator	2.5	3.0	1.4	1.7
Consumer Price Index	2.1	2.9	1.8	2.0
Core CPI	1.8	1.7	1.9	1.9
Pre-Tax Corporate Profits	4.6	12.0	3.5	7.0
Employment	1.5	1.6	0.8	1.1
thousands of jobs	240	265	133	196
thousands of jobs (Q4/Q4)	233	220	165	210
Unemployment Rate (%)	7.1	7.5	7.4	7.2
Current Account Balance (C\$ bn.)	7.9	-52.0	-51.4	-42.5
per cent of GDP	0.8	-3.0	-2.9	-2.3
Merchandise Trade Balance (C\$ bn.)	46.2	-1.9	1.0	11.0
Federal Budget Balance (C\$ bn.)	-1.2	-30	-26	-17
per cent of GDP	0.0	-1.8	-1.5	-0.9
Housing Starts (thousands)	200	192	180	175
Motor Vehicle Sales (thousands)	1,588	1,590	1,605	1,615
Motor Vehicle Production (thousands)	2,447	2,075	2,270	2,350
Industrial Production	0.0	3.7	2.8	3.0
<b>United States</b>				
Real GDP	1.8	1.7	1.8	2.2
Consumer Spending	2.2	2.2	1.5	1.7
Residential Investment	-4.9	-1.9	1.7	2.4
Business Investment	0.9	9.0	6.4	6.1
Government	2.0	-1.9	-0.7	-1.0
Exports	3.9	6.7	3.6	4.8
Imports	3.4	4.8	1.7	2.4
Nominal GDP	4.1	3.9	3.1	3.5
GDP Deflator	2.3	2.1	1.2	1.4
Consumer Price Index	2.5	3.1	1.7	2.1
Core CPI	2.1	1.6	1.6	1.8
Pre-Tax Corporate Profits	7.0	8.1	4.8	6.0
Employment	0.1	1.0	1.1	1.3
millions of jobs	0.08	1.32	1.47	1.75
millions of jobs (Q4/Q4)	-0.01	1.55	1.48	1.96
Unemployment Rate (%)	5.9	9.0	8.7	8.6
Current Account Balance (US\$ bn.)	-564	-484	-483	-453
per cent of GDP	-4.5	-3.2	-3.1	-2.8
Merchandise Trade Balance (US\$ bn.)	-633	-745	-748	-744
Federal Budget Balance (US\$ bn.)	-407	-1,299	-1,200	-1,040
per cent of GDP	-3.0	-8.6	-7.7	-6.5
Housing Starts (millions)	1.45	0.61	0.68	0.78
Motor Vehicle Sales (millions)	15.4	12.7	13.5	14.2
Motor Vehicle Production (millions)	10.6	8.4	9.1	9.6
Industrial Production	0.2	4.1	3.0	3.2
<b>Mexico</b>				
Real GDP	2.1	3.9	3.0	3.7
Industrial Production	1.4	3.8	2.7	3.9
Consumer Price Index (year-end)	4.9	3.6	4.0	4.1
Current Account Balance (US\$ bn.)	-10.0	-13.2	-18.2	-18.2
per cent of GDP	-1.2	-1.1	-1.5	-1.7

## Forecast

## Changes

## Canada &amp; United States

- Our forecast of Canadian GDP growth this year and next is unchanged from our December Update, with output expected to advance 1.8% and 2.4%, respectively. The latest economic indicators are consistent with positive, yet moderate growth, as relatively solid domestic demand — consumer spending, housing and business investment — is tempered by weak global export conditions.
- U.S. economic indicators continue to gradually improve, with the final months of 2011 expected to post the strongest growth since mid-2010. Our 2012 and 2013 GDP forecasts remain unchanged at 1.8% and 2.2%, respectively. Modest downward revisions were made to the unemployment rate and CPI estimates, largely due to the base effect created by the better-than-expected Q4 reports. As the economy rebalances away from an over-reliance on consumers, business investment and exports are adding the most to growth.
- As Ottawa lays out its longer-term major transfers to the Provinces, achieving its second-round strategic spending reductions, starting in fiscal 2012-13, becomes increasingly critical to its deficit elimination plans. The U.S. federal deficit forecast assumes offsetting savings for maintaining the payroll tax cut through 2012.

## Mexico

- Mexican output growth is expected to decelerate to 3.0% this year following an estimated 3.9% advance in 2011. The Mexican peso remains under pressure, unable to trade below the 13.4 mark in the past two months. While the monetary authorities remain in a neutral position, they have shown some concern over the passthrough effects of recent peso depreciation.

## Global Forecast Update

International	2000-10	2011e	2012f	2013f
<b>Real GDP (annual % change)</b>				
World (based on purchasing power parity)	3.7	3.7	3.6	3.9
United Kingdom	2.0	0.9	0.7	1.8
Euro zone	1.4	1.6	0.0	1.3
Germany	1.2	3.0	0.6	1.6
France	1.4	1.7	0.3	1.3
Italy	0.7	0.5	-1.0	0.7
Spain	0.3	0.6	-0.4	1.1
Japan	1.0	-0.4	3.3	1.8
Australia	3.1	2.1	4.2	3.3
China	9.5	9.1	8.9	8.5
India	7.5	7.2	7.5	8.0
Korea	4.6	3.8	4.3	4.5
Thailand	4.1	2.8	3.5	4.5
Brazil	3.7	2.8	3.8	4.5
Chile	3.8	6.2	3.9	5.5
Colombia	4.1	5.5	5.0	5.0
Peru	5.5	6.9	5.5	5.6
<b>Consumer Prices (y/y % change, year-end)</b>				
United Kingdom	2.1	4.4	2.1	2.5
Euro zone	2.1	2.6	1.5	1.8
Germany	1.7	2.4	1.5	1.8
France	1.9	2.4	1.3	1.6
Italy	2.3	3.5	1.3	1.7
Spain	2.9	2.5	1.4	1.6
Japan	-0.3	0.2	0.4	0.5
Australia	3.1	3.0	2.8	2.5
China	2.3	4.7	4.5	4.3
India	6.4	8.1	6.5	6.0
Korea	3.1	3.7	3.3	3.0
Thailand	2.6	3.5	3.0	2.8
Brazil	6.6	6.5	5.5	5.0
Chile	3.3	3.8	2.8	3.5
Colombia	5.8	3.5	3.3	3.0
Peru	2.4	4.8	3.0	2.5
<b>Current Account Balance (% of GDP)</b>				
United Kingdom	-2.2	-2.0	-1.3	-0.7
Euro zone	-0.2	-0.6	-0.4	0.0
Germany	3.8	4.9	4.9	4.7
France	-0.6	-2.4	-2.3	-2.2
Italy	-1.7	-3.4	-3.2	-2.8
Spain	-5.7	-4.0	-3.1	-2.7
Japan	3.3	2.2	2.2	2.3
Australia	-4.5	-2.9	-3.1	-2.6
China	5.3	4.0	3.0	2.4
India	-0.8	-3.2	-3.1	-2.6
Korea	2.3	2.3	2.0	1.8
Thailand	3.3	3.8	3.2	2.6
Brazil	-0.9	-2.3	-2.8	-2.8
Chile	0.9	-0.7	-2.4	-1.5
Colombia	-1.6	-2.8	-2.5	-2.0
Peru	-0.7	-2.4	-2.5	-2.7
<b>Commodities (annual average)</b>				
WTI Oil (US\$/bbl)	54	95	100	105
Brent Oil (US\$/bbl)	52	111	110	110
Nymex Natural Gas (US\$/mmbtu)	5.81	4.05	3.50	4.25
Copper (US\$/lb)	1.93	4.00	3.90	3.90
Zinc (US\$/lb)	0.75	0.99	0.94	1.10
Nickel (US\$/lb)	7.36	10.39	9.00	8.00
Gold, London PM Fix (US\$/oz)	586	1,569	1,675	1,600
Pulp (US\$/tonne)	694	977	912	950
Newsprint (US\$/tonne)	575	640	680	725
Lumber (US\$/mfbm)	273	255	260	300

## Forecast

## Changes

## International

- We have made no material changes to our euro zone growth outlook for 2011-2013. For the U.K., available data for the fourth quarter point to a slightly better outcome in 2011 than previously anticipated. We now expect the economy advanced 0.9% in 2011. The 2012 forecast has been edged down, to 0.7% from 0.8%. We have also lowered the profile for the ECB, with the central bank moving the refinancing rate to a low of 0.50% in early 2012, where it will remain through the second quarter of 2013.
- Asia will not be immune to the euro-centred slowdown. External trade data already reflect lacklustre export growth to Europe, though shipments to the U.S. have yet to retrench. Asian governments will rely on monetary and fiscal firepower in the case of faltering economic growth. Inflationary pressures are easing in most countries. While we envisage a lower rate of Chinese yuan appreciation, support for market-determined exchange rates will endure on the back of favourable interest rate and growth differentials.
- We have lowered our 2011 GDP growth estimate for Brazil from 3.5% to 2.8% on the back of weaker domestic consumption and less robust industrial activity, especially in the manufacturing sector. Monetary authorities have restarted a monetary policy easing cycle and the government has unveiled a series of tax cuts and credit measures aimed at strengthening local demand. We expect the Brazilian economy to expand by 4.2% on average in 2012-2013.

## Commodities

- Oil prices are starting 2012 on a strong note, with Brent at US\$110/bbl and WTI oil at US\$101, and are likely to remain strong. Despite concern over the euro zone economic outlook, prices are being supported by a widening geopolitical risk premium due to developments in the Persian Gulf and the threat of oil supply disruptions linked to sanctions on Iran.

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## Global Forecast Update

Provincial	2000-10	2011e	2012f	2013f	2000-10	2011e	2012f	2013f
	<u>Real GDP</u> (annual % change)				<u>Budget Balances*, FY March 31</u> (\$millions)			
<b>Canada</b>	2.2	2.3	1.8	2.4	3,149	-33,372	-30,000	-26,000
Newfoundland & Labrador	3.3	4.0	1.8	2.5	91	485	756	n.a.
Prince Edward Island	1.9	1.5	1.3	1.9	-30	-52	-73	n.a.
Nova Scotia	1.8	1.6	1.6	2.4	23	569	-365	n.a.
New Brunswick	2.0	1.4	1.3	2.0	-15	-633	-546	n.a.
Quebec	1.9	1.9	1.5	2.2	-1,259	-3,150	-3,800	n.a.
Ontario	1.9	2.0	1.6	2.1	-2,407	-14,011	-15,994	n.a.
Manitoba	2.3	2.0	2.1	2.5	239 **	-298	-989	n.a.
Saskatchewan	1.9	3.2	2.9	3.2	427	48	338	n.a.
Alberta	2.7	3.3	3.1	3.3	3,957	0	0	n.a.
British Columbia	2.5	2.3	2.0	2.8	615	-309	-3,091	n.a.
					* Final result; other FY11-FY12 data: Provinces' estimates. ** FY04-FY09.			
	<u>Employment</u> (annual % change)				<u>Unemployment Rate</u> (annual average, %)			
<b>Canada</b>	1.5	1.6	0.8	1.1	7.1	7.5	7.4	7.2
Newfoundland and Labrador	0.8	2.7	1.2	1.0	15.2	12.7	12.0	11.6
Prince Edward Island	1.4	1.7	0.5	0.7	11.3	11.3	11.2	10.9
Nova Scotia	1.0	-0.1	0.6	1.1	8.8	8.9	8.6	8.2
New Brunswick	0.8	-1.3	0.5	0.8	9.4	9.5	9.4	9.1
Quebec	1.5	1.2	0.6	0.9	8.3	7.7	7.7	7.6
Ontario	1.5	1.9	0.7	1.0	6.9	7.9	7.9	7.8
Manitoba	1.2	0.7	0.8	1.0	4.9	5.4	5.3	5.3
Saskatchewan	1.0	0.3	0.9	1.2	5.1	5.0	4.8	4.8
Alberta	2.5	3.8	2.0	1.7	4.8	5.5	5.0	4.5
British Columbia	1.6	0.8	0.9	1.2	6.7	7.5	7.4	7.3
	<u>Housing Starts</u> (annual, thousands of units)				<u>Motor Vehicle Sales</u> (annual, thousands of units)			
<b>Canada</b>	200	192	180	175	1,587	1,590	1,605	1,615
Atlantic	12	12	11	11	114	122	123	124
Quebec	45	48	44	40	405	410	413	416
Ontario	73	67	63	60	604	588	593	595
Manitoba	4	6	5	5	44	46	46	46
Saskatchewan	4	7	6	6	41	48	49	50
Alberta	35	25	26	28	204	218	221	223
British Columbia	27	27	25	26	176	158	160	161

## Forecast Changes

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## Commodities

- Global oil demand and supply conditions are in balance, with OPEC intending to produce 30 mb/d in 2012H1 — just slightly above the projected 'call' for OPEC crude. A narrowing discount for WTI oil off Brent will also lift WTI prices in the coming year, as rising Alberta and mid-Continent supplies (built to record levels at Cushing, Oklahoma in April 2011) are linked to Gulf Coast refining centres (via reversal of the Seaway Pipeline). Material markets will likely be quiet in early 2012, but strengthen by spring, as China's industrial activity picks up after decelerating last fall.

## Provincial

- Saskatchewan's and Alberta's economic outperformance is evident in recent data. Tight job markets and correspondingly higher wages are once again spurring population inflows from other provinces, boosting the two Prairie provinces' services sectors, with retail sales and housing demand tracking well above national trends.
- In Central Canada, Quebec will benefit from announced aluminum smelting investments, while Ontario will see auto production increase further, as North American production rises to its highest level in four years. The latter improvement reflects rising replacement demand in the U.S., the destination for more than 80% of Canadian vehicle assemblies. Resilience in Ontario's private-sector service employment is expected to offer some offset to slowing growth in the broader public sector.
- Slower economic growth plus one-time events, such as B.C.'s return to a Provincial Sales Tax after Q1 2013, are contributing to the wider deficits now forecast by several Provinces for fiscal 2011-12. This raises the stakes for credible fiscal repair plans in the upcoming spring *Budgets*.

Financial Markets	11Q4	12Q1f	12Q2f	12Q3f	12Q4f	13Q1f	13Q2f	13Q3f	13Q4f
(%, end of period)									
<b>Canada</b>									
BoC Overnight Target Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.50	2.00	2.25
3-month T-bill	0.80	0.85	0.90	0.95	1.10	1.30	1.80	2.15	2.30
2-year Canada	0.96	0.95	1.00	1.45	1.80	1.95	2.10	2.35	2.40
5-year Canada	1.28	1.25	1.40	2.00	2.40	2.45	2.50	2.65	2.75
10-year Canada	1.94	1.90	2.10	2.50	2.95	3.05	3.10	3.15	3.30
30-year Canada	2.49	2.45	2.50	2.90	3.40	3.55	3.60	3.65	3.80
Real GDP (q/q, ann. % change)	1.7	1.5	1.4	1.9	2.4	2.5	2.6	2.8	2.8
Real GDP (y/y, % change)	2.0	1.5	2.0	1.6	1.8	2.1	2.3	2.6	2.7
Consumer Prices (y/y, % change)	2.8	2.1	1.5	1.6	1.8	2.0	2.0	2.1	2.1
Core CPI (y/y % change)	2.1	2.0	1.9	1.7	1.8	1.9	1.9	2.0	2.0
<b>United States</b>									
Fed Funds Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.75	1.25
3-month T-bill	0.01	0.05	0.05	0.10	0.15	0.15	0.40	0.95	1.45
2-year Treasury	0.24	0.30	0.35	0.65	1.00	1.10	1.20	1.35	1.50
5-year Treasury	0.83	0.85	1.00	1.45	1.65	1.75	1.80	1.90	1.95
10-year Treasury	1.88	1.90	2.05	2.55	3.00	3.10	3.20	3.30	3.50
30-year Treasury	2.89	2.85	3.00	3.40	3.90	4.00	4.10	4.20	4.40
Real GDP (q/q, ann. % change)	3.0	1.6	1.2	1.4	1.8	2.2	2.5	2.8	2.9
Real GDP (y/y, % change)	1.6	1.9	1.9	1.8	1.5	1.7	2.0	2.3	2.6
Consumer Prices (y/y, % change)	3.4	2.2	1.6	1.5	1.6	1.8	2.1	2.3	2.3
Core CPI (y/y % change)	2.0	1.8	1.5	1.5	1.6	1.6	1.8	1.8	2.0
<b>Spreads</b>									
Target Rate	0.75	0.75	0.75	0.75	0.75	0.75	1.25	1.25	1.00
3-month T-bill	0.79	0.80	0.85	0.85	0.95	1.15	1.40	1.20	0.85
2-year	0.72	0.65	0.65	0.80	0.80	0.85	0.90	1.00	0.90
5-year	0.45	0.40	0.40	0.55	0.75	0.70	0.70	0.75	0.80
10-year	0.06	0.00	0.05	-0.05	-0.05	-0.05	-0.10	-0.15	-0.20
30-year	-0.40	-0.40	-0.50	-0.50	-0.50	-0.45	-0.50	-0.55	-0.60
<b>Central Bank Rates</b>									
European Central Bank	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.75	1.00
Bank of England	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.75	1.00
Swiss National Bank	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25
Bank of Japan	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.25	0.25
Reserve Bank of Australia	4.50	4.25	4.25	4.25	4.25	4.25	4.50	4.50	4.50
<b>Exchange Rates</b>									
Canadian Dollar (USDCAD)	1.02	1.02	1.01	0.99	0.98	0.98	0.97	0.97	0.96
Canadian Dollar (CADUSD)	0.98	0.98	0.99	1.01	1.02	1.02	1.03	1.03	1.04
Euro (EURUSD)	1.30	1.29	1.28	1.27	1.25	1.25	1.26	1.28	1.29
Euro (EURGBP)	0.83	0.83	0.81	0.78	0.77	0.76	0.76	0.77	0.77
Sterling (GBPUSD)	1.55	1.56	1.59	1.62	1.63	1.65	1.66	1.67	1.68
Yen (USDJPY)	77	78	80	80	82	83	83	84	84
Australian Dollar (AUDUSD)	1.02	1.02	1.04	1.06	1.08	1.09	1.09	1.10	1.10
Chinese Yuan (USDCNY)	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.8
Mexican Peso (USDMXN)	13.9	13.5	13.2	13.0	13.0	13.1	13.2	13.3	13.3
Brazilian Real (USDBRL)	1.87	1.84	1.81	1.78	1.75	1.77	1.80	1.82	1.85

## Scotia Economics

Scotia Plaza 40 King Street West, 63rd Floor  
 Toronto, Ontario Canada M5H 1H1  
 Tel: (416) 866-6253 Fax: (416) 866-2829  
 Email: [scotia.economics@scotiabank.com](mailto:scotia.economics@scotiabank.com)

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## Fixed Income and Foreign Exchange Strategy

### January 5, 2012 Forecast Summary (averages)

Michael Gregory, CFA  
Senior Economist

Benjamin Reitzes  
Senior Economist  
Foreign Exchange Strategist

	Actual Dec	2012 Jan	Feb	Mar	2012 Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4
BoC overnight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.85
10-yr Canadas	1.99	2.00	2.00	2.00	2.00	2.20	2.45	2.70	2.90	3.15	3.40
Fed funds	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.20	0.60
10-yr Treasuries	1.98	1.95	1.95	1.90	1.90	2.10	2.40	2.65	2.90	3.15	3.40
C\$ per US\$	1.024	1.025	1.034	1.043	1.060	1.040	1.010	0.993	0.983	0.987	0.997
US\$/€	1.32	1.30	1.28	1.27	1.25	1.28	1.33	1.37	1.39	1.38	1.36
US\$/£	1.56	1.55	1.54	1.53	1.53	1.55	1.59	1.61	1.62	1.63	1.65
¥/US\$	78	77	77	76	76	77	79	81	83	85	89

### U.S. Rates

**Fed Policy:** The December 13 policy announcement continued the commitment to "exceptionally low levels for the federal funds rate at least through mid-2013" along with the Maturity Extension Program and the reinvestment strategy. There was no mention, at the time, of

changes to communications strategy. However, the Minutes (released Jan. 3) announced that beginning January 25 the FOMC's quarterly Summary of Economic Projections will include the range of members' forecasts for the fed funds target rate (consistent with their already-published projections for real GDP growth, PCE and core PCE inflation, and the unemployment rate), along with their expectations on the timing of the first rate hike and "qualitative information" regarding their expectations on the Fed's balance sheet. With this new information, markets will be able to better assess what "at least through mid-2013" means along with the conditions that impinge on this policy commitment, and what it might take to trigger QE3. The market is already betting that this new info will point to rate hikes commencing later in the 2013 H2-and-beyond period than first assessed. (We've pushed back our 2013 Q3 rate hike start call to Q4.)

We look for real GDP growth to slow to just under 2% annualized in 2012 H1, from a 2011 Q4 reading close to 3%, owing to a deepening European recession, slowing emerging markets and ebbing domestic momentum. The latter reflects calmer consumer spending (the drawdown in savings and aggressive



price discounting were probably temporary) and cooler business capital spending (after tax incentives pulled outlays into 2011), amid continuing fiscal consolidation. This will keep the unemployment rate “elevated”, headline inflation falling and core inflation contained in its price stability range—a ripe environment for further Fed easing, particularly with this year’s rotation of voting regional Fed presidents more dovish than last year. Apart from employing the communications strategy to ease, we also look for more net purchases of MBS (with housing finally stabilizing, additional policy support would promote outright recovery). We don’t think the Fed will start buying Treasuries outright unless deflation risks rise or this credit easing requires reinforcement.

**Treasuries:** For the past two months, bellwether 10-year yields have been trading in the 1.80% to 2.10% range. With U.S. economic momentum expected to ebb during 2012 H1 (and the Fed expected to be on hold for longer), the trend should still drift down a bit, as the deepening European recession and inevitable sovereign debt crisis flare-up stoke the safe-haven bid for Treasuries. We’re forecasting a 1.9% monthly average low through this spring, likely hitting a record-low, sub-1.70% in trading. Beyond mid-2012, with self-sustaining, moderate U.S. economic growth becoming evident, the global situation stabilizing and the end of the Fed’s Maturity Extension Program, longer-term yields should head higher.

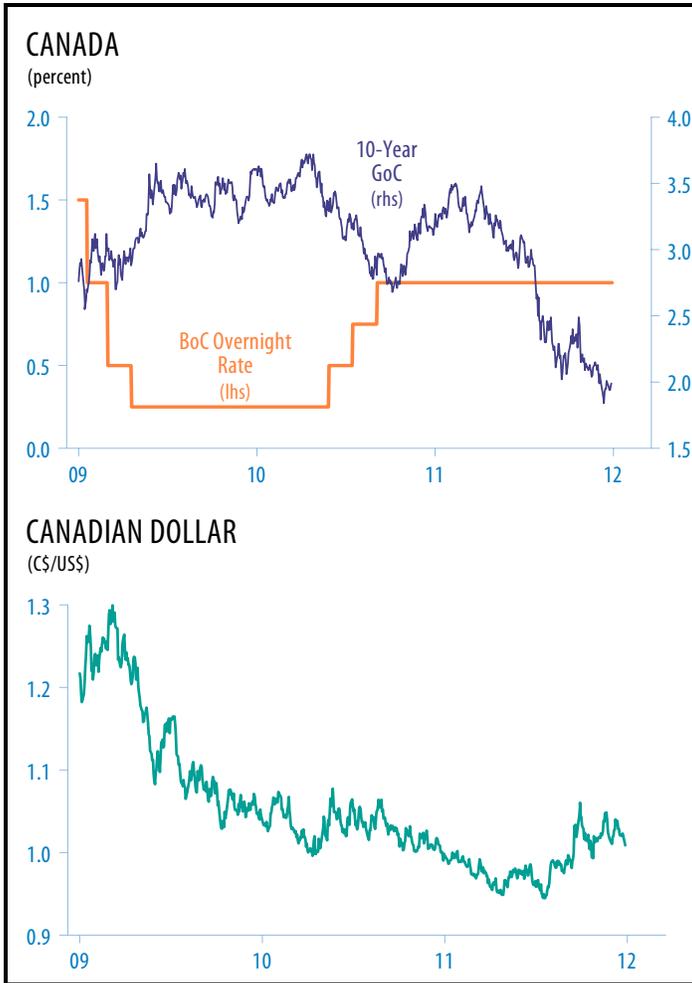
**Greenback:** The swinging pendulum between safety and risk assets remains the U.S. dollar’s primary driver. With the former likely to be felt more often than the latter during 2012 H1, we look for the greenback to rise on a trade-weighted basis. When the pendulum finally swings back the other way during 2012 H2, the dollar should resume depreciating.

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## Canadian Rates

**BoC policy:** The Bank of Canada kept policy rates unchanged on December 6. The Bank said *“uncertainty around the global economic outlook has increased”* and *“the recession in Europe is now expected to be more pronounced.”* Offsetting this, U.S. growth *“has been slightly more robust than anticipated”* while Canadian second-half growth is tracking *“slightly stronger”* than projected with inflation running *“slightly higher.”* The BoC judges these North American misses will prove temporary, and that growth and inflation will cool as projected, partly owing to the worsening global situation. Resulting sub-2% Canadian GDP growth and CPI inflation should keep BoC easing odds building through the spring. However, with household debt and housing market dynamics still arguing for higher, not lower rates, and the fact that the BoC notes that there is still *“considerable monetary policy stimulus”* in place, the external headwinds are going to have to blow much harder to elicit rate cuts. We’re holding to our view for unchanged policy all next year, and a before-the-Fed resumption of rate hikes in 2013.

**Canadas:** Canadian longer-term bonds continue their pattern of outperforming Treasuries amid rising yields but lagging as U.S. yields fall, and the latter should be the predominant theme during 2012 H1 (occasionally, factors such as the domestic demand for duration can

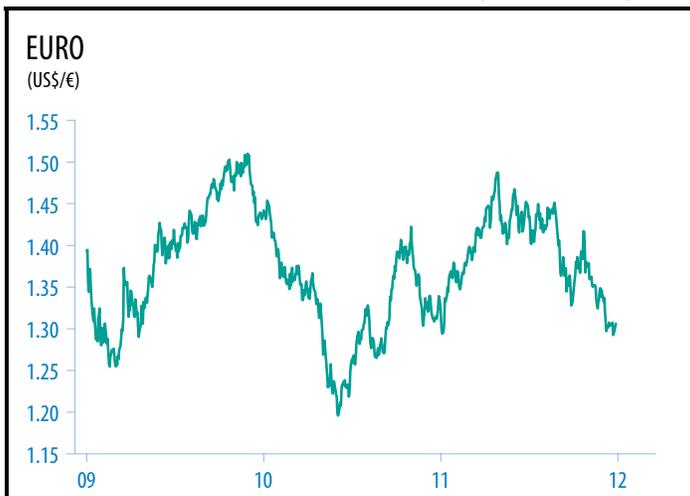


even cause mild Canadian outperformance at the longer end in a falling yield environment, which was the case last month). But, with the chance of BoC easing and the Fed selling the under-3-year Treasury segment, Canada's should outperform at the shorter end. Once the Treasury market takes a bearish turn during 2012 H2, look for a reversal in these trends. Canadian longer-term maturities should garner additional support from wider and/or less-negative Canada-U.S. yield differentials (the result of prior lagging performance), not to mention Canada's stronger fiscal fundamentals and an appreciating currency.

**Loonie:** For the past two months, the loonie traded between 95 U.S. cents and just under parity, averaging around the mid-97s and reflecting swings between "risk on" and "risk off" (with the "risk off" impact muted a bit by high oil prices). With "risk off" the prevailing wind during 2012 H1 (along with slight BoC easing prospects), we look for the loonie to weaken further—a monthly average low near 94 U.S. cents. As risk appetites swing the other way during 2012 H2, and prospects for BoC rate hikes build, the loonie should reverse course, hitting parity by year end.

## Euro

European leaders made some progress at the December summit, but it clearly isn't sufficient to contain the crisis. The bright side is that Europe appears to be tentatively on the right path, headed toward a fiscal union, though the path is long and arduous. Expect more summits in the year ahead, with each taking baby steps forward. Meantime, the ECB will do all it can to support the economy. The three-year refinancing operation in December was very successful and should



help banks avoid a liquidity crunch, which will in turn help the economy. The tender also appears to have lowered short-term bond yields for Italy and Spain, as banks take advantage of cheap funding. However, long-term yields remain elevated (Italy is near 7%), keeping pressure on those governments to shrink deficits and restructure their economies.

Further action from the ECB in January is probably asking too much. While the Euro Area is likely already in recession, the December rate cut was not a unanimous decision and the data since then have not materially altered the outlook. However, data

releases through January are expected to make the worsening economic picture clear and prompt rate cuts in February and March. If growth continues to falter into Q2 and inflation slows sufficiently to give rise to deflation fears, quantitative easing would be a possibility.

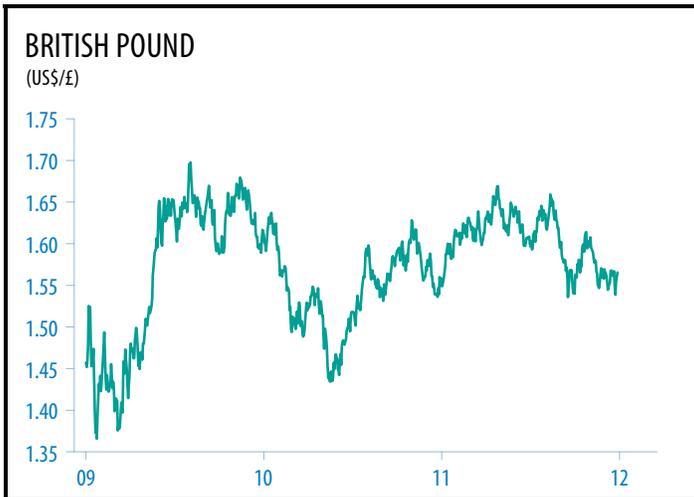
While we anticipate the euro will remain intact, it will take time for the appropriate decisions to be made, meaning the crisis atmosphere will persist in the near term. As such, the euro will remain under pressure amid further ECB easing. Once it becomes clear that the Euro Area will survive as is—and that may not be until around mid-2012—the euro should appreciate.

## U.K. Pound

The U.K. economy is facing two major headwinds: fiscal cutbacks and the Euro Area crisis. That prompted the Bank of England to expand its Asset Purchase Facility in October. Since then, the European economic data point to renewed recession and the government announced that weaker growth will mean austerity measures will have to last an extra two years (until 2017) and

public sector employment will shrink much more than previously announced. Given those factors, we anticipate the BoE will increase its Asset Purchase Facility further in either January or February, by which time inflation should start to trend downward (the VAT increase will fall out of the calculation in January).

Bank of England easing and a generally risk averse mood in markets as the euro crisis lingers are expected to weaken the pound to the middle of 2012. As the global outlook then starts to improve, sterling should strengthen on improved risk appetite and as the BoE shifts away from an easing bias.



## Japanese Yen

The Japanese yen was among the top performing currencies in 2011, much to the chagrin of exporters and policymakers. However, the currency remains off the record level hit in late

October which prompted official intervention. Still, the yen remains exceptionally strong, weighing heavily on exporters. Making matters more challenging, the global economy has clearly slowed. Japan's exports fell a hefty 6.5% in the two months to November and industrial production slumped that month. Growth will continue to get a boost from post-quake rebuilding, but that won't be sufficient to offset global headwinds.

Slowing growth, ongoing turmoil in Europe, and a stubbornly strong yen will likely prompt further easing from the Bank of Japan. That should keep the yen from strengthening beyond



the range that has prevailed since August. One potential risk to the yen outlook is Japan's credit rating. Rumours of a potential downgrade hit the yen in late November; and, if proven true, could weigh heavily on the currency.

## Australian Dollar

The Reserve Bank of Australia cut rates 25 bps for a second straight month in December, bringing the policy rate to 4.25%. The Bank highlighted concerns about Europe, increasing the "likelihood of a further material slowing in global growth". Domestic growth was characterized as at trend, with inflation expected to be consistent with the 2%-to-3% target.



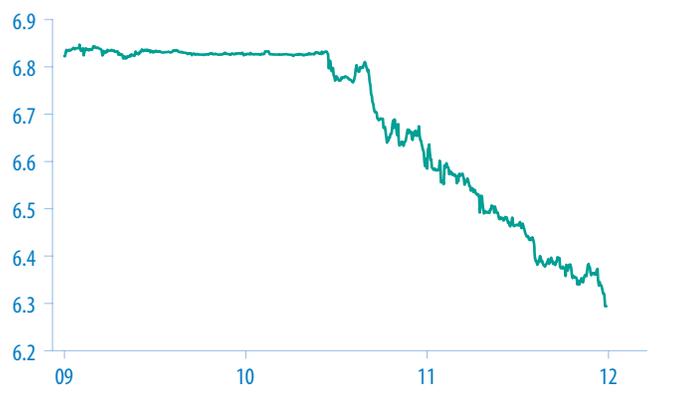
Importantly, the statement noted that bank funding conditions have worsened and credit growth remains subdued. Further easing by the RBA will likely be contingent on how the situation in Europe and domestic data evolve.

Since we expect the European crisis to persist, though not necessarily worsen, and China's economic growth to slow, there's potential for more rate cuts early in 2012. The slowing global economy and possible easing will weigh on the Australian dollar through early 2012, with the currency expected to fall below parity. Once global growth starts to reaccelerate around mid-year, the A\$ should turn higher.

## Chinese Yuan

Chinese economic momentum has slowed with most economic indicators decelerating. In response, Chinese officials cut banks' reserve requirements by 50 bps to 21% in December and have adopted a more-stimulative posture. Look for more easing in the form of reserve requirement and interest rate cuts early this year. However, officials may be reluctant to reduce

**CHINESE YUAN (CNY/US\$)**



interest rates until inflation comes down further from November's 4.2% y/y rate.

After a few months of stability from August to November, the yuan strengthened in December, closing the year at its best level in 18 years and gaining 5% for all of 2011. With the global economy slowing and uncertainty persisting in Europe, China will likely remain reluctant to allow the yuan to appreciate significantly. Look for the yuan to stay flat to modestly stronger over the next few months until there's more clarity on the outlook. We're forecasting 5%-to-8% annual appreciation to resume in mid-2012.

## Foreign Exchange Forecasts Local Currency per U.S. Dollar (averages)

	Actual Dec	2012 Jan	Feb	Mar	2012 Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4
<b>Canadian Dollar</b>											
C\$ per US\$	1.024	1.025	1.034	1.043	1.060	1.040	1.010	0.993	0.983	0.987	0.997
US\$ per C\$	0.977	0.976	0.967	0.959	0.943	0.962	0.990	1.007	1.017	1.013	1.003
Trade-Weighted	117.1	117.0	116.1	115.2	113.5	115.4	118.3	120.0	121.0	120.7	119.8
<b>U.S. Dollar</b>											
Trade-Weighted*	100.5	100.8	101.3	101.8	102.4	100.9	98.7	97.3	96.2	95.9	96.3
<b>European Currencies</b>											
Euro**	1.32	1.30	1.28	1.27	1.25	1.28	1.33	1.37	1.39	1.38	1.36
Danish Krone	5.65	5.75	5.80	5.90	5.95	5.80	5.60	5.45	5.35	5.40	5.50
Norwegian Krone	5.89	6.00	6.10	6.15	6.25	6.10	5.90	5.80	5.70	5.75	5.85
Swedish Krona	6.86	6.95	7.00	7.15	7.25	7.10	6.80	6.65	6.50	6.50	6.60
Swiss Franc	0.93	0.94	0.96	0.98	1.00	0.99	0.97	0.96	0.95	0.97	0.99
U.K. Pound**	1.56	1.55	1.54	1.53	1.53	1.55	1.59	1.61	1.62	1.63	1.65
<b>Asian Currencies</b>											
Chinese Yuan	6.35	6.34	6.32	6.31	6.28	6.22	6.14	6.07	6.00	5.92	5.85
Japanese Yen	78	77	77	76	76	77	79	81	83	85	89
Korean Won	1148	1155	1160	1165	1175	1150	1115	1090	1075	1060	1040
Indian Rupee	52.4	52.5	52.8	53.0	53.0	51.7	49.7	48.6	48.0	47.4	46.8
Singapore Dollar	1.30	1.29	1.30	1.30	1.31	1.30	1.26	1.23	1.20	1.18	1.15
Malaysian Ringgit	3.16	3.18	3.19	3.20	3.20	3.15	3.08	3.01	2.94	2.87	2.80
Thai Baht	31.2	31.5	31.6	31.7	31.9	31.3	30.3	29.7	29.2	28.8	28.3
Philippine Peso	43.6	43.9	44.0	44.1	44.2	43.5	42.3	41.5	41.0	40.4	39.8
Taiwan Dollar	30.3	30.3	30.3	30.4	30.5	30.1	29.6	29.0	28.5	28.0	27.6
Indonesian Rupiah	9076	9050	9070	9090	9130	9020	8820	8710	8650	8580	8520
<b>Other Currencies</b>											
Australian Dollar**	1.012	1.010	0.990	0.970	0.950	0.967	0.992	1.017	1.042	1.033	1.008
N.Z. Dollar**	0.770	0.780	0.760	0.740	0.720	0.738	0.767	0.800	0.838	0.842	0.829
Mexican Peso	13.77	13.85	13.90	14.00	14.00	13.70	13.30	13.10	12.80	12.60	12.50
Brazilian Real	1.84	1.84	1.84	1.85	1.85	1.83	1.81	1.79	1.77	1.75	1.75
Russian Ruble	31.6	32.0	31.1	32.1	32.2	31.9	31.3	30.7	30.2	30.0	30.3
South African Rand	8.2	8.2	8.3	8.4	8.5	8.3	8.1	7.9	7.6	7.5	7.4

\* Federal Reserve Broad Index    \*\* (US\$ per local currency)

### Cross Rates

#### Versus Canadian Dollar

Euro (C\$/€)	1.35	1.33	1.33	1.32	1.33	1.33	1.35	1.36	1.37	1.37	1.35
U.K. Pound (C\$/£)	1.60	1.59	1.59	1.60	1.62	1.61	1.60	1.60	1.59	1.61	1.64
Japanese Yen (¥/C\$)	76	75	74	73	72	74	78	82	84	86	89
Australian Dollar (C\$/A\$)	1.036	1.035	1.024	1.012	1.007	1.006	1.002	1.010	1.024	1.020	1.005

#### Versus Euro

U.K. Pound (£/€)	0.84	0.84	0.83	0.83	0.82	0.83	0.84	0.85	0.86	0.85	0.83
Japanese Yen (¥/€)	102	100	98	97	95	99	105	111	116	118	121

## Interest Rate Forecasts Percent (averages)

	Actual Dec	2012			2012			2013			
		Jan	Feb	Mar	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Cdn. Yield Curve</b>											
Overnight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.85
3 month	0.83	0.82	0.82	0.82	0.82	0.82	0.82	0.82	1.07	1.32	1.65
6 month	0.88	0.95	0.95	0.95	0.94	0.94	0.94	0.94	1.19	1.44	1.75
1 year	0.89	0.96	0.95	0.95	0.94	1.05	1.20	1.40	1.65	1.90	2.20
2 year	0.89	0.98	0.97	0.96	0.95	1.15	1.50	1.85	2.10	2.35	2.60
3 year	0.96	1.02	1.01	1.00	1.00	1.25	1.60	2.00	2.30	2.50	2.80
5 year	1.28	1.31	1.30	1.30	1.30	1.50	1.85	2.20	2.50	2.75	3.00
7 year	1.53	1.54	1.54	1.54	1.55	1.75	2.10	2.45	2.75	2.95	3.20
10 year	1.99	2.00	2.00	2.00	2.00	2.20	2.45	2.70	2.90	3.15	3.40
30 year	2.56	2.55	2.55	2.55	2.55	2.70	3.00	3.20	3.45	3.65	3.85
1m BA	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.40	1.65	2.00
3m BA	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.45	1.70	2.05
6m BA	1.29	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.60	1.85	2.20
12m BA	1.33	1.40	1.40	1.40	1.40	1.50	1.65	1.85	2.10	2.35	2.65
Prime Rate	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.25	3.50	3.85
<b>U.S. Yield Curve</b>											
Fed funds	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.20	0.60
3 month	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.10	0.44
6 month	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.10	0.48
1 year	0.12	0.12	0.13	0.13	0.14	0.23	0.38	0.52	0.65	0.85	1.20
2 year	0.26	0.27	0.28	0.29	0.30	0.49	0.80	1.07	1.35	1.65	2.00
3 year	0.39	0.40	0.41	0.41	0.42	0.65	1.00	1.30	1.65	2.00	2.35
5 year	0.89	0.89	0.89	0.88	0.88	1.11	1.45	1.80	2.15	2.50	2.85
7 year	1.43	1.41	1.40	1.38	1.35	1.60	1.90	2.25	2.55	2.90	3.20
10 year	1.98	1.95	1.95	1.90	1.90	2.10	2.40	2.65	2.90	3.15	3.40
30 year	2.98	3.00	2.95	2.90	2.85	3.05	3.35	3.60	3.85	4.10	4.35
1m LIBOR	0.28	0.30	0.30	0.30	0.30	0.30	0.25	0.25	0.20	0.25	0.65
3m LIBOR	0.56	0.55	0.55	0.60	0.60	0.55	0.45	0.40	0.30	0.35	0.75
6m LIBOR	0.78	0.80	0.80	0.80	0.85	0.80	0.70	0.60	0.50	0.60	0.95
12m LIBOR	1.10	1.10	1.10	1.15	1.15	1.20	1.25	1.30	1.40	1.55	1.90
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.60
<b>Other G7 Yields</b>											
ECB Refi	1.00	1.00	0.75	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.75
10yr Bund	2.10	2.00	1.95	1.92	1.90	2.05	2.30	2.55	2.75	2.95	3.15
BoE Repo	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.65
10yr Gilt	2.17	2.10	2.10	2.05	2.05	2.25	2.60	2.90	3.15	3.40	3.65
BoJ 0/N	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
10yr JGB	1.01	1.00	1.00	1.00	1.00	1.05	1.15	1.20	1.30	1.40	1.45

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# Canadian Economic Outlook

BMO Capital Markets Economics

January 20, 2012

	2011				2012				2013				2010	2011	2012	2013
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
<b>PRODUCTION</b>																
	<b>(quarter/quarter % change : a.r.)</b>															
Real GDP (chain-weighted)	3.5	-0.5	3.5	1.8	1.7	2.2	2.4	2.7	2.9	2.3	2.4	2.1	3.2	2.3	2.0	2.5
Final Sales	0.8	-3.0	6.4	1.8	1.9	2.2	2.3	2.7	2.5	2.5	2.5	2.2	2.6	2.1	2.3	2.5
Final Domestic Demand	1.5	3.1	0.9	2.4	1.9	2.1	2.2	2.6	2.3	2.3	2.1	2.0	4.5	2.9	2.1	2.3
Consumer Spending	-0.1	2.1	1.2	1.8	1.3	1.7	2.1	2.4	2.4	2.3	2.2	2.2	3.3	1.9	1.7	2.3
durables	-6.5	2.1	-1.5	1.9	1.0	1.5	2.0	2.5	2.4	1.8	1.7	2.0	4.4	0.3	1.2	2.1
nondurables	-0.8	0.2	1.8	2.0	1.0	1.3	1.6	2.2	2.0	2.0	2.0	2.0	1.8	0.8	1.4	1.9
services	1.6	3.3	1.1	1.5	1.5	1.8	2.3	2.4	2.5	2.5	2.4	2.4	3.5	2.7	1.8	2.4
Government Spending	-0.9	0.9	0.0	0.0	0.4	0.4	0.4	1.0	-0.0	0.4	0.6	0.4	4.7	1.3	0.3	0.4
Business Investment	12.3	14.6	-3.6	8.0	6.5	7.0	6.2	5.5	5.5	5.5	4.5	3.5	7.3	12.1	5.9	5.4
non-residential construction	10.3	-0.9	4.4	5.0	6.0	6.0	5.5	5.0	5.0	5.0	4.0	3.0	2.8	9.7	5.1	4.9
machinery and equipment	14.5	32.7	-11.0	11.0	7.0	8.0	7.0	6.0	6.0	6.0	5.0	4.0	11.8	14.6	6.8	6.0
Residential Construction	6.7	1.6	10.9	7.0	4.0	3.0	3.0	5.0	4.0	3.0	2.0	3.0	10.2	2.9	5.0	3.5
Exports	6.2	-6.4	14.4	-0.5	3.8	4.0	4.3	4.3	4.7	4.7	5.1	4.3	6.4	4.1	3.7	4.6
Imports	8.4	13.6	-3.2	1.5	3.6	3.6	4.0	4.0	3.8	3.8	3.8	3.5	13.1	6.4	3.0	3.8
	<b>(billions of chained 2002 dollars : a.r.)</b>															
Inventory Change	9.9	20.8	10.3	8.6	8.0	8.3	8.9	9.1	10.6	9.9	9.5	9.0	8.9	12.4	8.5	9.8
Contribution to GDP Growth	2.4	2.7	-2.6	-0.0	-0.2	0.1	0.2	0.0	0.4	-0.2	-0.1	-0.2	0.6	0.2	-0.2	0.1
Net Exports	-131.9	-158.8	-138.2	-141.2	-142.1	-142.9	-144.0	-145.1	-145.4	-145.7	-145.4	-145.7	-124.4	-142.5	-143.5	-145.6
Contribution to GDP Growth	-0.7	-6.0	5.3	-0.6	0.0	0.1	0.1	0.1	0.3	0.3	0.4	0.2	-1.9	-0.8	0.2	0.2
	<b>(billions of dollars : a.r.)</b>															
Nominal GDP	1,693	1,702	1,721	1,738	1,752	1,770	1,788	1,810	1,832	1,853	1,872	1,890	1,625	1,713	1,780	1,862
(% chng : a.r.)	7.7	2.1	4.6	4.0	3.2	4.2	4.3	4.9	5.1	4.6	4.2	4.0	6.3	5.5	3.9	4.6
<b>INFLATION</b>																
	<b>(quarter/quarter % change : a.r.)</b>															
GDP Price Index	3.9	2.6	1.3	2.0	1.5	1.9	1.9	2.1	2.1	2.2	1.8	1.8	2.9	3.0	1.8	2.0
CPI All Items	3.6	3.1	1.1	2.9	2.2	2.2	1.8	2.2	1.7	2.3	2.3	2.0	1.8	2.9	2.3	2.1
Excl. Food & Energy	1.7	1.3	1.2	1.8	2.0	2.4	1.8	2.4	1.7	2.4	2.4	2.0	1.3	1.6	1.9	2.1
Food Prices	5.5	5.8	4.6	2.5	2.4	1.2	1.2	1.2	1.7	1.9	1.9	1.9	1.4	3.8	2.5	1.6
Energy Prices	15.4	11.9	-5.4	12.8	4.3	2.6	2.4	2.4	2.4	2.4	2.4	2.4	6.6	12.3	4.3	2.4
Services	1.3	3.7	3.0	1.1	1.2	2.1	2.0	2.4	2.4	2.4	2.4	2.4	2.0	2.5	1.9	2.4
	<b>(year/year % change)</b>															
CPI All Items	2.6	3.4	3.0	2.7	2.3	2.2	2.4	2.1	2.0	2.0	2.1	2.1	1.7	1.7	1.9	2.0
BoC Core	1.3	1.6	1.9	2.0	2.0	1.9	1.8	1.8	1.9	1.9	2.0	2.0	1.7	1.7	1.9	2.0
<b>FINANCIAL</b>																
	<b>(average for the quarter : %)</b>															
Overnight Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.83	0.60	1.00	1.00	1.40
3-Month T-Bill	0.95	0.95	0.88	0.86	0.82	0.82	0.82	0.82	0.82	1.07	1.32	1.65	0.56	0.91	0.82	1.22
90-Day BAs	1.26	1.26	1.22	1.20	1.20	1.20	1.20	1.20	1.20	1.45	1.70	2.03	0.83	1.23	1.20	1.59
10 Year Bond Yield	3.31	3.16	2.53	2.13	2.00	2.00	2.18	2.46	2.70	2.93	3.15	3.38	3.24	2.78	2.16	3.04
<b>Canada/US spread: (bps)</b>																
90 day	82	90	86	84	80	80	80	80	80	105	124	122	42	86	80	108
10 year	-15	-5	10	9	5	10	8	6	3	1	-2	-4	2	0	7	0
<b>FOREIGN TRADE</b>																
	<b>(billions of dollars : a.r.)</b>															
Current Account Balance	-41.3	-64.5	-48.5	-49.8	-52.1	-50.5	-50.5	-48.8	-48.4	-47.6	-46.5	-45.5	-50.9	-51.0	-50.5	-47.0
(% of GDP)	-2.4	-3.8	-2.8	-2.9	-3.0	-2.9	-2.8	-2.7	-2.6	-2.6	-2.5	-2.4	-3.1	-3.0	-2.8	-2.5
Merchandise Balance	5.6	-14.1	2.9	0.5	-2.0	-1.4	-0.8	0.8	1.8	2.8	4.6	5.6	-9.0	-1.2	-0.9	3.7
Non-Merchandise Balance	-47.0	-50.5	-51.4	-50.3	-50.1	-49.1	-49.7	-49.5	-50.3	-50.5	-51.1	-51.2	-41.9	-49.8	-49.6	-50.7
	<b>(average for the quarter)</b>															
Exchange Rate (US\$/C\$)	101.4	103.4	102.1	97.8	96.7	94.3	96.2	99.0	100.7	101.7	101.4	100.3	97.1	101.2	96.6	101.0
Exchange Rate (C\$/US\$)	0.986	0.967	0.979	1.023	1.034	1.060	1.040	1.010	0.993	0.983	0.987	0.997	1.030	0.989	1.036	0.990
Exchange Rate (¥/C\$)	83.4	84.3	79.3	75.6	74.1	71.7	74.4	78.6	81.5	83.9	86.5	89.1	85.2	80.7	74.7	85.3
Exchange Rate (C\$/Euro)	1.35	1.39	1.38	1.38	1.33	1.33	1.33	1.35	1.36	1.37	1.36	1.35	1.37	1.38	1.33	1.36
<b>INCOMES</b>																
	<b>(billions of dollars : a.r.)</b>															
Corporate Profits Before Tax	202.9	198.8	207.2	207.9	209.3	211.5	212.3	215.2	218.1	220.7	222.6	225.0	180.7	204.2	212.1	221.6
Corporate Profits After Tax	155.7	150.1	157.1	157.7	159.2	161.4	162.2	165.1	168.0	170.6	172.5	174.9	124.2	155.2	162.0	171.5
	<b>(year/year % change)</b>															
Corporate Profits Before Tax	13.0	15.1	17.0	7.3	3.2	6.4	2.5	3.5	4.2	4.4	4.9	4.5	21.2	13.0	3.9	4.5
Personal Income	4.7	4.1	3.7	3.0	3.3	3.3	4.0	4.2	4.5	4.4	4.3	4.1	4.2	3.9	3.7	4.3
Real Disposable Income	3.0	-0.6	1.1	0.7	1.0	1.4	2.3	2.3	2.4	2.0	1.9	1.8	3.6	1.0	1.7	2.0
	<b>(average for the quarter : %)</b>															
Savings Rate	4.3	4.1	3.5	3.9	3.8	4.0	4.1	4.2	4.1	3.7	3.7	3.7	4.8	3.9	4.0	3.8
<b>OTHER INDICATORS</b>																
	<b>(quarter average)</b>															
Unemployment Rate (%)	7.7	7.5	7.2	7.4	7.5	7.5	7.4	7.3	7.2	7.1	7.0	7.0	8.0	7.5	7.4	7.0
Housing Starts (000s, a.r.)	177	192	205	199	186	181	181	182	188	188	188	188	191	193	182	188
Existing Home Sales (y/y % ch)	-7.5	-1.3	13.0	6.9	3.5	5.8	2.7	-1.0	-2.0	-0.9	0.3	0.6	-3.9	2.2	2.7	-0.5
Home Prices (y/y % ch, CREA)	7.5	9.0	8.5	4.1	-1.1	-1.6	-0.8	-0.7	-0.2	0.0	0.9	1.2	6.9	7.2	-1.0	0.5
Motor Vehicle Sales (mlns, a.r.)	1.61	1.62	1.61	1.64	1.59	1.59	1.59	1.60	1.59	1.60	1.59	1.60	1.58	1.62	1.59	1.59
	<b>(quarter/quarter % change : a.r.)</b>															
Employment Growth	2.4	2.0	1.2	-0.5	0.5	0.9	1.3	1.4	1.2	1.3	1.3	1.2	1.4	1.5	0.7	1.3
Industrial Production	7.1	-4.1	7.6	3.2	1.2	2.7	2.2	2.2	3.2	4.1	3.1	2.6	4.9	3.7	2.5	3.0
Federal Budget Balance (% of FY GDP)													-2.1	-1.8	-1.6	-0.9

Note: Outlined areas represent forecast periods

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## Highlights

- *It's been a difficult year for the global economy. We see continuing deceleration in 2012. The crisis of public finances in the euro zone has undercut the economy of the region: the fiscal austerity forced on virtually all of its governments has made a recession practically inevitable. Despite an anticipated rebound in the U.S., the advanced economies as a group are likely to grow less in 2012 than in any of the last 30 years outside the recent recession. The emerging economies, however, with their ever-growing weight in the world, can be expected to pull global growth to 3.4% in 2012.*
- *It's now clear that the U.S. economy not just avoided recession in 2011 but in fact accelerated as the year progressed. GDP in Q4 is tracking well above 2% annualized, the best quarterly performance of 2011. Momentum should carry through to 2012, with the US achieving above-potential growth for the first time in six years, helped by resilient domestic demand and inventory rebuilding. The big caveat, however, is that a European-triggered global financial crisis is averted by policymakers who would, presumably, have learnt about the devastating costs of inaction à la 2008.*
- *Facing challenges both at home and abroad in 2012, Canada stands to underperform the US for the first time in six years. Domestic demand will be under siege from a likely softening in housing, and a more moderate pace to consumption spending. Trade will be vulnerable to the lagged impacts of a strong Canadian dollar although there will be some offset in the form of increasing demand from an accelerating US economy. With domestic demand trading water and European inertia threatening to trigger a global financial crisis, the Bank of Canada is likely to delay rate hikes to 2013.*

	2010	2011	2012	Change from Previous Forecast	
				2011	2012
<b>United States</b>					
GDP	3.0%	1.8%	2.5%	+0.1 pp	+0.3 pp
CPI inflation	1.7%	3.1%	1.8%	unch	+0.1 pp
Overnight rate*	0-25%	0-25%	0-25%	unch	unch
Ten-year bond yield*	3.29%	2.06%	2.62%	unch	-0.22 pp
<b>Canada</b>					
GDP	3.2%	2.4%	2.0%	+0.1 pp	-0.1pp
CPI inflation	1.8%	3.0%	2.2%	unch	+0.3 pp
Overnight rate*	1.00%	1.00%	1.00%	unch	-0.75 pp
Ten-year bond yield*	3.12%	2.04%	2.73%	-0.05 pp	-0.19 pp
USD/CAD	0.97	1.01	0.98	unch	-0.04

\* end of period

**ECONOMIC AND STRATEGY GROUP – 514.879.2529**  
**Stéfane Marion, Chief Economist and Strategist**

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## World: Recession in Europe: the need to avoid a credit crisis

*It's been a difficult year for the global economy. We see continuing deceleration in 2012. The crisis of public finances in the euro zone has undercut the economy of the region: the fiscal austerity forced on virtually all of its governments has made a recession practically inevitable. Despite an anticipated rebound in the U.S., the advanced economies as a group are likely to grow less in 2012 than in any of the last 30 years outside the recent recession. The emerging economies, however, with their ever-growing weight in the world, can be expected to pull global growth to 3.4% in 2012.*

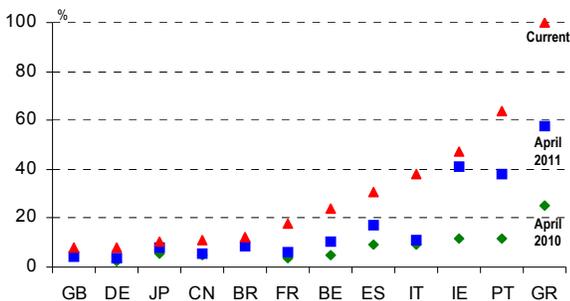
The cyclical rebound from the economic and financial crisis of 2008-09 turned out to be short-lived. We estimate 2011 global economic growth at 3.9%, the lowest since 2003, excluding the last recession. A number of headwinds arose in the first half of the year. Strong inflationary pressures, notably in energy and food, crimped consumer purchasing power around the world. In many countries, mainly those whose labour markets have been slow to recover, income gains have barely matched inflation. Consumer spending has slowed accordingly. Then Japan was struck by a tsunami that destroyed much of its industrial plant and disabled global supply chains for months. Though these factors are unlikely to affect growth in 2012, euro-zone public finances will remain the focus of investor attention.

countries. The default swap market registers fears about Italy greater than those about Greece in April 2010. The soaring cost of Italy's borrowing is made especially perilous by the country's high debt load. The upshot is that stabilizing its debt-to-GDP ratio will take measures much more drastic than initially foreseen.

In our view, the size of Italy's debt and its importance in the European banking system require that the authorities keep its financing costs sustainable, especially since Italy, unlike Greece and Portugal, is generally regarded as solvent. Things would probably not have reached this pass had European leaders not done too little, too late as investor apprehension mounted. Economists have long insisted that monetary union is not viable without fiscal union. There has been real progress recently, not least in a plan to improve the Stability and Growth Pact that would entail a loss of fiscal sovereignty for member countries whose deficits or debt exceed set limits. To survive, however, we think the euro zone must ultimately go further, harmonizing its economic and social policies on a model more favourable to growth and more sustainable in the long term. In the meantime, further short-term measures will also be necessary to limit the financing costs of Spain and Italy. Since insufficient funds are available to bail out these countries, it seems increasingly clear that the rescue of the euro zone will require issuance of eurobonds, ECB purchases of new bond issues, or both.

### Fears unabated

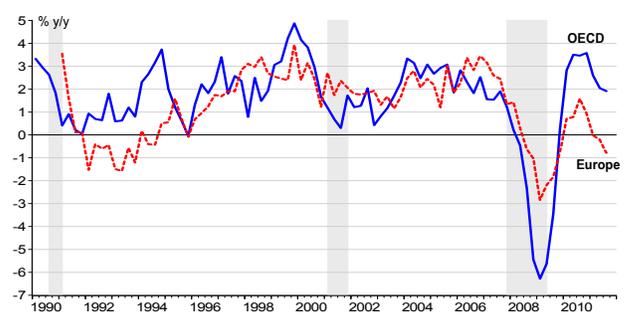
Probability of default implied by default swap rates (40% recovery rate)



NBF Economy & Strategy (data via Datastream)

### Shrinking European consumption

Volume retail sales



NBF Economy & Strategy (data via OECD)

In Europe, the crisis that began in the spring of 2010 with worries about the solvency of Greece has ended up spreading throughout the zone. European leaders have been unable to agree on action that would limit investor apprehensions to the worst-off of the euro

For the euro economies, the damage has been done. Most countries of the zone are being forced to eliminate their deficits much faster than they had planned. The resulting across-the-board fiscal austerity is likely to plunge the zone into its second

**World Economic Outlook**

**Forecast**

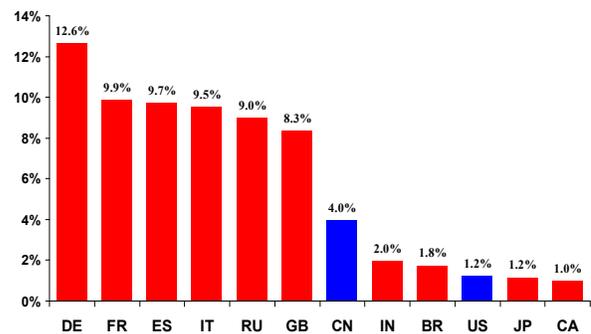
	2010	2011	2012
<b>Advanced countries</b>	<b>3.1</b>	<b>1.6</b>	<b>1.3</b>
United states	3.0	1.8	2.5
Euroland	1.8	1.4	-1.5
Japan	4.0	-0.6	2.0
UK	1.4	1.0	0.5
Canada	3.2	2.4	2.0
Australia	2.7	1.9	2.5
New Zealand	1.7	1.2	2.1
Hong Kong	7.0	5.2	4.0
Korea	6.2	4.0	3.9
Taiwan	10.9	5.1	4.4
Singapore	14.5	5.0	4.2
<b>Emerging Asia</b>	<b>9.5</b>	<b>7.9</b>	<b>7.0</b>
China	10.3	9.0	7.7
India	10.1	7.8	7.0
Indonesia	6.1	6.2	5.0
Malaysia	7.2	5.0	4.5
Philippines	7.6	4.5	4.5
Thailand	7.8	3.5	4.2
<b>Latin Amer. and Caribbean</b>	<b>6.1</b>	<b>4.6</b>	<b>3.6</b>
Mexico	5.4	3.8	3.2
Brazil	7.5	4.0	3.3
Argentina	9.2	8.0	4.0
Venezuela	-1.5	2.5	2.7
Colombia	4.3	4.9	3.9
<b>Eastern Europe and CIS</b>	<b>4.5</b>	<b>4.3</b>	<b>3.2</b>
Russia	4.0	4.2	3.2
Czech Rep.	2.3	2.0	1.0
Poland	3.8	3.7	2.8
Turkey	8.9	6.2	2.5
<b>Middle East and N. Africa</b>	<b>4.4</b>	<b>4.0</b>	<b>3.6</b>
<b>Sub-Saharan Africa</b>	<b>5.4</b>	<b>5.2</b>	<b>5.8</b>
<b>Advanced economies</b>	<b>3.1</b>	<b>1.6</b>	<b>1.3</b>
<b>Emerging economies</b>	<b>7.3</b>	<b>6.2</b>	<b>5.4</b>
<b>World</b>	<b>5.1</b>	<b>3.9</b>	<b>3.4</b>

Source : NBF Economy & Strategy, Consensus Economics, IMF

recession in less than four years, especially since the climate of uncertainty has undermined household and business confidence. Industrial production has been in decline for two months now and retail sales are down from a year ago. These conditions could exacerbate pressures on governments and financial institutions as they wrestle with their heavy indebtedness. In our view, however, the central banks have the tools in place to move quickly to prevent the economic downturn from becoming a financial crisis.

**The U.S. and China relatively less exposed to Europe?**

Exports to euro countries as % of GDP (2010)



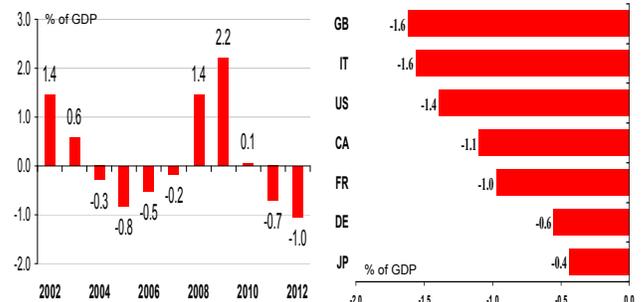
NBF Economy & Strategy (data via IMF)

Even Germany, whose austerity measures need not be as sweeping as those of other euro countries, is unlikely to come through unscathed. Germany exports a hefty 12.6% of its GDP to other euro countries. The euro zone's neighbours may also feel the shock waves. The U.K., already facing an outlook of slow growth in its domestic economy, will grow hardly at all if its major trading partners stumble. The Chinese and U.S. economies, on the other hand, are much less exposed. Their exports to the euro zone amount to only 4.0% and 1.2% of GDP respectively. So if European governments and central banks can stop their recession from turning into a credit crunch, the two heavyweights of the global economy will pull through.

**Advanced countries: Fiscal policy will brake growth**

Change in structural deficit – advanced countries

2012 change in structural deficit – G-7



NBF Economy & Strategy (data via Global Insight)

The scope of the austerity that will grip the advanced economies in 2012 can be seen in IMF projections of changes in structural deficits, illustrating the effect of discretionary changes to government budgets as of September. At that time the IMF considered that the braking effect of fiscal policy in the advanced countries would be the sharpest since it began compiling the data in 2002 – 40% sharper than in 2011. And it is quite possible that the fiscal braking will be even more severe than expected, since countries including France and Italy have adopted additional austerity measures since September.

### Home prices slow to stabilize

% of 22 OECD countries showing home prices rising more slowly than inflation

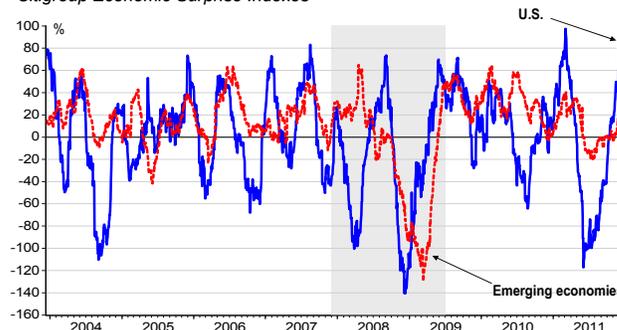


NBF Economy & Strategy (data via OECD)

The watch list includes, besides governments, the real estate sectors of the advanced economies. The housing market is exposed to additional risk as a number of countries go into recession. We are especially surprised to see 16 of the 22 OECD countries for which data are available reporting deflation of real home prices in the most recent quarter for which data are available. One reason is that the demographics of European countries including Germany, Spain and Italy are unfavourable to real estate – the ranks of their first-time homebuyers are depleting sharply. This trend, combined with a euro-zone labour market that is especially hard on young people, suggests to us that the housing sector in some advanced countries may remain under pressure over the coming quarters.

### Surprising vigour in the U.S. economy

Citigroup Economic Surprise Indexes

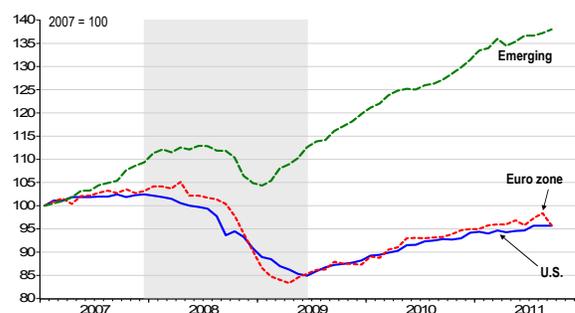


NBF Economy & Strategy (data via Datastream)

As the euro economy deteriorates, the U.S. economy has been gaining strength. The Citigroup Economic Surprise Index for the U.S. recently approached its most positive reading ever. We are especially comforted by improvements in the labour market at a time when an unusually divided political landscape has generated high uncertainty about fiscal policy. Despite these risks, we see the U.S. economy accelerating to growth of 2.5% in 2012 after a difficult 2011 (see U.S. section for details). As for the emerging economies, which bulk ever larger in the world economy, current indicators are essentially in line with the consensus expectation.

### Emerging countries keep industrial production growing

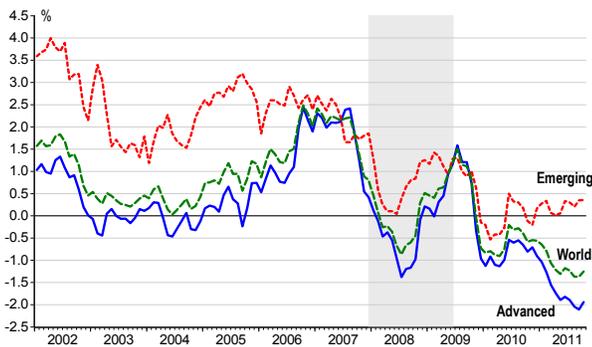
Real industrial production



NBF Economy & Strategy (data via CPB)

World industrial production, meanwhile, is still trending up, mainly as a result of a surge in the emerging economies. However, recession in Europe is likely to slow imports from Asia. A recent deceleration of China's economy aroused apprehension, though the 9.1% growth rate of its third quarter would be the envy of almost any other country. It should be kept in mind that to counter inflation, Beijing has considerably reduced its monetary accommodation in an attempt to cool its economic growth rate to about 8%. However, the anticipated sluggishness of the advanced economies in 2012 is likely to slow China's growth to a rate below that threshold.

**Advanced countries: Highly accommodative real rates**

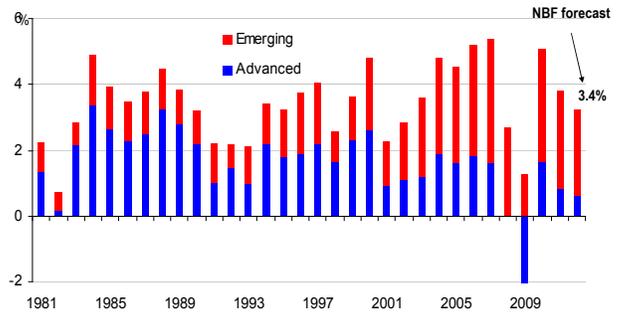


NBF Economy & Strategy (data via Global Insight)

In that event, Beijing can be expected to offset export softness by stimulating domestic demand, especially since recent reports show a sharp deceleration of consumer prices. The recent decline of commodity prices, in response to a decline of physical and financial demand and to the rise of the U.S. dollar, will ultimately show up as disinflation. If the economic picture deteriorates further, inflation fears will completely dissipate and a number of central banks, especially in emerging countries, could put their shoulders to the wheel. In the advanced countries, real short rates are now more stimulative than in 2008. In addition, several central banks use unconventional monetary stimulus currently.

**Emerging countries will save the day in 2012**

Contributions to global GDP growth



NBF Economy & Strategy (data via IMF)

All these factors considered, we see the advanced economies taken together as likely to expand 1.3% in 2012. Outside the great recession of 2008-09, that would be the weakest annual growth of the last 30 years. Yet the emerging economies, given their growing share of world output, are likely to push global growth to 3.4% in 2012.

From 1980 to 2000, the advanced economies accounted for 63% of global growth. Since 2000 they have accounted for 28%. This new reality justifies optimism in the face of old-world difficulties.

## U.S.: Accelerating growth in 2012

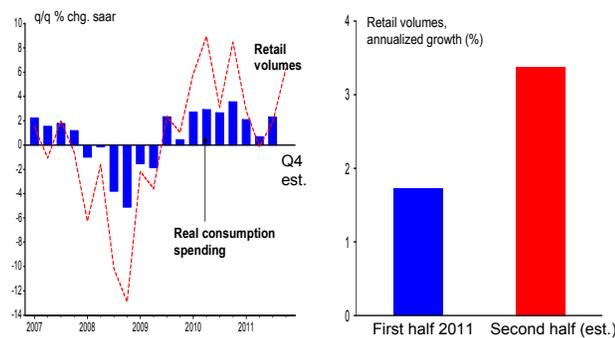
It's now clear that the U.S. economy not just avoided recession in 2011 but in fact accelerated as the year progressed. GDP in Q4 is tracking well above 2% annualized, the best quarterly performance of 2011. Momentum should carry through to 2012, with the US achieving above-potential growth for the first time in six years, helped by resilient domestic demand and inventory rebuilding. The big caveat, however, is that a European-triggered global financial crisis is averted by policymakers who would, presumably, have learnt about the devastating costs of inaction à la 2008.

### Consumers finding support

The U.S. economy has rarely done badly when its consumers have been in a spending mood. Its acceleration in the second half of 2011 was largely a result of consumers getting their mojo back. With two months in, Q4 real retail spending is tracking + 6.3% annualized, the highest since Q4 of 2010. Retail volumes in the second half of 2011 are on track to grow at twice the pace of the first half.

#### U.S.: Consumers back in the mood in second half of 2011

H2 retail volumes on track to grow at twice H1 pace



NBF Economy & Strategy (data via Global Insight) 2011-12-13

The outlook for 2012 consumer spending seems positive, partly because of a slower pace of deleveraging. Mortgage credit outstanding continues to drop, but more slowly than before. In Q3, moreover, non-mortgage credit (even excluding student loans), led by auto loans, showed the first quarterly increase in three years. Together with a stabilization of the savings rate, these are signs that the worst of the deleveraging process may be over.

#### U.S.: Is consumer deleveraging over?

Q3 sees first quarterly increase in non-mortgage credit in three years

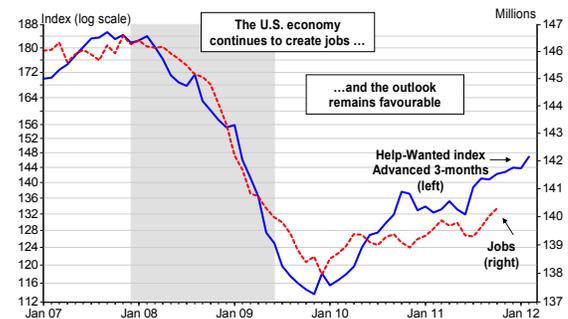


NBF Economy & Strategy (data via New York Fed) 2011-12-07

Another plus for consumer spending is the recovery now under way in employment. Non farm payrolls rose 681,000 from June through November, with all gains coming from the private sector. The household survey also shows a clear improvement in the labour market – full-time employment up 759,000 over the same period. In November more than 113 million Americans were employed full-time, the most since April 2009. Odds are that the uptrend will extend into the new year, particularly given the strength of help-wanted listings, which tend to lead the household employment survey.

#### U.S.: Expect more job gains in coming months

Household employment vs. Monster on-line help-wanted index\*



\* Seasonally adjusted by NBF  
NBF Economy & Strategy (BLS data via Global Insight) 2011-11-04

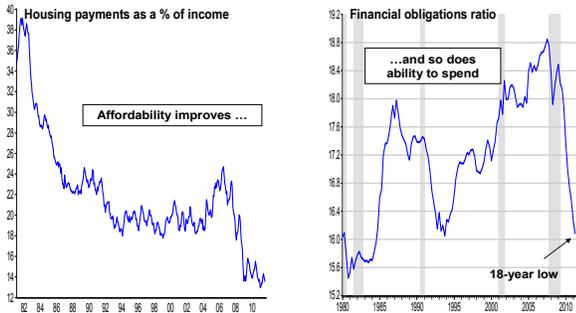
Complementing the improvement in credit and the labour market in 2012 will be a diminished drag on consumer spending from the negative wealth effect of home prices.

### Has housing finally hit bottom?

While it's too early to say whether the double-dip housing recession is definitely over, there are signs suggesting some stabilization ahead. Residential investment grew in both Q2 and Q3, the first back-to-back quarterly increases since 2005. The pace of

home-price deflation seems to be moderating as supply and demand come into better balance. Thanks to lower mortgage rates and depressed home prices, affordability is the best in a generation. That, coupled with an 18-year low in the financial obligations ratio, makes borrowing more likely.

**U.S.: Housing demand backed by improved fundamentals**  
Ratio of household debt payments to disposable income hit 18-year low in 2011



NBF Economy & Strategy (data via Federal Reserve, Global Insight) 2011-11-30

Moreover, higher rental demand has driven rents high enough as to give renters incentives to become home owners. On the supply side, while inventory remains large, the drop in foreclosure rates is also helping somewhat in keeping supply growth under control. The overall improving market conditions explain perhaps why builder confidence in December was the second highest since 2007, according to the National Association of Home Builders. That said, don't expect a significant turnaround in the housing market just yet. A flattish trend is more likely for home prices in 2012, with improving demand likely to be offset by supply increases from both new construction and foreclosures that have yet to hit the market. But importantly, the reduced drag from housing should be supportive of consumption spending in 2012.

**U.S.: Record occupancy rates giving incentives to buyers**

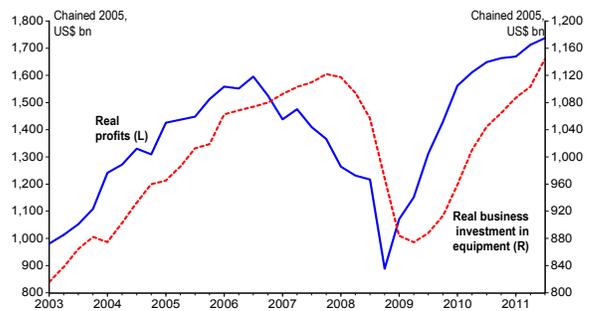


NBF Economy & Strategy (data via Census Bureau) 2011-11-03

**Business investment to remain solid**

Domestic demand is likely to gain further support in 2012 from investment spending as businesses seek to maintain the growth of productivity and profits. Though U.S. output is now back to pre-recession levels, employment remains 5% or so below the pre-recession peak. In short, the U.S. is doing more with less. This productivity boost has come from massive capital outlays over the last couple of years, with investment in equipment and machinery now back to pre-recession levels after growing 15% in 2010 and roughly 10% in 2011. Given the solid corporate profits of 2011 and the usual lag between profits and investment, there is reason to expect capital spending to continue at a healthy pace in 2012, particularly if global economic uncertainty dissipates somewhat.

**U.S.: Business investment seems to lag profits**



NBF Economy & Strategy (data via Global Insight) 2011-12-05

**Fiscal policy: Kicking the can down the road, again**

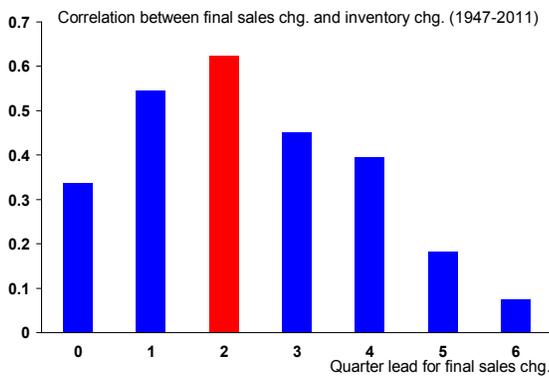
The past year has been eventful for U.S. fiscal policy. The economy was subjected to a near government shutdown in April, a debt-ceiling drama and the ensuing US credit downgrade by S&P in July/August, and the failure of the Super Committee in November. December saw further debates and footdragging by Congress on what ought to be a straightforward decision on the extension of payroll tax cuts. The fiscal outlook remains unclear. Assuming nothing else changes on Capitol Hill (and the current political impasse suggests just that outcome) the US economy will face \$2.1 tn in spending cuts over ten years. Add to that the end of the Bush-era tax cuts and the potential fiscal drag rises to over 2% of GDP in 2013. Facing the prospect of a recession-inducing fiscal drag, a new Congress after the 2012

Presidential elections will very likely kick the can down the road.

**The inventory cycle to boost 2012 GDP**

Having braked growth in 2011, inventories are set to contribute to it in 2012. Destocking has chopped 3.3% off GDP in the last four quarters alone (Q410 to Q311), the largest 4-quarter cumulative drag outside of a recession in 25 years. Now, unless we're in a recession or heading precipitously towards one, such inventory cuts are unsustainable. In our view, with domestic demand seemingly still resilient, it's a question of time before the restocking process kicks back into gear. History suggests there tends to be a couple of quarters lag in the inventory response to changes in final sales.

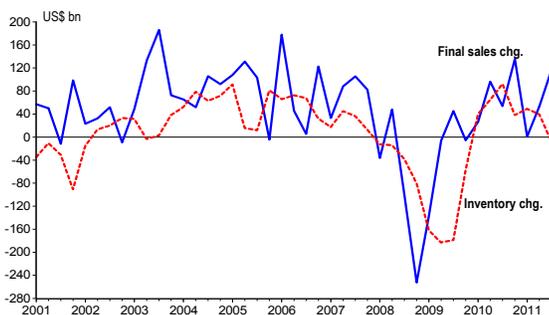
**U.S.: Stocks to be replenished over next couple of quarters**



NBF Economy & Strategy (data via Global Insight) 2011-11-28

So, the surge in final sales in Q3 bodes well for inventory rebuilding over the next few quarters, assuming of course that the global economic picture doesn't darken any further.

**U.S.: Changes in final sales tend to lead inventories**

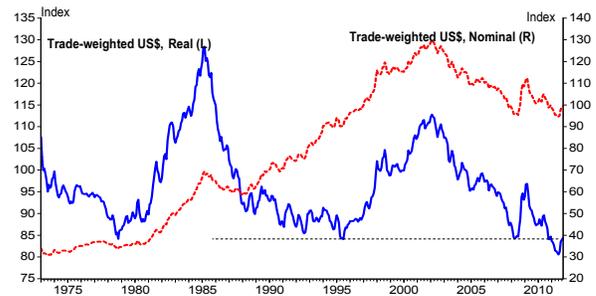


NBF Economy & Strategy (data via Global Insight) 2011-11-28

**Trade supported by a competitive US dollar**

The resilience of domestic demand will be especially welcome in 2012 as global growth slows. Trade may face some headwinds as a European recession translates into sluggish demand for American exports. That said, the overall impact on US growth isn't likely to be significant, particularly given that only 20% or so of US exports go to Europe, and exports account for less than 14% of the overall US economy. Moreover, the highly competitive U.S. dollar, which in real terms is still near historic lows, will provide some offset, especially in markets of buoyant demand such as Asia and South America.

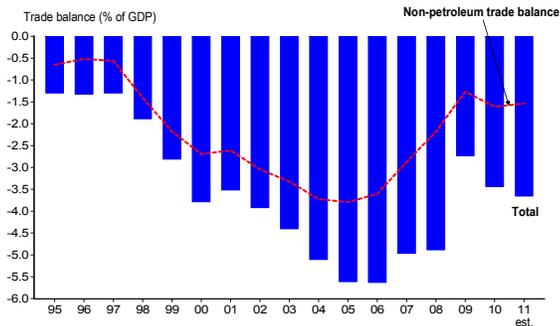
**U.S.: Dollar remains highly competitive in real terms**



NBF Economy & Strategy (data via Global Insight) 2011-12-13

Further down the road, exports are set to benefit from the long-term trend of depreciation of the U.S. dollar. On trade fundamentals alone, the greenback needs not depreciate much more: the trade deficit excluding petroleum is stabilizing at just 1.5% of GDP. Depreciation pressures will come from elsewhere – the country's precarious fiscal position, the Fed's easy money policy, China's reduction of its foreign exchange reserves. We see the USD losing ground against most currencies, primarily the yuan and the OPEC currencies if the latter are allowed to come off the peg.

**U.S.: Non-petroleum goods trade balance stabilizes**  
*Excluding petroleum, trade deficit is now half what it was in 2007 (as a % of GDP)*



NBF Economy & Strategy (data via Global Insight) 2011-12-09

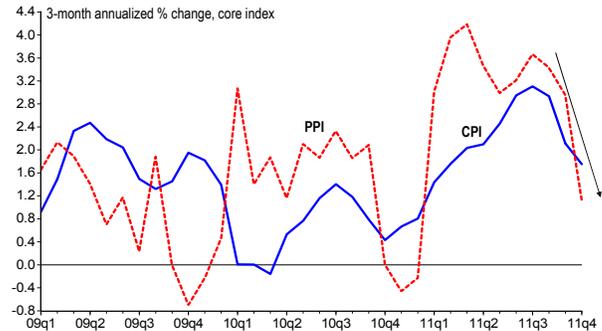
While trade is unlikely to derail the US recovery, that's not to say that America will remain unscathed by the European situation. European pain would still filter through to America via the financial channel if the debt crisis evolves into a full-blown global financial crisis, perhaps via sovereign defaults. According to data from the Bank of International Settlements, US exposure to European banks stood at US\$3.8 tn at the end of Q2. Taking into account derivative contracts, guarantees and credit commitments, the exposure rises to roughly US\$5.9 tn. Although the bulk of that is being held by the non-bank private sector, the banking sector also has significant exposure (over US\$700 bn). No wonder that CDS spreads for American financials have risen in tandem with European ones as the debt crisis intensified on the old continent. Should European debt turn sour, expect US banks to take write-downs triggering balance sheet repairs via recapitalizations and asset sales. That eventuality – a credit crunch – is the major channel through which Europe could affect the United States.

**QE3 in 2012?**

Fortunately, the US has a more proactive central bank than Europeans do. While an improving US economy and better credit flow make a third round of unsterilized bond purchases (QE3) less necessary at this point, a European-triggered credit crunch would have the Fed take prompt action. The recent easing in inflationary pressures, with both the CPI and PPI on a declining path, and stable inflationary expectations, give the Fed more room to act if necessary. Note that even with the currently well-functioning financial markets, FOMC members continue to talk about the possibility of unleashing QE3 as a way of stimulating the economy. Should

credit markets freeze à la 2008, expect talk to translate into action.

**U.S.: Easing of inflation gives Fed more room**



NBF Economy & Strategy (data via Global Insight) 2011-11-18

All told, barring a European-triggered global financial crisis and subsequent world recession, US economic growth should accelerate to an above-potential 2.5% in 2012 thanks to a combination of resilient domestic demand and inventory rebuilding. Fiscal drag will continue to impose a speed limit on the economy in 2012, although that will pale in comparison to the impacts seen in 2013 and beyond.

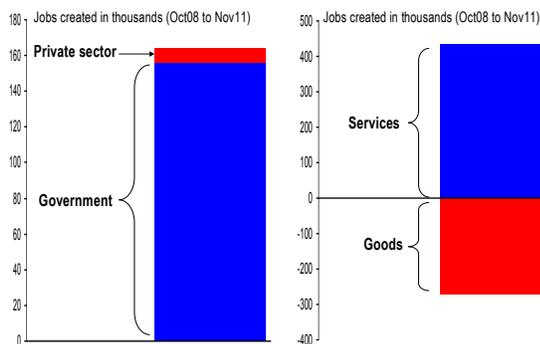
## Canada: Headwinds from several fronts in 2012

*Facing challenges both at home and abroad in 2012, Canada stands to underperform the US for the first time in six years. Domestic demand will be under siege from a likely softening in housing, and a more moderate pace to consumption spending. Trade will be vulnerable to the lagged impacts of a strong Canadian dollar although there will be some offset in the form of increasing demand from an accelerating US economy. With domestic demand trading water and European inertia threatening to trigger a global financial crisis, the Bank of Canada is likely to delay rate hikes to 2013.*

### Labour market deceleration in 2012

Canada's labour market recovery has been much stronger than that of the US, with employment here now above the pre-recession peak compared to American payrolls still languishing 5% below pre-recession levels. The difference between the two countries has, of course, been the relatively better economic growth in Canada. But government payrolls have also been a big driver in boosting Canadian employment. Over the last three years (Oct08 to Nov11), Canada has added roughly 164,000 jobs, 95% of which came from government. Contrast this with the US where the purge in public sector payrolls has been unprecedented. The increase in hiring by government together with the 278,000 job gains in private sector service-producing industries lifted total services employment enough as to offset the purge in the goods sector payrolls.

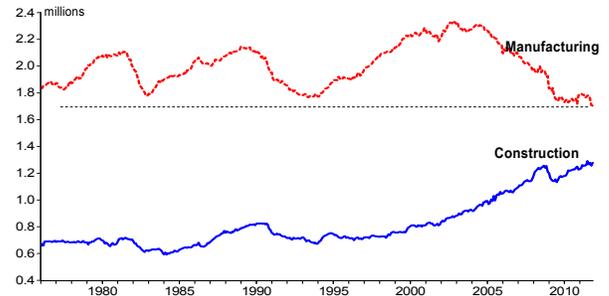
**Canada: Bulk of jobs created over last 3 years due to Govt.**



NBF Economy & Strategy (data from Global Insight) 2011-12-15

The employment slump in the goods sector was driven by the manufacturing sector whose payrolls are at a record low. This avalanche of pink slips from factories was partially offset by the uptrend in construction employment which reached new highs in 2011.

**Canada: Manufacturing employment at record low, Construction jobs near all-time high**



NBF Economy & Strategy (data from Global Insight) 2011-12-15

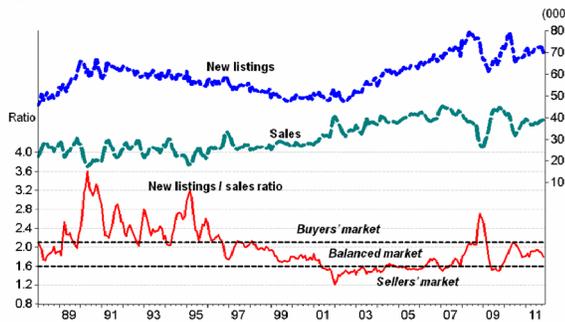
What do those patterns suggest for the 2012 employment? Simply put, those trends aren't bullish. The destruction of manufacturing jobs is symptomatic of a structural problem that's not going away anytime soon (C\$ impacts are described further on). And the gains in construction jobs which have been fed by stimulus programs and the expansion of housing, are likely to reverse as both of those boosters fade in 2012. Hiring in the resources sector may provide some support, although the expected softening in commodity prices should limit employment gains there. In any case, any job gains in the resources sector, which accounts for less than 10% of overall goods sector employment, are unlikely to have a significant positive impact. So expect the goods sector payrolls to remain weak.

This time, however, there won't be as much of an offset from services payrolls. Government hiring at the pace seen over the last three years isn't sustainable, nor likely to be permitted to continue particularly with deficit-cutting plans underway. The saving grace for Canadian employment in 2012 may be from private sector service-providing sectors, but even there we're not expecting miracles given the anticipated softening of the overall economy. All told, employment growth should be modest at just under 1% in 2012, contrasting with a roughly 1.5% increase in the prior year. That should leave the unemployment rate averaging north of 7% in 2012.

**Consumers under stress**

A tepid labour market will evidently weigh on consumption spending in 2012. However, a slower global economy should cap gasoline prices which will offer Canadians some relief. That’s pretty much the reverse of the scenario that played out in 2011 when the benefits of a relatively strong labour market on consumption spending was offset by high gasoline prices. Another difference will be the impact of the housing market on consumers. For now the Canadian housing market is being described as “balanced” with the listings-to-sales ratio remaining low enough as to allow home prices to rise at a modest pace.

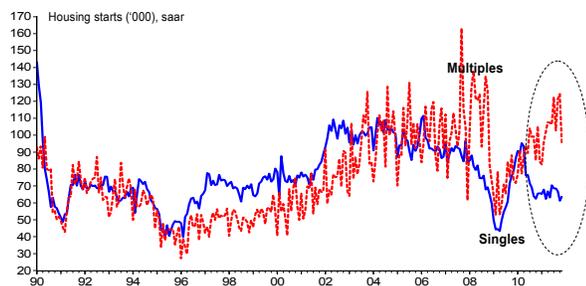
**Canada: Conditions on the existing home market**  
Data as of November 2011. seasonally adjusted



NBF Economy & Strategy (data from CREA) 2011-12-16

But with the labour market likely to decelerate, the resulting weakness in household incomes should work as to bring the existing home market closer to buyers’ market territory, hence limiting price increases or even prompting price declines in some cases. The market for multiple units e.g. condos, apartments, seem more prone for a price correction given how far new supply has strayed from that of singles.

**Canada: Multiple starts out of synch with singles**  
Any correction in housing market in 2012 more likely to come from multis



NBF Economy & Strategy (data from Global Insight) 2011-12-13

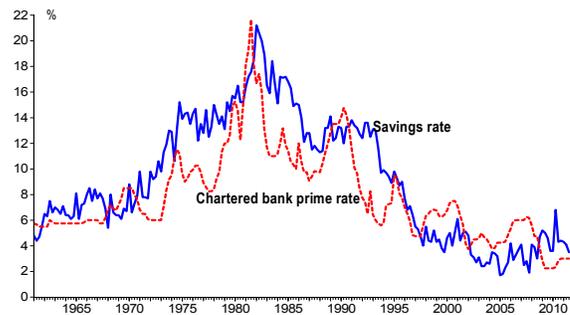
So the housing wealth effect which has helped boost consumption spending over the last several years is likely to be less of a factor going forward.

**How serious is the deleveraging threat to consumption spending?**

We are less concerned about the negative impacts of deleveraging on consumption because we do not expect the savings rate to rise significantly given that interest rates are set to remain low for a while. Rock bottom interest rates are clearly discouraging savings and encouraging debt accumulation.

**Canada: Savings rate tightly linked to interest rates**

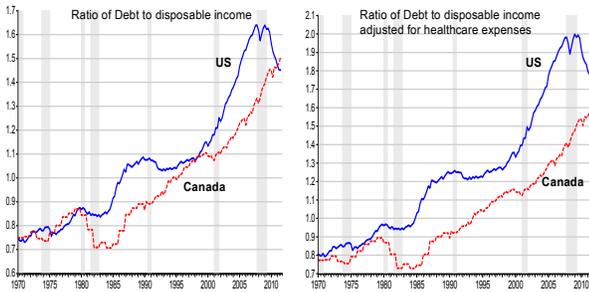
Savings rate unlikely to rise much from here given current BoC stance



NBF Economy & Strategy (data from Global Insight) 2011-12-14

The Bank of Canada is in a bind because it’s being forced by global events to keep interest rates low, hence fueling the debt accumulation spree of Canadians. In fact, the longer the BoC delays rate increases, the harder it will be for it to raise rates without triggering a housing-led recession. Which is why the BoC felt that it had to, repeatedly, warn Canadians against over-leverage, going so far as to say that “Canadians are now more indebted than the Americans”. While the latter statement may be true if one looks at an unadjusted ratio of household debt to disposable income which is indeed higher in Canada, the comparison is arguably unfair. Disposable incomes of Americans aren’t exactly comparable to Canadian ones since the former get a lot less bang for the buck having to assume more significant expenses like health care outlays. An adjusted ratio, which removes health care expenses from the calculations, shows that Canadians aren’t quite as levered as Americans.

**Canadian debt elevated, but not worse than the US**



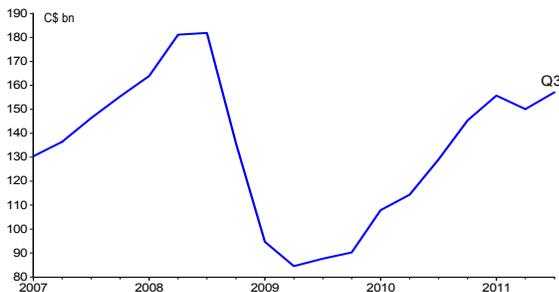
NBF Economy & Strategy (data via Global Insight)

That said, there's no denying that the Canadian debt picture isn't pretty. Canadians will find it harder to service their debt once interest rates resume their ascendancy. But rates are set to remain low over the next several years, meaning that debt servicing costs should remain manageable over the near to medium term. Deleveraging would become a more serious problem for consumption spending if interest rates rise quickly or if the housing market collapses. We're not expecting either of those to materialize. Still, consumers will face enough challenges as to limit spending growth to less than 2% in 2012.

Providing a partial offset in 2012 to a flatlining housing market and the anemic growth in consumption and government spending, will be business investment spending. Buoyed by strong corporate profits, low interest rates and a strong Canadian dollar, business outlays have decent fundamentals for expansion. Planned outlays relating to projects in energy, namely hydro and the oil sands will also help support investment. That, however, won't prevent overall domestic demand to ramp down to a sub-2% performance in 2012.

**Canada: Corporate profits highest since 2008**

A source of support for business investment spending

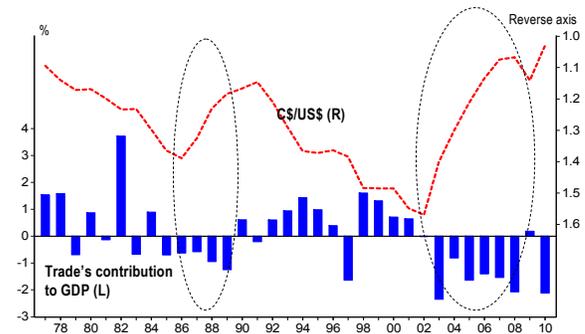


NBF Economy & Strategy (data from Global Insight) 2011-12-15

**Canadian Trade: Currency impacts offset by accelerating US economy**

With the US economy going up one gear in 2012, demand for Canadian exports should improve somewhat. However, it's not going to be smooth sailing for our exporters. With only 5% or so of their products going to Europe, Canadian exporters are lucky to not have significant direct exposure to waning demand from the old continent. However, exporters of resources, will feel an indirect hit as the European recession weighs enough on global growth as to bring down commodity prices. Non-resource exporters may get some lift from an accelerating US economy but will be hampered by the lagged impacts of a strong Canadian dollar. Note that the merchandise trade balance remained in deficit territory for the third year in a row in 2011. And, as has been the case for seven of the eight preceding years, trade was likely again a drag on the economy in 2011. So the currency's impacts can be significant.

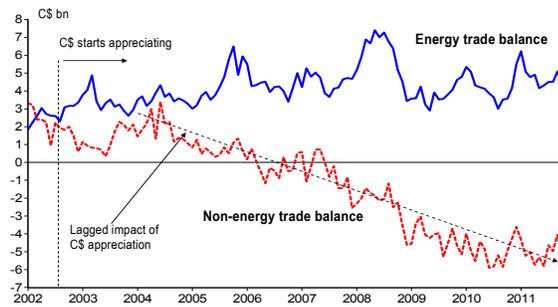
**Canada: Currency appreciation turns trade into drag**



NBF Economy & Strategy (data from Global Insight) 2011-12-14

Commodity prices, which are largely determined on global markets, have been on the rise over the past several years courtesy of the growing clout of emerging markets in the world economy, fuelling the Canadian dollar's ascent. While higher prices have allowed our resource exporters to cushion the blow of the stronger currency, non-resource exporters haven't been so lucky. In fact, excluding resources, Canada's trade performance has been largely disappointing, with the non-energy trade balance on a steady decline in recent years.

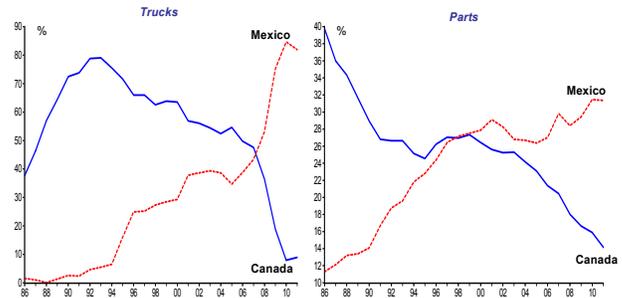
**Canada: C\$ appreciation hits non-energy trade**



NBF Economy & Strategy (data via Global Insight) 2011-12-09

The erosion of Canada's manufacturing base is one explanation for that alarming trend which is likely to extend into 2012. The poster child for this sad reality is the auto sector. After rebounding strongly in the preceding year, the Canadian auto sector struggled in 2011. Of course, supply chain disruptions related to the Japanese tsunami played a role there, but the negative impact of the strong currency cannot be ignored. In 2011, Canada's share of the US auto market fell under 22% for the first time on record.

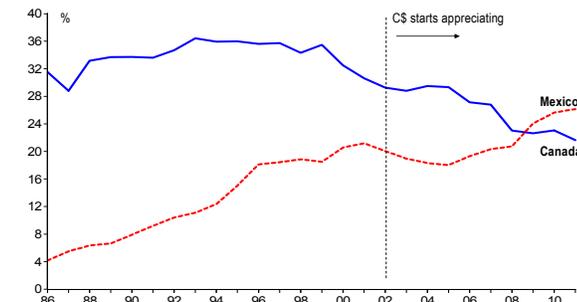
**Canada loses market share to Mexico in trucks and parts**  
Share of U.S. auto imports



NBF Economy & Strategy (data via Global Insight) 2011-12-14

The only segment where Canadian exporters have been able to maintain market share was in the passenger car segment, although that too could change for the worse sooner rather than later. For instance, note a recent comment from Chrysler's CEO Sergio Marchionne: "you cannot have an uncompetitive wage rate and then expect Chrysler or all the other car makers to keep on making cars in this country and be disadvantaged". He has a valid point. While Canadian manufacturing costs have tracked US ones closely up to 2002, the gap has widened significantly since then, due to the Canadian dollar's ascent.

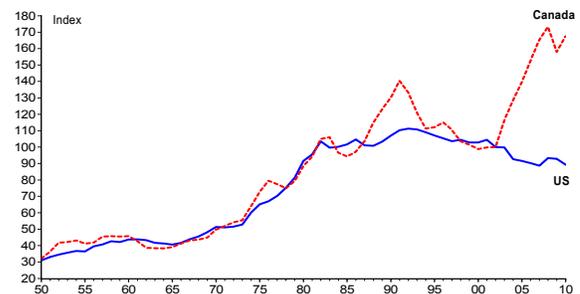
**Canadian share of U.S. auto imports at all-time low**



NBF Economy & Strategy (data via Global Insight) 2011-12-14

Low-cost competitors with highly competitive currencies, like Mexico, have grabbed market share particularly in high margin segments like trucks and parts. While over half of overall US truck imports came from Canada in 2002, our market share in that segment has shrunk to just 10% today. Mexico's share, in contrast has soared past 80%. The contrast is less dramatic for the auto parts business, although the trend is similarly depressing from a Canadian standpoint.

**Canadian manufacturing sector struggling to compete**  
Unit labor costs in manufacturing, U.S. dollar basis (Index=100 in 2002)



NBF Economy & Strategy (data via US Bureau of Labor Statistics) 2011-12-14

And with the US dollar expected to remain weak over the next several years, and commodities continuing to inflate the loonie, salvation for Canada's auto sector can only come via higher productivity. In fact, such a prescription applies to pretty much all of the non-resource sector. Canada is on track to improve its productivity record if recent trends in business investment are any guide, but productivity improvements won't happen overnight. So expect non-resource exporters to remain under pressure over the near to medium term as they compete with

lower-cost competitors. That said, the acceleration of the US economy should be enough as to allow trade to turn into a contributor to growth in 2012. Indeed, a rising tide tends to lift all boats, even those that are listing badly.

The contribution from trade will be offset by a weakened domestic demand resulting in tepid GDP growth of just 2% for Canada in 2012, taking away our bragging rights of having outperformed the US economy since 2006. With domestic demand under pressure and the European debt crisis having the potential to spiral into a full-blown global financial crisis, the Bank of Canada is likely to play safe and delay rate hikes to 2013.

**Krishen Rangasamy/Matthieu Arseneau**

**Canada  
Economic Forecast**

<b>(Annual % change)*</b>							<b>Q4/Q4</b>	
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2011</b>	<b>2012</b>	
Gross domestic product (2002 \$)	0.7	(2.8)	3.2	2.4	2.0	2.1	2.1	
Consumption	3.0	0.4	3.3	1.9	1.9	1.4	1.8	
Residential construction	(3.2)	(8.0)	10.2	2.7	0.6	5.8	(1.9)	
Business investment	3.7	(20.8)	7.3	11.7	4.9	6.2	6.5	
Government expenditures	4.8	4.3	4.7	1.3	0.3	0.1	0.3	
Exports	(4.7)	(13.8)	6.4	4.4	5.8	4.3	6.0	
Imports	1.5	(13.4)	13.1	6.5	3.4	5.3	3.9	
Change in inventories (millions \$)	9,683	(539)	8,899	12,505	7,063	9,052	5,893	
Domestic demand	3.0	(2.1)	4.5	2.9	1.7	1.9	1.7	
Real disposable income	4.1	0.8	3.6	1.0	1.6	0.4	2.1	
Employment	1.7	(1.6)	1.4	1.5	0.9	1.3	1.1	
Unemployment rate	6.2	8.3	8.0	7.4	7.2	7.3	7.1	
Inflation	(0.7)	0.3	1.8	3.0	2.2	2.3	2.9	
Before-tax profits	8.0	(32.3)	20.9	15.3	5.8	8.3	5.2	
Federal balance (Public Acc., bil. \$)	9.6	(5.8)	(55.6)	(33.4)	(30.1)	....	....	
Current account (bil. \$)	5.3	(45.2)	(50.9)	(51.3)	(46.5)	(48.0)	(40.0)	

\* or as noted

**Financial Forecast\***

	<b>Current 12/16/11</b>	<b>Q1/12</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>2012</b>	<b>2013</b>
Overnight rate	1.00	1.00	1.00	1.00	1.00	1.00	2.00
Prime rate	3.00	3.00	3.00	3.00	3.00	3.00	4.00
3 month T-Bills	0.83	0.86	0.90	0.92	1.17	1.17	1.92
Treasury yield curve							
2-Year	0.85	0.94	1.01	1.13	1.38	1.38	2.49
5-Year	1.19	1.46	1.57	1.76	1.97	1.97	2.91
10-Year	1.88	2.24	2.37	2.58	2.73	2.73	3.40
30-Year	2.46	2.79	2.88	3.04	3.15	3.15	3.63
Exchange rates*							
USD per CAD	0.96	0.99	0.97	0.96	0.98	0.98**	....
Oil price (WTI), U.S.\$	93	90	85	87	89	88**	....

National Bank Financial

\* end of period

\*\* annual average

**United States  
Economic Forecast**

<i>(Annual % change)*</i>	2008	2009	2010	2011	2012	Q4/Q4	
						2011	2012
Gross domestic product (2005 \$)	(0.3)	(3.5)	3.0	1.8	2.5	1.7	2.5
Consumption	(0.6)	(1.9)	2.0	2.3	2.5	1.9	2.7
Residential construction	(23.9)	(22.2)	(4.3)	(1.7)	13.9	2.0	20.3
Business investment	(0.8)	(17.9)	4.4	8.7	9.3	8.1	9.2
Government expenditures	2.6	1.7	0.7	(1.9)	(1.1)	(1.7)	(1.6)
Exports	6.1	(9.4)	11.3	6.8	4.3	5.2	4.1
Imports	(2.7)	(13.6)	12.5	4.8	5.1	3.3	7.0
Change in inventories (bil. \$)	(36.3)	(145.0)	58.8	19.9	23.8	0.0	30.0
Domestic demand	(1.0)	(3.6)	1.8	2.0	2.7	1.8	2.8
Real disposable income	2.4	(2.3)	1.8	1.0	2.0	0.4	2.8
Household employment	(0.5)	(3.8)	(0.6)	0.5	1.2	0.8	1.4
Unemployment rate	5.8	9.3	9.6	9.0	8.5	8.9	8.4
Inflation	(1.3)	(0.3)	1.7	3.1	1.8	1.2	3.3
Before-tax profits	(17.4)	9.1	32.2	8.3	5.7	8.0	4.2
Federal balance (unified budget, bil. \$)	(1,800.0)	(1,800.0)	(1,300.0)	(1,350.0)	(1,100.0)	...	...
Current account (bil. \$)	(410.0)	(410.0)	(500.0)	(480.0)	(490.0)	(510.0)	0.0

\* or as noted

**Financial Forecast**

	Current 12/16/11	Q1/12	Q2	Q3	Q4	2012	2013
Fed Fund Target Rate	0.07	0.12	0.12	0.12	0.12	0.12	0.50
3 month Treasury bills	0.01	0.05	0.06	0.05	0.05	0.05	0.29
Treasury yield curve							
2-Year	0.23	0.27	0.29	0.33	0.35	0.35	1.46
5-Year	0.81	0.99	1.04	1.18	1.30	1.30	2.25
10-Year	1.86	2.18	2.25	2.43	2.62	2.62	3.32
30-Year	2.86	3.22	3.28	3.45	3.62	3.62	4.09
Exchange rates*							
U.S.\$/Euro	1.30	1.38	1.35	1.30	1.25	1.32**	....
YEN/U.S.\$	78	78	77	77	76	77**	....

National Bank Financial

\* end of period

\*\* annual average

## CANADIAN ECONOMIC OUTLOOK

*Period-Over-Period Annualized Per Cent Change Unless Otherwise Indicated*

	2011				2012				2013				Annual Average			4th Qtr/4th Qtr		
	Q1	Q2	Q3	Q4F	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F	11F	12F	13F	11F	12F	13F
<b>Real GDP</b>	3.5	-0.5	3.5	2.0	1.7	0.5	1.8	2.4	2.0	2.4	2.7	2.8	2.4	1.7	2.2	2.1	1.6	2.5
<b>Consumer Expenditure</b>	-0.1	2.1	1.2	1.7	1.6	1.0	1.8	2.1	2.0	2.2	2.1	2.0	1.9	1.6	2.0	1.2	1.6	2.1
Durable Goods	-6.5	2.1	-1.5	3.0	1.8	-5.0	1.0	2.5	3.5	4.0	2.0	1.9	0.4	0.3	2.3	-0.8	0.0	2.8
<b>Business Investment</b>	12.3	14.6	-3.6	1.3	3.0	1.5	7.4	8.2	9.1	12.3	14.5	13.2	11.7	3.1	9.8	5.9	5.0	12.3
Non-Res. Structures	10.3	-0.9	4.4	-0.5	1.0	-0.5	3.5	6.0	7.0	7.5	7.8	8.2	9.3	1.4	6.2	3.2	2.5	7.6
Machinery & Equipment	14.5	32.7	-11.0	3.1	5.0	3.5	11.2	10.4	11.2	17.0	21.0	18.0	14.1	4.8	13.3	8.7	7.5	16.7
<b>Residential Investment</b>	6.7	1.6	10.9	4.0	-1.0	-5.0	0.4	2.3	-0.5	-7.4	-7.9	-5.6	2.7	1.1	-2.8	5.8	-0.9	-5.4
<b>Government Expenditures</b>	4.4	0.9	0.0	0.6	0.4	0.4	0.1	0.1	-0.4	-0.1	-0.1	-0.1	1.3	0.4	-0.1	0.4	0.3	-0.1
<b>Final Domestic Demand</b>	1.5	3.1	0.9	1.6	1.3	0.5	1.9	2.3	2.0	2.1	2.3	2.3	2.8	1.4	2.0	1.8	1.5	2.2
<b>Exports</b>	6.2	-6.4	14.4	2.1	1.9	1.0	2.6	3.9	6.4	5.2	6.9	7.8	4.3	2.9	5.0	3.8	2.3	6.6
<b>Imports</b>	8.4	13.6	-3.2	1.0	0.6	0.4	3.0	2.6	5.9	5.1	5.5	5.4	6.4	1.3	4.4	4.7	1.7	5.5
<b>Change in Non-Farm Inventories (\$2002 Bn)</b>	7.1	17.5	7.1	7.5	7.8	6.5	7.0	6.5	5.6	7.5	8.0	7.0	9.8	7.0	7.0	---	---	---
<b>Final Sales</b>	0.3	-3.8	6.9	2.1	2.0	0.8	1.9	3.0	2.2	2.5	3.2	3.5	2.0	2.1	2.5	1.3	1.9	2.9
<b>International Current Account Balance (\$Bn)</b>	-41.4	-64.5	-48.5	-53.8	-31.6	-34.1	-33.5	-30.4	-28.3	-27.8	-25.3	-20.9	-52.1	-32.4	-25.6	---	---	---
% of GDP	-2.4	-3.8	-2.8	-3.1	-1.8	-1.9	-1.9	-1.7	-1.6	-1.5	-1.4	-1.1	-3.0	-1.8	-1.4	---	---	---
<b>Pre-tax Corp. Profits</b>	20.5	-7.8	18.1	1.6	-4.0	-8.2	14.7	7.5	7.4	7.6	13.8	8.5	13.0	1.4	8.2	7.4	2.1	9.3
% of GDP	12.0	11.7	12.0	12.0	11.8	11.5	11.8	11.9	12.0	12.1	12.4	12.5	11.9	11.8	12.2	---	---	---
<b>GDP Deflator (Y/Y)</b>	2.9	3.4	3.4	2.1	1.4	1.1	1.2	1.4	1.6	1.6	1.7	1.9	3.0	1.3	1.7	2.1	1.4	1.9
<b>Nominal GDP</b>	7.7	2.1	4.6	3.0	2.6	1.8	3.5	3.9	3.8	4.1	4.7	5.0	5.4	2.9	3.9	4.3	3.0	4.4
<b>Labour Force</b>	2.6	0.8	0.1	0.8	1.0	1.0	1.2	1.2	1.3	1.2	1.3	1.5	1.0	0.9	1.2	1.1	1.1	1.3
<b>Employment</b>	2.4	2.0	1.2	0.3	0.9	0.2	0.7	1.2	1.7	1.8	1.9	1.9	1.6	0.8	1.4	1.5	0.7	1.8
<b>Employment ('000s)</b>	101	87	50	13	39	9	30	52	74	79	83	84	272	130	252	251	130	319
<b>Unemployment Rate (%)</b>	7.8	7.5	7.2	7.3	7.4	7.5	7.7	7.7	7.6	7.4	7.3	7.2	7.4	7.6	7.4	---	---	---
<b>Personal Disp. Income</b>	2.6	3.2	-0.2	2.8	3.0	1.9	2.8	3.4	3.7	4.1	4.0	4.1	2.9	2.4	3.6	2.1	2.8	4.0
<b>Pers. Savings Rate (%)</b>	4.3	4.1	3.5	3.3	3.2	3.1	3.1	3.2	3.3	3.4	3.4	3.5	3.8	3.1	3.4	---	---	---
<b>Cons. Price Index (Y/Y)</b>	2.6	3.4	3.0	2.7	2.1	1.7	1.4	1.5	1.6	1.8	1.9	1.9	2.9	1.7	1.8	2.7	1.5	1.9
<b>Core CPI (Y/Y)</b>	1.3	1.6	1.9	2.0	1.8	1.5	1.4	1.3	1.5	1.6	1.8	1.8	1.7	1.5	1.7	2.0	1.3	1.8
<b>Housing Starts ('000s)</b>	178	192	205	193	188	175	180	182	178	173	169	167	192	181	172	---	---	---
<b>Productivity:</b>																		
<b>Real GDP / worker (Y/Y)</b>	0.9	0.6	0.9	0.6	0.5	1.2	1.0	0.8	0.7	0.8	0.7	0.7	0.7	0.9	0.7	0.6	0.8	0.7

F: Forecast by TD Economics as at December 2011

Source: Statistics Canada, Bank of Canada, Canada Mortgage and Housing Corporation, Haver Analytics

## HIGHLIGHTS

- The most significant challenge facing the global economy is the ongoing European sovereign debt crisis and already the year has started poorly. European policymakers have already made progress to reduce the risk that the worst-case scenario will occur.
- While the unfolding crisis in Europe presents a very real challenge to the global economy, we have been comforted by a stronger-than expected outturn for economic growth in the United States through the second half of the year.
- The publication also includes quarterly interest rate and exchange rate forecasts for the U.S., Canada, Australia, and New Zealand, and also offers additional exchange rate forecasts for the Japanese yen, the euro, and the Swiss franc.

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## GEARING UP FOR A GRUELLING 2012

The dawn of a new year offers an opportunity for both reflection and the promise of a new beginning. After a tumultuous year for the global economy and financial markets, many are looking to 2012 for lighter headwinds than what had restrained economic growth and dented confidence in 2011. While the outlook is expected to improve over the year ahead, we think conditions will deteriorate further before a sense of impending crisis warrants a sufficient response by policymakers.

How close to the edge of the abyss must we come? In 2008 many believed the global economy was a mere 36 hours away from tumbling into the second Great Depression. And while this may make for a thrilling climax in Hollywood, there are very significant consequences in the real world. This is especially true when it comes to the sequel of sovereign risk playing out in Europe.

### In the Danger Zone

The most significant challenge facing the global economy is the ongoing European sovereign debt crisis and already the year has started poorly. After placing the entire region on negative outlook in early December, S&P followed through last week with a sweeping set of sovereign downgrades. While Germany managed to hold onto its AAA rating, France and Austria lost their AAA status and now join the United States with a rating of AA+. In the periphery, Spain and Italy were both downgraded by two notches while the downgrade to Portugal stripped it of its investment grade standing.

March is a crucial month in the progress of the crisis. The negotiations between Greece and the private sector over the inevitable restructuring of Greek debt have been indefinitely suspended, putting the €14.4 billion of bond redemptions in March in doubt. A disruptive unilateral Greek default is possible. Finally, Greece is not alone. Italy faces a staggering €96 billion of sovereign debt maturing by March 1st.

In anticipation, European policymakers have already made progress to reduce the risk that the worst-case scenario will occur. In December, the European Central Bank (ECB) conducted a €489 billion three-year long-term refinancing operation (LTRO) to mitigate the risk of a credit crunch among European banks, and encourage the continued provision of credit to the wider economy. A second LTRO is scheduled for February which will accept a wider range of collateral and is expected to be well tapped.

Despite greater demand at several recent bond auctions in Italy and Spain, it appears that most of the proceeds from the first LTRO have been returned to the ECB through its deposit facility. This result is vaguely reminiscent of the efforts of the Federal Reserve in the United States to push liquidity onto bank balance sheets only to have those assets remain as excess reserves held at the Fed instead of being lent out to firms and households. But even if the LTRO fails to boost the flow of credit through the economy, it does still help to insulate European banks and reduces the risk of contagion to the wider financial system.

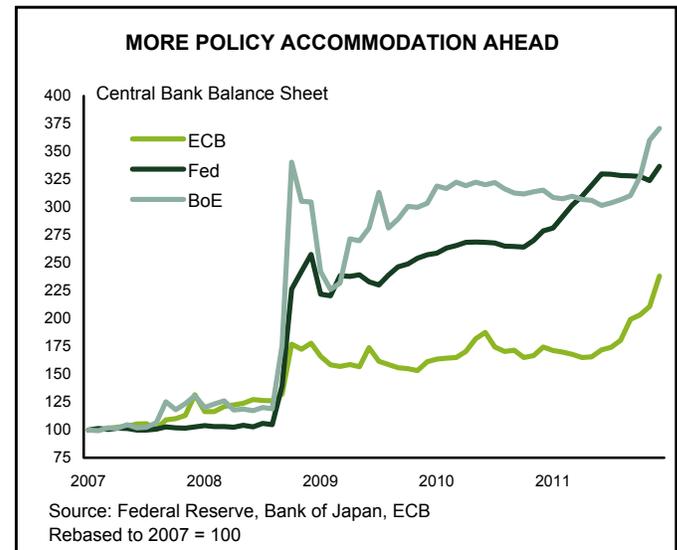
Unfortunately preserving bank liquidity does not completely address the un-

derlying issue: the crisis of European sovereign solvency. The ECB cannot solve this problem; only provide cover in the form of excess liquidity whilst sovereigns square-up their finances. The ECB has put a ceiling on the interest rates of the most distressed sovereigns, but will not fund them.

An alternative strategy would mirror the Federal Reserve and specify purchase intentions in advance, providing a targeted amount and time horizon. Though this strategy would likely be more effective in anchoring yields, the appearance of rewarding profligate sovereigns is too much for the ECB to bear. Instead, the ECB is hoping that the provision of liquidity to the banking sector through the LTRO will be used to purchase government debt.

While aggressive ECB liquidity operations may have quelled the bond market riot, it cannot end the crisis. Governments must slim-down bloated balance sheets, and undertake difficult structural reforms to overcome the loss of competitiveness the peripheral countries have suffered relative to Germany since they entered the Euro. Peripheral countries must boost their productivity, which means overcoming vested interests.

These challenges demand effective political leadership and at least begrudging popular support in some key and big European countries; neither of which is assured against a backdrop of fiscal retrenchment that has delivered a deep economic recession. Growth in the Eurozone is forecast to fall by 1.2% in 2012, and the prospect for additional rating downgrades and continued political intransigence in the face of urgent change only imperils the outlook more. Simply put, until there is a sustainable solution in place, the



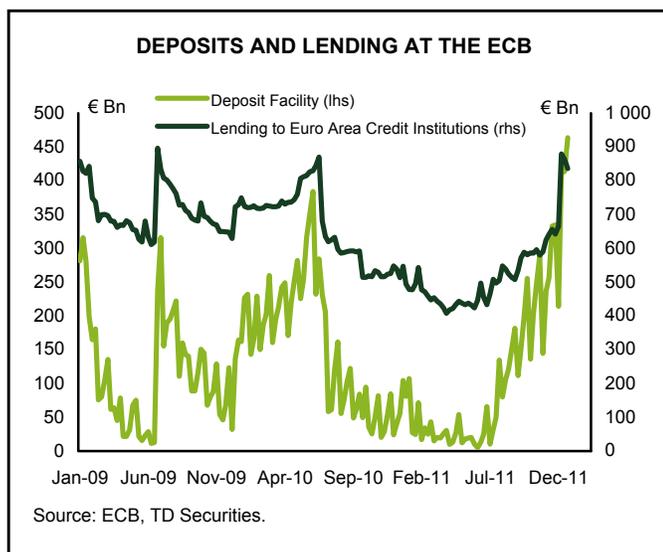
downside risks to growth and financial markets cannot be ignored. We anticipate that the ECB will respond this year through its own program of quantitative easing coupled with additional rate cuts.

### Spending the End of 2011 Suiting Up for Battle

While the unfolding crisis in Europe presents a very real challenge to the global economy, we have been comforted by a stronger-than expected outturn for economic growth in the United States through the second half of the year. The US is now forecast to expand by 3.0% in the final quarter of the year, which represents the fastest rate of growth since the second quarter of 2010.

While part of the upturn in growth reflects the unwinding of the disruption to the global supply chain from the first half of 2011—including the Japanese earthquake and the spike in commodity prices triggered by the Arab spring. Moreover, while there are many structural impediments to a more rapid, capacity absorbing, rate of growth, progress is being made to reduce them:

- At long last, the labour market appears to have finally found its footing. While the overall pace of job creation remains disappointing relative to past economic cycles, initial unemployment claims have trended lower to their lowest level since 2008 and hiring intentions measured by the ISM surveys have improved.
- The flow of consumer credit has also improved, suggesting that a small portion of the monetary stimulus



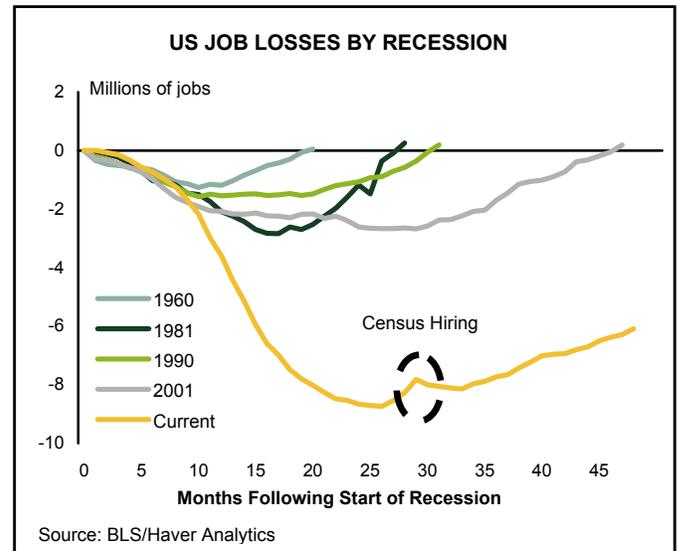
bottled up in the banking system is finding its way to the wider economy. This observation is consistent with recent editions of the Senior Loan Officer Survey that shows an increase willingness to lend met by higher demand for loans from commercial and industrial firms.

- The housing market represents a more persistent challenge to the outlook and a sustainable recovery remains well over the horizon. However, the renewed focus by policymakers on loan modification makes it easier to reclassify properties as rental units is encouraging, and this may free-up a portion of the inventory afflicting the housing market. From the Federal Reserve's perspective, we expect any additional monetary stimulus through renewed QE would target the mortgage market given that longer-term nominal yields are already very well anchored.

Admittedly these are small steps, but taken together, they provide some much needed momentum for the global economy heading into a difficult year, one that will undoubtedly be punctuated by confidence-sapping headlines out of Europe. We are also encouraged by the prospect of additional stimulus from major emerging market economies that have begun to feel the effects of lax advanced market demand and have started to reverse last year's tightening.

### Balancing Growth and Fear

Despite the preponderance of downside risk weighing on the outlook, financial markets can find reasons to rally. The end of 2011 was quiet and European headlines were fewer, allowing investors to focus on stronger-than expected growth in the US. But as we have seen numerous times before, this optimism can be fleeting. Volatility is likely to carry the day because vulnerability to shocks remains high. And as one year gives way to another, so a new list of potential



shocks emerges. Geopolitical tension between the west and Iran has pushed the price of oil higher, and this could both weigh on economic growth and undermine confidence.

Uncertainty prevails, but the headwinds feel like they are blowing less hard, and hope that as the structural undertow lessens the cycle can show through with more force to allow a positive feedback loop of production and employment to lead the US expansion to a new and higher rate that is better able to cushion against the European storm. Recall that even with the heroic steps taken by policymakers in late 2008 and early 2009 to forestall a return to the 1930s, we were still left with the Great Recession.

*David Tulk, Chief Canada Macro Strategist  
416-983-0445*

## U.S. FIXED INCOME

In November we suggested that chatter on QE3 would diminish going into year-end as US economic data continued to prove resilient. Since that time upside pressure on rates that one might have expected given the tone of the recent data has not materialized. That is in part a function of Fed policy. It is also due to lingering risks to growth. Chatter on QE3 is likely to increase given a more challenging growth environment and coupled with ongoing risk from Europe suggests rates will remain well bid over coming months. We have not, therefore, made any changes to our earlier forecasts.

There are three factors that could push 10 yr rates over the early months of the New Year through the October highs of 2.39%. First, economic growth continues to surprise to the upside. Second, and part of the first, the Fed begins to loosen its commitment to keep policy easy for longer. Third, a more definitive resolution in Europe emerges, one that would raise risk appetites and reduce the uncertainty that has plagued this recovery. On all counts, however, not one of these three conditions is likely to be met over the near term. The risk remains for quite the opposite. Inflation risks are rolling over, but rates didn't trade inflation on the way up and are unlikely to do so on the way down.

The 10yr yield has held in a tight 30bp range over the past two months and change despite economic data that has consistently surprised to the upside. Real 10 yr rates are -.15%, well below the 1.00% level suggested by fair value models that incorporate a blend of factors that include inflation volatility, employment gaps, corporate financing gaps, and the policy rate. One doesn't need a fancy model to see that, however. The relationship between 5yr nominal rates and nominal GDP, normally a tight one over time, is set to hit a record wide 360bps with the release of Q4 GDP. In part this decoupling with economic fundamentals is a function of Europe, but it is also a function of the Fed's reflation policy of low for longer, QE2, and Operation Twist.

Meanwhile, growth over the next several quarters will shift lower. First, global growth is skewed to the downside which, in concert with a firmer USD, will act as a constraint on US export demand. Second, fiscal drag will intensify in 2012 with or without a full extension of the payroll tax reduction. Third, real consumption has held up despite weak real income growth, but much of the cushion from savings has been tapped. Headline inflation will roll over in y/y terms, and real income growth is set to improve, but not sufficiently to change what we suspect is a diminished outlook for consumer spending over the first half of the year. Taken together, GDP growth in the US is poised to slow to an average pace of 1.5%. That is not horrible and is not a recession, but it represents a clear slowing in economic momentum from the 2.5% average over the second half of 2011. It also makes the economy more susceptible to exogenous shocks and brings the Fed back into play.

Europe remains one of those lingering risks as well, and the region most capable of disrupting the Bernanke recovery. While the US can absorb the effects of lower growth from Europe, it is the contagion effects that bear watching. Those risks have eased, but they have not been eliminated. The FOMC captured it succinctly in the December minutes in their view that "global financial strains constitute significant risk."

With growth in the US at risk of slowing back to 2% or lower the Fed will soon be back in play. If the Fed does ultimately squeeze more duration out of the market while reflating its balance sheet through \$3T mark the ultimate effect is likely to be higher yields. That has been the script thus far. The penultimate effect, however, is a persistent bias toward lower and flatter, one that shows no evidence of having run its course.

*Eric Green, Chief U.S. Strategist  
212-827-7156*

U.S. FIXED INCOME OUTLOOK													
	Spot Rate	2011				2012				2013			
	17/01/2012	Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Fed Funds Target Rate (%)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.75	1.00
3-mth T-Bill Rate (%)	0.03	0.09	0.01	0.02	0.01	0.10	0.10	0.10	0.10	0.10	0.15	0.80	1.10
2-yr Govt. Bond Yield (%)	0.22	0.82	0.46	0.24	0.24	0.25	0.30	0.35	0.50	0.80	0.95	1.15	1.55
5-yr Govt. Bond Yield (%)	0.80	2.27	1.76	0.95	0.83	0.85	1.10	1.40	1.55	1.65	1.70	1.95	2.10
10-yr Govt. Bond Yield (%)	1.88	3.47	3.16	1.91	1.88	1.90	2.20	2.65	2.75	2.75	2.80	3.00	3.25
30-yr Govt. Bond Yield (%)	2.92	4.51	4.37	2.91	2.89	2.80	3.30	3.90	4.00	4.05	4.10	4.20	4.30
10-yr-2-yr Govt. Spread (%)	1.66	2.65	2.70	1.67	1.64	1.65	1.90	2.30	2.25	1.95	1.85	1.85	1.70

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period. Source: Bloomberg, TDBG

## CANADIAN FIXED INCOME

In 2011 the Canadian fixed income market was marked by an unchanged overnight rate and a flattening trend in the yield curve. Driven by a flight to safety from an increasingly perilous outlook for the global economy, longer-dated government yields fell to record lows before rebounding modestly. Looking out to the year ahead, the macro backdrop remains essentially unchanged. Conditions in Europe remain precarious, and while growth in the United States is likely to finish the year on a firmer footing, momentum is expected to fade amid fiscal restraint, elevated commodity prices, and bruised confidence. The economic backdrop is likely to leave the path of least resistance—an unchanged overnight rate, lower yields, and a flatter curve—as the most likely outcome over the next six months.

Our forecast for the Bank of Canada reflects a balance between international headwinds and domestic momentum that is forecast to keep the overnight rate unchanged at 1.00% for all of 2012. While weak foreign demand and the persistent strength of the currency is expected to weigh on growth, accommodative financial conditions and a functional monetary transmission mechanism will provide a sufficient offset to underpin domestic demand. It would likely require a significant financial shock in Europe—sufficiently large to impair the Canadian funding market—to compel the Bank to provide additional stimulus. At the other end of the spectrum, there would need to be compelling evidence of a sustained upturn in US activity to justify resuming the withdrawal of stimulus.

In weighing the balance of risk to monetary policy over 2012, conditions in Europe are more likely to deteriorate

in the first half of the year while growth in the US is could surprise to the upside in the second. While a cut by the Bank cannot be fully discounted, we believe the probability is not large enough to be incorporated into the base case and we expect that the Bank will err on the side of caution in considering second half strength. As a result, we expect the next move by the Bank will be a hike in the first quarter of 2013.

Looking out over the rest of the curve, we expect to see yields in the front end remain within their recent trading range. There is more scope for yields on 5s and 10s to remain subdued on the back of additional European turmoil. We forecast 5s to reach 1.30% and 10s to reach 2.00% by the end of the second quarter. Over the second half of the year we expect that attention will shift towards the US economy and an undercurrent of stronger global growth. This expectation will be built initially into 10s and 30s before shifting into 5s by the end of the year. By early 2013 the market will begin to anticipate hikes by the Bank, helping the curve to flatten once again.

The clear risk to this forecast is one of timing. The peak period of financial market stress in the Eurozone is expected to occur in the first half of the year. Assuming that renewed efforts by European policymakers are successful in avoiding the worst-case scenario, the backdrop for global growth is expected to improve. However, if it takes longer for these efforts to materialize, the move in Canadian yields to price in a stronger recovery will also be delayed.

*David Tulk, Chief Canada Macro Strategist  
416-983-0445*

### CANADIAN FIXED INCOME OUTLOOK

	Spot Rate 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Overnight Target Rate (%)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.75	2.00	2.50
3-mth T-Bill Rate (%)	0.97	0.96	0.90	0.82	0.80	0.90	0.90	0.95	1.00	1.30	1.80	2.10	2.60
2-yr Govt. Bond Yield (%)	1.29	1.83	1.59	0.89	0.96	0.95	0.95	1.15	1.40	1.80	2.20	2.70	3.10
5-yr Govt. Bond Yield (%)	1.95	2.77	2.33	1.40	1.28	1.25	1.30	1.75	2.10	2.30	2.60	3.00	3.30
10-yr Govt. Bond Yield (%)	2.53	3.35	3.11	2.16	1.94	1.90	2.00	2.45	2.75	3.25	3.40	3.60	3.70
30-yr Govt. Bond Yield (%)	2.73	3.76	3.55	2.77	2.49	2.40	2.50	3.10	3.60	3.80	3.85	4.05	4.10
10-yr-2-yr Govt. Spread (%)	1.24	1.52	1.52	1.27	0.98	0.95	1.05	1.30	1.35	1.45	1.20	0.90	0.60
<b>Canada-U.S. Spreads</b>													
3-mth T-Bill Rate (%)	0.94	0.87	0.89	0.80	0.79	0.80	0.80	0.85	0.90	1.20	1.65	1.30	1.50
2-yr Govt. Bond Yield (%)	1.07	1.01	1.13	0.65	0.70	0.70	0.65	0.80	0.90	1.00	1.25	1.55	1.55
5-yr Govt. Bond Yield (%)	1.15	0.50	0.57	0.45	0.50	0.40	0.20	0.35	0.55	0.65	0.90	1.05	1.20
10-yr Govt. Bond Yield (%)	0.65	-0.12	-0.05	0.25	0.10	0.00	-0.20	-0.20	0.00	0.50	0.60	0.60	0.45
30-yr Govt. Bond Yield (%)	-0.19	-0.75	-0.82	-0.14	-0.30	-0.40	-0.80	-0.80	-0.40	-0.25	-0.25	-0.15	-0.20

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period. Source: Bloomberg, TDBG

## U.K. FIXED INCOME

The UK economy sits precariously balanced on the edge of recession. Recent data gives a tracking for GDP growth in Q4 of 0%, so well within the margin of error for a marginally positive or negative number, but doubtful meaningfully in either direction. With all three December PMIs surprising to the upside, and only Manufacturing at 49.6 still sitting below the 50.0 threshold denoting growth, the very recent trend has been constructive heading into the new year, but all the risks to the economy remained biased to the downside as the Eurozone crisis continues. So the big picture is we do see the economy slipping into recession with the Eurozone, just marginally less severe, and still see the BoE supporting the economy with further QE announcements in February and May.

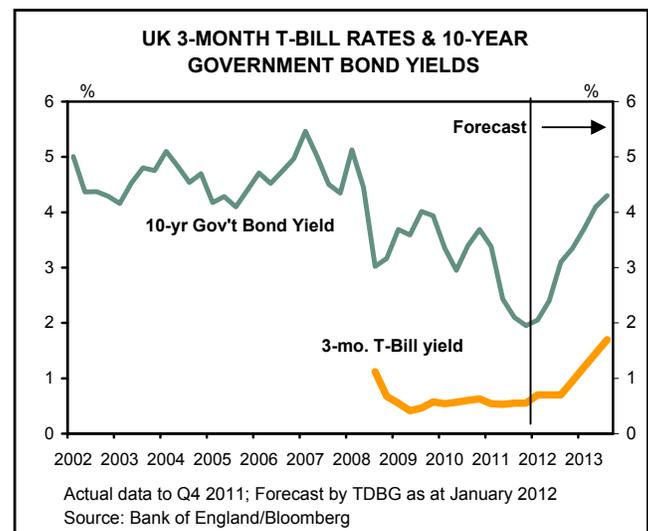
In general, the flatter the better to mid-year for gilts. Our overall level strategy remains the “1-2-3” strategy we’ve held since the fall – 5s below 1%, 10s below 2% and 30s below 3%. For spreads, 2s30s flattener continues to be the path of least resistance in our mind. The point is 2s are outside of the BoE’s buying mandate but everything 3+ is in. When you start going out past 10y, supply becomes more of a constraint so with the BoE likely to announce another 50bn in buying for Feb-May, and we think another 50bn after that, there is still plenty of supply being taken out to flatten curves, and if you get in a periods of “risk on” like we saw at the beginning of the year, you generally could still get short term yields rising by more than the long end as an immediate relief valve.

The real holdout to the general flattening bias out the curve would be 5s10s, as 5s might have further to rally than 10s as things worsen in the EZ and could be one area for slight steepening risk now. And conversely in 2012H2, the bias goes to steepening with the exception of 5s10s. One reason sticking to 2s30s at the moment is you keep out of some of the odd dislocations that have persisted in the curve

dynamics since 2009 and don’t try to fight to BoE.

The two big event risks out there for gilts relative to our expectations would be the better than expected resolution of the Eurozone crisis and the UK’s potential loss of the AAA rating. We think the market has become a bit complacent at the moment with regards to Eurozone complications that will mount in the coming months. But it also seems doubtful that the UK can avoid a downgrade by at least one rating agency, but interestingly, the two risks are also partial hedges. If the EZ crisis gets worse, gilts are bid with all of the safe haven assets and the BoE will increase their asset purchase totals, but the UK is more likely to lose at least one AAA rating as the economic ramifications will be deficit targets slipping. While if the EZ crisis is milder and resolved better than we expect, the fixed income selloff can begin, but the UK will have a better chance of holding their universal AAA as meeting deficit reduction goals will be easier.

**Richard Kelly**  
*Head of European Rates & FX Research*  
+44 20 7786 8448



U.K. FIXED INCOME OUTLOOK													
	Spot Rate 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Bank Rate Target (%)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.75	1.00	1.25	1.50
3-mth T-Bill Rate (%)	0.48	0.63	0.54	0.53	0.55	0.55	0.70	0.70	0.70	0.95	1.20	1.45	1.70
2-yr Gilt Yield (%)	0.39	1.36	0.83	0.58	0.50	0.45	0.55	0.80	1.40	1.55	1.80	2.10	2.30
5-yr Gilt Yield (%)	0.99	2.44	2.07	1.37	1.00	0.85	1.10	1.60	2.50	2.90	3.10	3.30	3.50
10-yr Gilt Yield (%)	1.96	3.69	3.38	2.43	2.10	1.95	2.05	2.40	3.10	3.35	3.70	4.10	4.30
30-yr Gilt Yield (%)	2.96	4.36	4.29	3.55	3.10	2.90	3.35	3.90	4.30	4.50	4.70	4.90	4.90
10-yr-2-yr Gilt Spread (%)	1.57	2.33	2.55	1.85	1.60	1.50	1.50	1.60	1.70	1.80	1.90	2.00	2.00

f: Forecast by TD Bank Group as of January 17, 2012; All forecasts are for end of period. Source: Bloomberg, TDBG

## AUSTRALIAN FIXED INCOME

Over the past four weeks, bond yields have oscillated in a fairly wide 30bp trading range, reflecting thin holiday conditions and plenty of Euro-centric headlines to react to. 10yr yields traded between 3.65%-3.95%, currently 3.78% while 3yr yields traded between 3.0-3.30%, currently 3.26%. The 3-10yr yield curve flattened from +80bp to +52bp via a selloff in the short end, while the longer end rallied due to safe-haven demand as the pool of AAA-rated paper globally continues to shrink.

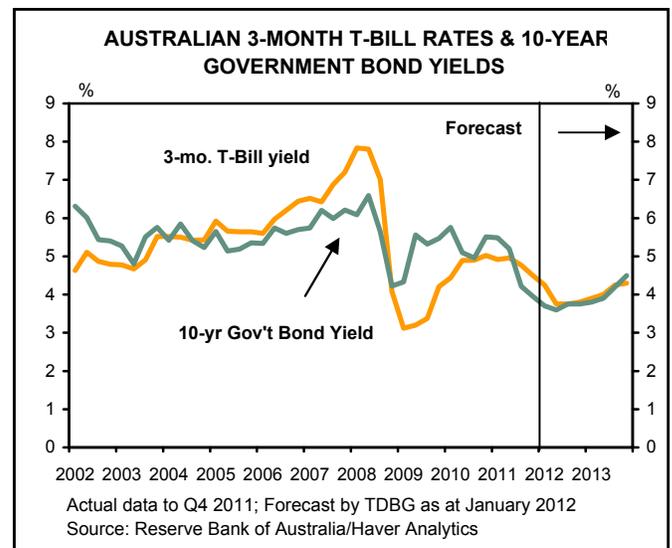
The GDP growth drivers this year are likely to be resource sector business investment and exports. The uncertain global outlook – a European recession and China posting sub-8% GDP growth are now our base case – means non-resource exporters and manufacturers have a tough time ahead and our 2012 GDP growth target has been lowered to 3.5%. The TD inflation gauge suggests that underlying inflation closed 2011 just above 2%/yr, and we forecast a dip below the critical 2-3% target band by mid-year as commodity prices soften, the labour market loosens, unit labour costs have peaked, and the AUD remains relatively elevated.

Uncertain global growth and the much improved inflation outlook pave the way for the RBA to generate more accommodative monetary policy, and we forecast an additional 75bp of easing to 3.5% by mid-year. Revisiting the prior “emergency cash rate” of 3% requires the European debt crisis dissolving into outright dysfunctional credit market.

In 2011, over \$A63b of bonds were issued, with only \$A5b of maturities. For 2012, maturities are hefty \$A23b, hence there will be far less “fresh” supply coming to the market this year. In the last two months of 2011, auctions of longer-dated bonds attracted less interest (btc <2) but no auctions have been held since December 9, 2011. The first for 2012 is held on Wednesday 1 February.

Our short bond forecasts reflect our expected RBA easing and fresh investor aversion to duration ahead of forthcoming turbulence. 3yr yields are forecast to revisit 2008 lows while longer bonds are expected to outperform our forecast US Treasury sell-off given RBA easing, improved inflation and ongoing investor appetite for Australia’s AAA-rated bonds (a shrinking asset class), narrowing the spread from the current +194bp to +100bp by year end.

*Annette Beacher, Head of Asia-Pacific Research*  
**+65 6500 8047**



AUSTRALIA FIXED INCOME OUTLOOK													
	Spot Rate	2011				2012				2013			
	17/01/2012	Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Cash Target Rate (%)	4.25	4.75	4.75	4.75	4.25	4.00	3.50	3.50	3.50	3.50	3.50	3.75	4.25
3-mth Bank Bill Rate (%)	4.40	4.92	4.96	4.77	4.50	4.25	3.75	3.75	3.80	3.90	4.00	4.25	4.30
3-yr Govt. Bond Yield (%)	3.26	5.11	4.84	3.64	3.11	2.90	2.70	2.80	2.90	3.10	3.20	3.50	3.80
5-yr Govt. Bond Yield (%)	3.40	5.30	4.98	3.78	3.37	3.20	3.00	3.10	3.25	3.35	3.40	3.55	3.95
10-yr Govt. Bond Yield (%)	3.78	5.48	5.20	4.21	3.95	3.70	3.60	3.75	3.75	3.80	3.90	4.20	4.50
10-yr-3-yr Govt. Spread (%)	0.52	0.38	0.36	0.57	0.84	0.80	0.90	0.95	0.85	0.70	0.70	0.70	0.70

Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period. Source: Bloomberg, TDBG

**NEW ZEALAND FIXED INCOME**

New Zealand Government bonds (NZGB, AA rated by S&P) have been somewhat sidelined in the last month or so, hence at last have underperformed the Australian AAA equivalent. 10yr yields at 3.87% are +9bp above Australia, from -18bp in mid-December. The NZGB 3-10yr yield curve has been around +110bp for the last four weeks, where the short-end remains firmly anchored to an already-accommodative 2.5% cash rate, while the long-end retains some of the RBNZ’s long-held threat of a higher cash rate at some stage.

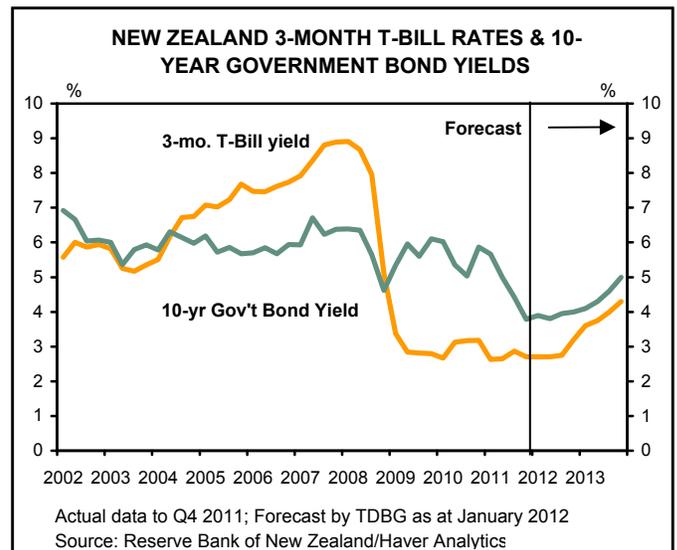
However, if it wasn’t for the Christchurch earthquake reconstruction slated for this year, downside risks to global growth and commodity prices could prompt an easing bias if not outright easing by the RBNZ. We have a 3% GDP forecast for this year, however, this outcome wholly relies on a near-30% surge in housing and non-housing construction. Despite ongoing accommodative cash and mortgage rates, the housing sector is lacklustre and consumer spending (outside of the Sept/Oct Rugby World Cup) has faltered. Add in downside surprises to the CPI, lower inflationary expectations, and downgrades to Australia, China and global growth, there is ample reason for the RBNZ to leave the cash rate on hold for some time.

Last year, just over \$NZ19b of bonds were issued, and extrapolating from the NZDMO’s fiscal year projections, expect around \$NZ14b to be issued this year (no maturities in 2012). Recent bond auctions have had btc of around 1-2, which is not high, but as offshore holdings of bonds has collapsed to 59.1% (the lowest since mid-2004) clearly these bonds are being taken up by local bank balance sheets.

Similar to Australia, we forecast a steeper curve in the early months of 2012, with the shorter end outperforming as headlines from Europe turn for the worse but we

don’t expect a lot of downside in 10yr yields due to New Zealand’s inferior economic and fiscal metrics. The +9bp spread between Australia and New Zealand 10yr bond yields remains below our +20bp target, while we expect NZGBs to outperform our forecast UST sell-off, hence expect that 10yr spread to narrow from the current +203bp to closer to +160bp by mid-year.

*Annette Becher, Head of Asia-Pacific Research*  
**+65 6500 8047**



NEW ZEALAND FIXED INCOME OUTLOOK													
	Spot Rate 17/01/2012	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Official Cash Rate (%)	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.00	3.25	3.50	3.75	4.00
3-mth Bank Bill Rate (%)	2.72	2.63	2.65	2.87	2.70	2.70	2.70	2.75	3.20	3.60	3.75	4.00	4.30
3-yr Govt. Bond Yield (%)	2.79	4.40	3.97	3.33	2.70	2.70	2.70	2.80	3.40	3.70	3.90	4.20	4.60
5-yr Govt. Bond Yield (%)	3.38	5.20	4.65	3.98	3.29	3.00	3.00	3.20	3.60	3.90	4.10	4.40	4.80
10-yr Govt. Bond Yield (%)	3.87	5.66	5.00	4.42	3.78	3.90	3.80	3.95	4.00	4.10	4.30	4.60	5.00
10-yr-2-yr Govt. Spread (%)	1.09	1.26	1.03	1.09	1.08	1.20	1.10	1.15	0.60	0.40	0.40	0.40	0.40

Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period. Source: Bloomberg, TDBG

**U.S. DOLLAR**

The USD ended 2011 in mixed fashion overall against its major currency peers, losing a little ground over the year to the GBP, AUD and NZD – and weakening a little more substantially to the JPY. But the EUR declined some 3% against the USD in 2011, with the SEK, CAD and NOK also posting losses in the region of 2.5%.

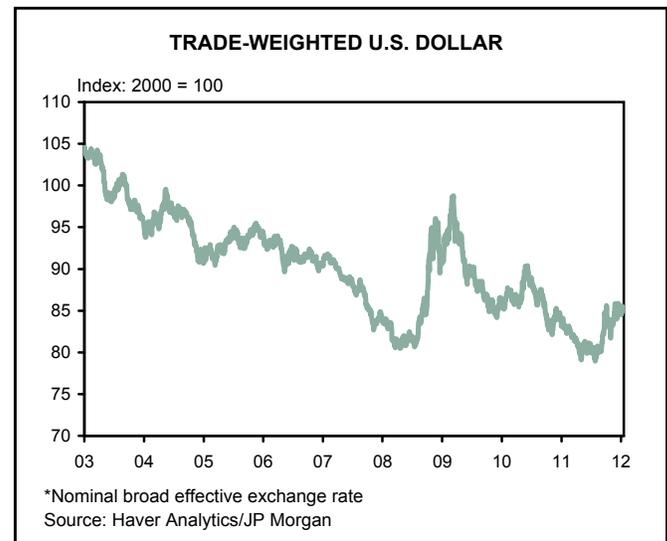
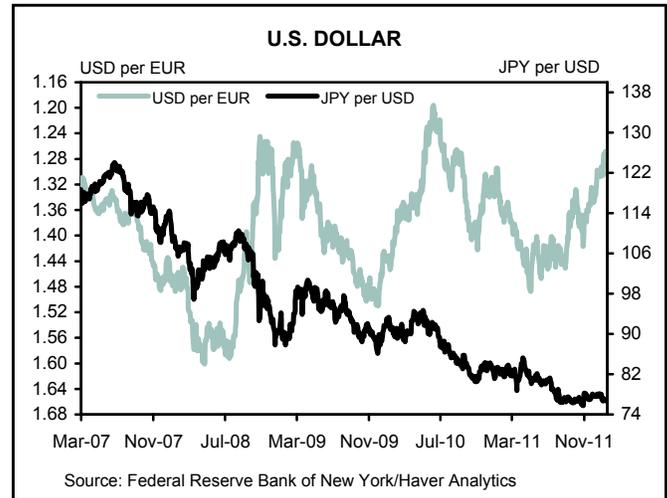
We remain of the opinion that the USD is looking “cheap” against a range of major currencies and that the long-term secular bear trend in place since 2001/2002 is in the process of moderating and perhaps turning higher. We expect the USD to gain modestly against the EUR and CAD through the first half of this year at least, for example.

US economic and financial challenges remain significant and this may well limit the appeal of the USD from a longer-term point of view. But the US economy still seems better positioned to weather the global downturn in growth than many of its peers (we look for the US economy to expand a little below 2% this year – about potential). And while Federal Reserve policy settings remain loose, quantitative easing is no longer the obvious drag on the USD that it used to be.

That is because the use of unorthodox central bank policy is spreading. In fact, the Fed now manages a balance sheet that is slightly smaller than the European Central Bank’s (by about USD300 bn in nominal terms). And as a share of the economy, the Fed’s balance sheet is little different to the Bank of England’s and is substantially smaller than the BoJ (and ECB).

Further action by the Fed to foster the rebound in the economy is, of course, still on the cards but while other central banks are being relatively more aggressive with their own balance sheets, we think the USD has room to improve.

The USD’s correlation with risk assets has weakened over the turn of the year but we still think the risk on/off relationship has traction in the market. Renewed risk aversion will further boost the USD.



U.S. DOLLAR FUNDAMENTALS			
Interest Rate Spreads	-	Business Cycle	+
Inflation Differential	-	Fiscal Balances	-
Current Account	N	Politics	N

Legend: - is negative, + is positive, N is neutral for currency

*Shaun Osborne, Chief FX Strategist 416-983-2629*

U.S. DOLLAR OUTLOOK													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Trade-wtd. USD	100.5	96.5	94.7	100.2	99.9	101.0	102.5	101.4	99.3	99.4	98.5	96.9	96.2
JPY per USD	76.8	83	81	77	77	78	78	83	85	88	88	90	90
USD per EUR	1.273	1.416	1.450	1.339	1.296	1.280	1.220	1.250	1.300	1.300	1.300	1.350	1.350
USD per GBP	1.534	1.603	1.605	1.557	1.554	1.524	1.470	1.524	1.585	1.566	1.566	1.688	1.688

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

## CANADIAN DOLLAR

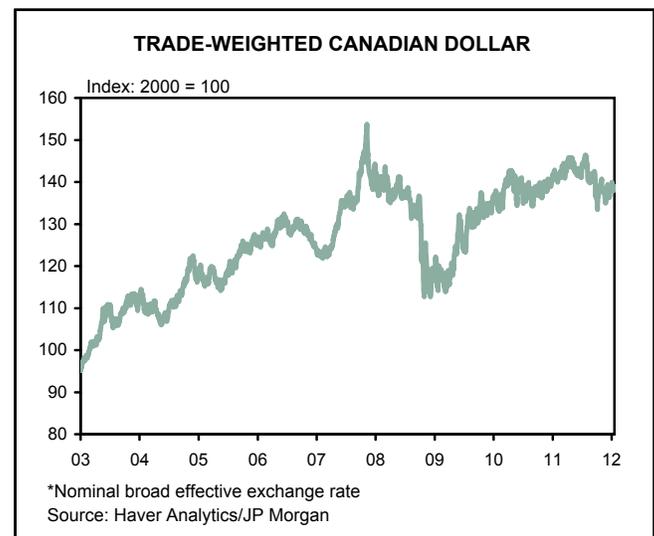
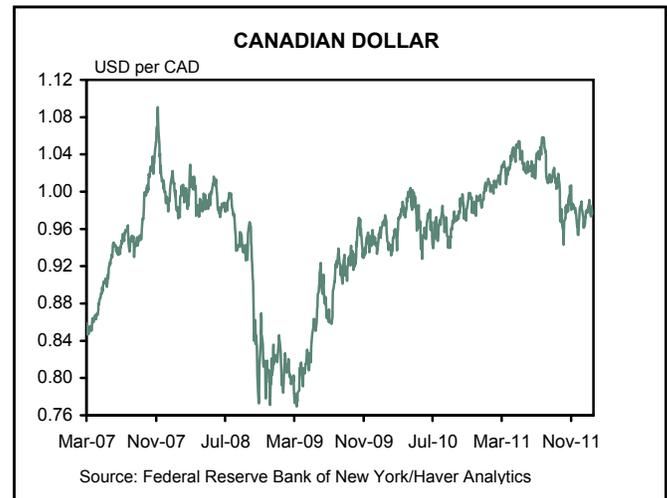
After the regular holiday lull, the CAD has made some sharp swings in the first two weeks of the year. But despite the moves, the trend remains essentially directionless and continues to map out the boundaries of a narrowing range that has been developing since early October.

As with most FX majors over the past several months, European headlines had persistently been the main driver of the CAD. However, in the absence of developments in the euro zone crisis over the holiday period, North American data releases gained greater influence over the CAD – albeit not to the extent that the medium term trend was altered.

The recent flow of data from both the US and Canada has been mostly robust, and provided a fairly optimistic view of the North American economy in the end of 2011. With Canada and its largest trading partner seemingly insulated from the European crisis so far, the idea that North American prospects may be further diverging from those in Europe has gained some momentum and perhaps helped support the CAD slightly. But as we have heard from BoC Governor Carney for several months now, the external risks to the Canadian economy remain particularly acute. This is likely to uphold the important ‘lower for longer’ theme from the BoC, which should keep rate differentials on the back burner as far as drivers of the CAD for the time being.

Since external risks from Europe continue to cloud the outlook for Canada and the US, the re-flaring of concerns in the region suggests movements in the CAD may quickly return to following euro zone woes. Heading into an environment that is likely to see the type of risk aversion seen through the fall, we expect the CAD will lose support – in particular against its safe haven USD counterpart. With this in mind, the recent narrowing range that the CAD has been defining, may just be a coiling before a bigger move lower. This should help push USD/CAD toward our Q1 target of 1.09 (USD 0.92), before ultimately peaking in Q2 near our current forecast of 1.11 (USD 0.90).

**Greg Moore, FX Strategist**  
416-982-7784



CANADIAN DOLLAR FUNDAMENTALS			
Interest Rate Spreads	N	Business Cycle	N
Inflation Differential	+	Fiscal Balances	+
Current Account	N	Politics	N

Legend: - is negative, + is positive, N is neutral for currency

CANADIAN DOLLAR OUTLOOK													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
CAD per USD	1.014	0.971	0.963	1.050	1.020	1.087	1.111	1.087	1.053	1.031	1.010	1.000	0.980
USD per CAD	0.986	1.030	1.038	0.952	0.980	0.920	0.900	0.920	0.950	0.970	0.990	1.000	1.020
JPY per CAD	76	86	84	73	75	72	70	76	81	85	87	90	92
CAD per EUR	1.291	1.374	1.397	1.406	1.322	1.391	1.356	1.359	1.368	1.340	1.313	1.350	1.324
CAD per GBP	1.56	1.556	1.547	1.635	1.586	1.656	1.633	1.657	1.669	1.615	1.582	1.688	1.654

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

**EURO**

Sovereign credit stress, slow growth, and more aggressive ECB policy accommodation will combine to weaken the EUR further in the next few months.

The eurozone’s sovereign credit problems remain challenging. A potentially dislocating default by Greece appears to be an ever more likely prospect as talks on debt restructuring are making no progress and time for an agreement is running desperately short ahead of a EUR14.4bn bond maturity in late March.

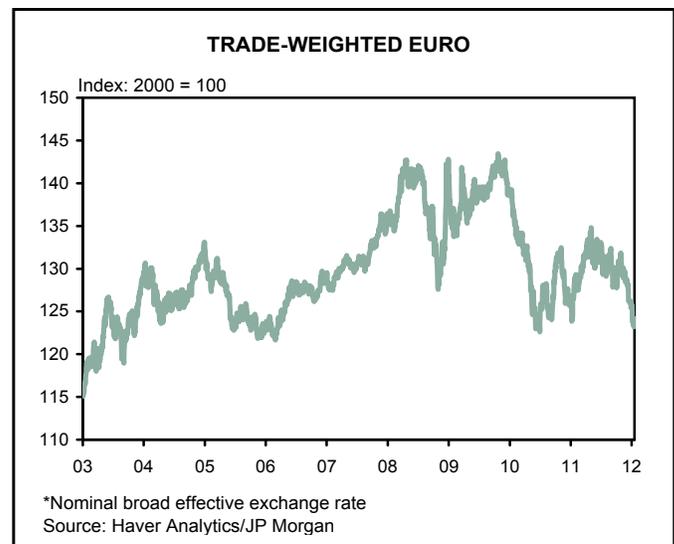
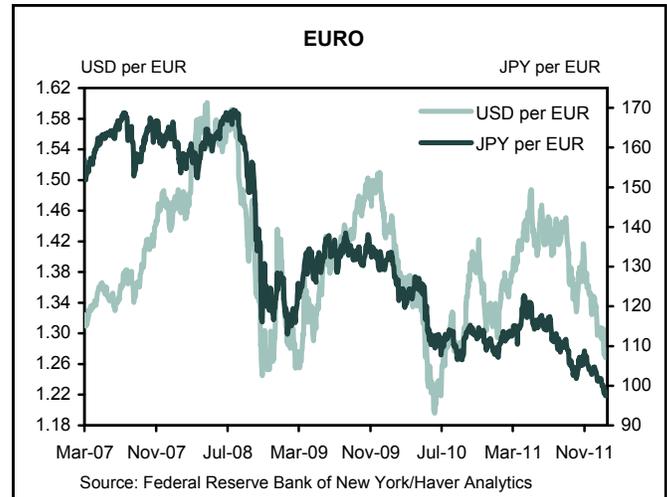
Sovereign credit downgrades by S&P were not as aggressive as they might have been but France and Austria lost their prestigious AAA ratings and Portugal and Cyprus were cut to “junk”. More downgrades (of banks and, perhaps, sovereigns again later this year) will follow.

Peripheral sovereign debt remains under pressure (with the exception of Ireland to a degree). Portuguese yields rose to new crisis highs after the S&P downgrade as investors were forced to dump government bonds. Italian 10-year bond yields remain close to 7% and PM Monti has appealed to the eurozone core for more help in reducing borrowing costs or risk a voter “backlash”.

Investors are yet to be convinced that the eurozone has the policies in place to deal adequately with the crisis. Germany is refusing to do more than it already has or concede that the ECB has a greater role to play as lender of the last resort. In this uncertain environment, the currency seems liable to take more of the strain.

In addition, ECB policy has responded to the rising liquidity pressures in the eurozone banking system via a generous allocation in a three-year Long-Term Refinancing Operation. But banks do not – yet – appear to be deploying the cash amid concerns over their own funding requirements and the underlying concerns over liquidity and sovereign solvency remain.

Balance sheet expansion is quantitative easing by any other name and more – a lot more – of it is coming this year (after the ECB’s key refi rate has been reduced to 0.50%). Weak growth, policy easing and the very messy sovereign credit situation will combine to pull EUR/USD back towards at least the USD1.22 area by mid-year.



EURO FUNDAMENTALS			
Interest Rate Spreads	-	Business Cycle	-
Inflation Differential	N	Fiscal Balances	-
Current Account	+	Politics	-

Legend: - is negative, + is positive, N is neutral for currency

*Shaun Osborne, Chief FX Strategist, 416-983-2629*

EURO OUTLOOK													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
USD per EUR	1.273	1.416	1.450	1.339	1.296	1.280	1.220	1.250	1.300	1.300	1.300	1.350	1.350
JPY per EUR	98	118	117	103	100	100	95	104	111	114	114	122	122
GBP per EUR	0.830	0.883	0.903	0.860	0.834	0.840	0.830	0.820	0.820	0.830	0.830	0.800	0.800
CAD per EUR	1.291	1.374	1.397	1.406	1.322	1.391	1.356	1.359	1.368	1.340	1.313	1.350	1.324

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

## JAPANESE YEN

Weak global growth and the relatively high value of the JPY remain significant challenges for the Japanese economy. Officials remain sensitive to JPY appreciation after the aggressive intervention seen in October last year (directed at USD/JPY).

Now, the focus for concern appears to be turning towards EUR/JPY, given the general weakness of the EUR in response to the eurozone fiscal crisis which has driven the cross rate back below JPY100 and to its lowest level since 2000.

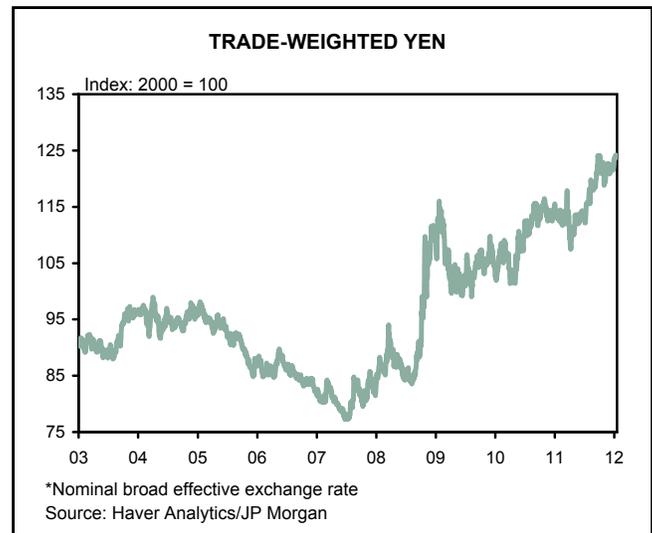
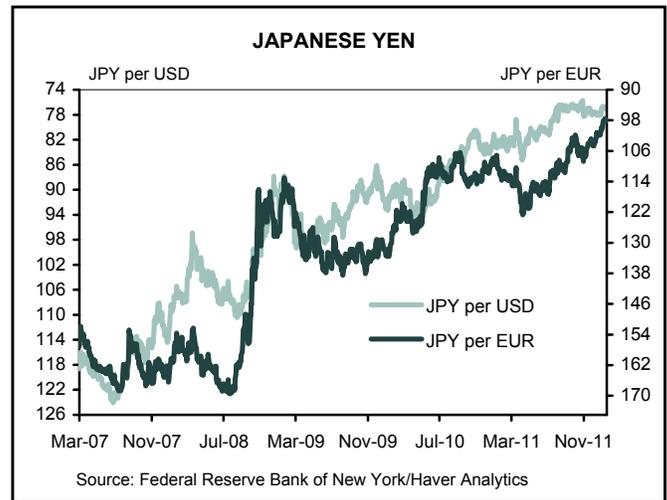
A strong rise in Japan's November core machinery orders, a proxy for capital spending, and an improvement in manufacturing PMI data back above 50 in December were encouraging developments on the industrial side of the economy late last year.

But domestic consumer spending has been weak and the export sector continues to lag, falling a worse-than-expected 4.5% in the November year, reflecting the high JPY and the challenging environment for global exporters.

Given the domestic situation, we think the Japanese authorities remain prepared to try and curb JPY appreciation by direct (and likely unilateral) intervention in the FX market. But we also think that Japan's intervention tactics will do little more than provide a temporary respite from the high JPY for the moment.

We look for USD/JPY to remain broadly stable in the next few months though a return to risk-averse trading conditions may give the JPY a slight edge and push USD/JPY back towards the late October low just above 75.

*Shaun Osborne, Chief FX Strategist*  
416-983-2629



YEN FUNDAMENTALS			
Interest Rate Spreads	-	Business Cycle	N
Inflation Differential	-	Fiscal Balances	-
Current Account	+	Politics	-

Legend: - is negative, + is positive, N is neutral for currency

JAPANESE YEN OUTLOOK													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
JPY per USD	77	83	81	77	77	78	78	83	85	88	88	90	90
JPY per EUR	98	118	117	103	100	100	95	104	111	114	114	122	122
JPY per GBP	118	133	129	120	120	119	115	127	135	138	138	152	152
JPY per CAD	76	86	84	73	75	72	70	76	81	85	87	90	92

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

**U.K. POUND**

Sterling held up remarkably well against the USD overall last year and made some decent ground against the EUR. We look for the GBP to remain better supported against the EUR in the next few months but we also suspect that it will lose some ground against the broadly stronger USD over the period even as the UK economy teeters on the brink of a renewed recession.

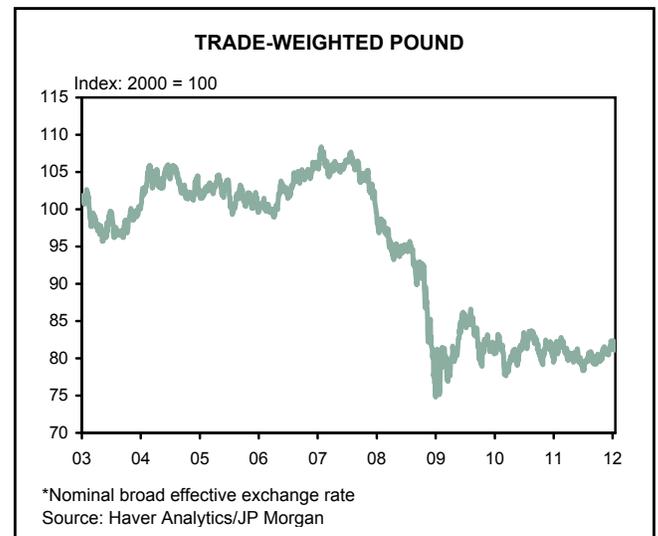
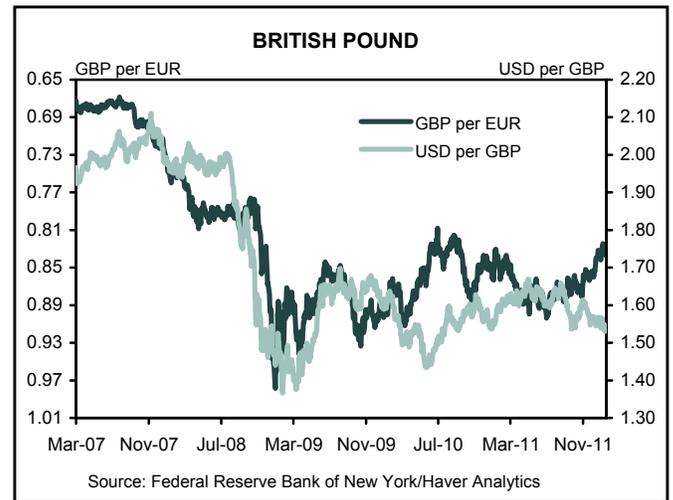
The UK economic recovery remains stalled. Growth may have contracted in the last quarter of 2011 and industrial forecasters are calling for more of the same in the early part of 2012. As inflationary pressures are liable to start easing back a little more obviously in the next few months (partially reflecting the base effects of last year's utility and VAT increases), signs of renewed recession mean that the door is opening for more easing from the Bank of England (BoE). A further deterioration in the euro zone sovereign credit crisis will add further, significant headwinds to the UK economic outlook.

We continue to look for more BoE balance sheet support for the economy in the form of a further GBP50bn in quantitative easing. This is likely to be unveiled in the next month or two to help offset weak domestic growth prospects.

Easier BoE policy may undercut the GBP versus the USD (where the Fed is set to remain on hold for the next few months at least) but may see the GBP rise somewhat versus the EUR given that ECB policy will become relatively looser.

For the moment, the UK retains its AAA status – though whether it can maintain that increasingly rare credit rating is somewhat questionable – and this may give the GBP and additional boost versus the fiscally-challenged EUR in the near to medium-term. We look for EUR/GBP to slide to GBP0.82 by end 2012.

*Shaun Osborne, Chief FX Strategist*  
416-983-2629



POUND FUNDAMENTALS			
Interest Rate Spreads	-	Business Cycle	N
Inflation Differential	+	Fiscal Balances	-
Current Account	-	Politics	-

Legend: - is negative, + is positive, N is neutral for currency

UNITED KINGDOM POUND													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
USD per GBP	1.534	1.603	1.605	1.557	1.554	1.524	1.470	1.524	1.585	1.566	1.566	1.688	1.688
GBP per EUR	0.830	0.883	0.903	0.860	0.834	0.840	0.830	0.820	0.820	0.830	0.830	0.800	0.800
CAD per GBP	1.56	1.56	1.55	1.63	1.59	1.66	1.63	1.66	1.67	1.61	1.58	1.69	1.65

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

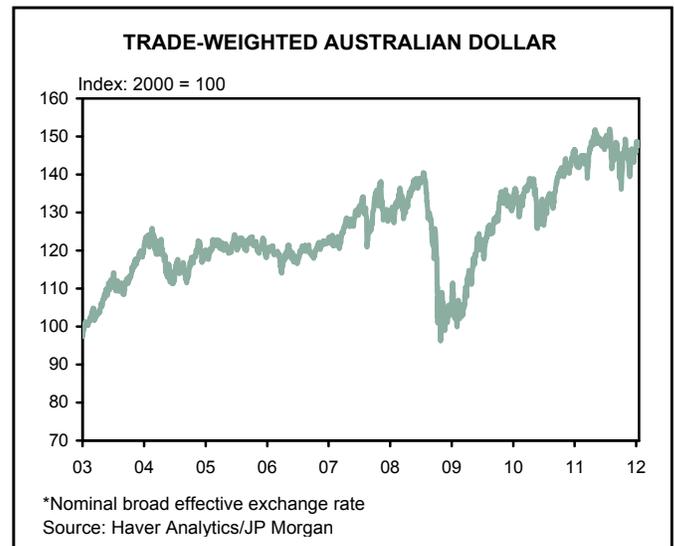
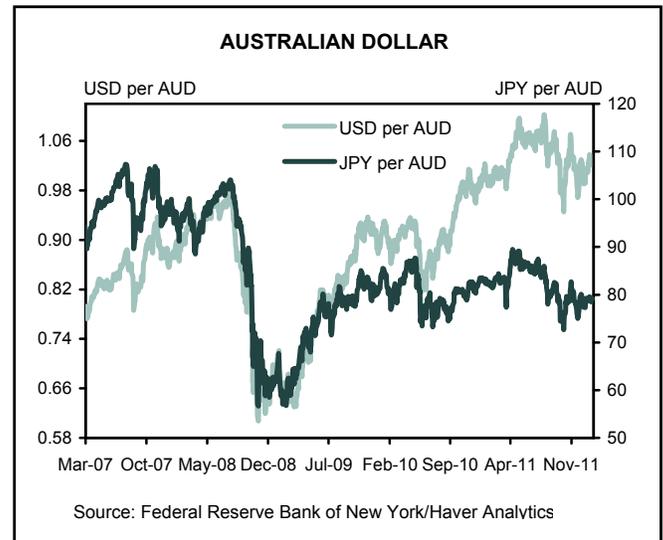
**AUSTRALIAN DOLLAR**

The AUD has rallied throughout the last four weeks, although not in a straight line. The low was USD0.986 mid-Dec, and currently USD1.042. The AUD remains an attractive high-yielding AAA-rated currency play, with ample liquidity. But in the early weeks of 2012, a topic of discussion in the Asia-Pac space was not the AUD versus the USD, but the slump in the EUR cross rate. EURAUD was trading at 1.31 in mid-December, then traded steadily down to 1.224. While every economic fundamental supports such AUD outperformance, such as high real yields, sound fiscal position, exposure to Asia, credible government and central bank, and robust shape of the banking sector, we believe valuations are looking a little stretched.

At some stage this outsized pricing action is going to correct. Net short EUR positions are at record levels, while net long AUD positions are hefty, if not at record levels, yet. The cross rate of 1.224 is well short of our end-Q1 target of 1.28 (1.28 was below the well-worn 1.30-1.40 trading range for 2011). We are convinced that another bout of risk-off trading in the coming months will hurt the AUD comparatively more given these net trading positions.

We have nudged our 2012 AUD forecasts lower to reflect the upcoming risk-off period while the European recession takes hold, with a decline to around USD0.95 by mid-year. Our risk case is re-freezing of financial markets, where we expect the race to the exit to be crowded and the AUD could sink to USD0.60. We remain with our long-held trading range theme, but given the risks that lie ahead to global financial markets and forthcoming RBA cash rate cuts, last year's USD0.95-USD1.05 trading range is likely to be closer to USD0.90-USD1.00 this year.

*Annette Beacher, Head of Asia-Pacific Research*  
*+65 6500 8047*



AUSTRALIAN DOLLAR FUNDAMENTALS			
Interest Rate Spreads	+	Business Cycle	+
Inflation Differential	+	Fiscal Balances	+
Current Account	N	Politics	N

Legend: - is negative, + is positive, N is neutral for currency

AUSTRALIAN DOLLAR OUTLOOK													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
USD per AUD	1.039	1.033	1.072	0.970	1.020	1.000	0.950	0.970	1.000	1.000	1.000	0.970	0.950
JPY per AUD	79.84	85.86	86.31	74.69	78.44	78.00	74.10	80.51	85.00	88.00	88.00	87.30	85.50
AUD per CAD	0.949	0.997	0.968	0.982	0.961	0.920	0.947	0.948	0.950	0.970	0.990	1.031	1.074
NZD per AUD	1.300	1.356	1.293	1.276	1.313	1.282	1.250	1.228	1.235	1.235	1.235	1.228	1.218

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

**NEW ZEALAND DOLLAR**

The NZD rallied from the low of USD0.765 in late 2011 to around USD0.801, despite plenty of ‘risk off’ moments in between. The EURNZD cross rate plummeted by 10 big figures from 1.70 to just over 1.59, a point of discussion for the Asia-Pac region, but economic ties between the two countries are actually rather slim. In the early weeks of 2012, net long NZD positions increased from net-square to a net +5k contracts, historically consistent with around a 4c rally.

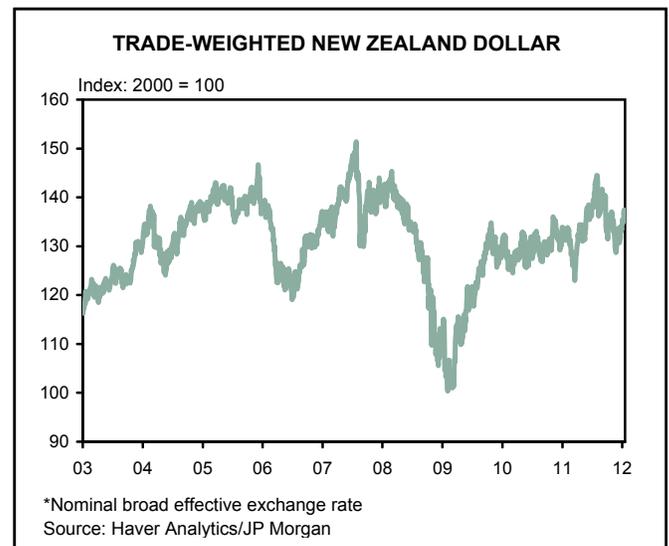
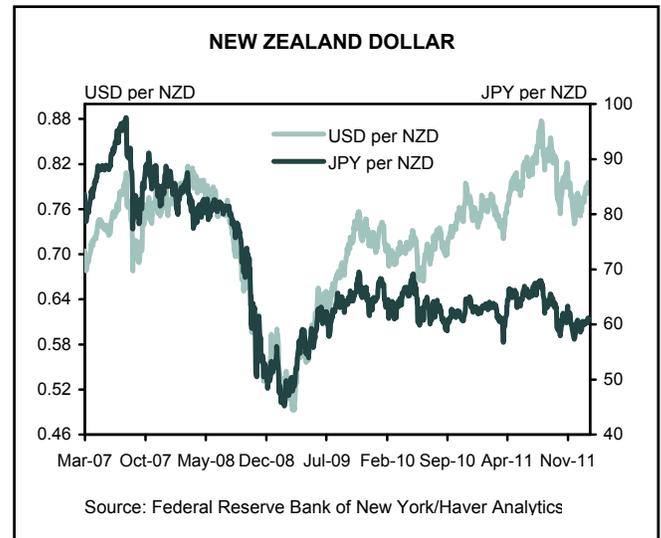
Let’s not forget that long-run estimates of the NZD are closer to USD0.60, so why is the NZD so elevated? The New Zealand economy remains strongly tied to Australia, China and commodity prices, is a relatively high yielder, and at least on paper is expected to return to fiscal surplus within three years. Compared with many G20 currencies these are attractive fundamentals.

The domestic picture for New Zealand is clouded, the only data surprising to the upside in recent months is that strongly associated with the Rugby World Cup (credit card sales, retail sales, tourism). The uncertain outlook for global growth coupled with domestic data disappointment has pushed out expectations for future RBNZ tightening, and the OIS market assumes no change in the cash rate in the next twelve months.

No-one really knows when the rebuilding of earthquake-affected Christchurch will get underway, as there were quite severe aftershocks throughout December. But as long as the NZD30b project remains on the cards (up to 15% of GDP) the next move remains up for the OCR, however distant that may be, which remains a strong bedrock for the NZD.

Overall, we expect the NZD to trade in a slightly lower trading range of USD0.75-0.81 this year. One forecast that remains unchanged, however, is while we forecast the RBA to slash the cash rate by an additional 75bp this year and the RBNZ remains on hold, we expect the NZD to outperform the AUD, and our year-end AUDNZD target of 1.23 remains unchanged.

*Annette Beacher, Head of Asia-Pacific Research*  
**+65 6500 8047**



NEW ZEALAND DOLLAR FUNDAMENTALS			
Interest Rate Spreads	+	Business Cycle	N
Inflation Differential	+	Fiscal Balances	N
Current Account	-	Politics	N

Legend: - is negative, + is positive, N is neutral for currency

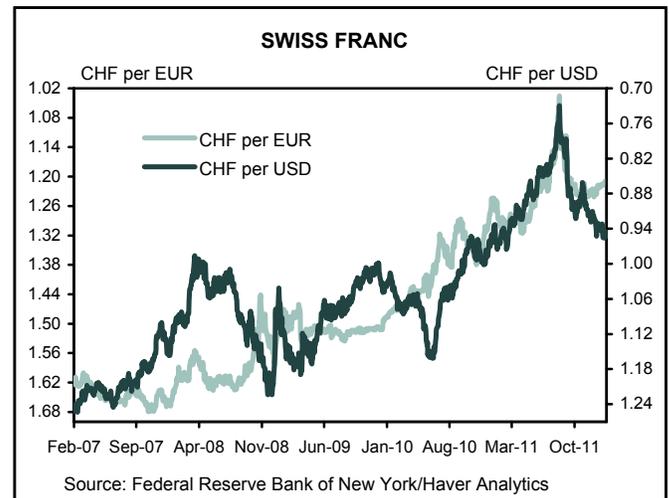
NEW ZEALAND DOLLAR OUTLOOK													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
USD per NZD	0.800	0.762	0.829	0.760	0.777	0.780	0.760	0.790	0.810	0.810	0.810	0.790	0.780
JPY per NZD	61.42	63.30	66.75	58.52	59.75	60.84	59.28	65.57	68.85	71.28	71.28	71.10	70.20
NZD per CAD	1.233	1.353	1.252	1.253	1.261	1.179	1.184	1.165	1.173	1.198	1.222	1.266	1.308
NZD per AUD	1.300	1.356	1.293	1.276	1.313	1.282	1.250	1.228	1.235	1.235	1.235	1.228	1.218

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

## SWISS FRANC

Since early September, when the Swiss National Bank made the commitment to use ‘unlimited’ resources to devalue the CHF, the trend for the franc has diverged somewhat against its two major counterparts. Against the heavily pressured EUR, the CHF’s direction has been range-bound and essentially sideways, with a flat performance since the intervention. However, against the USD – one of the only remaining safe havens – the franc has risen roughly 11% over the same period.

With the persistent fundamental concerns in Europe – and the corresponding demand for safe currencies – the most important driver of the CHF continues to be speculation on whether the SNB will act to further devalue the currency. Indications that deflationary pressures have been mounting over the past several months raised concerns that the SNB might raise the floor set against the EUR, which saw the CHF slowly grind lower through the fall. However, in mid-December, the controversy surrounding the SNB’s former Chairman Hildebrand was somewhat of a knock to their reputation which has seen investors push EUR/CHF as close to the floor at 1.20 that it has been since late September. Nevertheless, with only posturing by from the SNB so far, the floor remains untested. Indeed, the credible threat of intervention appears to have essentially removed the franc as one of the safe haven currencies – as displayed by the weak performance against the JPY and the USD since the initial action was taken.



With the risks surrounding the European crisis likely to remain acute for at least the first half of 2012, we expect that safe have currencies will continue to see strong support. With this in mind, the SNB will have to make its commitment continuously clear in order to maintain its intervention success, especially in light of the recent minor set back to its reputation. While we continue to believe that challenging the SNB’s resolve would be a risky proposition, we would also be surprised if the Bank attempted to raise its established floor given the current pressures on the EUR.

**Greg Moore, FX Strategist**  
416-982-7784

SWISS FRANC OUTLOOK													
	Spot Price 17/01/12	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
CHF per USD	0.951	0.919	0.840	0.911	0.939	0.953	1.025	1.000	1.000	1.000	1.000	0.963	0.963
CHF per EUR	1.211	1.301	1.219	1.220	1.217	1.220	1.250	1.250	1.300	1.300	1.300	1.300	1.300
CHF per CAD	0.938	0.947	0.872	0.868	0.920	0.877	0.922	0.920	0.950	0.970	0.990	0.963	0.982

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TDBG

SUMMARY FIXED INCOME TABLE													
	Spot Price 17/01/2012	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
<b>United States</b>													
Fed Funds Target Rate (%)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.75	1.00
3-mth T-Bill Rate (%)	0.03	0.09	0.01	0.02	0.01	0.10	0.10	0.10	0.10	0.10	0.15	0.80	1.10
2-yr Govt. Bond Yield (%)	0.22	0.82	0.46	0.24	0.24	0.25	0.30	0.35	0.50	0.80	0.95	1.15	1.55
5-yr Govt. Bond Yield (%)	0.80	2.27	1.76	0.95	0.83	0.85	1.10	1.40	1.55	1.65	1.70	1.95	2.10
10-yr Govt. Bond Yield (%)	1.88	3.47	3.16	1.91	1.88	1.90	2.20	2.65	2.75	2.75	2.80	3.00	3.25
30-yr Govt. Bond Yield (%)	2.92	4.51	4.37	2.91	2.89	2.80	3.30	3.90	4.00	4.05	4.10	4.20	4.30
10-yr-2-yr Govt. Spread (%)	1.66	2.65	2.70	1.67	1.64	1.65	1.90	2.30	2.25	1.95	1.85	1.85	1.70
<b>Canada</b>													
Overnight Target Rate (%)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.75	2.00	2.50
3-mth T-Bill Rate (%)	0.97	0.96	0.90	0.82	0.80	0.90	0.90	0.95	1.00	1.30	1.80	2.10	2.60
2-yr Govt. Bond Yield (%)	1.29	1.83	1.59	0.89	0.96	0.95	0.95	1.15	1.40	1.80	2.20	2.70	3.10
5-yr Govt. Bond Yield (%)	1.95	2.77	2.33	1.40	1.28	1.25	1.30	1.75	2.10	2.30	2.60	3.00	3.30
10-yr Govt. Bond Yield (%)	2.53	3.35	3.11	2.16	1.94	1.90	2.00	2.45	2.75	3.25	3.40	3.60	3.70
30-yr Govt. Bond Yield (%)	2.73	3.76	3.55	2.77	2.49	2.40	2.50	3.10	3.60	3.80	3.85	4.05	4.10
10-yr-2-yr Govt. Spread (%)	1.24	1.52	1.52	1.27	0.98	0.95	1.05	1.30	1.35	1.45	1.20	0.90	0.60
<b>United Kingdom</b>													
Bank Rate Target (%)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.75	1.00	1.25	1.50
3-mth T-Bill Rate (%)	0.48	0.63	0.54	0.53	0.55	0.55	0.70	0.70	0.70	0.95	1.20	1.45	1.70
2-yr Gilt Yield (%)	0.39	1.36	0.83	0.58	0.50	0.45	0.55	0.80	1.40	1.55	1.80	2.10	2.30
5-yr Gilt Yield (%)	0.99	2.44	2.07	1.37	1.00	0.85	1.10	1.60	2.50	2.90	3.10	3.30	3.50
10-yr Gilt Yield (%)	1.96	3.69	3.38	2.43	2.10	1.95	2.05	2.40	3.10	3.35	3.70	4.10	4.30
30-yr Gilt Yield (%)	2.96	4.36	4.29	3.55	3.10	2.90	3.35	3.90	4.30	4.50	4.70	4.90	4.90
10-yr-2-yr Gilt Spread (%)	1.57	2.33	2.55	1.85	1.60	1.50	1.50	1.60	1.70	1.80	1.90	2.00	2.00
<b>Australia</b>													
Cash Target Rate (%)	4.25	4.75	4.75	4.75	4.25	4.00	3.50	3.50	3.50	3.50	3.50	3.75	4.25
3-mth Bank Bill Rate (%)	4.40	4.92	4.96	4.77	4.50	4.25	3.75	3.75	3.80	3.90	4.00	4.25	4.30
3-yr Govt. Bond Yield (%)	3.26	5.11	4.84	3.64	3.11	2.90	2.70	2.80	2.90	3.10	3.20	3.50	3.80
5-yr Govt. Bond Yield (%)	3.40	5.30	4.98	3.78	3.37	3.20	3.00	3.10	3.25	3.35	3.40	3.55	3.95
10-yr Govt. Bond Yield (%)	3.78	5.48	5.20	4.21	3.95	3.70	3.60	3.75	3.75	3.80	3.90	4.20	4.50
10-yr-3-yr Govt. Spread (%)	0.52	0.38	0.36	0.57	0.84	0.80	0.90	0.95	0.85	0.70	0.70	0.70	0.70
<b>New Zealand</b>													
Cash Target Rate (%)	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.00	3.25	3.50	3.75	4.00
3-mth T-Bill Rate (%)	2.72	2.63	2.65	2.87	2.70	2.70	2.70	2.75	3.20	3.60	3.75	4.00	4.30
2-yr Govt. Bond Yield (%)	2.79	4.40	3.97	3.33	2.70	2.70	2.70	2.80	3.40	3.70	3.90	4.20	4.60
4-yr Govt. Bond Yield (%)	3.38	5.20	4.65	3.98	3.29	3.00	3.00	3.20	3.60	3.90	4.10	4.40	4.80
10-yr Govt. Bond Yield (%)	3.87	5.66	5.00	4.42	3.78	3.90	3.80	3.95	4.00	4.10	4.30	4.60	5.00
10-yr-2-yr Govt. Spread (%)	1.09	1.26	1.03	1.09	1.08	1.20	1.10	1.15	0.60	0.40	0.40	0.40	0.40

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period. Source: Bloomberg, TDBG

SUMMARY FOREIGN EXCHANGE TABLE														
		Spot Price 17/01/12	2011				2012				2013			
			Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
<b>Exchange rate to U.S. dollar</b>														
Japanese yen	JPY per USD	76.81	83	81	77	77	78	78	83	85	88	88	90	90
Euro	USD per EUR	1.273	1.416	1.450	1.339	1.296	1.280	1.220	1.250	1.300	1.300	1.300	1.350	1.350
U.K. pound	USD per GBP	1.534	1.603	1.605	1.557	1.554	1.524	1.470	1.524	1.585	1.566	1.566	1.688	1.688
Swiss franc	CHF per USD	0.951	0.919	0.840	0.911	0.939	0.953	1.025	1.000	1.000	1.000	1.000	0.963	0.963
Canadian dollar	CAD per USD	1.014	0.971	0.963	1.050	1.020	1.087	1.111	1.087	1.053	1.031	1.010	1.000	0.980
Australian dollar	USD per AUD	1.039	1.033	1.072	0.970	1.020	1.000	0.950	0.970	1.000	1.000	1.000	0.970	0.950
NZ dollar	USD per NZD	0.800	0.762	0.829	0.760	0.777	0.780	0.760	0.790	0.810	0.810	0.810	0.790	0.780
<b>Exchange rate to Euro</b>														
U.S. dollar	USD per EUR	1.273	1.416	1.450	1.339	1.296	1.280	1.220	1.250	1.300	1.300	1.300	1.350	1.350
Japanese yen	JPY per EUR	98	118	117	103	100	100	95	104	111	114	114	122	122
U.K. pound	GBP per EUR	0.830	0.883	0.903	0.860	0.834	0.840	0.830	0.820	0.820	0.830	0.830	0.800	0.800
Swiss franc	CHF per EUR	1.211	1.301	1.219	1.220	1.217	1.220	1.250	1.250	1.300	1.300	1.300	1.300	1.300
Canadian dollar	CAD per EUR	1.291	1.374	1.397	1.406	1.322	1.391	1.356	1.359	1.368	1.340	1.313	1.350	1.324
Australian dollar	AUD per EUR	1.224	1.371	1.353	1.380	1.271	1.280	1.284	1.289	1.300	1.300	1.300	1.392	1.421
NZ dollar	NZD per EUR	1.591	1.859	1.749	1.761	1.668	1.641	1.605	1.582	1.605	1.605	1.605	1.709	1.731
<b>Exchange rate to Japanese yen</b>														
U.S. dollar	JPY per USD	76.81	83	81	77	77	78	78	83	85	88	88	90	90
Euro	JPY per EUR	97.8	118	117	103	100	100	95	104	111	114	114	122	122
U.K. pound	JPY per GBP	118	133	129	120	120	119	115	127	135	138	138	152	152
Swiss franc	JPY per CHF	80.7	90.5	95.8	84.5	81.9	81.8	76.1	83.0	85.0	88.0	88.0	93.5	93.5
Canadian dollar	JPY per CAD	75.7	85.6	83.6	73.3	75.4	71.8	70.2	76.4	80.8	85.4	87.1	90.0	91.8
Australian dollar	JPY per AUD	79.8	85.9	86.3	74.7	78.4	78.0	74.1	80.5	85.0	88.0	88.0	87.3	85.5
NZ dollar	JPY per NZD	61.4	63.3	66.8	58.5	59.8	60.8	59.3	65.6	68.9	71.3	71.3	71.1	70.2
<b>Exchange rate to Canadian dollar</b>														
U.S. dollar	USD per CAD	0.986	1.030	1.038	0.952	0.980	0.920	0.900	0.920	0.950	0.970	0.990	1.000	1.020
Japanese yen	JPY per CAD	76	86	84	73	75	72	70	76	81	85	87	90	92
Euro	CAD per EUR	1.291	1.374	1.397	1.406	1.322	1.391	1.356	1.359	1.368	1.340	1.313	1.350	1.324
U.K. pound	CAD per GBP	1.56	1.56	1.55	1.63	1.59	1.66	1.63	1.66	1.67	1.61	1.58	1.69	1.65
Swiss franc	CHF per CAD	0.938	0.947	0.872	0.868	0.920	0.877	0.922	0.920	0.950	0.970	0.990	0.963	0.982
Australian dollar	AUD per CAD	0.949	0.997	0.968	0.982	0.961	0.920	0.947	0.948	0.950	0.970	0.990	1.031	1.074
NZ dollar	NZD per CAD	1.233	1.353	1.252	1.253	1.261	1.179	1.184	1.165	1.173	1.198	1.222	1.266	1.308

f: Forecast by TD Bank Group as at January 17, 2012; All forecasts are for end of period.  
Source: Federal Reserve Bank of New York, Bloomberg, TDBG

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## FINANCIAL MARKET FORECASTS

January 2011

### Interest rates (% , end of quarter)

	Actual				Forecast								Actual			Forecast		
	11Q1	11Q2	11Q3	11Q4	12Q1	12Q2	12Q3	12Q4	13Q1	13Q2	13Q3	13Q4	2009	2010	2011	2012	2013	
<b>Canada</b>																		
Overnight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.75	2.00	2.00	0.25	1.00	1.00	1.25	2.00	
Three-month	1.10	0.90	0.80	0.82	0.90	0.95	1.05	1.30	1.60	1.80	2.05	2.10	0.19	0.97	0.82	1.30	2.10	
Two-year	1.85	1.42	0.88	0.95	1.05	1.15	1.25	1.50	1.75	2.25	2.50	2.60	1.47	1.71	0.95	1.50	2.60	
Five-year	2.65	2.06	1.39	1.27	1.40	1.65	1.85	2.10	2.35	2.60	3.00	3.10	2.77	2.46	1.27	2.10	3.10	
10-year	3.25	2.91	2.15	1.94	2.30	2.40	2.45	2.55	2.75	3.00	3.15	3.25	3.61	3.16	1.94	2.55	3.25	
30-year	3.85	3.42	2.77	2.49	2.75	2.90	3.05	3.20	3.40	3.55	3.65	3.70	4.07	3.55	2.49	3.20	3.70	
Yield curve (10s-2s)	140	149	127	99	125	125	120	105	100	75	65	65	214	145	99	105	65	
<b>United States</b>																		
Fed funds	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Three-month	0.15	0.03	0.02	0.02	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.10	0.06	0.12	0.02	0.05	0.10	
Two-year	0.70	0.41	0.25	0.25	0.25	0.25	0.30	0.40	0.50	0.70	1.00	1.20	1.14	0.61	0.25	0.40	1.20	
Five-year	2.10	1.45	0.96	0.83	1.00	1.05	1.15	1.25	1.55	1.80	2.00	2.15	2.69	2.01	0.83	1.25	2.15	
10-year	3.45	2.92	1.92	1.88	2.20	2.35	2.40	2.50	2.75	3.00	3.15	3.25	3.85	3.30	1.88	2.50	3.25	
30-year	4.50	4.27	2.92	2.89	3.25	3.55	3.65	3.80	4.05	4.20	4.30	4.40	4.63	4.34	2.89	3.80	4.40	
Yield curve (10s-2s)	275	251	167	163	195	210	210	210	225	230	215	205	271	269	163	210	205	
<b>Yield spreads</b>																		
Three-month T-bills	0.95	0.87	0.78	0.80	0.85	0.90	1.00	1.25	1.55	1.75	2.00	2.00	0.13	0.85	0.80	1.25	2.00	
Two-year	1.15	1.01	0.63	0.70	0.80	0.90	0.95	1.10	1.25	1.55	1.50	1.40	0.33	1.10	0.70	1.10	1.40	
Five-year	0.55	0.61	0.43	0.44	0.40	0.60	0.70	0.85	0.80	0.80	1.00	0.95	0.08	0.45	0.44	0.85	0.95	
10-year	-0.20	-0.01	0.23	0.06	0.10	0.05	0.05	0.05	0.00	0.00	0.00	0.00	-0.24	-0.14	0.06	0.05	0.00	
30-year	-0.65	-0.85	-0.15	-0.40	-0.50	-0.65	-0.60	-0.60	-0.65	-0.65	-0.65	-0.70	-0.56	-0.79	-0.40	-0.60	-0.70	

### Exchange rates (% , end of quarter)

		Actual				Forecast						Actual			Forecast
		11Q1	11Q2	11Q3	11Q4	12Q1	12Q2	12Q3	12Q4	13Q1	13Q2	2009	2010	2011	2012
Australian dollar	AUD/USD	1.03	1.07	0.97	1.03	1.03	1.03	1.02	1.01	1.00	0.99	0.69	1.02	1.03	1.01
Brazilian real	USD/BRL	1.63	1.56	1.88	1.86	1.80	1.83	1.85	1.85	1.85	1.85	2.32	1.66	1.86	1.85
Canadian dollar	USD/CAD	0.97	0.96	1.05	1.02	1.03	1.02	1.01	1.00	0.98	0.96	1.26	1.00	1.02	1.00
Renmibi	USD/CNY	6.55	6.46	6.38	6.29	6.15	6.05	5.95	5.85	5.80	5.75	6.83	6.59	6.29	5.85
Euro	EUR/USD	1.42	1.45	1.34	1.30	1.30	1.29	1.28	1.27	1.26	1.26	1.33	1.34	1.30	1.27
Yen	USD/JPY	83	81	77	77	73	70	73	75	77	79	99	81	77	75
Mexican peso	USD/MXN	11.91	11.71	13.90	14.00	12.75	12.50	12.50	12.50	12.50	12.50	14.17	12.36	14.00	12.50
New Zealand dollar	NZD/USD	0.76	0.83	0.76	0.78	0.78	0.79	0.77	0.77	0.77	0.77	0.56	0.78	0.78	0.77
Swiss franc	USD/CHF	0.92	0.84	0.91	0.94	0.95	0.97	0.98	0.99	1.00	1.01	1.14	0.93	0.94	0.99
U.K. pound sterling	GBP/USD	1.60	1.61	1.56	1.55	1.55	1.55	1.56	1.59	1.59	1.62	1.43	1.56	1.55	1.59

Note: Exchange rates are expressed in units per USD, with the exception of the Euro, GBP, AUD, and NZD, which are expressed in USD per local currency unit. Source: Reuters, RBC Economics Research forecasts

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ECONOMIC FORECAST DETAIL – CANADA

December 6, 2011

Real growth in the economy

Quarter-over-quarter annualized percent change unless otherwise indicated

	Actual			Forecast								Actual		Forecast			
	2011			2012				2013				year-over-year % change		year-over-year % change			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2009	2010	2011	2012	2013
Consumer spending	-0.1	2.1	1.2	2.3	2.4	2.2	2.1	2.1	2.5	2.4	2.2	2.2	0.4	3.3	1.9	2.1	2.3
Durables	-6.5	2.1	-1.5	6.0	4.3	4.3	4.3	4.2	5.8	5.4	5.1	4.8	-1.9	4.4	0.6	3.7	5.0
Semi-Durables	0.2	-1.0	4.1	1.0	2.5	1.5	1.7	1.7	2.8	2.5	1.5	1.5	-2.3	5.0	1.4	1.9	2.1
Non-durables	-0.8	0.2	1.8	1.0	2.3	1.8	1.7	1.7	2.1	2.1	1.9	2.0	0.8	1.8	0.8	1.7	1.9
Services	1.6	3.3	1.1	2.2	2.0	2.0	1.8	1.8	1.9	1.9	1.9	1.9	1.1	3.5	2.8	2.0	1.9
Government expenditures	-0.8	0.9	0.0	-2.9	-1.1	0.0	0.7	1.2	0.2	0.2	0.2	0.2	4.3	4.7	1.2	-0.6	0.5
Residential investment	6.7	1.6	10.9	3.1	-2.1	-1.7	0.6	1.2	0.5	0.8	2.3	3.3	-8.0	10.2	2.6	1.3	0.9
Business investment	12.3	14.6	-3.6	7.2	6.1	7.1	6.8	6.7	7.9	7.0	6.9	6.9	-20.8	7.3	12.0	5.8	7.1
Non-residential structures	10.3	-0.9	4.4	8.8	8.1	8.3	8.1	8.1	8.1	7.5	7.0	7.0	-22.2	2.8	9.9	7.2	7.8
Machinery & equipment	14.5	32.7	-11.0	5.5	4.0	5.8	5.5	5.3	7.7	6.4	6.7	6.7	-19.5	11.8	14.2	4.4	6.4
Final domestic demand	1.5	3.1	0.9	1.6	1.6	1.9	2.2	2.3	2.4	2.3	2.3	2.3	-2.1	4.5	2.8	1.8	2.3
Exports	6.2	-6.4	14.4	7.4	9.4	7.3	6.9	6.5	5.9	6.7	6.3	5.9	-13.8	6.4	4.6	7.7	6.4
Imports	8.4	13.6	-3.2	4.1	4.7	4.4	5.4	5.5	4.3	5.5	5.8	5.8	-13.4	13.1	6.6	4.2	5.2
Inventories (change in \$b)	9.9	20.8	10.3	8.3	8.0	7.5	7.7	8.1	7.9	8.0	7.4	7.0	-0.5	8.9	12.3	7.8	7.6
<b>Real gross domestic product</b>	<b>3.5</b>	<b>-0.5</b>	<b>3.5</b>	<b>2.0</b>	<b>2.9</b>	<b>2.6</b>	<b>2.6</b>	<b>2.7</b>	<b>2.8</b>	<b>2.6</b>	<b>2.2</b>	<b>2.2</b>	<b>-2.8</b>	<b>3.2</b>	<b>2.3</b>	<b>2.5</b>	<b>2.6</b>

Other indicators

Year-over-year percent change unless otherwise indicated

Business and labour

Productivity	0.7	0.5	0.6	0.9	0.9	1.8	1.5	1.1	1.0	1.1	1.0	1.0	0.6	1.3	0.6	1.3	1.0
Pre-tax corporate profits	13.0	15.1	17.0	9.7	10.1	15.2	13.7	15.0	13.1	13.2	12.9	12.3	-33.1	21.2	13.6	13.5	12.9
Unemployment rate (%)*	7.8	7.5	7.2	7.3	7.3	7.2	7.1	7.1	7.0	7.0	6.9	6.9	8.3	8.0	7.5	7.2	7.0

Inflation

Headline CPI	2.6	3.4	3.0	2.7	1.9	1.5	1.8	1.8	1.9	2.1	2.1	2.1	0.3	1.8	2.9	1.7	2.1
Core CPI	1.3	1.6	1.9	2.0	1.9	1.8	1.8	1.8	1.9	1.9	2.0	2.0	1.7	1.8	1.7	1.8	2.0

External trade

Current account balance (\$b)	-41	-65	-49	-43	-33	-30	-28	-27	-23	-22	-22	-22	-45	-51	-49	-29	-22
% of GDP	-2.4	-3.8	-2.8	-2.5	-1.9	-1.7	-1.6	-1.5	-1.3	-1.2	-1.2	-1.1	-3.0	-3.1	-2.9	-1.6	-1.2
Housing starts (000s)*	178	192	205	198	187	185	185	184	183	183	183	183	149	190	193	185	183
Motor vehicle sales (mill., saar)*	1.61	1.62	1.60	1.63	1.64	1.64	1.65	1.65	1.67	1.69	1.71	1.72	1.48	1.58	1.62	1.64	1.70

\*\*Quarterly average

Source: Statistics Canada, RBC Economics Research forecasts

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# Forecast addendum: The Fab Five

**Bank of America**  
**Merrill Lynch**

Sheryl King  
Canada Economist  
Merrill Lynch (Canada)  
sheryl.king@baml.com

+1 416 369 8756

## Lower GDP outlook implies easing ahead

We have shaved our GDP forecasts for 2012 and 2013 to 1.6% and 2.4%, respectively, as we incorporate several new pieces of information. Despite the lower growth outlook, the Bank of Canada will likely hold off cutting rates until financial market turmoil stemming from the Eurozone warrants such a move. At this point, we have penciled the rate cuts in 3Q 2012, but emphasize this is a place-holder for our directional view, rather than a prediction of when the markets will start to roil and prompt the BoC to step in and cut rates.

## Five new developments shave 0.5ppt from 2012

There are five new developments that we have incorporated into our new forecasts; three negative factors and two positive that, in net, take our 2012 GDP prediction down by 0.5ppt and 2013 down by 0.2ppt. At this point, we are only partially scaling in the implications of the new information, which, in net, could take 0.7ppt from 2012 GDP growth. Thus, there is downside risk to these new GDP forecasts if no offsetting upside surprises come to light.

## Inflation sticky until 4Q

Though consumer spending will be sluggish for most of the year, it will take awhile for the softening to translate into lower inflation. However, we believe that the trend will turn in the Bank's favour by mid-year, driving core CPI temporarily below the 2% target by late summer, in our view.

## Investment implications - spread-limits

The implication for bonds is, in a nut-shell, expect low for long. Ahead of policy easing, we expect to see the 2s5s curve flatten to about 20bps, then steepen by about 80bps, as BoC executes the rate cuts. Our end-of-year target drops significantly, to just 2.0% on the 10-year, down from 2.75% previously. The weaker commodity price outlook suggests that earnings will be flat in 2012, versus bottom-up expectations of 17%, and rising, embedded in current equity multiples.

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Refer to important disclosures on page 6 to 7. Link to Definitions on page 5.

## Factors changing economic outlook

There are five new pieces of information that we have incorporated into our 2012 and 2013 economic outlook:

1. More momentum in US economic activity data and improving sentiment, which implies a slightly less abrupt slowing in 1H Canada GDP. Adds 0.2ppt to 2012 GDP
2. The ECB action to provide banks with liquidity through 3-year long-term repo operations. Adds 0.1ppt to 2012 GDP.
3. A lower commodity price outlook, due to the slump in natural gas. Cuts 0.4ppt from 2012 GDP.
4. European bank deleveraging to raise capital. We're assuming European banks will have to raise 200-250b euros, according to BofAML estimates. Cuts 0.6ppts from 2012 GDP (and we are assuming a linear relationship between deleveraging and GDP impact, which could, in fact, be non-linear or even parabolic).
5. The BoC remains on the sidelines, in contrast to our expectation of 75bps in cuts in 1Q. Cuts 0.1ppt from 2012 GDP if the BoC does cut rates in 2H, as we predict.

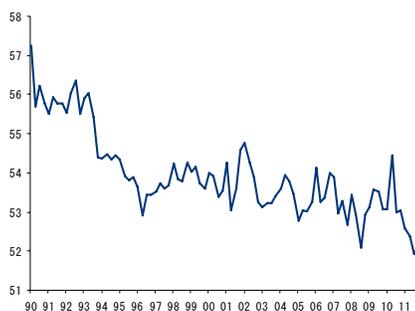
These new factors add up to a 0.7ppt hit to 2012 GDP, whereas we have only taken our tracking down by 0.5ppt. In our view, this is a prudent step, given the uncertainty around the estimates of the impacts. As such, there remains a small downside bias to our GDP forecasts, based on these assumptions alone. And, as we noted in point 4, as European banks realize that they have to raise double the capital the EBA estimates, there is a real risk that credit markets become considerably more roiled.

## Consumers tap savings and ATMs as unemployment tops 8%

Canadian consumers are being hit by a confluence of negative shocks, and will probably pull back on spending in the first half of the year, as the unemployment rate climbs to 8%. Competition and budgetary issues are forcing restructuring in 3 major sectors of the Canadian economy in 2012 – financial services, retail and public services – which, combined, represent 40% of the workforce. Combine that with a likely pullback in construction jobs, as home building softens, and employment prospects look weak indeed.

As can be seen in Chart 1, consumers have very little discretionary spending power. Discretionary income – once all the basics of life are paid for, such as food energy, housing and credit card bills -- has sunk to an all-time low. Indeed, discretionary income has been declining since 2009, by a cumulative C\$57b. Rising energy bills, mortgage payments and interest payments to lines of credit and credit cards are the main reasons why discretionary income has sunk this low.

**Chart 1: Scraping the bottom**  
(Discretionary income\* % of personal income)



Source: BofA Merrill Lynch Global Research. Discretionary income is personal income less taxes, medical costs, food and energy purchases, mortgage payments and non-mortgage interest.

The decline in saving more than accounted for the gain in consumer spending and one-third of the annualized 2.1% increase in real GDP in the first 3 quarters of 2011.

### Savings dip accounts for all consumer spending in 2011

The one upside risk we see for the consumer sector is if households go American-style and push off the day of reckoning by running down savings even further. As of the third quarter, the decline in the savings rate, to 3.5% from an average of 4.8% in 2010, boosted consumer spending by 1.2 percentage points. This contrasts to the 1.1% annualized rise in consumer spending, suggesting the decline in saving more than accounted for the gain in consumer spending and one-third of the annualized 2.1% increase in real GDP. If consumers ran down savings to the 2005 low of 1.7% this year, instead of retrenching, as dictated by rising unemployment and weak portfolio gains, it could provide a 1.7%ppt boost to consumer spending growth and a 1ppt increase to real GDP.

In addition, consumers will probably have less recourse to portfolio wealth in 2012. Equity returns, having already finished 2011 with a loss, will likely be capped by a 10% decline in commodity prices this year. Moreover, housing wealth, which has been a seemingly unstoppable source of spending power over the past several years, will probably see about a 5% correction this year.

### Uncertain outlook to restrain capex

Our model indicates that the BoC commodity price index will decline by roughly 10% in 2012, which could translate into no corporate profit growth. This will likely be a significant headwind to capital investment. The sobering outlook for conventional natural gas prices alone could flatten capital investment. The new BofAML natural gas forecast for 2012 of US\$3.30 moves prices well below the profit breakeven for producers of roughly US\$4.30.

We estimate that, at US\$3.3, natgas will shave about 2.2-2.7ppt from capex investment and 0.3ppt from annual GDP. The BofAML Canada energy analyst estimates that capex spending in the sector will decline by about 35% for Encana, which a pure natgas play in Canada. If we extrapolate this sensitivity to the entire sector, it shaves 0.4 to 0.5ppt from the contribution to GDP from capex investment. We'd also anticipate about 1100 job cuts (C\$50m in lost income).

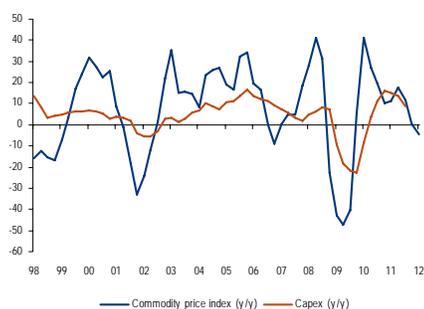
The hit to capital investment would be partly offset by a \$250m gain in discretionary consumer spending, for a 0.1ppt boost to GDP from higher consumer spending. Since the industry is partly hedged at higher natgas prices (ECA is 60% hedged at US\$5.80, for example), the impact on capex will probably start showing up in 2H2012 and into 2013. The current account could rise to a 2-year high of 3.8% of GDP. All the analysis assumes no change to the currency outlook, which should depreciate, given this new outlook for natgas. Since these natgas forecasts are quite similar to the NG1 futures strip, the currency may already be reflecting this in lower terms of trade. However, risks to the natural gas outlook remain to the downside, with the BofAML energy team seeing risks of a brief dip US\$2.00, which could put further downward pressure on CAD.

### Trade still a headwind as US sputters

The high value of the currency amid weak commodity prices and sluggish US economic growth implies that exports will be at best flat in 2012. The diverging trends in commodity and currency markets this year highlight the issue.

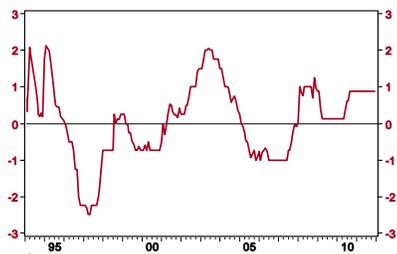
The latest commodity price data from the BoC show that Canada is not benefiting from the commodity boom as natural gas prices continue to pull back. The BoC commodity price index is down 3.4% since the start of the year. This stands in contrast to the widely watched CRB commodity price index, which is up 3.6% over the same period. The divergence is explained by the heavy weight that conventional natural gas prices have in the BoC index and that natural gas prices have slipped by 10% since December.

Chart 2: Where commodities go...



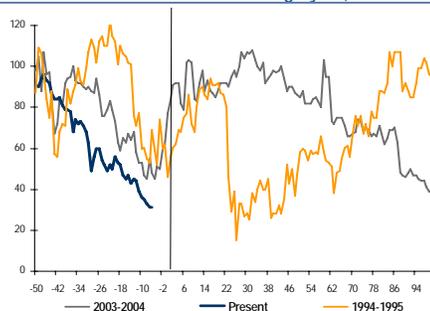
Source: Statscan, BofA Merrill Lynch Global Research.

Chart 3: Policy rate spread  
(CAD overnight rate – Fed funds, percent)



Source: Bank of Canada, Federal Reserve, BofA Merrill Lynch Global Research.

Chart 4: 2s/5s approach hard landing zone  
(0 = first BoC rate cut in the easing cycle)



Source: Statscan, BofA Merrill Lynch Global Research.

Therefore, the recent rise in CAD cannot be attributed to improving terms of trade and is instead more flight-to-quality and speculative in nature. Because of the weak outlook for natural gas, we expect the BoC commodity price index to drop by 10% in 2012.

## Market implications - spread limits

Despite the lower growth outlook, the Bank of Canada will likely hold off cutting rates until financial market turmoil stemming from the Eurozone warrants such a move. At this point, we have penciled the rate cuts in 3Q 2012, but emphasize that this is a place-holder for our directional view rather than a prediction of when the markets will start to roil and prompt the BoC to step in and cut rates. But since European banks need to raise capital by June, at which time the US debt debate and downgrade threat will no doubt be once again heating up, 3Q 2012 could easily be the tipping point for the financial markets – and the BoC.

This week, the Fed eased monetary policy for the fourth time since last September. The easing came in the form of a signaled intention to leave monetary policy on hold for the better part of 3 years. Risk-based currencies, such as the Canadian dollar, continue to drive higher on the news. While the actual spread between the Canadian overnight rate and Fed funds is 88bps, the effective rate is considerably larger, at roughly to 200-250bps. This puts the divergence between Fed and Canadian monetary policy at the upper end of the Bank of Canada's tolerance range. We think the main driver of rate cuts from the BoC will be deteriorating events in Europe, but diverging monetary policy and upward pressure on the Canadian dollar add to the [pressure on the BoC to ease](#).

Moreover, arguments that Fed easing is a boon to Canada in the form of lower-than-normal longer-term interest rates are less valid at this time, since longer-dated Canada bond yields are reacting less and less to every new Fed initiative. Our fair value bond-spread models, based on relative inflation, short rates and government debt, suggest that longer rate spreads to the US have now moved significantly above fair value. The 30-year bond and the 10-year note fair values are 80 and 40 bps, respectively, in contract to current spreads of +10 on the 10-year note and -46bps for the 30-year.

## Positioning for curve steepening

As the market moves further to pricing in a hard landing, we think the 2s5s curve has some more room to flatten and could go as low as 20bps on spot rate. This sets the curve up for steepening of about 60-80bps going into the end of the year. 20bps on the 2s5s curve would be consistent with the market pricing in a hard landing, [since the option premium](#) due to the low level of interest rates biases the curve about 30-35bps steeper than it otherwise would be. Currently, the spot curve is around 33bps and forwards are priced about 10bps higher than that. Hence, there is a further 20-40bps of steepening to be priced into forwards.

27 January 2012

**Table 1: Forecast summary**

	11Q4	121Q	12Q2	12Q3	12Q4	2010	2011	2012	2013
<b>Economy (q/q % saar)</b>									
GDP	3.0	0.7	0.7	1.4	1.8	3.2	2.42	1.6	2.4
Consumption	3.0	-0.4	-0.2	0.6	1.0	3.4	1.9	0.8	1.4
Government	-2.4	0.0	0.2	0.2	0.2	4.7	1.1	-0.3	1.4
Housing Investment	2.5	2.0	0.0	-3.0	-3.0	10.2	2.6	1.8	-1.0
Business Investment	7.0	1.4	-1.2	-5.9	-5.5	8.5	12.7	0.6	-2.5
Exports	2.0	-5.0	1.5	-3.0	-2.3	6.4	4.3	0.1	2.6
Imports	2.5	-6.0	-3.3	-5.0	-4.2	13.1	6.5	-2.2	-0.5
Inventory (C\$bn)	13.7	14.6	12.7	16.8	21.3	8.9	13.7	16.4	23.8
Nominal GDP	4.2	0.7	1.5	2.1	4.6	6.3	5.5	2.5	4.6
<b>Fiscal Balance (\$B)</b>									
(% GDP)						-33.4	-27.7	-26.3	-19.1
Debt (% GDP)						-2.1	-1.6	-1.5	-1.0
						33.9	33.7	34.4	34.1
<b>Trade (C\$bn)</b>									
Merchandise Trade Balance	-2.3	-2.2	-1.6	-1.0	0.8	-2.2	-0.9	-1.0	0.0
Current Account Balance	-58.7	-56.4	-51.8	-47.5	-38.2	-50.9	-53.3	-48.5	-46.0
(% of GDP)	-3.4	-3.2	-3.0	-2.7	-2.2	-3.1	-3.1	-2.8	-2.7
<b>Inflation (yr/yr % change)</b>									
Consumer Price Index	2.7	2.5	2.1	1.8	1.5	1.8	2.9	2.0	1.8
CPI-X	2.0	2.3	2.2	1.9	1.6	1.7	1.7	2.0	2.0
GDP Deflator	1.2	0.0	0.7	0.7	2.9	3.0	3.1	0.9	2.2
<b>Financial (End of period, %)</b>									
Overnight Rate	1.00	1.00	1.00	0.25	0.25	1.00	1.00	0.25	2.00
3-mth	0.82	0.80	0.50	0.25	0.30	0.97	0.82	0.30	2.10
2-yr	0.95	0.95	0.70	0.65	0.40	1.67	0.95	0.40	2.40
5-yr	1.27	1.35	0.90	1.05	1.20	2.41	1.27	1.20	2.80
10-yr	1.94	2.20	1.85	1.75	2.00	3.11	1.94	2.00	3.00
30-yr	2.49	2.65	2.60	2.90	3.00	3.52	2.49	3.00	3.90
<b>USD-CAD</b>									
	1.02	1.09	1.09	1.07	1.05	1.01	1.02	1.05	
<b>Other Indicators</b>									
Employment (Q-Q, thous.)	-14	16	9	-45	29	279	263	8	280
Unemployment Rate (%)	7.5	7.7	7.9	8.3	8.2	8.0	7.5	8.0	7.7
Housing Starts (000s)	199	190	170	150	170	192	193	170	185

Source: BofA Merrill Lynch Global Research

## Link to Definitions

### Macro

 Click [here](#) for definitions of commonly used terms.

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27 January 2012

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**2012.1 RR BCUC.48.1.2 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section C, pp. 5-4 to 5-8**  
**Calculation of the New Money Rate**

**Please compare and contrast the updated figures and the existing information available up to September 13, 2011, which was included in the Application.**

**Response:**

Compared to September 13, 2011, the New Money Rate, based on most recent forecasts, is lower by 0.63%. This is due exclusively to declining interest rate expectations contained in updated yield forecasts as provided in response to information request 2012.1 RR BCUC.48.1. Please see the table below that shows a decline in all forecast elements.

	<b>Weighting</b>		<b>Formula for Yield</b>	<b>Yields</b>
	72%	x	Forecast 3-year Government of Canada bond yield calculated from multi-dealer survey	Down 0.66%
+	23%	x	Forecast 30-year Government of Canada bond yield from multi-dealer survey + 5.5%	Down 0.62%
+	5%	x	Forecast Canadian inflation from multi-dealer survey + 4.25%	Down 0.28%
<b>Change in New Money Rate for the 2012 policy year</b>				<b>Down 0.63%</b>

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**2012.1 RR BCUC.48.2 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C, pp. 5-4 to 5-8  
Calculation of the New Money Rate**

**What would be the new PY 2012 actuarial rate indication if the New Money Rate is calculated using most recent bond yields and inflation data available from the six financial forecasts, holding all else equal?**

**Response:**

Based on the response to information request 2012.1 RR BCUC.48.1, the New Money Rate calculated using the most recent forecast information is 3.13%. Using the updated New Money Rate would have an impact of +1.7 percentage points on the Basic insurance actuarial rate indication.

Please also see the response to information request 2012.1 RR BCUC.19.1, Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application and information requests.

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**2012.1 RR BCUC.48.3 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C, pp. 5-4 to 5-8  
Calculation of the New Money Rate**

**Should the new PY 2012 actuarial rate indication with the updated New Money Rate using the most recent data (if any different) be considered for the permanent rate increase? Why or why not?**

**Response:**

The actuarial rate level indication analysis filed with the Commission in the Application indicating a required Basic insurance rate increase of 11.2% was performed according to accepted actuarial practice as of the filing date of December 1, 2011. ICBC believes that the Commission should rely on the information filed in the Application, which has been certified by ICBC's Filing Actuary and Reviewing Actuary.

As requested by the Commission, ICBC has also provided an updated actuarial rate level indication of 14.5% in the response to information request 2012.1 RR BCUC.5.1, which incorporates updated information known to ICBC as of the information request response date of March 12, 2012. It should be noted that the updated actuarial rate level indication analysis has not been subject to the same level of review as the actuarial rate level analysis included in the Application, and includes the results to date of investigative analysis which is ongoing. ICBC is still working to more fully understand the factors which have been contributing to the recent increases in bodily injury claim frequency. If ICBC were to produce a fully updated and reviewed actuarial rate level indication analysis, more time would be required.

Where individual assumptions are altered for the purpose of testing the sensitivity of the rate indication, this does not necessarily result in an updated rate indication that accords with accepted actuarial practice. Section 1720 of the Standards of Practice of the Canadian Institute of Actuaries requires that an actuary select assumptions that are independently reasonable, and appropriate in the aggregate. Alternative assumptions may be selected for sensitivity testing, as has been done in the response to information request 2012.1 RR BCUC.48.2 and other information requests from the Commission and Intervenors. In performing sensitivity tests on individual assumptions, other assumptions are held constant, regardless of whether they are reasonable in light of the most recent information.

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Although ICBC believes that the Commission should rely on the actuarial rate level indication analysis provided in the Application, an updated actuarial rate level indication has also been provided in response to information request 2012.1 RR BCUC.5.1 that considers the most recent information and incorporates the results to-date of ongoing investigative analysis. If the Commission determines that it should rely on more recent data than that submitted in the Application on December 1, 2011, it would be more appropriate to consider the updated actuarial rate level indication than to apply the impact of updating an individual assumption.

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**2012.1 RR BCUC.48.4 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C, pp. 5-4 to 5-8  
Calculation of the New Money Rate**

**48.4 Please explain if there are any linkages between the existing and updated New Money Rate in relation to MCT levels.**

**48.4.1 If so, please calculate the new MCT level with the updated New Money Rate.**

**Response:**

**48.4**

There is no linkage between the existing and updated New Money Rate in relation to Minimum Capital Test (MCT) ratio. The New Money Rate is a prospective rate that represents the investment yield expected to be achieved on future premiums. It therefore does not factor into the calculation of the MCT ratio.

**48.4.1**

The most recent MCT ratio has been provided in the response to information request 2012.1 RR BCUC.20.2.

**2012.1 RR BCUC.49.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C, pp. 5-3 to 5-4  
Formula for the New Money Rate**

In paragraph 11, ICBC states:

**“In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.”**

**Using the New Money Rate formulae, please demonstrate a comparison for the New Money Rate for the last three years that compares the historical actual yield and forecast yield.**

**Response:**

Using the New Money Rate formulae, the following is a comparison of the forecasted New Money Rate compared to the New Money Rate calculated using actual yields for the last three years. Below this table are the detailed calculations.

	<b>Forecasted New Money Rate</b>	<b>New Money Rate Using Actual Yields</b>	<b>Difference</b>
<b>Policy Year June 1, 2008 to May 31, 2009</b>	5.01%	4.27%	-0.74%
<b>Policy Year Oct 1, 2009 to Sep 30, 2010</b>	4.24%	4.39%	0.15%
<b>Policy Year Nov 1, 2010 to Oct 31, 2011</b>	4.93%	3.67%	-1.26%

<b>Policy Year June 1, 2008 to May 31, 2009</b>	<b>Policy Weight</b>	<b>Actual Yield/CPI</b>	<b>Premium</b>	<b>Expected yield</b>	<b>Description of Forecast Element</b>
Bonds	72%	2.53%		2.53%	5-Yr Gov't Can Bond avg yield*
Equity	23%	3.90%	5.80%**	9.70%	30-Yr Gov't Can Bond avg yield
Real Estate	5%	0.10%	4.25%	4.35%	Annual CPI
		<b>New Money Rate</b>		<b>4.27%</b>	
<b>Policy Year Oct 1, 2009 to Sep 30, 2010</b>	<b>Policy Weight</b>	<b>Actual Yield/CPI</b>	<b>Premium</b>	<b>Expected yield</b>	<b>Description of Forecast Element</b>
Bonds	72%	2.59%		2.59%	5-Yr Gov't Can Bond avg yield *
Equity	23%	3.87%	5.80%**	9.67%	30-Yr Gov't Can Bond avg yield
Real Estate	5%	1.90%	4.25%	6.15%	Annual CPI
		<b>New Money Rate</b>		<b>4.39%</b>	
<b>Policy Year Nov 1, 2010 to Oct 31, 2011</b>	<b>Policy Weight</b>	<b>Actual Yield/CPI</b>	<b>Premium</b>	<b>Expected yield</b>	<b>Description of Forecast Element</b>
Bonds	72%	1.74%		1.74%	3-Yr Gov't Can Bond avg yield *
Equity	23%	3.45%	5.50%**	8.95%	30-Yr Gov't Can Bond avg yield
Real Estate	5%	2.90%	4.25%	7.15%	Annual CPI
		<b>New Money Rate</b>		<b>3.67%</b>	

\* Selected bond reflects the duration target of ICBC bond investments.

\*\* Equity risk premium established by the Commission.

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**2012.1 RR BCUC.49.1.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C, pp. 5-3 to 5-4  
Formula for the New Money Rate**

**In paragraph 11, ICBC states:**

**“In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.”**

**Please discuss the appropriateness of the New Money Rate formulae given the above comparisons.**

**Response:**

The comparisons in the response to information request 2012.1 RR BCUC.49.1 do not shed any light on the appropriateness of the New Money Rate formula. However, these comparisons do highlight that economists cannot always accurately predict the movements in interest rates.

ICBC continues to believe that the New Money Rate formula is appropriate because the formula:

- i) Continues to reflect ICBC's long-term portfolio allocation between bonds, equity, and real estate.
- ii) Draws from a consistent set of data providers to forecast bond yields and, therefore, has limited subjectivity.
- iii) Specifies forecasts of Government of Canada bond yields that in turn can be used to derive a forecast yield on a Government of Canada bond that proxies ICBC's fixed income duration.
- iv) Makes use of an equity risk premium that has been determined by the Commission to forecast returns on its equity portfolio. This approach also limits subjectivity. ICBC is

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aware of the upcoming Commission Proceeding on Cost of Capital and will be updating the equity risk premium based on the outcome of that proceeding.

- v) Utilizes the target yield on ICBC real estate investments to forecast a yield on that component of ICBC's asset mix.

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**2012.1 RR BCUC.50.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C.1, p. 5-7, Para. 20  
Equity Risk Premium**

**In paragraph 20, ICBC states:**

**“The market equity risk premium used in the calculation of the New Money Rate of 5.5% is established in the Commission’s Decision regarding Return on Equity and Capital Structure for Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc, and Terasen Gas (Whistler) Inc., dated December 16, 2009. [Footnote 8]”**

**Does ICBC consider the equity risk premium of 5.5% remain to be appropriate?**

**Response:**

Yes, ICBC believes the equity risk premium (ERP) of 5.5% is reasonable, but it falls within the upper range of estimates put forth by recognized experts in the field.

The ERP is a theoretical concept and is not definitive. In 2001, and again in 2011, the Research Foundation of the Chartered Financial Analysts (CFA) Institute brought together a panel of experts to study the ERP question. In 2001, the average real ERP from 19 expert submissions was 3.7%, with a range of 0% to 7%. The CFA Institute publication that followed the 2011 follow-up study, titled “Rethinking the Equity Risk Premium”, concludes that “most agree that it is in the 4% range” over the next few years, but there is a “great deal of variation among the authors on the stability and term structure of the ERP”.

**2012.1 RR BCUC.51.1 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section C.2, p. 5-9, Figure 5.9**  
**Yield on Basic Equity**

Figure 5.9 shows the Yield on Basic Equity for the 2012 policy year, calculated based on the investment portfolio profile as at June 30, 2011.

51.1 Please update Figure 5.9 to the end of 2011. Please include updates to Actual Yields, Current Weighting, and Weighted Yield of all components to calculate an updated Yield on Basic Equity as at December 31, 2011.

51.1.1 Please compare and contrast the updated Yield on Basic Equity with existing information as at June 30, 2011, which was included in the Application.

Response:

51.1

**Calculation of the Yield on Basic Equity for the 2012 Policy Year as of December 31, 2011**

	Current Weightings		Formula for Yield	Actual Yields	Weighted Yield
	3.6%	x	Current Money Market Yield at Cost	0.88%	0.03%
+	62.3%	x	Current Canadian Bond Yield at Market	2.54%	1.58%
+	n/a	x	Current US Bond Yield at Market	n/a	n/a
+	9.0%	x	Current Mortgage Yield at Cost	5.29%	0.48%
+	21.5%	x	30-Year Canadian Bond Yield + 5.5%	2.49%+5.5%	1.72%
+	3.5%	x	Current Real Estate Yield at Cost	8.24%	0.29%
-			Fees for Managing Investment Portfolio		0.11%
<b>Yield on Basic Equity as at December 31, 2011 *</b>					<b>4.00%</b>

\* Differences between Current Weighting multiplied by Actual Yields and Weighted Yields are due to rounding.

### 51.1.1

The table below contrasts the calculation of Yield on Basic Equity at June 30, 2011 with the calculation at December 31, 2011. The Yield on Basic Equity at December 31, 2011 has declined by 60 basis points due to a decline in yields across all assets and due to decline in the weighting of equity investments at December 31, 2011, offset by an increase in the weighting of money market.

Asset Class	Current Weighting			Actual Yield			Weighted Yield		
	June 2011	Dec 2011		June 2011	Dec 2011		June 2011	Dec 2011	
Money Market	0.9%	3.6%	↑	0.97%	0.88%	↓	0.01%	0.03%	↑
Bond	58.8%	62.3%	↑	2.91%	2.54%	↓	1.71%	1.58%	↓
US Bond	4.6%	n/a	↑	2.17%	n/a		0.10%	n/a	
Mortgage	8.7%	9.0%	↑	5.47%	5.29%	↓	0.47%	0.48%	↑
Equity	23.5%	21.5%	↓	3.56%+ 5.5%	2.49%+ 5.5%	↓	2.13%	1.72%	↓
Real Estate	3.5%	3.5%		8.30%	8.24%	↓	0.29%	0.29%	
Fees for Managing Investment Portfolio							0.11%	0.11%	
Yield on Basic Equity							4.60%	4.00%	↓

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.51.2 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.51.2 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C.2, p. 5-9, Figure 5.9  
Yield on Basic Equity**

**Figure 5.9 shows the Yield on Basic Equity for the 2012 policy year, calculated based on the investment portfolio profile as at June 30, 2011.**

**What would be the new PY 2012 actuarial rate indication using the updated Yield on Basic Equity as of December 31, 2011, holding all else equal?**

**Response:**

If the Yield on Basic Equity were based on the investment portfolio profile as of December 31, 2011, the updated Yield on Basic Equity would be 4.00%. This would have an impact of +0.4 percentage points on the Basic insurance actuarial rate indication.

Please see information request 2012.1 RR BCUC.19.1, Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application.

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**2012.1 RR BCUC.51.3 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C.2, p. 5-9, Figure 5.9  
Yield on Basic Equity**

**Figure 5.9 shows the Yield on Basic Equity for the 2012 policy year, calculated based on the investment portfolio profile as at June 30, 2011.**

**Should the new PY 2012 actuarial rate indication using the updated Yield on Basic Equity be considered for the permanent rate increase? Why or why not?**

**Response:**

The impact of using the updated Yield on Basic Equity has been provided as a sensitivity test, but updating this assumption in isolation would not necessarily result in an updated actuarial rate indication that is appropriate in light of the most recent information available. Please see the response to information request 2012.1 RR BCUC.48.3 for discussion of actuarial standards.

ICBC believes that the Commission should rely on the information filed in the Application, which has been certified by ICBC's Filing Actuary and Reviewing Actuary. As requested by the Commission, ICBC has also provided an updated actuarial rate level indication in the response to information request 2012.1 RR BCUC.5.1 that is based on updated assumptions and considers the most recent information, and incorporates the results to-date of ongoing investigative analysis. If the Commission determines that it should rely on more recent data than that submitted in the Application on December 1, 2011, it would be more appropriate to consider the updated actuarial rate level indication than to apply the impact of updating an individual assumption.

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**2012.1 RR BCUC.51.4 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section C.2, p. 5-9, Figure 5.9  
Yield on Basic Equity**

**Figure 5.9 shows the Yield on Basic Equity for the 2012 policy year, calculated based on the investment portfolio profile as at June 30, 2011.**

**51.4 Please explain if there are any linkages between the existing and updated Yield on Basic Equity in relation to MCT levels.**

**51.4.1 If so, please calculate the new MCT level with the updated Yield on Basic Equity.**

**Response:**

**51.4**

There are linkages between the Yield on Basic Equity and the Minimum Capital Test (MCT) ratio. MCT ratio is determined by capital available and capital required, and changes in both can relate to changes in the Yield on Basic Equity. Items directly related to the Yield on Basic Equity are investment income, realized capital gains and losses, and unrealized capital gains and losses, which impact the amount of capital available; and the market value of the investment portfolio, which impacts the amount of capital required.

**51.4.1**

The most recent MCT ratio has been provided in the response to information request 2012.1 RR BCUC.20.2 and reflects the updated Yield on Basic Equity.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.52.1-2 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.52.1-2 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Appendix 5 A  
Statement of Investment Policy and Procedures as of July 28, 2011**

**ICBC in Appendix 5 A includes the most recent Statement of Investment Policy and Procedures dated July 28, 2011.**

**52.1 Have there been any changes to the Statement of Investment Policy since July 28, 2011?**

**52.2 Please provide a black line version of changes to the Statement of Investment Policy and Procedures as noted in Footnote 2 on p. 5-1.**

**Response:**

**52.1**

No.

**52.2**

Please see Attachment A – Black lined version of Statement of Investment Policy and Procedures dated July 28, 2011 in comparison with that dated April 29, 2010. Double underlined sections are inserts.



**2012.1 RR BCUC.52.1-2 – Attachment A –  
Black lined version of Statement of  
Investment Policy and Procedures dated July  
28, 2011 in comparison with that dated April  
29, 2010**

**INSURANCE CORPORATION OF BRITISH COLUMBIA**

**STATEMENT OF INVESTMENT  
POLICY AND PROCEDURES**

**~~APRIL 29, 2010~~ JULY 28, 2011**

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# INSURANCE CORPORATION OF BRITISH COLUMBIA

## Statement of Investment Policy and Procedures

### 1 PURPOSE

The purpose of this investment policy is to establish guidelines which will ensure ICBC's assets are managed prudently. The investment policy will establish eligible investments, asset allocation ranges and the discretion given to fund managers, and consequently dictate the portfolio risk return profile.

### 2 CORPORATE LIABILITY AND RISK PROFILE

ICBC is a Crown corporation offering compulsory basic automobile insurance and optional extension insurance.

As of December 31, 2009, ICBC's liabilities were profiled as follows:

	Liabilities (\$000)	Duration in Years
Basic	5,472,655	2.27
Optional	2,212,027	2.47
Total	7,684,682	2.33

For the purposes of prudence and efficiency, ICBC will continue to manage one investment portfolio for both Basic and Optional insurance businesses since the duration of the liabilities for each respective business are similar.

Like other insurers, ICBC's liabilities are subject to inflation risk and can be sensitive to price increases.

ICBC has significant cash needs due to the volatility of claims payments. However, the relative predictability and volume of premium cashflows considerably reduce ICBC's cashflow risks.

### **3 REGULATORY FRAMEWORK**

The legislative framework with respect to ICBC's obligations and responsibilities in the management of its investment portfolio is based on the "prudent person rule". This general prudent person standard is set out in section 492 of the *Insurance Companies Act (Canada)*. This standard requires ICBC to make investments for its insurance business in the manner that "a reasonable and prudent person would apply in respect of a portfolio of investments to avoid undue risk of loss and to obtain a reasonable return".

The specific statutory framework and asset class limits with respect to ICBC's investments are outlined in Section 29 of the *Insurance Corporation Act* and Section 2 of the Application of Legislation Regulation, BC Reg. 322/03 deposited.

The regulatory asset class limits applicable to ICBC's investment policy are as follows:

1. real estate investments are limited to 10% of total assets, as that term is defined;
2. the value of participating shares or other ownership interests in unincorporated businesses cannot exceed 25% of total assets;
3. investments in (1) and (2) in the aggregate cannot exceed 35% of assets; and
4. commercial and consumer lending cannot exceed 5% of total assets.

It should be noted that the ICBC investment policy may prescribe more restrictive limits than those established by the legislative framework.

### **4 ROLES AND RESPONSIBILITIES**

#### **1. ICBC Board of Directors**

Under Corporate By-Laws, the Board of Directors has the responsibilities to define and control strategies, policies and limitations related to the investment of the Corporation's funds, exercise voting rights attached to corporate securities, provide for the custody of assets, registration of securities and the disposition of investments. The execution of most of these responsibilities has been delegated to Officers of the Corporation and the ICBC Investment Committee of the Board of Directors. The Board of Directors still retains responsibility for major changes to investment policies and procedures.

## 2. ICBC Investment Committee

The Investment Committee has the following responsibilities:

- a) recommends to the Board of Directors investment policies and procedures regarding:
  - return objectives
  - risk parameters
  - asset allocation parameters
  - eligible investments;
- b) approves management's recommendation for external investment management services for the fund;
- c) approves performance benchmarks;
- d) ensures policy compliance; and
- e) monitors investment performance.

## 3. ICBC Investment Department

The ICBC Investment Department has the following responsibilities:

- a) recommends investment policies and procedures to the Investment Committee;
- b) develops investment strategies to meet investment objectives;
- c) makes all day-to-day investment decisions and handles reporting requirements as it pertains to internally managed mandates;
- d) makes portfolio rebalancing decisions
- e) ensures adequate cashflows to meet the Corporation's payment obligations;
- f) monitors the activity of external investment managers and reports on external investment managers performance to the Investment Committee;
- g) recommends the hiring and termination of the external investment managers;
- h) ensures policy compliance and investment performance is monitored and reported independently to the Investment Committee;
- i) manages costs associated with the investment portfolio; and
- j) arranges custodial and securities lending services.

## 4. External Investment Managers

The investment manager(s) have the following responsibilities:

- a) selects securities within each permitted asset class for the portion of the portfolio allocated to the manager, subject to applicable legislation and to any constraints or directives within the Statement of Investment Policy and Procedures or established by the ICBC Investment Committee;
- b) participates in a review of the Statement of Investment Policy and Procedures when requested by the Investment Committee;

- c) provides a Statement of Investment Policy and Goals for any pooled fund investments it makes;
- d) provides quarterly performance reports;
- e) informs the ICBC Investment Department of any element of the Statement of Investment Policy and Procedures or any other item that could prevent the achievement of the mandate objectives, and obtains prior approval to materially deviate from the Statement of Investment Policy and Procedures;
- f) informs the Investment Department of any changes in ownership of the firm or changes in key personnel, investment process, or style; and
- g) reconciles periodically in conjunction with the custodian the list of assets if managing portfolio assets on a segregated basis, and report any discrepancies to the Investment Department.

#### 5. Custodian

The custodian has the following responsibilities:

- a) carries out the duties of the custodian as set out in the Plan's custodial agreement and as required by law or regulation; and
- b) processes the security transactions that result from the buy and sell orders placed by the investment manager(s) or the ICBC Investment Department as applicable.

#### 6. Performance Measurer

The performance measurer has the following responsibilities:

- a) provides the Investment Committee with quarterly reports on the performance of the portfolio; and
- b) attends Investment Committee meetings at the request of the Investment Committee.

### **5 CONFLICT OF INTEREST**

All actual, potential, or perceived conflicts of interest between all parties associated with the investment of insurance assets, including officers, directors, designated employees, employees or agents of ICBC shall be disclosed before any decision regarding the specific transactions are completed. If a conflict of interest arises, the party shall disclose such a conflict to the Chair of the Investment Committee or in the Chair's absence, the acting Chair. The party must be excluded from participating in any discussion or decision related to the area of conflict.

The Secretary of the Investment Committee will be responsible for recording the declaration of conflict and will advise the Board of Directors of the details of the conflict.

Guidance on what constitutes conflicts of interest will be provided by:

1. Section 2.04 of the Corporate By-Law No. 6 dated March 3, 2005 of the Insurance Corporation of British Columbia;
2. The Insurance Corporation of British Columbia, Investment Department, Personal Trading Rules and Procedures dated November 29, 2007, for designated employees; and
3. The Insurance Corporation of British Columbia's Code of Ethics for officers and employees of ICBC.

## **6 ASSET ALLOCATION**

### Strategic Asset Mix

The strategic asset mix is used to set the total return performance benchmark for the portfolio.

It establishes the long-term combination of asset classes normally split into two major groups categorized as fixed income or equities. The fixed income category includes all interest-bearing instruments like bonds, mortgages and money market instruments. The equity category includes investments exhibiting elements of participation in ownership like common stocks and real estate.

The optimal strategic asset mix is determined based on expected rate of return for each asset class for the forecasting period and their associated range of returns expressed in standard deviations. Liquidity, risk constraints, and cashflow considerations are also incorporated in the determination of the strategic asset mix.

### Tactical Asset Mix

Tactical asset mix focuses on short-term asset allocations that attempt to increase investment return through these opportunistic shifts in asset weightings. Since tactical asset allocation can either add or detract from the overall strategic asset mix return, the extent of tactical asset mix decisions are limited by the following ranges. These ranges are set in consideration of the overall financial strength of ICBC and its sensitivity to negative or positive investment returns.

## Asset Mix Ranges

Asset Class	Tactical Minimum %	Strategic Mix %	Tactical Maximum %
<b>Fixed Income</b>	<b>69.0</b>	<b>72.0</b>	<b>76.0</b>
Money Market	0	1.0	5.0
Canadian Bonds	<del>52</del> <u>56.0</u>	<del>58</del> <u>63.</u> 0	<del>62</del> <u>68.0</u>
<del>US Bonds</del>	<del>4.0</del>	<del>5.0</del>	<del>6.0</del>
Mortgages	6.0	8.0	10.0
<b>Equity</b>	<b>20.0</b>	<b>23.0</b>	<b>25.0</b>
Canadian Equities	10.0	13.0	16.0
US Equities	4.0	5.0	6.0
EAFE Equities	4.0	5.0	6.0
<b>Real Estate</b>	<b>4.0</b>	<b>5.0</b>	<b>6.0</b>

## 7 INVESTMENT RISK

Diversification of investment risk between asset classes is provided through the asset allocation guidelines set forth in the previous section.

Investment risk guidelines within each asset class are set out in the definitions of eligible investments.

## 8 RETURN OBJECTIVES AND PERFORMANCE MEASUREMENT

The return objectives for ICBC's investment portfolio is to achieve superior investment returns through management of its assets subject to level of risk deemed appropriate by the policy.

ICBC will measure individual asset categories against the appropriate index with added excess returns. Measurement will be assessed net of associated management fees over four-year moving periods.

Below is a list of the appropriate benchmarks for each asset class and the expected incremental return for active management.

<b>ASSET CLASS BENCHMARK</b>	<b>BENCHMARK</b>	<b>TARGET EXCESS RETURN AFTER FEES</b>
<b>Fixed Income</b>		
Money Market	DEX 91-day T-Bill Index	N/A
Canadian Bonds	Weighting of: <ul style="list-style-type: none"> <li>▪ 85% of DEX Short Term Bond Index</li> <li>▪ 15% of DEX 91-day T-Bill Index</li> </ul>	+17.5 basis points
<del>US Bonds</del>	<del>100% Merrill Lynch Corporate &amp; Government, 1-5 Years Index (BVA0)</del>	<del>+20 basis points</del>
Mortgages	DEX Short Term Bond Index + 100 basis points	N/A
<b>Equities</b>		
Canadian Equities	S&P/TSX 10% Capped Composite Index	+75 basis points
US Equities	S&P 500	+50 basis points
EAFE Equities	MSCI EAFE Index	+100 basis points
<b>Real Estate</b>	ICREIM/IPD Canadian Index	N/A

In addition, the total fund investment return will be expected to exceed the weighted average of benchmark returns for the strategic asset mix plus an excess return over four years, net of management fees and operating expenses, of 0.28428275% effective July 30, 200928, 2011 on a go forward basis.

Investment returns will be reported to the Investment Committee on a quarterly basis. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Investments that are not regularly traded should be valued at least annually by the custodian in cooperation with each investment manager. When valuing less liquid assets, the custodian and investment manager shall consider at least one of the following. The method used will be dependent on the asset type.

1. bid and ask prices;
2. previous transaction prices;
3. independent appraisal values
4. discounted cash flow;
5. the valuation of comparable publicly-traded investments; and
6. other valuation techniques judged relevant.

The valuation of securities within a pooled fund that are not regularly traded will be subject to the investment policies of the pooled fund.

Performance standards established by the CFA Institute will be applied.

## **9 FUND MANAGEMENT STRUCTURE AND INVESTMENT MANAGER MANDATES**

### Manager Structure

The ICBC Investment Committee has adopted a diversified manager structure which employs a mix of active and passive styles. Active management has been adopted for a small portion of assets because it provides the opportunity to outperform market indices over the long run. Passive management, in the form of index or enhanced index mandates, has been adopted for a portion of the assets because it minimizes the risk of underperformance relative to a benchmark index and is less expensive than active management. Specialist managers are used where there is a potential added value benefit.

### Rebalancing

The ICBC Investment Department is responsible for portfolio rebalancing. Portfolio assets will be rebalanced whenever actual allocations to an asset class fall outside the maximum and minimum allocation or whenever it is deemed otherwise appropriate. Rebalancing may be suspended if market conditions, such as excessive volatility or illiquidity, preclude cost effective rebalancing. Should such conditions occur, the ICBC Investment Committee and the Board will assess the Fund's asset allocation and market conditions with regard to

the appropriateness of rebalancing and approve deviations from the tactical asset mix range as required.

### Evaluation of Investment Managers

Investment managers will be reviewed at least quarterly. All external investment managers will be monitored in accordance with the ICBC External Investment Manager Selection, Monitoring and Termination Policy.

Investment manager(s) will be measured, before fees, on a quarterly basis by an external performance measurer. Investment manager(s), excluding index managers, will be expected to exceed their applicable index, including an additional return net of fees for active management, and exceed the median manager, as applicable. Quarterly and annual returns will be monitored, but the four year moving average return will be the primary measurement. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Performance standards established through the CFA institute (GIPS standards) will be applied.

## **10 ELIGIBLE INVESTMENTS**

### **10.1 MONEY MARKET INVESTMENTS**

Money market investments will be held for cash management purposes and will be ~~limited to treasury bills.~~consolidated with the bond portfolio for the purpose of measuring credit quality, liquidity, and diversification as outlined in section 10.2. All non-government guaranteed issuers will be subject to the same due diligence process that is applied to credit in the bond portfolio. The following investments will be authorized for cash management purposes:

Treasury Bills; Repo; Certificates of Deposit; Bankers Acceptances; Commercial Paper

### **10.2 BOND INVESTMENTS**

ICBC can invest in secured and unsecured floating, fixed rate and inflation linked debt obligations denominated in Canadian dollars or any major foreign currency of Canadian and foreign corporations, governments and government agencies, and supranational development banks.

Private placement bonds are permitted provided it can be demonstrated that they conform to quality and diversification guidelines. For clarification purposes, private placements are bond issues that are legally private, subscription based and/or do not have a broad issuance, liquidity, dealer support, or, are of small deal size.

## Canadian Bond Portfolio

All Canadian bond investments will comply with the following guidelines:

### Quality

All ~~domestic~~ bonds must be rated a minimum of BBB and ~~foreign~~ bonds must be rated A by a recognized rating agency. In the case of split ratings, Standard and Poor's (S&P) will be considered the appropriate rating. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

Quality constraints do not preclude the bond manager from the responsibility of performing a credit assessment on bonds purchased.

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
Federal	no restriction	no restriction
Major Province (BC, Alta, Ont, & Que)	no restriction	33% of total portfolio
Minor Province	no restriction	16% of total portfolio
Municipal	20% of total portfolio	5% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	20% of total portfolio	2% of total portfolio
Derivatives	10% of total portfolio	2% of total portfolio
Foreign	10% of total portfolio	2% of total portfolio

### Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in Government of Canada, Government of Canada Agency and major Provincial bonds at all times.

### Duration

The duration of the Canadian bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 2.5 years and the performance benchmark is a weighting of 85% of DEX Short Term Bond Index and 15% of DEX 91-day T-Bill Index.

### US Bond Portfolio

All US bond investments will comply with the following guidelines:

#### Quality

All US bonds must be rated a minimum of BBB. In the case of split ratings, Standard and Poors (S&P) will be considered the appropriate rating for US bonds. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

Quality constraints do not preclude the bond manager from the responsibility of performing a credit assessment on bonds purchased.

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
US Treasuries	no restriction	no restriction
FDIC Guaranteed (TLGP)*	50% of portfolio	2% of any TLGP issue
Quasi Government	10% of total portfolio	3% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset Backed Securities	25% of total portfolio	2% of total portfolio

\*Temporary Liquidity Guarantee Program

### Liquidity

~~Liquidity will be maintained by holding at least 25% of the portfolio in US Treasuries or Quasi-Government bonds at all times.~~

#### Duration

~~The duration of the US bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 2.5 years and the performance benchmark is a weighting of 100% of the Merrill Lynch Corporate & Government, 1-5 Years Index (BVA0).~~

#### Related Securities

Coupons, residuals, and synthetic securities will fall under the category and guidelines of the underlying security.

### **10.3 MORTGAGES**

ICBC can invest in long-term mortgages through one or all of the following vehicles: open or closed end pools, segregated funds, NHA mortgage-backed securities and direct mortgage loans.

#### Quality

The quality of the mortgage portfolio will be maintained by adhering to the following guidelines:

1. Insured mortgage investments will not exceed 85% of the purchase price or appraised value of the real estate it is secured against.
2. Conventional mortgages will not exceed 75% of the purchase price or appraised value of the real estate it is secured against.
3. No further encumbrance to the property is allowed, except with approval of ~~the Investment Committee~~ ICBC.
4. No investment will be made in second or third mortgages.

#### Diversification:

1. No single mortgage will account for more than 5% of the market value of the mortgage portfolio.
2. The aggregate amount of all loans to any one borrower will not be greater than 10% of the mortgage portfolio.

3. The aggregate amount of all construction loans will not exceed 20% of the Committed and Funded portfolio.

In addition, diversification will be achieved by property type and location using the following guidelines:

<u>Property Type</u>	<u>Target</u>	<u>Range</u>
	%	%
Office	25	15 - 35
Retail	25	15 - 35
Industrial	25	15 - 35
Residential	20	10 - 30
Other	5	0 - 10

<u>Location</u>	<u>Target</u>	<u>Range</u>
	%	%
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Quebec & Maritimes	5	0 - 10

#### Liquidity

Liquidity will be maintained by focusing the lending activities on premium loans, in order to maintain a mortgage portfolio of the highest quality with low inherent risk of default, while achieving an acceptable investment return.

#### Duration

The duration of the mortgage portfolio will not be permitted to deviate from the DEX Short Term Bond Index by more than 1.5 years.

#### Approvals & Authorities

1. Approval for new loans, renewals ~~and~~, assumptions and the placement of secondary debt or encumbrances shall be governed by the Mortgage Approval Structure as approved by the Investment Committee from time to time.
2. Approval of the Investment Committee is required to sell the mortgage portfolio, in whole or in part, either directly or through securitization to the public market.
3. Management shall be responsible for the day-to-day operations of the mortgage portfolio. Management has the ability to delegate the mortgage administration functions to third party managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## 10.4 EQUITIES

Canadian and foreign equity investments will be made through direct holdings of securities (common shares, convertible preferred shares, convertible debentures, options, warrants, installment receipts, rights, etc.), stock index futures contracts, equity linked bonds and swaps or indirectly through pooled and mutual funds or any combination of the above.

### Diversification

Diversification will be maintained by restricting the number of equity holdings in any separate asset class to no less than 20 individual holdings. No single issuer will represent more than 10% of the portfolio's equity exposure as calculated by market value.

### Liquidity

Liquidity will be maintained by limiting equity holdings to securities listed on major exchanges. No more than 20% of the equity portfolio will be invested in companies with market capitalization of less than \$100 million.

## 10.5 REAL ESTATE

Real estate investments will be made on an active basis by investing directly in individual revenue producing real estate assets or in segregated fund accounts with third party investment managers who in turn invest in individual revenue producing real estate assets. Real estate investments may also be in the form of joint ventures or co-ownership vehicles with like-minded investors.

### Quality

1. Investments will focus on good quality core properties of institutional investment quality that are cash flow yield oriented.
2. Investments will not be made in specialty properties, defined as any property with a business component such as hotels, motels, retirement homes, and mini warehouses.
3. Investment in opportunistic properties, defined as any property that requires repositioning or development with a view to creating value, will only be permitted with specific approval of the full ICBC Board of Directors.

### Diversification

1. No single investment will account for more than 15% of the real estate allocation.
2. Properties with a value of less than \$5 million will not be considered.

In addition, diversification will be achieved by property type and location using the following guidelines:

#### Geographic Location

<u>Location</u>	<u>Target</u> %	<u>Range</u> %
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Québec & Maritimes	5	0 - 10

#### Product Type

<u>Property Type</u>	<u>Target</u> %	<u>Range</u> %
Office	35	20 - 50
Industrial	35	20 - 50
Retail	20	10 - 30
Residential	10	0 - 20

All diversification measures will be made as if the portfolio allocation was fully funded.

#### Liquidity

- Investments will be made in major Canadian metropolitan areas, being defined as urban areas with a population base greater than 250,000 persons.
- Due to their illiquid nature, segregated funds will be limited to no more than 20% of the portfolio.

#### Use of Debt (Leverage)

- ~~The use of debt or leverage~~ Leverage will not be permitted for direct investments ~~except pre to a maximum of 75% loan-to-value at the property level and to a maximum of 45% of the value of the total real estate portfolio. All new debt will be non-recourse to ICBC.~~
- ~~Pre-existing debt at the time of acquisition of a specific property. Such debt will be considered within the approval of the acquisition on the basis that it will be discharged upon maturity. Any such debt will~~ permitted to be included in the gross amount invested, as it will be converted to equity as soon as allowable under the mortgage agreement. ~~assumed.~~

~~2.3.~~ The use of debt or leverage will be permitted in segregated fund investments to a maximum of 75% loan-to-value at the property level and a maximum of 50% at the account level.

~~1.~~ At no time will the total exposure to debt exceed the permitted statutory limits for any particular property or 25% of the value of the total real estate portfolio.

## Approvals & Authorities

1. Approval for acquisitions and disposals shall be governed by the Real Estate Approval Structure as approved by the Investment Committee from time to time.
2. Approval for capital expenditures shall be governed by the Capital Expenditure Policy and Procedures as approved by the Investment Committee from time to time.
3. The selection of any investment manager, joint venture partner or co-ownership vehicle requires the prior approval of the Investment Committee.
4. Management shall be responsible for the day-to-day operations and leasing of the real estate investment portfolio. Management has the ability to delegate the day-to-day property management functions to third party property managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

### **10.6 DERIVATIVE INSTRUMENTS**

Swaps, options, forwards, future contracts and other derivative instruments are permitted as long as they are used to hedge portfolio risks or enhance portfolio returns. These strategies can involve foreign exchange components on a hedged basis.

Derivatives are not permitted to lever the portfolio or increase portfolio risk (speculation). Derivatives can only be applied to asset classes contemplated in the Investment Policy. Derivatives will not be used to extend asset class weights outside the stated asset mix ranges.

The ICBC Investment Department is authorized to post cash or securities as collateral for ICBC's obligations under derivative agreements, and to receive cash or securities posted by counterparties as collateral for their obligations to ICBC under those agreements.

All derivative activity will be disclosed to the Investment Committee on a quarterly basis.

### **10.7 BORROWING AUTHORITY**

In general, neither the Investment Department nor the external managers can borrow funds directly to make investments. Exceptions include short-term borrowing to finance temporary cash flow shortfalls, financing techniques to support customer payment plans, real estate transactions, and derivative transactions where financing techniques are used to hedge revenue enhancing strategies.

## **11 VOTING RIGHTS**

Portfolio managers will exercise any voting powers and execute any proxies in conjunction with all the securities held in the Portfolio. Voting rights will be exercised in the best financial interests of ICBC. The voting policies and practices of each manager are to be periodically reviewed and each manager will provide written confirmation of adherence to their voting policy on a quarterly basis.

Issues deemed to be of concern to the Board will be brought to the attention of the Chair of the Investment Committee.

## **12 SECURITIES LENDING**

The Insurance Portfolio may lend its securities provided that:

1. the loan is secured by collateral that has a market value equal to or greater than 105% of the value of the loaned securities with the following exception:
  - a) the loan of US equity securities is secured by collateral that has a market value equal to or greater than 102% of the value of the loaned securities provided the loan is fully indemnified by the investment portfolio custodian;
2. the loan and collateral are valued daily on a "marked-to-market" basis;
3. the collateral meets all investment criteria of the Insurance Portfolio;
4. all potential borrowers have been approved by ICBC; and
5. all appropriate agreements and documentation have been completed.

## **13 POOLED FUNDS**

The policies covering conflicts of interest, investment constraints, voting rights and securities lending for assets invested in pooled funds will be subject to the investment policies of the said pooled fund.

## **14 POLICY REVIEW**

This investment policy will be reviewed annually to confirm that the existing asset allocations will result in the best projected investment return for the selected risk level. Current economic and political conditions will be reviewed to ascertain if the necessary conditions exist for the investment policies to succeed. Current guidelines will be reviewed to maintain their relevance and updated if changes are required. The annual review will not prohibit the interim modification of the investment policy if there have been fundamental changes which affect the underlying assumptions of the investment policy.

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**2012.1 RR BCUC.52.3 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Appendix 5 A  
Statement of Investment Policy and Procedures as of July 28, 2011**

**ICBC in Appendix 5 A includes the most recent Statement of Investment Policy and Procedures dated July 28, 2011.**

**Please provide the latest compliance review on investment activities and portfolio positions according to the ICBC Investment Policy and Procedures as of July 28, 2011. Please indicate the frequency of such reviews.**

**Response:**

The testing results are provided in memo format to the CEO and CFO on a monthly basis. A formal compliance report is provided to the Investment Committee on a quarterly basis. The December 31, 2011 compliance report is provided in Attachment A – Investment Compliance Review – 4<sup>th</sup> Quarter 2011.

Frequency of compliance reviews are detailed below.

Daily review:

- Fixed Income Portfolio Compliance
- Security Lending Compliance

Weekly Review:

- Equity Portfolio Compliance
- Asset Mix Compliance

Monthly Review:

- Mortgage Portfolio Compliance
- Real Estate Portfolio Compliance



# **2012.1 RR BCUC.52.3 – Attachment A – Investment Compliance Review – 4<sup>th</sup> Quarter 2011**



# Investment Committee Status Report

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MEETING DATE February 29, 2012

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SUBJECT INVESTMENT COMPLIANCE REVIEW

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4<sup>th</sup> QUARTER 2011

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ICBC INVESTMENT PORTFOLIO

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## **OVERVIEW**

For the quarter, the ICBC Investment portfolio was monitored in relation to the compliance requirements set forth in its Statement of Investment Policy and Procedures (SIPP) dated July 28, 2011.

This report summarizes the results and tests for the following sections of the SIPP:

- Section 3 Regulatory Framework
- Section 6 Asset Allocation
- Section 10 Eligible Investments
- Section 11 Voting Rights
- Section 12 Securities Lending
- Section 13 Pooled Funds

Results for the quarter ended December 31, 2011 are summarized below.

Currently, there is one exemption from policy granted by the ICBC Board of Directors:

- One mortgage holding is not compliant with geographic constraints (exemption approved on July 29, 2010).

## **PROCESS**

Daily, weekly, and monthly tests are run throughout the quarter by the Investment Compliance Manager, using imported data from internal accounting systems, custodian State Street, and Bloomberg. Notification of credit rating changes to bond holdings, if any, are emailed to the Investment Compliance Manager daily. The data is believed to be timely and reliable, and best efforts are made to identify and correct data errors from both sources.

## **RESULTS SUMMARY**

### **Section 3 Regulatory Framework**

No exceptions identified.



# Investment Committee Status Report

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SUBJECT INVESTMENT COMPLIANCE REVIEW

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4<sup>th</sup> QUARTER 2011

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ICBC INVESTMENT PORTFOLIO

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## **Section 6 Asset Allocation**

No exceptions identified.

## **Section 10 Eligible Investments**

### Money Market

No exceptions identified.

### Bonds

No exceptions identified.

### Mortgages

Unapproved second mortgages were placed on the securities backing several ICBC mortgages. The Investment Committee of the Board was informed of these violations in July 2011, and of the two loans that were expected to be ongoing compliance violations at that time, only one remained in the portfolio as of December 31, 2011.

### Equities

No exceptions identified.

### Real Estate

No exceptions identified.

### Derivatives

The portfolio's equity managers owned warrants and rights during the quarter. It is against policy to use derivatives for leverage or speculation. However, the securities in the portfolio were not explicitly acquired for either of these purposes and were acquired at zero or close to zero value as part of private placement equity purchases or corporate actions, and therefore present no risk to the portfolio.



# Investment Committee Status Report

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SUBJECT INVESTMENT COMPLIANCE REVIEW

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4<sup>th</sup> QUARTER 2011

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ICBC INVESTMENT PORTFOLIO

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## **Section 11 Voting Rights**

There were no reported deviations from managers' voting policies.

## **Section 12 Securities Lending**

There were no reported deviations with respect to the portfolio's securities lending program.

## **Section 13 Pooled Funds**

There were no reported violations from pooled fund policy during the quarter.

<b>3. REGULATORY FRAMEWORK</b>					<b>Compliance Weekly</b>
Real estate investments are limited to 10% of total assets, as that term is defined.					✓
The value of participating shares, or other ownership interests in unincorporated business, cannot exceed 25% of total assets.					✓
Investments in 1 and 2 above in the aggregate cannot exceed 35% of total assets.					✓
Commercial and consumer lending cannot exceed 5% of total assets (as per OSFI, commercial loans are defined as > 80% of a property's value at acquisition).					✓
<b>6. ASSET MIX</b>	<b>Based on Market Values</b>			<b>Actual %</b>	<b>Compliance</b>
	Min %	Target %	Max %	Dec 31, 2011	Weekly
Money Market	0	1	5	3.7	✓
Canadian Bonds	52	58	62	61.7	✓
Mortgages	6	8	10	9.2	✓
<b>Total Fixed Income</b>	<b>69</b>	<b>72</b>	<b>76</b>	<b>74.6</b>	✓
Canadian Equities	10	13	16	11.3	✓
US Equities	4	5	6	5.0	✓
EAFE Equities	4	5	6	4.6	✓
<b>Total Equity</b>	<b>20</b>	<b>23</b>	<b>28</b>	<b>20.9</b>	✓
<b>Real Estate</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>4.5</b>	✓
<b>10. ELIGIBLE INVESTMENTS</b>					
<b>Money Market Investments</b>					<b>Compliance Weekly</b>
Money Market investments must be held for cash management purposes and will be limited to Treasury Bills, Repo, Certificates of Deposit, Bankers Acceptances, and Commercial Paper.					✓
<b>Bond Investments</b>					<b>Compliance Daily</b>
QUALITY – all bonds and money market securities must be rated a minimum BBB by a recognized rating agency (Standard & Poor's is the default for split ratings). The following minimum quality limits apply: > 25% AAA, >50% AA or better, >90% A or better, 100% >BBB or better					✓

DIVERSIFICATION – the market value of the bond portfolio must not exceed the following category limits: Municipal 20%, Corporate 50%, Asset-Backed Securities 20%, Derivatives 10%, Foreign issues 10%.	✓
DIVERSIFICATION – within each of the following categories, the market value of individual issuers must not exceed: major Provinces 33% each, minor Provinces (PEI, NS, SK, MB, NF) 16% each, Municipal 5%, Corporate 3%, Other (ABS, Derivatives, Foreign) 2% each.	✓
LIQUIDITY – liquidity must be maintained by holding at least 25% of the portfolio in Government of Canada, Government of Canada Agency, and major Provincial bonds at all times.	✓
INTEREST RATE RISK – portfolio duration must be within +/-0.5 years of the benchmark (85% DEX Short-term Bond + 15% DEX 91-day T-Bill).	✓
<b>Mortgages</b>	<b>Compliance Monthly</b>
APPROVAL – new loans, renewals and assumptions must be approved as per the Mortgage Approval Structure (transactions between \$15M and \$20M by the CEO & CFO, transactions >\$20M by the Investment Committee).	✓
QUALITY – conventional mortgage LTV must not exceed 75% (85% for insured mortgages) using the lower of purchase price or appraised value.	✓
QUALITY – investment in second or third mortgages is prohibited.	✓
QUALITY – no further encumbrance to the property is allowed, except with approval of the ICBC.	x
DIVERSIFICATION – single mortgages must not exceed 5% of the market value of the mortgage portfolio.	✓
DIVERSIFICATION – the amount provided to any one borrower (not mortgage) must not exceed 10% of the mortgage portfolio.	✓
DIVERSIFICATION – diversification ranges: Office 15% to 35%, Retail 15% to 35%, Industrial 15% to 35%, Residential 10% to 30%, Other 0% to 15%.	✓
DIVERSIFICATION – diversification by region ranges: BC 15% to 35%, Prairies 15% to 35%, Ontario 30% to 60%, Quebec & Atlantic 0 to 10%.	✓
DIVERSIFICATION – the aggregate amount of all construction loans must not exceed 20% of the Committed and Funded portfolio.	✓
INTEREST RATE RISK – duration of the mortgage portfolio must be within +/- 1.5 years of the benchmark.	✓

<b>Equities</b>	<b>Compliance Weekly</b>
DIVERSIFICATION – diversification must be maintained by restricting the number of equity holdings in any separate asset class to no less than 20.	✓
DIVERSIFICATION – single issuers must not exceed 10% of the portfolio's equity exposure as calculated by market value.	✓
LIQUIDITY – companies with a market capitalization less than \$100M must not exceed 20% of the portfolio as calculated by market value.	✓
LIQUIDITY – equity holdings must trade on major exchanges.	✓
<b>Real Estate</b>	<b>Compliance Month end</b>
APPROVAL – acquisitions and disposals must be approved as per the Real Estate Approval Structure (transactions between \$15M and \$20M by the CEO & CFO, transactions >\$20M by the Investment Committee).	✓
APPROVAL – capital expenditures must be approved as per the Capital Expenditure Policy and Procedures (those above a certain threshold, in percentage or dollar terms, by the CEO/CFO or Investment Committee).	✓
QUALITY – specialty properties with a business component (such as hotels, motels, retirement homes, and mini warehouses) are prohibited.	✓
DIVERSIFICATION – diversification ranges: Office 20% to 50%, Industrial 20% to 50%, Retail 10% to 30%, Residential 0% to 20%.	✓
DIVERSIFICATION – diversification ranges: BC 15% to 35%, Prairies 15% to 35%, Ontario 30% to 60%, Quebec and Maritimes 0% to 10%.	✓
DIVERSIFICATION – single properties must be < 15% of the portfolio.	✓
DIVERSIFICATION – each property must have a market value > \$5 million.	✓
LIQUIDITY – investments must be located in major Canadian metropolitan areas, defined as urban areas with a population greater than 250,000.	✓
LIQUIDITY – segregated funds must not exceed 20% of the portfolio.	✓
LEVERAGE – debt or leverage for direct investments must not exceed loan-to-value maximums of 75% (property level) and 45% (portfolio level).	✓
EXTERNAL – the selection of any manager, joint venture partner, or co-ownership vehicle, must be approved by the Investment Committee.	N/A
EXTERNAL – debt or leverage in segregated funds must not exceed loan-to-value maximums of 75% (property level) and 50% (account level).	N/A

<b>Derivatives</b>	<b>Compliance Weekly</b>
Derivatives are not permitted to lever the portfolio or increase portfolio risk (speculation). Derivatives will not be used to extend asset class weights outside the stated asset mix ranges.	x
<b>11. VOTING RIGHTS</b>	<b>Compliance Quarter end</b>
Certificates must be received confirming adherence to the managers' voting policies (reported with a one quarter lag).	✓
<b>12. SECURITIES LENDING</b>	<b>Compliance Weekly</b>
Loans must be secured by collateral that have a market value equal to or greater than 105% (102% for U.S.) of the value of the loaned securities.	✓
The loan and collateral must be valued daily on a "marked-to-market" basis.	✓
The collateral must meet the investment criteria of the Insurance Portfolio.	✓
All potential borrowers must be approved by ICBC. <i>(Test run and reported by Investment Operations)</i>	✓
All appropriate agreements and documentation must be completed. <i>(Test run and reported by Investment Operations annually)</i>	✓
<b>13. POOLED FUNDS</b>	<b>Compliance Quarter end</b>
Certificates received confirming adherence to the pooled funds' policies, covering conflict of interests, investment constraints, voting rights and securities lending (reported with a one quarter lag).	✓

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**2012.1 RR BCUC.53.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section D, p. 5-10  
Impact of Changes in the ICBC Statement of Investment Policy and Procedures**

**53.1 In paragraph 27, ICBC states that US bonds have been removed from the investment portfolio's strategic asset mix and, as an offset, the asset allocation for Canadian bonds has been increased by 5%. Please explain why ICBC has removed US bonds from the investment portfolio's strategic asset mix. Wouldn't the inclusion of US bonds help to diversity investment portfolio risks?**

**53.1.1 What will happen to any existing US bonds that ICBC may still hold?**

**Response:**

**53.1**

Reasons for removing US Bonds from the investment portfolio's strategic asset mix included the following:

- 1) Based on stated US interest rate policy of near zero interest rates for an extended period, the US bond portfolio was not expected to satisfy its original objective of providing a US cash flow stream sufficient to cover a large portion of ICBC's US cash flow requirements.
- 2) It did not make sense to assume the foreign exchange risk associated with holding US denominated bonds if the portfolio was not delivering the intended cash flow benefits.
- 3) Based on the positive yield differential of approximately 1% between Canadian and US bonds, overall portfolio return would be better served if assets were shifted into Canadian bonds.

Yes, the inclusion of US bonds can be expected to provide some diversification benefit within the investment portfolio. But given that only a small allocation would be appropriate given ICBC's liability profile, this benefit would be limited.

**53.1.1**

There are no US denominated bonds remaining in the portfolio.

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**2012.1 RR BCUC.53.2 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section D, p. 5-10  
Impact of Changes in the ICBC Statement of Investment Policy and Procedures**

**53.2 With respect to Real Estate Investments, please explain the before and after changes to the policy that permit the use of debt (leverage) for real estate investments.**

**53.2.1 Would the use of debt result in higher risk to the investment portfolio?**

**Response:**

**53.2**

Prior to the change in investment policy, the restrictions regarding real estate leverage contained in the ICBC Statement of Investment Policy and Procedures were as follows:

1. The use of debt or leverage will not be permitted for direct investments except pre-existing debt at the time of acquisition of a specific property. Such debt will be considered within the approval of the acquisition on the basis that it will be discharged upon maturity. Any such debt will be included in the gross amount invested, as it will be converted to equity as soon as allowable under the mortgage agreement.
2. The use of debt or leverage will be permitted in segregated fund investments to a maximum of 75% loan-to-value at the property level and a maximum of 50% at the account level.
3. At no time will the total exposure to debt exceed the permitted statutory limits for any particular property, or 25% of the value of the total real estate portfolio.

These restrictions were put in place at a time when the real estate portfolio was below its target real estate allocation and the Investment team was focused on building the portfolio's equity investment in real estate. Any leverage utilized would reduce ICBC's equity investment in real estate, redirecting cash into the lower yielding bond portfolio. Debt assumed at the time of acquisition was permitted because the costs of discharging the debt are typically onerous. The use of debt within segregated fund investments was permitted because segregated funds typically permit debt, and ICBC did not want to exclude itself from potential investment opportunities should they arise.

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In 2011, the restrictions with regard to real estate leverage contained in the ICBC Statement of Investment Policy and Procedures were amended to be as follows:

1. Leverage will be permitted for direct investments to a maximum of 75% loan-to-value at the property level and to a maximum of 45% of the value of the total real estate portfolio. All new debt will be non-recourse to ICBC.
2. Pre-existing debt at the time of acquisition of a specific property will be permitted to be assumed.
3. The use of debt or leverage will be permitted in segregated fund investments to a maximum of 75% loan-to-value at the property level and a maximum of 50% at the account level.

This change followed on an increase in the real estate allocation to within the allocation target range of 4 to 6%. Now that the portfolio has reached its 5% equity allocation, the focus of the investment team has shifted from building a real estate allocation to enhancing the real estate portfolio returns. Leverage is a common tool used by investors to enhance real estate portfolio returns. In addition, leverage provides for additional real estate asset diversification within the portfolio as the number of real estate properties increases.

The maximum level of leverage was limited to 45% in keeping with current real estate investment industry practice. Furthermore, at a 5% equity allocation to real estate, a maximum 45% leverage keeps the ICBC investment portfolio within prudent exposures to real estate as set by the Office of Superintendent of Financial Institutions, which places a 10% maximum real estate exposure on Canadian property and casualty companies.

The 75% loan-to-value at the property level was set to provide management with ample flexibility to position properties at the time of sale to make them attractive to potential buyers. Attractive financing at attractive rates has the potential to make properties more saleable to real estate investors who use leverage to enhance returns.

All new debt is to be structured so it is non-recourse to ICBC, to mitigate risk to ICBC.

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**53.2.1**

Yes, the addition of leverage will add to the real estate portfolio's return volatility because leverage magnifies the impact of changes in the capitalization rate on the value of real estate properties. Given the small allocation to real estate assets within the overall investment portfolio, the impact of any added real estate return volatility is expected to be small when rolled up to the total portfolio level.

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**2012.1 RR BCUC.53.3 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section D, p. 5-10  
Impact of Changes in the ICBC Statement of Investment Policy and Procedures**

**53.3 With respect to the diversification section of Real Estate in the Statement of Investment Policy and Procedures in Appendix 5 A, it states that no single investment will account for more than 15% of the real estate allocation and that properties with a value of less than \$5 million will not be considered. Please explain whether these allocation and dollar amounts refer to the Net Book Value or the Fair Market Value.**

**53.3.1 If the allocation and dollar amounts refer to the Fair Market Value, what will happen to individual real estate assets if it is no longer in compliance with the Statement of Investment Policy and Procedures in Appendix 5 A? (i.e. single investment exceeding 15% allocation or valued at less than \$5 million)**

**Response:**

**53.3**

The allocation dollar amounts are measured based on Fair Market Value.

**53.3.1**

If the real estate asset is no longer in compliance with the Statement of Investment Policy and Procedures, the asset would likely be sold, but only after a detailed review of the risks and benefits associated with the sell decision.

If the non-compliant asset continued to be held in the investment portfolio, non-compliance would be reported to the ICBC Board of Directors. The ICBC Board of Directors would be responsible for approving any deviation from investment policy.

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**2012.1 RR BCUC.53.4 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section D, p. 5-10  
Impact of Changes in the ICBC Statement of Investment Policy and Procedures**

**What percentage of the overall investment portfolio has been invested in real estate for each year from 2008 through 2011?**

**Response:**

The percentage of the overall investment portfolio that has been invested in real estate for years 2008 to 2010 can be found in Chapter 5, Figure 5.10 of the Application. The percentage of the overall investment portfolio invested in real estate at December 31, 2011 was 4.5%.

**2012.1 RR BCUC.54.1 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-11**  
**Figure 5.10 – Actual Asset Mix**

Please provide the actual asset mix as of June 30, 2011 and as of December 31, 2011.

Response:

**Actual Asset Mix**

	2011	
	June 30	December 31
<b>Fixed Income</b>	<b>72.4%</b>	<b>74.3%</b>
Cash	0.9%	3.5%
Canadian Bonds	58.1%	61.6%
US/Global Bonds	4.6%	0.0%
Mortgages	8.8%	9.2%
<b>Equity</b>	<b>23.2%</b>	<b>21.2%</b>
Canadian Equity	12.8%	11.6%
US Equity	5.2%	5.0%
EAFE Equity	5.2%	4.6%
<b>Real Estate</b>	<b>4.4%</b>	<b>4.5%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

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**2012.1 RR BCUC.54.2 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-11**  
**Figure 5.10 – Actual Asset Mix**

**Please explain how the actual asset mix as of June 30, 2011 relates to the calculation of the Yield on Basic Equity for the 2012 policy year shown in Figure 5.9, if applicable.**

**Response:**

The asset mix as of June 30, 2011 was used to weight the various yields that are incorporated into the calculation of the Yield on Basic Equity.

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**2012.1 RR BCUC.54.3 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section E, p. 5-11  
Figure 5.10 – Actual Asset Mix**

**54.3 As shown in Figure 5.10, the actual asset mix in real estate is 3.9%, 3.0%, and 2.8% for 2010, 2009, and 2008 respectively. The tactical minimum % for real estate is 4.0%. Please explain why the real estate asset allocation is below the tactical minimum.**

**54.3.1 Would this be non-compliance with ICBC’s Investment Policy and Procedures as of July 28, 2011?**

**Response:**

**54.3**

In regard to establishing a real estate exposure within its investment portfolio, ICBC has pursued a direct investment strategy in order to control the risk and return profile of its real estate investments. It takes time to build a quality real estate portfolio, due to the limited number of available assets, the highly competitive nature of the commercial real estate market in Canada, and the extended transaction timeframe associated with acquiring assets. ICBC has been steadily building towards its long-term strategic allocation for real estate and the portfolio allocation within the investment portfolio now sits above its tactical minimum.

**54.3.1**

Ongoing real estate sourcing efforts have moved the real estate allocation within the investment portfolio to its strategic target range. At July 28, 2011 the investment portfolio was in compliance with the real estate allocation specified in the Statement of Investment Policy and Procedures.

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**2012.1 RR BCUC.54.4 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section E, p. 5-11  
Figure 5.10 – Actual Asset Mix**

**54.4 As shown in Figure 5.9, current weighting for real estate is at 3.5% and current real estate yield at cost has the highest actual yield at 8.30% relative to other investment yields. Given the high actual yield in real estate, would it be appropriate to increase its weighting at this time? Why or why not?**

**54.4.1 If yes, what would be the new target strategic mix?**

**Response:**

**54.4**

The fact that the real estate assets have delivered a higher yield at cost than other assets does not justify an increase in the strategic allocation target within the overall ICBC investment portfolio. There are several reasons for this. First, the real estate strategic allocation of 5%, with a tactical allocation of 4 to 6%, has been set based on the expected long-term risk-return characteristics of real estate and the relationship between real estate returns and the returns of other asset classes. In addition, the allocation takes into account that real estate assets are inherently illiquid. Assets are typically larger value and indivisible. Transaction costs are typically high and the time to sell real estate assets is often lengthy and uncertain. Consideration has also been given to the practical difficulties associated with building a real estate portfolio. The supply of good quality assets is limited, the commercial real estate market in Canada is highly competitive, and there is an extended transaction process associated with acquiring assets.

ICBC's allocation to the real estate is consistent with the real estate asset class limits set by the Office of Superintendent of Financial Institutions for Canadian property and casualty insurance companies.

**54.4.1**

For the reasons set out in the response to information request 2012.1 RR BCUC.54.4, a new target strategic mix is not required.

**2012.1 RR BCUC.55.1 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-12**  
**Figure 5.11 – Investment Portfolio Total Asset Values**

Figure 5.11 includes estimated fair values of investment portfolio assets for 2009 and 2010.

Please present the fair value of the Canadian bond portfolio, US bond portfolio, and mortgage portfolio, stratified by Credit Rating.

Response:

Fair Value of Canadian bond portfolio, US bond portfolio, and mortgage portfolio, stratified by Credit Rating

(\$ THOUSANDS)		
	2010	2009
	Estimated Fair Value	Estimated Fair Value
Canadian Bonds		
AAA	3,517,354	3,531,269
AA	1,147,545	1,471,046
A	1,581,608	1,303,900
BBB	490,291	278,427
Not rated		9,330
<b>Total Canadian bonds</b>	<b>6,736,798</b>	<b>6,593,972</b>
US Bonds		
AAA		
AA	275,507	346,782
A	99,731	40,077
BBB	141,905	111,185
Not rated	55,080	45,153
<b>Total US bonds</b>	<b>572,223</b>	<b>543,197</b>
Mortgage		
Not rated	1,024,358	921,531

**2012.1 RR BCUC.55.2 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-12**  
**Figure 5.11 – Investment Portfolio Total Asset Values**

Figure 5.11 includes estimated fair values of investment portfolio assets for 2009 and 2010.

Please present the fair value of the Canadian bond portfolio, US bond portfolio, and mortgage portfolio, stratified by Term to maturity.

Response:

Fair Value of Canadian bond portfolio, US bond portfolio, and mortgage portfolio, stratified by term to maturity

(\$ THOUSANDS)							
	Within 1 Year	1 to 2 Years	2 to 3 Years	3 to 4 Years	4 to 5 Years	After 5 Years	Total
<b>Dec 31, 2010</b>							
Bonds							
Canadian							
Federal	0	60,643	578,847	1,395,220	775,570	100,023	2,910,303
Provincial	0	36,377	287,010	266,727	255,204	45,804	891,122
Corporate	771,009	628,347	645,630	387,068	443,751	59,568	2,935,373
US							
Federal	0	135,397	27,830	60,470	74,855	0	298,552
Corporate	15,004	66,675	109,759	54,324	25,111	2,798	273,671
<b>Total Bonds</b>	<b>786,013</b>	<b>927,439</b>	<b>1,649,076</b>	<b>2,613,809</b>	<b>1,574,491</b>	<b>208,193</b>	<b>7,309,021</b>
<b>Mortgages</b>	<b>159,387</b>	<b>276,167</b>	<b>92,719</b>	<b>171,143</b>	<b>198,647</b>	<b>126,295</b>	<b>1,024,358</b>

<b>(\$ THOUSANDS)</b>							
	<b>Within 1 Year</b>	<b>1 to 2 Years</b>	<b>2 to 3 Years</b>	<b>3 to 4 Years</b>	<b>4 to 5 Years</b>	<b>After 5 Years</b>	<b>Total</b>
<b>Dec 31, 2009</b>							
Bonds							
Canadian							
Federal	0	435,090	764,010	632,399	1,180,323	0	3,011,822
Provincial	0	148,065	208,211	306,550	249,759	5,774	918,359
Municipal	0	2,903	0	0	7,002	0	9,905
Corporate	568,209	725,041	618,575	460,765	255,596	25,700	2,653,886
US							
Federal	0	141,226	101,452	46,841	69,725	0	359,244
Corporate	14,109	21,318	55,409	48,065	40,610	4,442	183,953
<b>Total Bonds</b>	<b>582,318</b>	<b>1,473,643</b>	<b>1,747,657</b>	<b>1,494,620</b>	<b>1,803,015</b>	<b>35,916</b>	<b>7,137,169</b>
<b>Mortgages</b>	<b>118,313</b>	<b>146,727</b>	<b>292,580</b>	<b>82,006</b>	<b>168,286</b>	<b>113,619</b>	<b>921,531</b>

**2012.1 RR BCUC.55.3 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-12**  
**Figure 5.11 – Investment Portfolio Total Asset Values**

Figure 5.11 includes estimated fair values of investment portfolio assets for 2009 and 2010.

Please present the fair value of the Canadian bond portfolio and US bond portfolio by sector (government level types, banks, corporate, etc.).

Response:

Fair Value of Canadian bond portfolio and US bond portfolio by sector (government level types, banks, corporate, etc)

(\$ THOUSANDS)	Dec 31, 2010	Dec 31, 2009
	Fair Value	Fair Value
Bonds		
Canadian		
Federal	2,910,303	3,011,822
Provincial	891,122	918,359
Municipal	0	9,905
Banks	1,022,907	820,828
Corporate	1,912,466	1,833,058
Total Canadian bonds	6,736,798	6,593,972
United States		
Federal	298,552	359,244
Corporate	273,671	183,953
Total United States bonds	572,223	543,197
<b>Total Bonds</b>	<b>7,309,021</b>	<b>7,137,169</b>

**2012.1 RR BCUC.55.4 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-12**  
**Figure 5.11 – Investment Portfolio Total Asset Values**

Figure 5.11 includes estimated fair values of investment portfolio assets for 2009 and 2010.

Please present the fair value of the Canadian bond portfolio and US bond portfolio by coupon rates (fixed rate, floating rate, or zero coupon rate).

Response:

**Fair Value of Canadian bond portfolio and US bond portfolio by coupon rates**

<b>(\$ THOUSANDS)</b>	<b>Dec 31, 2010</b>	<b>Dec 31, 2009</b>
	<b>Fair Value</b>	<b>Fair Value</b>
Bonds		
Canadian		
Fixed rate	5,709,824	6,095,934
Floating rate	1,026,974	498,038
Zero coupon rate	0	
Total Canadian bonds	6,736,798	6,593,972
United States		
Fixed rate	572,223	543,197
Floating rate		
Zero coupon rate		
Total United States bonds	572,223	543,197
<b>Total Bonds</b>	<b>7,309,021</b>	<b>7,137,169</b>

**2012.1 RR BCUC.55.5 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-12**  
**Figure 5.11 – Investment Portfolio Total Asset Values**

Figure 5.11 includes estimated fair values of investment portfolio assets for 2009 and 2010.

Please present the carrying value and fair value of the mortgage portfolio by location and property type.

Response:

**Carrying value and fair value of the mortgage portfolio by location and property type**

<b>2010 Carrying Value</b>						
	<b>Industrial</b>	<b>Office</b>	<b>Retail</b>	<b>Residential</b>	<b>Other</b>	<b>Total</b>
<b>Province</b>						
BC	94,228	26,942	90,729	61,867	8,924	282,690
Prairie	75,668	40,567	79,130	25,820		221,185
Ont.	107,555	129,314	132,805	79,610	14,117	463,401
Que. & Mar		17,479	2,226	3,980		23,685
NWT		2,528				2,528
<b>Grand Total</b>	<b>277,451</b>	<b>216,830</b>	<b>304,890</b>	<b>171,277</b>	<b>23,041</b>	<b>993,489</b>

<b>2010 Fair Value</b>						
	<b>Industrial</b>	<b>Office</b>	<b>Retail</b>	<b>Residential</b>	<b>Other</b>	<b>Total</b>
<b>Province</b>						
BC	97,011	27,635	93,203	63,108	9,120	290,077
Prairie	78,031	41,803	82,164	26,653		228,651
Ont.	112,073	134,489	136,691	80,439	14,750	478,442
Que. & Mar		18,151	2,308	4,114		24,573
NWT		2,615				2,615
<b>Grand Total</b>	<b>287,115</b>	<b>224,693</b>	<b>314,366</b>	<b>174,314</b>	<b>23,870</b>	<b>1024,358</b>

<b>2009 Carrying Value</b>						
	<b>Industrial</b>	<b>Office</b>	<b>Retail</b>	<b>Residential</b>	<b>Other</b>	<b>Total</b>
<b>Province</b>						
BC	96,994	35,236	55,361	63,763	9,152	260,506
Prairie	102,919	33,298	61,808	31,681		229,706
Ont.	104,884	138,823	97,394	39,954	14,593	395,648
Que. & Mar		16,355	2,302			18,657
NWT						
<b>Grand Total</b>	<b>304,797</b>	<b>223,712</b>	<b>216,865</b>	<b>135,398</b>	<b>23,745</b>	<b>904,517</b>

<b>2009 Fair Value</b>						
	<b>Industrial</b>	<b>Office</b>	<b>Retail</b>	<b>Residential</b>	<b>Other</b>	<b>Total</b>
<b>Province</b>						
BC	99,336	35,827	55,867	64,862	9,426	265,318
Prairie	105,555	33,906	63,011	32,208		234,680
Ont.	107,083	141,326	99,031	40,302	14,575	402,317
Que. & Mar		14,114	2,395			16,509
NWT		2,707				2,707
<b>Grand Total</b>	<b>311,974</b>	<b>227,880</b>	<b>220,304</b>	<b>137,372</b>	<b>24,001</b>	<b>921,531</b>

**2012.1 RR BCUC.55.6 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-12**  
**Figure 5.11 – Investment Portfolio Total Asset Values**

Figure 5.11 includes estimated fair values of investment portfolio assets for 2009 and 2010.

Please present the carrying value and fair value of the real estate portfolio by location and property type.

Response:

The carrying value and fair market value of the real estate portfolio for 2010 by location and property type are contained in Chapter 5, Figure 5.17 of the Application. The carrying value and fair market value of the real estate portfolio for 2009 are contained in the following table.

(\$ 000's)	December 31, 2009		
	(\$ 000's) Net Book Value	(\$ 000's) Fair Market Value	Annual Cash on Cash Return
Ontario:			
Industrial	58,145	52,439	
Office	84,638	83,233	
Retail	14,547	18,440	
Prairies:			
Industrial	21,699	20,525	
Office	22,440	35,875	
Retail	20,483	23,551	
BC:			
Industrial	10,882	15,140	
Office	38,671	91,225	
<b>Total</b>	<b>\$271,505</b>	<b>\$340,428</b>	<b>8.30%</b>

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**2012.1 RR BCUC.56.1-3 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section E, p. 5-13  
Figure 5.12 – Annual Management Expense Ratios**

**56.1 Please elaborate on what has occurred that resulted in the decrease in real estate annual management expense ratio from 0.20% in 2008 to 0.13% in 2010.**

**56.2 Please elaborate on what has occurred that resulted in the decrease in Canadian equity annual management expense ratio from 0.39% in 2008 to 0.28% in 2010.**

**56.3 Please elaborate on what has occurred that resulted in the increase in US equity annual management expense ratio from 0.09% in 2008 to 0.40% in 2010.**

**Response:**

**56.1**

The decrease in the real estate management expense ratio from 2008 to 2010 was due to unusually high legal fees and other due diligence costs incurred in 2008. These costs were associated with real estate deals not pursued due to adverse market conditions in the third quarter of 2008.

**56.2**

The slight decrease in cost for the Canadian equity portfolio from 2008 to 2010 was due to the elimination of an equity mandate from the portfolio in October 2009. Assets were transferred to a Canadian equity manager with a lower fee structure.

**56.3**

The increase in cost for the US equity portfolio from 2008 to 2010 was the result of portfolio restructuring. In 2007, ICBC's lone US equity manager was compensated via a performance based fee. This manager failed to meet performance expectations and was consequently paid a minimal base fee. Due to underperformance, the manager was terminated in late 2008 and the portfolio was restructured. Management fees for this portfolio now reflect fee schedules based on the size of assets under management and on the degree of active management employed in each mandate.

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**2012.1 RR BCUC.57.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, p. 5-13, Figure 5.13  
US Equity Portfolio**

**Figure 5.13 shows the 4-year annualized returns including the US Equity Portfolio. In 2010, the US Equity Portfolio shows -4.84, which is below the 2010 S&P 500 (CAD) benchmark of -4.67 and down from -3.23 in 2009.**

**Please explain the decrease in performance in the US Equity Portfolio. Did ICBC take any action to mitigate the impact of this performance?**

**Response:**

On an absolute return basis, the US equity portfolio is structured so that it does not deviate significantly from the S&P 500 Composite (CAD). The decrease in 4-year annualized returns from 2009 to 2010 was the result of lower returns in the US equity market overall. ICBC has not adjusted its strategic allocation to US equity in response to lower US equity returns.

On an index-relative basis, the US equity portfolio underperformed. ICBC has taken action in response to this underperformance. One firm was chiefly responsible for the drop in overall performance in 2010. This firm, which manages 28% of the portfolio's US equity assets, beat the S&P 500 Composite by 12.9% in 2009, but underperformed that index by 3.2% in 2010. Volatility of value-added is expected from this portfolio manager, and the firm's long-term track record remains strong. Nonetheless, management is monitoring the firm closely.

A second firm, which manages 45% of the portfolio's US equity assets, underperformed by a much smaller amount in 2010. However, to accommodate the volatility from the portfolio's active managers, the decision was made to reduce the portfolio's risk of underperforming by replacing this enhanced index manager (low deviation from the benchmark) with a low-cost index fund (no deviation from the index).

**2012.1 RR BCUC.58.1 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, pp. 5-13 to 5-14**  
**Annualized Returns**

**Please present the results as shown in Figure 5.13 for each calendar year, instead of a Rolling 4-Years Ended period over 2008 through 2010.**

**Response:**

**Annual Returns**

Results shown in (%)*	Calendar Year Returns					
	2010	2009	2008	2007	2006	2005
TOTAL PLAN	5.82	8.12	1.30	3.21	7.89	6.82
Total Plan Benchmark	5.48	7.89	-0.37	3.11	7.75	6.22
CANADIAN BOND PORTFOLIO	3.52	4.94	8.31	3.45	3.94	3.88
Bond Policy Benchmark	3.11	4.37	8.34	3.60	4.03	3.79
US/GLOBAL BOND PORTFOLIO	-1.34	-12.65	40.12	-6.76	5.91	-5.48
US/Global Bond Policy Benchmark	-1.28	-10.65	33.53	-6.47	5.80	-5.46
MORTGAGE PORTFOLIO	7.07	6.13	7.31	5.51	5.43	4.66
Mortgage Policy Benchmark	4.60	5.54	9.56	5.13	5.04	3.52
MONEY MARKET PORTFOLIO	1.35	1.56	1.09	2.10	3.99	2.89
DEX 91 Day T-Bill (CAD)	0.54	0.62	3.33	4.43	3.98	2.58
CANADIAN EQUITY PORTFOLIO	17.20	32.61	-32.50	12.68	14.83	28.30
Standard & Poors S&P TSX CAPPED INDEX	17.61	35.05	-33.00	9.83	17.26	24.13
US EQUITY PORTFOLIO	7.98	11.13	-21.97	-12.42	15.44	2.90
Standard & Poors S&P 500 (CAD)	9.06	7.39	-21.20	-10.53	15.35	2.29
EAFE EQUITY PORTFOLIO	2.50	11.55	-28.75	-8.26	31.31	10.38
MSCI EAFE Net (CAD)	2.13	11.91	-29.18	-5.71	25.86	10.69
REAL ESTATE PORTFOLIO	10.70	4.23	11.14	19.51	24.05	
ICREIM/IPD Canadian Property Index	10.73	-0.84	3.19	15.97	18.01	

\* Descriptions in lower case indicate the benchmark return objective of ICBC's investments.

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**2012.1 RR BCUC.58.2 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section E, pp. 5-13 to 5-14  
Annualized Returns**

**Please explain the term Rolling 12 Months Ended used in Figure 5.14. Is that different from a calendar year?**

**Response:**

It is standard investment practice to present one year returns for the 12 months ending at each reporting date. The returns reported in Chapter 5, Figure 5.14 are annual returns for the reporting periods ending December 31 in calendar years 2010, 2009, and 2008. So, in this case, they are the same.

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**2012.1 RR BCUC.59.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section E, p. 5-15  
Figure 5.15 – Actual Equity Portfolio Performance Statistics**

**59.1 Figure 5.15 shows a decrease in information ratio from 0.73 in 2008 to 0.16 in 2010 for Canadian equity and a decrease in information ratio from 0.22 in 2008 to -0.32 in 2010 for EAFE equity. Please confirm whether the decrease in information ratio indicates unfavourable investment performance.**

**59.1.1 If so, please explain the contributing factors that led to the unfavourable investment performance and explain the performance of portfolio managers.**

**Response:**

**59.1**

The information ratio is calculated as the ratio of index-relative 4-year performance (value-added) to the quarterly volatility of the value-added (tracking error).

Canadian Equity

The decline in the information ratio, from 0.73 in 2008 to 0.16 in 2010, indicates both a deterioration in 4-year value-added performance (from 1.16% to 0.30%) and an increase in the annualized quarterly volatility of that value-added or tracking error (from 1.59% to 1.85%).

EAFE Equity

The decline in the information ratio, from 0.22 in 2008 to -0.32 in 2010, indicates deterioration in 4-year value-added performance (from 0.45% to -0.49%) only. The annualized quarterly volatility of value-added or tracking error lessened, from 2.03% to 1.54%.

**59.1.1**

Canadian Equity

The decline in the information ratio from 2008 to 2010 was due to declining index-relative performance for all of the managers in the portfolio. In broad terms, this occurred because of the portfolio's exposure to managers with a "quantitative" approach to stock selection, an approach that generally has struggled in the volatile market environment from 2008 on.

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Quantitative approaches use computer models to evaluate stocks based on backward-looking relationships in the market, and therefore have difficulty adapting when these relationships change suddenly and dramatically. One such manager was replaced with an index fund in 2010; this will lower the portfolio's tracking error and, all else being equal, raise its information ratio.

EAFE Equity

The decline in the information ratio from 2008 to 2010 primarily was due to the index-relative performance of one manager over that span. The reasons for this underperformance are the same as those discussed above; struggles of firms with quantitative approaches. The tracking error improved, in part, due to the addition of an index fund manager in 2010.

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**2012.1 RR BCUC.59.2 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-15**  
**Figure 5.15 – Actual Equity Portfolio Performance Statistics**

**Figure 5.15 shows an increase in information ratio from -0.34 in 2008 to -0.08 in 2010 for US equity. Please confirm, or explain otherwise, that the increase in information ratio indicates a relatively improved investment performance.**

**Response:**

The increase in the information ratio from -0.34 in 2008 to -0.08 in 2010 represents an improvement in index-relative 4-year performance (value-added), from -0.58% in 2008 to -0.16% in 2010. This was partially offset by an increase in the quarterly volatility of the value-added (tracking error), from an annualized 1.71% in 2008 to 2.02% in 2010.

The increase in the information ratio over this period comes from the elimination of poor performance in 2005 and 2006. That is, when calculating the 2010 information ratio, 2005 and 2006 are no longer included in the 4-year calculation. The manager responsible for the poor performance in 2005 and 2006 no longer manages money for ICBC.

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**2012.1 RR BCUC.59.3 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-15**  
**Figure 5.15 – Actual Equity Portfolio Performance Statistics**

**Please provide details for any changes to portfolio managers in the last 5 years, including any terminations, manager’s mandate, the market value of their portfolios at the time of termination, and why they were replaced.**

**Response:**

Canadian Equity Managers

No firms were terminated in the 5-year span between 2006 and 2010, but there were two additions.

In October 2006, a third manager was added to the portfolio in order to diversify firm-specific risk. Approximately \$375 million was placed with this firm. This firm manages a “core” portfolio (broadly diversified with low-risk versus the S&P/TSX Composite Index) using quantitative models.

In October 2009, a fourth manager was added to the portfolio. This was done in part to diversify away from firms using quantitative models, and in part as the result of terminating one of two mandates at another firm. At this time, a small equitized market neutral mandate with a market value of approximately \$155 million was terminated due to underperformance. Approximately \$450 million was placed with this new firm, which also manages a “core” portfolio (broadly diversified with low-risk versus the S&P/TSX Composite Index), but with less reliance on quantitative models.

US Equity managers

In November 2008, the portfolio was restructured. Approximately \$430 million in assets, previously managed by a single enhanced-index manager, was diversified among four new managers. The new structure, created to enhance expected risk-adjusted returns and diversify firm-specific risk at a time of financial institution stress, consists of four complementary investment mandates. Two of these mandates, or approximately 65% of the portfolio, are

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considered to be low-risk in terms of variation from the benchmark index. This structure was in place as of December 31, 2010.

EAFE Equity managers

In the fourth quarter of 2007, one of the portfolio's EAFE managers, accounting for approximately \$335 million (75% of the EAFE portfolio) was terminated for poor performance. The assets were allocated to a new firm with a low-risk mandate in relation to the MSCI EAFE benchmark (enhanced index mandate). This new firm was a large financial institution in the United States, a fact that would be relevant in the 2010 portfolio restructuring following the financial crisis of 2008 and 2009.

In May 2010, the portfolio was restructured. Approximately \$400 million in assets, previously managed by the above noted enhanced-index manager, was diversified among three new managers. The new structure, created to enhance expected risk-adjusted returns and diversify firm-specific risk at a time of financial institution stress, produced a portfolio with four complementary investment mandates. One of the new mandates, approximately 50% of the portfolio, replicates the MSCI EAFE index (near-zero risk in terms of variation from the benchmark index). This structure was in place as of December 31, 2010.

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**2012.1 RR BCUC.60.1 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-16**  
**Figure 5.16 – Fixed Income Characteristics and Performance Statistics**

**Please show calculations for the Canadian bond portfolio for each year shown in Figure 5.16, i.e. alpha (%), tracking error (%), and information ratio.**

**Response:**

Please see Attachment A – Canadian Bond Portfolio for the calculation of alpha, tracking error, and information ratio for the Canadian bond portfolio for each year shown in Figure 5.16 of the Application.



# 2012.1 RR BCUC.60.1 – Attachment A – Canadian Bond Portfolio

END DATE	Canadian Bond PORTFOLIO	90/10 INDEX	III DIFFERENCE	91 DAY RISK FREE RATE
12/31/2008	1.8655	1.8214	0.0441	0.3365
11/30/2008	1.5232	1.4783	0.0449	0.1725
10/31/2008	1.0030	0.9613	0.0417	0.2074
9/30/2008	-0.8591	-0.7537	-0.1054	-0.7861
8/31/2008	0.7222	0.7194	0.0028	0.2139
7/31/2008	0.9733	1.0405	-0.0672	0.2493
6/30/2008	-0.1807	-0.1936	0.0129	0.2876
5/31/2008	-0.1636	-0.1958	0.0322	0.2560
4/30/2008	-0.0637	-0.0137	-0.0500	0.0027
3/31/2008	0.5759	0.5775	-0.0016	0.4821
2/29/2008	1.1996	1.2031	-0.0035	0.3233
1/31/2008	1.4415	1.4294	0.0121	0.4202
12/31/2007	0.3443	0.3113	0.0330	0.3477
11/30/2007	1.0387	1.0879	-0.0492	0.3544
10/31/2007	0.2943	0.3221	-0.0278	0.3668
9/30/2007	0.7700	0.7500	0.0200	0.3400
8/31/2007	0.7700	0.8000	-0.0300	0.4800
7/31/2007	0.2000	0.2500	-0.0500	0.3900
6/30/2007	-0.0100	0.0000	-0.0100	0.3300
5/31/2007	-1.0100	-0.9900	-0.0200	0.3400
4/30/2007	0.0300	0.0300	0.0000	0.3600
3/31/2007	0.0300	0.0300	0.0000	0.3500
2/28/2007	0.9200	0.9100	0.0100	0.3100
1/31/2007	0.0300	0.0500	-0.0200	0.3700
12/31/2006	-0.3700	-0.3600	-0.0100	0.3300
11/30/2006	0.8200	0.8000	0.0200	0.3400
10/31/2006	0.3100	0.3200	-0.0100	0.3600
9/30/2006	0.7700	0.7500	0.0200	0.3200
8/31/2006	1.1600	1.1300	0.0300	0.3700
7/31/2006	1.4800	1.4700	0.0100	0.4000
6/30/2006	-0.3000	-0.2600	-0.0400	0.3300
5/31/2006	0.2900	0.3100	-0.0200	0.3500
4/30/2006	-0.3900	-0.3500	-0.0400	0.2700
3/31/2006	-0.1613	-0.0370	-0.1242	0.3100
2/28/2006	0.5456	0.2941	0.2514	0.2400
1/31/2006	-0.2527	-0.0817	-0.1709	0.2900
12/31/2005	0.3473	0.3387	0.0087	0.2800
11/30/2005	0.4203	0.4119	0.0084	0.2400
10/31/2005	-0.6209	-0.6566	0.0356	0.2200
9/30/2005	-0.6578	-0.6481	-0.0098	0.2000
8/31/2005	0.7661	0.8094	-0.0433	0.2200
7/31/2005	-0.2642	-0.2846	0.0204	0.1800
6/30/2005	0.8895	0.9260	-0.0365	0.2000
5/31/2005	1.2290	1.1689	0.0601	0.2200
4/30/2005	1.0257	0.9171	0.1086	0.2200
3/31/2005	-0.0696	0.0071	-0.0767	0.1900
2/28/2005	0.0851	0.0636	0.0216	0.1800
1/31/2005	0.6888	0.6914	-0.0027	0.2200
<b>Average Return</b>	<b>0.3997</b>	<b>0.4032</b>	<b>-0.0035</b>	<b>0.2705</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>

END DATE	V (I - Average I)	VI (II - Average II)	VII (III - Average III)	VII (V * V)	VIII (VI * VI)	IX (VII * VII)	IX (V * VI)
12/31/2008	1.4658	1.4182	0.0476	2.1486	2.0112	0.0023	2.0787
11/30/2008	1.1235	1.0751	0.0484	1.2623	1.1557	0.0023	1.2078
10/31/2008	0.6033	0.5581	0.0452	0.3640	0.3114	0.0020	0.3367
9/30/2008	-1.2588	-1.1569	-0.1019	1.5846	1.3385	0.0104	1.4564
8/31/2008	0.3225	0.3162	0.0063	0.1040	0.1000	0.0000	0.1020
7/31/2008	0.5736	0.6373	-0.0637	0.3290	0.4061	0.0041	0.3655
6/30/2008	-0.5804	-0.5968	0.0164	0.3369	0.3562	0.0003	0.3464
5/31/2008	-0.5633	-0.5990	0.0357	0.3173	0.3589	0.0013	0.3374
4/30/2008	-0.4634	-0.4169	-0.0465	0.2147	0.1738	0.0022	0.1932
3/31/2008	0.1762	0.1743	0.0019	0.0310	0.0304	0.0000	0.0307
2/29/2008	0.7999	0.7999	0.0000	0.6398	0.6398	0.0000	0.6398
1/31/2008	1.0418	1.0262	0.0156	1.0854	1.0530	0.0002	1.0691
12/31/2007	-0.0554	-0.0919	0.0365	0.0031	0.0085	0.0013	0.0051
11/30/2007	0.6390	0.6847	-0.0457	0.4083	0.4688	0.0021	0.4375
10/31/2007	-0.1054	-0.0811	-0.0243	0.0111	0.0066	0.0006	0.0086
9/30/2007	0.3703	0.3468	0.0235	0.1371	0.1202	0.0006	0.1284
8/31/2007	0.3703	0.3968	-0.0265	0.1371	0.1574	0.0007	0.1469
7/31/2007	-0.1997	-0.1532	-0.0465	0.0399	0.0235	0.0022	0.0306
6/30/2007	-0.4097	-0.4032	-0.0065	0.1679	0.1626	0.0000	0.1652
5/31/2007	-1.4097	-1.3932	-0.0165	1.9872	1.9411	0.0003	1.9640
4/30/2007	-0.3697	-0.3732	0.0035	0.1367	0.1393	0.0000	0.1380
3/31/2007	-0.3697	-0.3732	0.0035	0.1367	0.1393	0.0000	0.1380
2/28/2007	0.5203	0.5068	0.0135	0.2707	0.2568	0.0002	0.2637
1/31/2007	-0.3697	-0.3532	-0.0165	0.1367	0.1248	0.0003	0.1306
12/31/2006	-0.7697	-0.7632	-0.0065	0.5924	0.5825	0.0000	0.5875
11/30/2006	0.4203	0.3968	0.0235	0.1767	0.1574	0.0006	0.1668
10/31/2006	-0.0897	-0.0832	-0.0065	0.0080	0.0069	0.0000	0.0075
9/30/2006	0.3703	0.3468	0.0235	0.1371	0.1202	0.0006	0.1284
8/31/2006	0.7603	0.7268	0.0335	0.5781	0.5282	0.0011	0.5526
7/31/2006	1.0803	1.0668	0.0135	1.1671	1.1380	0.0002	1.1524
6/30/2006	-0.6997	-0.6632	-0.0365	0.4896	0.4399	0.0013	0.4641
5/31/2006	-0.1097	-0.0932	-0.0165	0.0120	0.0087	0.0003	0.0102
4/30/2006	-0.7897	-0.7532	-0.0365	0.6236	0.5674	0.0013	0.5948
3/31/2006	-0.5610	-0.4403	-0.1207	0.3147	0.1939	0.0146	0.2470
2/28/2006	0.1459	-0.1091	0.2550	0.0213	0.0119	0.0650	-0.0159
1/31/2006	-0.6524	-0.4850	-0.1674	0.4256	0.2352	0.0280	0.3164
12/31/2005	-0.0524	-0.0646	0.0122	0.0027	0.0042	0.0001	0.0034
11/30/2005	0.0206	0.0087	0.0119	0.0004	0.0001	0.0001	0.0002
10/31/2005	-1.0206	-1.0598	0.0392	1.0417	1.1232	0.0015	1.0817
9/30/2005	-1.0575	-1.0513	-0.0062	1.1184	1.1053	0.0000	1.1118
8/31/2005	0.3664	0.4062	-0.0397	0.1343	0.1650	0.0016	0.1488
7/31/2005	-0.6639	-0.6878	0.0239	0.4408	0.4731	0.0006	0.4566
6/30/2005	0.4898	0.5227	-0.0329	0.2399	0.2733	0.0011	0.2561
5/31/2005	0.8293	0.7657	0.0636	0.6878	0.5863	0.0040	0.6350
4/30/2005	0.6260	0.5139	0.1121	0.3919	0.2641	0.0126	0.3217
3/31/2005	-0.4693	-0.3962	-0.0731	0.2203	0.1570	0.0053	0.1859
2/28/2005	-0.3146	-0.3397	0.0251	0.0989	0.1154	0.0006	0.1069
1/31/2005	0.2891	0.2882	0.0009	0.0836	0.0831	0.0000	0.0833
			<b>Sum</b>	<b>20.9969</b>	<b>19.8238</b>	<b>0.1740</b>	<b>20.3233</b>
				<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

Number of Obs.	48	I	
Number of Obs. - 1	47	J	Canadian Bond
4-year Annualized Portfolio Return	4.8759	K	UPDATE
4-year Annualized Index Return	4.9213	L	UPDATE
4-year Annualized Risk-Free Return	3.5763	M	UPDATE
Annualized Portfolio Std. Deviation	2.3154	[Square Root of (E/J)] * [Square Root of 12] N	
Annualized Index Std. Deviation	2.2498	[Square Root of (F/J)] * [Square Root of 12] O	
Annualized Tracking Error	0.2108	[Square Root of (G/J)] * [Square Root of 12] P	
Annualized alpha	-0.0454	K-L	
Information Ratio	.....-0.2154	[(G - H) / L] AA	

## 2009

END DATE	Canadian Bond PORTFOLIO	90/10 INDEX	III DIFFERENCE	91 DAY RISK FREE RATE
12/31/2009	-0.6089	-0.6586	0.0497	0.0315
11/30/2009	0.8681	0.8503	0.0178	0.0249
10/31/2009	0.2574	0.2026	0.0548	0.0250
9/30/2009	0.4757	0.4120	0.0637	0.0578
8/31/2009	0.7300	0.5667	0.1633	0.0342
7/31/2009	0.5845	0.5129	0.0716	0.0263
6/30/2009	0.4341	0.4952	-0.0611	0.0263
5/31/2009	-0.2854	-0.2684	-0.0170	0.0158
4/30/2009	0.5765	0.5110	0.0655	0.0842
3/31/2009	1.3021	1.2149	0.0872	0.1054
2/28/2009	0.8305	0.8275	0.0030	0.1293
1/31/2009	-0.3605	-0.3613	0.0008	0.0924
12/31/2008	1.8655	1.8214	0.0441	0.3365
11/30/2008	1.5232	1.4783	0.0449	0.1725
10/31/2008	1.0030	0.9613	0.0417	0.2074
9/30/2008	-0.8591	-0.7537	-0.1054	-0.7861
8/31/2008	0.7222	0.7194	0.0028	0.2139
7/31/2008	0.9733	1.0405	-0.0672	0.2493
6/30/2008	-0.1807	-0.1936	0.0129	0.2876
5/31/2008	-0.1636	-0.1958	0.0322	0.2560
4/30/2008	-0.0637	-0.0137	-0.0500	0.0027
3/31/2008	0.5759	0.5775	-0.0016	0.4821
2/29/2008	1.1996	1.2031	-0.0035	0.3233
1/31/2008	1.4415	1.4294	0.0121	0.4202
12/31/2007	0.3443	0.3113	0.0330	0.3477
11/30/2007	1.0387	1.0879	-0.0492	0.3544
10/31/2007	0.2943	0.3221	-0.0278	0.3668
9/30/2007	0.7700	0.7500	0.0200	0.3400
8/31/2007	0.7700	0.8000	-0.0300	0.4800
7/31/2007	0.2000	0.2500	-0.0500	0.3900
6/30/2007	-0.0100	0.0000	-0.0100	0.3300
5/31/2007	-1.0100	-0.9900	-0.0200	0.3400
4/30/2007	0.0300	0.0300	0.0000	0.3600
3/31/2007	0.0300	0.0300	0.0000	0.3500
2/28/2007	0.9200	0.9100	0.0100	0.3100
1/31/2007	0.0300	0.0500	-0.0200	0.3700
12/31/2006	-0.3700	-0.3600	-0.0100	0.3300
11/30/2006	0.8200	0.8000	0.0200	0.3400
10/31/2006	0.3100	0.3200	-0.0100	0.3600
9/30/2006	0.7700	0.7500	0.0200	0.3200
8/31/2006	1.1600	1.1300	0.0300	0.3700
7/31/2006	1.4800	1.4700	0.0100	0.4000
6/30/2006	-0.3000	-0.2600	-0.0400	0.3300
5/31/2006	0.2900	0.3100	-0.0200	0.3500
4/30/2006	-0.3900	-0.3500	-0.0400	0.2700
3/31/2006	-0.1613	-0.0370	-0.1242	0.3100
2/28/2006	0.5456	0.2941	0.2514	0.2400
1/31/2006	-0.2527	-0.0817	-0.1709	0.2900
<b>Average Return</b>	<b>0.4198</b>	<b>0.4149</b>	<b>0.0049</b>	<b>0.2306</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>

END DATE	V (I - Average I)	VI (II - Average II)	VII (III - Average III)	VII (V * V)	VIII (VI * VI)	IX (VII * VII)	IX (V * VI)
12/31/2008	-1.0287	-1.0735	0.0448	1.0582	1.1524	0.0020	1.1043
11/30/2008	0.4483	0.4354	0.0129	0.2010	0.1896	0.0002	0.1952
10/31/2008	-0.1624	-0.2123	0.0499	0.0264	0.0451	0.0025	0.0345
9/30/2008	0.0559	-0.0029	0.0588	0.0031	0.0000	0.0035	-0.0002
8/31/2008	0.3102	0.1518	0.1584	0.0962	0.0230	0.0251	0.0471
7/31/2008	0.1647	0.0980	0.0667	0.0271	0.0096	0.0045	0.0161
6/30/2008	0.0143	0.0803	-0.0660	0.0002	0.0064	0.0044	0.0011
5/31/2008	-0.7052	-0.6833	-0.0219	0.4973	0.4669	0.0005	0.4819
4/30/2008	0.1567	0.0961	0.0606	0.0246	0.0092	0.0037	0.0151
3/31/2008	0.8823	0.8000	0.0823	0.7785	0.6400	0.0068	0.7058
2/29/2008	0.4107	0.4126	-0.0019	0.1687	0.1702	0.0000	0.1695
1/31/2008	-0.7803	-0.7762	-0.0041	0.6089	0.6025	0.0000	0.6057
12/31/2007	1.4457	1.4065	0.0392	2.0901	1.9782	0.0015	2.0334
11/30/2007	1.1034	1.0634	0.0400	1.2175	1.1308	0.0016	1.1734
10/31/2007	0.5832	0.5464	0.0368	0.3401	0.2985	0.0014	0.3187
9/30/2007	-1.2789	-1.1686	-0.1103	1.6356	1.3656	0.0122	1.4945
8/31/2007	0.3024	0.3045	-0.0021	0.0914	0.0927	0.0000	0.0921
7/31/2007	0.5535	0.6256	-0.0721	0.3064	0.3914	0.0052	0.3463
6/30/2007	-0.6005	-0.6085	0.0080	0.3606	0.3703	0.0001	0.3654
5/31/2007	-0.5834	-0.6107	0.0273	0.3403	0.3730	0.0007	0.3563
4/30/2007	-0.4835	-0.4286	-0.0549	0.2338	0.1837	0.0030	0.2072
3/31/2007	0.1561	0.1626	-0.0065	0.0244	0.0264	0.0000	0.0254
2/28/2007	0.7798	0.7882	-0.0084	0.6081	0.6212	0.0001	0.6146
1/31/2007	1.0217	1.0145	0.0072	1.0439	1.0292	0.0001	1.0365
12/31/2006	-0.0755	-0.1036	0.0281	0.0057	0.0107	0.0008	0.0078
11/30/2006	0.6189	0.6730	-0.0541	0.3830	0.4529	0.0029	0.4165
10/31/2006	-0.1255	-0.0928	-0.0327	0.0157	0.0086	0.0011	0.0116
9/30/2006	0.3502	0.3351	0.0151	0.1226	0.1123	0.0002	0.1174
8/31/2006	0.3502	0.3851	-0.0349	0.1226	0.1483	0.0012	0.1349
7/31/2006	-0.2198	-0.1649	-0.0549	0.0483	0.0272	0.0030	0.0362
6/30/2006	-0.4298	-0.4149	-0.0149	0.1847	0.1721	0.0002	0.1783
5/31/2006	-1.4298	-1.4049	-0.0249	2.0443	1.9738	0.0006	2.0087
4/30/2006	-0.3898	-0.3849	-0.0049	0.1519	0.1482	0.0000	0.1500
3/31/2006	-0.3898	-0.3849	-0.0049	0.1519	0.1482	0.0000	0.1500
2/28/2006	0.5002	0.4951	0.0051	0.2502	0.2451	0.0000	0.2476
1/31/2006	-0.3898	-0.3649	-0.0249	0.1519	0.1332	0.0006	0.1422
12/31/2005	-0.7898	-0.7749	-0.0149	0.6238	0.6005	0.0002	0.6120
11/30/2005	0.4002	0.3851	0.0151	0.1602	0.1483	0.0002	0.1541
10/31/2005	-0.1098	-0.0949	-0.0149	0.0121	0.0090	0.0002	0.0104
9/30/2005	0.3502	0.3351	0.0151	0.1226	0.1123	0.0002	0.1174
8/31/2005	0.7402	0.7151	0.0251	0.5479	0.5114	0.0006	0.5293
7/31/2005	1.0602	1.0551	0.0051	1.1240	1.1132	0.0000	1.1186
6/30/2005	-0.7198	-0.6749	-0.0449	0.5181	0.4555	0.0020	0.4858
5/31/2005	-0.1298	-0.1049	-0.0249	0.0168	0.0110	0.0006	0.0136
4/30/2005	-0.8098	-0.7649	-0.0449	0.6558	0.5851	0.0020	0.6194
3/31/2005	-0.5811	-0.4519	-0.1291	0.3376	0.2043	0.0167	0.2626
2/28/2005	0.1258	-0.1208	0.2466	0.0158	0.0146	0.0608	-0.0152
1/31/2005	-0.6725	-0.4966	-0.1758	0.4522	0.2466	0.0309	0.3340
			<b>Sum</b>	<b>20.0023</b>	<b>18.7684</b>	<b>0.2042</b>	<b>19.2833</b>
				<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

2009

Number of Obs.	48	I	
Number of Obs. - 1	47	J	Canadian Bond
4-year Annualized Portfolio Return	5.1408	K	UPDATE
4-year Annualized Index Return	5.0690	L	UPDATE
4-year Annualized Risk-Free Return	3.0782	M	UPDATE
Annualized Portfolio Std. Deviation	2.2599	[Square Root of (E/J)] * [Square Root of 12] N	
Annualized Index Std. Deviation	2.1890	[Square Root of (F/J)] * [Square Root of 12] O	
Annualized Tracking Error	0.2283	[Square Root of (G/J)] * [Square Root of 12] P	
Annualized alpha	0.0718	K-L	
Information Ratio	0.3145	[(G - H) / L] AA	

END DATE	Canadian Bond PORTFOLIO	CDCI13 INDEX	III DIFFERENCE	91 DAY RISK FREE RATE
12/31/2010	0.1430	0.1123	0.0307	0.0967
11/30/2010	-0.5712	-0.5101	-0.0611	0.0654
10/31/2010	0.2831	0.2225	0.0606	0.0706
9/30/2010	0.1471	0.0542	0.0929	0.0314
8/31/2010	0.9981	0.9404	0.0577	0.0681
7/31/2010	0.4751	0.3931	0.0820	0.0367
6/30/2010	1.2581	1.2317	0.0264	0.0577
5/31/2010	0.4381	0.4618	-0.0237	0.0341
4/30/2010	-0.2097	-0.2198	0.0101	0.0236
3/31/2010	-0.7146	-0.7192	0.0046	0.0052
2/28/2010	0.1918	0.1689	0.0229	0.0157
1/31/2010	1.0454	0.9457	0.0997	0.0289
12/31/2009	-0.6089	-0.6586	0.0497	0.0315
11/30/2009	0.8681	0.8503	0.0178	0.0249
10/31/2009	0.2574	0.2026	0.0548	0.0250
9/30/2009	0.4868	0.4120	0.0748	0.0240
8/31/2009	0.7624	0.5667	0.1957	0.0342
7/31/2009	0.5845	0.5129	0.0716	0.0263
6/30/2009	0.4341	0.4952	-0.0611	0.0263
5/31/2009	-0.2854	-0.2684	-0.0170	0.0158
4/30/2009	0.5765	0.5110	0.0655	0.0842
3/31/2009	1.3021	1.2149	0.0872	0.1054
2/28/2009	0.8305	0.8275	0.0030	0.1293
1/31/2009	-0.3605	-0.3613	0.0008	0.0924
12/31/2008	1.8655	1.8214	0.0441	0.3365
11/30/2008	1.5232	1.4783	0.0449	0.1725
10/31/2008	1.0030	0.9613	0.0417	0.2074
9/30/2008	-0.8591	-0.7537	-0.1054	0.3282
8/31/2008	0.7222	0.7194	0.0028	0.2139
7/31/2008	0.9733	1.0405	-0.0672	0.2493
6/30/2008	-0.1807	-0.1936	0.0129	0.2876
5/31/2008	-0.1636	-0.1958	0.0322	0.2560
4/30/2008	-0.0637	-0.0137	-0.0500	0.0027
3/31/2008	0.5759	0.5775	-0.0016	0.4821
2/29/2008	1.1996	1.2031	-0.0035	0.3233
1/31/2008	1.4415	1.4294	0.0121	0.4202
12/31/2007	0.3443	0.3113	0.0330	0.3477
11/30/2007	1.0387	1.0879	-0.0492	0.3544
10/31/2007	0.2943	0.3221	-0.0278	0.3668
9/30/2007	0.7700	0.7500	0.0200	0.3400
8/31/2007	0.7700	0.8000	-0.0300	0.4800
7/31/2007	0.2000	0.2500	-0.0500	0.3900
6/30/2007	-0.0100	0.0000	-0.0100	0.3300
5/31/2007	-1.0100	-0.9900	-0.0200	0.3400
4/30/2007	0.0300	0.0300	0.0000	0.3600
3/31/2007	0.0300	0.0300	0.0000	0.3500
2/28/2007	0.9200	0.9100	0.0100	0.3100
1/31/2007	0.0300	0.0500	-0.0200	0.3700
<b>Average Return</b>	<b>0.4120</b>	<b>0.3961</b>	<b>0.0159</b>	<b>0.1827</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>

END DATE	V (I - Average I)	VI (II - Average II)	VII (III - Average III)	VII (V * V)	VIII (VI * VI)	IX (VII * VII)	IX (V * VI)	
12/31/2008	-0.2690	-0.2838	0.0148	0.0724	0.0805	0.0002	0.0763	
11/30/2008	-0.9832	-0.9062	-0.0770	0.9667	0.8212	0.0059	0.8910	
10/31/2008	-0.1289	-0.1736	0.0447	0.0166	0.0301	0.0020	0.0224	
9/30/2008	-0.2649	-0.3419	0.0770	0.0702	0.1169	0.0059	0.0906	
8/31/2008	0.5861	0.5443	0.0418	0.3435	0.2963	0.0017	0.3190	
7/31/2008	0.0631	-0.0030	0.0661	0.0040	0.0000	0.0044	-0.0002	
6/30/2008	0.8461	0.8356	0.0105	0.7159	0.6983	0.0001	0.7070	
5/31/2008	0.0261	0.0657	-0.0396	0.0007	0.0043	0.0016	0.0017	
4/30/2008	-0.6217	-0.6159	-0.0058	0.3865	0.3793	0.0000	0.3829	
3/31/2008	-1.1266	-1.1153	-0.0113	1.2692	1.2438	0.0001	1.2565	
2/29/2008	-0.2202	-0.2272	0.0070	0.0485	0.0516	0.0000	0.0500	
1/31/2008	0.6334	0.5496	0.0838	0.4012	0.3021	0.0070	0.3481	
12/31/2007	-1.0209	-1.0547	0.0338	1.0422	1.1123	0.0011	1.0767	
11/30/2007	0.4561	0.4542	0.0019	0.2080	0.2063	0.0000	0.2072	
10/31/2007	-0.1546	-0.1935	0.0389	0.0239	0.0374	0.0015	0.0299	
9/30/2007	0.0748	0.0159	0.0589	0.0056	0.0003	0.0035	0.0012	
8/31/2007	0.3504	0.1706	0.1798	0.1228	0.0291	0.0323	0.0598	
7/31/2007	0.1725	0.1168	0.0557	0.0298	0.0136	0.0031	0.0202	
6/30/2007	0.0221	0.0991	0.0263	0.0005	0.0098	0.0059	0.0022	
5/31/2007	-0.6974	-0.6645	-0.0329	0.4864	0.4415	0.0011	0.4634	
4/30/2007	0.1645	0.1149	0.0496	0.0271	0.0132	0.0025	0.0189	
3/31/2007	0.8901	0.8188	0.0713	0.7923	0.6705	0.0051	0.7288	
2/28/2007	0.4185	0.4314	-0.0129	0.1751	0.1861	0.0002	0.1805	
1/31/2007	-0.7725	-0.7574	-0.0151	0.5968	0.5736	0.0002	0.5851	
12/31/2006	1.4535	1.4253	0.0282	2.1126	2.0315	0.0008	2.0717	
11/30/2006	1.1112	1.0822	0.0290	1.2348	1.1712	0.0008	1.2026	
10/31/2006	0.5910	0.5652	0.0258	0.3493	0.3195	0.0007	0.3340	
9/30/2006	-1.2711	-1.1498	-0.1213	1.6157	1.3220	0.0147	1.4615	
8/31/2006	0.3102	0.3233	-0.0131	0.0962	0.1045	0.0002	0.1003	
7/31/2006	0.5613	0.6444	-0.0831	0.3151	0.4153	0.0069	0.3617	
6/30/2006	-0.5927	-0.5897	-0.0030	0.3513	0.3477	0.0000	0.3495	
5/31/2006	-0.5756	-0.5919	0.0163	0.3313	0.3503	0.0003	0.3407	
4/30/2006	-0.4757	-0.4098	-0.0659	0.2263	0.1679	0.0043	0.1949	
3/31/2006	0.1639	0.1814	-0.0175	0.0269	0.0329	0.0003	0.0297	
2/28/2006	0.7876	0.8070	-0.0194	0.6203	0.6513	0.0004	0.6356	
1/31/2006	1.0295	1.0333	-0.0038	1.0599	1.0678	0.0000	1.0638	
12/31/2005	-0.0677	-0.0848	0.0171	0.0046	0.0072	0.0003	0.0057	
11/30/2005	0.6267	0.6918	-0.0651	0.3927	0.4786	0.0042	0.4336	
10/31/2005	-0.1177	-0.0740	-0.0437	0.0139	0.0055	0.0019	0.0087	
9/30/2005	0.3580	0.3539	0.0041	0.1282	0.1253	0.0000	0.1267	
8/31/2005	0.3580	0.4039	-0.0459	0.1282	0.1632	0.0021	0.1446	
7/31/2005	-0.2120	-0.1461	-0.0659	0.0449	0.0213	0.0043	0.0310	
6/30/2005	-0.4220	-0.3961	-0.0259	0.1781	0.1569	0.0007	0.1671	
5/31/2005	-1.4220	-1.3861	-0.0359	2.0221	1.9212	0.0013	1.9710	
4/30/2005	-0.3820	-0.3661	-0.0159	0.1459	0.1340	0.0003	0.1398	
3/31/2005	-0.3820	-0.3661	-0.0159	0.1459	0.1340	0.0003	0.1398	
2/28/2005	0.5080	0.5139	-0.0059	0.2581	0.2641	0.0000	0.2611	
1/31/2005	-0.3820	-0.3461	-0.0359	0.1459	0.1198	0.0013	0.1322	
				<b>Sum</b>	<b>19.7538</b>	<b>18.8313</b>	<b>0.1317</b>	<b>19.2267</b>
				<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	

Number of Obs.	48	I	
Number of Obs. - 1	47	J	Canadian Bond
4-year Annualized Portfolio Return	5.0334	K	UPDATE
4-year Annualized Index Return	4.8363	L	UPDATE
4-year Annualized Risk-Free Return	2.2147	M	UPDATE
Annualized Portfolio Std. Deviation	2.2458	[Square Root of (E/J)] * [Square Root of 12] N	
Annualized Index Std. Deviation	2.1927	[Square Root of (F/J)] * [Square Root of 12] O	
Annualized Tracking Error	0.1834	[Square Root of (G/J)] * [Square Root of 12] P	
Annualized alpha	0.1971	K-L	
Information Ratio	1.0748	[(G - H) / L] AA	

**2012.1 RR BCUC.60.2 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-16**  
**Figure 5.16 – Fixed Income Characteristics and Performance Statistics**

**Please provide the alpha (%), tracking error (%), and information ratio, for the US bond portfolio and mortgage portfolio. Show calculations for each year.**

**Response:**

Alpha (%), tracking error (%), and information ratio for the US/Global bond portfolio is detailed below. Detailed calculations are included in Attachment A – US/Global Bond Portfolio.

**US/Global Bond Portfolio**

<b>For the Years Ending December 31</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>
Alpha (%) 4-year	0.56	0.61	1.22
Tracking Error (4-year)	1.66	1.66	1.57
Information Ratio (4-year)	0.34	0.37	0.78

Alpha (%), tracking error (%), and information ratio for the mortgage portfolio is detailed below. Detailed calculations are included in Attachment B – Mortgage Portfolio.

**Mortgage Portfolio**

<b>For the Years Ending December 31</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>
Alpha (%) 4-year	0.28	-0.19	-0.05
Tracking Error (4-year)	1.81	1.62	1.37
Information Ratio (4-year)	0.16	-0.12	-0.04



## **2012.1 RR BCUC.60.2 – Attachment A – US/Global Bond Portfolio**

END DATE	US/Global Bond PORTFOLIO	CDIC09 INDEX	III DIFFERENCE	91 DAY RISK FREE RATE	END DATE	V (I - Average I)	VI (II - Average II)	VII (III - Average III)	VII (V * V)	VIII (VI * VI)	IX (VII * VII)	IX (V * VI)
12/31/2008	0.5704	1.1754	-0.6050	0.3365	12/31/2008	-0.0532	0.6527	-0.7059	0.0028	0.4260	0.4983	-0.0347
11/30/2008	4.4547	4.4616	-0.0069	0.1725	11/30/2008	3.8311	3.9389	-0.1078	14.6773	15.5150	0.0116	15.0903
10/31/2008	15.8277	13.4464	2.3813	0.2074	10/31/2008	15.2041	12.9237	2.2804	231.1647	167.0221	5.2002	196.4933
9/30/2008	1.2113	-0.5087	1.7200	0.3282	9/30/2008	0.5877	-1.0314	1.6191	0.3454	1.0638	2.6215	-0.6062
8/31/2008	4.2011	4.0766	0.1245	0.2139	8/31/2008	3.5775	3.5539	0.0236	12.7985	12.6302	0.0006	12.7141
7/31/2008	1.6629	1.2764	0.3865	0.2493	7/31/2008	1.0393	0.7537	0.2856	1.0801	0.5681	0.0816	0.7833
6/30/2008	2.6853	2.2436	0.4417	0.2876	6/30/2008	2.0617	1.7209	0.3408	4.2506	2.9615	0.1161	3.5480
5/31/2008	-2.0358	-2.7109	0.6751	0.2560	5/31/2008	-2.6594	-3.2336	0.5742	7.0724	10.4561	0.3297	8.5994
4/30/2008	-4.1077	-4.1965	0.0888	0.0027	4/30/2008	-4.7313	-4.7192	-0.0121	22.3852	22.2708	0.0001	22.3279
3/31/2008	7.0128	6.9953	0.0175	0.4821	3/31/2008	6.3892	6.4726	-0.0834	40.8219	41.8946	0.0070	41.3548
2/29/2008	-1.0707	-1.0418	-0.0289	0.3233	2/29/2008	-1.6943	-1.5645	-0.1298	2.8706	2.4476	0.0168	2.6507
1/31/2008	5.1729	5.2473	-0.0744	0.4202	1/31/2008	4.5493	4.7246	-0.1753	20.6961	22.3219	0.0307	21.4937
12/31/2007	-1.6230	-1.5907	-0.0323	0.3477	12/31/2007	-2.2466	-2.1134	-0.1332	5.0472	4.4664	0.0177	4.7480
11/30/2007	8.0401	8.1335	-0.0934	0.3544	11/30/2007	7.4165	-0.76108	-0.1943	55.0045	57.9243	0.0378	56.4455
10/31/2007	-3.0599	-3.0378	-0.0221	0.3668	10/31/2007	-3.6835	-3.5605	-0.1230	13.5682	12.6771	0.0151	13.1151
9/30/2007	-4.3200	-4.3400	0.0200	0.3400	9/30/2007	-4.9436	-4.8627	-0.0809	24.4392	23.6458	0.0065	24.0392
8/31/2007	0.3100	0.4600	-0.1500	0.4800	8/31/2007	-0.3136	-0.0627	-0.2509	0.0983	0.0039	0.0630	0.0197
7/31/2007	2.7700	2.8600	-0.0900	0.3900	7/31/2007	2.1464	2.3373	-0.1909	4.6070	5.4630	0.0364	5.0168
6/30/2007	-0.7400	-0.7900	0.0500	0.3300	6/30/2007	-1.3636	-1.3127	-0.0509	1.8594	1.7232	0.0026	1.7900
5/31/2007	-4.8200	-4.8600	0.0400	0.3400	5/31/2007	-5.4436	-5.3827	-0.0609	29.6328	28.9734	0.0037	29.3012
4/30/2007	-3.1300	-3.2000	0.0700	0.3600	4/30/2007	-3.7536	-3.7227	-0.0309	14.0895	13.8585	0.0010	13.9735
3/31/2007	-1.6000	-1.5600	-0.0400	0.3500	3/31/2007	-2.2236	-2.0827	-0.1409	4.9444	4.3376	0.0199	4.6311
2/28/2007	1.3800	1.4300	-0.0500	0.3100	2/28/2007	0.7564	0.9073	-0.1509	0.5721	0.8232	0.0228	0.6863
1/31/2007	0.4800	0.5200	-0.0400	0.3700	1/31/2007	-0.1436	-0.0027	-0.1409	0.0206	0.0000	0.0199	0.0004
12/31/2006	0.4500	0.4500	0.0000	0.3300	12/31/2006	-0.1736	-0.0727	-0.1009	0.0301	0.0053	0.0102	0.0126
11/30/2006	4.4100	4.3300	0.0800	0.3400	11/30/2006	3.7864	3.8073	-0.0209	14.3368	14.4956	0.0004	14.4160
10/31/2006	1.3800	1.3100	0.0700	0.3600	10/31/2006	0.7564	0.7873	-0.0309	0.5721	0.6198	0.0010	0.5955
9/30/2006	0.6200	0.6900	-0.0700	0.3200	9/30/2006	-0.0036	0.1673	-0.1709	0.0000	0.0280	0.0292	-0.0006
8/31/2006	-0.5900	-0.4700	-0.1200	0.3700	8/31/2006	-1.2136	-0.9927	-0.2209	1.4728	0.9854	0.0488	1.2047
7/31/2006	2.7100	2.7100	0.0000	0.4000	7/31/2006	2.0864	2.1873	-0.1009	4.3531	4.7843	0.0102	4.5636
6/30/2006	0.6700	0.5800	0.0900	0.3300	6/30/2006	0.0464	0.0573	-0.0109	0.0022	0.0033	0.0001	0.0027
5/31/2006	-0.5800	-0.4900	-0.0900	0.3500	5/31/2006	-1.2036	-1.0127	-0.1909	1.4486	1.0256	0.0364	1.2189
4/30/2006	-2.5600	-2.6700	0.1100	0.2700	4/30/2006	-3.1836	-3.1927	0.0091	10.1353	10.1933	0.0001	10.1643
3/31/2006	1.5456	1.5741	-0.0285	0.3100	3/31/2006	0.9220	1.0514	-0.1294	0.8502	1.1055	0.0167	0.9695
2/28/2006	-0.9118	-0.9619	0.0501	0.2400	2/28/2006	-1.5354	-1.4846	-0.0508	2.3575	2.2041	0.0026	2.2795
1/31/2006	-1.2020	-1.2054	0.0034	0.2900	1/31/2006	-1.8256	-1.7281	-0.0975	3.3328	2.9862	0.0095	3.1547
12/31/2005	1.1767	1.0101	0.1666	0.2800	12/31/2005	0.5531	0.4874	0.0657	0.3059	0.2375	0.0043	0.2696
11/30/2005	-1.5662	-1.5226	-0.0436	0.2400	11/30/2005	-2.1898	-2.0453	-0.1445	4.7951	4.1833	0.0209	4.4787
10/31/2005	0.3902	0.3812	0.0090	0.2200	10/31/2005	-0.2334	-0.1415	-0.0919	0.0545	0.0200	0.0084	0.0330
9/30/2005	-3.7745	-3.9999	0.2254	0.2000	9/30/2005	-4.3981	-4.5226	0.1245	19.3434	20.4538	0.0155	19.8908
8/31/2005	-1.3396	-1.2717	-0.0680	0.2200	8/31/2005	-1.9632	-1.7944	-0.1689	3.8543	3.2197	0.0285	3.5228
7/31/2005	-0.9420	-0.9920	0.0500	0.1800	7/31/2005	-1.5656	-1.5147	-0.0509	2.4511	2.2942	0.0026	2.3714
6/30/2005	-2.6632	-2.5286	-0.1346	0.2000	6/30/2005	-3.2868	-3.0513	-0.2355	10.8029	9.3105	0.0554	10.0290
5/31/2005	-0.9917	-1.0110	0.0193	0.2200	5/31/2005	-1.6153	-1.5337	-0.0816	2.6093	2.3523	0.0067	2.4775
4/30/2005	5.2223	5.3514	-0.1290	0.2200	4/30/2005	4.5987	4.8287	-0.2299	21.1483	23.3160	0.0529	22.2058
3/31/2005	-2.5922	-2.5084	-0.0838	0.1900	3/31/2005	-3.2158	-3.0311	-0.1847	10.3414	9.1874	0.0341	9.7474
2/28/2005	-0.8221	-0.9221	0.0999	0.1800	2/28/2005	-1.4457	-1.4447	-0.0010	2.0901	2.0873	0.0000	2.0887
1/31/2005	2.6211	2.7664	-0.1453	0.2200	1/31/2005	1.9975	2.2437	-0.2462	3.9899	5.0341	0.0606	4.4817
<b>Average Return</b>	<b>0.6236</b>	<b>0.5227</b>	<b>0.1009</b>	<b>0.2937</b>				<b>Sum</b>	<b>632.7269</b>	<b>573.6070</b>	<b>9.6158</b>	<b>598.3591</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>				<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	

Number of Obs.	48	I	
Number of Obs. - 1	47	J	US/Global Bond
4-year Annualized Portfolio Return	6.9417	K	UPDATE
4-year Annualized Index Return	5.7257	L	UPDATE
4-year Annualized Risk-Free Return	3.5763	M	UPDATE
Annualized Portfolio Std. Deviation	12.7101	[Square Root of (E/J)] * [Square Root of 12]	N
Annualized Index Std. Deviation	12.1018	[Square Root of (F/J)] * [Square Root of 12]	O
Annualized Tracking Error	1.5669	[Square Root of (G/J)] * [Square Root of 12]	P
Annualized alpha	1.2160	K-L	
Information Ratio	0.7761	[(G - H) / L]	AA

END DATE	US/Global Bond PORTFOLIO	CDIC09 INDEX	III DIFFERENCE	91 DAY RISK FREE RATE
12/31/2009	-1.4752	-1.5540	0.0788	0.0315
11/30/2009	-1.1375	-1.1665	0.0290	0.0249
10/31/2009	0.7800	0.8250	-0.0450	0.0250
9/30/2009	-1.8804	-1.6913	-0.1891	0.0240
8/31/2009	2.2675	2.4214	-0.1539	0.0342
7/31/2009	-6.1532	-6.1608	0.0076	0.0263
6/30/2009	6.0926	6.2208	-0.1282	0.0263
5/31/2009	-7.5491	-7.2773	-0.2718	0.0158
4/30/2009	-5.4861	-5.1655	-0.3206	0.0842
3/31/2009	-0.0782	0.2031	-0.2813	0.1054
2/28/2009	2.2802	2.4788	-0.1986	0.1293
1/31/2009	-0.2634	0.5144	-0.7778	0.0924
12/31/2008	0.5704	1.1754	-0.6050	0.3365
11/30/2008	4.4547	4.4616	-0.0069	0.1725
10/31/2008	15.8277	13.4464	2.3813	0.2074
9/30/2008	1.2113	-0.5087	1.7200	0.3282
8/31/2008	4.2011	4.0766	0.1245	0.2139
7/31/2008	1.6629	1.2764	0.3865	0.2493
6/30/2008	2.6853	2.2436	0.4417	0.2876
5/31/2008	-2.0358	-2.7109	0.6751	0.2560
4/30/2008	-4.1077	-4.1965	0.0888	0.0027
3/31/2008	7.0128	6.9953	0.0175	0.4821
2/29/2008	-1.0707	-1.0418	-0.0289	0.3233
1/31/2008	5.1729	5.2473	-0.0744	0.4202
12/31/2007	-1.6230	-1.5907	-0.0323	0.3477
11/30/2007	8.0401	8.1335	-0.0934	0.3544
10/31/2007	-3.0599	-3.0378	-0.0221	0.3668
9/30/2007	-4.3200	-4.3400	0.0200	0.3400
8/31/2007	0.3100	0.4600	-0.1500	0.4800
7/31/2007	2.7700	2.8600	-0.0900	0.3900
6/30/2007	-0.7400	-0.7900	0.0500	0.3300
5/31/2007	-4.8200	-4.8600	0.0400	0.3400
4/30/2007	-3.1300	-3.2000	0.0700	0.3600
3/31/2007	-1.6000	-1.5600	-0.0400	0.3500
2/28/2007	1.3800	1.4300	-0.0500	0.3100
1/31/2007	0.4800	0.5200	-0.0400	0.3700
12/31/2006	0.4500	0.4500	0.0000	0.3300
11/30/2006	4.4100	4.3300	0.0800	0.3400
10/31/2006	1.3800	1.3100	0.0700	0.3600
9/30/2006	0.6200	0.6900	-0.0700	0.3200
8/31/2006	-0.5900	-0.4700	-0.1200	0.3700
7/31/2006	2.7100	2.7100	0.0000	0.4000
6/30/2006	0.6700	0.5800	0.0900	0.3300
5/31/2006	-0.5800	-0.4900	-0.0900	0.3500
4/30/2006	-2.5600	-2.6700	0.1100	0.2700
3/31/2006	1.5456	1.5741	-0.0285	0.3100
2/28/2006	-0.9118	-0.9619	0.0501	0.2400
1/31/2006	-1.2020	-1.2054	0.0034	0.2900
<b>Average Return</b>	<b>0.4711</b>	<b>0.4163</b>	<b>0.0547</b>	<b>0.2531</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>

END DATE	V (I - Average I)	VI (II - Average II)	VII (III - Average III)	VII (V * V)	VIII (VI * VI)	IX (VII * VII)	IX (V * VI)	
12/31/2008	-1.9463	-1.9703	0.0241	3.7879	3.8823	0.0006	3.8348	
11/30/2008	-1.6086	-1.5828	-0.0257	2.5875	2.5054	0.0007	2.5461	
10/31/2008	0.3089	0.4087	-0.0997	0.0954	0.1670	0.0099	0.1262	
9/30/2008	-2.3515	-2.1076	-0.2438	5.5294	4.4422	0.0594	4.9561	
8/31/2008	1.7964	2.0051	-0.2086	3.2272	4.0202	0.0435	3.6019	
7/31/2008	-6.6243	-6.5771	-0.0471	43.8809	43.2589	0.0022	43.5688	
6/30/2008	5.6215	5.8045	-0.1829	31.6017	33.6917	0.0335	32.6299	
5/31/2008	-8.0202	-7.6936	-0.3265	64.3231	59.1922	0.1066	61.7043	
4/30/2008	-5.9572	-5.5818	-0.3753	35.4878	31.1570	0.1409	33.2520	
3/31/2008	-0.5493	-0.2132	-0.3360	0.3017	0.0455	0.1129	0.1171	
2/29/2008	1.8091	2.0625	-0.2533	3.2730	4.2537	0.0642	3.7313	
1/31/2008	-0.7345	0.0981	-0.8325	0.5394	0.0096	0.6931	-0.0720	
12/31/2007	0.0993	0.7591	-0.6597	0.0099	0.5762	0.4352	0.0754	
11/30/2007	3.9836	4.0453	-0.0616	15.8693	16.3641	0.0038	16.1148	
10/31/2007	15.3566	13.0301	2.3266	235.8262	169.7823	5.4130	200.0978	
9/30/2007	0.7402	-0.9250	1.6653	0.5479	0.8557	2.7732	-0.6848	
8/31/2007	3.7300	3.6603	0.0698	13.9132	13.3975	0.0049	13.6529	
7/31/2007	1.1918	0.8601	0.3318	1.4205	0.7397	0.1101	1.0250	
6/30/2007	2.2142	1.8273	0.3870	4.9028	3.3389	0.1498	4.0460	
5/31/2007	-2.5069	-3.1272	0.6204	6.2844	9.7797	0.3849	7.8396	
4/30/2007	-4.5788	-4.6128	0.0341	20.9651	21.2784	0.0012	21.1211	
3/31/2007	6.5417	6.5790	-0.0372	42.7943	43.2826	0.0014	43.0378	
2/28/2007	-1.5418	-1.4581	-0.0836	2.3770	2.1262	0.0070	2.2481	
1/31/2007	4.7018	4.8310	-0.1291	22.1072	23.3381	0.0167	22.7143	
12/31/2006	-2.0941	-2.0070	-0.0870	4.3851	4.0282	0.0076	4.2029	
11/30/2006	7.5690	7.7172	-0.1481	57.2903	59.5545	0.0219	58.4114	
10/31/2006	-3.5310	-3.4541	-0.0768	12.4677	11.9311	0.0059	12.1965	
9/30/2006	-4.7911	-4.7563	-0.0347	22.9543	22.6228	0.0012	22.7880	
8/31/2006	-0.1611	0.0437	-0.2047	0.0259	0.0019	0.0419	-0.0070	
7/31/2006	2.2989	2.4437	-0.1447	5.2851	5.9714	0.0209	5.6178	
6/30/2006	-1.2111	-1.2063	-0.0047	1.4667	1.4553	0.0000	1.4610	
5/31/2006	-5.2911	-5.2763	-0.0147	27.9954	27.8398	0.0002	27.9175	
4/30/2006	-3.6011	-3.6163	0.0153	12.9677	13.0780	0.0002	13.0227	
3/31/2006	-2.0711	-1.9763	-0.0947	4.2893	3.9059	0.0090	4.0931	
2/28/2006	0.9089	1.0137	-0.1047	0.8262	1.0275	0.0110	0.9213	
1/31/2006	0.0089	0.1037	-0.0947	0.0001	0.0107	0.0090	0.0009	
12/31/2005	-0.0211	0.0337	-0.0547	0.0004	0.0011	0.0030	-0.0007	
11/30/2005	3.9389	3.9137	0.0253	15.5152	15.3167	0.0006	15.4156	
10/31/2005	0.9089	0.8937	0.0153	0.8262	0.7986	0.0002	0.8123	
9/30/2005	0.1489	0.2737	-0.1247	0.0222	0.0749	0.0156	0.0408	
8/31/2005	-1.0611	-0.8863	-0.1747	1.1259	0.7856	0.0305	0.9405	
7/31/2005	2.2389	2.2937	-0.0547	5.0128	5.2608	0.0030	5.1353	
6/30/2005	0.1989	0.1637	0.0353	0.0396	0.0268	0.0012	0.0326	
5/31/2005	-1.0511	-0.9063	-0.1447	1.1047	0.8215	0.0209	0.9526	
4/30/2005	-3.0311	-3.0863	0.0553	9.1874	9.5255	0.0031	9.3549	
3/31/2005	1.0746	1.1578	-0.0832	1.1547	1.3405	0.0069	1.2441	
2/28/2005	-1.3829	-1.3783	-0.0046	1.9124	1.8997	0.0000	1.9060	
1/31/2005	-1.6731	-1.6217	-0.0513	2.7991	2.6299	0.0026	2.7132	
<b>Sum</b>	<b>750.3071</b>	<b>681.3937</b>	<b>10.7851</b>	<b>710.4579</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

2009

Number of Obs.	48	I	
Number of Obs. - 1	47	J	US/Global Bond
4-year Annualized Portfolio Retu	4.8522	K	UPDATE
4-year Annualized Index Return	4.2455	L	UPDATE
4-year Annualized Risk-Free Ret	3.0782	M	UPDATE
Annualized Portfolio Std. Deviat	13.8408	[Square Root of (E/J)] * [Square Root of 12] N	
Annualized Index Std. Deviation	13.1899	[Square Root of (F/J)] * [Square Root of 12] O	
Annualized Tracking Error	1.6594	[Square Root of (G/J)] * [Square Root of 12] P	
Annualized alpha	0.6067	K-L	
Information Ratio	0.3656	[(G - H) / L] AA	

END DATE	US/Global BOND PORTFOLIO	RBSDAILY INDEX	III DIFFERENCE	91 DAY RISK FREE RATE
12/31/2010	-3.9327	-3.8148	-0.1179	0.0967
11/30/2010	0.5069	0.4952	0.0117	0.0654
10/31/2010	-0.3482	-0.3648	0.0166	0.0706
9/30/2010	-3.4564	-3.4342	-0.0222	0.0314
8/31/2010	4.1182	4.0920	0.0262	0.0681
7/31/2010	-2.2882	-2.3180	0.0298	0.0367
6/30/2010	2.1227	2.0465	0.0762	0.0577
5/31/2010	4.0034	4.0115	-0.0081	0.0341
4/30/2010	0.3324	0.3686	-0.0362	0.0236
3/31/2010	-4.1832	-4.2278	0.0446	0.0052
2/28/2010	-0.5133	-0.4468	-0.0665	0.0157
1/31/2010	2.7681	2.7853	-0.0172	0.0289
12/31/2009	-1.4752	-1.5540	0.0788	0.0315
11/30/2009	-1.1375	-1.1665	0.0290	0.0249
10/31/2009	0.7800	0.8250	-0.0450	0.0250
9/30/2009	-1.8804	-1.6913	-0.1891	0.0240
8/31/2009	2.2675	2.4214	-0.1539	0.0342
7/31/2009	-6.1532	-6.1608	0.0076	0.0263
6/30/2009	6.0926	6.2208	-0.1282	0.0263
5/31/2009	-7.5491	-7.2773	-0.2718	0.0158
4/30/2009	-5.4861	-5.1655	-0.3206	0.0842
3/31/2009	-0.0782	0.2031	-0.2813	0.1054
2/28/2009	2.2802	2.4788	-0.1986	0.1293
1/31/2009	-0.2634	0.5144	-0.7778	0.0924
12/31/2008	0.5704	1.1754	-0.6050	0.3365
11/30/2008	4.4547	4.4616	-0.0069	0.1725
10/31/2008	15.8277	13.4464	2.3813	0.2074
9/30/2008	1.2113	-0.5087	1.7200	0.3282
8/31/2008	4.2011	4.0766	0.1245	0.2139
7/31/2008	1.6629	1.2764	0.3865	0.2493
6/30/2008	2.6853	2.2436	0.4417	0.2876
5/31/2008	-2.0358	-2.7109	0.6751	0.2560
4/30/2008	-4.1077	-4.1965	0.0888	0.0027
3/31/2008	7.0128	6.9953	0.0175	0.4821
2/29/2008	-1.0707	-1.0418	-0.0289	0.3233
1/31/2008	5.1729	5.2473	-0.0744	0.4202
12/31/2007	-1.6230	-1.5907	-0.0323	0.3477
11/30/2007	8.0401	8.1335	-0.0934	0.3544
10/31/2007	-3.0599	-3.0378	-0.0221	0.3668
9/30/2007	-4.3200	-4.3400	0.0200	0.3400
8/31/2007	0.3100	0.4600	-0.1500	0.4800
7/31/2007	2.7700	2.8600	-0.0900	0.3900
6/30/2007	-0.7400	-0.7900	0.0500	0.3300
5/31/2007	-4.8200	-4.8600	0.0400	0.3400
4/30/2007	-3.1300	-3.2000	0.0700	0.3600
3/31/2007	-1.6000	-1.5600	-0.0400	0.3500
2/28/2007	1.3800	1.4300	-0.0500	0.3100
1/31/2007	0.4800	0.5200	-0.0400	0.3700
<b>Average Return</b>	<b>0.3291</b>	<b>0.2777</b>	<b>0.0514</b>	<b>0.1827</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>

END DATE	V (I - Average I)	VI (II - Average II)	VII (III - Average III)	VII (V * V)	VIII (VI * VI)	IX (VII * VII)	IX (V * VI)	
12/31/2008	-4.2618	-4.0925	-0.1693	18.1633	16.7487	0.0287	17.4417	
11/30/2008	0.1778	0.2175	-0.0397	0.0316	0.0473	0.0016	0.0387	
10/31/2008	-0.6773	-0.6425	-0.0348	0.4588	0.4128	0.0012	0.4352	
9/30/2008	-3.7855	-3.7119	-0.0736	14.3304	13.7783	0.0054	14.0516	
8/31/2008	3.7891	3.8143	-0.0252	14.3569	14.5487	0.0006	14.4525	
7/31/2008	-2.6173	-2.5957	-0.0216	6.8505	6.7378	0.0005	6.7939	
6/30/2008	1.7936	1.7688	0.0248	3.2168	3.1286	0.0006	3.1724	
5/31/2008	3.6743	3.7338	-0.0595	13.5001	13.9411	0.0035	13.7189	
4/30/2008	0.0033	0.0909	-0.0876	0.0000	0.0083	0.0077	0.0003	
3/31/2008	-4.5123	-4.5055	-0.0068	20.3613	20.2997	0.0000	20.3305	
2/29/2008	-0.8424	-0.7245	-0.1179	0.7097	0.5249	0.0139	0.6104	
1/31/2008	2.4390	2.5076	-0.0686	5.9485	6.2880	0.0047	6.1159	
12/31/2007	-1.8043	-1.8317	0.0274	3.2557	3.3552	0.0007	3.3051	
11/30/2007	-1.4666	-1.4442	-0.0224	2.1511	2.0858	0.0005	2.1182	
10/31/2007	0.4509	0.5473	-0.0964	0.2033	0.2995	0.0093	0.2467	
9/30/2007	-2.2095	-1.9690	-0.2405	4.8821	3.8770	0.0579	4.3506	
8/31/2007	1.9384	2.1437	-0.2053	3.7572	4.5954	0.0422	4.1552	
7/31/2007	-6.4823	-6.4385	-0.0438	42.0208	41.4545	0.0019	41.7367	
6/30/2007	5.7635	5.9431	-0.1796	33.2174	35.3202	0.0323	34.2527	
5/31/2007	-7.8782	-7.5550	-0.3232	62.0668	57.0783	0.1045	59.5203	
4/30/2007	-5.8152	-5.4432	-0.3720	33.8171	29.6286	0.1384	31.6537	
3/31/2007	-0.4073	-0.0746	-0.3327	0.1659	0.0056	0.1107	0.0304	
2/28/2007	1.9511	2.2011	-0.2500	3.8066	4.8448	0.0625	4.2944	
1/31/2007	-0.5925	0.2367	-0.8292	0.3511	0.0560	0.6876	-0.1402	
12/31/2006	0.2413	0.8977	-0.6564	0.0582	0.8058	0.4309	0.2166	
11/30/2006	4.1256	4.1839	-0.0583	17.0202	17.5049	0.0034	17.2608	
10/31/2006	15.4986	13.1687	2.3299	240.2052	173.4142	5.4283	204.0955	
9/30/2006	0.8822	-0.7864	1.6686	0.7782	0.6185	2.7841	-0.6937	
8/31/2006	3.8720	3.7989	0.0731	14.9920	14.4315	0.0053	14.7091	
7/31/2006	1.3338	0.9987	0.3351	1.7789	0.9974	0.1123	1.3320	
6/30/2006	2.3562	1.9659	0.3903	5.5515	3.8647	0.1523	4.6319	
5/31/2006	-2.3649	-2.9886	0.6237	5.5930	8.9318	0.3890	7.0679	
4/30/2006	-4.4368	-4.4742	0.0374	19.6856	20.0186	0.0014	19.8514	
3/31/2006	6.6837	6.7176	-0.0339	44.6712	45.1259	0.0012	44.8980	
2/28/2006	-1.3998	-1.3195	-0.0803	1.9596	1.7411	0.0065	1.8471	
1/31/2006	4.8438	4.9696	-0.1258	23.4620	24.6967	0.0158	24.0714	
12/31/2005	-1.9521	-1.8684	-0.0837	3.8109	3.4910	0.0070	3.6474	
11/30/2005	7.7110	7.8558	-0.1448	59.4588	61.7133	0.0210	60.5756	
10/31/2005	-3.3890	-3.3155	-0.0735	11.4856	10.9927	0.0054	11.2364	
9/30/2005	-4.6491	-4.6177	-0.0314	21.6146	21.3233	0.0010	21.4684	
8/31/2005	-0.0191	0.1823	-0.2014	0.0004	0.0332	0.0406	-0.0035	
7/31/2005	2.4409	2.5823	-0.1414	5.9578	6.6682	0.0200	6.3030	
6/30/2005	-1.0691	-1.0677	-0.0014	1.1431	1.1400	0.0000	1.1415	
5/31/2005	-5.1491	-5.1377	-0.0114	26.5137	26.3962	0.0001	26.4549	
4/30/2005	-3.4591	-3.4777	0.0186	11.9657	12.0945	0.0003	12.0299	
3/31/2005	-1.9291	-1.8377	-0.0914	3.7216	3.3772	0.0084	3.5452	
2/28/2005	1.0509	1.1523	-0.1014	1.1043	1.3278	0.0103	1.2109	
1/31/2005	0.1509	0.2423	-0.0914	0.0228	0.0587	0.0084	0.0365	
<b>Sum</b>	<b>810.1776</b>	<b>739.8323</b>	<b>10.7699</b>	<b>769.6200</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>

Number of Obs.	48	I	
Number of Obs. - 1	47	J	US/Global Bond
4-year Annualized Portfolio Return	3.0087	K	UPDATE
4-year Annualized Index Return	2.4516	L	UPDATE
4-year Annualized Risk-Free Return	2.2147	M	UPDATE
Annualized Portfolio Std. Deviation	14.3824	[Square Root of (E/J)] * [Square Root of 12]	N
Annualized Index Std. Deviation	13.7438	[Square Root of (F/J)] * [Square Root of 12]	O
Annualized Tracking Error	1.6582	[Square Root of (G/J)] * [Square Root of 12]	P
Annualized alpha	0.5571	K-L	
Information Ratio	0.3360	[(G - H) / L]	AA



## **2012.1 RR BCUC.60.2 – Attachment B – Mortgage Portfolio**

DATE	MORTGAGES	MORTGAGE BENCHMARK	Value-added (VA)		MORTGAGES	MORTGAGE BENCHMARK	Value-added (VA)
December 31, 2011	0.99%	0.76%	0.23%		1.0099	1.0076	1.0023
September 30, 2011	2.24%	2.57%	-0.33%		1.0224	1.0257	0.9967
June 30, 2011	2.09%	1.76%	0.34%		1.0209	1.0176	1.0034
March 31, 2011	0.95%	0.51%	0.43%		1.0095	1.0051	1.0043
December 31, 2010	0.47%	0.00%	0.47%		1.0047	1.0000	1.0047
September 30, 2010	1.75%	1.87%	-0.11%		1.0175	1.0187	0.9989
June 30, 2010	2.52%	1.97%	0.56%		1.0252	1.0197	1.0056
March 31, 2010	2.16%	0.70%	1.46%		1.0216	1.0070	1.0146
December 31, 2009	1.77%	0.69%	1.07%		1.0177	1.0069	1.0107
September 30, 2009	2.78%	1.90%	0.88%		1.0278	1.0190	1.0088
June 30, 2009	0.55%	0.93%	-0.38%		1.0055	1.0093	0.9962
March 31, 2009	0.92%	1.95%	-1.04%		1.0092	1.0195	0.9896
December 31, 2008	3.45%	4.55%	-1.10%		1.0345	1.0455	0.9890
September 30, 2008	1.45%	1.40%	0.05%		1.0145	1.0140	1.0005
June 30, 2008	-2.14%	-0.12%	-2.02%		0.9786	0.9988	0.9798
March 31, 2008	4.48%	3.53%	0.95%		1.0448	1.0353	1.0095
December 31, 2007	2.41%	1.87%	0.54%		1.0241	1.0187	1.0054
September 30, 2007	2.00%	2.08%	-0.08%		1.0200	1.0208	0.9992
June 30, 2007	-0.41%	-0.18%	-0.23%		0.9959	0.9982	0.9977
March 31, 2007	1.43%	1.29%	0.14%		1.0143	1.0129	1.0014
December 31, 2006	1.11%	1.02%	0.09%		1.0111	1.0102	1.0009
September 30, 2006	3.05%	2.82%	0.23%		1.0305	1.0282	1.0023
June 30, 2006	0.51%	0.33%	0.18%		1.0051	1.0033	1.0018
March 31, 2006	0.67%	0.61%	0.06%		1.0067	1.0061	1.0006
December 31, 2005	0.51%	0.05%	0.46%		1.0051	1.0005	1.0046
September 30, 2005	0.04%	-0.01%	0.05%		1.0004	0.9999	1.0005
June 30, 2005	2.71%	2.55%	0.16%		1.0271	1.0255	1.0016
March 31, 2005	1.34%	0.95%	0.39%		1.0134	1.0095	1.0039

Statistics based on annualizing quarterly data

**For 2011**

4-yr annualized return = $\text{product}(1+\text{return})^{\sqrt{(4/16)}-1}$	6.73%	6.36%
4-Yr Value-added (VA) = mortgage 4 yr return - benchmark 4 yr return	0.37%	
4-yr Tracking Error (TE) = Stdev(VA)		0.91%
Annualized TE = $\text{Stdev}(\text{VA})^{\sqrt{4}}$		1.81%
Information Ratio = VA / TE	0.20	

**For 2010**

4-yr annualized return = $\text{product}(1+\text{return})^{\sqrt{(4/16)}-1}$	6.50%	6.22%
4-Yr Value-added = mortgage 4 yr return - benchmark 4 yr return	0.28%	
4-yr Tracking error = Stdev(VA)		0.906%
Annualized = $\text{Stdev}(\text{VA})^{\sqrt{4}}$		1.8%
Information Ratio = VA / TE	0.16	

**For 2009**

4-yr annualized return = $\text{product}(1+\text{return})^{\sqrt{(4/16)}-1}$	6.09%	6.28%
4-Yr Value-added = mortgage 4 yr return - benchmark 4 yr return	-0.19%	
4-yr Tracking error = Stdev(VA)		0.81%
Annualized = $\text{Stdev}(\text{VA})^{\sqrt{4}}$		1.62%
Information Ratio = VA / TE	(0.12)	

**For 2008**

4-yr annualized return = $\text{product}(1+\text{return})^{\sqrt{(4/16)}-1}$	5.72%	5.77%
4-Yr Value-added = mortgage 4 yr return - benchmark 4 yr return	-0.05%	
4-yr Tracking error = Stdev(VA)		0.69%
Annualized = $\text{Stdev}(\text{VA})^{\sqrt{4}}$		1.37%
Information Ratio = VA / TE	(0.04)	

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**2012.1 RR BCUC.60.3 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, Section E, p. 5-16  
Figure 5.16 – Fixed Income Characteristics and Performance Statistics**

**Please explain if the calculated alpha (%), tracking error (%), and information ratio for the US bond portfolio is related to the removal of US bonds from ICBC’s investment portfolio strategic asset mix.**

**Response:**

The alpha, tracking error, and information ratio were all positive and were not related to the removal of US bonds from the ICBC strategic asset mix. Please reference the response to information request 2012.1 RR BCUC.53.1 for a full discussion of the removal of US bonds from the ICBC strategic asset mix.

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**2012.1 RR BCUC.60.3.1 Reference: INVESTMENTS**  
**Exhibit B-1, Chapter 5, Section E, p. 5-16**  
**Figure 5.16 – Fixed Income Characteristics and Performance Statistics**

**Did the performance of portfolio managers influence ICBC’s decision to change US bond investment guidelines?**

**Response:**

As evidenced by the 4-year annualized returns in Chapter 5, Figure 5.13 of the Application, portfolio returns had been strong relative to the US bond policy benchmark. Manager performance did not influence ICBC’s decision to remove US bonds from ICBC’s strategic asset mix.

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**2012.1 RR BCUC.61.1 Reference: INVESTMENTS  
Exhibit B-1, Chapter 5, p. 5-16, Figure 5.16  
Duration of Portfolio**

**Figure 5.16 shows the fixed income characteristics and performance statistics, including the duration of bond portfolios.**

**61.1 Please explain why the duration of the Canadian Bond Portfolio has been declining since 2008. Please include 2011 data.**

**61.1.1 Is the declining trend expected to continue in 2012?**

**Response:**

**61.1**

In July 2009, ICBC reduced the target duration of its bond holding from 3 years to 2.5 years to more closely align the bond duration with the duration of ICBC's liabilities, thereby reducing ICBC's exposure to the risk of rising interest rates.

Since that time, any variation from the bond portfolio's duration target is due to the composition of the benchmark duration against which portfolio managers manage. The slight decline in the portfolio duration from 2009 to 2010 reflects a slightly lower benchmark duration, as bond issuers, in general, have been extending the term of their issuance to take advantage of very low long-term borrowing costs. As a result, there has been less issuance in the three to five year part of the yield curve, leading to a slightly lower benchmark duration as existing bonds within the benchmark universe move closer to maturity.

At December 31, 2011 the Canadian bond portfolio had a duration of 2.23 years compared to a benchmark duration of 2.36 years.

**61.1.1**

ICBC manages its bond investments against the prescribed policy benchmark. The duration of this benchmark in 2012 will depend on bond issuance patterns. If the benchmark duration were to drift significantly from the target duration, the appropriateness of benchmark duration would be reviewed with the Investment Committee of ICBC's Board of Directors.

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**2012.1 RR BCUC.61.2 Reference: INVESTMENTS**

**Exhibit B-1, Chapter 5, p. 5-16, Figure 5.16**

**Duration of Portfolio**

**Figure 5.16 shows the fixed income characteristics and performance statistics, including the duration of bond portfolios.**

**What impact does a shortened duration have on the expected returns of the portfolio?**

**Response:**

The impact of a short duration bond strategy on future portfolio return will be dependent on future changes in the interest rate environment. A short duration strategy will minimize the potential negative return impact that an interest rate increase will have on portfolio return. Also, all else being equal, a shortened duration will reduce the volatility of returns associated with changes in bond yields.

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**2012.1 RR BCUC.62.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section B, p. 6-1  
Bodily Injury Cost Increases**

**In paragraph 5, ICBC states that bodily injury claims severities are impacted by the type and complexity of injuries reported, which in turn drive payments for general damages (the biggest cost driver in bodily injury claims) and the costs of litigation.**

**Please describe how BI claims handling has changed over the last five years and the relationship to BI claims severity.**

**Response:**

ICBC's claims handling philosophy is to ensure that claims are resolved fairly and reasonably, through the appropriate investigation, evaluation, and negotiation of each claim. ICBC's claims handling philosophy has not changed over the last five years.

While ICBC's claims handling philosophy has not changed, ICBC has introduced several claims handling initiatives in the last five years and will continue to refine existing initiatives to help manage bodily injury (BI) claims costs.

ICBC's key claims handling initiatives focus on streamlining claims handling processes through the segmenting of claims by matching claims risk with appropriate skill sets. This includes the centralization of high-risk/high-complexity represented and litigated BI claims at the Litigation Centre, expansion of telephone claims handling for low-risk/low-complexity unrepresented bodily claims through the Centralized Claims Injury Centre (CCIC), and implementation of the functional organizational model within the Claims Division, which aligns employees by line of business or specialty to allow greater focus and accountability for business results.

- The Litigation Centre has expanded its volume since 2006 to approximately 7,000 pending exposures. The Litigation Centre has the staff with the appropriate skills, experience, and knowledge to effectively handle those claims that have complex medical or legal issues that could result in higher claims costs if not managed appropriately.

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- Since 2006 ICBC has expanded its CCIC telephone claims handling initiative to more than double the retention rate in 2011 (18%) and is planning to expand CCIC in 2012, with a target retention rate of 24% by the end of 2012.
- The new functional organizational model was implemented October 1, 2011. Under this model, all BI files are now managed within the accountability of one Vice President. Prior to the model, injury claims management was divided amongst three Vice Presidents. ICBC believes this single accountability will allow for improved consistency and better drive best practices throughout the accountable line of business.

As stated in the Chapter 6 of the Application, these initiatives are believed to have contributed to the lower BI severity trend that has emerged since 2005. As the emergence of the lower trend has coincided with the concerted efforts of the Claims Division, through the several initiatives, to contain BI claims costs, it is reasonable to assume these initiatives have contributed to some part of the reduced BI severity trend. Without these initiatives and ongoing refinement, the current pressure on Basic insurance rates would be even greater.

**2012.1 RR BCUC.62.2 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section B, p. 6-1  
Bodily Injury Cost Increases**

In paragraph 5, ICBC states that bodily injury claims severities are impacted by the type and complexity of injuries reported, which in turn drive payments for general damages (the biggest cost driver in bodily injury claims) and the costs of litigation.

Please provide information to the following table, with references or calculations where applicable. If this table is not appropriate, please provide an appropriate table that presents the information.

**Table - AVERGAE BI CLAIMS COST AND LITIGATION COSTS**

Line #	Year	Average BI Claims Cost (Excluding Costs of Litigation)			Average Costs of Litigation			Average of Total Cost (in \$)	Annual Change %
		Low-Risk/ Low-Complexity (in \$)	High-Risk/ High-Complexity (in \$)	Total Average (in \$)	Low-Risk/ Low-Complexity (in \$)	High-Risk/ High-Complexity (in \$)	Total Average (in \$)		
1	2006								-
2	2007								
3	2008								
4	2009								
5	2010								
6	2011								
7	2012 Forecast								
8	<b>Total Average</b>								

**Response:**

In Table 1, the “average bodily injury claims loss costs” is defined for this response as the amounts paid on bodily injury (BI) exposures closed in the current year divided by the total number of BI exposures closed in the current year, regardless of the year of loss, for loss payments for pain and suffering, future care, past wage loss, and future wage loss.

In Table 1, “low-risk/low-complexity” is defined for this response as payments equal to or less than \$40,000 and “high-risk/high-complexity” is defined as payments over \$40,000, similar to the BI paid severity as reported by ICBC in Chapter 9 of the Application. The figures in Table 1

represent a Claims operational view, and any trends observed therein may differ from trends observed when the data is organized differently, and/or developed, as would be for an actuarial purpose such as calculating the revenue requirement.

The “average costs of litigation” is defined for this response as third party costs and disbursements (plaintiff counsel costs), external legal fees, and legal disbursements incurred by ICBC in defence of the claim, and medical/dental reports divided by the number of exposures closed in the current year. There are other expenses related to the investigation of a BI claim that may not direct relate to costs of litigation. Those costs are included in the “average BI paid severity all” in Table 1.

Table 1

	Average BI Claims Loss Costs for Closed Claims			Average Costs of Litigation for Closed Claims			Average BI Paid Severity All	Annual Change %
	Below or Equal to \$40,000	Above \$40,000	Total Average	Below or Equal to \$40,000	Above \$40,000	Total Average		
2006 Actual	\$8,071	\$110,222	\$21,730	\$2,220	\$24,402	\$ 7,643	\$24,957	
2007 Actual	\$8,537	\$108,017	\$23,205	\$2,392	\$28,535	\$ 9,527	\$27,330	9.5%
2008 Actual	\$8,634	\$101,925	\$22,932	\$2,495	\$30,050	\$10,240	\$27,563	0.9%
2009 Actual	\$8,874	\$98,158	\$23,819	\$2,588	\$32,085	\$11,286	\$29,256	6.1%
2010 Actual	\$9,169	\$107,194	\$26,488	\$2,484	\$32,136	\$12,021	\$32,072	9.6%
2011 Actual	\$9,557	\$109,692	\$28,967	\$2,514	\$31,504	\$12,533	\$34,929	8.9%
2012 Forecast	n/a	n/a	n/a	n/a	n/a	n/a	\$36,179	3.6%



**Response:**

ICBC cannot provide the specific data requested as it does not have the data by accident year. Upon clarification with the Commission, ICBC believes the data set out in Table 1 will provide the Commission with useful information.

Table 1 sets out data with respect to bodily injury (BI) claims payments for BI claims that were closed in each year for 2006 to 2011. "BI claims loss" is the total of loss payments for pain and suffering, future care, past wage loss, and future wage loss. "Costs of litigation" are third party costs and disbursements (plaintiff counsel costs), external legal fees and legal disbursements incurred by ICBC in defence of the claim, and medical/dental reports.

Table 2 sets out the number of policies written in each of those same years. Because the claims closed in any given year relates both to policies sold in the same year and policies sold in previous years, it would not be appropriate to calculate a per policy amount by dividing these payments by the number of policies written.

Table 1

(in \$millions)	Bodily Injury Claims Loss Closed BI claims			Costs of Litigation Closed BI claims		
	Below or Equal to \$40,000	Above \$40,000	Total	Below or Equal to \$40,000	Above \$40,000	Total
2006 Actual	\$313.0	\$659.9	\$972.9	\$40.2	\$142.8	\$183.0
2007 Actual	\$324.1	\$709.2	\$1,033.3	\$40.7	\$182.2	\$222.9
2008 Actual	\$300.1	\$641.2	\$941.3	\$39.2	\$184.5	\$223.7
2009 Actual	\$296.4	\$659.1	\$ 955.5	\$40.8	\$211.5	\$252.3
2010 Actual	\$322.6	\$809.3	\$1,131.9	\$38.7	\$237.2	\$275.9
2011 Actual	\$320.2	\$883.7	\$1,203.9	\$37.3	\$247.0	\$284.3

Table 2

<b>(in 000s)</b>	<b>Total Policies Written</b>
2006 Actual	2,650
2007 Actual	2,725
2008 Actual	2,764
2009 Actual	2,797
2010 Actual	2,841
2011 Forecast	2,874
2012 Forecast	2,907

2011 forecast and 2012 forecast are based on the fourth quarter 2011 forecast.

**2012.1 RR BCUC.62.4 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section B, p. 6-1  
Bodily Injury Cost Increases**

**In paragraph 5, ICBC states that bodily injury claims severities are impacted by the type and complexity of injuries reported, which in turn drive payments for general damages (the biggest cost driver in bodily injury claims) and the costs of litigation.**

**Please provide the total of BI claim files and BI claim files that went to trial for each of the last five years, including a breakdown of all associated costs. Please provide in tabular format and explain any annual differences of ±10 percentage points.**

**Response:**

ICBC has not tracked trial data in a format that would provide responses for years prior to 2009. The table below sets out the total number of trials concluded and bodily injury (BI) exposures closed with payment in the year, including where a payment was awarded at trial. Other expenses include the amounts paid for investigative expenses and expert reports.

Trial results year over year can be volatile and are affected by the types of cases that go to trial in a given year. The number of trials can depend on factors such as court availability, counsel calendars, and the maturity of claims. The total number of claims resolved by trial in any given year represents less than 2% of closed BI files in a year.

Trial counts increased by 16.7% in 2010 from 2009. Trial counts decreased by 34.1% in 2011 from 2010. Legal fees increased by 12.2% in 2010 from 2009, due in part to a 6.5% increase in volume of closed BI claim exposure count over the same period. Settlements and awards for closed BI claim exposure count increased by 20.1% in 2010 over 2009. This was influenced by a number of factors including an increase in trial activity and volume of BI claims closed.

All BI exposures (including trials) where payments were made:

Closed Year	Trial Count	Exposure Count* (includes trials)	Legal Fees	Legal Disbursements	Other Expenses	Settlements and Awards
2009	216	42,000	\$101.6 M	\$22.2 M	\$39.9 M	\$1,041.9 M
2010	252	45,000	\$114.0 M	\$22.8 M	\$42.5 M	\$1,250.9 M
2011	166	44,000	\$107.9 M	\$20.1 M	\$38.7 M	\$1,323.1 M

\* Figures above rounded to nearest thousand

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**2012.1 RR BCUC.62.5 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section B, p. 6-1  
Bodily Injury Cost Increases**

**In paragraph 5, ICBC states that bodily injury claims severities are impacted by the type and complexity of injuries reported, which in turn drive payments for general damages (the biggest cost driver in bodily injury claims) and the costs of litigation.**

**Please discuss any strategies, initiatives, or efforts by ICBC to reduce court awards for BI litigation.**

**Response:**

Court awards are decisions of judges based on assessment of the evidence and applicable law. Judges consider the evidence and apply past legal precedents in civil tort (bodily injury (BI)) case law to the particular facts of each case. ICBC does not have jurisdiction over the courts in BC and, consequently, cannot drive reductions in court awarded damages in BI tort claims.

ICBC seeks to settle BI claims through fair and reasonable settlement offers and prompt payment of benefits. In evaluating BI claims and determining fair and reasonable settlement offers, ICBC considers the BI tort claim case law precedents. In the event that a fair and reasonable BI claim settlement cannot be reached through negotiation by the parties, the case will proceed to court.

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**2012.1 RR BCUC.63.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2, Para. 6  
Cost Management**

**On p. 6-2, paragraph 6 ICBC notes that it has developed and implemented a number of strategies and initiatives to help address factors that are within ICBC's control with respect to managing bodily injury claims costs.**

**Please discuss any new initiatives in 2012 to help reduce BI claims costs. Please explain each new initiative including any expected benefits.**

**Response:**

In October 2011, the Claims Division implemented the new functional organization model. ICBC is committed to effective implementation of that model and that will be a major focus in 2012. It is also expected that the Health Check introduced in the latter part of 2011 will better enable managers to identify and manage any claims handling issues on an adjuster by adjuster basis as they arise in 2012.

As referenced in Chapter 6 of the Application, ICBC is expanding the streamlined telephone claims handling for low-risk/low-complexity bodily injury in claims in the Centralized Claims Injury Centre (CCIC) with a target retention of 24% by the end of 2012. CCIC provides a streamlined hassle-free customer experience that also improves the efficiency of claims handling and has a positive effect on claims costs.

ICBC, and the Claims Division in particular, is preparing for the introduction of the new claims management system in 2013. As a result, the Claims Division is not contemplating any further new initiatives in 2012, but will be readying the business for the claims management system.

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**2012.1 RR BCUC.64.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2, Para. 9  
Telephone Handling**

**On p. 6-2, paragraph 9 ICBC states that it plans to continue to leverage the Centralized Claims Injury Centre (CCIC) model through increasing CCIC's bodily injury file retention rates. A further expansion is expected to be operational in 2012 which will allow CCIC to retain up to 24% of all low-risk/low-complexity bodily injury claims.**

**How has ICBC accounted for the planned expansion of telephone handling to 24% in 2012 and where do the cost savings show in the Application?**

**Response:**

ICBC's initiative to expand the use of telephone handling for low-risk/low-complexity unrepresented bodily injury (BI) claims through the Centralized Claims Injury Centre (CCIC) improves the efficiency of claims handling and has had a positive impact on claims costs. The primary objectives of this initiative are to provide a streamlined and cost-effective process for handling low-risk/low-complexity BI claims and to improve the customer experience.

Since the initial implementation of CCIC (formerly known as Customer Service Centre) in 2006, its retention has grown each year. This means that CCIC has had progressively more influence on BI claims costs in each of the past six years (2006 through 2011). The expansion of CCIC is incorporated in the loss experience and thus it has impacted the selected BI severity trend. Since the impact of continued CCIC expansion is included in the trend, the inclusion of any additional reductions to the rate indication beyond the trend would not be appropriate.

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**2012.1 RR BCUC.65.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC's Centralized Claims Injury Centre (CCIC).**

**Please provide the determination process or corporation policy guidelines (if applicable) used to "classify claims by their risk and then match claims handling models and skill sets to the risk".**

**Response:**

Segmentation of bodily injury (BI) claims by risk and complexity allows ICBC to offer streamlined services that improve the customer experience and to provide effective management of claims.

ICBC segments BI claims as follows:

Non-represented

Non-represented claims are segmented into one of two handling areas:

- Minor injuries that resolve quickly with a limited amount of treatment required (low-risk/low-complexity) are handled by the Centralized Claims Injury Centre (CCIC) over the telephone, rather than through referral to Regional Claim Centres. Telephone claims handling provides prompt service with a minimum of inconvenience for those customers who qualify for and choose telephone claims handling. CCIC uses an adjuster team approach that allows for ready access and frequent follow-up contact with customers. This enhanced customer service leads to a more positive relationship with customers and contributes to the effective management of BI costs and legal representation rates.
- Unrepresented injury claims that require an appointment with an adjuster due to the injury being of a more significant nature and requiring more treatments or more investigation of the loss are dealt with in Regional Claim Centres. The adjusters in

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Regional Claim Centres are assigned files individually and are able to provide a greater level of file management than in the CCIC model.

Represented

Represented claims are segmented into one of two handling areas:

- BI adjusters in Regional Claim Centres manage represented and litigated BI claims that are of low to medium risk/complexity, and are expected to resolve within the Basic insurance amount of \$200,000.
- High-risk/high-complexity BI claims are centralized in High Risk Injury Services, which is comprised of the Litigation Centre and Head Office Claims. High risk BI claims are those claims that have complex medical or legal issues the outcome of which, if not managed appropriately, can result in higher claims costs, and those that are expected to resolve above the Basic insurance amount of \$200,000. The BI adjusters that manage these claims have the experience and management oversight to effectively handle high-risk represented and litigated claims.

This increased focus by claim type will enable more effective and efficient claims handling consistent with industry best practices.

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**2012.1 RR BCUC.65.2 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC's Centralized Claims Injury Centre (CCIC).**

**How has ICBC's implementation of initiatives to enhance its claims handling practices since 2006 affected bodily injury frequency and bodily injury severity, if any?**

**Response:**

Claims handling initiatives do not affect claims frequency. Bodily injury (BI) claims frequency is influenced by factors such as driving behavior, driving experience, and weather.

The way in which claims are handled can mitigate the pressures on claims costs. For example, the streamlined telephone claims handling offered by the Centralized Claims Injury Centre (CCIC) for low-risk/low-complexity claims with a minimum of inconvenience for those customers leads to a more positive relationship with customers and contributes to the effective management of BI costs and legal representation rates.

As indicated in Chapter 3 of the Application, ICBC believes that its claims handling initiatives have contributed to the lower BI severity trend that has emerged since 2005.

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**2012.1 RR BCUC.65.2.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC's Centralized Claims Injury Centre (CCIC).**

**Please discuss what would happen to bodily injury severity if ICBC otherwise does not implement these claims initiatives.**

**Response:**

It is expected that bodily injury severity would increase. Please see the response to information request 2012.1 RR BCUC.65.2.

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**2012.1 RR BCUC.65.2.2 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC's Centralized Claims Injury Centre (CCIC).**

**Has ICBC attempted to establish a statistical relationship between BI severity to BI Claims handling processes based on the number of BI adjusters or any other such claims handling or procedural factors or that could be considered prospective adjustments (other than the CCIC)? If not, why not. Please discuss the merits.**

**Response:**

ICBC has not conducted any recent studies on the relationship between bodily injury (BI) severity and BI claims handling processes. ICBC's past attempts to investigate the relationship between operational factors and cost outcomes did not produce useful results because of the complex and interactive nature of claims file complexity and claims handling processes, particularly when these interactions and confounding factors cannot be controlled in a complex operational environment. Consequently, ICBC is not able to use such factors in program evaluations or prospective adjustments. ICBC also does not use operating costs or allocated expenses as a predictive variable in its actuarial forecasting of BI severity.

Despite these limitations, initiatives aimed at enhancing claims handling practices are being developed. The Centralized Claims Injury Centre (CCIC) model of telephone claims handling for low-risk/low-complexity BI claims is one example. CCIC has more than doubled its claims retention rate since 2006, and plans to increase this further in 2012, from 18% to 24% of low-risk/low-complexity BI intake. The new functional organizational structure for the Claims Division builds on ICBC's approach to segmentation of risk, and supports more effective and efficient claims handling practices that will help to minimize operational costs.

**2012.1 RR BCUC.65.3 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC’s Centralized Claims Injury Centre (CCIC).**

**In tabular format, please provide the average BI claims settlement time since 2006. How has the settlement time change over this period, in light of enhanced handling practices?**

**Response:**

The average bodily injury (BI) settlement time is based on the mix of claims closed in a year. As the number of represented and litigated claims that are closed in a year increases, the average settlement time also increases. Table 1 sets out the average days to settle a BI claim for the past five years.

Table 1

<b>Closed Year</b>	<b>Average number of days to settlement</b>
2006	414
2007	418
2008	419
2009	449
2010	448
2011	448

The purpose of the Litigation Centre is to improve the management of high-risk/high-complexity litigated claims, which may not translate into reduced days to settlement. Enhanced handling practices, such as the streamlined telephone handling through the Centralized Claims Injury Centre, helps to prevent this measure from increasing at a greater rate.

Table 2 sets out the percentage of BI claims settled within 90 days for the past five years.

Table 2

<b>Closed Year</b>	<b>% Exposures Settled within 90 days</b>
2007	28.6%
2008	29.4%
2009	27.2%
2010	29.6%
2011	31.1%

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**2012.1 RR BCUC.65.3.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC's Centralized Claims Injury Centre (CCIC).**

**Please explain if there is a relationship between BI claims costs and the time it takes to settle a claim. Please discuss intuitively and statistically.**

**Response:**

There is a relationship between bodily injury (BI) claims costs and the time it takes to settle a claim. The longer it takes to settle, the more costly the claim, on average. However, there are multiple factors, such as complexity, that are correlated with the time taken to settle a claim. Timely settlement reduces the overall time that a claim is open, which typically results in lower costs related to the handling of the claim. More costly claims are often of higher complexity and take longer to settle as a result. Therefore it is difficult to determine the strength of the causal relationship between time taken to settle and claim cost. This is a challenge faced by all insurance companies, and is not unique to ICBC.

ICBC's goal is a positive relationship with claimants that results in timely settlements of claims on a fair and reasonable basis. ICBC's strategy with respect to claims handling is to ensure that opportunities to resolve claims through effective and fair interactions between claimants and skilled adjusters are maximized and to ensure that the most efficient and effective process, as determined by the degree of risk, is applied to claims.

**2012.1 RR BCUC.65.4 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC’s Centralized Claims Injury Centre (CCIC).**

**In tabular format, please provide the average BI claim files per BI claims adjuster since 2006. How has the average BI claim files per BI claims adjuster changed over time?**

**Response:**

Classification of bodily injury (BI) claims by risk and complexity allows ICBC to offer streamlined services to improve the customer experience and to provide effective risk management of claims. Ensuring the BI claims adjusters assigned have the experience, knowledge, and skills to effectively handle that segment of BI claims files allows ICBC to manage the cost of BI claims. Segmentation of BI claims does not impact the average BI claims files per BI claims adjuster.

	2006	2007	2008	2009	2010	2011
<b>Average BI claims files per BI claims adjuster FTE</b>	129	126	122	124	136	129

The average BI claims files per BI claims adjuster has remained stable from 2006 to 2011.

**2012.1 RR BCUC.65.4.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-2  
Claims Handling**

**In paragraph 8, ICBC notes that one key element in improving the claims handling process is a continued focus on opportunities to classify claims by their risk and then match claims handling models and skill sets to the risk. As examples, ICBC cited the Litigation Centre for high-risk/high-complexity represented and litigated claims as well as the use of telephone handling for low-risk/low-complexity unrepresented bodily injury claims through ICBC’s Centralized Claims Injury Centre (CCIC).**

**How would ICBC evaluate its efficiency in terms of the time it takes to settle claims and workload of BI claims adjusters? Please provide any efficiency analyses based on the evaluation method.**

**Response:**

ICBC believes it has the claims handling processes and employees in place to ensure files are settled efficiently and at the appropriate time.

Overall, ICBC’s goal is to close as many claims as it opens during a year. This goal is measured through a ratio of closed to opened files, with a target ratio of 1.0. If the number of claims opened deviate too far from what was anticipated, adjustments to staffing, as well as targeting a different ratio would be contemplated if the trend continued.

Table 1 sets out the closed to open ratio for bodily injury (BI) claims handled by those areas handling BI claims within the Basic insurance coverage for the years 2006 to 2011. The Claims Division is monitoring the closed to open ratio carefully based on the 2011 results.

Table 1

	<b>BI Closed to Open Ratio</b>
2006	1.04
2007	1.03
2008	0.99
2009	0.99
2010	1.00
2011	0.93

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**2012.1 RR BCUC.66.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-3  
Claims Quality Review Service**

**In paragraph 11, ICBC states that in order to ensure quality file handling, an internal Claims Quality Review Service was implemented in 2009 to provide management with an independent and objective assessment of individual claims office performance through the conduct of file quality and compliance reviews.**

**Please provide the information on the Claims Quality Review Service since implementation in 2009, including any findings, policy guidelines, action plans, etc.**

**Response:**

Claims Quality Review Service conducts its assessment through a “scorecard review”. The objective of the scorecard review is to measure individual Claims Centres’ compliance to policies, procedures, legislation and regulations, and standard quality claims handling practices by reviewing a statistically significant sample of adjuster files. Identified issues are addressed through management action plans.

Claims Quality Review Service has completed 54 claims centre reviews, including 38 initial reviews of all Claims Centres and second reviews on 16 Claims Centres. Claims Quality Review Service has also completed reviews on eight specialty claims departments as follows:

- Head Office Claims
- Employee Claims
- Claims Contact Centre
- Centralized Claims Handling
- Commercial Claims
- Litigation Centres
- Centralized Claims Injury Centre
- Out of Province Material Damage

Claims Quality Review Service has reviewed over 12,000 files evenly distributed between material damage (MD) (claims adjusting aspects) and bodily injury (BI) files.

Findings vary by Claims Centre or area reviewed. However, some of the more common findings relate to compliance with quantum evaluation documentation and compliance to management review protocol review dates. Management is required to develop and implement action plans for each identified finding. Typically, the action plans will include training and increased management focus on those issues.

As a result of their findings, Claims Quality Review Service has also made the following broadly applicable recommendations:

- (1) A consistent management review form should be developed.
- (2) Claims adjuster manager review criteria should be established.

A consistent review form was developed and was implemented in November 2011. Claims adjuster manager review criteria have been developed and the implementation of the criteria is scheduled for March 2012.

In addition, the management review protocols were reviewed as the reason for non-compliance to review dates related primarily to workload. Revised protocols were developed and were implemented November 2009.

Table 1 sets out the aggregate score for 2009 and 2010 by MD (claims adjuster portion) and BI. The benchmark was set at 80%. Claims Quality Review Services has not completed the 2011 year-end report.

Table 1

	<b>Initial Review 2009</b>	<b>Initial Review 2010</b>	<b>Combined 2009-2010</b>
Claims Adjuster Review Results	87%	88%	87%
BI Adjuster Review Results	80%	82%	80%
Total Office Score	83%	84%	83%

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**2012.1 RR BCUC.66.1.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-3  
Claims Quality Review Service**

**In paragraph 11, ICBC states that in order to ensure quality file handling, an internal Claims Quality Review Service was implemented in 2009 to provide management with an independent and objective assessment of individual claims office performance through the conduct of file quality and compliance reviews.**

**Please explain how ICBC managed to ensure the quality of file handling between 2006 and 2009, as ICBC has implemented a number of initiatives to enhance its claims handling practices since 2006, but the Claims Quality Review Service was implemented in 2009.**

**Response:**

ICBC managed the quality of file handling between 2006 and 2009 through file reviews conducted by the Claims Adjusting Examiners and managers, as well as a number of office level trend reviews.

Between 2006 and 2007 the Best Practices Team conducted annual best practice reviews of each Claims office. Each office was reviewed against a set of quality and compliance criteria. Office best practices were recorded and shared with management.

In 2007 the Best Practices Team was redeployed to the Bodily Injury (BI) Services Department (a department formed in 2005 to look at programs to manage BI costs). The BI Services Department conducted claims quality and compliance reviews in 2007 and 2008 in a theme review format to measure compliance to claims initiatives and identify emerging issues. In 2008, the BI Services Department developed and piloted the Claims Quality Review Service scorecard based review and officially launched the Claims Quality Review Service in January 2009.

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**2012.1 RR BCUC.67.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-3  
Connecting with your Customer**

**On p. 6-3, paragraph 14 ICBC notes that it has recently introduced a new program in the claim centres called “Connecting with your Customer”. This program is aimed at enhancing the management of bodily injury claims through streamlined processes for determining coverage and the payment of Part 7 benefits, which will help employees to focus on customers’ immediate needs and to have the time to help customers better understand the claims process.**

**Please update how the new program “Connecting with your Customer” is performing in terms of ICBC’s operational efficiencies against its performance measuring and monitoring criteria. What cost savings can be expected in 2012?**

**Response:**

The Connecting with your Customer program was not designed to be measured by operational efficiencies. The Connecting with your Customer initiative is a customer experience initiative.

The expectation is that the more positive the customer experience is in the early stage of the claim, the less likely that those customers who seek legal representation for service reasons will actually seek representation. No cost savings have been forecast for 2012, as ICBC is not able to isolate that segment of its customers who seek legal representation for service reasons only (please see the response to information request 2012.1 RR BCUC.94.1).

Feedback provided by customers is that they want to be guided through the injury claims process; they want less hassle and easier access to benefits that would help them in their recovery. ICBC is listening to its customers and making changes to claims processes in order to meet their needs. The purpose of the Connecting with your Customer initiative is to allow adjusters to spend less time on process and more time talking to customers, so there are no operational savings.

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**2012.1 RR BCUC.68.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, pp. 6-4 to 6-5  
Management Accountability**

**In paragraph 15, ICBC states:**

**“Since 2006, ICBC has made several changes to facilitate management focus on bodily injury claims handling... These changes include: ...**

- Revised file payment authority that better reflects risk and requires manager payment authority on the highest risk files.**
- A decreased management span of control in order to ensure there is sufficient staffing to deliver regular and systematic bodily injury file reviews and to manage requirements associated with revised payment authority levels...”**

**68.1 Please elaborate on the “revised file payment authority”. Are payment authority levels subject to the discretion of individual managers or are there guidelines that all managers must follow?**

**68.1.1 If applicable, please provide in tabular format a payment authority overview including information by dollar value, authority level, claim centre, and any other variables.**

**Response:**

An earned authority program was in place in 2006 that provided manager discretion as to payment authority to a prescribed maximum. Authority was set for each adjuster based on their demonstrated knowledge, skills, and abilities.

In 2008, ICBC revised the payment authorities to provide a set maximum level of authority by position. At the same time, overall payment authority levels were reduced.

Payments above the authority level require approval by the applicable level of management. No authority can be set above the prescribed amount for each claims job position without prior approval from the Vice President Claims Programs and Planning.

		<b>Authority Levels</b>	
<b>Job ID</b>	<b>Job Name</b>	<b>BI Payment</b>	<b>BI Reserve</b>
Injury Operations			
612	BI Adjuster Trainee L0	\$ 3,500	\$7,000
849	BI Adjuster Trainee L6	\$3,500	\$7,000
448	BI Adjuster (CCIC)	\$3,500	\$7,000
448	BI Adjuster (12+ months)	\$10,000	\$20,000
448	BI Adjuster (unrepresented)	\$10,000	\$20,000
448	BI Adjuster (mixed caseload)	\$40,000	\$80,000
448	BI Adjuster (represented and litigated)	\$40,000	\$80,000
448	BI Adjuster (complex - Litigation Centre only)	\$60,000	\$120,000
243146	Manager Represented Injury Services	\$150,000	\$300,000
243147	Manager Unrepresented Injury Services	\$100,000	\$200,000
243137	Manager Claims Ops Represented Injury Services	\$200,000	\$400,000
243138	Manager Claims Ops Unrepresented Injury Services	\$200,000	\$400,000
90155	Manager Employee Claims	\$100,000	\$200,000
243409	Director Claims Injury Services	\$500,000	\$500,000
243410	Director Claims High Risk Represented Injury Services	\$3,000,000	\$6,000,000

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**2012.1 RR BCUC.68.2 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, pp. 6-4 to 6-5  
Management Accountability**

In paragraph 15, ICBC states:

**“Since 2006, ICBC has made several changes to facilitate management focus on bodily injury claims handling... These changes include: ...**

- **Revised file payment authority that better reflects risk and requires manager payment authority on the highest risk files.**
- **A decreased management span of control in order to ensure there is sufficient staffing to deliver regular and systematic bodily injury file reviews and to manage requirements associated with revised payment authority levels...”**

**Please elaborate on the “decreased management span of control”, in terms of responsibility changes for management and staff including payment authority levels, changes in coaching and training, performance evaluation process, performance review findings, and any other applicable matters.**

**Response:**

Starting in 2006, ICBC put increased controls in place in response to rising bodily injury (BI) claims costs, including initiatives to improve claims handling quality and to effectively manage risk by focusing manager time and attention on the higher-risk BI files.

In 2008, ICBC revised its claims payment authority to provide payment authority by job position and lowered overall payment authority. Once payments reach the set authority level, manager approval is required before any payment can be made. The manager is required to review the file, including the documented investigation, evaluation, and settlement strategy.

At the same time, ICBC introduced a diarized manager file review system. The purpose of the diary review is to ensure proper injury classification and investigation, adherence to customer commitments, proper assessment and evaluation, and appropriate overall file strategy. As part of diarized file reviews, managers will provide direction and feedback to the adjuster by either making a file note or providing one-on-one coaching with adjusters. Coaching builds adjuster skills and addresses file handling performance.

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ICBC decreased the manager span of control to support these changes and to ensure appropriate manager time for file direction and settlement authority.

Managers are also required to regularly review the adjuster performance as part of ICBC's overall performance management program, which came into effect for Bargaining Unit employees January 2009. This entails quarterly reviews of adjuster performance, and the identification of any issues or training requirements.

**2012.1 RR BCUC.68.3 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, pp. 6-4 to 6-5  
Management Accountability**

In paragraph 15, ICBC states:

“Since 2006, ICBC has made several changes to facilitate management focus on bodily injury claims handling... These changes include: ...

- Revised file payment authority that better reflects risk and requires manager payment authority on the highest risk files.
- A decreased management span of control in order to ensure there is sufficient staffing to deliver regular and systematic bodily injury file reviews and to manage requirements associated with revised payment authority levels...”

Please show the average ratio of managers versus staff in the claims handling line of business. Please provide this ratio for the last five years to present and the forecast for next two years.

Response:

The human resources system used by ICBC is not able to differentiate claims handling manager positions according to claims functions; therefore, ICBC is not able to provide the actual average ratio of managers to adjusters for the bodily injury (BI) function for the years 2007 to 2011. Under the geographic-centric delivery service model, the division’s goal was to hire to a 5:1 BI claims handling staff to manager span of control.

BI management recruitment targets for 2012 and 2013 are as follows:

Function	Targeted Ratio
Centralized Claims Injury Centre	8 BI adjusters to 1 manager
Unrepresented BI handling	6 BI adjusters to 1 manager
Represented BI handling	5 BI adjusters to 1 manager

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**2012.1 RR BCUC.68.4 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, pp. 6-4 to 6-5  
Management Accountability**

**In paragraph 15, ICBC states:**

**“Since 2006, ICBC has made several changes to facilitate management focus on bodily injury claims handling... These changes include: ...**

- **Revised file payment authority that better reflects risk and requires manager payment authority on the highest risk files.**
- **A decreased management span of control in order to ensure there is sufficient staffing to deliver regular and systematic bodily injury file reviews and to manage requirements associated with revised payment authority levels...”**

**Please explain “payment authority” and “span of control” in light of ICBC’s Claims Division restructuring process effective October 1, 2011, as mentioned in paragraph 16.**

**Response:**

Authority levels have not changed as a result of the restructuring under the new functional model. Please also see the response to information request 2012.1 RR BCUC.68.2. Information with respect to span of control is set out in the response to information request 2012.1 RR BCUC.68.3.

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**2012.1 RR BCUC.68.5 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, pp. 6-4 to 6-5  
Management Accountability**

In paragraph 15, ICBC states:

**“Since 2006, ICBC has made several changes to facilitate management focus on bodily injury claims handling... These changes include: ...**

- **Revised file payment authority that better reflects risk and requires manager payment authority on the highest risk files.**
- **A decreased management span of control in order to ensure there is sufficient staffing to deliver regular and systematic bodily injury file reviews and to manage requirements associated with revised payment authority levels...”**

**Please explain the performance review process that ensures ICBC’s increased focus to bring about more effective and efficient claims handling that is consistent with industry best practices. How would this new functional organizational structure benefit claims savings and operations cost savings?**

**Response:**

ICBC uses multiple processes to ensure effective and efficient claims handling. They are described more generally in the Application, Chapter 6, and in the response to information request 2012.1 RR BCUC.62.1. ICBC has elaborated on manager reviews in the response to information request 2012.1 RR BCUC.68.2. The Claims Quality Review Service is discussed in the response to information request 2012.1 RR BCUC.66.1.

Although it is still early in the reorganization, ICBC expects that there may be operational efficiencies as a result of the functional model, particularly in the area of administrative support. Alignment of all injury claims under one Vice President in the new functional model allows a more singular focus and accountability. ICBC believes increased focus by claim type and complexity will help better manage rising bodily injury costs. Additional information on the functional model and its benefits can be found in the response to information request 2012.1 RR BCUC.68.5.1.

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**2012.1 RR BCUC.68.5.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, pp. 6-4 to 6-5  
Management Accountability**

In paragraph 15, ICBC states:

**“Since 2006, ICBC has made several changes to facilitate management focus on bodily injury claims handling... These changes include: ...**

- **Revised file payment authority that better reflects risk and requires manager payment authority on the highest risk files.**
- **A decreased management span of control in order to ensure there is sufficient staffing to deliver regular and systematic bodily injury file reviews and to manage requirements associated with revised payment authority levels...”**

**Is the October 2011 restructuring process a strategy to address issues that ICBC finds the previous claims handling process less effective and efficient? Please discuss the issues that led to the new functional model, if any.**

**Response:**

The 2011 Claims Division restructuring will help ICBC to better meet customer expectations of convenience and a hassle-free claims experience, while also effectively managing the cost of bodily injury (BI) claims through segmentation by risk and complexity.

The Claims Division has historically been organized primarily on a geographic basis with segmentation into some areas of specialization, such as the Litigation Centre and Centralized Claims Injury Centre. Accountability for BI results was divided amongst three Vice Presidents. Those accountable for BI claims handling also had to manage other aspects of the claims business (such as estimating and claims adjusting), spreading their focus and attention. Having BI claims split between three areas also resulted in some inconsistencies in training, claims handling, and customer experience. Moving to a functional organizational model is considered an industry best practice and the best option to serve ICBC’s customers and manage claims costs for its policyholders.

With a functional model, individuals doing the same type of work are organized within a single reporting stream (injury and non-injury). Each manager’s focus is specific to their functional area of accountability. Aligned management focus will improve claims file handling quality

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through consistent direction and support, enabled by a clear reporting structure with a singular focus and direction. ICBC expects the new functional organizational model will help ICBC effectively and efficiently manage BI claims costs.

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**2012.1 RR BCUC.69.1 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-5  
Business Indicator Reporting and Data Analysis**

**In paragraphs 19 and 20, ICBC note:**

**“Since 2006, ICBC has introduced a number of key reports to identify trends with respect to bodily injury claims, which will aid managers in understanding the drivers of claims costs, and data analysis to assist management in developing action plans:**

- **A claims leading indicator report which provides management a snapshot of recent intake by coverages (bodily injury, accident benefits, and death benefits) and comparisons to prior years to help identify possible injury claims trends that may be developing...**

**In 2011, ICBC implemented a new report known as the Claims “Health Check”. This report builds on previous business indicator reporting improvements with business unit specific reporting on key metrics at the adjuster level.”**

**69.1 Please indicate whether the key reports to identify trends with respect to bodily injury claims are integrated in the actuarial rate indication analysis. Are there any notable trends in 2011?**

**69.1.1 If so, please provide a brief summary of the integration process and demonstrate its impact on the rate indication.**

**69.1.2 If not, please explain why these key reports will aid managers in understanding the drivers of claims costs, and data analysis to assist management in developing action plans but not the actuarial rate indication analysis.**

**Response:**

The key reports referenced in Chapter 6 represent a Claims operational view of bodily injury (BI) claims, in that they report on all claims opened, pending, and closed in the year, regardless of the year of loss or policy year. The reports provide information at a more localized level than the reports utilized by actuaries in the estimation of ultimate claims costs.

By ensuring timely settlement of BI claims and in understanding the BI loss and expense costs, managers are better able to manage claims costs. The key reports allow managers to identify if claim files are aging beyond the expected time for settlement and to then develop specific action plans in response. The reports also allow managers to determine if there are any particular

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heads of damage driving bodily injury loss and expense costs, and to develop mitigating plans in response.

Actuaries review the trends at a corporate level and have ongoing discussions with Claims management to ensure that they are aware of any trends identified operationally, which forms a key part of the process of estimating the ultimate cost of claims.

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**2012.1 RR BCUC.69.2 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-5  
Business Indicator Reporting and Data Analysis**

**In paragraphs 19 and 20, ICBC note:**

**“Since 2006, ICBC has introduced a number of key reports to identify trends with respect to bodily injury claims, which will aid managers in understanding the drivers of claims costs, and data analysis to assist management in developing action plans:**

- A claims leading indicator report which provides management a snapshot of recent intake by coverages (bodily injury, accident benefits, and death benefits) and comparisons to prior years to help identify possible injury claims trends that may be developing...**

**In 2011, ICBC implemented a new report known as the Claims “Health Check”. This report builds on previous business indicator reporting improvements with business unit specific reporting on key metrics at the adjuster level.”**

**69.2 Please provide the most recent copy of the claims leading indicator report.**

**69.2.1 What is the reporting cycle of the claims leading indicator report?**

**69.2.2 How often does management use this reporting of information?**

**Response:**

The key reports referenced in Chapter 6 represent a Claims operational view of bodily injury (BI) claims. They report on all claims opened, pending, and closed in the year, regardless of the year of loss or policy year. Claims intake by claim type is recorded weekly and reported monthly for all coverages, including Optional insurance coverage.

Management uses the key reports to look at emerging claims business trends and to monitor claims business results. Please see the response to information request 2012.1 RR BCUC.69.1

Attachment A – Claims Leading Indicators contains Claims reports for the week ended December 31, 2011 for BI claims. The newly opened, pending, and closed BI business indicators year over year comparison includes those within the Optional insurance coverage.



## **2012.1 RR BCUC.69.2 – Attachment A – Claims Leading Indicators**

## Y/Y % Change

### Exposure Counts

AS\_OF\_DATE 2011-12-31

	Last Year YTD	YTD	Y/Y % Change
<b>Injury</b>	<b>139,993</b>	<b>144,157</b>	<b>2.97%</b>
AB	80,844	83,581	3.39%
BI	58,760	60,249	2.53%
DB	389	327	-15.94%
<b>MD</b>			
COLL			
COMP			
GLASS			
KOL37			
PD			
RSPLUS			
RSTR			
<b>Grand Total</b>			

### Claim Counts

AS\_OF\_DATE 2011-12-31

	Last Year YTD	YTD	Y/Y % Change
All except glass			
Injury	86,762	86,191	-0.66%
MD except glass			
Glass			
Glass			
<b>Grand Total</b>			



## Business Indicators - BI Newly Opened (All Areas) as of December 31, 2011

RESP_CLAIM_LOCATION_ID	(All)
RESP_COST_CENTRE_ID	(All)
RESP_COST_CENTRE_NAME	(All)
RESP_ORG_UNIT_ID	(All)
RESP_ORG_UNIT_NAME	(All)
REPRESENTED_YN	(All)
ORIGINAL_RESERVE_RANGE	(All)

Exposure Count		PERIOD_YEAR_MONTH					Y / Y % Change B (W)			
RESP_VP_LEVEL_NAME	RESP_GROUP_NAME	2007-12	2008-12	2009-12	2010-12	2011-12	2008	2009	2010	2011
INJURY SERVICES	INJURY SERVICES OPERATIONS - 1	25,620	24,973	26,350	31,877	38,838	3%	(6%)	(21%)	(22%)
	INJURY SERVICES OPERATIONS - 2	8,593	5,929	3,617	3,113	3,525	31%	39%	14%	(13%)
	INJURY SERVICES OPERATIONS - 3	7,852	9,289	6,106	4,542	2,811	(18%)	34%	26%	38%
	INJURY SERVICES OPERATIONS - 4	3,875	5,288	5,996	7,926	8,124	(36%)	(13%)	(32%)	(2%)
	Other	48	11		3	7	77%	100%		(133%)
<b>INJURY SERVICES Total</b>		<b>45,988</b>	<b>45,490</b>	<b>42,069</b>	<b>47,461</b>	<b>53,305</b>	<b>1%</b>	<b>8%</b>	<b>(13%)</b>	<b>(12%)</b>
CUSTOMER SERVICES	CENTRALIZED CLAIMS	3	3	2	2	8	0%	33%	0%	(300%)
	CUSTOMER SERVICES OPERATIONS	14,675	11,892	12,521	9,619	6,027	19%	(5%)	23%	37%
	ADMINISTRATIVE SERVICES OPERATIONS	21	26	23	39	46	(24%)	12%	(70%)	(18%)
	ESTIMATING SERVICES OPERATIONS	379		17	16	3	100%		6%	81%
	COMMERCIAL SERVICES OPERATIONS		1	6	10			(500%)	(67%)	100%
Other	751	703	647	638	486	6%	8%	1%	24%	
<b>CUSTOMER SERVICES Total</b>		<b>15,829</b>	<b>12,625</b>	<b>13,216</b>	<b>10,324</b>	<b>6,570</b>	<b>20%</b>	<b>(5%)</b>	<b>22%</b>	<b>36%</b>
PROGRAMS & PLANNING	FRAUD PREVENTION & INVESTIGATION	2	5	17	11	8	(150%)	(240%)	35%	27%
	MD SERVICES	2					100%			
	CLAIMS SERVICES	2	3	3			(50%)	0%	100%	
	Other			1	1	1			0%	0%
<b>PROGRAMS &amp; PLANNING Total</b>		<b>6</b>	<b>8</b>	<b>21</b>	<b>12</b>	<b>9</b>	<b>(33%)</b>	<b>(163%)</b>	<b>43%</b>	<b>25%</b>
Other	Other	127	593	1,474	1,178	384	(367%)	(149%)	20%	67%
<b>Other Total</b>		<b>127</b>	<b>593</b>	<b>1,474</b>	<b>1,178</b>	<b>384</b>	<b>(367%)</b>	<b>(149%)</b>	<b>20%</b>	<b>67%</b>
<b>Grand Total</b>		<b>61,950</b>	<b>58,716</b>	<b>56,780</b>	<b>58,975</b>	<b>60,268</b>	<b>5%</b>	<b>3%</b>	<b>(4%)</b>	<b>(2%)</b>

Definition: Newly Opened Exposures represent those new exposures opened in a calendar period.

Variance Coding:

**(Green)** - favourable variance of 0% or better

**(Blue)** - unfavourable variance up to & including 2%

**(Red)** - unfavourable variance greater than 2%



## Business Indicators - BI Closed (All Areas) as of December 31, 2011

### Loss Severity (Loss Only)

RESP_CLAIM_LOCATION_ID	(All)
RESP_COST_CENTRE_ID	(All)
RESP_COST_CENTRE_NAME	(All)
RESP_ORG_UNIT_ID	(All)
RESP_ORG_UNIT_NAME	(All)
RESP_RESOURCE_NAME	(All)
CWA_OR_CWP_OLD	(All)
REPRESENTED_YN	(All)

Sum of LOSS_DED_CKE_COUNT		PERIOD_YEAR_MONTH					Y / Y % Change B ( W)			
RESP_VP_LEVEL_NAME	RESP_GROUP_NAME	2007-12	2008-12	2009-12	2010-12	2011-12	2008	2009	2010	2011
INJURY SERVICES	Other	312	34		2	43	89%	100%		(2050%)
	INJURY SERVICES OPERATIONS - 1	13,139	12,316	12,309	15,121	16,163	6%	0%	(23%)	(7%)
	INJURY SERVICES OPERATIONS - 2	9,998	8,722	7,626	8,305	8,590	13%	13%	(9%)	(3%)
	INJURY SERVICES OPERATIONS - 3	9,951	10,337	10,682	10,496	10,703	(4%)	(3%)	2%	(2%)
	INJURY SERVICES OPERATIONS - 4	882	1,390	1,364	2,008	2,078	(58%)	2%	(47%)	(3%)
<b>INJURY SERVICES Total</b>		<b>34,282</b>	<b>32,799</b>	<b>31,981</b>	<b>35,932</b>	<b>37,577</b>	<b>4%</b>	<b>2%</b>	<b>(12%)</b>	<b>(5%)</b>
CUSTOMER SERVICES	CENTRALIZED CLAIMS	1	2	19	5	9	(100%)	(850%)	74%	(80%)
	Other	575	526	477	404	245	9%	9%	15%	39%
	CUSTOMER SERVICES OPERATIONS	9,560	7,365	6,652	5,818	3,688	23%	10%	13%	37%
	ESTIMATING SERVICES OPERATIONS	220	0	2	10	1	100%		(400%)	90%
	ADMINISTRATIVE SERVICES OPERATIONS	13	23	6	9	27	(77%)	74%	(50%)	(200%)
	COMMERCIAL SERVICES OPERATIONS	0	1	2	2	3		(100%)	0%	(50%)
<b>CUSTOMER SERVICES Total</b>		<b>10,369</b>	<b>7,917</b>	<b>7,158</b>	<b>6,248</b>	<b>3,973</b>	<b>24%</b>	<b>10%</b>	<b>13%</b>	<b>36%</b>
PROGRAMS & PLANNING	Other				0					
	CLAIMS SERVICES	1	4	2			(300%)	50%	100%	
	CLAIMS LEGAL SERVICES		1					100%		
	MD SERVICES	0								
	FRAUD PREVENTION & INVESTIGATION	3		0	0	0	100%			
	BUSINESS QUALITY SERVICES					2				
<b>PROGRAMS &amp; PLANNING Total</b>		<b>4</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>(25%)</b>	<b>60%</b>	<b>100%</b>	
Other	Other	24	512	1,185	739	217	(2033%)	(131%)	38%	71%
<b>Other Total</b>		<b>24</b>	<b>512</b>	<b>1,185</b>	<b>739</b>	<b>217</b>	<b>(2033%)</b>	<b>(131%)</b>	<b>38%</b>	<b>71%</b>
<b>Grand Total</b>		<b>44,679</b>	<b>41,233</b>	<b>40,326</b>	<b>42,919</b>	<b>41,769</b>	<b>8%</b>	<b>2%</b>	<b>(6%)</b>	<b>3%</b>



Business Indicators - BI Pending (All Areas)  
as of December 31, 2011

RESP_CLAIM_LOCATION_ID	(All)
RESP_COST_CENTRE_ID	(All)
RESP_ORG_UNIT_ID	(All)
RESP_ORG_UNIT_NAME	(All)
KOL_ID	(All)
RESP_RESOURCE_NAME	(All)
RECORDED_INCURRED_RANGE	(All)
RESP_COST_CENTRE_NAME	(All)

Exposure Count		PERIOD_YEAR_MONTH				
RESP_VP_LEVEL_NAME	RESP_GROUP_NAME	2007-12	2008-12	2009-12	2010-12	2011-12
INJURY SERVICES	Other	640	1	4	3	
	INJURY SERVICES OPERATIONS - 1	14,329	14,380	12,814	14,469	20,601
	INJURY SERVICES OPERATIONS - 2	19,521	18,415	18,793	19,889	20,343
	INJURY SERVICES OPERATIONS - 3	17,852	22,157	23,156	22,894	27,083
	INJURY SERVICES OPERATIONS - 4	1,036	1,429	1,713	1,402	1,645
<b>INJURY SERVICES Total</b>		<b>53,378</b>	<b>56,382</b>	<b>56,480</b>	<b>58,657</b>	<b>69,672</b>
CUSTOMER SERVICES	Other	628	554	545	540	
	CENTRALIZED CLAIMS	4	4	9	5	1
	CUSTOMER SERVICES OPERATIONS	11,147	8,049	7,842	6,666	439
	ADMINISTRATIVE SERVICES OPERATIONS	39	7	7	18	5
	ESTIMATING SERVICES OPERATIONS		10			
	COMMERCIAL SERVICES OPERATIONS		25		4	3
<b>CUSTOMER SERVICES Total</b>		<b>11,818</b>	<b>8,649</b>	<b>8,403</b>	<b>7,233</b>	<b>448</b>
PROGRAMS & PLANNING	BUSINESS QUALITY SERVICES					2
	CLAIMS SERVICES	4	2			5
	Other		1	1	3	2
	FRAUD PREVENTION & INVESTIGATION	11	15	17	27	34
<b>PROGRAMS &amp; PLANNING Total</b>		<b>15</b>	<b>18</b>	<b>18</b>	<b>30</b>	<b>43</b>
Other	Other	59	1,046	1,532	503	328
<b>Other Total</b>		<b>59</b>	<b>1,046</b>	<b>1,532</b>	<b>503</b>	<b>328</b>
<b>Grand Total</b>		<b>65,270</b>	<b>66,095</b>	<b>66,433</b>	<b>66,423</b>	<b>70,491</b>

Y / Y % Change B ( W )				
2008	2009	2010	2011	
100%	(300%)	25%	100%	
(0%)	11%	(13%)	(42%)	
6%	(2%)	(6%)	(2%)	
(24%)	(5%)	1%	(18%)	
(38%)	(20%)	18%	(17%)	
(6%)	(0%)	(4%)	(19%)	
12%	2%	1%	100%	
0%	(125%)	44%	80%	
28%	3%	15%	93%	
82%	0%	(157%)	72%	
	100%			
	100%		25%	
27%	3%	14%	94%	
50%	100%			
	0%	(200%)	33%	
(36%)	(13%)	(59%)	(26%)	
(20%)	0%	(67%)	(43%)	
(1673%)	(46%)	67%	35%	
(1673%)	(46%)	67%	35%	
(1%)	(1%)	0%	(6%)	

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**2012.1 RR BCUC.69.3 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-5  
Business Indicator Reporting and Data Analysis**

**In paragraphs 19 and 20, ICBC note:**

**“Since 2006, ICBC has introduced a number of key reports to identify trends with respect to bodily injury claims, which will aid managers in understanding the drivers of claims costs, and data analysis to assist management in developing action plans:**

- **A claims leading indicator report which provides management a snapshot of recent intake by coverages (bodily injury, accident benefits, and death benefits) and comparisons to prior years to help identify possible injury claims trends that may be developing...**

**In 2011, ICBC implemented a new report known as the Claims “Health Check”. This report builds on previous business indicator reporting improvements with business unit specific reporting on key metrics at the adjuster level.”**

**69.3 Please provide the most recent Claims “Health Check” report.**

**69.3.1 What is the reporting cycle of the Claims “Health Check” report?**

**69.3.2 How often does management review the Claims “Health Check” report? Are there any actions required?**

**Response:**

The Health Check report is designed to provide a more detailed view of claims handling at the adjuster level by providing individual adjuster results with respect to productivity, average representation rate, average paid severity, average paid by head of damage, proportion of costs and disbursements, average pending reserve, and use of mediation. This allows claims managers to provide specific coaching and oversight to more effectively and efficiently manage employee performance and manage bodily injury claims costs.

There is no single Claims Health Check report. The Health Check is formatted as follows and populated by the applicable data monthly.

Table 1 shows a Health Check for an unrepresented unit.

Table 1

Resource	Number of Claims Closed	Average Paid	Number of Claims Represented	Number of Claims Pending	Average Dollar Amount of Pending
Adjuster 1					
Adjuster 2					
Adjuster 3					
Adjuster 4					

Table 2 shows a Health Check for a represented unit.

Table 2

Resource	Number of Claims Closed	Average Paid	Average General Damages Paid	Percentage of Future Wage Loss and Future Care (The percentage of Average Paid paid as Future Wage Loss and Future Care.)	Percentage Alternative Dispute Resolution (The percentage of the Number of Claims Closed which were settled by mediation.)	Pending	Average Dollar Amount of Pending
Adjuster 1							
Adjuster 2							
Adjuster 3							
Adjuster 4							

The Health Check is produced on a monthly reporting cycle. It can be used in multiple views (1 month, 3 month, 12 months, and year to date) in order to track claims trends as well as to quickly measure and monitor individual action plans to improve claims handling performance.

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Managers review Health Check results for their adjusters on a monthly basis. Managers are expected to identify any claims handling issues disclosed by the results, and to address those with the adjuster and put action plans in place where appropriate.

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**2012.1 RR BCUC.69.3.3 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-5  
Business Indicator Reporting and Data Analysis**

**In paragraphs 19 and 20, ICBC note:**

**“Since 2006, ICBC has introduced a number of key reports to identify trends with respect to bodily injury claims, which will aid managers in understanding the drivers of claims costs, and data analysis to assist management in developing action plans:**

- **A claims leading indicator report which provides management a snapshot of recent intake by coverages (bodily injury, accident benefits, and death benefits) and comparisons to prior years to help identify possible injury claims trends that may be developing...**

**In 2011, ICBC implemented a new report known as the Claims “Health Check”. This report builds on previous business indicator reporting improvements with business unit specific reporting on key metrics at the adjuster level.”**

**ICBC notes this information helps identify best practices utilized by high-performing adjusters, which can then be shared with others. Please explain this sharing process. How does ICBC handle under-performing adjusters identified in this report?**

**Response:**

ICBC has developed the Health Check as a key reporting tool to enable increased individual performance accountability in the effective management of bodily injury claims costs.

Unit Managers (those managers directly accountable for adjusters) review the Health Check report results for their adjusters on a monthly basis.

- 1) The Unit Manager shares the results and tactics utilized by the high performing adjuster with the rest of their team during monthly one-on-one meetings with adjusters. High performing adjusters also mentor the adjusters requiring assistance one-on-one.
- 2) The Unit Manager shares the results and tactics utilized with the Operations Manager in bi-weekly meetings.
- 3) The Operations Manager communicates with the rest of the Unit Managers reporting to them to ensure consistency of approach when the tactics have applicability to others.
- 4) The Operations Manager communicates with their peers and results are shared with the Unit Managers throughout the business stream when the tactics are applicable to others.

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When the Health Check identifies underperforming adjusters, managers put action plans in place to address performance issues. These include: sharing of the tactics of the high performing adjusters, individual coaching, and performance management.

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**2012.1 RR BCUC.69.3.4 Reference: CLAIMS INITIATIVES  
Exhibit B-1, Chapter 6, Section C, p. 6-5  
Business Indicator Reporting and Data Analysis**

**In paragraphs 19 and 20, ICBC note:**

**“Since 2006, ICBC has introduced a number of key reports to identify trends with respect to bodily injury claims, which will aid managers in understanding the drivers of claims costs, and data analysis to assist management in developing action plans:**

- **A claims leading indicator report which provides management a snapshot of recent intake by coverages (bodily injury, accident benefits, and death benefits) and comparisons to prior years to help identify possible injury claims trends that may be developing...**

**In 2011, ICBC implemented a new report known as the Claims “Health Check”. This report builds on previous business indicator reporting improvements with business unit specific reporting on key metrics at the adjuster level.”**

**Please explain whether this report provides measures to assist with understanding manager performance, in addition to reporting on key metrics at the adjuster level.**

**Response:**

The Health Check report does not provide measures to assist with understanding manager performance. The Health Check report assists in assessing the progress of managers in improving performance of adjusters within their span of control.

The Health Check report is designed to rank adjusters in terms of specific areas of bodily injury (BI) claims handling performance in order to identify outliers (both high performers and low performers). Unit managers are accountable to review those specific areas with the low performing BI adjusters.

Using the Health Check report, Operations Managers are able to identify the performance outliers and are accountable to ensure the Unit Managers are providing specific coaching to the BI adjusters. The Operations Managers are responsible to put action plans in place to address Unit Manager performance issues through measurable action plans.

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Similarly, Directors are also able to identify the performance outliers using the Health Check report and are accountable to ensure the Operations Managers are providing specific coaching to the Unit Managers. The Directors are responsible to put action plans in place to address Operations Managers' performance issues through measurable action plans.

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**2012.1 RR BCUC.70.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section B, p. 7-2**

**Exhibit B-1, Chapter 2, Section B.3, p. 2-4**

**Operating Expenses**

**In paragraph 17 of p. 2-4, ICBC states:**

**“In the early part of 2011, ICBC identified that the number of bodily injury claims was higher than expected. This was putting pressure on Basic insurance rates. ICBC saw opportunities to reduce a rate increase for its customers by re-evaluating its planned expenditures for 2011 and took action to reduce the impact on the actuarial rate indication from operating expenses.”**

**Please provide a detailed list of actions taken and reductions made as result of the re-evaluation of the planned expenditures for 2011.**

**Response:**

ICBC conducted a thorough review of operating costs and challenged itself to identify all areas where costs could be reduced or spending managed to keep costs within inflation and reduce the impact on the actuarial rate indication.

The following three cost control actions were the result of the re-evaluation of planned expenditures in 2011:

- **Management of staffing vacancies** – Approximately 74% of 2010 base operating expenses are related to compensation, therefore Management focused efforts on reducing compensation costs by managing staffing vacancies. ICBC’s Executive Committee issued a direction that ICBC would only proceed with hiring of vital positions. This Executive directive was communicated to all hiring managers. In addition, all hires required approval by the hiring division executive. Divisions were challenged to absorb work within the existing FTE complement and reduce lower priority work. These actions contributed approximately \$10 million in savings and resulted in approximately 101 fewer FTEs than planned.
- **Strategic Prioritization of Projects** – ICBC employs a centralized cross-corporate strategic approach to prioritizing projects and managing project scope and costs which

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ensures strong executive leadership oversight and accountability for project prioritization and results delivery. This prioritization process was designed to reduce the number of projects and help to control the associated costs. In addition, all approved corporate projects go through a risk-based business case approval process that focuses on alternatives and outcomes. Furthermore, ICBC employs regular updates of project costs to identify risks and savings. For example, the Customer Experience Measurement Project reduced costs by approximately \$1.9 million by reviewing the risk and savings opportunities resulting in a decision to incorporate a commercial off the shelf (COTS) software package instead of building a custom solution. These identified savings contributed to lowering overall operating expenses. The strategic prioritization of projects contributed approximately \$3 million in savings.

- **Detailed Budget Reviews** – ICBC conducted detailed budget reviews to search for cost savings opportunities across the organization right down to the cost centre and cost element levels. These reviews identified planned expenses that were no longer required due to changes in assumptions in the original annual budget. In addition, a detailed review of divisional operating expenses over a five-year time frame was conducted. This review identified potential cost savings opportunities at a divisional and expense level. These actions contributed approximately \$13 million in savings which included the following items: reduced spending in staffing related costs of \$1 million, reduced discretionary expenses of \$4 million such as professional services and data processing costs, and savings of \$8 million in other items such as traffic safety costs, bank charges, severance, doubtful debt allowances, higher miscellaneous revenues, and other smaller dollar items that include collection fees, carbon offset, Board of Directors fees, and unspent regulatory costs.

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**2012.1 RR BCUC.70.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section B, p. 7-2**

**Exhibit B-1, Chapter 2, Section B.3, p. 2-4**

**Operating Expenses**

**In paragraph 17 of p. 2-4, ICBC states:**

**“In the early part of 2011, ICBC identified that the number of bodily injury claims was higher than expected. This was putting pressure on Basic insurance rates. ICBC saw opportunities to reduce a rate increase for its customers by re-evaluating its planned expenditures for 2011 and took action to reduce the impact on the actuarial rate indication from operating expenses.”**

**Have all actions identified to reduce the impact on the actuarial rate indication been completed? If not please identify and quantify those that remain outstanding.**

**Response:**

Yes, ICBC has completed the actions identified to reduce the impact on the actuarial rate indication. ICBC will continue to look at opportunities to reduce operating expenses to minimize the impact on Basic insurance rates.

Please see the response to information request 2012.1 RR BCUC 85.1-2 for a list of cost control measures included in the review of 2012 operating costs.

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**2012.1 RR BCUC.70.3 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section B, p. 7-2**

**Exhibit B-1, Chapter 2, Section B.3, p. 2-4**

**Operating Expenses**

**In paragraph 17 of p. 2-4, ICBC states:**

**“In the early part of 2011, ICBC identified that the number of bodily injury claims was higher than expected. This was putting pressure on Basic insurance rates. ICBC saw opportunities to reduce a rate increase for its customers by re-evaluating its planned expenditures for 2011 and took action to reduce the impact on the actuarial rate indication from operating expenses.”**

**Please discuss how many years the cost savings are expected to persist.**

**Response:**

ICBC has a robust planning and oversight framework in place and employs the framework to assess business needs and required expenditures in 2011 and 2012 (please see the responses to information requests 2012.1 RR BCUC.70.1 and 2012.1 RR BCUC.85.1-2 for a summary of cost control measures) to manage and contain the increase in operating costs.

As such, ICBC expects that the discipline and rigour it applied to its 2011 mid-year review will carry forward to future years, and ICBC will be seeking to manage costs within inflation. Nevertheless, due to ICBC's changing business needs and the regulated environment in which it operates, it is reasonable to expect that operating cost requirements may change over time.

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**2012.1 RR BCUC.71.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section B, p. 7-2  
ICBC's CORPORATE OPERATING EXPENSES  
Transformation Project**

In paragraph 8 the ICBC evidence states:

**“Beginning in 2010 ICBC started the Transformation Program (TP) which pursuant to the Government Directive regarding the Transformation Program is to be funded 100% by Optional insurance. TP is a suite of projects that involves transformational changes supporting ICBC’s business strategy including the introduction of new systems, improvements to business processes, and giving employees the tools they need to be successful. The scope of TP is specified in the Government Directive regarding the Transformation Program. The suite of projects includes the modernization of claims and insurance product sales processes and systems, building and managing customer relationships, and making rates more reflective of driver risk. The costs covered by Optional insurance are also specified in the Government Directive regarding the Transformation Program and include project operational costs and depreciation expenses associated with TP project capital costs. TP is expected to be a major enabler in fulfilling ICBC’s corporate strategy for customers, partners, and employees.”**

**Although the TP is funded by Optional Insurance, does ICBC contemplate that the benefits of the TP project will also flow through to the Basic Insurance?**

**Response:**

The Transformation Program will provide benefits to both Basic insurance and Optional insurance policyholders.

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**2012.1 RR BCUC.71.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section B, p. 7-2  
ICBC’s CORPORATE OPERATING EXPENSES  
Transformation Project**

In paragraph 8 the ICBC evidence states:

“Beginning in 2010 ICBC started the Transformation Program (TP) which pursuant to the Government Directive regarding the Transformation Program is to be funded 100% by Optional insurance. TP is a suite of projects that involves transformational changes supporting ICBC’s business strategy including the introduction of new systems, improvements to business processes, and giving employees the tools they need to be successful. The scope of TP is specified in the Government Directive regarding the Transformation Program. The suite of projects includes the modernization of claims and insurance product sales processes and systems, building and managing customer relationships, and making rates more reflective of driver risk. The costs covered by Optional insurance are also specified in the Government Directive regarding the Transformation Program and include project operational costs and depreciation expenses associated with TP project capital costs. TP is expected to be a major enabler in fulfilling ICBC’s corporate strategy for customers, partners, and employees.”

71.2 If yes, please identify what types of benefits will flow through to Basic Insurance for each of the process improvement areas identified below and at what point in time will these benefits be expected to assist ICBC in fulfilling its “corporate strategy” for:

71.2.1 Customers, partners and employees;

71.2.2 Claims Processes;

71.2.3 Insurance Product Sales Process;

71.2.4 Customer Relationship Management;

71.2.5 Driver Risk Rate Making.

71.2.5.1 Please quantify each of the benefits identified for each process improvement areas, as they relate to Basic Insurance, for the expected life of the TP project.

**Response:**

The Transformation Program (TP) will enable ICBC to achieve benefits in each of the identified process improvement areas.

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Collectively, all system and process improvements implemented through TP will allow ICBC to achieve its goal of improving customer experience and perception. This includes the implementation of a new Claims management system that will support the provision of efficient and hassle-free service to ICBC customers. TP will also introduce technology and processes that will give ICBC the improved capability to provide rates that are more reflective of risk.

Customer experience and perception will be further enhanced by expanded productivity and communications tools being delivered for employees who serve ICBC customers, either directly or indirectly, as well as through new systems being delivered for business partners, including a new system to support the insurance sales process at broker locations.

A key improvement being delivered by TP will be the ability to have an integrated view of the customer, thereby making it possible to manage customer relationships more effectively.

Further benefits will occur as a result of replacing aging systems and technology, which will allow ICBC to deliver necessary business functionality in a cost-effective manner.

TP is currently transitioning from a planning and design phase into a major construction phase. ICBC is making good progress on replacing its aging technology and processes, and is confident that the anticipated benefits of TP will be realized in the coming years. However, it is too early in the program to fully quantify those benefits as well as the full operational costs, as development is not yet complete, details are still being refined, and assumptions relating to benefits and end-state operational costs will evolve as is typical for initiatives of this scale.

Although some TP “enabler” projects<sup>1</sup> are now complete, their financial benefits cannot be fully determined until the entire process improvement area affected by these changes has been addressed through the full scope of TP.

No quantifiable TP benefits are expected to be realized for the 2012 policy year. ICBC expects that TP benefits will flow through subsequent policy years, and ICBC will report to the Commission regarding any implications for Basic insurance rates in future filings.

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While financial benefits are an important outcome of TP, ICBC would need to replace its aging systems and processes regardless of the achievement of those benefits, in order to maintain services to customers.

<sup>1</sup> Enabler projects are infrastructure enhancements that provide the technology foundation to support other TP projects.

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**2012.1 RR BCUC.71.3 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section B, p. 7-2  
ICBC's CORPORATE OPERATING EXPENSES  
Transformation Project**

In paragraph 8 the ICBC evidence states:

**“Beginning in 2010 ICBC started the Transformation Program (TP) which pursuant to the Government Directive regarding the Transformation Program is to be funded 100% by Optional insurance. TP is a suite of projects that involves transformational changes supporting ICBC’s business strategy including the introduction of new systems, improvements to business processes, and giving employees the tools they need to be successful. The scope of TP is specified in the Government Directive regarding the Transformation Program. The suite of projects includes the modernization of claims and insurance product sales processes and systems, building and managing customer relationships, and making rates more reflective of driver risk. The costs covered by Optional insurance are also specified in the Government Directive regarding the Transformation Program and include project operational costs and depreciation expenses associated with TP project capital costs. TP is expected to be a major enabler in fulfilling ICBC’s corporate strategy for customers, partners, and employees.”**

**When does ICBC expect to have the Transformation Program fully implemented?**

**Response:**

Based on current planning, ICBC expects to implement the final components of the Transformation Program in the fall of 2016.

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**2012.1 RR BCUC.72.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section B, pp. 7-3 to 7.4**  
**ICBC’s CORPORATE OPERATING EXPENSES**  
**Cost Control Measures**

In paragraph 11, the ICBC evidence states:

“As indicated in Section A, ICBC re-evaluated its expenditures in the second half of 2011 and initiated a suite of cost control measures, which has had the short-term impact of saving \$26 million in comparison to the original 2011 plan shown in Figure 7.1. These cost control measures include, for example:

- **Conducting detailed budget reviews to search for cost savings opportunities across ICBC, right down to the cost centre and cost element levels.**
- **A strategic approach to prioritizing projects and managing project scope and costs. ICBC has centralized its corporate planning process to ensure stronger executive leadership oversight and accountability for cross-corporate project prioritization and results delivery. This re-prioritization process is designed to reduce the number of projects and help to control the associated costs.**
- **Management of staffing vacancies. ICBC now requires executive approval for all hiring and ensures that new staff is only hired to fill vital positions, such as replacement of staff upon attrition or in response to business demand.”**

**Please provide a comprehensive listing of all the cost control measures taken by ICBC to identify the \$26 million savings in the 2011 Outlook. Please identify what portion of the \$26 million savings is related to a reduction in employee related expenses and what portion is related to discretionary expenses. Have any costs been deferred to future years?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.70.1 for a list of the cost control measures undertaken by ICBC to identify the \$26 million savings in the 2011 outlook. This response captures explanations for employee-related and discretionary expenses.

There are some project costs that have been deferred to a future year, such as the replacement of the estimator tablets and the Phase II portion of the Customer Experience Learning Project. Projects that have been deferred to a future year will be assessed as part of the cross-corporate strategic prioritization process to ensure they are consistent with corporate strategy.





## **2012.1 RR BCUC.73.1 – Attachment A – Operating Expenses by Expense Category**

## Commission Staff Table 1 – Operating Expenses by Expense Category

(\$ MILLIONS)																									
Line #	BASE OPERATING EXPENSES	Actual				Actual				Actual				Actual				Outlook			Forecast			\$ Change since 2007	% Change since 2007
		2007 (CGAAP)	2008 (CGAAP)	\$ Δ	% Δ	2009 (CGAAP)	\$ Δ	% Δ	2010 (CGAAP)	\$ Δ	% Δ	2010 (IFRS)	\$ Δ	% Δ	2011 (IFRS)	\$ Δ	% Δ	2012 (IFRS)	\$ Δ	% Δ					
1	Compensation	\$ 360	\$ 378	\$ 18	5.0%	\$ 389	\$ 11	2.9%	\$ 402	\$ 13	3.3%	\$ 402	\$ 13	3.3%	\$ 409	\$ 7	1.7%	\$ 416	\$ 7	1.7%	\$ 56	15.6%			
2	Building & Operating	\$ 27	\$ 28	\$ 1	3.7%	\$ 30	\$ 2	7.1%	\$ 32	\$ 2	6.7%	\$ 32	\$ 2	6.7%	\$ 32	\$ -	0.0%	\$ 32	\$ -	0.0%	\$ 5	18.5%			
3	Professional Services	\$ 12	\$ 13	\$ 1	8.3%	\$ 13	\$ -	0.0%	\$ 16	\$ 3	23.1%	\$ 16	\$ 3	23.1%	\$ 14	-\$ 2	-12.5%	\$ 14	\$ -	0.0%	\$ 2	16.7%			
4	Other Operating	\$ 13	\$ 16	\$ 3	23.1%	\$ 15	-\$ 1	-6.3%	\$ 13	-\$ 2	-13.3%	\$ 13	-\$ 2	-13.3%	\$ 13	\$ -	0.0%	\$ 13	\$ -	0.0%	\$ -	0.0%			
5	Other Misc	\$ 95	\$ 90	-\$ 5	-5.3%	\$ 92	\$ 2	2.2%	\$ 81	-\$ 11	-12.0%	\$ 81	-\$ 11	-12.0%	\$ 85	\$ 4	4.9%	\$ 90	\$ 5	5.9%	-\$ 5	-5.3%			
6	Sub Total	\$ 507	\$ 525	\$ 18	3.6%	\$ 539	\$ 14	2.7%	\$ 544	\$ 5	0.9%	\$ 544	\$ 5	0.9%	\$ 553	\$ 9	1.7%	\$ 565	\$ 12	2.2%	\$ 58	11.4%			
Line #	GOVERNMENT INITIATIVES AND UNIQUE ITEMS	2007 (CGAAP)	2008 (CGAAP)	\$ Δ	% Δ	2009 (CGAAP)	\$ Δ	% Δ	2010 (CGAAP)	\$ Δ	% Δ	2010 (IFRS)	\$ Δ	% Δ	2011 (IFRS)	\$ Δ	% Δ	2012 (IFRS)	\$ Δ	% Δ	\$ Change since 2007	% Change since 2007			
7	Government Initiatives	\$ 19	\$ 21	\$ 2	10.5%	\$ 28	\$ 7	33.3%	\$ 33	\$ 5	17.9%	\$ 33	\$ 5	17.9%	\$ 36	\$ 3	9.1%	\$ 35	-\$ 1	-2.8%	\$ 16	84.2%			
8	Unique Items	-\$ 4	-\$ 9	-\$ 5	-125.0%	-\$ 7	\$ 2	22.2%	-\$ 2	\$ 5	71.4%	\$ 12	\$ 19	271.4%	\$ 5	-\$ 7	-58.3%	\$ 5	\$ -	0.0%	\$ 9	225.0%			
9	Sub Total	\$ 15	\$ 12	-\$ 3	-20.0%	\$ 21	\$ 9	75.0%	\$ 31	\$ 10	47.6%	\$ 45	\$ 24	114.3%	\$ 41	-\$ 4	-8.9%	\$ 40	-\$ 1	-2.4%	\$ 25	166.7%			
10	TOTALS	\$ 522	\$ 537	\$ 15	2.9%	\$ 560	\$ 23	4.3%	\$ 575	\$ 15	2.7%	\$ 589	\$ 29	5.2%	\$ 594	\$ 5	0.8%	\$ 605	\$ 11	1.9%	\$ 83	15.9%			

Operating Expenses increase comprised of:

2007 to 2010 Actual (CGAAP) = \$53 million

2010 Actual (CGAAP) to 2010 Actual (IFRS) = \$14 million

2010 Actual (IFRS) to 2012 Forecast (IFRS) = \$16 million

Total from 2007 Actual (CGAAP) to 2012 Forecast (IFRS) = \$83 million

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**2012.1 RR BCUC.74.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Unique Items**

In paragraph 31 the ICBC evidence states:

**“The estimated cost of employee benefits including pensions is included under compensation using a ratio associated with compensation dollars. At the end of every year, the actual cost of employee benefits is reconciled and compared to the estimated cost. Any excess or deficiency is largely due to changes in the prevailing interest rates which impact the discounting of pension liabilities. Therefore, the excess or deficiency which fluctuates considerably from year to year is beyond ICBC’s control. A decrease in the discount rate increases the benefit expense because it increases the present value of the total amount of benefits to be paid out in the future (6).**

**Footnote (6) Present value represents the value of future benefits in today’s dollar. As discount rate decreases, a lower return is earned between today and when the benefit is paid. Therefore, it requires a higher expense today to fund the future benefits.”**

**In the instance where there are longer term prevailing lower interest rates, does ICBC have an indication of a continuing trend in higher current expenses to fund future pension benefits?**

**Response:**

In years without past service costs, settlements, or curtailments, pension and post-retirement expense is comprised of the following three components:

- Current service cost.
- Interest on the plan obligation.
- Expected return on plan assets (only for the pension plans as the Post-Retirement Benefits Plan is unfunded).

When interest rates decrease, the plan obligation increases and correspondingly, the current service cost will increase. Interest on the plan obligation is generally not as sensitive to decreases in interest rates since the impact of calculating interest on a higher obligation is offset by using a lower interest rate. Changes in the expected return on plan assets will be subject to the size of the assets and the expected rate of return for the year.

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The net impact to pension and post-retirement expense will be a composite of the increases and/or decreases of the three individual components. Funding is determined by the triennial actuarial funding valuations.

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**2012.1 RR BCUC.74.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12  
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**Footnote (6) Present value represents the value of future benefits in today’s dollar. As discount rate decreases, a lower return is earned between today and when the benefit is paid. Therefore, it requires a higher expense today to fund the future benefits.”**

**What other factors, besides the discount rate decrease, are contributing to the increase in higher current expense?**

**Response:**

The increase in the 2012 forecast pension and post-retirement expense from the 2011 expense is primarily due to the following:

- Decrease in the discount rate from 5.61% at December 31, 2010 to 5.20% at December 31, 2011.
- Decrease in the expected rate of return on plan assets from a weighted average rate of return of 7.6% at December 31, 2010 to 7.2% at December 31, 2011.

Over time, even with all things held equal, the current service cost may increase due to compensation and employee population factors. Similarly, the interest cost on the obligation would increase if the liability growth is greater than benefit payments. The higher interest cost would offset an increase in the expected return on assets due to growth in the asset base.

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INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
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**Footnote (6) Present value represents the value of future benefits in today’s dollar. As discount rate decreases, a lower return is earned between today and when the benefit is paid. Therefore, it requires a higher expense today to fund the future benefits.”**

**Have there been any changes to the calculation of pensionable earnings for employees that would lead to an increase in current expenses?**

**Response:**

In 2009 ICBC changed the Management Plan to include a portion of Short-Term Incentive Plan (STIP) pay in the pensionable earnings for service years from 2010 forward. For Management and Confidential employees the cap is the lesser of: (a) 15% of the employee’s earnings, or (b) the incentive pay amount. For Executives reporting directly to the CEO, the cap is 100% of the employee’s target STIP earnings.

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**2012.1 RR BCUC.74.4 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

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**Footnote (6) Present value represents the value of future benefits in today’s dollar. As discount rate decreases, a lower return is earned between today and when the benefit is paid. Therefore, it requires a higher expense today to fund the future benefits.”**

**74.4 Does ICBC include incentive pay and any other compensation for Executives and Senior management in the calculation of pensionable earnings?**

**74.4.1 If yes, when did this inclusion take place and what is the cost of including incentive pay in pensionable earnings for each of the years where incentive pay was included in pensionable earnings? Does ICBC consider it appropriate for Basic Insurance policyholders to pay for this premium to pensionable earnings?**

**74.4.1.1 What is the impact on the 2012 Rate Indication from the outcome of the response above?**

**Response:**

**74.4**

Please see the response to information request 2012.1 RR BCUC.74.3.

**74.4.1**

The inclusion of incentive pay in pensionable earnings was approved by ICBC’s Board of Directors in 2009 and applies to pensionable service from January 1, 2010 forward. The payment made in 2011 for incentive pay was the first payment to be considered for pensionable

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earnings. This change results in a \$2 million increase in total pension expense. This change was introduced following approval from Public Sector Employers Council (PSEC) and included with other changes to limit pension liability.

ICBC believes this treatment is appropriate because it is a component of the total compensation package necessary to operate in a competitive market. ICBC has offered this component of compensation through offsets in savings in other total operating costs associated with the Management and Confidential pension plan including the introduction of a cap on pension plan indexing, elimination of indexing for terminated plan members, and negotiating a new transfer agreement with the Bargaining Unit pension plan. As a result it has no impact on the policy year 2012 Basic insurance actuarial rate indication.

**74.4.1.1**

The impact on the 2012 rate indication is an increase less than 0.1 percentage points. However this impact has been offset by other savings as total operating costs (including pension expense) had no impact on the policy year 2012 Basic insurance actuarial rate indication.

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**2012.1 RR BCUC.75.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

In paragraph 33, the ICBC evidence states:

**“In both the 2011 outlook and 2012 forecast, ICBC has excluded from operating expenses used for the actuarial rate indication a \$10 million amount relating to the annual pension and post-retirement benefit adjustment, which arises due to the variation in the rate which is used to discount pension liabilities. This adjustment can fluctuate significantly from year to year due to variations in the discount rate. The pension and post-retirement liability is long-term. Payments are made to employees upon retirement and therefore are spread over a long period of time. Meanwhile, the interest rate used to discount pension liabilities may fluctuate up and down during this long period. ICBC believes that this component of the pension and post-retirement benefit adjustment should be excluded from operating expenses in order to remove the impact of this variability on Basic insurance rates, to help keep rates more stable.” [Emphasis Added]**

**From the underlined phrase in paragraph 33, can ICBC confirm that it will not be recovering the Basic portion of the \$20 million amount (i.e. each year a \$10 million amount for 2011 outlook and 2012 forecast) from Basic Insurance rates for PY 2012?**

**Response:**

Only \$10 million relating to the annual pension and post-retirement benefit adjustment has been excluded from the 2012 operating expenses used for the policy year 2012 Basic insurance actuarial rate indication.

Please see the response to information request 2012.1 RR BCUC.75.3 for a description of how ICBC proposes to treat the pension and post-retirement benefit adjustment for the 2012 policy year, which arises due to the variation in the rate which is used to discount pension and post-retirement liabilities.

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**2012.1 RR BCUC.75.2 Reference: OPERATING EXPENSE AND ALLOCATION  
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**Can ICBC confirm that, if there is a continuing trend of low or lower discount rates, the unfunded portion of Pension Benefits and Post Retirement Benefits will continue to increase?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.75.5 for a discussion of the distinction between funding valuations and accounting valuations. The funded status on an accounting valuation basis is the net of the plan assets and the defined benefit obligation.

A continuing trend of low or lower discount rates relative to the discount rate assumption will increase the defined benefit obligation of the pension plans and post-retirement benefits plan reported in ICBC’s corporate financial statements. Assuming the funded status is in a deficit position, all other variables and assumptions (such as the expected rate of return on plan assets, level of contributions and funding, etc.) are held constant and the plan assets do not increase at the same rate as the defined benefit obligation, then the unfunded portion (i.e., deficit position) will increase.

Both the ICBC Management and Confidential Plan and the Bargaining Unit Plan are funded by contributions determined by the triennial actuarial funding valuations. The Post-Retirement Benefits Plan is not funded.

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**2012.1 RR BCUC.75.3 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

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**75.3 Does ICBC propose to exclude all incremental Pensions and Post Retirement Benefit Liabilities from inclusion into the Basic Rate indication in future years past the PY 2012?**

**75.3.1 If no, at what point will ICBC forecast to bring the adjustment into Basic Equity through the OCE?**

**Response:**

No, ICBC does not expect to propose the exclusion of incremental pensions and post-retirement benefits liabilities from the Basic insurance actuarial rate indication in future years past policy year 2012, unless similar circumstances to policy year 2012 take place. The reason these costs are proposed for exclusion for this policy year is due to the circumstances listed in the criteria below and the fact that these costs are associated with a long-term liability. The longer term nature of this liability, compared to any other asset or liability, enables more time for any impact due to the fluctuation of interest rates, which can be significant on actuarially indicated rates for any one policy year, to smooth out over time.

Management interprets the 2011 Government Directive regarding Basic Rate Stability and Capitalization to allow for the exclusion this year based on the statement in the letter: “Government believes that capital above the Basic insurance regulatory minimum should be made available to help manage rates”.

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But, in making exclusions of costs to be funded by Basic capital, the potential future adverse consequences to ICBC's financial condition must be considered. ICBC management determined the following necessary conditions in order to make this specific exclusion:

- A large Basic insurance rate increase is indicated.
- The exclusion cannot result in the actual or forecast MCT falling below 100%.
- It must be implemented on or before January 31, 2015 (in accordance with the 2011 Government Directive).
- It is considered a one-time exclusion and is not repeated unless the first three bullets hold.

Accepted actuarial practice requires that the rate indication provides for all costs associated with the future policies, and allows for the capital provision to be specified by the capital framework in place. As a result, the exclusion of costs, which is equivalent to a specification of the capital provision, is in accordance with accepted actuarial practice.

Please see the response to information request 2012.1 RR BCUC.42.3-4, which describes the scenario when the actual or forecasted MCT ratio is or is expected to be less than 100%.

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**2012.1 RR BCUC.75.3.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Unique Items**

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**Can ICBC assess the impact on Basic MCT in future periods from the effect of deferring the operating expense impact in PY 2012?**

**Response:**

This \$10 million adjustment is being excluded from operating expenses used for the 2012 Basic insurance actuarial rate indication and is not being deferred. Rate-regulated deferral accounting was previously permitted under Canadian Generally Accepted Accounting Principles but is not permitted under International Financial Reporting Standards (IFRS). Deferring the \$10 million under rate-regulated accounting would have resulted in the amount being recorded as a deferral asset on the balance sheet.

ICBC is not deferring this amount and for the year ended December 31, 2012 will include this amount in actual operating expenses and in retained earnings; consequently flowing into the Basic Minimum Capital Test (MCT) ratio. All things being held equal and also with no change to the discount rate, this \$10 million amount will reduce the Basic MCT ratio at the end of December 31, 2012. However, the Basic MCT ratio at December 31, 2012 is still forecasted to be greater than 100% with the proposed Basic insurance rate increase of 11.2%. Please see the response to information request 2012.1 RR BCUC.42.3-4, which describes the scenario when the actual or forecast MCT ratio is or is expected to be less than 100%.

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Please also see the response to information request 2012.1 RR BCUC.75.3 for a description of how ICBC proposes to treat the pension and post-retirement benefit adjustment for the 2012 policy year, which arises due to the variation in the rate which is used to discount pension and post-retirement liabilities.

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**2012.1 RR BCUC.75.4 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

In paragraph 33, the ICBC evidence states:

**“In both the 2011 outlook and 2012 forecast, ICBC has excluded from operating expenses used for the actuarial rate indication a \$10 million amount relating to the annual pension and post-retirement benefit adjustment, which arises due to the variation in the rate which is used to discount pension liabilities. This adjustment can fluctuate significantly from year to year due to variations in the discount rate. The pension and post-retirement liability is long-term. Payments are made to employees upon retirement and therefore are spread over a long period of time. Meanwhile, the interest rate used to discount pension liabilities may fluctuate up and down during this long period. ICBC believes that this component of the pension and post-retirement benefit adjustment should be excluded from operating expenses in order to remove the impact of this variability on Basic insurance rates, to help keep rates more stable.” [Emphasis Added]**

**Given the on-going trend of low interest rates, how will the risk of increased current funding of pension and post retirement benefits be accounted for if the \$20 million amount adjustment is not made?**

**Response:**

Only \$10 million relating to the annual pension and post-retirement benefit adjustment has been excluded from the 2012 forecast operating expenses used for the policy year 2012 Basic insurance actuarial rate indication. However, this amount will be recognized for financial reporting purposes in ICBC corporate financial statements for the year ending December 31, 2012 and hence will be included in the Minimum Capital Test (MCT) ratio at December 31, 2012.

The 2011 Government Directive regarding Basic Rate Stability and Capitalization specifies that the capital build provision should not apply during the 3-year period from February 1, 2012 to January 31, 2015 when the Basic MCT ratio is over 100%. For the years ending during this period (December 31, 2012, December 31, 2013, and December 31, 2014) if Basic MCT ratio is greater than 100%, no recovery will be made for this excluded amount. Please see the response to information request 2012.1 RR BCUC.75.3 for a description of how ICBC proposes to treat the pension and post-retirement benefit adjustment for the 2012 policy year, which

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arises due to the variation in the rate which is used to discount pension and post-retirement liabilities.

Please see the response to information request 2012.1 RR BCUC.75.5 for a discussion of the distinction between funding valuations and accounting valuations. Both the ICBC Management and Confidential Plan and the Bargaining Unit Plan are funded by contributions determined by the triennial actuarial funding valuations. The Post-Retirement Benefits Plan is not funded. The level of contributions is determined by the Going Concern and Solvency valuations, which will not be impacted by the \$10 million excluded from the policy year 2012 Basic insurance actuarial rate indication.

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**2012.1 RR BCUC.75.4.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

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**Does the exclusion of this amount from operating expenses create a difference between the operating expenses included in the Application to those that would need to be recorded for IFRS?**

**Response:**

Only \$10 million relating to the annual pension and post-retirement benefit adjustment has been excluded from the 2012 forecast operating expenses used for the actuarial rate indication. Yes, this exclusion would be a difference between the operating expenses included in the actuarial rate indication and what would be reported in the 2012 actual operating expenses under IFRS.

Please also see the response to information request 2012.1 RR BCUC.75.3 for a description of how ICBC proposes to treat the pension and post-retirement benefit adjustment for the 2012 policy year, which arises due to the variation in the rate which is used to discount pension and post-retirement liabilities.

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**2012.1 RR BCUC.75.4.1.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

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**Is ICBC proposing regulatory deferral account treatment for the \$20 million not included in current operating expenses?**

**Response:**

As explained in the response to information request 2012.1 RR BCUC.75.3.2, ICBC is not proposing regulatory deferral accounting treatment but rather is excluding this amount from the policy year 2012 Basic insurance actuarial rate indication. Please see the response to information request 2012.1 RR BCUC.75.3 for a description of how ICBC proposes to treat the pension and post-retirement benefit adjustment for the 2012 policy year, which arises due to the variation in the rate which is used to discount pension liabilities.

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**2012.1 RR BCUC.75.4.1.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Unique Items**

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**How does ICBC propose to bring the deferred portion of operating expenses into the Basic Rate Indication? Over what time frame and what amounts?**

**Response:**

As explained in the response to information request 2012.1 RR BCUC.75.3.2, ICBC is not proposing regulatory deferral accounting treatment but rather is excluding this amount from the policy year 2012 Basic insurance actuarial rate indication. Please see the response to information request 2012.1 RR BCUC.75.3 for a description of how ICBC proposes to treat the pension and post-retirement benefit adjustment for the 2012 policy year, which arises due to the variation in the rate which is used to discount pension liabilities.

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**2012.1 RR BCUC.75.4.1.3 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

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**How does ICBC intend to absorb the risk of ongoing low interest rates so as to mitigate the impact on Basic Insurance rates into the future?**

**Response:**

A continuing trend of low discount rates relative to the discount rate assumption will increase the defined benefit obligation, via increased actuarial losses, of the pension plans and post-retirement benefits plan reported in the ICBC corporate financial statements. All things being held equal, future actuarial losses will decrease the funded status ratio and be recognized in retained earnings, thereby decreasing the Minimum Capital Test (MCT) ratio. Conversely, future actuarial gains will increase the funded status ratio and be recognized in retained earnings, thereby increasing the MCT ratio. Please also see the response to information request 2012.1 RR BCUC.75.3 for a description of how ICBC proposes to treat the pension and post-retirement benefit adjustment for the 2012 policy year, which arises due to the variation in the rate which is used to discount pension and post-retirement liabilities.

The 2011 Government Directive regarding Basic Rate Stability and Capitalization specifies that the capital build provision should not apply during the 3-year period from February 1, 2012 to January 31, 2015 when the Basic MCT ratio is over 100%. For the years ending during this period (December 31, 2012, December 31, 2013, and December 31, 2014) if the Basic MCT

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ratio is greater than 100%, no recovery will be made for actuarial losses recognized in retained earnings. Please see the response to information request 2012.1 RR BCUC.42.3-4 which, describes the scenario when the actual or forecast MCT ratio is or is expected to be less than 100%.

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**2012.1 RR BCUC.75.5 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

In paragraph 33, the ICBC evidence states:

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**Please provide copies of the actuarial valuation for the M&C Plan as at December 31, 2009 , the COPE Plan as at December 31, 2011 (if incomplete provide a preliminary valuation) and the post retirement benefits valuation as at December 31, 2009.**

**Response:**

Please see Attachment A – Management and Confidential Plan Funding Valuation as at December 31, 2009.

Please note that the Post-Retirement Benefits Plan last valuation was done as at January 1, 2010 and not December 31, 2009. Please see Attachment B – Post-Retirement Benefits Plan Valuation as at January 1, 2010.

Please see Attachment C – COPE 378 ICBC Plan Valuation as at December 31, 2008.

The Bargaining Unit Plan valuation as at December 31, 2011 has not been completed. A preliminary valuation is not available. A copy of the last valuation as at December 31, 2008 is attached. Please see the response to information request 2012.1 RR BCUC.75.6.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.75.5 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 2 of 2
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The pension plan funding valuations are done on the following bases:

- Going Concern Funding – purpose is to determine minimum required and allowable maximum contributions to ensure long-term funding adequacy.
- Solvency Funding – purpose is to determine whether current liquidation value of assets is sufficient to cover the current cost of settling the plan’s obligations in the event of plan termination or company insolvency; and the resulting required minimum contributions.

In addition, the member data used to complete the funding valuations will be used for the accounting valuation, which is done to account for the costs of the plan in the plan sponsor’s financial statements and does not affect contributions.

The funded status of these three valuations will differ as they are done for different purposes and therefore, use different assumptions. The funding valuations are done to determine ICBC’s contributions, whereas the Accounting valuation is the basis used in the financial statements and therefore, in the policy year 2012 Basic insurance actuarial rate indication.



# **2012.1 RR BCUC.75.5 – Attachment A – Management and Confidential Plan Funding Valuation as at December 31, 2009**

# Insurance Corporation of British Columbia Pension Plan for Management and Confidential Employees Funding Valuation as of December 31, 2009

September 2010

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# Preparation of this Actuarial Valuation

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## **Insurance Corporation of British Columbia Pension Plan for Management and Confidential Employees**

We have prepared this report on the actuarial valuation of the *Insurance Corporation of British Columbia Pension Plan for Management and Confidential Employees* (the "Plan") as of December 31, 2009 for the Insurance Corporation of British Columbia ("ICBC"). The purposes of the valuation include determining:

- the Plan's going concern funded position and current service cost;
- the Plan's solvency position;
- the required minimum employer contributions until the next valuation in accordance with the *British Columbia Pension Benefits Standards Act ("PBSA")*; and
- the maximum employer contributions for the year following the valuation date in accordance with the *Income Tax Act ("ITA")*.

In conducting the valuation, we have used membership data we obtained from ICBC and the third party Plan administrator, Mercer Consulting, audited financial statements prepared by PricewaterhouseCoopers LLP, and the actuarial assumptions and methods described in this report.

It is our opinion that:

- the latest date on which the next valuation should be performed is December 31, 2012;
- the data on which this report is based are sufficient and reliable for the purposes of the valuation;
- the assumptions used are, in aggregate, appropriate for the purpose of the going concern valuation; emerging experience differing from assumptions will result in gains or losses that will be revealed in future valuations and may cause changes in future contribution levels;
- the methods employed in the going concern valuation are appropriate for the purposes of the valuation;
- the assumptions and methods used in the solvency valuation meet the requirements of the *PBSA*;
- the minimum required contributions stated in this report are sufficient to meet the funding requirements of the *PBSA*;
- the Plan has an unfunded accrued liability of \$16,300,000 based on the going concern assumptions described in the appendices to this report;
- the Plan's going concern funded ratio is 95.8%;
- the Plan has a "solvency deficiency" based on the solvency assumptions described in the appendices to this report;
- the Plan has an unfunded solvency liability of \$91,700,000; and

- the Plan's solvency ratio is 79.4%.

We hereby certify that:

1. the calculations in this report have been prepared in accordance with Subparagraphs 147.2(2)(a)(iii) and (iv) of the *Income Tax Act*; and
2. no excess surplus exists in the Plan as of the valuation date.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice.

Hewitt Associates

Shelley Engman  
Fellow of the Canadian Institute of Actuaries

Jennifer Schoenfeld  
Fellow of the Society of Actuaries

September 2010

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## Executive Summary

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### **Contributions since the Previous Valuation**

Employee contributions have remained the same since May 2002, at a rate of 4.9% / 6.5% (of earnings below / above the YMPE).

ICBC pays the balance of the cost of the Plan. Ongoing ICBC contributions have been roughly two times employee contributions. In addition ICBC made special solvency payments of \$2,800,000 in each of 2008 and 2009.

### **Changes in Plan Provisions since the Previous Valuation**

Effective October 29, 2008, the Plan was amended to clarify the Plan wind-up provisions, including that ICBC will pay all associated expenses. In addition, the maximum pension commencement age was increased from 69 to 71, along with some minor housekeeping amendments.

This valuation reflects those amendments as well as the following amendments that were effective January 1, 2010 and apply only to post-2009 pensionable service:

- Indexation of pensions in payment is capped at 3.0% per year;
- Deferred vested pensions are not indexed prior to pension commencement; and
- Short-term incentive pay is included in covered earnings.

### **Changes in Plan Membership since the Previous Valuation**

Overall, the Plan membership has increased by 13% over the two-year inter-valuation period, from 1,365 at December 31, 2007 to 1,549 at December 31, 2009. The active membership has increased by 13% from 864 to 979. The disabled membership has increased by 31% from 16 to 21, the terminated vested membership has increased by 13% from 115 to 130, and the number of retired members and survivors has increased by 13% from 370 to 419.

### **Asset Performance since the Previous Valuation**

Over the two-year inter-valuation period, the Plan assets earned an average annual return of -1.6% on a market value basis and 1.7% on a smoothed basis.

### **Legislative Changes since the Previous Valuation**

Since the previous valuation, the *PBSA* Regulation was amended to allow the use of letters of credit in lieu of cash solvency deficiency contributions. Also, the *ITA* was amended to increase the maximum allowable surplus to 25% of going concern liabilities.

### **Assumption Changes**

In this going concern valuation, we increased the projection of mortality improvement by two years.

## Executive Summary (continued)

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### **Balance Sheets at December 31, 2009**

At December 31, 2009, the Plan has a going concern funded ratio of 95.8% (unfunded accrued liability of \$16,300,000). At December 31, 2007, the date of the previous valuation, the Plan had a going concern funded ratio of 105.3% (surplus of \$17,100,000). The main reason for the decline in funded status is investment returns lower than assumed.

At December 31, 2009, the Plan has a solvency ratio of 79.4% and an unfunded solvency liability of \$91,700,000. This compares to a solvency ratio of 96.4% and an unfunded solvency liability of \$12,500,000 at the previous valuation. The main reason for the decline is investment returns.

### **New Current Service Cost**

The current service cost (cost of accruing benefits) has decreased (as a percent of covered earnings) since the previous valuation, from 17.3% of covered earnings (base earnings only) to 16.8% of covered earnings (base earnings plus short-term incentive pay). The estimated current service cost for 2010 is \$17,800,000. Of this, employees pay a fixed percentage of earnings, and ICBC pays the balance of the cost.

Employee contributions at 4.9% / 6.5% (of earnings below / above the YMPE) cover approximately one-third of the current service cost (approximately 5.8% of covered earnings).

ICBC must pay the balance of the current service cost, being approximately 11.0% of covered earnings.

### **ICBC Minimum Contributions**

Pursuant to the Plan terms and the results of this valuation, ICBC is required to make at least the following minimum contributions to the Plan:

- 11.0% of covered earnings in respect of the current service cost;
- special payments of \$1,700,000 per year toward the going concern unfunded accrued liability, to be paid in cash; and
- special payments of \$19,800,000 per year toward the solvency deficiency, to be paid in cash or backed by a letter of credit.

### **Subsequent Events**

Subsequent events are events that transpire after the valuation date (December 31, 2009) and before the date of this report (September 27, 2010). Subsequent events also include events that, as of the date of this report, are fully committed to occur in the future.

ICBC has confirmed that there are no subsequent events that would materially affect the valuation results.

## Going Concern Valuation Results

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	December 31, 2007	December 31, 2009
<b>Past Service</b>		
Going Concern Accrued Liability		
■ Active Members	\$ 203,900,000	\$ 241,900,000
■ Disabled Members	5,000,000	7,300,000
■ Terminated Vested Members	14,200,000	19,400,000
■ Retired Members	<u>100,200,000</u>	<u>122,500,000</u>
Total	\$ 323,300,000	\$ 391,100,000
Going Concern Asset Value	\$ 340,400,000	\$ 374,800,000
Going Concern Surplus / (Unfunded Accrued Liability)	\$ 17,100,000	\$ (16,300,000)
Going Concern Funded Ratio	105.3%	95.8%
<b>Current Service</b>		
Total Current Service Cost (percent of covered earnings)	17.3%	16.8%
Estimated Covered Earnings <sup>1</sup>	\$ 78,200,000	\$ 106,400,000
Estimated Total Current Service Cost	\$ 13,500,000	\$ 17,800,000
Less: Estimated Employee Contributions	<u>(4,500,000)</u>	<u>(6,100,000)</u>
Equals: Estimated ICBC Current Service Cost	\$ 9,000,000	\$ 11,700,000

1. \_\_\_\_\_  
<sup>1</sup> December 31, 2007 covered earnings exclude short-term incentive pay. December 31, 2009 covered earnings include short-term incentive pay.

## Solvency Valuation Results

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	December 31, 2007	December 31, 2009
Solvency Liability		
■ Active Members	\$ 207,800,000	\$ 255,100,000
■ Disabled Members	6,700,000	11,000,000
■ Terminated Vested Members	18,000,000	25,200,000
■ Retired Members	<u>119,300,000</u>	<u>153,100,000</u>
Total	\$ 351,800,000	\$ 444,400,000
Solvency Assets	\$ 339,300,000	\$ 352,700,000
Solvency Asset Adjustment	<u>0</u>	<u>15,600,000</u>
Total	\$ 339,300,000	\$ 368,300,000
Solvency Surplus / (Deficiency)	\$ (12,500,000)	\$ (76,100,000)
Unfunded Solvency Liability	\$ (12,500,000)	\$ (91,700,000)
Solvency Ratio	96.4%	79.4%

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*Solvency Assets* are the market value of the Plan assets adjusted to reflect contributions and benefit payments in transit as of the valuation date.

The *Solvency Asset Adjustment* reflects the present value of the going concern special payments for the five years following the valuation date, plus the present value of any previously established solvency deficiency special payments for the five years following the valuation date.

The *Solvency Surplus / (Deficiency)* is the difference between the solvency assets plus the solvency asset adjustment, and the solvency liability.

The *Unfunded Solvency Liability* is the difference between the solvency liability and the solvency assets.

The *Solvency Ratio* compares the solvency assets to the solvency liability.

### Wind-Up Position

In our opinion, the value of the Plan assets would be \$91,700,000 less than the solvency liability if the Plan were wound up on the valuation date.

Since the Plan's solvency ratio is less than 1.0, the *PBSA* places restrictions on lump sum benefit payments from the Plan, unless ICBC makes additional payments to fund the associated transfer deficiencies.

## Contributions

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### Excess Surplus

Excess Surplus is defined in Section 147.2(2)(d) of the *ITA*. The *ITA* requires that any Excess Surplus first be applied to reduce or eliminate ICBC's contribution requirements. Since the calculation of Excess Surplus impacts the development of ICBC's contribution requirements, we first show the development of Excess Surplus.

Excess Surplus is defined under the *ITA* as the portion of going concern surplus (if any) that exceeds 25% of the accrued liability.

### Development of Excess Surplus

Since there is a going concern unfunded accrued liability as of December 31, 2009, there is no Excess Surplus as of December 31, 2009.

### Schedule of Minimum Special Payments – Going Concern Unfunded Accrued Liability

The schedule of minimum special payments in respect of the unfunded accrued liability is as follows:

Date Established	Original Amount	Annual Special Payments	End of Amortization Period	Balance at December 31, 2009
December 31, 2009	\$ 16,300,000	\$ 1,700,000	December 31, 2024	\$ 16,300,000

### Schedule of Minimum Special Payments – Solvency Deficiency

The schedule of minimum special payments in respect of the solvency deficiency is as follows:

Date Established	Original Amount	Annual Special Payments	End of Amortization Period	Balance at December 31, 2009
December 31, 2007	\$ 12,500,000	\$ 2,800,000	December 31, 2012	\$ 7,900,000
December 31, 2009	\$ 76,100,000	\$ 17,000,000	December 31, 2014	\$ 76,100,000

## Contributions (continued)

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### **Current Service Cost (Cost of Accruing Benefits)**

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	As a Percentage of Covered Earnings	Estimated Dollars in 2010
Covered earnings (includes short term incentive pay)		\$ 106,400,000
Total current service cost	16.8%	\$ 17,800,000
Less: Employee contributions	<u>(5.8%)</u>	<u>(6,100,000)</u>
Equals: ICBC's current service cost	11.0%	\$ 11,700,000

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### **Plan Expenses**

All of the Plan's expenses, including investment management fees, are paid by ICBC. No expenses are paid from the Plan, therefore no additional amount needs to be contributed to cover expenses.

### **Minimum Required Contributions**

Under the *PBSA*, ICBC's minimum required contribution for a Plan year is equal to:

- ICBC's portion of the current service cost; plus
- Special payments toward amortizing any going concern unfunded accrued liability over 15 years from the date on which it was established; plus
- Special payments toward amortizing any solvency deficiency over five years from the date on which it was established; less
- Required application of Excess Surplus; less
- Permitted application of surplus.

The *PBSA* requires that if ICBC uses surplus funds to offset its contribution requirements, a going concern surplus of at least 5% of the Plan's liabilities must remain in the Plan, and the surplus in excess of 5% of the accrued liability must be amortized over at least five years.

### **Timing of Contributions**

In order to satisfy the requirements of the *PBSA* and its Regulation, contributions to the Plan must be remitted to the pension fund at least quarterly within 30 days after the end of the quarter for which the contributions are payable.

## Contributions (continued)

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ICBC's minimum required contributions for the year following the valuation date are therefore:

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	<b>Estimated Dollars in 2010</b>
ICBC current service contributions	\$ 11,700,000
Going concern special payments	1,700,000
Solvency special payments	<u>19,800,000</u>
Total minimum ICBC contributions	\$ 33,200,000

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ICBC's actual minimum contributions should be calculated as 11.0% of covered earnings, plus \$5,375,000 per calendar quarter (one-fourth of \$1,700,000 plus \$19,800,000). The current service contributions and going concern special payments must be made in cash. ICBC can post a letter of credit in lieu of making cash solvency contributions.

### **Maximum Permissible Contributions**

The *ITA* allows ICBC to pay the current service cost plus the greater of the going concern unfunded accrued liability and the unfunded solvency liability.

The following table shows the estimated maximum permissible ICBC contributions under the *ITA* for the year following the valuation date:

---

	<b>Estimated Dollars in 2010</b>
ICBC current service contributions	\$ 11,700,000
Unfunded solvency liability	<u>91,700,000</u>
Total maximum ICBC contributions	\$103,400,000

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### **Acceptable ICBC Contributions**

ICBC is required to make at least the minimum contributions and no more than the maximum contributions.

# Changes in Financial Position

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## **Changes in Going Concern Valuation Results**

In this section, we analyze the change in the going concern funded position and in the current service cost over the two-year inter-valuation period. There are three categories of items that give rise to these changes:

1. Experience in the period since the previous valuation versus the assumptions used in the previous valuation;
2. Plan and legislative changes; and
3. Changes in our assumptions about the future.

### **1. Plan Experience since the Previous Valuation**

Over the short period between valuations, actual experience typically differs from the long-term assumptions. To the extent possible, we have quantified the impact of this experience for the two-year inter-valuation period in the pages that follow.

### **2. Plan and Legislative Changes**

The October 29, 2008 Plan amendments do not affect the going concern valuation. The January 1, 2010 Plan amendments affect the current service cost but not the going concern accrued liability.

### **3. Changes in Valuation Estimates (Actuarial Assumptions and Methods)**

In this valuation we replaced the active member mortality table from UP94 projected to 2028 to UP94 projected to 2030, and we changed the retired member mortality table from UP94 projected to 2017 to UP94 projected to 2019.

## Changes in Financial Position (continued)

### Analysis of Change in Going Concern Funded Position

The following schedule summarizes (approximately) the changes in the Plan's going concern funded position between December 31, 2007 and December 31, 2009.

Going Concern Surplus / (Unfunded Accrued Liability) at December 31, 2007		\$ 17,100,000
Interest on funding excess		2,500,000
Plan Experience since the Previous Valuation:		
■ Investments <sup>1</sup>	\$ (37,200,000)	
■ Contributions less than cost of accruing benefits	(500,000)	
■ Solvency special payments, with interest	6,000,000	
■ Salary, YMPE and ITA Increases <sup>2</sup>	5,400,000	
■ Pension commencements	400,000	
■ Terminations	(2,500,000)	
■ Mortality and disability	(300,000)	
■ Indexing	2,200,000	
■ Interplan transfers <sup>3</sup>	(5,400,000)	
■ Other factors	<u>(700,000)</u>	
		(32,600,000)
Changes in Valuation Estimates:		
■ Mortality assumption	(2,400,000)	
■ Programming and methods	<u>(900,000)</u>	
		<u>(3,300,000)</u>
Going Concern Surplus / (Unfunded Accrued Liability) at December 31, 2009		\$ (16,300,000)

1. \_\_\_\_\_

<sup>1</sup> Using smoothed asset values, the fund earned an average annual net investment return over the two-year inter-valuation period of 1.7%, underperforming the assumed 6.75%.

<sup>2</sup> Actual pay increases granted to Plan members over the inter-valuation period were less than assumed.

<sup>3</sup> When members transfer from the COPE 378 / ICBC Pension Plan, the reserve established in this Plan exceeds the amount transferred in.

## Changes in Financial Position (continued)

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### Analysis of Change in Current Service Cost

There has been a decrease during the two-year inter-valuation period in the going concern current service cost, expressed as a percentage of covered earnings:

	<b>% of Covered Earnings</b>
Current Service Cost at December 31, 2007	17.3%
Plan Experience Since the Previous Valuation:	
■ Demographic changes and other factors	(0.1)
Plan and Legislative Changes <sup>1</sup>	(0.5)
Changes in Valuation Estimates:	
■ Mortality assumption	<u>0.1</u>
Current Service Cost at December 31, 2009	16.8%

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1. \_\_\_\_\_

<sup>1</sup> Removal of pre-retirement indexing, and inclusion of short-term incentive pay in covered earnings. The inclusion of short-term incentive pay decreases the current service cost percentage because covered earnings increase by the full amount of short-term incentive pay whereas the benefit increase is affected by the *ITA* maximum pension limit. The dollar amount of current service cost increases due to the much larger covered earnings base when short-term incentive pay is included.

## Asset Data

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### Plan Assets

The Plan assets are held by State Street Trust Company Canada. The assets are managed by multiple investment management firms. Information in this section of the report is based on audited financial statements prepared by PricewaterhouseCoopers LLP.

At the valuation date, the Plan assets were invested as shown below.

	December 31, 2009 Market Value	Percentage of Plan Assets
Canadian Equities	\$ 109,297,000	31.1%
Foreign Equities	102,289,000	29.2
Fixed Income	136,188,000	38.8
Money Market Securities	330,000	0.1
Cash	1,622,000	0.5
Accrued Income	<u>1,216,000</u>	<u>0.3</u>
Total Assets	\$ 350,942,000	100.0%
Net Payables and Receivables <sup>1</sup>	<u>1,803,000</u>	
	\$ 352,745,000	

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1. \_\_\_\_\_  
<sup>1</sup> At the valuation date, contributions and other receivables due to the Plan totaled \$2,967,000. Accounts payable from the Plan were \$1,164,000. Therefore, there was a net receivable of \$1,803,000.

## Asset Data (continued)

### Changes to Plan Assets

The following table shows the changes to the Plan assets during the inter-valuation period.

	2007	2008	2009
Market Value at Beginning of Period <sup>1</sup>	\$ 331,533,000	\$ 339,287,000	\$ 286,009,000
Transfers In	4,371,000	7,699,000	4,560,000
Employee / ICBC Contributions	12,505,000	16,496,000	18,047,000
Pension Payments	(7,712,000)	(8,465,000)	(9,409,000)
Lump Sum Payments	(4,830,000)	(5,147,000)	(1,213,000)
Investment Income	<u>3,420,000</u>	<u>(63,861,000)</u>	<u>54,751,000</u>
Market Value at End of Period <sup>1</sup>	\$ 339,287,000	\$ 286,009,000	\$ 352,745,000
Rate of return	1.0%	(18.5%)	18.8%

### Smoothed Asset Value

For determining the Plan's going concern position, we have used an asset valuation method that smoothes the impact of short-term fluctuations in the market value of the assets. The method does this by recognizing the difference between each year's actual and expected investment earnings over a four-year period. Expected investment earnings are calculated by assuming the fund assets and cash flows would have earned the previous valuation's assumed going concern return on assets of 6.75%.

The fund's actual investment earnings (including interest and dividend income, realized and unrealized gains) are compared below to expected investment earnings:

Investment Earnings	2007	2008	2009
Expected	\$ 22,500,000	\$ 23,300,000	\$ 19,700,000
Actual	<u>3,420,000</u>	<u>(63,861,000)</u>	<u>54,751,000</u>
Excess of expected over actual	\$ 19,080,000	\$ 87,161,000	\$ (35,051,000)

1. \_\_\_\_\_  
<sup>1</sup> Includes payables and receivables.

## Asset Data (continued)

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The market value is then adjusted by the portion of the investment gains/losses that the method does not yet recognize:

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Market value at December 31, 2009	\$ 352,700,000
Adjustment for gains/losses not yet recognized:	
■ .25 x 2007 excess	4,800,000
■ .50 x 2008 excess	43,600,000
■ .75 x 2009 excess	<u>(26,300,000)</u>
Smoothed value at December 31, 2009	\$ 374,800,000

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The smoothed value is equal to 106.3% of market value. There are \$22,100,000 of investment losses that have not yet been recognized in the smoothed value of assets.

Based on smoothed values, the Plan assets earned approximately 1.7% per year on average over the two-year inter-valuation period.

# Membership Data

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## Description of Membership Data

We obtained membership data as of December 31, 2009 from ICBC and from the third party Plan administrator, Mercer Consulting. We reviewed the data to ensure its completeness, accuracy and consistency with the data used in the previous valuation.

The main tests of reliability and sufficiency we conducted on the data included:

- reconciliation of individual member records with records used for the prior valuation;
- checks to determine reasonableness of individual data elements both on an absolute basis and relative to the same data elements provided for the prior valuation; and
- checks to ensure consistency between the membership information and the information contained in the Plan's financial statements.

## Summary of Membership Data

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	December 31, 2007	December 31, 2009
<b>Active</b>		
■ number	864	979
■ average age	47.1	47.2
■ average pensionable service (years)	13.5	13.3
■ average salary	\$90,455	\$94,666
■ average salary plus assumed short-term incentive pay	n/a	\$108,645
<b>Disabled</b>		
■ number	16	21
■ average age	51.2	53.8
■ average pensionable service (years)	18.4	20.9
■ average deemed earnings	\$86,707	\$88,607
<b>Terminated Vested</b>		
■ number	115	130
■ average age	48.5	50.2
■ average monthly lifetime pension	\$969	\$1,084
<b>Retired</b>		
■ number	370	419
■ average age	67.1	67.7
■ average monthly lifetime pension	\$1,474	\$1,605

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## Membership Data (continued)

### Changes in Plan Membership

The following table shows the changes in Plan membership since the previous valuation.

	Active	Disabled	Terminated Vested	Retired	Total
Members at December 31, 2007	864	16	115	370	1,365
New Members	124		1	2	127
Pension Commencements	(49)		(4)	53	
Disabilities					
■ became disabled	(8)	8			
■ returned to active	3	(3)			
Terminations of Employment					
■ deferred pensions	(27)		27		
■ lump-sum payment or non-vested	(35)		(9)		(44)
Deaths					
■ lump sum payment	(1)				(1)
■ cessation of payments				(6)	(6)
Transfers					
■ to COPE 378 / ICBC Pension Plan	(1)				(1)
■ from COPE 378 / ICBC Pension Plan	109				109
Members at December 31, 2009	979	21	130	419	1,549

All of the active Plan members are employed in British Columbia.

## Membership Data (continued)

In the tables that follow, the value shown in each cell (aside from the number of members) is an average for that cell. The covered earnings in the active member summary include short-term incentive pay.

### Active Member Summary

Age Group		Years of Continuous Service							Totals	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35		35+
24 & under	Number	2								2
	Pensionable Service	2.1								2.1
	Covered Earnings	*								*
25-29	Number	18	2							20
	Pensionable Service	1.6	5.0							1.9
	Covered Earnings	\$74,078	*							\$74,544
30-34	Number	42	11	12						65
	Pensionable Service	1.9	7.2	9.6						4.2
	Covered Earnings	\$88,339	\$99,323	\$84,653						\$89,518
35-39	Number	33	18	36	9	2				98
	Pensionable Service	1.7	7.5	10.4	16.3	19.1				7.7
	Covered Earnings	\$84,992	\$102,522	\$95,809	\$95,785	*				\$93,212
40-44	Number	44	27	43	43	30				187
	Pensionable Service	1.9	7.4	10.9	17.7	20.0				11.3
	Covered Earnings	\$106,542	\$121,826	\$98,213	\$104,160	\$103,161				\$105,744
45-49	Number	37	27	27	37	75	15	1		219
	Pensionable Service	2.7	7.6	11.2	17.9	21.5	25.7	30.1		15.0
	Covered Earnings	\$121,556	\$117,295	\$109,531	\$116,800	\$113,525	\$111,622	*		\$115,478
50-54	Number	28	21	22	38	56	26	18	1	210
	Pensionable Service	1.9	7.9	12.4	16.8	22.1	27.1	26.1	26.0	17.0
	Covered Earnings	\$142,475	\$117,691	\$110,585	\$116,568	\$111,567	\$116,549	\$123,816	*	\$118,840
55-59	Number	19	18	20	14	26	19	13	7	136
	Pensionable Service	2.2	8.6	11.7	17.6	22.3	28.3	27.4	25.2	17.1
	Covered Earnings	\$129,551	\$98,755	\$95,474	\$100,833	\$104,069	\$118,952	\$123,290	\$127,915	\$110,473
60-64	Number	6	8	7	3	8	3	1	5	41
	Pensionable Service	2.3	7.2	12.0	17.8	22.8	28.0	29.8	28.0	15.7
	Covered Earnings	\$108,638	\$130,388	\$118,924	\$106,342	\$97,062	\$117,937	*	\$108,341	\$112,541
65-70	Number						1			1
	Pensionable Service						26.7			26.7
	Covered Earnings						*			*
Totals	Number	229	132	167	144	197	64	33	13	979
	Pensionable Service	2.0	7.6	11.1	17.4	21.6	27.2	26.8	26.3	13.3
	Covered Earnings	\$105,931	\$112,454	\$100,720	\$109,881	\$109,202	\$116,522	\$123,776	\$120,265	\$108,645

\* Omitted for confidentiality reasons.

## Membership Data (continued)

### Disabled Member Summary

Age Group		Years of Continuous Service						Totals
		5-10	10-15	15-20	20-25	25-30	30-35	
25-29	Number							
	Pensionable Service							
	Salary							
30-34	Number							
	Pensionable Service							
	Salary							
35-39	Number							
	Pensionable Service							
	Salary							
40-44	Number			1				1
	Pensionable Service			16.5				16.5
	Salary			*				*
45-49	Number		2	2	2			6
	Pensionable Service		12.2	16.9	19.6			16.2
	Salary		*	*	*			\$84,281
50-54	Number				3	1		4
	Pensionable Service				21.5	28.1		23.1
	Salary				\$87,635	*		\$86,678
55-59	Number		1		1		1	3
	Pensionable Service		14.7		22.8		28.0	24.3
	Salary		*		*		*	\$100,097
60-65	Number	1			1	1	1	4
	Pensionable Service	8.8			22.7	29.6	32.6	23.4
	Salary	*			*	*	*	\$80,956
Totals	Number	1	3	3	7	2	2	3
	Pensionable Service	8.8	13.0	16.8	21.3	28.8	30.3	24.3
	Salary	*	\$82,290	\$89,602	\$82,515	*	*	\$100,097

\* Omitted for confidentiality reasons.

## Membership Data (continued)

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### Terminated Vested Member Summary Male

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Age Group	Number	Average Monthly Normal Retirement Pension
25-29	1	\$ 281
30-34	2	167
35-39	3	497
40-44	3	889
45-49	19	1,222
50-54	19	1,902
55-59	14	1,233
60-64	3	475
Totals	64	\$ 1,294

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### Female

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Age Group	Number	Average Monthly Normal Retirement Pension
30-34	2	\$ 211
35-39	3	270
40-44	10	691
45-49	19	932
50-54	16	1,078
55-59	11	1,219
60-64	4	360
65-69	1	93
Totals	66	\$ 879

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## Membership Data (continued)

All pensions shown in the tables that follow include the January 1, 2010 cost-of-living adjustment. Ages shown are age nearest birthday.

### Retired Member Summary—Male

Age Group		Number	Average Monthly Pension	Average Monthly Pension to Spouse	Average Remaining Guarantee Period (years)
55–59	guaranteed life	3	\$2,745		8
	life only	2	2,263		
	joint life	21	1,890	\$ 1,498	
	bridge	25	546		
	level income	19	518		
60–64	guaranteed life	9	1,771		5
	life only	9	2,372		
	joint life	46	1,732	1,348	
	bridge	64	484		
	level income	42	513		
65–69	guaranteed life	6	1,449		3
	life only	18	1,787		
	joint life	49	1,960	1,554	
	annuity certain	1	1,394		
70–74	guaranteed life	1	1,384		1
	life only	9	886		
	joint life	27	1,905	1,440	
75–79	guaranteed life				
	life only	11	1,612		
	joint life	17	1,530	1,082	
80–84	guaranteed life				
	life only	11	1,201		
	joint life	6	1,380	1,101	
85–89	guaranteed life				
	life only				
	joint life	4	1,104	590	
90–94	life only	1	703		
Totals excluding bridge and level income		251	\$ 1,748	\$ 1,388	

## Membership Data (continued)

### Retired Member Summary—Female

Age Group		Number	Average Monthly Pension	Average Monthly Pension to Spouse	Average Remaining Guarantee Period (years)
30-34	life only	1	\$ 2,333		
45-49	life only	1	2,497		
50-54	life only	1	1,166		
55-59	guaranteed life	11	1,786		4
	life only	8	2,426		
	joint life	13	1,660	\$ 1,306	
	bridge	29	519		
	level income	21	570		
60-64	guaranteed life	3	727		5
	life only	16	1,273		
	joint life	28	1,446	1,076	
	bridge	46	448		
	level income	36	540		
65-69	guaranteed life	5	837		3
	life only	25	1,465		
	joint life	12	1,389	1,043	
	annuity certain	1	1,394		4
70-74	life only	11	1,452		
	joint life	5	731	553	
75-79	life only	13	1,181		
	joint life	2	732	732	
80-84	life only	6	742		
	joint life	1	427	427	
85-89	life only	4	817		
90-94	life only	1	762		
Totals excluding bridge and level income		168	\$ 1,392	\$ 1,053	

# Actuarial Assumptions and Methods

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## Going Concern Valuation

The actuarial assumptions we used for the going concern valuation are described below. The only assumption change since the prior valuation is two additional years of mortality projection.

## Demographic Assumptions

### Pension Commencement

Active Members Table R following.

Disabled Members Age 65.

Terminated Vested Members Age 60.

Disability PSSP December 31, 1992 report.

Termination Table T following.

### Mortality

Active and Terminated Vested Members 1994 Uninsured Pensioner Mortality Table with mortality improvement projected to 2030 using projection scale AA (sex distinct rate).

In the previous valuation, the projection was to 2028.

No provision has been made for mortality prior to retirement for Terminated Vested Members.

Retired Members 1994 Uninsured Pensioner Mortality Table with mortality improvement projected to 2019 using projection scale AA (sex distinct rate).

In the previous valuation, the projection was to 2017.

Disabled Members Rates from PSSP December 31, 1992 report.

### Marital Status

Retired Members Pension option elected at retirement, and actual age of joint annuitant, are used.

All Other Members Spouse is assumed to be of opposite sex of member. Male is assumed to be 3 years older than female.

## Economic Assumptions

Inflation 3.00% per annum.

YMPE Increases 4.00% per annum.

ITA Maximum Pension Increases 4.00% per annum after 2010.

Salary Increases 5.00% per annum.

Discount Rate 6.75% per annum.

## Actuarial Assumptions and Methods (continued)

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### Miscellaneous Assumptions

Ongoing Plan Expenses Nil (paid by ICBC).

### Cost Methods

Actuarial Cost Method Projected Unit Credit Cost Method.

Asset Valuation Method Smoothed.

**Table R**  
**Retirement Rates**

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Age	Unisex
below 55	0%
55	15%
56	10%
57	10%
58	10%
59	10%
60	25%
61	25%
62	25%
63	25%
64	25%
65	100%

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**Table T**  
**Termination Rates**

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Age	Male	Female
25	7.4%	10.1%
30	5.8%	8.5%
35	3.8%	6.0%
40	2.7%	3.9%
45	2.0%	2.7%
50	1.4%	2.1%
55	0.0%	0.0%
60	0.0%	0.0%

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## Actuarial Assumptions and Methods (continued)

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### Solvency Valuation

The actuarial assumptions used for the solvency valuation are described below.

### Assumed Method of Liability Settlement

Members in receipt of, or eligible for, immediate pension: purchase of annuities.

All other members: lump sum transfer.

### Assumptions

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	Members for whom benefits are assumed to be settled by purchase of annuities	Members for whom benefits are assumed to be settled by lump sum transfer
Net Interest Rate	1.53% per annum	2.1% per annum for the first 10 years 2.7% per annum thereafter
Postretirement Mortality	1994 UP projected to 2020	1994 UP projected to 2020
Pension Commencement Age	Age on valuation date	Integer age between 55 and 65 that produces the highest value

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### Miscellaneous Assumptions

Plan Wind-up Expenses Nil (paid by ICBC).

### Cost Methods

Actuarial Cost Method Accrued Benefit Unit Credit Cost Method.

Asset Valuation Method Market value of assets adjusted to reflect contributions receivable and benefits payable at the valuation date.

## Rationale for Actuarial Assumptions

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### Going Concern Valuation

#### Provision for Adverse Deviation (PfAD")

In a plan with benefits based on highest or final average salaries, the pre-retirement net discount rate is the difference between the gross discount rate and the salary increase assumption. In a plan with benefits that are indexed post-retirement, the post-retirement net discount rate is the difference between the gross discount rate and the inflation assumption.

The PfADs in the valuation are:

- 1.05% pre-retirement, and
- 1.05% post-retirement,

as illustrated in the following table.

	Pre-retirement			Post-retirement		
	Best Estimate	Assumption	PfAD	Best Estimate	Assumption	PfAD
Gross discount rate	7.30%	6.75%	0.55%	7.30%	6.75%	0.55%
Salary increases	4.50%	5.00%	0.50%	n/a	n/a	n/a
Inflation	n/a	n/a	n/a	2.50%	3.00%	0.50%
Net discount rate	2.80%	1.75%	<b>1.05%</b>	4.80%	3.75%	<b>1.05%</b>

### Pension Commencement

We have developed a table of retirement rates for active members based on Plan experience up to 2007.

### Disability

We have used the disability incidence rates from the PSSP December 31, 1992 report. There have not been significant gains or losses demonstrated and the disability experience of the membership of the Plan is too small to assess Plan specific experience. In our view, the rates remain appropriate.

### Termination of Employment

We have used a table of termination rates that were based on previous Plan experience. This table was developed by a prior actuary, has been in use for many years, and there have not been significant gains or losses demonstrated. In our view, the rates continue to be appropriate.

## Rationale for Actuarial Assumptions (continued)

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### **Mortality**

The 1994 Uninsured Pensioner Mortality Table reflects the mortality experience as of 1994 for a large sample of North American pension plans. Applying projection scale AA provides allowance for improvements in mortality after 1994 and is generally considered reasonable for projecting mortality experience into the future. This table is commonly used for valuations where the mortality experience of the membership of a plan is insufficient to assess plan specific experience and where there is no reason to expect the mortality experience of the Plan to differ significantly from that of other pension plans. Both of these are true for this Plan and, therefore, we consider the use of this mortality table reasonable.

We have projected improvement to approximately match the duration of the Plan's liabilities.

### **Inflation**

The 3.00% assumption reflects a 2.50% best estimate of future inflation, considering economic and financial market conditions at the valuation date, plus a 0.50% provision for adverse deviation.

### **YMPE Increases**

We have assumed future increases to the YMPE will be 4.00% per annum. The assumption reflects an assumed rate of inflation of 3.00% per annum plus an allowance of 1.00% per annum for the effect of productivity growth in the Canadian economy.

### **ITA Maximum Pension Increases**

We have assumed future increases to the *ITA* Maximum Pension will be 4.00% per annum after 2010. For 2010, the maximum pension is specified by the *ITA*. The assumption reflects an assumed rate of inflation of 3.00% per annum plus an allowance of 1.00% per annum for the effect of productivity growth in the Canadian economy.

### **Salary Increases**

The 5.00% assumption reflects an assumed rate of inflation of 3.00% per annum (includes a 0.50% provision for adverse deviation), plus 1.00% per annum for the effect of productivity growth, plus 1.00% per annum to reflect the average expected increase as a result of individual employee merit and promotion.

### **Short Term Incentive Pay**

ICBC provided us with target payouts under the short-term incentive pay program. A maximum of 15% of base pay is included in covered earnings for the Plan (Executive Committee employees 100%).

### **Discount Rate**

The 6.75% discount rate assumption reflects a best estimate rate of return on the pension fund assets of 7.30% per annum, less a provision for adverse deviation of 0.55%.

The best-estimate rate of return was developed using best-estimate returns for each major asset class in which the pension fund is invested and then using a building block approach, based on the plan's investment policy, to develop an overall best-estimate rate of return for the total pension fund. Our estimate assumes that additional returns will be achievable due to a combination of diversification and rebalancing. We have not presumed any active management premium.

## Rationale for Actuarial Assumptions (continued)

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### **Expenses**

Section 17.02 of the Plan provides that ICBC will pay all expenses associated with the Plan's ongoing administration. Accordingly, we have not reduced the discount rate to account for expenses, nor have we made an explicit expense allowance.

### **Actuarial Cost Method**

The actuarial liability and current service cost have been determined using the Projected Accrued Benefit (or Projected Unit Credit) Actuarial Cost Method.

The actuarial liability is equal to the present value of benefits earned by members for service prior to the valuation date. The current service cost is equal to the present value of benefits earned by members in the year following the valuation date. Under the Projected Accrued Benefit Actuarial Cost Method, benefits earned by members are calculated using current earnings projected to pension commencement, termination or death, whichever is applicable.

For disabled members, we have included service to age 65 in the actuarial liability and have omitted the current service cost.

The Projected Accrued Benefit Actuarial Cost Method produces a current service cost for an individual member that increases with age. For the entire membership, however, the current service cost will remain stable provided the average age of the active membership remains stable.

### **Asset Valuation Method**

Assets are smoothed for the going concern valuation to remove the short term volatility that is associated with investment capital markets. We determine the smoothed asset value by adjusting the market value to recognize the difference between each year's actual and expected investment earnings over a four year period. Expected investment earnings are calculated by assuming the fund assets and cash flows earn the previous valuation's going concern discount rate.

## Rationale for Actuarial Assumptions (continued)

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### Solvency Valuation

#### Benefits Valued

We have treated all accrued benefits as vested on Plan wind-up.

The Plan has no consent benefits.

We included indexing benefits because they are a guaranteed Plan benefit.

#### Method of Benefit Settlement

We have assumed that all Plan benefits would be settled on Plan wind-up either by purchase of single premium annuities or by lump sum transfer (including payments in cash).

We have set the following assumptions based on guidance prepared by the Canadian Institute of Actuaries (“CIA”) Committee on Pension Plan Financial Reporting (“PPFRC”) in the April 2010 Educational Note *Assumptions for Hypothetical Wind-up and Solvency Valuations with Effective Dates Between December 31, 2009 and December 30, 2010* (“CIA Guidance”).

- For benefit entitlements that are expected to be settled by purchase of annuities, we based the assumptions on the guidance by the PPFRC which recommends using the yield of real return long-term bonds as a proxy for fully-indexed annuities. For this purpose, we have assumed a total premium in excess of \$15 million.
- For benefit entitlements that are expected to be settled by lump sum transfer, we based the assumptions on the CIA Standard of Practice for Determining Pension Commuted Values, effective April 1, 2009, using rates corresponding to a valuation date of December 31, 2009.

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	Percent of liability assumed to be settled by purchase of annuities	Percent of liability assumed to be settled by lump sum transfer
Active members—not retirement eligible	0%	100%
Active members—retirement eligible	100%	0%
Terminated vested members—not retirement eligible	0%	100%
Terminated vested members—retirement eligible	100%	0%
Retired members and surviving spouses	100%	0%

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#### Pre-Retirement Mortality

We have made no allowance for pre-retirement mortality. The impact of including such an assumption would not have a material impact on the valuation, since the value of the death benefit is approximately equal to the value of the accrued pension.

## Rationale for Actuarial Assumptions (continued)

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### **Assumptions Not Needed**

The following assumptions are not relevant to the solvency valuation:

- Disability
- Termination
- *ITA* Maximum Pension Increases
- YMPE Increases
- Salary Increases

### **Plan Wind-up Expenses**

Section 13.01 of the Plan provides that ICBC will pay all expenses associated with terminating and winding up the Plan. Accordingly, we have not made an allowance for Plan wind-up expenses in the solvency valuation.

### **Calculation of Solvency Special Payments**

We used an interest rate of 4.25% to calculate the special payments necessary to liquidate the solvency deficiency established at December 31, 2009. This rate is a weighted average of non-indexed rates, based on the relative proportions of benefit entitlements that are expected to be settled by purchase of annuities and lump sum transfers.

### **Actuarial Cost Method**

The solvency liability was determined using the Accrued Benefit (or Unit Credit) Actuarial Cost Method. The solvency liability is equal to the present value of benefits earned by members for service prior to the valuation date assuming the Plan is wound-up on the valuation date, based on member service, contributions and earnings up to the valuation date.

### **Asset Valuation Method**

We did not smooth the assets for the solvency valuation.

## Plan Provisions

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This summary contains the main provisions of the *Insurance Corporation of British Columbia Pension Plan for Management and Confidential Employees* as of January 1, 2010. For a complete description of the Plan, reference should be made to the Plan text.

<b>Eligibility</b>	Employees are required to join the Plan on the first day of the month coincident with or next following the completion of two years of continuous service. Employees may join voluntarily during the first two years of service.
<b>Continuous Service</b>	All service with ICBC.
<b>Pensionable Service</b>	All service during which a member contributes to the Plan or earns disability accruals. Pensionable Service for a year in which a member works on a part-time basis is based on the percentage of time worked.
<b>Normal Pension Commencement Date</b>	The first day of the month coincident with or immediately following attainment of age 65.
<b>Highest 5-Year Average Earnings</b>	For pre-2010 Pensionable Service is based on salary only.  For post-2009 Pensionable Service is based on salary plus short-term incentive pay (to a maximum of 15% of salary).
<b>Pension Benefit</b>	For each year of Pensionable Service:  <ol style="list-style-type: none"><li>1. 2.0% of HAE</li><li>2. minus, at age 65 a "CPP offset" equal to 0.7% of the lesser of HAE and the YMPE for the year prior to pension commencement.</li></ol>

## Plan Provisions (continued)

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### Early Pension Commencement from Active Status

Early pension commencement is permitted at any time after attainment of age 55. The percentage of full pension payable on pension commencement from active status before age 65 is shown in the following table:

Age at Pension Commencement	10 or More Years of Service*	Less than 10 Years of Service*
55	85%	75%
56	88%	80%
57	91%	85%
58	94%	90%
59	97%	95%
60 and older	100%	100%

\* The percentage is applied to the 2% formula before the CPP offset.

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A full pension is payable on pension commencement after age 55 if age plus employment service exceeds 85 years. The reduction on pension commencement from active status before age 65 is as follows. A "point" is given for each year of age and each year of employment service:

- if ten or more years of service, 3% for each year that pension commencement precedes the earlier of age 60 and 85 points;
- if less than ten years of service, 5% for each year that pension commencement precedes age 60.

### Postponed Pension Commencement

A member may elect to postpone pension commencement until as late as December 31 of the year the member turns age 69, and will continue to accrue benefits until pension commencement.

### Maximum Pension

The maximum pension is limited to 2,494.44 for 2010 (or such other amount as is permitted from time to time by the *Income Tax Act*) for each year of Pensionable Service.

## Plan Provisions (continued)

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### **Termination of Service**

Full vesting of benefits occurs at the earlier of five years of Continuous Service and two years of Plan membership. If a member terminates employment before vesting, the member's contributions with interest are refunded.

A vested former member may elect to commence receipt of pension after attaining age 55. The deferred pension commencement pension will be reduced by 5% for each year the pension commences before age 65. However, if the member had attained age 50, had completed at least 10 years of service at the date of termination and terminated on or after January 1, 1996, the reduction will be 5% for each year before age 60. The reduction is applied to the 2% formula pension before the CPP offset.

A vested member terminating employment is entitled to receive his accrued pension deferred to pension commencement age or may transfer the equivalent lump sum to a locked-in RRSP or LIRA, another pension plan, a LIF, or an insurance company to purchase a deferred annuity.

### **Lump Sum Payment on Death Prior to Pension Commencement**

If a member dies prior to pension commencement, the Plan shall pay the greater of the member's contributions with interest and 100% of the commuted value of the vested deferred pension commencement benefit accrued to the date of death plus excess benefits.

This amount may be transferred to the spouse's locked-in RRSP, or be used to provide a monthly pension to the spouse, or paid in cash to the designated beneficiary.

## Plan Provisions (continued)

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### **Survivor Pension on Death Prior to Pension Commencement**

If a member dies after completion of 10 years of service, or had completed five years of service before January 1, 1996, and was a member of the Plan prior to February 15, 2002, a survivor's pension will be payable instead of the lump sum described above. The pension is calculated as if, immediately prior to the member's death, the member had reached age 65, commenced pension and elected a joint and 100% survivor pension.

If the member had not attained age 55 and had less than 25 years of pensionable service, the years of pensionable service on which the pension is calculated will be increased from the date of the member's death to the member's 55<sup>th</sup> birthday, subject to a maximum of 25 years. If no spouse exists, the beneficiary will receive the commuted value of the survivor pension that would have been payable as if the member had a spouse of equal age.

### **Death After Pension Commencement**

The normal form of pension is a pension payable for the life of the member, guaranteed 5 years. The member may, however, elect an optional form of benefit of equal value. For a member who has a spouse at pension commencement, the member must elect at least a joint and 60% survivor pension unless the spouse signs a waiver.

### **Disability Accruals**

If a member is totally disabled, the member will continue to accrue Pensionable Service without making contributions. Pensionable earnings will be imputed for the period of disability on the basis of the member's earnings in the 12 months prior to commencement of long term disability benefits. The imputed earnings are indexed in line with the Consumer Price Index.

### **Excess Benefits**

At the date of pension commencement, death or termination, if a member's contributions made since January 1, 1993 with interest exceed one-half of the commuted value of the pension benefit accrued in respect of service since January 1, 1993, the excess is payable to the member, spouse or designated beneficiary.

## Plan Provisions (continued)

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### Maximum Benefit

The *Income Tax Act* limits on retirement pensions, bridge benefits, combined lifetime and bridge benefits and death benefits apply.

### Pension Indexing

#### ***Pensions in respect of pre-2010 Pensionable Service***

Pensions in payment are increased quarterly in line with the Consumer Price Index ("CPI").

Deferred pensions are increased on the date of pension commencement by the change in CPI since termination of employment.

#### ***Pensions in respect of post-2009 Pensionable Service***

Pensions in payment are increased quarterly in line with CPI up to a maximum annual increase of 3%.

Deferred pensions are not indexed.

### Employee Contributions

Since May 13, 2002, the employee contribution rate has been 4.9% of earnings up to the YMPE and 6.5% of earnings in excess of the YMPE.

### ICBC Contributions

ICBC pays the balance of the cost of the Plan, as determined by the actuary.

### Interest on Employee Contributions

The interest rate credited is based on the average of the yields of 5-year personal fixed term chartered bank deposit rates, published in the Bank of Canada Review. The interest rate credited for 2009 was 2.81%.

### Expenses

The costs of investment management, professional services, and all other operating costs of the Plan are paid by ICBC.

### Plan Termination

Upon termination of the Plan, the following provisions would apply:

- all benefits would become fully vested;
- if assets were insufficient to cover the cost of accrued benefits, ICBC would make up the deficiency; and
- if assets exceeded the value of accrued benefits, the surplus would be returned to ICBC, unless ICBC used it to increase benefits.



# **2012.1 RR BCUC.75.5 – Attachment B – Post-Retirement Benefits Plan Valuation as at January 1, 2010**

# Non-Pension Post-Retirement Benefits Valuation as at January 1, 2010

*Insurance Corporation of British Columbia*

*January, 2012*

## Insurance Corporation of British Columbia —Non-Pension Post-Retirement Benefits Valuation

This report has been prepared for the Insurance Corporation of British Columbia (ICBC) and presents the results of the actuarial valuation with respect to the non-pension post-retirement benefits offered by ICBC.

This valuation is not itself an accounting valuation, but will form the basis for future accounting valuations used to determine ICBC's financial statement disclosures. The valuation is performed as at January 1, 2010 and includes the following benefits.

- Extended Health Care (EHC)
- Dental Care (dental)
- Life Insurance (life)
- BC Medical Service Plan (MSP) Premium

The previous actuarial valuation was prepared as at January 1, 2007.

ICBC has not notified us of any significant events occurring between the valuation date (January 1, 2010) and when this report is issued.

The purpose of this report is to present the accrued benefit obligation, the service cost and the expected benefit payments as at the valuation date.

The information contained in this report was prepared for ICBC, for its internal use and to form the basis of the preparation of its financial statement disclosure. This report is not intended nor necessarily suitable for other purposes. Further distribution of this report or part of this report to any other parties (except as required by applicable legislation) or other use of this report is expressly prohibited without Aon Hewitt's prior consent.

It is our understanding that there are no assets dedicated to the non-pension post-retirement benefits.

The benefits obligations will change in the future as a result of possible changes in any of the following:

- Actuarial assumptions
- Valuation methods
- Membership data
- Plan provisions
- Applicable legislation and accounting rules
- Emerging claims experience different from expected

None of the above has been anticipated and reflected in the valuation. Gains and losses resulting from the above changes will be revealed in future actuarial valuations.

In our opinion:

- the data on which this report is based are sufficient and reliable for the purposes of the valuation;
- the assumptions used are determined by ICBC's management as their best estimates after discussion with Aon Hewitt and includes no provision for adverse deviation; emerging experience differing from these assumptions will result in gains or losses that will be recognized in future valuations; and
- the methods employed are appropriate for the purposes of the valuation.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice.

The next actuarial valuation should be performed as at a date on or before January 1, 2013.

Aon Hewitt



George Wang

Fellow, Canadian Institute of Actuaries

January, 2012



Joseph P. S. Chow

Associate, Society of Actuaries



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## Valuation Results

The tables below present a summary of the Accrued Benefit Obligation (“ABO”), Service Cost and Expected Benefit Payments by benefit and member group. An expense load of 6% is included for all benefits except MSP. Actuarial valuation results as at January 1, 2007 are shown in the tables for comparison purposes.

### Accrued Benefit Obligation (\$000's)

	January 1, 2007	January 1, 2010		
	Total	Retirees	Actives	Total
<b>Management &amp; Confidential</b>				
▪ EHC	\$ 38,751	\$ 18,587	\$ 22,253	\$ 40,840
▪ Dental	10,903	4,686	4,693	9,379
▪ MSP	7,048	5,732	9,273	15,005
▪ Life	446	152	N/A	152
Subtotal	\$ 57,148	\$ 29,157	\$ 36,219	\$ 65,376
<b>Bargaining Unit</b>				
▪ EHC	\$ 46,948	\$ 12,986	\$ 36,302	\$ 49,288
▪ MSP	19,326	9,275	33,568	42,843
Subtotal	\$ 66,274	\$ 22,261	\$ 69,870	\$ 92,131
<b>Total</b>	<b>\$ 123,422</b>	<b>\$ 51,418</b>	<b>\$ 106,089</b>	<b>\$ 157,507</b>

### Service Cost (\$000's)

	January 1, 2007	January 1, 2010
<b>Management &amp; Confidential</b>		
▪ EHC	\$ 1,445	\$ 1,337
▪ Dental	361	281
▪ MSP	218	560
▪ Life	n/a	n/a
Subtotal	\$ 2,024	\$ 2,178
<b>Bargaining Unit</b>		
▪ EHC	\$ 2,110	\$ 1,746
▪ MSP	807	1,762
Subtotal	\$ 2,917	\$ 3,508
<b>Total</b>	<b>\$ 4,941</b>	<b>\$ 5,686</b>



## Expected Benefit Payment (\$000's)

	January 1, 2007	January 1, 2010		
	Total	Retirees	Actives	Total
<b>Management &amp; Confidential</b>				
▪ EHC	\$ 516	\$ 828	\$ 22	\$ 850
▪ Dental	371	369	10	379
▪ MSP	302	365	16	381
▪ Life	<u>56</u>	<u>32</u>	<u>N/A</u>	<u>32</u>
Subtotal	\$ 1,245	\$ 1,594	\$ 48	\$ 1,642
<b>Bargaining Unit</b>				
▪ EHC	\$ 598	\$ 923	\$ 122	\$ 1,045
▪ MSP	<u>508</u>	<u>640</u>	<u>97</u>	<u>737</u>
Subtotal	\$ 1,106	\$ 1,563	\$ 219	\$ 1,782
<b>Total</b>	<b>\$ 2,351</b>	<b>\$ 3,157</b>	<b>\$ 267</b>	<b>\$ 3,424</b>

	EHC	Dental	MSP	Life	Total
<b>2010</b>	\$1,895	\$379	\$1,118	\$32	\$3,424
<b>2011</b>	2,308	404	1,344	24	4,080
<b>2012</b>	2,802	433	1,606	14	4,855
<b>2013</b>	3,355	464	1,892	6	5,717
<b>2014</b>	3,978	495	2,210	4	6,687
<b>2015</b>	4,683	533	2,568	4	7,788
<b>2016</b>	5,431	570	2,946	4	8,951
<b>2017</b>	6,267	614	3,371	5	10,257
<b>2018</b>	7,169	661	3,833	5	11,668
<b>2019</b>	8,141	713	4,342	5	13,201



## Reconciliation of ABO (\$000's)

The table below presents a reconciliation of the ABO from the January 1, 2007 valuation to the current valuation.

		<b>ABO</b>
<b>ABO at January 1, 2007 (at 5.20%)</b>		<b>\$ 123,422</b>
2007–2009 Service Costs	16,008	
2007–2009 Interest Costs	21,340	
2007–2009 Expected Benefit Payments	<u>(8,152)</u>	
		<u>29,196</u>
<b>Expected ABO at January 1, 2010 (at 5.20%)</b>		<b>\$ 152,618</b>
Change to Claims Cost Assumption	(7,283)	
Change to Trend Rate Assumption	35,163	
Change to Retirement Rate Assumption	4,211	
Change to Discount Rate Assumption	(37,966)	
Other Factors	<u>10,764</u>	
		<u>4,889</u>
<b>ABO at January 1, 2010 (at 6.61%)</b>		<b>\$ 157,507</b>

## Discussion of Actuarial (Gains)/Losses

### Change to Claims Cost Assumption

For EHC and dental, actual claims over the three-year inter-valuation period did not trend as high as was assumed in the previous valuation.

For MSP, the previous valuation assumed no cost increases during the three-year inter-valuation period, while actual costs increased 6%.

Due the lifetime maximum associated with the EHC benefits, the EHC claims paid up to the valuation date would reduce the liability of the plan. To address this issue, we estimated the historical claims paid up to date and included it in this valuation.

### Change to Trend Rate Assumption

As part of the valuation, we reviewed EHC and Dental trend rate assumptions based on actual claims experience. Based on recent claims experience, the EHC trend rate assumption was revised while the Dental trend rate assumption was maintained. The MSP trend rate assumption was revised according to the BC budget announced in September, 2009. The change in MSP trend assumption significantly increased the liability of the plan.

### Change to Retirement Rate Assumption

The retirement rate assumption for both Management & Confidential and Bargaining Unit changed from the previous valuation. This change is consistent with the change in Pension plans.

### New Discount Rate Assumption

The discount rate increased to 6.61% from 5.20% at the last valuation.

### Other Factors

There were increases in membership between January 1, 2007 and January 1, 2010. There were also a number of transferred employees from the Bargaining Unit to Management & Confidential.

There were a number of missing Life Insurance amounts in the previous valuation data; we were able to obtain additional data at this valuation.

Other items under this category include more retirees than expected, employees retired at younger ages than expected, etc.

## Appendix A—Membership Data

In conducting the valuation, we have used personnel data and the plan provisions provided by ICBC. We are not aware of any events occurring subsequent to the valuation date that would materially change ICBC's financial position with respect to the non-pension post-retirement benefits.

Active and inactive (including retirees and surviving spouses) data is as at January 1, 2010 and was provided by ICBC. We performed tests of sufficiency and reliability on the member data and determined the results were satisfactory for the purposes of this valuation.

### Summary of Membership Data

The following table summarizes the key characteristics of the data used for the valuation.

	January 1, 2007	January 1, 2010
<b>Actives</b>		
Management & Confidential		
▪ Number	857	1,027
▪ Average age (years)	46.5	47.4
▪ Average service (years)	14.1	14.4
Bargaining Unit		
▪ Number	4,239	4,450
▪ Average age (years)	43.5	44.8
▪ Average service (years)	12.4	13.7
<b>Retirees</b>		
Management & Confidential Div 003		
▪ Number	325	307
▪ Average age (years)	68.6	70.8
Management & Confidential Div 004		
▪ Number	32	100
▪ Average age (years)	59.9	61.5
Bargaining Unit		
▪ Number	677	887
▪ Average age (years)	66.2	67.1

Management and Confidential employees have different plan provisions depending on the employee's date of retirement. Division 003 Management and Confidential employees are pre 2003 (i.e., retired on or before December 31, 2002) retirees, whereas division 004 are post 2002 (i.e., retired on or after January 1, 2003) retirees. The description of the plan provisions can be found in Appendix B.

## Summary of Retiree Coverage

Below is a summary of retiree elections in MSP, EHC and dental coverage.

	MSP		EHC		Dental	
	2007	2010	2007	2010	2007	2010
<b>Management &amp; Confidential (Div 003)</b>						
▪ Single coverage	93	103	88	98	88	98
▪ Family coverage	182	164	197	181	199	181
<b>Management &amp; Confidential (Div 004)</b>						
▪ Single coverage	8	21	8	18	8	18
▪ Family coverage	21	67	21	76	20	76
<b>Bargaining Unit</b>						
▪ Single coverage	164	226	157	210		
▪ Family coverage	304	402	347	466		



## Active Membership Summary—Management & Confidential

### Females

Age Group	Years of Continuous Service						Total
	0–4	5–9	10–14	15–19	20–24	25+	
20–24	2						2
25–29	13	1					14
30–34	28	5	8				41
35–39	23	14	20	7	1		65
40–44	31	14	21	13	22		101
45–49	19	14	11	22	26	12	104
50–54	15	7	12	18	24	24	100
55–59	11	5	12	10	13	18	69
60–64	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>5</u>	<u>21</u>
<b>Total</b>	144	63	87	73	91	59	517

### Males

Age Group	Years of Continuous Service						Total
	0–4	5–9	10–14	15–19	20–24	25+	
25–29	5	1					6
30–34	15	7	4				26
35–39	13	4	14	3	1		35
40–44	15	13	22	32	12		94
45–49	19	11	19	19	52	4	124
50–54	14	13	11	19	37	26	120
55–59	8	15	9	5	15	24	76
60–64	5	6	4	2	6	5	28
65+	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>1</u>	<u>1</u>
<b>Total</b>	94	70	83	80	123	60	510



## Active Membership Summary—Bargaining Unit

### Females

Age Group	Years of Continuous Service						Total
	0–4	5–9	10–14	15–19	20–24	25+	
19 + under	2						2
20–24	79	5					84
25–29	187	25	1				213
30–34	114	78	63	5			260
35–39	82	86	207	81	9		465
40–44	62	73	158	169	85	1	548
45–49	62	45	127	123	112	44	513
50–54	45	39	123	93	77	91	468
55–59	13	32	70	46	61	89	311
60–64	10	6	27	24	22	31	120
65+	<u>1</u>	<u>2</u>	<u>2</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>16</u>
<b>Total</b>	657	391	778	546	369	259	3,000

### Males

Age Group	Years of Continuous Service						Total
	0–4	5–9	10–14	15–19	20–24	25+	
20–24	27	1					28
25–29	57	15					72
30–34	56	24	21				101
35–39	44	36	83	12			175
40–44	32	33	80	61	8		214
45–49	35	35	74	69	78	15	306
50–54	21	13	47	65	69	37	252
55–59	7	10	44	44	40	57	202
60–64	4	10	20	10	13	34	91
65+	<u></u>	<u>3</u>	<u>1</u>	<u>1</u>	<u></u>	<u>4</u>	<u>9</u>
<b>Total</b>	283	180	370	262	208	147	1,450

## Appendix B—Plan Provisions

### Post-Retirement Benefits Plan

<b>Benefit Eligibility</b>	<b>Group</b>	<b>Eligibility</b>
	Bargaining Unit	<ul style="list-style-type: none"> <li>▪ resident of BC</li> <li>▪ five years employment service</li> <li>▪ cost shared for part-time employees based on percentage time worked at retirement</li> </ul>
	M&C—Div 003	<ul style="list-style-type: none"> <li>▪ resident of BC</li> <li>▪ five years employment service</li> <li>▪ retired before 1/1/2003</li> </ul>
	M&C—Div 004	<ul style="list-style-type: none"> <li>▪ resident of BC</li> <li>▪ ten years employment service</li> <li>▪ retired on and after 1/1/2003</li> </ul>
<b>Coverage</b>	<b>Group</b>	<b>Coverage</b>
	Bargaining Unit	<ul style="list-style-type: none"> <li>▪ retiree, spouse and dependent children</li> <li>▪ coverage ceases upon retiree death</li> </ul>
	M&C—Div 003	<ul style="list-style-type: none"> <li>▪ retiree, spouse and dependent children</li> <li>▪ coverage continues to later of retiree or spouse's death</li> </ul>
	M&C—Div 004	<ul style="list-style-type: none"> <li>▪ retiree, spouse and dependent children</li> <li>▪ dependent children only covered up to age 19</li> <li>▪ coverage continues to later of retiree or spouse's death</li> </ul>
<b>MSP Premiums</b>	ICBC pays the cost of the provincial medical plan premiums for retirees and their dependents in British Columbia.	

**Extended Health Care Plan**

<b>Group</b>	<b>Benefit</b>
Bargaining Unit	<ul style="list-style-type: none"> <li>▪ 80% coverage after deductible of first \$1,000 paid claims, 100% thereafter</li> <li>▪ \$25 annual deductible</li> <li>▪ cap at \$25,000 lifetime (starts at retirement), the cap is applied separately to the retiree and the retiree's spouse (if applicable).</li> <li>▪ generic substitution</li> <li>▪ prescription drugs (generic substitution) upgrades to private/semi private hospital rooms</li> </ul>
M&C—Div 003	<ul style="list-style-type: none"> <li>▪ 80% coverage after deductible of first \$1,000 paid claims, 100% thereafter</li> <li>▪ \$25 annual deductible</li> <li>▪ cap at \$1,000,000 lifetime (continues from employment)</li> <li>▪ prescription drugs (generic substitution)</li> <li>▪ \$300 eyewear every two years</li> <li>▪ \$1,000 hearing aids in any five years</li> <li>▪ paramedical (combined to max \$650 per year)</li> <li>▪ out of province</li> </ul>
M&C—Div 004	<ul style="list-style-type: none"> <li>▪ 80% coverage after deductible of first \$1,000 paid claims, 100% thereafter</li> <li>▪ \$25 annual deductible</li> <li>▪ cap at \$100,000 lifetime (starts at retirement), the cap is applied separately to the retiree and the retiree's spouse (if applicable).</li> <li>▪ \$150 eyewear every two years</li> <li>▪ \$500 hearing aids in any five years</li> <li>▪ paramedical (combined to max \$650 per year)</li> <li>▪ no out of province</li> </ul>

**Life Insurance**

<b>Group</b>	<b>Benefit</b>
Bargaining Unit	<ul style="list-style-type: none"> <li>▪ None</li> </ul>
M&C—Div 003	<ul style="list-style-type: none"> <li>▪ One times salary to age 65, \$5,000 after 65 (paid up)</li> </ul>
M&C—Div 004	<ul style="list-style-type: none"> <li>▪ None</li> </ul>

**Dental**

<b>Group</b>	<b>Benefit</b>
Bargaining Unit	<ul style="list-style-type: none"> <li>▪ None</li> </ul>
M&C—Div 003	<ul style="list-style-type: none"> <li>▪ 100% basic</li> <li>▪ 70% restorative</li> <li>▪ 50% orthodontics (\$5,000 max)</li> <li>▪ no cap</li> </ul>
M&C—Div 004	<ul style="list-style-type: none"> <li>▪ 70% basic</li> <li>▪ 50% restorative</li> <li>▪ 0% orthodontics</li> <li>▪ cap at \$2,000 per covered life per year</li> </ul>

## Appendix C—Actuarial Assumptions

The actuarial assumptions used for the valuation are as follows:

### Economic Assumptions

	2007	2010																																						
<b>Discount Rate</b>	5.20% per year	6.61% per year																																						
<b>MSP Premium Inflation</b>	0.0% per year	<table border="1"> <thead> <tr> <th>Year</th> <th>Trend Factor</th> </tr> </thead> <tbody> <tr><td>2010</td><td>6.00%</td></tr> <tr><td>2011</td><td>6.00%</td></tr> <tr><td>2012</td><td>6.00%</td></tr> <tr><td>2013</td><td>6.00%</td></tr> <tr><td>2014</td><td>6.00%</td></tr> <tr><td>2015</td><td>6.00%</td></tr> <tr><td>2016</td><td>6.00%</td></tr> <tr><td>2017</td><td>6.00%</td></tr> <tr><td>2018</td><td>6.00%</td></tr> <tr><td>2019+</td><td>3.00%</td></tr> </tbody> </table>	Year	Trend Factor	2010	6.00%	2011	6.00%	2012	6.00%	2013	6.00%	2014	6.00%	2015	6.00%	2016	6.00%	2017	6.00%	2018	6.00%	2019+	3.00%																
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<b>EHC</b>	<table border="1"> <thead> <tr> <th>Year</th> <th>Trend Factor</th> </tr> </thead> <tbody> <tr><td>2007</td><td>10.67%</td></tr> <tr><td>2008</td><td>10.00%</td></tr> <tr><td>2009</td><td>9.33%</td></tr> <tr><td>2010</td><td>8.67%</td></tr> <tr><td>2011</td><td>7.33%</td></tr> <tr><td>2012</td><td>6.67%</td></tr> <tr><td>2013+</td><td>6.00%</td></tr> </tbody> </table>	Year	Trend Factor	2007	10.67%	2008	10.00%	2009	9.33%	2010	8.67%	2011	7.33%	2012	6.67%	2013+	6.00%	<table border="1"> <thead> <tr> <th>Year</th> <th>Trend Factor</th> </tr> </thead> <tbody> <tr><td>2010</td><td>8.00%</td></tr> <tr><td>2011</td><td>8.00%</td></tr> <tr><td>2012</td><td>7.63%</td></tr> <tr><td>2013</td><td>7.25%</td></tr> <tr><td>2014</td><td>6.88%</td></tr> <tr><td>2015</td><td>6.50%</td></tr> <tr><td>2016</td><td>6.13%</td></tr> <tr><td>2017</td><td>5.75%</td></tr> <tr><td>2018</td><td>5.38%</td></tr> <tr><td>2019+</td><td>5.00%</td></tr> </tbody> </table>	Year	Trend Factor	2010	8.00%	2011	8.00%	2012	7.63%	2013	7.25%	2014	6.88%	2015	6.50%	2016	6.13%	2017	5.75%	2018	5.38%	2019+	5.00%
Year	Trend Factor																																							
2007	10.67%																																							
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2018	5.38%																																							
2019+	5.00%																																							
<b>Dental Inflation</b>	3.0% per year	3.0% per year																																						
<b>Expenses (excludes MSP)</b>	6% load on accrued liabilities	6% load on accrued liabilities																																						



**Monthly Benefit  
Payments per  
Employee**

EHC	2007			2010		
	Bargaining Unit	M&C— Div 004	M&C— Div 003	Bargaining Unit	M&C— Div 004	M&C— Div 003
▪ Future Retiree	\$85	\$97	n/a			
▪ Current Retiree	\$65	\$92	\$98			
▪ Not Eligible for Senior Fair PharmaCare (born post-1940)				\$89	\$116	\$154
▪ Eligible for Senior Fair PharmaCare (born pre-1940)				\$54	\$70	\$94

Note: Claims costs shown above are as at age 70. Claims costs at other ages are adjusted by the EHC Age Factors which are summarized in this Appendix.

**Dental**

	2007			2010		
	Bargaining Unit	M&C— Div 004	M&C— Div 003	Bargaining Unit	M&C— Div 004	M&C— Div 003
	n/a	\$ 39	n/a	n/a	\$32	\$52

**MSP**

	2007	2010
▪ Single Coverage	\$ 54	\$ 57
▪ Couple Coverage	\$ 96	\$ 102

## Demographic Assumptions

Retirement	2007			2010		
	Age	Males	Females	Age	Bargaining Unit	M&C
	55 to 59	5%	10%	55	15%	15%
	56	5%	10%	56	10%	10%
	57	5%	10%	57	10%	10%
	58	5%	10%	58	10%	10%
	59	5%	10%	59	10%	10%
	60	20%	20%	60	20%	25%
	61	14%	14%	61	20%	25%
	62	16%	16%	62	20%	25%
	63	16%	16%	63	20%	25%
	64	18%	18%	64	20%	25%
	65+	100%	100%	65+	100%	100%
<b>Termination</b>	<b>Age</b>	<b>Males</b>	<b>Females</b>	No change		
	< = 25	7.4%	10.1%			
	30	5.8%	8.5%			
	35	3.8%	6.0%			
	40	2.7%	3.9%			
	45	2.0%	2.7%			
	50	1.4%	2.1%			
	55+	0.0%	0.0%			
<b>Mortality</b>						
▪ Actives:		1994 Uninsured Pensioner Table projected to 2025, gender-distinct.			1994 Uninsured Pensioner Table projected to 2030, gender-distinct.	
▪ Retires:		1994 Uninsured Pensioner Table projected to 2015, gender-distinct.			1994 Uninsured Pensioner Table projected to 2019, gender-distinct.	

	<b>2007</b>	<b>2010</b>																
<b>Disability</b>	n/a	n/a																
<b>Spousal coverage</b>																		
▪ Actives:	80% electing family coverage; female spouses three years younger than males.	80% electing family coverage; female spouses three years younger than males.																
▪ Retirees:	Coverage as provided in data.	Coverage as provided in data.																
<b>Sample EHC age factors</b>	<table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="text-align: center;">Age</th> <th style="text-align: center;">Age Factor</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">55</td><td style="text-align: center;">45%</td></tr> <tr><td style="text-align: center;">60</td><td style="text-align: center;">60%</td></tr> <tr><td style="text-align: center;">65</td><td style="text-align: center;">80%</td></tr> <tr><td style="text-align: center;">70</td><td style="text-align: center;">100%</td></tr> <tr><td style="text-align: center;">75</td><td style="text-align: center;">112%</td></tr> <tr><td style="text-align: center;">80</td><td style="text-align: center;">117%</td></tr> <tr><td style="text-align: center;">85+</td><td style="text-align: center;">120%</td></tr> </tbody> </table>	Age	Age Factor	55	45%	60	60%	65	80%	70	100%	75	112%	80	117%	85+	120%	No change
Age	Age Factor																	
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60	60%																	
65	80%																	
70	100%																	
75	112%																	
80	117%																	
85+	120%																	

## Appendix D—Actuarial Methods

The actuarial cost method used in this valuation is the projected accrued benefit method prorated on service with full allocation by earliest eligibility date, which is the method used for ICBC's corporate financial statement disclosures.

The ABO is the present value of expected benefit costs attributed to past service up to the valuation date. This includes the full present value of the expected benefits for retirees as well as for active employees currently eligible to retire. For all other active employees, a portion of the expected benefit cost is included. The portion included is based on the ratio of past service (from the date of hire to the valuation date) to expected total service (from date of hire to the earliest date of full eligibility).

The current service cost refers to the estimated annual cost of accruing benefits. This is equal to nil for retirees and active employees currently eligible to retire with non-pension post-retirement benefits. For all other active employees, it is equal to the present value of the expected benefits divided by expected total service (from date of hire to the earliest date of full eligibility).

## Appendix E—Medical Claims Cost Development

ICBC-specific retiree and dependent claims experience from January 1, 2007 to December 31, 2009 was used to develop the claims cost assumptions. Claims experience was evaluated separately for EHC and dental benefits. Personnel data used to calculate the number of covered lives was based on valuation census data.

Pooled EHC claims were removed from our analysis. For each experience period, per capita costs were calculated by dividing paid claims by the average number of eligible retirees and dependents in that period.

The resulting per capita costs for each experience period were adjusted with trend to the midpoint of the valuation year. This step was performed separately for each experience period. The final per capita costs are a weighted average of the three experience periods, using weights of 25% for 2007 and 2008 and 50% for 2009.

Aon Hewitt's methodology projects age-related claims costs for EHC. The expected increases to EHC claims costs for each year of age are summarized under Appendix C.

In addition, due to Provincial Drug Programs for individuals born before January 1, 1940 (i.e., Fair PharmaCare), we expected EHC claims costs would be 65% higher for individuals not eligible for Fair PharmaCare.

The per capita costs calculated above are then adjusted by individual valuation data taking into account aging factors.



# **2012.1 RR BCUC.75.5 – Attachment C – COPE 378 ICBC Plan Valuation as at December 31, 2008**

# **COPE 378 / Insurance Corporation of British Columbia Pension Plan**

## **Funding Valuation as of December 31, 2008**

September 2009

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# Preparation of this Actuarial Valuation

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## **COPE 378 / Insurance Corporation of British Columbia Pension Plan**

We have prepared this report on the actuarial funding valuation of the *COPE 378 / Insurance Corporation of British Columbia Pension Plan* (the "Plan") as of December 31, 2008 for the Plan's board of trustees. The purposes of the valuation include determining the Plan's:

1. going-concern financial position;
2. solvency position;
3. the required minimum contributions until the next valuation in accordance with the *British Columbia Pension Benefits Standards Act (PBSA)*;
4. the maximum employer contributions for the year following the valuation date in accordance with the *Income Tax Act (ITA)*; and
5. required employee and employer contribution rates pursuant to section 4.01 of the Plan text.

In conducting the valuation, we have used membership data we obtained from ICBC, audited financial statements prepared by the Plan auditor (Michael I. d'Abadie & Company), financial statements prepared by State Street Trust Company Canada and the actuarial assumptions and methods described in the report.

It is our opinion that:

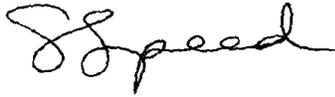
1. the latest date on which the next valuation should be performed is December 31, 2011;
2. the data on which this report is based are sufficient and reliable for the purposes of the valuation;
3. the assumptions used are, in aggregate, appropriate for the purpose of the going-concern valuation; emerging experience differing from assumptions will result in gains or losses which will be revealed in future valuations and may cause changes in future contribution levels;
4. the methods employed in the valuation are appropriate for the purposes of the going-concern valuation;
5. the assumptions and methods used for the solvency valuation meet the requirements of the *PBSA*;
6. the scheduled contributions stated in this report are sufficient to meet the funding requirements of the *PBSA*;
7. the Plan does not have a solvency deficiency based on the solvency assumptions described in the appendices to this report; and
8. the Plan's solvency ratio is 105%, before applying section 13.03(d) of the Plan, which provides for benefit enhancements in the event of surplus assets on Plan wind-up. The solvency ratio is based on the market value of assets (adjusted for receivables and payables) and the solvency liabilities for accrued benefits with full vesting and without earnings projection.

We hereby certify that:

1. the calculations in this report have been prepared in accordance with Subparagraphs 147.2(2)(a)(iii) and (iv) of the *ITA*; and
2. As defined under the *ITA*, no excess surplus exists in the Plan as of the valuation date.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice.

Hewitt Associates



Shelley Speed  
Fellow of the Canadian Institute of Actuaries



Jennifer Schoenfeld  
Fellow of the Society of Actuaries

September 2009

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# Executive Summary

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## **Balance Sheets at December 31, 2008**

At December 31, 2008, the Plan has a going-concern surplus of \$20,800,000, none of which is "excess surplus", as defined under the *ITA*. At December 31, 2007, the date of the previous valuation, the Plan had a going-concern surplus of \$40,000,000, none of which was excess surplus. The Plan's funded ratio has decreased from 106% to 103% over the one-year period.

The Plan does not have a solvency deficiency as of December 31, 2008.

## **Contributions**

The going concern cost of accruing benefits is 16.35% of covered payroll. The estimated cost of accruing benefits for 2009 is \$32,600,000.

The cost of accruing benefits is shared equally between the active Plan members and ICBC. Employee and ICBC Contribution rates will increase from 7.25% of earnings up to the YMPE and 9.67% of earnings above the YMPE, to 7.74% and 10.32%, respectively.

## **Changes in Plan Membership since the Previous Valuation**

The total Plan membership has remained relatively steady over the one-year inter-valuation period, from 5,200 at December 31, 2007 to 5,209 at December 31, 2008. The active membership has decreased by 2% from 3,984 to 3,924. The disabled membership has increased by 10% from 242 to 265. The terminated vested membership has increased by 3% from 187 to 192. The number of retired members and survivors has increased by 5% from 787 to 828 over the one-year period.

## **Asset Performance since the Previous Valuation**

The smoothed actuarial value of the Plan assets at December 31, 2008 is \$640,200,000. This compares to \$661,200,000 at the previous valuation on December 31, 2007.

The market value of the Plan assets at December 31, 2008 is \$605,600,000, compared to \$678,800,000 at the previous valuation.

Based on market values, the Plan assets earned -11.5% over the one-year period. On a smoothed basis, they earned -3.9%.

## Going-Concern Valuation

---

### Balance Sheet

The following table shows the Plan's going-concern balance sheet at December 31, 2008, with comparative figures from the previous valuation. The Plan had a going-concern surplus at both valuation dates.

	December 31, 2007	December 31, 2008
Going-Concern Actuarial Liabilities		
■ Active Members	\$ 451,300,000	\$ 442,800,000
■ Disabled Members	39,100,000	41,100,000
■ Terminated Vested Members	14,400,000	13,900,000
■ Retired Members	<u>116,400,000</u>	<u>121,600,000</u>
Total	\$ 621,200,000	\$ 619,400,000
Smoothed Value of Assets	\$ 661,200,000	\$ 640,200,000
Going-Concern Surplus	\$ 40,000,000	\$ 20,800,000
"Excess Surplus" Threshold	\$ 65,000,000	\$ 65,200,000
"Excess Surplus"	nil	nil
Funded Ratio	106%	103%

---

### "Excess Surplus" Test

The going-concern balance sheet identifies a surplus of \$20,800,000.

Excess surplus is defined in Section 147.2(2)(d) of the *ITA* to be surplus that exceeds the lesser of:

- the greater of:
  - 10% of the actuarial liabilities (\$61,940,000), and
  - two years' cost of accruing benefits (\$65,200,000), and
- 20% of the actuarial liabilities (\$123,880,000).

The excess surplus threshold as at December 31, 2008 is therefore \$65,200,000. Since the Plan's surplus is below the excess surplus threshold, there is no excess surplus.

## Solvency Valuation

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### Balance Sheet

The following table shows the Plan's solvency balance sheet at December 31, 2008, with comparative figures from the previous valuation. The Plan had a solvency surplus at both valuation dates.

	December 31, 2007	December 31, 2008
Solvency Liabilities		
■ Active Members	\$ 408,000,000	\$ 388,800,000
■ Disabled Members	39,300,000	39,700,000
■ Terminated Vested Members	15,500,000	14,400,000
■ Retired Members	<u>119,600,000</u>	<u>133,000,000</u>
Total	\$ 582,400,000	\$ 575,900,000
Solvency Assets	\$ 678,800,000	\$ 605,600,000
Solvency Asset Adjustment	<u>(17,600,000)</u>	<u>34,600,000</u>
Smoothed Value of Assets	\$ 661,200,000	\$ 640,200,000
Solvency Ratio (using Solvency Assets)	117%	105%
Solvency Deficiency (using Smoothed Value of Assets)	none	none

---

Under the Plan's Funding Policy, the smoothed value of assets is used to determine whether there is a solvency deficiency. The smoothed value of assets exceeds the solvency liabilities by \$64,300,000, therefore there is no solvency deficiency.

In accordance with the Plan termination provisions, since the solvency assets are sufficient to provide for more than the minimum solvency liabilities, then benefits would be improved. The improvement would first be to provide for future salary projection for benefits not already in payment, and then to improve the benefit formula, to the extent there are sufficient Plan assets to cover the additional liabilities. Such improvements would use up the surplus assets, and the solvency liabilities would therefore be equal to the solvency assets.

## Contributions

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### Cost of Accruing Benefits (Going-Concern Basis)

The following table shows the estimated going-concern annual cost of accruing benefits for the current and previous valuations:

	2008	2009
Total cost of accruing benefits	\$ 32,500,000	\$ 32,600,000
Estimated annual covered payroll	\$ 196,900,000	\$ 199,400,000
Cost as a percentage of covered payroll	16.51%	16.35%

### Minimum Required Contributions

Under the *PBSA*, the minimum required contribution for a Plan year is equal to the sum of:

1. The cost of accruing benefits for the Plan year. Subject to the provisions of the Plan and the requirements of the *PBSA*, any going-concern surplus may be used to pay some or all of the cost of accruing benefits.
2. Special payments toward amortizing any going-concern unfunded accrued liability over 15 years from the date on which the unfunded liability was established.
3. Special payments toward amortizing any solvency deficiency over five years from the date on which the deficiency was established.

Since the Plan has a going-concern surplus and no solvency deficiency as of December 31, 2008, no special payments are required.

Under the *PBSA*, surplus can be applied toward the cost of accruing benefits, provided a cushion equal to 5% of the Plan liabilities is maintained. The assets do not exceed 105% of the Plan's going-concern liabilities, therefore no surplus can be applied toward the cost of accruing benefits.

The following table shows the minimum required contributions under the *PBSA* for the year following the valuation:

	Dollars in First Year	Percentage of Covered Payroll
Cost of Accruing Benefits	\$32,600,000	16.35%
Plus: Special Payments	0	0.00
Less: Application of Surplus	(0)	(0.00)
Equals: Minimum Required Contributions	\$32,600,000	16.35%

## Contributions (continued)

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### Maximum Permissible Contributions

The *ITA* allows contributions equal to the cost of accruing benefits, plus the greater of the unfunded going concern and solvency liabilities, less the required application of excess surplus.

The following table shows the maximum permissible contributions under the *ITA* for the year following the valuation:

	Dollars in First Year	Percentage of Covered Payroll
Cost of Accruing Benefits	\$ 32,600,000	16.35%
Plus: Greater of unfunded going concern and solvency liabilities	0	0.00
Less: Excess Surplus	<u>(0)</u>	<u>(0.00)</u>
Maximum Permissible Contributions	\$ 32,600,000	16.35%

---

### Scheduled Contributions

Based on the valuation results and the Plan terms, contribution rates will increase. The surplus is below the threshold that would allow it to be used to reduce contribution rates.

The cost of accruing benefits is shared equally between the active Plan members and ICBC. Employee and ICBC contribution rates will increase from 7.25% of earnings up to the YMPE and 9.67% of earnings above the YMPE, to 7.74% and 10.32%, respectively. These new Plan member and ICBC contributions will total 16.35% of covered payroll.

The above scheduled contributions comply with the *PBSA* and the *ITA*.

# Changes in Financial Position

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## **Changes in Going–Concern Valuation Results**

In this section, we analyze the change in the going–concern funded position and in the current service cost over the one–year inter–valuation period.

There are three categories of items that give rise to changes in the going–concern funded position:

1. Experience in the period since the previous valuation versus the assumptions used in the previous valuation;
2. Plan changes, including those that are legislatively driven; and
3. Changes in the assumptions about the future and the methods for valuing the Plan’s assets and liabilities.

The latter two categories, as well as changes in demographics, also give rise to changes in the current service cost.

### **1. Plan Experience since the Previous Valuation**

Over the short period between valuations, actual experience typically differs from the long–term assumptions. To the extent possible, we have quantified the impact of this experience for the one–year inter–valuation period in the pages that follow.

### **2. Plan Changes**

There were no Plan amendments during the one-year inter-valuation period that affected the going-concern valuation.

### **3. Changes in Valuation Estimates (Actuarial Assumptions and Methods)**

In this valuation, we reduced the gross discount rate (for years after 2008) from 6.30% to 6.15% per annum.

## Changes in Financial Position (continued)

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### Analysis of Change in Going-Concern Funded Position

The following schedule summarizes (approximately) the changes in the Plan's going-concern funded position between December 31, 2007 and December 31, 2008.

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Going-Concern Surplus as at December 31, 2007		\$ 40,000,000
Interest on Surplus <sup>1</sup>		\$ (1,600,000)
Plan Experience		
■ Investments <sup>2</sup>	\$ 700,000	
■ Contributions <sup>3</sup>	(6,800,000)	
■ Salaries & YMPE <sup>4</sup>	5,500,000	
■ Pension inflation indexing	(600,000)	
■ Retirements <sup>5</sup>	3,600,000	
■ Terminations and transfers	(700,000)	
■ Disability	(1,800,000)	
■ Mortality	(1,300,000)	
■ Other	700,000	
		(700,000)
Changes in Valuation Estimates		
■ Change in discount rate		<u>(16,900,000)</u>
Going-Concern Surplus as at December 31, 2008		\$ 20,800,000

<sup>1</sup> Amount is negative due to the negative discount rate assumed for 2008 in the December 31, 2007 valuation.

<sup>2</sup> Using smoothed asset values, the fund earned a net investment return over the one-year inter-valuation period of -3.90%, performing slightly better than the assumed -4.00%.

<sup>3</sup> During the inter-valuation period, surplus was used to cover a portion of the current service cost.

<sup>4</sup> Actual pay increases over the inter-valuation period were less than assumed and the YMPE increase was different than assumed.

<sup>5</sup> We updated the retirement rates in the previous valuation to reflect more recent Plan experience. Over the inter-valuation period, there were fewer retirements than assumed.

## Changes in Financial Position (continued)

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### Analysis of Change in Current Service Cost

There has been an decrease during the one-year inter-valuation period in the going-concern current service cost, expressed as a percentage of covered payroll:

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	<b>% of Covered Payroll</b>
Current Service Cost at December 31, 2007	16.51%
Plan Experience Since the Previous Valuation:	
■ Demographic changes and other factors	0.03
■ Elimination of negative 2008 discount rate <sup>1</sup>	(0.77)
Changes in Valuation Estimates:	
■ Change in assumed discount rate	<u>0.58</u>
Current Service Cost at December 31, 2008	16.35%

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<sup>1</sup> Discount rate for 2008 was -4.00%

### Subsequent Events

Subsequent events are events that transpire after the valuation date and before the date of this report. Subsequent events also include events that, as of the date of this report, are fully committed to occur in the future.

On June 8, 2009, the trustees resolved to recommend certain Plan amendments to the Plan partners (COPE 378 and ICBC). The amendments concern increasing the maximum retirement age, entitlement to disability benefits, late enrollment service credits, and clarification of certain Plan provisions. None of these amendments, if implemented, would materially affect the valuation results.

The Plan trustees have confirmed that there are no other subsequent events that would materially affect the valuation results.

## Asset Data

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### Description of Plan Assets

The Plan assets are held by State Street Trust Company Canada and managed by multiple investment management firms. Information in this section of the report is based on financial reports prepared by State Street, ICBC and the Plan auditor (Michael I. d'Abadie & Company).

At the valuation date, the Plan assets were invested as shown below.

	<b>December 31, 2008 Market Value</b>	<b>Percentage of Plan Assets</b>
Canadian Equities	\$ 164,400,000	26.9%
Foreign Equities	122,000,000	20.0
Fixed Income	250,800,000	41.1
Real Estate	66,300,000	10.9
Short Term	3,100,000	0.5
Cash	2,000,000	0.3
Accrued Income	<u>2,000,000</u>	<u>0.3</u>
Total Assets	\$ 610,600,000	100.0%
Net Payables	<u>(5,000,000)</u>	
	\$ 605,600,000	

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## Asset Data (continued)

### Changes to Plan Assets

The following tables show changes to the Plan assets during the four years leading up to the valuation date.

	2005	2006	2007	2008
Market Value at Beginning of Period <sup>1</sup>	\$ 495,135,000	\$ 568,168,000	\$ 649,367,000	\$ 678,849,000
Employee Contributions	12,407,000	12,688,000	13,104,000	13,436,000
ICBC Contributions	12,407,000	12,688,000	13,104,000	13,436,000
Pension Payments	(6,799,000)	(7,419,000)	(8,547,000)	(9,502,000)
Lump Sum Payments	(3,812,000)	(4,791,000)	(3,984,000)	(4,844,000)
Net Transfers Out Under Portability Agreements	(3,016,000)	(4,354,000)	(4,176,000)	(7,698,000)
Investment Income	63,348,000	74,523,000	22,362,000	(75,324,000)
Expenses	<u>(1,502,000)</u>	<u>(2,136,000)</u>	<u>(2,381,000)</u>	<u>(2,705,000)</u>
Market Value at End of Period <sup>1</sup>	\$ 568,168,000	\$ 649,367,000	\$ 678,849,000	\$ 605,648,000
Rate of Return	12.3%	12.6%	3.0%	-11.5%

<sup>1</sup> Including payables and receivables.

### Smoothed Value of Assets

We have used an asset valuation method that smoothes the impact of short-term deviations between expected and actual investment income. The method does this by recognizing the difference between each year's expected and actual investment earnings over a five-year period. Expected investment earnings are calculated by assuming the fund assets and cash flows would have earned the previous valuation's going-concern valuation interest rate (6.8% for 2005, 6.5% for 2006 and 2007, and -4.0% for 2008).

The fund's net investment earnings (including interest and dividend income, realized and unrealized gains, less Plan expenses) are compared below to expected investment earnings:

Net Investment Earnings	2005	2006	2007	2008
Expected	\$ 34,000,000	\$ 37,200,000	\$ 42,500,000	\$ (27,300,000)
Actual	<u>61,800,000</u>	<u>72,400,000</u>	<u>20,000,000</u>	<u>(78,000,000)</u>
Excess of expected over actual	\$ (27,800,000)	\$ (35,200,000)	\$ 22,500,000	\$ 50,700,000

## Asset Data (continued)

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These differences (“gains/losses”) are then recognized in equal increments over a five-year period from when they occurred. Accordingly, the market value is adjusted by the portion of the investment gains/losses that the method does not yet recognize:

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Market value at December 31, 2008	\$ 605,600,000
Adjustment for gradual recognition of gains/losses	
■ .20 x 2005 excess	(5,500,000)
■ .40 x 2006 excess	(14,000,000)
■ .60 x 2007 excess	13,500,000
■ .80 x 2008 excess	<u>40,600,000</u>
Smoothed value at December 31, 2008	\$ 640,200,000

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The smoothed value is equal to 105.7% of the market value.

# Membership Data

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## Description of Membership Data

We obtained membership data as at December 31, 2008 from ICBC and from our Plan administration database. We reviewed the data to ensure its completeness, accuracy and consistency with the data used in the previous valuation.

The main tests of reliability and sufficiency we conducted on the data included:

- reconciliation of individual member records with records used for the prior valuation;
- checks to determine reasonableness of individual data elements both on an absolute basis and relative to the same data elements provided for the prior valuation; and
- checks to ensure consistency between the membership information and the information contained in the Plan's financial statements.

## Summary of Membership Data

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	December 31, 2007	December 31, 2008
<b>Active</b>		
■ number	3,984	3,924
■ average age	43.5	43.9
■ average pensionable service (years)	10.5	10.9
■ average annualized earnings	\$ 52,100	\$ 52,400
<b>Disabled</b>		
■ number	242	265
■ average age	50.5	49.8
■ average pensionable service (years)	14.4	14.3
■ average deemed earnings	\$ 50,100	\$ 51,500
<b>Terminated Vested</b>		
■ number	187	192
■ average age	45.2	46.3
■ average monthly lifetime pension	\$ 490	\$ 508
<b>Retired &amp; Survivors</b>		
■ number	787	828
■ average age	68.7	68.7
■ average monthly lifetime pension	\$ 705	\$ 756

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## Membership Data (continued)

### Changes in Plan Membership

The following table shows the changes in Plan membership since the previous valuation.

	Active	Disabled	Terminated Vested	Retired & Survivors	Total
Members at December 31, 2007	3,984	242	187	787	5,200
New Members	206				206
Retirements	(45)	(9)	(2)	56	
Disabilities					
■ became disabled	(83)	83			
■ returned to active	44	(42)	(2)		
Terminations of Employment					
■ deferred pensions	(25)	(1)	26		
■ lump-sums or non-vested	(90)	(4)	(19)		(113)
■ non-vested returned to active	1				1
Deaths					
■ lump sums		(4)			(4)
■ cessation of payments				(15)	(15)
Transfers					
■ to Management & Confidential Plan	(68)				(68)
■ from Management & Confidential Plan			1		1
Data Adjustments			1		1
Members at December 31, 2008	3,924	265	192	828	5,209

All of the active Plan members are employed in British Columbia.

In addition to the above members, there are 118 members, most of whom are non-vested, who terminated from the Plan before December 31, 2008 and who, as of the valuation date, had not elected their form of payment. The \$300,000 liability in respect of these terminated members has been included in the liabilities for terminated vested members.

## Membership Data (continued)

The following tables summarize relevant data items for the active and disabled Plan membership. The value shown for each data item in each cell is an average for the members in that cell. The totals row and totals column show averages for each age band and service band respectively.

### Active Member Summary

Age Group		Years of Continuous Service							Totals	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35		35+
<20	Number	1								1
	Pensionable Service	0.1								0.1
	Salary	*								*
20-24	Number	110	2							112
	Pensionable Service	1.6	4.3							1.7
	Salary	\$38,806	*							\$38,807
25-29	Number	195	35	2						232
	Pensionable Service	1.8	5.8	8.4						2.5
	Salary	\$41,119	\$48,527	*						\$42,222
30-34	Number	147	155	93	1					396
	Pensionable Service	1.9	6.4	9.1	10.4					5.4
	Salary	\$45,334	\$50,331	\$54,094	*					\$49,408
35-39	Number	113	200	184	113	7				617
	Pensionable Service	2.0	6.7	9.4	14.6	18.3				8.2
	Salary	\$45,543	\$50,741	\$55,731	\$53,537	\$54,943				\$51,837
40-44	Number	106	136	171	247	63	1			724
	Pensionable Service	2.2	7.0	9.7	15.8	17.4	22.4			10.9
	Salary	\$46,358	\$50,799	\$54,718	\$57,427	\$57,223	*			\$53,879
45-49	Number	79	109	157	192	100	63	3		703
	Pensionable Service	2.4	7.7	10.3	16.9	19.8	23.2	22.8		13.4
	Salary	\$45,956	\$51,961	\$53,947	\$58,186	\$62,218	\$56,420	\$59,702		\$55,321
50-54	Number	59	67	127	148	92	44	46	2	585
	Pensionable Service	1.9	7.6	10.4	16.9	21.2	25.3	22.9	21.0	14.7
	Salary	\$46,606	\$49,782	\$52,908	\$55,557	\$60,323	\$60,086	\$53,730	*	\$54,363
55-59	Number	24	47	63	75	61	39	68	14	391
	Pensionable Service	2.6	7.4	10.5	17.4	21.2	26.1	21.2	19.0	16.4
	Salary	\$46,947	\$48,564	\$50,677	\$56,939	\$56,201	\$57,963	\$56,165	\$59,175	\$54,242
60-64	Number	10	17	29	30	21	9	29	7	152
	Pensionable Service	2.5	7.5	11.0	16.9	20.9	26.5	21.9	21.0	16.0
	Salary	\$48,795	\$51,507	\$52,018	\$53,290	\$56,318	\$59,983	\$56,729	\$61,870	\$54,418
65+	Number	1	4		4		1	1		11
	Pensionable Service	1.8	7.9		17.6		26.0	19.0		13.5
	Salary	*	\$ 53,483		\$ 48,144		*	*		\$ 51,509
Totals	Number	845	772	826	810	344	157	147	23	3,924
	Pensionable Service	2.0	6.9	9.9	16.3	20.0	24.7	21.9	19.8	10.9
	Salary	\$43,893	\$50,525	\$54,008	\$56,493	\$59,221	\$57,975	\$55,516	\$59,639	\$52,363

\* Omitted for confidentiality reasons.

## Membership Data (continued)

### Disabled Member Summary

Age Group		Years of Continuous Service							Totals	
		0-5	5-10	10-15	15-20	20-25	25-30	30-35		35+
25-29	Number	3	1							4
	Pensionable Service	2.0	8.0							3.5
	Salary	\$42,597	*							\$44,425
30-34	Number	2	3	2						7
	Pensionable Service	1.6	5.0	10.0						5.4
	Salary	*	\$47,347	*						\$44,138
35-39	Number	3	6	17	1	1				28
	Pensionable Service	2.7	6.0	9.3	15.2	17.1				8.4
	Salary	\$37,472	\$47,153	\$50,999	*	*				\$48,719
40-44	Number	1	8	13	14	5	1			42
	Pensionable Service	2.0	7.7	9.5	15.7	18.8	25.9			12.5
	Salary	*	\$50,503	\$53,045	\$56,171	\$56,411	*			\$54,260
45-49	Number	4	5	9	16	10	2			46
	Pensionable Service	1.1	7.3	10.9	16.5	19.5	22.4			14.0
	Salary	\$43,716	\$43,721	\$51,157	\$52,750	\$51,729	*			\$50,438
50-54	Number	1	4	8	12	10	8	6		49
	Pensionable Service	3.2	8.1	10.7	17.5	21.4	26.0	20.1		17.8
	Salary	*	\$51,560	\$53,038	\$53,032	\$56,068	\$59,618	\$52,763		\$54,437
55-59	Number	1	8	12	12	8	5	8	3	57
	Pensionable Service	2.1	7.7	10.4	15.5	18.7	26.8	19.3	19.3	15.3
	Salary	*	\$47,161	\$44,099	\$52,936	\$56,675	\$60,638	\$50,442	\$55,251	\$50,956
60-64	Number	1	1	4	9	4	2	8	3	32
	Pensionable Service	3.6	8.4	10.1	17.9	20.7	26.9	22.3	23.9	18.8
	Salary	*	*	<u>\$41,701</u>	<u>\$47,907</u>	<u>\$58,158</u>	*	<u>\$52,492</u>	<u>\$59,616</u>	<u>\$50,424</u>
Totals	Number	16	36	65	64	38	18	22	6	265
	Pensionable Service	2.0	7.2	10.0	16.5	19.8	25.9	20.6	21.6	14.3
	Salary	\$42,580	\$47,799	\$49,550	\$52,698	\$55,483	\$58,161	\$51,820	\$57,433	\$51,454

\* Omitted for confidentiality reasons.

## Membership Data (continued)

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### Terminated Vested Member Summary Male

Age Group	Number	Average Monthly Normal Retirement Pension
25-29	1	\$ 173
30-34	7	172
35-39	12	325
40-44	16	512
45-49	21	689
50-54	11	609
55-59	5	1,013
60-64	4	345
65-70	<u>2</u>	<u>395</u>
Totals	79	\$ 530

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### Female

Age Group	Number	Average Monthly Normal Retirement Pension
25-29	3	\$ 181
30-34	8	195
35-39	18	312
40-44	21	447
45-49	24	500
50-54	13	634
55-59	20	844
60-64	5	256
65-70	<u>1</u>	<u>97</u>
Totals	113	\$ 492

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## Membership Data (continued)

### Retired and Surviving Member Summary—Male

Age Group		Number	Average Monthly Pension	Average Monthly Pension to Spouse	Average Remaining Guarantee Period (years)
40–45	life only	1	\$ 1,020		
45–49	life only	1	1,729		
50–54	life only	1	654		
55–59	guaranteed life	3	920		7
	life only	4	941		
	joint life	23	1,018	\$ 870	
	bridge	28	510		
	level income	23	503		
60–64	guaranteed life	16	1,082		6
	life only	13	923		
	joint life	48	1,008	801	
	bridge	73	470		
	level income	57	557		
65–69	guaranteed life	16	1,236		5
	life only	17	986		
	joint life	46	881	632	
70–74	guaranteed life	5	939		3
	life only	18	640		
	joint life	32	861	647	
75–79	life only	27	636		
	joint life	18	759	536	
80–84	life only	24	622		
	joint life	6	440	407	
85–89	life only	5	393		
	joint life	1	587	293	
90–94	guaranteed life	<u>2</u>	<u>215</u>		
Totals excluding bridge		327	\$ 866		

## Membership Data (continued)

### Retired and Surviving Member Summary—Female

Age Group		Number	Average Monthly Pension	Average Monthly Pension to Spouse	Average Remaining Guarantee Period (years)
40–44	life only	3	\$ 1,326		
45–49	annuity certain	1	525		3
	life only	2	932		
50–54	life only	1	662		
55–59	guaranteed life	20	810		6
	life only	11	777		
	joint life	22	888	744	
	bridge	52	468		
	level income	35	538		
60–64	guaranteed life	38	810		5
	life only	32	785		
	joint life	53	761	554	
	bridge	117	422		
	level income	81	484		
65–69	annuity certain	1	1,459		7
	guaranteed life	23	813		3
	life only	58	791		
	joint life	56	717	511	
70–74	annuity certain	4	284		3
	guaranteed life	3	1,156		2
	life only	53	595		
	joint life	17	633	539	
75–79	life only	50	464		
	joint life	3	720	495	
80–84	life only	31	333		
	joint life	1	637	637	
85–89	life only	16	309		
	joint life	<u>2</u>	<u>288</u>	144	
Totals excluding bridge		501	\$ 683		

# Actuarial Assumptions and Methods

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## Going-Concern Valuation

The actuarial assumptions used for the Going-Concern Valuation are described below.

## Demographic Assumptions

### Pension Commencement

Active Members Table R following.

Disabled Members Age 65.

Terminated Vested Members Age 60.

Disability PSSP December 31, 1992 report.

Termination Table T following.

### Mortality

Active and Terminated Vested Members 1994 Uninsured Pensioner Mortality Table with mortality improvement projected to 2027 using projection scale AA (gender distinct rates).  
No provision has been made for mortality prior to retirement for Terminated Vested Members.

Retired Members 1994 Uninsured Pensioner Mortality Table with mortality improvement projected to 2017 using projection scale AA (gender distinct rates).

Disabled Members Rates from PSSP December 31, 1992 report.

### Marital Status

Retired Members Pension option elected at retirement, and actual age of joint annuitant, are used.

All Other Members Spouse is assumed to be of opposite gender of member. Male is assumed to be 3 years older than female.

## Economic Assumptions

Inflation 3.00% per annum.

YMPE Increases 3.50% per annum.

ITA Maximum Pension Increases 3.50% per annum after 2009.

Salary Increases 4.50% per annum.

Discount Rate 6.15% per annum.

## Actuarial Assumptions and Methods (continued)

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### Miscellaneous Assumptions

Ongoing Plan Expenses Nil (paid by ICBC).

### Cost Methods

Actuarial Cost Method Projected Unit Credit Cost Method.

Asset Valuation Method Smoothed value of assets adjusted to reflect contributions receivable and benefits payable at the valuation date.

**Table R**  
**Retirement Rates**

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Age	Unisex
below 55	0%
55	15%
56	10%
57	10%
58	10%
59	10%
60	20%
61	20%
62	20%
63	20%
64	20%
65	100%

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**Table T**  
**Termination Rates**

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Age	Male	Female
25	7.4%	10.1%
30	5.8%	8.5%
35	3.8%	6.0%
40	2.7%	3.9%
45	2.0%	2.7%
50	1.4%	2.1%
55	0.0%	0.0%
60	0.0%	0.0%

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## Rationale for Actuarial Assumptions

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### Going–Concern Valuation

#### Provision for Adverse Deviation (PfAD”)

In a plan with benefits based on highest or final average salaries, the pre-retirement net discount rate is the difference between the gross discount rate and the salary increase assumption. In a plan with benefits that are indexed post-retirement, the post-retirement net discount rate is the difference between the gross discount rate and the inflation assumption.

The PfADs in the valuation are:

- 1.54% pre-retirement, and
- 1.04% post-retirement,

as illustrated in the following table.

	Pre-retirement			Post-retirement		
	Best Estimate	Assumption	PfAD	Best Estimate	Assumption	PfAD
Gross discount rate	6.19%	6.15%	0.04%	6.19%	6.15%	0.04%
Salary increases	3.00%	4.50%	1.50%	n/a	n/a	n/a
Inflation	n/a	n/a	n/a	2.00%	3.00%	1.00%
Net discount rate	3.19%	1.65%	<b>1.54%</b>	4.19%	3.15%	<b>1.04%</b>

### Pension Commencement

We have used a table of retirement rates for active members based on recent Plan experience.

### Disability

We have used the disability incidence rates from the PSSP December 31, 1992 report. There have not been significant gains or losses demonstrated and the disability experience of the membership of the Plan is too small to assess Plan specific experience. In our view, the rates remain appropriate.

### Termination of Employment

We have used a table of termination rates that were based on previous Plan experience. This table was developed by a prior actuary, has been in use for many years, and there have not been significant gains or losses demonstrated. In our view, the rates continue to be appropriate.

## Rationale for Actuarial Assumptions (continued)

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### **Mortality**

The 1994 Uninsured Pensioner Mortality Table reflects the mortality experience as of 1994 for a large sample of North American pension plans. Applying projection scale AA provides allowance for improvements in mortality after 1994 and is generally considered reasonable for projecting mortality experience into the future. This table is commonly used for valuations where the mortality experience of the membership of a plan is insufficient to assess plan specific experience and where there is no reason to expect the mortality experience of the Plan to differ significantly from that of other pension plans. Both of these are true for this Plan and, therefore, we consider the use of this mortality table reasonable.

We have projected improvement to approximately match the duration of the Plan's liabilities.

### **Inflation**

The 3.00% assumption reflects a 2.00% best estimate of future inflation, considering economic and financial market conditions at the valuation date, plus a 1.00% provision for adverse deviation.

### **YMPE Increases**

We have assumed future increases to the YMPE will be 3.50% per annum. The assumption reflects an assumed rate of inflation of 3.00% per annum plus an allowance of 0.50% per annum for the effect of productivity growth in the Canadian economy.

### **ITA Maximum Pension Increases**

We have assumed future increases to the *ITA* Maximum Pension will be 3.50% per annum after 2009. For 2009, the maximum pension is specified by the *ITA*. The assumption reflects an assumed rate of inflation of 3.00% per annum plus an allowance of 0.50% per annum for the effect of productivity growth in the Canadian economy.

### **Salary Increases**

The assumption reflects an assumed rate of inflation of 3.00% per annum, plus 0.50% per annum for the effect of productivity growth, plus 1.00% per annum to reflect the average expected increase as a result of individual employee merit and promotion. The resulting 4.50% salary increase assumption includes a 1.50% provision for adverse deviation.

### **Discount Rate**

The long term discount rate assumption of 6.15% per annum reflects a best estimate net rate of return on the pension fund assets, of 6.19%, less a provision for adverse deviation of 0.04%.

A long term best-estimate gross rate of return of 6.49% was provided by Aon Consulting Inc., the Plan's investment consultant, based on the Plan's new asset mix policy established in 2008. Aon's estimate is within the range of what we would consider reasonable for the Plan's asset mix.

Subtracting from this 0.25% for investment management fees and 0.05% for non-investment expenses paid from the Plan results in our best estimate net return on assets assumption of 6.19%.

## Rationale for Actuarial Assumptions (continued)

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### **Expenses**

The Plan's expenses, excluding administration expenses, are paid from the Plan. The going-concern discount rate is net of estimated Plan expenses.

### **Actuarial Cost Method**

The actuarial liability and current service cost have been determined using the Projected Accrued Benefit (or Projected Unit Credit) Actuarial Cost Method.

The actuarial liability is equal to the present value of benefits earned by members for service prior to the valuation date. The current service cost is equal to the present value of benefits earned by members in the year following the valuation date. Under the Projected Accrued Benefit Actuarial Cost Method, benefits earned by members are calculated using current earnings projected to pension commencement, termination or death, whichever is applicable.

For disabled members, we have included service to age 65 in the actuarial liability and have omitted the current service cost.

The Projected Accrued Benefit Actuarial Cost Method produces a current service cost for an individual member that increases with age. For the entire membership, however, the current service cost will remain stable provided the average age of the active membership remains stable.

### **Asset Valuation Method**

Assets are smoothed for the going concern valuation to remove the short term volatility that is associated with investment capital markets. We determine the smoothed asset value by adjusting the market value to recognize the difference between each year's actual and expected investment earnings over a five year period. Expected investment earnings are calculated by assuming the fund assets and cash flows earn the previous valuation's going-concern discount rate.

## Rationale for Actuarial Assumptions (continued)

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### Solvency Valuation

#### Benefits Valued

We have treated all accrued benefits as vested on Plan wind-up.

The Plan has no consent benefits.

We included indexing benefits because they are a guaranteed Plan benefit.

#### Method of Benefit Settlement

We have assumed that all Plan benefits would be settled on Plan wind-up either by purchase of single premium annuities or by lump sum transfer (including payments in cash).

We have set the following assumptions based on guidance prepared by the Canadian Institute of Actuaries (“CIA”) Committee on Pension Plan Financial Reporting (“PPFRC”) in a April 2009 Educational Note *Assumptions for Hypothetical Wind-up and Solvency Valuations with Effective Dates Between December 31, 2008 and December 30, 2009* (“CIA Guidance”).

- For benefit entitlements that are expected to be settled by purchase of annuities, we based the assumptions on the guidance by the PPFRC which recommends using the yield of real return long-term bonds as a proxy for fully-indexed annuities. For this purpose, we have assumed a total premium in excess of \$15 million.
- For benefit entitlements that are expected to be settled by lump sum transfer, we based the assumptions on the CIA Standard of Practice for Determining Pension Commuted Values, effective April 1, 2009, using rates corresponding to a valuation date of December 31, 2008.

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	Percent of liability assumed to be settled by purchase of annuities	Percent of liability assumed to be settled by lump sum transfer
Active members – not retirement eligible	0%	100%
Active members – retirement eligible	100%	0%
Terminated vested members – not retirement eligible	0%	100%
Terminated vested members – retirement eligible	100%	0%
Retired members and surviving spouses	100%	0%

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#### Pre-Retirement Mortality

We have made no allowance for pre-retirement mortality. The impact of including such an assumption would not have a material impact on the valuation, since the value of the death benefit is approximately equal to the value of the accrued pension.

## Rationale for Actuarial Assumptions (continued)

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### **Assumptions Not Needed**

The following assumptions are not relevant to the Solvency Valuation:

- Disability
- Termination
- *ITA* Maximum Pension Increases
- YMPE Increases
- Salary Increases

### **Plan Wind-up Expenses**

Section 13.03(e) of the Plan text states that ICBC and any Related Employers shall pay the costs of winding up the Plan. Accordingly, it is our expectation that, if the Plan were ever to be wound up, expenses would not be paid from the Plan's assets. Therefore, we have not made an allowance for Plan wind-up expenses in the solvency valuation.

### **Actuarial Cost Method**

The solvency liability was determined using the Accrued Benefit (or Unit Credit) Actuarial Cost Method. The solvency liability is equal to the present value of benefits earned by members for service prior to the valuation date assuming the Plan is wound-up on the valuation date, based on member service, contributions and earnings up to the valuation date.

### **Asset Valuation Method**

The solvency assets are equal to the market value of assets, adjusted for receivables and payables. We have made no allowance for Plan wind-up expenses, as explained above. The solvency assets are used to determine the solvency ratio.

Under the Plan's Funding Policy, assets are to be smoothed when calculating a solvency deficiency. There are no going concern special payments or previously established solvency deficiency special payments to include in the solvency asset adjustment. Therefore, the solvency asset adjustment is solely comprised of the amount by which the value of the solvency assets is adjusted on account of smoothing. The smoothed value of assets is equal to the solvency assets plus the solvency asset adjustment.

## Plan Provisions

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This summary contains the main provisions of the *COPE 378 / Insurance Corporation of British Columbia Pension Plan* as of December 31, 2008. For a complete description of the Plan, reference should be made to the Plan text.

<b>Eligibility</b>	Employees are required to join the Plan on the first day of the month coincident with or next following the completion of two years of continuous service. Employees may join voluntarily during the first two years of service.
<b>Continuous Service</b>	All service with ICBC.
<b>Pensionable Service</b>	All service during which a member contributes to the Plan or earns disability accruals. Pensionable Service for a year in which a member works on a part-time basis is based on the percentage of time worked.
<b>Normal Pension Commencement Date</b>	The first day of the month coincident with or immediately following attainment of age 65.
<b>Pension Benefit</b>	For each year of Pensionable Service: <ol style="list-style-type: none"><li>1. 2.0% of highest 5-year average earnings (“HAE”)</li><li>2. minus, at age 65 a “CPP offset” equal to 0.7% of the lesser of HAE and the Year’s Maximum Pensionable Earnings (YMPE) for the year prior to pension commencement.</li></ol>

## Plan Provisions (continued)

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### Early Pension Commencement from Active Status

Early pension commencement is permitted at any time after attainment of age 55. The percentage of full pension payable on pension commencement from active status before age 65 is shown in the following table:

Age at Pension Commencement	10 or More Years of Service <sup>3</sup>	Less than 10 Years of Service
55	85%	75%
56	88%	80%
57	91%	85%
58	94%	90%
59	97%	95%
60 and older	100%	100%

A full pension is payable on pension commencement after age 55 if age plus employment service exceeds 85 years. The reduction on pension commencement from active status before age 65 is as follows. A “point” is given for each year of age and each year of employment service:

- if ten or more years of service, 3% for each year that pension commencement precedes the earlier of age 60 and 85 points;
- if less than ten years of service, 5% for each year that pension commencement precedes age 60.

### Postponed Pension Commencement

A member may elect to postpone pension commencement until as late as December 31 of the year the member turns age 69, and will continue to accrue benefits until pension commencement.

### Maximum Pension

The maximum pension is limited to \$2,444.44 for 2009 (or such other amount as is permitted from time to time by the *Income Tax Act*) for each year of Pensionable Service.

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<sup>3</sup> The percentage is applied to the 2% formula before the CPP offset.

### **Termination of Service**

Full vesting of benefits occurs at the earlier of five years of Continuous Service and two years of Plan membership. If a member terminates employment before vesting, the member's contributions with interest are refunded.

A vested former member may elect to commence receipt of pension after attaining age 55. The deferred pension commencement pension will be reduced by 5% for each year the pension commences before age 65. However, if the member had attained age 50, had completed at least 10 years of service at the date of termination and terminated on or after January 1, 1996, the reduction will be 5% for each year before age 60. The reduction is applied to the 2% formula pension before the CPP offset.

A vested member terminating employment is entitled to receive his accrued pension deferred to pension commencement age or may transfer the equivalent lump sum to a locked-in RRSP or LIRA, another pension plan, a LIF, or an insurance company to purchase a deferred annuity.

### **Lump Sum Payment on Death Prior to Pension Commencement**

If a member dies prior to pension commencement, for pre-93 service the Plan shall pay the greater of the member's contributions with interest and 100% of the commuted value of the vested deferred pension commencement benefit accrued before January 1, 1993. For post-92 pensionable service, the Plan shall pay the commuted value of the pension benefits accrued after December 31, 1992 plus excess benefits if any.

This amount may be transferred to the spouse's locked-in RRSP, or be used to provide a monthly pension to the spouse, or paid in cash to the designated beneficiary.

## Plan Provisions (continued)

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### **Survivor Pension on Death Prior to Pension Commencement**

If a member dies after completion of 10 years of service, and was a member of the Plan on December 31, 2002, the spouse can elect to receive survivor pension in lieu of the lump sum described above. The pension is calculated as if, immediately prior to the member's death, the member had reached age 65, retired and elected a joint and 100% survivor pension.

If the member had not attained age 55 and had less than 25 years of pensionable service, the years of pensionable service on which the pension is calculated will be increased from the date of the member's death to the member's 55<sup>th</sup> birthday, subject to a maximum of 25 years.

### **Death After Pension Commencement**

The normal form of pension is a pension payable for the life of the member, guaranteed 5 years. The member may, however, elect an optional form of benefit of equal value. For a member who has a spouse at pension commencement, the member must elect at least a joint and 60% survivor pension unless the spouse signs a waiver.

### **Disability Accruals**

If a member is totally disabled, the member will continue to accrue Pensionable Service without making contributions. Pensionable earnings will be imputed for the period of disability on the basis of the member's earnings in the 12 months prior to commencement of long term disability benefits. The imputed earnings are indexed in line with the Consumer Price Index.

### **Excess Benefits**

At the date of pension commencement, death or termination, if a member's contributions made since January 1, 1993 with interest exceed one-half of the commuted value of the pension benefit accrued in respect of service since January 1, 1993, the excess is payable to the member, spouse or designated beneficiary.

### **Maximum Benefit**

The *Income Tax Act* limits on retirement pensions, bridge benefits, combined lifetime and bridge benefits and death benefits apply.

## Plan Provisions (continued)

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### Pension Indexing

Pensions in payment are increased quarterly in line with the Consumer Price Index (“CPI”).

Deferred pensions are increased on the date of pension commencement by the change in CPI since termination of employment.

### Employee Contributions

Date	Below YMPE	Above YMPE
January 1, 2001	3.40%	5.00%
September 1, 2002	4.90%	6.50%
January 3, 2003	6.37%	8.50%
June 22, 2003	6.56%	8.74%
January 25, 2009	7.25%	9.67%

### ICBC Contributions

ICBC contributes the same amount as employees.

### Interest on Employee Contributions

The interest rate credited is based on the average of the yields of five-year personal fixed term chartered bank deposit rates, published in the Bank of Canada Review. The interest rate credited for 2008 was 3.09%.

### Expenses

Investment management, professional services, and other operating costs of the Plan are paid from the Plan, with the exception of administration costs, which are paid by ICBC.

### Plan Termination

On termination of the Plan:

- Full vesting applies to all accrued benefits.
- If assets are insufficient to cover the cost of accrued benefits, all Plan benefits are reduced by a uniform percentage.
- If assets exceed the value of accrued benefits, then benefits are first enhanced for salary projection and then up to the maximums allowed. If there are still surplus assets, one-half is paid to the Plan members and one-half is paid to ICBC.

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**2012.1 RR BCUC.75.6 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

In paragraph 33, the ICBC evidence states:

**“In both the 2011 outlook and 2012 forecast, ICBC has excluded from operating expenses used for the actuarial rate indication a \$10 million amount relating to the annual pension and post-retirement benefit adjustment, which arises due to the variation in the rate which is used to discount pension liabilities. This adjustment can fluctuate significantly from year to year due to variations in the discount rate. The pension and post-retirement liability is long-term. Payments are made to employees upon retirement and therefore are spread over a long period of time. Meanwhile, the interest rate used to discount pension liabilities may fluctuate up and down during this long period. ICBC believes that this component of the pension and post-retirement benefit adjustment should be excluded from operating expenses in order to remove the impact of this variability on Basic insurance rates, to help keep rates more stable.” [Emphasis Added]**

**When will the next actuarial evaluation of the ICBC Pension be performed?**

**Response:**

The next expected actuarial valuations for the ICBC pension and post-retirement benefit plans will be completed as follows:

- Management and Confidential Plan – during 2013 for the next expected valuation date as at December 31, 2012.
- Post-Retirement Benefits Plan – during 2013 for the next expected valuation date as at January 1, 2013.
- Bargaining Unit Plan – during 2012 for the valuation date as at December 31, 2011.

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**2012.1 RR BCUC.75.7 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
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**Please provide a copy of any updates or opinions sought on the pension valuations.**

**Response:**

There have been no updates or opinions sought on the Management and Confidential Plan valuation since the last actuarial valuation as at December 31, 2009; however, ICBC has monitored the solvency funding position of the plan on a quarterly basis. ICBC is aware that the Board of Trustees of the Bargaining Unit Plan has also monitored the solvency funding position on a quarterly basis in anticipation of the Bargaining Unit Plan valuation as at December 31, 2011.

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**2012.1 RR BCUC.75.8 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

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**At what per cent funded or unfunded are the ICBC pensions and what risk do they pose to current and future stable rates?**

**Response:**

Please see the responses to information requests 2012.1 RR BCUC.75.2 and 2012.1 RR BCUC.75.5 for a discussion of the distinction between funding valuations and accounting valuations.

On an accounting basis, the funded ratio (i.e., plan assets divided by the defined benefit obligation) of ICBC's pension plans at December 31, 2011 is preliminary and estimated to be 91.6%. The accounting funded ratio does not impact contributions as both the ICBC Management and Confidential Plan and the Bargaining Unit Plan are funded by contributions determined by the triennial actuarial funding valuations.

The current accounting funded ratio above does not pose a risk to current and future stable rates. All things being held equal, future actuarial losses (such as decreases in discount rates and lower than assumed returns on plan assets) will decrease the accounting funded ratio and be recognized in retained earnings, thereby decreasing the Minimum Capital Test (MCT) ratio.

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Conversely, future actuarial gains will increase the accounting funded ratio and be recognized in retained earnings, thereby increasing the MCT ratio.

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**2012.1 RR BCUC.75.9 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.1, p. 7-12**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Unique Items**

In paragraph 33, the ICBC evidence states:

**“In both the 2011 outlook and 2012 forecast, ICBC has excluded from operating expenses used for the actuarial rate indication a \$10 million amount relating to the annual pension and post-retirement benefit adjustment, which arises due to the variation in the rate which is used to discount pension liabilities. This adjustment can fluctuate significantly from year to year due to variations in the discount rate. The pension and post-retirement liability is long-term. Payments are made to employees upon retirement and therefore are spread over a long period of time. Meanwhile, the interest rate used to discount pension liabilities may fluctuate up and down during this long period. ICBC believes that this component of the pension and post-retirement benefit adjustment should be excluded from operating expenses in order to remove the impact of this variability on Basic insurance rates, to help keep rates more stable.” [Emphasis Added]**

**What impact would any unfunded portion of ICBC pensions have on the MCT and how would ICBC deal with this in its Capital maintenance provision for the PY 2012 in future Revenue Requirements Applications, either streamlined or otherwise?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.75.8.

The accounting funded ratio at December 31, 2011 is preliminary and estimated to be 91.6%. As this percentage is a ratio of plan assets over the defined benefit obligation, changes in the accounting funded ratio can be due to a variety of factors, including changes to the accounting discount rate, return on plan assets different from assumed, the pace of funding, and experience gains or losses.

All things being held equal, future actuarial losses will decrease the accounting funded ratio and be recognized in retained earnings, thereby decreasing the Minimum Capital Test (MCT) ratio. Conversely, future actuarial gains will increase the accounting funded ratio and be recognized in retained earnings, thereby increasing the MCT ratio.

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The 2011 Government Directive regarding Basic Rate Stability and Capitalization specifies that the capital build provision should not apply during the 3-year period from February 1, 2012 to January 31, 2015 when the Basic MCT ratio is greater than 100%. For the years ending during this period (December 31, 2012, December 31, 2013, and December 31, 2014) if the Basic MCT ratio is greater than 100%, no recovery will be made for actuarial losses recognized in retained earnings. Please see the response to information request 2012.1 RR BCUC.42.3-4 which describes the scenario when the actual or forecast MCT ratio is or is expected to be less than 100%.

**2012.1 RR BCUC.76.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1, p. 7-14**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation**

In paragraph 42, the ICBC evidence states:

“Management and Confidential compensation costs have been increasing from 2007 mainly due to an increase in the number of FTEs in this employee group, and ICBC’s adoption of a labour market position for total compensation based on the markets in which ICBC competes for talent.”

Based on the information provided by ICBC in Figure 7.6 - Compensation by Employee Group, Commission Staff prepared the following Commission Staff Table 2.

Commission Staff Table 2 - COMPENSATION

		(\$ MILLIONS)																	
Line #	EMPLOYEE GROUP	Actual		Actual			Actual			Outlook			Forecast			\$ Change since 2007	% Change since 2007		
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012			\$ Δ	% Δ
1	BU	264	273	9	3.4%	275	2	0.8%	273	-2	-0.7%	272	-1	-0.4%	278	6	2.2%	14	5.3%
2	M&C	103	112	9	8.7%	124	12	11.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7%
3	Other	-7	-7	0	0.0%	-10	-3	42.9%	-6	4	-40.0%	-7	-1	16.7%	-9	-2	28.6%	-2	28.6%
4	Total	360	378	18	5.0%	389	29	8.1%	402	13	3.3%	409	7	1.7%	416	7	1.7%	56	15.6%

Please confirm if this table is accurate, otherwise please update.

Response:

Please see Attachment A – Commission Staff Table 2 – Compensation, corrected for calculation errors.



## **2012.1 RR BCUC.76.1 – Attachment A – Commission Staff Table 2 – Compensation**

**Commission Staff Table 2 - COMPENSATION**

(\$ MILLIONS)

Line #	EMPLOYEE GROUP	Actual	Actual			Actual			Actual			Outlook			Forecast			\$ Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ		
1	BU	264	273	9	3.4%	275	2	0.7%	273	-2	-0.7%	272	-1	-0.4%	278	6	2.2%	14	5.3%
2	M&C	103	112	9	8.7%	124	12	10.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7% *
3	Other	-7	-7	0	0.0%	-10	-3	42.9%	-6	4	-40.0%	-7	-1	16.7%	-9	-2	28.6%	-2	28.6%
4	Total	360	378	18	5.0%	389	11	2.9%	402	13	3.3%	409	7	1.7%	416	7	1.7%	56	15.6% **

\* Increase in M&C compensation is related to increase in M&C FTEs, from 2007 actual of 855 to 2012 forecast of 1,086.

\*\* Increase in total compensation is discussed in the Application, Chapter 7, section D.2.1 Compensation, on page 7-13.

**2012.1 RR BCUC.76.2 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1, p. 7-14**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation**

In paragraph 42, the ICBC evidence states:

**“Management and Confidential compensation costs have been increasing from 2007 mainly due to an increase in the number of FTEs in this employee group, and ICBC’s adoption of a labour market position for total compensation based on the markets in which ICBC competes for talent.”**

**Based on the information provided by ICBC in Figure 7.6 - Compensation by Employee Group, Commission Staff prepared the following Commission Staff Table 2.**

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		(\$ MILLIONS)																	
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		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012			\$ Δ	% Δ
1	BU	264	273	9	3.4%	275	2	0.8%	273	-2	-0.7%	272	-1	-0.4%	278	6	2.2%	14	5.3%
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3	Other	-7	-7	0	0.0%	-10	-3	42.9%	-6	4	-40.0%	-7	-1	16.7%	-9	-2	28.6%	-2	28.6%
4	Total	360	378	18	5.0%	389	29	8.1%	402	13	3.3%	409	7	1.7%	416	7	1.7%	56	15.6%

**Of the \$44 million (or 42.7%) increase in Management and Confidential compensation (Commission Staff Table 2, Line 2) from 2007 Actual to 2012 Forecast, what portion is related to the increase in FTEs and what portion is attributed to the adoption of a labour market position for total compensation?**

**Response:**

Compensation for Management and Confidential employees is forecast to increase from \$103 million to \$147 million in the 2007 to 2012 forecast period. The increase of \$44 million is primarily due to 231 more FTEs hired throughout this period, which accounted for \$27 million of this increase. Compensation changes, inclusive of ICBC’s adoption of a labour market position, performance-based wage adjustments approved by ICBC’s Board of Directors and the Public Sector Employers’ Council (PSEC), and benefit cost increases accounted for the remaining \$17 million.

ICBC’s adoption of a labour market position allowed its Management compensation plan to align its salary ranges and performance-based incentive program with the markets in which ICBC competes for talent. Each year, ICBC’s Board of Directors reviews its compensation programs

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including determining adjustments, if any, to the Management salary structure (i.e., salary ranges). As discussed in Chapter 7, page 7-17, paragraph 54, the compensation market position is stated as the market median (P50) for similar positions within the following three, equally weighted comparator groups:

- Canadian Insurance Companies with assets between \$1 and \$15 billion.
- Canadian Broad Industry with revenue between \$1 and \$10 billion.
- Canadian Government, Quasi-Government, and Crown Corporations.

This market position was the result of a compensation review first discussed with the Commission as part of the 2006 Revenue Requirements Proceeding. At that time, ICBC conducted a total compensation review which indicated that ICBC's total Management and Confidential compensation was below the market median (P50) of a sampling of government, insurance industry, and general industry. ICBC's Board of Directors adopted the compensation review's recommendations and discussed with PSEC the need to change ICBC's compensation model to address labour market, leadership, and competitive issues facing ICBC. In 2007, these changes were approved by PSEC and ICBC subsequently implemented a new compensation system which, among other benefits, shifted ICBC to a performance-based culture, eliminating automatic, fixed salary progression based on tenure in favour of movement through salary ranges based on performance only.

ICBC uses market reference data from a variety of sources, but in particular uses survey data from the Conference Board of Canada to propose salary range adjustments for ICBC's Board of Directors' consideration. This is consistent with ICBC's early representations to the Commission in the August 2005 Revenue Requirements Application, Chapter 8.

With PSEC's approval, ICBC shifted its Management and Confidential salary structure in 2007, 2008, 2009, and again in 2011 in keeping with PSEC guidelines. The structure remained unchanged in 2010 and 2012. Movement of Management and Confidential salary structure does not result in any change or increase to Management and Confidential salaries. It is simply a movement of the salary ranges. Any adjustments to Management and Confidential employee

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wages are based on annual performance and an annual wage budget (if any) as approved by ICBC's Board of Directors.

Since 2007, ICBC has increased the governance and rigour of its Management and Confidential compensation system, including the following actions undertaken:

- Implemented quarterly and annual performance management reviews for each employee (both Bargaining Unit and Management and Confidential).
- Tied all management salary increases to individual performance, within an annual market-driven wage budget (if any).
- First proposed Canadian Securities Administrators (CSA) executive compensation standards to PSEC, a standard eventually adopted by all of government.
- Overhauled the Management and Confidential Short-Term Incentive Plan (STIP) to become more rigorous, metric, and even more closely tied to company performance.
- Aligned the Bargaining Unit gainsharing program to the same goals as that of Management and Confidential STIP program.
- Capped the pension indexing for Management and Confidential employees, thus reducing future risk to the plan.
- Introduced a financial trigger to the STIP program to safeguard ICBC's financial health by creating a stronger tie between corporate financial performance and performance-based incentive payments.

**2012.1 RR BCUC.76.3 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1, p. 7-14**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation**

In paragraph 42, the ICBC evidence states:

“Management and Confidential compensation costs have been increasing from 2007 mainly due to an increase in the number of FTEs in this employee group, and ICBC’s adoption of a labour market position for total compensation based on the markets in which ICBC competes for talent.”

Based on the information provided by ICBC in Figure 7.6 - Compensation by Employee Group, Commission Staff prepared the following Commission Staff Table 2.

Commission Staff Table 2 - COMPENSATION

		(\$ MILLIONS)																		
Line #	EMPLOYEE GROUP	Actual		Actual			Actual			Actual			Outlook			Forecast			\$ Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ			
1	BU	264	273	9	3.4%	275	2	0.8%	273	-2	-0.7%	272	-1	-0.4%	278	6	2.2%	14	5.3%	
2	M&C	103	112	9	8.7%	124	12	11.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7%	
3	Other	-7	-7	0	0.0%	-10	-3	42.9%	-6	4	-40.0%	-7	-1	16.7%	-9	-2	28.6%	-2	28.6%	
4	Total	360	378	18	5.0%	389	29	8.1%	402	13	3.3%	409	7	1.7%	416	7	1.7%	56	15.6%	

The overall increase in compensation since 2007 for the M&C group is \$44 million (line 2) or 42.7 percent, representing 52 percent of the overall increase in corporate operating costs of \$83. Please provide specific data, including explanations, that account for the \$44 million increase.

Response:

Please see the response to information request 2012.1 RR BCUC.76.1, Attachment A – Commission Staff Table 2 – Compensation.

The overall increase in compensation for Management and Confidential employees is forecast to increase from \$103 million to \$147 million in the 2007 to 2012 forecast period. The increase of \$44 million (or 42.7% over five years) is primarily due to 231 more FTEs hired throughout this period, which accounted for \$27 million of this increase. Compensation rate increases, inclusive of ICBC’s adoption of a labour market position as well as performance-based wage adjustments approved by ICBC’s Board of Directors and Public Sector Employers’ Council and benefit cost increases, accounted for the remaining \$17 million.

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For a discussion of Management and Confidential compensation changes in the 2007 to 2012 forecast period, please refer to the response to information request 2012.1 RR BCUC.76.2.

While compensation costs are a significant component of overall operating expenses, operating expenses only represent a small percentage of ICBC's total costs (approximately 16%). The 2011 outlook for operating expenses was reduced by \$26 million in comparison to the original 2011 plan. For the 2012 forecast, the increase in operating expenses was contained within inflation. Through ICBC's cost control management efforts, operating expenses do not contribute to the rate increase requested in the Application.

For a detailed discussion of ICBC's mid-year review and cost control initiatives undertaken to reduce 2011 planned expenditures, please refer to the response to information request 2012.1 RR BCUC.70.1.

**2012.1 RR BCUC.76.3.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1, p. 7-14**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation**

In paragraph 42, the ICBC evidence states:

“Management and Confidential compensation costs have been increasing from 2007 mainly due to an increase in the number of FTEs in this employee group, and ICBC’s adoption of a labour market position for total compensation based on the markets in which ICBC competes for talent.”

Based on the information provided by ICBC in Figure 7.6 - Compensation by Employee Group, Commission Staff prepared the following Commission Staff Table 2.

Commission Staff Table 2 - COMPENSATION

		(\$ MILLIONS)																		
Line #	EMPLOYEE GROUP	Actual		Actual			Actual			Actual			Outlook			Forecast			\$ Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ			
1	BU	264	273	9	3.4%	275	2	0.8%	273	-2	-0.7%	272	-1	-0.4%	278	6	2.2%	14	5.3%	
2	M&C	103	112	9	8.7%	124	12	11.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7%	
3	Other	-7	-7	0	0.0%	-10	-3	42.9%	-6	4	-40.0%	-7	-1	16.7%	-9	-2	28.6%	-2	28.6%	
4	Total	360	378	18	5.0%	389	29	8.1%	402	13	3.3%	409	7	1.7%	416	7	1.7%	56	15.6%	

What portion of the \$44 million increase is related to any changes in the employee pension and post retirement benefit or other benefit (e.g. Health and Wellness, etc.)? Please identify each increase and quantify that increase from 2007 to 2012 Forecast.

Response:

The overall increase in compensation for Management and Confidential employees is forecast to increase from \$103 million to \$147 million in the 2007 to 2012 forecast period. The increase of \$44 million is primarily due to 231 more FTEs hired throughout this period and compensation rate increases, inclusive of ICBC’s adoption of a labour market position as well as performance-based wage adjustments approved by ICBC’s Board of Directors and Public Sector Employers’ Council and benefit cost increases.

Certain pension and benefit costs are sensitive to changes in salary amounts. Therefore, an increase in Management and Confidential salary may result in an associated increase in these pension and benefit cost amounts. The results of the 2009 valuation for Management Pension Plan necessitated that ICBC should increase the pension contributions for current service costs commencing in 2010.

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In addition, as per the response to information request 2012.1 RR BCUC.74.4 (specifically, 2012.1 RR BCUC.74.4.1), the inclusion of incentive pay in pensionable earnings was approved by ICBC's Board of Directors in 2009 and applies to pensionable service from January 1, 2010 forward. The payment made in 2011 for incentive pay was the first payment to be considered for pensionable earnings. This change resulted in a \$2 million increase in total pension expense.

The impact of the inclusion of incentive pay in pensionable earnings on the 2012 actuarial rate indication is an increase of less than 0.1 percentage points. However, this impact has been offset by other savings as total operating costs (including pension expense) had no impact on the 2012 policy year Basic insurance actuarial rate indication.

For further details of compensation components, please see the response to information request 2012.1 RR BCUC.81.8, Attachment A – Commission Table – Compensation and Benefits by Employee Group by Year.

**2012.1 RR BCUC.77.0-1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1, p. 7-14**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation**

Paragraph 42 of the ICBC evidence states:

“The compensation cost increase projected for 2011 outlook and 2012 forecast is attributed mainly to a combination of changes in the number of FTEs and employee mix. As there is a net zero compensation rate increase mandate set by the Public Sector Employers' Council (PSEC), compensation level changes include only BU length-of-service and Management and Confidential performance-based wage adjustments, together with expected changes in performance-based incentive pay. The overall projected increase in compensation in 2011 and 2012 is expected to average 1.7% per annum.”

Based on the information provided by ICBC in Figure 7.6 - Compensation by Employee Group, Commission Staff prepared the following Commission Staff Table 2A and 2B.

Commission Staff Table 2A

MANAGEMENT AND CONFIDENTIAL (M&C) EMPLOYEE GROUP COMPENSATION LEVELS (\$MILLIONS)																			
Line #	DIVISION	Actual				Actual				Outlook				Forecast				\$ Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ		
5	Claims	\$	\$	\$	%	\$	\$	%	\$	\$	%	\$	\$	%	\$	\$	%	\$	%
6	Insurance																		
7	Drivers Licensing																		
8	Finance																		
9	Corporate Affairs																		
10	Information Services																		
11	Business Transformation																		
12	Human Resources																		
13	Strategic Marketing																		
14	Communications																		
15	Corporate Costs																		
16	Total FTE's																		
17	M&C (from Line 2)	103	112	9	8.7%	124	12	11.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7%

Commission Staff Table 2B

BARGAINING UNIT (BU) EMPLOYEE GROUP COMPENSATION LEVELS (\$ MILLIONS)																			
Line #	DIVISION	Actual				Actual				Outlook				Forecast				\$ Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ		
18	Claims	\$	\$	\$	%	\$	\$	%	\$	\$	%	\$	\$	%	\$	\$	%	\$	%
19	Insurance																		
20	Drivers Licensing																		
21	Finance																		
22	Corporate Affairs																		
23	Information Services																		
24	Business Transformation																		
25	Human Resources																		
26	Strategic Marketing																		
27	Communications																		
28	Corporate Costs																		
29	Total FTE's																		
30	BU (from Line 1)	264	273	9	3.4%	275	2	0.8%	273	-2	-0.7%	272	-1	-0.4%	278	6	2.2%	14	5.3%

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**77.0 Please change the tables as required for any organizational changes.**

**77.1 Please confirm if the above data is accurate, otherwise please update. Please complete Commission Staff Tables 2A and 2B and provide explanations for any annual increase over +3%**

**Response:**

**77.0**

Please see Attachment A – Commission Staff Table 2 – Compensation, which includes both tables 2A and 2B for Management and Confidential and Bargaining Unit compensation levels by division, updated to reflect ICBC organizational changes.

**77.1**

ICBC has completed the compensation analysis for the 2007 to 2012 forecast period as a whole, in concert with other information requests by the Commission and Intervenors.

As discussed in the response to information request 2012.1 RR BCUC.76.2, in the 2007 to 2012 forecast period, Management and Confidential compensation is forecast to increase from \$103 million to \$147 million. The increase of \$44 million is primarily due to 231 more FTEs hired throughout this period, as well as compensation rate increases and benefit cost increases.

In the 2007 to 2010 period, Management and Confidential compensation increased mainly due to ICBC's adoption of a labour market position, which allowed its management compensation plan to align its salary ranges with the markets in which ICBC competes for talent. In addition to the changes in ICBC's Management and Confidential compensation system, strong annual financial performance results impacted the level of performance-based incentive payments favourably.

The increase in Management and Confidential compensation for 2011 outlook reflects the cost of FTEs who were seconded to support Transformation Program projects during 2010 and either returned to their core positions in 2011 or were backfilled. Also, in 2011, additional staff

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was hired to address ICBC's need to build new capabilities in the underlying infrastructure in support of more sophisticated and diverse information technology with FTEs who possess technical or specialized skills, and managers who oversee and implement the changes to ICBC's current business model.

In the 2012 forecast period, Management and Confidential compensation reflects a modest increase to account for in-range performance-based wage adjustments and an expectation that performance targets for 2012 performance-based incentive pay will likely be met.

In the 2007 to 2012 forecast period, Bargaining Unit compensation is forecast to increase from \$264 million to \$278 million. The increase of \$14 million is primary due to Bargaining Unit employee salaries and performance-based incentive pay (gainsharing) in keeping with the terms of the ICBC 2006 to 2010 Collective Agreement with COPE 378. As there is a net zero compensation rate increase mandate set by the Public Sector Employers' Council, compensation level changes for 2011 outlook and 2012 forecast include only length-of-service wage adjustments. As well, performance-based incentive pay (gainsharing) is expected to continue for Bargaining Unit employees, despite the absence of a new collective agreement.



## **2012.1 RR BCUC.77.0-1 – Attachment A – Commission Staff Table 2 – Compensation**

**Commission Staff Table 2 - COMPENSATION**

		(\$ MILLIONS)																	
Line #	EMPLOYEE GROUP	Actual	Actual			Actual			Actual			Outlook			Forecast			Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ		
1	BU	264	273	9	3.4%	275	2	0.7%	273	-2	-0.7%	272	-1	-0.4%	278	6	2.2%	14	5.3%
2	M&C	103	112	9	8.7%	124	12	10.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7%
3	Other	-7	-7	0	0.0%	-10	-3	42.9%	-6	4	-40.0%	-7	-1	16.7%	-9	-2	28.6%	-2	28.6%
4	Total	360	378	18	5.0%	389	11	2.9%	402	13	3.3%	409	7	1.7%	416	7	1.7%	56	15.6%
<b>Commission Staff Table 2A</b>																			
<b>MANAGEMENT AND CONFIDENTIAL (M&amp;C) EMPLOYEE GROUP COMPENSATION LEVELS (\$MILLIONS)</b>																			
Line #	DIVISION	Actual	Actual			Actual			Actual			Outlook			Forecast			Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ		
5	Claims	49	52	3	6.1%	57	5	9.6%	59	2	3.5%	59	-	0.0%	60	1	1.7%	11	22.4%
6	Insurance	6	7	1	16.7%	7	-	0.0%	8	1	14.3%	9	1	12.5%	9	-	0.0%	3	50.0%
7	Drivers Licensing	4	4	-	0.0%	5	1	25.0%	6	1	20.0%	8	2	33.3%	8	-	0.0%	4	100.0%
8	Finance	13	15	2	15.4%	16	1	6.7%	17	1	6.3%	18	1	5.9%	18	-	0.0%	5	38.5%
9	Corporate Affairs	6	6	-	0.0%	6	-	0.0%	6	-	0.0%	7	1	16.7%	8	1	14.3%	2	33.3%
10	Information Services	8	9	1	12.5%	10	1	11.1%	12	2	20.0%	15	3	25.0%	17	2	13.3%	9	112.5%
11	Business Transformation	3	4	1	33.3%	5	1	25.0%	6	1	20.0%	6	-	0.0%	6	-	0.0%	3	100.0%
12	Human Resources	5	6	1	20.0%	7	1	16.7%	8	1	14.3%	9	1	12.5%	8	(1)	-11.1%	3	60.0%
13	Strategic Marketing	3	3	-	0.0%	3	-	0.0%	4	1	33.3%	4	-	0.0%	4	-	0.0%	1	33.3%
14	Communications	2	2	-	0.0%	3	1	50.0%	3	-	0.0%	3	-	0.0%	3	-	0.0%	1	50.0%
15	Executive	4	4	-	0.0%	5	1	25.0%	6	1	20.0%	6	-	0.0%	6	-	0.0%	2	50.0%
16	Total Compensation	103	112	9	8.7%	124	12	10.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7%
17	M&C (from Line 2)	103	112	9	8.7%	124	12	10.7%	135	11	8.9%	144	9	6.7%	147	3	2.1%	44	42.7%
<b>Commission Staff Table 2B</b>																			
<b>BARGAINING UNIT (BU) EMPLOYEE GROUP COMPENSATION LEVELS (\$ MILLIONS)</b>																			
Line #	DIVISION	Actual	Actual			Actual			Actual			Outlook			Forecast			Change since 2007	% Change since 2007
		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	2011	\$ Δ	% Δ	2012	\$ Δ	% Δ		
18	Claims	152	156	4	2.6%	155	(1)	-0.6%	153	(2)	-1.3%	150	(3)	-2.0%	154	4	2.7%	2	1.3%
19	Insurance	19	20	1	5.3%	21	1	5.0%	22	1	4.8%	22	-	0.0%	22	-	0.0%	3	15.8%
20	Drivers Licensing	29	31	2	6.9%	31	-	0.0%	32	1	3.2%	32	-	0.0%	32	-	0.0%	3	10.3%
21	Finance	15	16	1	6.7%	16	-	0.0%	17	1	6.3%	17	-	0.0%	18	1	5.9%	3	20.0%
22	Corporate Affairs	4	3	(1)	-25.0%	4	1	33.3%	4	-	0.0%	4	-	0.0%	4	-	0.0%	-	0.0%
23	Information Services	34	36	2	5.9%	37	1	2.8%	35	(2)	-5.4%	37	2	5.7%	37	-	0.0%	3	8.8%
24	Business Transformation	5	5	-	0.0%	5	-	0.0%	4	(1)	-20.0%	4	-	0.0%	4	-	0.0%	(1)	-20.0%
25	Human Resources	3	3	-	0.0%	3	-	0.0%	3	-	0.0%	3	-	0.0%	4	1	33.3%	1	33.3%
26	Strategic Marketing	3	3	-	0.0%	3	-	0.0%	3	-	0.0%	3	-	0.0%	3	-	0.0%	-	0.0%
27	Communications	-	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	0.0%
28	Executive	-	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	0.0%
29	Total Compensation	264	273	9	3.4%	275	2	0.7%	273	(2)	-0.7%	272	(1)	-0.4%	278	6	2.2%	14	5.3%
30	BU (from Line 1)	264	273	9	3.4%	275	2	0.7%	273	(2)	-0.7%	272	(1)	-0.4%	278	6	2.2%	14	5.3%

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**2012.1 RR BCUC.78.0-2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Number of FTEs**

**Paragraph 45 and 46 of the ICBC evidence states:**

**“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.**

**The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”**

**Based on the information provided by ICBC in Figure 7.7 – FTEs by Employee Group, Commission Staff prepared the following Commission Staff Table 3.**

**Commission Staff Table 3 - NUMBER OF FTEs**

Line #	EMPLOYEE GROUP	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
1	BU	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		
2	M&C	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		
3	Other	58	73	15	25.9%	85	12	20.7%	52	-33	-38.8%	74	22	42.3%	59	-15	-20.3%	1	1.7%		
4	Total	5005	5007	2	0.0%	5066	59	1.2%	4981	-85	-1.7%	5082	101	2.0%	5074	-8	-0.2%	69	1.4%		

**MANAGEMENT AND CONFIDENTIAL (M&C) EMPLOYEE GROUP NUMBERS OF EMPLOYEES**

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
5	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
6	Insurance																				
7	Drivers Licensing																				
8	Finance																				
9	Corporate Affairs																				
10	Information Services																				
11	Business Transformation																				
12	Human Resources																				
13	Strategic Marketing																				
14	Communications																				
15	Corporate Costs																				
16	Total FTE's																				
17	M&C (from Line 2)	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		

**BARGAINING UNIT (BU) EMPLOYEE GROUP NUMBERS OF EMPLOYEES**

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
18	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
19	Insurance																				
20	Drivers Licensing																				
21	Finance																				
22	Corporate Affairs																				
23	Information Services																				
24	Business Transformation																				
25	Human Resources																				
26	Strategic Marketing																				
27	Communications																				
28	Corporate Costs																				
29	Total FTE's																				
30	BU (from Line 1)	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		

**78.0 Please correct the table as required for any organizational changes.**

**78.1 Please confirm if the data contained in Commission Staff Table 3 is accurate, otherwise please update.**

**78.2 Please complete the above tables and provide a comprehensive analysis of the FTE changes by Division in support of the explanations given in Exhibit B-1-1 Chapter 7 pp. 7-15 to 7-16, paragraphs 46 to 49.**

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**Response:**

Please see Attachment A – Commission Staff Table 3 – Number of FTEs. This Attachment has been updated for organizational changes and corrected for calculation errors. The information in Attachment A is provided by employee group and by division, in support of the explanations given in Chapter 7, pages 7-15 to 7-16, paragraphs 46 to 49.

Please also see the response to information request 2012.1 RR BCUC.78.4 for a discussion of staffing changes at a divisional level.



## **2012.1 RR BCUC.78.0-2 – Attachment A – Commission Staff Table 3 – Number of FTEs**

Commission Staff Table 3 - NUMBER OF FTEs

Line #	EMPLOYEE GROUP	Actual	Actual		Actual			Actual			Outlook			Forecast			# Change since 2007	% Change since 2007	
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ			% Δ
1	BU	4,092	4,044	(48)	(1.2%)	4,009	(35)	(0.9%)	3,961	(48)	(1.2%)	3,938	(23)	(0.6%)	3,929	(9)	(0.2%)	(163)	(4.0%)
2	M&C	855	890	35	4.1%	972	82	9.2%	968	(4)	(0.4%)	1,070	102	10.5%	1,086	16	1.5%	231	27.0%
3	Other	58	73	15	25.9%	85	12	16.4%	52	(33)	(38.8%)	74	22	42.3%	59	(15)	(20.3%)	1	1.7%
4	Total	5,005	5,007	2	0.0%	5,066	59	1.2%	4,981	(85)	(1.7%)	5,082	101	2.0%	5,074	(8)	(0.2%)	69	1.4%
<b>MANAGEMENT AND CONFIDENTIAL (M&amp;C) EMPLOYEE GROUP NUMBERS OF EMPLOYEES</b>																			
Line #	DIVISION	Actual	Actual		Actual			Actual			Outlook			Forecast			# Change since 2007	% Change since 2007	
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ			% Δ
5	Claims	425	431	6	1.4%	461	30	7.0%	445	(16)	(3.5%)	473	28	6.3%	482	9	1.9%	57	13.4%
6	Insurance	48	48	-	0.0%	52	4	8.3%	51	(1)	(1.9%)	59	8	15.7%	62	3	5.1%	14	29.2%
7	Drivers Licensing	34	36	2	5.9%	39	3	8.3%	51	12	30.8%	62	11	21.6%	65	3	4.8%	31	91.2%
8	Finance	102	114	12	11.8%	122	8	7.0%	121	(1)	(0.8%)	132	11	9.1%	129	(3)	(2.3%)	27	26.5%
9	Corporate Affairs	45	46	1	2.2%	46	-	0.0%	46	-	0.0%	51	5	10.9%	59	8	15.7%	14	31.1%
10	Information Services	64	67	3	4.7%	75	8	11.9%	79	4	5.3%	106	27	34.2%	112	6	5.7%	48	75.0%
11	Business Transformation	25	31	6	24.0%	39	8	25.8%	34	(5)	(12.8%)	38	4	11.8%	34	(4)	(10.5%)	9	36.0%
12	Human Resources	49	55	6	12.2%	64	9	16.4%	63	(1)	(1.6%)	73	10	15.9%	59	(14)	(19.2%)	10	20.4%
13	Strategic Marketing	21	23	2	9.5%	29	6	26.1%	33	4	13.8%	32	(1)	(3.0%)	42	10	31.3%	21	100.0%
14	Communications	23	22	(1)	(4.3%)	23	1	4.5%	21	(2)	(8.7%)	19	(2)	(9.5%)	17	(2)	(10.5%)	(6)	(26.1%)
15	Corporate Costs/Executive	19	17	(2)	(10.5%)	22	5	29.4%	24	2	9.1%	25	1	4.2%	25	-	0.0%	6	31.6%
16	Total FTE's	855	890	35	4.1%	972	82	9.2%	968	(4)	(0.4%)	1,070	102	10.5%	1,086	16	1.5%	231	27.0%
17	M&C (from Line 2)	855	890	35	4.1%	972	82	9.2%	968	(4)	(0.4%)	1,070	102	10.5%	1,086	16	1.5%	231	27.0%
<b>BARGAINING UNIT (BU) EMPLOYEE GROUP NUMBERS OF EMPLOYEES</b>																			
Line #	DIVISION	Actual	Actual		Actual			Actual			Outlook			Forecast			# Change since 2007	% Change since 2007	
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ			% Δ
18	Claims	2,344	2,290	(54)	(2.3%)	2,247	(43)	(1.9%)	2,221	(26)	(1.2%)	2,190	(31)	(1.4%)	2,173	(17)	(0.8%)	(171)	(7.3%)
19	Insurance	322	332	10	3.1%	335	3	0.9%	350	15	4.5%	353	3	0.9%	340	(13)	(3.7%)	18	5.6%
20	Drivers Licensing	494	512	18	3.6%	509	(3)	(0.6%)	522	13	2.6%	535	13	2.5%	525	(10)	(1.9%)	31	6.3%
21	Finance	262	260	(2)	(0.8%)	267	7	2.7%	269	2	0.7%	276	7	2.6%	272	(4)	(1.4%)	10	3.8%
22	Corporate Affairs	67	50	(17)	(25.4%)	52	2	4.0%	55	3	5.8%	46	(9)	(16.4%)	49	3	6.5%	(18)	(26.9%)
23	Information Services	433	430	(3)	(0.7%)	438	8	1.9%	403	(35)	(8.0%)	392	(11)	(2.7%)	425	33	8.4%	(8)	(1.8%)
24	Business Transformation	73	73	-	0.0%	68	(5)	(6.8%)	48	(20)	(29.4%)	47	(1)	(2.1%)	48	1	2.1%	(25)	(34.2%)
25	Human Resources	52	50	(2)	(3.8%)	47	(3)	(6.0%)	49	2	4.3%	51	2	4.1%	53	2	3.9%	1	1.9%
26	Strategic Marketing	44	46	2	4.5%	45	(1)	(2.2%)	44	(1)	(2.2%)	48	4	9.1%	44	(4)	(8.3%)	-	0.0%
27	Communications	-	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	-	0.0%	-	0.0%
28	Corporate Costs/Executive	1	1	-	0.0%	1	-	0.0%	-	(1)	(100.0%)	-	-	0.0%	-	-	0.0%	(1)	(100.0%)
29	Total FTE's	4,092	4,044	(48)	(1.2%)	4,009	(35)	(0.9%)	3,961	(48)	(1.2%)	3,938	(23)	(0.6%)	3,929	(9)	(0.2%)	(163)	(4.0%)
30	BU (from Line 1)	4,092	4,044	(48)	(1.2%)	4,009	(35)	(0.9%)	3,961	(48)	(1.2%)	3,938	(23)	(0.6%)	3,929	(9)	(0.2%)	(163)	(4.0%)

Note: Rounding may affect totals.

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**2012.1 RR BCUC.78.3 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Number of FTEs**

Paragraph 45 and 46 of the ICBC evidence states:

“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.

The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”

Based on the information provided by ICBC in Figure 7.7 – FTEs by Employee Group, Commission Staff prepared the following Commission Staff Table 3.

Commission Staff Table 3 - NUMBER OF FTEs

Line #	EMPLOYEE GROUP	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
1	BU	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		
2	M&C	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		
3	Other	58	73	15	25.9%	85	12	20.7%	52	-33	-38.8%	74	22	42.3%	59	-15	-20.3%	1	1.7%		
4	Total	5005	5007	2	0.0%	5066	59	1.2%	4981	-85	-1.7%	5082	101	2.0%	5074	-8	-0.2%	69	1.4%		

MANAGEMENT AND CONFIDENTIAL (M&C) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
5	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
6	Insurance																				
7	Drivers Licensing																				
8	Finance																				
9	Corporate Affairs																				
10	Information Services																				
11	Business Transformation																				
12	Human Resources																				
13	Strategic Marketing																				
14	Communications																				
15	Corporate Costs																				
16	Total FTE's																				
17	M&C (from Line 2)	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		

BARGAINING UNIT (BU) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
18	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
19	Insurance																				
20	Drivers Licensing																				
21	Finance																				
22	Corporate Affairs																				
23	Information Services																				
24	Business Transformation																				
25	Human Resources																				
26	Strategic Marketing																				
27	Communications																				
28	Corporate Costs																				
29	Total FTE's																				
30	BU (from Line 1)	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		

Please confirm that the number of FTE's relating to the M&C group has increased by 27% between 2007 and forecast 2012 while the number for BU FTE's has dropped by 4%.

Response:

ICBC confirms that the number of full-time equivalents (FTEs) relating to the Management and Confidential group has increased by 27% between 2007 and forecast 2012, while the number of Bargaining Unit FTEs has dropped by 4%.

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**2012.1 RR BCUC.78.4 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Number of FTEs**

**Paragraph 45 and 46 of the ICBC evidence states:**

**“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.**

**The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”**

**Based on the information provided by ICBC in Figure 7.7 – FTEs by Employee Group, Commission Staff prepared the following Commission Staff Table 3.**

Commission Staff Table 3 - NUMBER OF FTEs

Line #	EMPLOYEE GROUP	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
1	BU	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		
2	M&C	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		
3	Other	58	73	15	25.9%	85	12	20.7%	52	-33	-38.8%	74	22	42.3%	59	-15	-20.3%	1	1.7%		
4	Total	5005	5007	2	0.0%	5066	59	1.2%	4981	-85	-1.7%	5082	101	2.0%	5074	-8	-0.2%	69	1.4%		

MANAGEMENT AND CONFIDENTIAL (M&C) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
5	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
6	Insurance																				
7	Drivers Licensing																				
8	Finance																				
9	Corporate Affairs																				
10	Information Services																				
11	Business Transformation																				
12	Human Resources																				
13	Strategic Marketing																				
14	Communications																				
15	Corporate Costs																				
16	Total FTE's																				
17	M&C (from Line 2)	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		

BARGAINING UNIT (BU) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
18	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
19	Insurance																				
20	Drivers Licensing																				
21	Finance																				
22	Corporate Affairs																				
23	Information Services																				
24	Business Transformation																				
25	Human Resources																				
26	Strategic Marketing																				
27	Communications																				
28	Corporate Costs																				
29	Total FTE's																				
30	BU (from Line 1)	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		

78.4 Please confirm that there has been an increase of 231 FTE's since 2007 in the M&C group.

78.4.1 Please elaborate on ICBC's rationale for requiring the M&C group to increase by 231 FTE's while the number of BU FTE's has decreased by 163. Please provide the response at a divisional level based on the statistics provided in Commission Staff Table 3.

**Response:**

**78.4**

ICBC confirms that there has been an increase of 231 FTEs for the 2007 to 2012 forecast period in the Management and Confidential employee group. Please see the response to the information request 2012.1 RR BCUC.78.0-2.

**78.4.1**

The following table summarizes the net change in FTEs by division, for both Bargaining Unit and Management and Confidential employees:

<b>Staff Changes by Division</b>	Actual	Actual	Actual	Actual	Outlook	Forecast			
<b>DIVISION</b>	2007	2008	2009	2010	2011	2012	# Change since 2007	BU	M&C
Claims	2,769	2,721	2,708	2,666	2,663	2,655	(114)	(171)	57
Insurance	370	380	387	401	412	402	32	18	14
Drivers Licensing	528	548	548	573	597	590	62	31	31
Finance	364	374	389	390	408	401	37	10	27
Corporate Affairs	112	96	98	101	97	108	(4)	(18)	14
Information Services	497	497	513	482	498	537	40	(8)	48
Business Transformation	98	104	107	82	85	82	(16)	(25)	9
Human Resources	101	105	111	112	124	112	11	1	10
Strategic Marketing	65	69	74	77	80	86	21	-	21
Communications	23	22	23	21	19	17	(6)	-	(6)
Corporate Costs/Executive	20	18	23	24	25	25	5	(1)	6
<b>Total FTE's</b>	<b>4,947</b>	<b>4,934</b>	<b>4,981</b>	<b>4,929</b>	<b>5,008</b>	<b>5,015</b>	<b>68</b>	<b>(163)</b>	<b>231</b>

Note: Rounding may affect totals.

Discussion of FTE changes by division, for both Bargaining Unit (BU) and Management and Confidential (M&C) employees, for the 2007 to 2012 forecast period:

Division	Primary Rationale for FTE Changes by Division
Claims	<p><b>BU:</b> FTEs decreased mainly due to the elimination of the examining adjuster position and reduction of administrative support staff. In addition, some BU vacancies (e.g., retirements or staff turnover) were intentionally left unfilled in order to support corporate cost control measures (vacancies management) and to transition to the new functional organization structure.</p> <p><b>M&amp;C:</b> FTEs increased mainly from 2007 to 2009, when the management span of control was decreased to ensure sufficient manager staffing for increased management oversight in order to improve claims handling quality and to effectively manage risk. FTE increases in 2011 were mainly for positions not filled in 2010 as well as additional resources required to oversee and implement changes to the division's new business model.</p>
Insurance	<p><b>BU:</b> Additional staff to improve service levels and to address call volume increases in the Insurance contact centres to support the needs of customers and brokers.</p> <p><b>M&amp;C:</b> FTEs increased to support additional BU staff, to increase capacity in Underwriting as ICBC moves to driver risk-based pricing, and to establish Personal and Commercial Insurance areas.</p>
Driver Licensing	<p><b>BU:</b> Additional Call Centre Representatives and Driver Examiners to improve service levels and to reduce road testing wait times.</p> <p><b>M&amp;C:</b> Management staff added to enhance management oversight of additional BU staff, to improve span of control, and to address performance management and change management needs.</p>
Finance	<p><b>BU:</b> FTEs increased to support significant volume increases as well as progressively complex procurement processes in Supply Management.</p> <p><b>M&amp;C:</b> Additional staffing added to increase financial governance in Investment Department, to enhance the Risk Management and Audit functions, and to support and manage additional BU staff.</p>
Corporate Affairs	<p><b>BU:</b> Reduction in FTEs primary in the Road Safety Department as part of the Road Safety Strategic Review to streamline operations.</p> <p><b>M&amp;C:</b> In response to increased corporate demand for services and to meet compliance requirements, additional M&amp;C staff hired in Corporate Law to perform work in-house and in the areas of Privacy and Regulatory Affairs to address changing business needs.</p>

Information Services	<p><b>BU:</b> FTE volumes fluctuate based on business needs, technological support requirements, and project support demands.</p> <p><b>M&amp;C:</b> Additional staff required to prepare for attrition, to migrate to new and more sophisticated and diverse information technology while at the same time, to continue to support current legacy systems.</p>
Business Transformation	<p><b>BU:</b> FTE volumes fluctuate based on business needs and project support demands.</p> <p><b>M&amp;C:</b> Increased staffing due to increased volume of project management needs.</p>
Human Resources	<p><b>BU:</b> Relatively stable staffing.</p> <p><b>M&amp;C:</b> M&amp;C staff added in 2007 to 2010 period to develop a change management group, to deliver employee wellness and care management, as well as to support recruitment, succession planning, and training. FTEs increased in 2011 primarily due to change management and implementation of learning management system and employee portal projects. In the 2012 forecast period, FTEs are expected to decrease in certain administrative roles as well as a number of positions made redundant in organizational development.</p>
Customer Marketing & Strategy (formerly Strategic Marketing)	<p><b>BU:</b> Relatively stable staffing.</p> <p><b>M&amp;C:</b> Added roles not traditionally found in BU. Additional M&amp;C staff required to support customer strategy, including customer/stakeholder consultation and analysis, customer experience management, channel strategies, and various communication campaigns that address making automobile insurance more understandable to customers as well as promoting driver accountability.</p>
Communications	<p><b>BU:</b> Relatively stable staffing.</p> <p><b>M&amp;C:</b> FTE decreases in 2011 and 2012 were mainly due to changes to the division's business model.</p>
Corporate Costs / Executive	<p><b>BU:</b> Relatively stable staffing.</p> <p><b>M&amp;C:</b> Increase in Executive leadership to help the business focus on the 2014 corporate strategy and administrative staff to support executives.</p>

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**2012.1 RR BCUC.78.5 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Number of FTEs**

**Paragraph 45 and 46 of the ICBC evidence states:**

**“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.**

**The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”**

**Based on the information provided by ICBC in Figure 7.7 – FTEs by Employee Group, Commission Staff prepared the following Commission Staff Table 3.**

Commission Staff Table 3 - NUMBER OF FTEs

Line #	EMPLOYEE GROUP	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
1	BU	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		
2	M&C	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		
3	Other	58	73	15	25.9%	85	12	20.7%	52	-33	-38.8%	74	22	42.3%	59	-15	-20.3%	1	1.7%		
4	Total	5005	5007	2	0.0%	5066	59	1.2%	4981	-85	-1.7%	5082	101	2.0%	5074	-8	-0.2%	69	1.4%		

MANAGEMENT AND CONFIDENTIAL (M&C) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
5	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
6	Insurance																				
7	Drivers Licensing																				
8	Finance																				
9	Corporate Affairs																				
10	Information Services																				
11	Business Transformation																				
12	Human Resources																				
13	Strategic Marketing																				
14	Communications																				
15	Corporate Costs																				
16	Total FTE's																				
17	M&C (from Line 2)	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		

BARGAINING UNIT (BU) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
18	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
19	Insurance																				
20	Drivers Licensing																				
21	Finance																				
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23	Information Services																				
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27	Communications																				
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30	BU (from Line 1)	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		

In Commission Staff Table 3 the 2010 M&C group decreased by 4 FTE to 968. In a similar Table provided in 2010 ICBC Streamlined RRA Exhibit B-6 response to IR 2010.1 RR BCUC.31.3.1, ICBC indicated that the M & C FTE for 2010 Forecast would be 1043. Please explain the net decrease of 75 FTE from 2010 Forecast to 2010 Actual and indicate the reason for the decrease in one year and the subsequent increase of 102 FTE in 2011 Outlook over 2010 Actual and additional 16 FTE additions in 2012 Forecast.

**Response:**

The 2010 forecast for Management and Confidential FTEs was presented to the Commission as part of the 2010 ICBC Streamlined Revenue Requirements Application. At that time, the

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expectation was that Management and Confidential FTEs would total to 1,043 by year's end. In actuality, 2010 Management and Confidential FTEs amounted to 968, consistent with 2009 actual of 972.

As discussed in the Application, Chapter 7, page 7-15, the total number of ICBC FTEs remained relatively flat for the 2007 to 2010 period. Due to the commencement of the Transformation Program (TP) in 2010, some Management and Confidential employees were seconded to support TP projects. These FTEs and their related compensation costs were charged to TP, which were covered by Optional insurance and therefore excluded from Basic insurance rates. As well, some Management and Confidential planned positions experienced hiring delays and were not filled during the year.

In 2011, a number of Management and Confidential FTEs who were in support of TP projects either returned to their core positions or were backfilled. Also, FTEs hired part-way through 2010 are now included in 2011 outlook for a full-year period. ICBC also anticipates an increase in Management and Confidential staff associated with its need to build new capabilities in the underlying infrastructure, to migrate to more sophisticated and diverse information technology, to effect transfer of knowledge in order to prepare for attrition, while at the same time, to continue to support current legacy systems. Overall, ICBC expects its new Management and Confidential employees to possess technical or specialized skills, and management talent who may oversee and implement the changes to ICBC's current business model.

ICBC expects to increase Management and Confidential FTEs to 1,070 for the 2011 outlook, and to 1,086 for the 2012 forecast.

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**2012.1 RR BCUC.78.5.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Number of FTEs**

Paragraph 45 and 46 of the ICBC evidence states:

“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.

The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”

Based on the information provided by ICBC in Figure 7.7 – FTEs by Employee Group, Commission Staff prepared the following Commission Staff Table 3.

Commission Staff Table 3 - NUMBER OF FTEs

Line #	EMPLOYEE GROUP	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
1	BU	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		
2	M&C	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		
3	Other	58	73	15	25.9%	85	12	20.7%	52	-33	-38.8%	74	22	42.3%	59	-15	-20.3%	1	1.7%		
4	Total	5005	5007	2	0.0%	5066	59	1.2%	4981	-85	-1.7%	5082	101	2.0%	5074	-8	-0.2%	69	1.4%		

MANAGEMENT AND CONFIDENTIAL (M&C) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
5	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
6	Insurance																				
7	Drivers Licensing																				
8	Finance																				
9	Corporate Affairs																				
10	Information Services																				
11	Business Transformation																				
12	Human Resources																				
13	Strategic Marketing																				
14	Communications																				
15	Corporate Costs																				
16	Total FTE's																				
17	M&C (from Line 2)	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		

BARGAINING UNIT (BU) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
18	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
19	Insurance																				
20	Drivers Licensing																				
21	Finance																				
22	Corporate Affairs																				
23	Information Services																				
24	Business Transformation																				
25	Human Resources																				
26	Strategic Marketing																				
27	Communications																				
28	Corporate Costs																				
29	Total FTE's																				
30	BU (from Line 1)	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		

**Please provide detailed explanations on why ICBC is forecasting an increase of 118 FTE over two years in the M&C group and what their role within the organization is expected to be.**

**Response:**

ICBC requires additional Management and Confidential talent to continually support its business needs and strategic objectives. The increase of 118 FTEs over the two-year 2011 outlook to 2012 forecast period is expected to provide leadership, oversight, and technical support to enhance technology, governance, risk management, and claims initiatives.

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Please see the response to information request 2012.1 RR BCUC.78.4 for further details of Management and Confidential FTE changes by division and their expected roles within the organization.

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**2012.1 RR BCUC.78.5.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Number of FTEs**

**Paragraph 45 and 46 of the ICBC evidence states:**

**“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.**

**The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”**

**Based on the information provided by ICBC in Figure 7.7 – FTEs by Employee Group, Commission Staff prepared the following Commission Staff Table 3.**

Commission Staff Table 3 - NUMBER OF FTEs

Line #	EMPLOYEE GROUP	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
1	BU	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		
2	M&C	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		
3	Other	58	73	15	25.9%	85	12	20.7%	52	-33	-38.8%	74	22	42.3%	59	-15	-20.3%	1	1.7%		
4	Total	5005	5007	2	0.0%	5066	59	1.2%	4981	-85	-1.7%	5082	101	2.0%	5074	-8	-0.2%	69	1.4%		

MANAGEMENT AND CONFIDENTIAL (M&C) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
5	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
6	Insurance																				
7	Drivers Licensing																				
8	Finance																				
9	Corporate Affairs																				
10	Information Services																				
11	Business Transformation																				
12	Human Resources																				
13	Strategic Marketing																				
14	Communications																				
15	Corporate Costs																				
16	Total FTE's																				
17	M&C (from Line 2)	855	890	35	4.1%	972	82	9.6%	968	-4	-0.4%	1070	102	10.5%	1086	16	1.5%	231	27.0%		

BARGAINING UNIT (BU) EMPLOYEE GROUP NUMBERS OF EMPLOYEES

Line #	DIVISION	Actual				Actual				Actual				Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ				
18	Claims	# FTE	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	# FTE	%	# FTE	%		
19	Insurance																				
20	Drivers Licensing																				
21	Finance																				
22	Corporate Affairs																				
23	Information Services																				
24	Business Transformation																				
25	Human Resources																				
26	Strategic Marketing																				
27	Communications																				
28	Corporate Costs																				
29	Total FTE's																				
30	BU (from Line 1)	4092	4044	-48	-1.2%	4009	-35	-0.9%	3961	-48	-1.2%	3938	-23	-0.6%	3929	-9	-0.2%	-163	-4.0%		

**What is the expected total compensation expense for the 118 FTE additions to the M&C group and what is the average salary?**

**Response:**

As discussed in the response to information request 2012.1 RR BCUC.78.5, ICBC expects to increase Management and Confidential FTEs from 968 in 2010 to 1,070 in 2011 outlook, and then to 1,086 in 2012 forecast.

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Based on average compensation per Management and Confidential FTE for the 2011 outlook and 2012 forecast period, this total increase of 118 FTE additions is expected to impact compensation expense by approximately \$16 million.

For average compensation per Management and Confidential FTE, please refer to the response to information request 2012.1 RR BCUC.81.1-2, Attachment A – Commission Table – Compensation Level Changes.

**2012.1 RR BCUC.78.6-7 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Number of FTEs**

Paragraph 45 and 46 of the ICBC evidence states:

“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.

The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”

78.6 Please complete the following table, FTE's & Vacancies, indicating staffing vacancies or use another format to appropriately represent open and unfilled positions in each of the years from 2007 actual to 2012 forecast. Please confirm if the data contained in this table is accurate, otherwise please update.

Table - FTE's & VACANCIES

Line #	DIVISION	Number of FTE's						Number of Vacancies					
		2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Outlook	2012 Forecast	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Outlook	2012 Forecast
1	Claims	#	#	#	#	#	#	#	#	#	#	#	#
2	Insurance												
3	Drivers Licencing												
4	Finance												
5	Corporate Affairs												
6	Information Services												
7	Business Transformation												
8	Human Resources												
9	Strategic Marketing												
10	Communications												
11	Corporate Costs												
12	Total FTE's	5,005	5,007	5,066	4,981	5,082	5,074	-	-	-	-	-	-

78.7 Please indicate what percentage of total vacancies is assumed to be unfilled in the PY 2012 Application.

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**Response:**

**78.6**

Please see Attachment A – Commission Table – FTEs and Unfilled FTEs (ICBC FTEs excluding contractors).

**78.7**

For the 2012 forecast period, ICBC has incorporated a vacancies management mandate in its calculation of forecast FTEs. Unfilled positions are expected to be zero to minimal.



## **2012.1 RR BCUC.78.6-7 – Attachment A – Commission Table – FTEs and Unfilled FTEs (ICBC FTEs excluding contractors)**

**Table - FTE's & Unfilled FTE's (ICBC FTEs excluding contractors)**

Line #	DIVISION	Number of ICBC FTE's						Number of Unfilled ICBC FTE's					
		2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Outlook	2012 Forecast	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Outlook	2012 Forecast
1	Claims	2,769	2,721	2,708	2,666	2,663	2,655	-	45	37	63	29	-
2	Insurance	370	380	387	401	412	402	25	4	5	-	-	-
3	Drivers Licencing	528	548	548	573	597	590	-	-	-	-	-	-
4	Finance	364	374	389	390	408	401	8	7	-	4	1	-
5	Corporate Affairs	112	96	98	101	97	108	-	9	3	-	11	-
6	Information Services	497	497	513	482	498	537	22	13	1	44	22	-
7	Business Transformation	98	104	107	82	85	82	6	5	5	39	12	-
8	Human Resources	101	105	111	112	124	112	-	-	-	12	11	-
9	Strategic Marketing	65	69	74	77	80	86	-	8	3	2	6	-
10	Communications	23	22	23	21	19	17	-	2	1	1	5	-
11	Corporate Costs/Executive	20	18	23	24	25	25	-	11	-	-	4	-
12	Total ICBC FTE's (excluding contractors)	4,947	4,934	4,981	4,929	5,008	5,015	61	104	55	165	101	-

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**2012.1 RR BCUC.78.8 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Number of FTEs**

**Paragraph 45 and 46 of the ICBC evidence states:**

**“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.**

**The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”**

**In an ICBC news release dated May 4, 2011 titled “Building the “new” ICBC, Modernizing to better serve our customers”, ICBC states:**

**“New technologies and systems are being introduced that will provide more efficient service to our customers. As a result, ICBC’s workforce will be reduced by approximately 350 positions over the next three years through normal departures.**

**The entire cost of our transformation is being funded by money already set aside from the Optional insurance side of our business and will not impact insurance rates.”**

**Please confirm that the claim of reducing ICBC’s workforce by approximately 350 positions over the next three years through normal departures is continuing as planned, otherwise please explain.**

**Response:**

The Transformation Program is proceeding as planned, including planned workforce reductions. ICBC intends that these reductions be achieved through natural attrition, beginning in 2014 and continuing through 2016.

**2012.1 RR BCUC.78.8.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Number of FTEs**

Paragraph 45 and 46 of the ICBC evidence states:

“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.

The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”

Please provide an estimate to the following table for the 350 positions.

**Table - TP FTE REDUCTIONS**

Line #	EMPLOYEE GROUP	2011	2012	2013	2014	2015	2016	Total TP FTE Reduction
1	BU	FTE #						
2	M&C							
3	Executive							
4	<b>Total</b>							<b>350</b>

**Response:**

Since the planned workforce reductions will be achieved through natural attrition, precise details are not yet known and it is too early to provide a detailed breakdown of staffing implications. As such, ICBC cannot complete the table at this time. However, as indicated in the response to 2012.1 RR BCUC.78.8, the reductions are anticipated to occur starting in 2014.

The estimate of 350 positions was made at a specific point in time, and may be subject to change. The estimate assumed that approximately one-fifth of the reductions would be non-union positions; this assumption is also subject to change.

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**2012.1 RR BCUC.78.8.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-15  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Number of FTEs**

**Paragraph 45 and 46 of the ICBC evidence states:**

**“Over the period from 2007 to 2010, the total number of ICBC FTEs remained relatively flat. Total FTEs, which include contractors, increased from 2007 to 2009 after which in 2010 there was a marked dip.**

**The growth in the number of FTEs from 2007 to 2009 is discussed in the 2010 Streamlined Revenue Requirements Application. From 2007 to 2009 there was more management oversight in the Claims Division in order to improve claims handling quality and to effectively manage risk. At the same time, there was a reduction in BU staff in the Claims Division due to the elimination of the examining adjuster position and vacancies left unfilled as a result of lower claims volumes.”**

**Please explain if ICBC has any strategic plans to retain or accommodate any M&C and BU FTEs that are currently diverted to TP projects when that project covered by Optional insurance concludes in the future. Are these M&C and BU FTEs returning to their original positions after the completion of TP projects? How would this transition affect Basic Insurance rates? Please discuss.**

**Response:**

The Transformation Program (TP) is staffed by a mixture of permanent internal resources and temporary external resources. Where core operational positions have been left vacant by internal staff moving into TP roles, operational units have hired temporary resources to backfill those positions.

At the conclusion of TP, internal TP resources will return to core positions, and the temporary backfilled resources will be released.

This approach has the added benefit of providing growth opportunities for existing employees without permanently increasing staffing levels.

**2012.1 RR BCUC.79.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-16**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Span of Control**

Table - SPAN OF CONTROL

Line #	DIVISION	Number of FTE (excluding Contractors)																	
		2007 Actual			2008 Actual			2009 Actual			2010 Actual			2011 Outlook			2012 Forecast		
		Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees
1	Claims	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
2	Insurance																		
3	Drivers Licencing																		
4	Finance																		
5	Corporate Affairs																		
6	Information Services																		
7	Business Transformation																		
8	Human Resources																		
9	Strategic Marketing																		
10	Communications																		
11	Corporate Costs																		
12	Total ICBC FTEs (Per Figure 7.7)	-	-	4,947			4,934	-	-	4,981	-	-	4,929	-	-	5,008	-	-	5,015

Note: Total Employees is the sum of Managers/Supervisors plus the product of Average Number of Direct Reports times the number of Managers / Supervisors.

**Please complete the above table. If this table is not indicative of span of control, please modify the table to indicate the span of control within each division of ICBC.**

**Response:**

ICBC's supervisors are Bargaining Unit staff with no span of control authority. As such, Commission Table – Span of Control has been amended to reflect the number of managers with staff to total employees. This calculation reflects commonly accepted span of control reporting practice: measuring the total number of employees supported by each manager. Please see Attachment A – Commission Table – Span of Control.



## **2012.1 RR BCUC.79.1 – Attachment A – Commission Table – Span of Control**

Table - SPAN OF CONTROL

		Number of FTE (excluding Contractors)																	
		2007 Actual			2008 Actual			2009 Actual			2010 Actual			2011 Outlook			2012 Forecast		
Line #	DIVISION	Managers	Direct Reports	Total Employees	Managers	Direct Reports	Total Employees	Managers	Direct Reports	Total Employees	Managers	Direct Reports	Total Employees	Managers	Direct Reports	Total Employees	Managers	Direct Reports	Total Employees
1	Claims	287	2,482	2,769	289	2,432	2,721	314	2,394	2,708	311	2,355	2,666	334	2,329	2,663	331	2,324	2,655
2	Insurance	36	334	370	36	344	380	39	348	387	40	361	401	45	367	412	42	360	402
3	Drivers Licencing	29	499	528	29	519	548	31	517	548	38	535	573	44	553	597	45	545	590
4	Finance	46	318	364	54	320	374	57	332	389	52	338	390	62	346	408	59	342	401
5	Corporate Affairs	19	93	112	16	80	96	15	83	98	14	87	101	12	85	97	14	94	108
6	Information Services	51	446	497	53	444	497	53	460	513	57	425	482	60	438	498	65	472	537
7	Business Transformation	8	90	98	12	92	104	17	90	107	14	68	82	13	72	85	13	69	82
8	Human Resources	17	84	101	14	91	105	15	96	111	20	92	112	21	103	124	20	92	112
9	Strategic Marketing	11	54	65	12	57	69	14	60	74	15	62	77	15	65	80	16	70	86
10	Communications	5	18	23	5	17	22	7	16	23	4	17	21	4	15	19	3	14	17
11	Corporate Costs/Executive	8	12	20	7	11	18	9	14	23	12	12	24	12	13	25	12	13	25
12	Total ICBC FTEs (Per Figure 7.7)	517	4,430	4,947	527	4,407	4,934	571	4,410	4,981	577	4,352	4,929	622	4,386	5,008	620	4,395	5,015
		Note: Total Employees is the sum of Managers with Staff plus Direct Reports.																	

		Managers with Staff to Total Employees																	
		2007 Actual			2008 Actual			2009 Actual			2010 Actual			2011 Outlook			2012 Forecast		
Line #	DIVISION	Managers		Total Employees	Managers		Total Employees	Managers		Total Employees	Managers		Total Employees	Managers		Total Employees	Managers		Total Employees
1	Claims	1		10	1		9	1		9	1		9	1		8	1		8
2	Insurance	1		10	1		10	1		10	1		10	1		9	1		9
3	Drivers Licencing	1		18	1		19	1		18	1		15	1		13	1		13
4	Finance	1		8	1		7	1		7	1		7	1		7	1		7
5	Corporate Affairs	1		6	1		6	1		6	1		7	1		8	1		8
6	Information Services	1		10	1		9	1		10	1		8	1		8	1		8
7	Business Transformation	1		13	1		9	1		6	1		6	1		6	1		6
8	Human Resources	1		6	1		7	1		7	1		6	1		6	1		6
9	Strategic Marketing	1		6	1		6	1		5	1		5	1		5	1		5
10	Communications	1		5	1		5	1		4	1		5	1		5	1		5
11	Corporate Costs/Executive	1		2	1		3	1		3	1		2	1		2	1		2
12	Managers with Staff to Total Employees	1		10	1		9	1		9	1		9	1		8	1		8
		Note: Rounding may affect totals.																	

**2012.1 RR BCUC.79.2 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-16**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Span of Control**

Table - SPAN OF CONTROL

No. of Line	DIVISION	Number of FTE (excluding Contractors)																	
		2007 Actual			2008 Actual			2009 Actual			2010 Actual			2011 Outlook			2012 Forecast		
		Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees
1	Claims	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
2	Insurance																		
3	Drivers Licencing																		
4	Finance																		
5	Corporate Affairs																		
6	Information Services																		
7	Business Transformation																		
8	Human Resources																		
9	Strategic Marketing																		
10	Communications																		
11	Corporate Costs																		
12	Total ICBC FTEs (Per Figure 7.7)	-	-	4,947			4,934	-	-	4,981	-	-	4,929	-	-	5,008	-	-	5,015

Note: Total Employees is the sum of Managers/Supervisors plus the product of Average Number of Direct Reports times the number of Managers / Supervisors.

**Please explain how the changes in span of control align with Corporate Strategic objectives.**

**Response:**

Changes in span of control to date are ancillary to the corporate strategic objectives. Changes in span of control are a result of current business requirements which vary across the organization. The changes have addressed immediate business needs, including:

- (1) Risk mitigation. For example, please refer to the response to information request 2012.1 RR BCUC.68.2 regarding span of control in the Claims Division.
- (2) Customer service and operational oversight. For example, see the changes to the Driver Licensing span of control as discussed in Chapter 7 of the Application, page 7-16.
- (3) Increased complexity of operations. As indicated in the response to information request 2012.1 RR BCUC.79.1, spans of control have been changing over the years due to the increased need for employees who possess technical or specialized skills, and managers who oversee and implement the changes to ICBC's current business model.

ICBC's spans of control for its divisions largely fall into the guidelines referenced in the organization design policy. ICBC's general principle is to maximize span of control. ICBC's new organization design policy (Attachment A – Organization Design Policy) now includes guidelines regarding span of control. These guidelines are intended to increase accountability

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and decision-making speed, while achieving an improved employee experience, and continued financial success.



## **2012.1 RR BCUC.79.2 – Attachment A – Organization Design Policy**



# Organization Design Policy

This policy sets out guidelines and principles which apply when an organization unit of the company intends to alter its organizational design.

This policy is intended to guide leaders in implementing organization design that instills more clear accountability, increased decision-making speed while achieving an improved employee experience, and continued financial success.

This policy is intended to provide guidance to managers as our company changes to meet emerging business needs. It is not intended to require an immediate reorganization of business units or reporting lines.

## Guidelines

### 1. Organization Structure

ICBC offers two primary product lines: (i) vehicle insurance and (ii) driver licensing. Our company has a single profit and loss line which rolls up to the President and Chief Executive Officer. ICBC functions almost exclusively in one geography. The company does not operate any major subsidiaries. Because the nature of our business is relatively straightforward, so should be the structure of the company.

Generally, ICBC will be organized on a functional basis unless the company's strategy suggests another style of organization. Any alternative structure chosen should be consistent with the guidelines as found in appendix "A".

### 2. Line and Staff Functions

**Line functions** are those that are directly responsible for customer experience, i.e. Driver Licensing, Claims, and Insurance.

**Staff functions** are those that support **line functions** to achieve the company's objectives. Examples of staff functions include Information Services, Human Resources, etc.

Responsibility for decision-making within either a line or staff function must be clear. Policies and practices should indicate how decisions are made and by what leader, and provide guidance as to the type and level of consultation required.

To achieve efficiency and build consistency, when the company has decided to create a corporate staff function, to the extent possible, no duplicate staff function capability should be created within in a line function.

To enable service to all functions, staff functions should adopt a shared services model approach, with centralized resourcing and management of corporate functions with services offered, and if necessary, resources deployment within other functions based on need and priority with company strategy. This will vary with business circumstance, and scale of requirements.

# Organization Units

The organization structure will make it clear which manager is accountable for the work unit, and successively, which managers are in turn responsible for any sub-units of that organization.

At ICBC, organization units are described as follows:

- Division** - A major function reporting to the CEO, the head of which serves on the Executive Committee
- Department** - A major operating or corporate-wide service area, usually headed by a Vice-President or Director
- Unit/sub-Unit** - A divisional service area or corporate sub-function reporting to a Director or a Manager

## 3. Management Levels

To remove unnecessary hierarchy, increase collaboration, enable better customer service, as well as to increase the speed of decision-making and allow business risk to be appropriately handled, the number of levels in the company will be limited.

Generally, there should be no more than six levels (including the CEO) in line functions in major operating divisions (e.g. Claims and Insurance), and no more than five levels in staff functions (e.g. Human Resources).

One additional level of management may be added to line functions where the above limits would result in span of control ratios greater than 10:1 at any level in the hierarchy.

## 4. Span of Control

ICBC wants a structure that allows staff to increase critical thinking and judgement with policy and process guidelines. To achieve this, the span of control should be as broad as possible. Span of control should be determined on a case-by-case basis, through the application of the following factors:

Decision Criterion	Description
Complexity of Work	Managers who supervise routine work can have wide span of control, while managers who supervise more significant or complex work will have narrower spans.
Workforce Maturity	If subordinates are responsive to direction and generally high-performing, they require less managerial control. A workforce which is highly resistant to change or direction will require a lower span of control.
Employee Autonomy	Managers who supervise professionals who work independently permit wider spans. If supervision is required, to that extent do tools and processes exist which facilitate this supervision (e.g. call centre environments).
Diversity of Subordinate Functions	If subordinates are engaged in the same or similar job functions, a broader span of control is possible. A diverse range of reporting functions militates in favour of a smaller span of control.

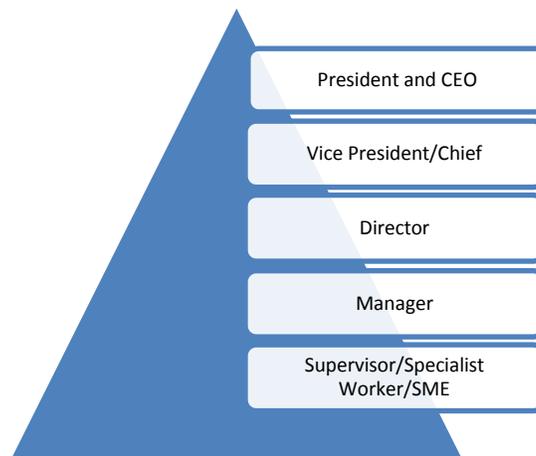
Role of Manager	Working managers require a lower span of control. Managers who are more focused on providing leadership and direction can support a broader span of control.
Geographic Distribution	If the effective supervision of subordinates requires the manager to travel, this militates in favour of a narrower span of control.

Span of control should not be less than three and generally should not exceed 10. Exceptions to this upper limit may be appropriate in line functions where workers are engaged in highly routinized or autonomous work where automated performance reporting is present, and managers are able to perform mainly supervisory duties.

## 5. Position Title Protocol

ICBC wants to remove unnecessary hierarchy and barriers to collaboration between leaders and staff. Simplicity in job titles will help remove unnecessary indications of stature as a barrier to collaboration.

Therefore, ICBC will use the following standard titles (by level):



- The title of **Vice President** is restricted to employees as designated by the CEO, who report to the CEO or a member of the Executive. Generally, Vice President level positions are the most senior within a division, or major department within a division. Vice Presidents lead the development of corporate level strategy and direction, are directly accountable for division level strategies.

The title of **Senior Vice President** will be discontinued once the current members have moved to a new role or have left the company.

- The titles with the word “**Chief**” are restricted to members of the executive, except as designated by the CEO (e.g. Chief Actuary and Chief Investment Officer).
- The title of **Director** is restricted to employees who report to a Vice President. Positions can only be designated as Director by the Divisional Head, with the concurrence of the head of Human Resources. Director level employees implement corporate strategies across multiple departments or lead major operating departments or units. They set department strategies consistent with established corporate and divisional strategies, and are responsible for a discrete divisional function or large operating segment.

- The title of **Manager** should be generally used in relation to positions with direct reports. Manager level employees typically are responsible for the implementation of corporate and divisional strategy for a unit or sub-unit of a department. Managers typically should report to a Director or Vice President, but may report to another Manager in operating lines which require another level between Director and first level Manager.
- The modifiers such as Senior, **Assistant** or **Associate** cannot be used to modify any of the standard job titles.
- Employees may continue to report to other employees with the same level of title. This practice is consistent with our goal of reducing proliferation of titles, and removing titles as barriers to collaboration.
- Exceptions to the protocols above will be permitted to conform to professional protocols (e.g. Controller, General Counsel), as determined by the head of Human Resources.

In conjunction with the above protocol, the company will also consider relevant labour market data or industry titling convention.

## 6. Matrix Reporting Relationship

In limited cases, a matrix reporting relationship (i.e. when an employee reports to more than one manager) can be used. Matrix reporting typically works best when different functions of the company have a shared responsibility for execution and results of a specific task or project. Matrix reporting relationship requires a much higher level of collaboration and communication between all of the parties involved.

When a matrix reporting relationship is to be implemented, the managers involved should resolve in advance (1) the specific accountabilities of each party; (2) responsibility for performance management; and (3) the duration of the matrix relationship.

All of the foregoing should be shared and understood by the employee and the managers involved.

# Appendix “A”

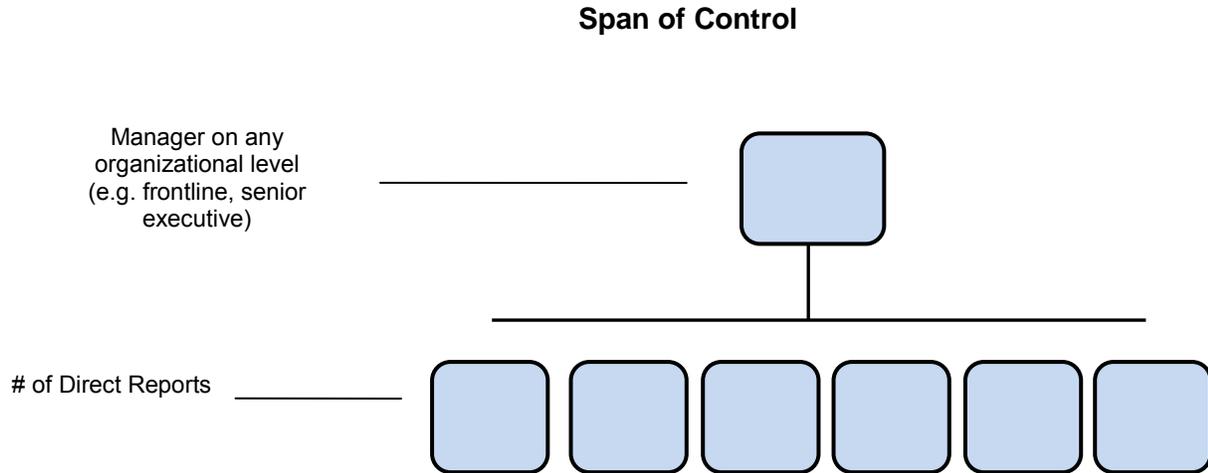
## Structure Types

Structure Type	Description	Advantages	Disadvantages	Characteristics of Strategy Supported by this Structure
<b>Functional Structure</b>	Organized around activities or functions	<ul style="list-style-type: none"> <li>• Gathering workers of one type allows them to transfer ideas and knowledge</li> <li>• Allows for greater scale, specialization, and standardization</li> <li>• Presents a single face to vendors</li> </ul>	<ul style="list-style-type: none"> <li>• Creates barriers between different functions</li> <li>• Overwhelming if there are a variety of products, channels, or customer</li> </ul>	<ul style="list-style-type: none"> <li>• Small-size, single-product line</li> <li>• Undifferentiated market</li> <li>• Scale or expertise within the function</li> <li>• Long product development life cycles</li> <li>• Common standards</li> </ul>
<b>Product Structure</b>	Multiple functional organizations, each with its own product line	<ul style="list-style-type: none"> <li>• Compresses the product development cycle because each unit focuses on a single product line</li> </ul>	<ul style="list-style-type: none"> <li>• Divisions want autonomy, so they reinvent the wheel</li> <li>• Organization loses economies of scale</li> <li>• Challenging when customers buy from multiple divisions</li> </ul>	<ul style="list-style-type: none"> <li>• Product focus</li> <li>• Multiple products for separate customers</li> <li>• Short product development life cycle</li> </ul>
<b>Market Structure</b>	Organized around customers, markets, or industries	<ul style="list-style-type: none"> <li>• Companies with superior knowledge and information about market segments have a competitive advantage</li> <li>• Helps service businesses that must focus on market segments</li> </ul>	<ul style="list-style-type: none"> <li>• Tendency to duplicate activities and develop incompatible systems</li> <li>• Difficulty sharing common products or services</li> </ul>	<ul style="list-style-type: none"> <li>• Important market segments</li> <li>• Product or service unique to segment</li> <li>• Customer knowledge advantage</li> <li>• Rapid customer service and product cycles</li> </ul>
<b>Geographical Structure</b>	Organized around districts, regions, or territories	<ul style="list-style-type: none"> <li>• Minimize costs of travel and distribution when close to the customer</li> <li>• Helpful if organization needs to be located near a source of supply</li> </ul>	<ul style="list-style-type: none"> <li>• Becoming less important now that technology allows companies to be anywhere and seek the best global location</li> </ul>	<ul style="list-style-type: none"> <li>• Low value-to-transport cost ratio</li> <li>• Service delivery on-site</li> <li>• Closeness to customer for delivery or support</li> <li>• Perception of the organization as local</li> </ul>
<b>Process Structure</b>	Organized around a complete flow of work	<ul style="list-style-type: none"> <li>• Allows a renewed look, from end to end, at an entire process</li> <li>• Processes with end-to-end coverage lend themselves to measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Creates barriers in handoffs between various process groups</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for new processes and radical change to processes</li> <li>• Reduced working capital</li> <li>• Need for reducing process cycle times</li> </ul>

# Appendix “A”

## Span of Control/Management Levels

The term **span of control** refers to the number of employees reporting to a particular position:



Span of control is dependent on a variety of factors: organization size and nature of work, and can be broad or narrow depending on management levels, as employees across different levels have different responsibilities. While no ideal span of control exists, managerial spans ultimately determine the number of management levels in an organization – i.e. the number of levels between the senior and most junior positions in a reporting line.

Narrow spans allow for close supervision and fast communication between superiors and direct reports, but can yield too many management levels. Wide spans increase autonomy for subordinates and create less administrative expense, although they also offer less individualized attention.

### Determining Required Management levels

Once spans of control are determined, the mathematical model below can be utilized to suggest an optimal number of management levels:

Process	Hypothetical Example
1. Determine the number of non-management employees in the operating line or division	1. 120 employees without direct reports in org unit
2. Using the weighted average span of control for the organizational area, determine the number of suggested management levels	2. Optimal span of control is 6:1 a. The first level requires approximately 20 managers (100/6) b. The second level requires 3-4 managers (20/6)
3. Continue dividing by that span to determine the additional needed number of levels	3. This yields three management levels for the unit

This yields a suggested number of levels only. Particular lines within an operating area of a division may be longer or shorter, depending on the nature of the work performed within the line.

**2012.1 RR BCUC.79.3 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.1, p. 7-16**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Span of Control**

Table - SPAN OF CONTROL

No. in Unit	DIVISION	Number of FTE (excluding Contractors)																	
		2007 Actual			2008 Actual			2009 Actual			2010 Actual			2011 Outlook			2012 Forecast		
		Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees	Managers/ Supervisors	Avg Number of Direct Reports	Total Employees
1	Claims	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
2	Insurance																		
3	Drivers Licencing																		
4	Finance																		
5	Corporate Affairs																		
6	Information Services																		
7	Business Transformation																		
8	Human Resources																		
9	Strategic Marketing																		
10	Communications																		
11	Corporate Costs																		
12	Total ICBC FTEs (Per Figure 7.7)	-	-	4,947			4,934	-	-	4,981	-	-	4,929	-	-	5,008	-	-	5,015

Note: Total Employees is the sum of Managers/Supervisors plus the product of Average Number of Direct Reports times the number of Managers / Supervisors.

**Please explain and quantify any efficiency gained by changes in span of control.**

**Response:**

Spans of control have generally been changing, as identified in the table in the response to information request 2012.1 RR BCUC.79.1. These have been changing for the reasons identified in the response to information request 2012.1 RR BCUC.79.2.

ICBC's general principle is to maximize span of control. ICBC's new organization design policy is attached to the response to information request 2012.1 RR BCUC.79.2. The organization design policy is intended to guide future restructuring efforts which arise in the normal course of business. Where deemed appropriate for the business, fewer management layers and managers will increase operating efficiency, ease communications, and increase autonomy of front line employees to respond to customer needs.

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**2012.1 RR BCUC.80.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.2, p. 7-16  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
FTE Mix**

**Paragraph 50 of the ICBC evidence states:**

**“FTE growth between 2007 and 2012 forecast is concentrated in the Management and Confidential employee group. The remuneration of Management and Confidential employees is, in general, greater than the remuneration of BU employees. As a result, the change in the employee mix has contributed to the overall compensation cost increase between 2007 and 2012 forecast.”**

**Please provide the strategic business objectives for the change in employee mix.**

**Response:**

ICBC’s strategic business objectives are to support the corporate 2014 strategies which are to:

- Improve Customer Perception
- Improve Employee Experience
- Improve Financial Stability

The shift in employee mix is an ancillary outcome and not directly related to ICBC’s strategic business objectives. ICBC’s Corporate Strategy is a long-term strategy to guide the company. As described in Chapter 7, paragraphs 47 to 49 of the Application, to continually support the Corporate Strategy more expertise is required in many different areas such as governance, change management, claims risk management, and quality improvement. These additional skill sets assist ICBC in fulfilling its overall corporate vision and strategy.

The employee mix has shifted, not as a direct result of any strategic business objective to change the mix, but due to these skill sets often being attracted from the private sector from non-union areas. Further, these skill sets have not been traditionally represented by the union in its ICBC Bargaining Unit.

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**2012.1 RR BCUC.80.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.2, p. 7-16  
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**Please describe the effects of the change in employee mix on employee engagement and workload.**

**Response:**

ICBC does not have the employee engagement data necessary to provide a response to this information request respecting effects on employee engagement. ICBC does not track engagement at the individual employee level, nor is information gathered respecting shifts in employee mix.

Changes in employee mix are largely due to the need for new expertise and skills that were not available within ICBC. While no study or data is readily available respecting effects of the change of employee mix on workload, it can be stated with a degree of certainty that the FTEs added to the Management and Confidential group did not increase the workload of existing ICBC employees. Their addition was necessary to deal with additional organizational work, which could not have been borne by the existing workforce.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.80.3 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.80.3 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.2, p. 7-16  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
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**Please explain how the change in employee mix is in alignment with the Corporate Strategy shown in Chapter 11, Appendix 11 B Service Plan 2011-2013 on p. 14.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.80.1 for the response to this information request.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.80.4 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.80.4 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.2, p. 7-16  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
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**ICBC in its 2007 Revenue Requirements Application, Exhibit B-11-1 ICBC Response to IR 2007.1 RR BCUC.50.3 provided Attachment A – Collective Agreement with COPE 378. Attachment A indicated that the agreement takes effect commencing July 1, 2006 and ending June 30, 2010. Please provide the effective dates and end dates of the most recent collective agreements between ICBC and COPE 378.**

**Response:**

The most recent collective agreement between ICBC and COPE 378 commenced July 1, 2006 and ended June 30, 2010. That agreement remains in effect through its continuation clause, as ICBC is still in negotiations toward a new collective agreement with COPE 378.

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**2012.1 RR BCUC.80.4.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.2, p. 7-16  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
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**Please provide an update on the status of negotiations of a new collective agreement between ICBC and COPE 378. Please file the current collective agreement if available.**

**Response:**

Negotiations toward a new collective agreement started in 2010. The parties have met on number of occasions and have reached agreement on non-contentious items. In February 2012, COPE 378 announced that it will take a strike vote. This is expected to be completed in April 2012. The parties will meet again in late March 2012 to continue negotiations. ICBC is currently in discussions with Public Sector Employers Council toward gaining approval of its bargaining mandate.

Please see Attachment A – [ICBC Collective Agreement 2006-2010](#) for the current collective agreement.



## **2012.1 RR BCUC.80.4.1 – Attachment A – ICBC Collective Agreement 2006-2010**

# Collective Agreement

**Between**  
Insurance Corporation  
of British Columbia  
and  
Canadian Office & Professional  
Employees Union,  
Local 378

**July 1, 2006 – June 30, 2010**



**COLLECTIVE AGREEMENT**

**BETWEEN**

**INSURANCE CORPORATION OF BRITISH  
COLUMBIA**

**AND**

**CANADIAN OFFICE AND PROFESSIONAL  
EMPLOYEES' UNION**

**LOCAL 378**

**2006 - 2010**

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## **PREAMBLE**

THIS AGREEMENT made the 29th day of March, 2006.

**BETWEEN:** THE INSURANCE CORPORATION OF BRITISH COLUMBIA  
(hereinafter called the "Corporation").

**AND:** CANADIAN OFFICE AND PROFESSIONAL EMPLOYEES'  
UNION, LOCAL 378  
(hereinafter called the "Union").

### **Purpose of Agreement**

- (a) The purpose of this Agreement is to establish and maintain orderly collective bargaining procedures between the Employer and the Union.
- (b) The parties to this Agreement share a desire to establish, within the framework provided by the law, an effective working relationship in all areas of the Corporation in which members of the bargaining unit are employed.
- (c) The parties to this Agreement share a desire to maintain harmonious relations and settled conditions of employment.

# ARTICLE 0

## SCOPE OF AGREEMENT

WITNESSETH, that the parties hereto have mutually agreed as follows:

### **0.01 Date of Effect**

The following provisions shall take effect and be binding upon the Corporation and the Union for a period commencing the first (1<sup>st</sup>) Day of July 2006 and ending the thirtieth (30<sup>th</sup>) Day of June 2010, SAVE AND EXCEPT as may be expressly required herein or as may be required from time to time by the statutes of British Columbia.

### **Section 50 Exclusion**

The parties hereto agree to the exclusion of the operation of Section 50, subsection (2) of the Labour Relations Code of British Columbia (in accordance with Section 50 (4) thereof).

### **0.02 Notice to Bargain**

Either party may at any time within four (4) months immediately preceding the expiry date of this Agreement, give to the other party written notice of its intention to re-open or amend this Agreement on its expiry date or on any day thereafter. The parties shall exchange particulars of desired changes to the Agreement not later than the date of the first meeting of negotiations.

### **0.03 Pre Bargaining Meeting**

Prior to the commencement of collective bargaining, the parties shall meet to preview matters of concern, and to develop plans and procedures to optimize the effectiveness of direct collective bargaining in bringing about an agreement.

### **0.04 Continuation of the Agreement**

After the expiry date of this Agreement and until a revised agreement is signed, this Agreement and all its provisions shall remain in full force and effect without prejudicing the position of the revised agreement in making any matter retroactive in such revised agreement.

### **0.05 Strikes and Lockouts**

Notwithstanding paragraphs 2. and 4. above, it is agreed that the employees may strike, and the Corporation may lock-out after this Agreement's expiry date.

## **0.06 Agreement Scope**

Letters or Memoranda of Understanding which may be agreed between the parties from time to time during the life of this Agreement shall be attached hereto when so intended by the parties and shall have full effect as part(s) of this Agreement. Such Letters or Memoranda shall contain appropriate references establishing effective dates. Where no terminating date is specified within the context, the Letter or Memoranda shall continue in effect from year to year in the same manner as the body of the Agreement or until terminated by agreement of the parties. Letters or Memoranda of Understanding shall carry the signatures of the appropriately authorized Union and Corporation Officers or Representatives.

## **0.07 Use of Plural Terms**

Wherever the singular is used in this Agreement, these words shall be construed as meaning the plural where the context requires. Conversely the reverse is equally true.

## **0.08 Interpretation of Time Period Terminology**

References to weeks, months or years shall mean calendar weeks, months, or years, unless otherwise stated in the context. References to "days" means working days unless otherwise stated in the context.

## **0.09 Catastrophic Event Cooperation**

It is recognized that a physical catastrophe (e.g. earthquake, fire) may seriously disrupt normal business operations. In this event, the parties agree to cooperate in the administration of the Collective Agreement, to enable contingencies which are directed to restoring normal operating conditions.

## **0.10 Management Rights**

All management rights heretofore exercised by the Corporation, unless expressly limited by this Agreement, are reserved to and are vested exclusively in the Corporation.

### **Notification of Corporation Policies and Procedures**

The Corporation agrees to advise the Union in writing of all policy and procedure instructions relating to matters covered by this Agreement. The Corporation will not issue any policy and procedure instructions which are contrary to the terms and conditions of this Agreement, and it is recognized that all such policy and procedure instructions may be the subject of grievance pursuant to Article 3 of this Agreement.

# ARTICLE 1

## UNION SECURITY

### 1.01 Agreement Application

This agreement shall apply to and be binding upon all employees of the Corporation described in a certificate issued to the Union by the Labour Relations Board on the 5th day of November, 1974, and shall continue to apply to the said certificate as the same may be amended by the Labour Relations Board from time to time.

### 1.02 Application and Maintenance of Membership

The Corporation agrees that all employees covered by this Agreement within fifteen (15) calendar days of the signing of this Agreement, or within fifteen (15) calendar days of the date of employment with the Corporation, whichever event shall later occur, as a condition of continued employment with the Corporation shall make application to become members of the Union and if accepted, remain members of the Union.

### 1.03 Acquainting New Employees

The Corporation will inform new employees of their Union membership obligations. The Corporation will provide Union membership cards and dues deduction forms to new employees for their completion and signing at the time of employee documentation. The Corporation will forward the executed documents to the Union as soon as possible, but in any event, within fifteen (15) calendar days of the employee's date of hire. Such forms will be provided to the Corporation by the Union.

The Corporation will provide the employee with a list of Job Stewards.

### 1.04 Assignments of Wages and Employee Information

The Corporation will honour written assignments of wages for Union dues, initiation fees and general membership assessments and shall remit such to the Union monthly together with the following information as to the persons from whose pay such deductions have been made:

- |                             |                                      |
|-----------------------------|--------------------------------------|
| (a) employee id number      | (g) date of hire                     |
| (b) name - address          | (h) work location                    |
| (c) monthly salary          | (i) telephone number, except where   |
| (d) amount of dues deducted | employees have expressly indicated   |
| (e) job classification      | to the Corporation that their number |
| (f) employee status         | is unlisted                          |

In addition to the above the Corporation will provide the Union monthly with a list of:

- i) new hires
- ii) terminations
- iii) promotions
- iv) demotions
- v) lateral moves between budget centres
- vi) salary revisions

- vii) address and name changes
- viii) employees on extended leave of absence
- ix) acting pay appointments
- x) overtime worked
- xi) telephone number changes, except where employees have expressly indicated to the corporation that their number is unlisted
- xii) seniority

Such information shall be supplied by the Corporation and in a form mutually acceptable to the parties.

### **1.05 Financial Obligations**

Notwithstanding any provision in this Article, there shall be no financial responsibility on the part of the Corporation for fees, dues, or general membership assessments of an employee unless there are sufficient unpaid wages of that employee in the Corporation's possession except that this provision shall not absolve the Corporation of its financial obligations in those circumstances where it knowingly failed to withhold sufficient employees' pay to pay the monies outstanding to the Union.

### **1.06 No Discrimination for Union Activity**

The Corporation and the Union agree that there shall be no discrimination or coercion exercised or practiced with respect to any employee for reason of membership or activity in the Union.

The Corporation shall not participate in or interfere with the administration of the Union.

### **1.07 Work Jurisdiction**

Duties normally performed by employees within the bargaining unit will not be assigned to or be performed by non-bargaining unit personnel except in emergencies when bargaining unit employees capable of performing the work are not available. In such emergency situations, where the period of assignment is longer than two (2) weeks duration, the Corporation will notify the Union when work traditionally performed exclusively by bargaining unit employees is being performed by exempt employees.

It is recognized by the parties under this clause that Corporation operations necessitate the utilization of non-bargaining unit personnel and they may continue to be used to the same extent they are now used.

The Corporation will not transfer to non-bargaining unit employees those functions (which do not qualify for exemption under the Labour Relations Code) which have been performed exclusively by bargaining unit employees.

Nothing in this Article shall be construed as a contractual definition of "employee" which is different from the definition of "employee" in the Labour Relations Code.

### **1.08 Contracting Out**

The Corporation will not contract out work normally performed by bargaining unit employees which will result in any layoff or downgrading of such employees.

## ARTICLE 2

### UNION RECOGNITION

#### **2.01 Recognition of Union Executive Board Members, Councillors, Job Stewards and Union Representatives**

The Corporation will recognize individuals and/or employees elected, appointed, and/or designated by the Union as its qualified Executive Board Members, Councillors, Job Stewards and Union Representatives.

The Union will notify the Corporation in writing as to who are the elected, appointed and/or designated Executive Board Members, Councillors, Job Stewards and Union Representatives authorized by the Union to discuss and wherever possible resolve problems arising out of the Agreement.

In the event that an alternative to the Job Steward is assigned by the Union to discuss and, wherever possible, resolve a problem arising out of the Agreement, reasonable notice will be provided in advance by the Union to the Manager, Labour Relations.

#### **2.02 Rights of Job Stewards**

The duties and responsibilities of Job Stewards shall include the following activities:

- (a) Investigation of complaints, grievances, and/or disputes including the making of presentations to management as required.
- (b) The transmission of Union bulletins and/or notices by posting or such other means as are reasonable under the circumstances.
- (c) Participation in collective bargaining, and/or arbitration proceedings when directed by the Union.
- (d) Participation in the administration of the Union as may be required for Union Executive Meetings and Job Steward Meetings.
- (e) Briefing time of up to one (1) hour prior to grievance meetings as set out in Article 3.06 of this Collective Agreement.

#### **2.03 Paid and Unpaid Leave for Job Stewards and Union Officers**

- (a) Job stewards can carry out their duties in Article 2.02(a), 2.02(b), and 2.02(e) above without loss of pay during regular business hours and it shall be considered as time worked. Time spent by Job Stewards beyond their regular hours will not be paid for by the Corporation. Before carrying out duties relating to 2.02(a) or 2.02(e) during regular working hours, the Job Steward will first obtain permission from the manager or her/his designate at her/his location. Such permission will not be unreasonably withheld. Job stewards may carry out their duties relating to 2.02(b) upon prior notification being given to the manager or her/his designate at her/his location. It is understood that Job Stewards will carry out their duties in a manner as to cause a minimum of interference to normal job duties and business operations.

- (b) Leave of Absence for Arbitration Hearings.

Job stewards and/or affected Corporation employees can participate in arbitration hearings without loss of pay during regular hours and it shall be considered as time worked. The time spent beyond regular hours will not be paid for by the Corporation.
- (c) Leave of Absence for Union Executive Meetings

Job stewards and/or other elected Officers of the Union who regularly work for the Corporation and are required to participate in Union Executive meetings will be granted up to one day's leave with pay for each period of leave so required. Time spent beyond regular hours and time spent beyond one working day will not be paid by the Corporation, and will be considered leave of absence without pay.
- (d) Leave of Absence for Union or Labour Conventions

Subject to maintenance of operations, Job Stewards and/or other elected Officers of the Union who regularly work for the Corporation, and who are elected or appointed to attend Union or labour conventions, will be granted leave of absence without pay to attend such conventions provided reasonable notice is provided to the Corporation. The Union agrees that remaining employees in a work area affected by the granting of leave under this provision will cooperate with the Corporation to minimize the effect of leave granted to Job Stewards and/or other elected Officers under this Section.
- (e) Miscellaneous Leave of Absence

Job stewards and/or other elected Officers of the Union may receive leave of absence with or without pay at the discretion of and by prior arrangement with the Manager, Labour Relations for other activities not specifically identified above.
- (f) Job stewards and/or elected Officers of the Union who regularly work for the Corporation and who are assigned to joint Union-Corporation committees, will be paid by the Corporation for all time spent on such committees during regular hours.
- (g) Time spent by Job Stewards and Union Officers, who are engaged in legitimate Union activities during working hours will not be referenced in their performance appraisals.
- (h) With respect to leaves of absence referred to in (b), (c), (d) and (e) above, every effort will be made to provide the applicable manager and/or Labour Relations Department with not less than five (5) working days written notice, where possible.
- (i) Employees who request and are granted a leave of absence for Union business, either with or without pay, are required to complete the appropriate form HR240 and submit it to their manager.
- (j) To facilitate the administration of this clause, when a leave of absence without pay is granted, the Corporation will continue an employee's normal salary, subject to the timely reimbursement by the Union for all direct and indirect costs associated with such leave.

## **2.04**

### **(a) Union Leave**

Employees elected or appointed to full time Union positions (excluding clerical staff) will be granted leave of absence without pay on request. Time spent with the Union will be considered as service with the Corporation and the employee will continue to accrue seniority with the Corporation during such period. Employees on such leave will at their option continue to participate in all Corporation welfare plans, provided the Union reimburses the Corporation on a monthly basis for the cost of such premiums. Employees on leave to work for the Union on application to the Corporation, will be re-employed by the Corporation at a job level equivalent to that which the employee left to work for the Union. The salary of the employee on re-employment will be that salary which the employee would have attained in her/his classification assuming she/he had never left the employment of the Corporation.

### **(b) Trainee Union Representatives**

The Corporation will grant leave of absence to an employee requested by the Union to serve as a Trainee Union Representative, in accordance with the foregoing paragraph, subject to the following conditions:

- the timing of the leave will be subject to departmental operating considerations;
- the period of absence will not exceed four (4) continuous months, unless otherwise agreed by the corporation;
- only one (1) such leave will be granted in a twelve (12) month period;
- in situations where the Trainee is assigned to the ICBC bargaining unit, she/he will work under the direction of a full-time union representative - who is also regularly assigned to the ICBC bargaining unit - for the duration of the trainee appointment.

## **2.05 Communications - Union Bulletin Boards**

Bulletin boards shall be made available to the Union at all locations of the Corporation for posting of appropriate notices relative to meetings and general Union activities. The Corporation will provide access to its mail distribution systems and electronic messaging systems, on a cost-share basis, for the distribution of such notices upon prior approval being obtained from the Manager, Labour Relations or her/his designate.

## **2.06 Cooperation with Union Officers**

The Corporation will cooperate with Officers, Councillors, Job Stewards, and/or Representatives of the Union in carrying out their Union responsibilities.

## **2.07 Union Use of Office Space**

Job stewards and/or Representatives of the Union who require private office space for the purpose of performing their duties relative to 2.02(a) above, will receive such accommodation on request to the manager of the department or the Manager, Labour Relations, or her/his designate.

## **2.08 New Employee Union Orientation**

A new employee will be provided with a copy of the Collective Agreement, and will be introduced to her/his job steward as part of her/his orientation to the department. In addition, the Corporation agrees that a representative of the Union will be given an opportunity to address collectively, on a once per month basis (if required), all new bargaining unit employees to a department during regular working hours, without loss of pay, for a period of up to one (1) hour. The purpose of the meeting is to acquaint new employees with the benefits and duties of Union membership and employees' responsibilities and obligations to the Corporation and the Union. The time and location of the meeting will be subject to approval by management.

## **2.09 Notification of New Excluded Jobs**

Prior to implementation, the Corporation agrees to advise the Union of newly created first-level management jobs, and confidential jobs which are excluded from the bargaining unit.

## **2.10 Union Insignia**

- (a) A Union member shall have the right to wear or display jewellery (pins, etc.) bearing the recognized insignia of the Union.
- (b) One (1) Union shop card, furnished by the Union, will be displayed to public view at the public entrances to Corporation premises. Such card will not exceed 6 in. X 8 in. In dimensions, and shall be surrendered by the Corporation upon demand by the Union.

## **2.11 Union Meetings**

Where possible the Corporation will allow Union Representatives to conduct meetings after hours on Corporation premises, within the following conditions:

- (a) The Union will provide the Corporation with as much advance notice as possible.
- (b) The meeting(s) will be held in an area which will cause the least inconvenience to the cleaning services, e.g. lunch rooms or an open area.
- (c) The Union will ensure that the premises are left in good order.
- (d) Any meetings involving more than one floor area, department or claim centre, will be held off premise.

## **2.12 Bargaining Agent Recognition**

The Corporation recognizes the COPE, Local 378, as the sole bargaining agent, as defined by the Labour Relations Code, for all employees described in the certification issued by the Labour Relations Board on November 5th, 1974.

### **2.13 No Other Agreement**

Neither the Corporation nor its representatives will require or permit any employee covered by this Agreement to make a written or oral agreement with the Corporation or its representatives which may conflict with the terms of this Agreement.

It is recognized by the parties, however, that there may be situations where employee accommodations of an incidental, infrequent, and minor nature can arise. Such accommodations will not be considered a violation of this Article.

### **2.14 Right to have Job Steward Present**

An employee shall have the right to have a job steward present at any discussion with management personnel which the employee believes might be the basis of disciplinary action providing that this does not result in an undue delay of proceedings. Where a manager meets with an employee with the specific intent to administer discipline, the manager shall make every effort to notify the employee in advance of that meeting in order that the employee may have a job steward present. This clause shall not apply to those discussions that are of an operational nature and do not involve disciplinary action.

Where the foregoing pertains to a job steward, an alternate local Union Representative may be present providing that this does not result in an undue delay of proceedings.

### **2.15 Technical Information**

The Corporation agrees to provide the Union with available information relating to employees in the bargaining unit, as may be requested by the Union during collective bargaining, subject to such information not being harmful to the business interests of the Corporation.

### **2.16 Union and Corporation Communications**

The Corporation and the Union agree that copies of all correspondence between the parties related to matters covered by the Agreement shall mutually be sent to the Manager, Labour Relations and the President of the Union or their respective designates.

The Union will be provided with a copy of any written correspondence issued to an employee which expresses an opinion respecting the interpretation of this Collective Agreement as it applies to that employee.

The parties further agree that the use of e-mail and fax correspondence and regular type written correspondence shall be considered proper and acceptable means of communications for all matters contained in this Agreement including grievances.

## ARTICLE 3

### GRIEVANCE PROCEDURE

#### 3.01 Grievance Defined

"Grievance" means any difference or any dispute between the persons bound by the Agreement concerning the dismissal, discipline, or suspension of an employee; or concerning the application, interpretation, operation, or any alleged violation of this Agreement; or any other dispute including any questions as to whether the matter is arbitrable. All grievances will be resolved without stoppage of work by one of the following procedures:

#### 3.02 Union or Corporation Grievance

Should either the Union or the Corporation consider that an action, or proposed action, is or will become a difference or dispute between the parties concerning the application, interpretation, operation or any alleged violation of this Agreement; or any questions as to whether the matter is arbitrable, then such will be considered a policy grievance and be dealt with as follows:

The grieving party, i.e. the President of the Union or the Manager, Labour Relations of the Corporation, or their nominee(s), shall initiate same by letter. Within seven (7) calendar days of receipt of such written notice, the principals or their nominees shall meet and attempt to resolve the grievance. Failing settlement, the matter may be referred by either party at its option to arbitration as set out in 3.07 below.

#### 3.03 Discipline, Termination, Suspension Grievances

Grievances concerning termination or suspension of an employee may be submitted directly to Stage III of 3.06 at the option of the grieving party. Grievances concerning the discipline of an employee, other than termination or suspension, will follow all the stages of 3.06.

Should an arbitrator, Labour Relations Board, or other body find that an employee has been dismissed, suspended or otherwise disciplined for other than just and reasonable cause, or find that an employee has been unjustly dismissed, suspended or otherwise disciplined for just and reasonable cause, the arbitrator, the Labour Relations Board, or other body may substitute such other penalty and/or order reinstatement and/or order compensation to the employee as it considers just and reasonable in all the circumstances.

#### 3.04 Job Selection Grievances

Grievances concerning job selection shall be dealt with under Article 7.

#### 3.05 Job Classification Disputes

Grievances and disputes concerning job classifications and pay grades shall be resolved under Article 10.

### **3.06 General Grievance Procedure**

The parties to this Agreement agree that it is important to resolve complaints and grievances as quickly as possible. It is the intent that every effort will be made at each stage of the Grievance Procedure to resolve the grievance or complaint.

#### **Stage I**

Should a grievance occur, it shall be submitted by the employee, or the Job Steward on behalf of the employee, to the Manager, in writing, with a copy to the Union and to the Manager, Labour Relations, not later than thirty (30) calendar days from the date the employee was advised of the event leading to the grievance.

Within seven (7) calendar days of receipt of such Stage I grievance, the Manager, or her/his designate, will discuss the grievance jointly with the Job Steward and employee. The Manager, or her/his designate, will render a decision in writing to the Job Steward with a copy to the employee, the Union, and the Manager, Labour Relations, within fifteen (15) calendar days of the date of the discussion at Stage I.

#### **Stage II**

- (a) Should a grievance be unresolved at Stage I, the Union may refer the matter to Stage II by writing to the Manager, Labour Relations, within fifteen (15) calendar days of receipt of the Manager's decision at Stage I.
- (b) Within twenty (20) calendar days of receipt of the Union's referral to Stage II, a member of the Union staff and a member of the Corporation's Human Resources staff will meet and initiate a joint investigation in an effort to resolve the dispute. If the parties are unable to resolve the dispute the Union may refer the matter to Stage III within fifteen (15) calendar days from the date of the discussion at Stage II.

#### **Stage III**

A grievance referred by the Union to Stage III will be in writing to the Manager, Labour Relations.

Within fifteen (15) calendar days of receipt of the Union's referral to Stage III, the Manager, Labour Relations, will discuss the grievance with representatives of the Union.

Within fifteen (15) calendar days of the date of the discussion with the Union Representative(s), the Manager, Labour Relations, will submit the Corporation's decision to the Union in writing.

Within thirty (30) calendar days of receipt of the Corporation's decision at Stage III, the Union may refer the grievance to arbitration as set out in Article 3.07.

### **3.07 Arbitration**

- (a) All grievances submitted to arbitration shall be adjudicated by a single arbitrator. Within fourteen (14) days of notice to arbitrate being served under Stage III above, or in accordance with other Articles of the Agreement, the parties will attempt to agree on an arbitrator. Should the parties fail to agree on the selection of an arbitrator during this period, either party may request the Minister of Labour to make an appointment.
- (b) The Arbitrator shall proceed as soon as practical to examine the grievance and within thirty (30) calendar days render her/his judgment

and decision which shall be final and binding on the parties and upon any employee affected by it.

- (c) Each party to this Agreement will equally share the fee, expenses and disbursements of an arbitrator appointed under this Section.
- (d) The Arbitrator shall not be authorized to alter, modify or amend any part of this Agreement.

### **3.08 Attendance of Grievor at Grievance Meetings**

The aggrieved employee may be present at any or all steps of the Grievance Procedure if she/he desires and costs and wages thereto will be borne by the Corporation.

### **3.09 Extension of Time Limits**

Time limits as set out in the preceding sections may be extended by mutual consent of the Corporation and the Union, but the same must be in writing.

### **3.10 Stage III Initiation**

The processing of any grievance may begin at Stage III at the option of the Union.

### **3.11 Expedited Arbitration**

- (a) For application of the following procedure the parties shall mutually agree upon a list of single arbitrators for the purposes of hearing and resolving any grievance(s) or group of grievances submitted under this process.
- (b) The parties shall meet every four (4) months or as often as required to review outstanding grievances which have been exhausted through the Grievance Procedure to determine by mutual agreement any grievance(s) suitable for this process, and shall set dates and locations for hearings of the grievances considered suitable for expedited arbitration.
- (c) The Arbitrator shall hear the grievance(s) and shall render a decision within five (5) working days of such hearings. Such decision will be final and binding on both parties. No written reasons for the decision shall be provided beyond that which the arbitrator deems appropriate to convey a decision.
- (d) Expedited arbitration awards shall be of no precedential value and shall not thereafter be referred to by the parties in respect of any other matter.
- (e) All settlements of expedited arbitration cases prior to hearing shall be without prejudice.
- (f) Any grievance may be removed from the expedited arbitration process by either party at any time prior to hearing and forwarded to a regular arbitration hearing.
- (g) The parties shall equally share the cost of the fees and expenses of the arbitrator and hearing rooms.
- (h) The parties will mutually agree to procedures to apply to expedited arbitration.

### **3.12 No Deviation from the Grievance Procedure**

After a grievance has been submitted, the manager will not enter into discussion with the grievor with respect to the grievance without Union representation.

### **3.13 Alternate Dispute Resolution Non-Binding**

Notwithstanding the other processes outlined in this Article, the parties may agree to participate in an alternate dispute resolution process. The process employs the caucus model and may be changed by mutual agreement of the parties.

## ARTICLE 4

### SENIORITY

#### 4.01 Seniority Defined

- (a) Except as modified in this Agreement, seniority shall be determined as length of continuous service with the Corporation as a member in good standing of the Union.
- (b) Unless an effective break in service occurs, a temporary employee who secures a regular position during the term of her/his temporary employment shall be credited with seniority back to the date last hired as a temporary employee. Service shall be deemed to be continuous for temporary employees in situations where there are fourteen (14) or fewer calendar days between the end of one period of temporary employment and the start of a new temporary or regular assignment. Such employees will be subject to the probationary periods outlined in Article 6.01.

#### 4.02 Date of Hire Prior to First Agreement

All employees of the Corporation as at the signing date of the first Collective Agreement shall be granted seniority back to the date that they were last hired by the Corporation provided, however, that they have maintained continuous membership in the Union and meet the requirements of 4.03 below.

#### 4.03 Probationary Employees

New employees hired under the terms of this Agreement will be credited with seniority back to the date of hire upon completion of their probationary period.

#### 4.04 Loss of Seniority

Employees shall lose their seniority only if they:

- (a) Terminate employment with the Corporation.
- (b) Are discharged for just cause or terminated pursuant to proper application of this Agreement.
- (c) Are laid off for a period exceeding the specified recall period as described in Article 8.06(a).
- (d) Accept, or transfer to, a position with the Corporation which is outside the bargaining unit; except that upon returning to a position within the bargaining unit they will be credited with such seniority as had previously been attained in the bargaining unit.
- (e) For the purposes of 4.01 and 4.04(a) above, seniority and service shall be deemed to be preserved in situations when:
  - i) A regular employee who has terminated her/his employment is offered and starts a new full-time or part-time regular job with the Corporation within sixty (60) calendar days of her/his last day of employment.

Such employees will be subject to the probationary periods outlined in Article 6.01.

- ii) A regular employee who has terminated her/his employment is offered and starts a temporary position within sixty (60) calendar days of her/his last day of employment and, without an effective break in service (as described in Article 4.01(b)), subsequently secures a full-time or part-time regular job with the Corporation. Such employees will be subject to the probationary periods outlined in Article 6.01.

Eligibility for benefits will be in accordance with the applicable Articles of the Collective Agreement (i.e. 17.02 and Article 18).

#### **4.05 Seniority Accrual on Seniority List**

Employees laid off and placed on the recall list shall continue to accrue seniority during such period of lay-off.

#### **4.06 Seniority for Part-Time Employees**

Part-time regular employees shall be credited with seniority on a pro-rata basis in proportion to the hours of work for a full-time employee, to a maximum of a full-time regular employee, as calculated on a bi-weekly basis. Seniority accrual will be based on the employee's scheduled non-overtime hours (i.e. base hours plus voluntary additional hours which are worked during a regular work day/week). In situations of part-time employee absence, seniority accrual will be in accordance with base hours only.

#### **4.07 Seniority Accrual While on Leave**

Periods of illness or injury, vacation, trial period in a position outside the bargaining unit or approved leave of absence will not constitute a break in continuous service provided membership is maintained in the Union.

#### **4.08 Seniority Calculation**

Seniority will be calculated on the basis of calendar days of employment as a member of the bargaining unit during a period of uninterrupted service with the Corporation as a regular employee. Part-time regular employees will earn a proportion of calendar days in accordance with Article 4.06.

#### **4.09 Labour Relations Code - Inclusions and Exclusions from Bargaining Unit**

- (a) Upon a decision by the Labour Relations Board or agreement by the parties, that an employee and a job previously excluded from the bargaining unit shall henceforth be included in the bargaining unit, the employee involved will be granted seniority credit for the period of exclusion.
- (b) Employees excluded under the Labour Relations Code of B.C. or by agreement of the parties, and thus required to withdraw from the bargaining unit, shall be credited with all seniority accrued pursuant to this Article as follows:

- i) Such employees shall have the right to exercise bumping rights as defined in Article 8.02 in order to remain in the bargaining unit, provided the employee elects this option within two weeks of being excluded from the bargaining unit.
- ii) Such employees may apply to vacant positions in accordance with Article 7, with full seniority rights, for a period of six months following exclusion from the bargaining unit.

## ARTICLE 5

### EMPLOYMENT, DISCHARGE AND TERMINATION

#### 5.01 Notice of Appointment to New Employees

All new employees will receive a notice of appointment setting out the date of hire, job title, salary, and employment status in accordance with Articles 6.02 to 6.05 inclusive of this Agreement. If status is that of a full or part-time temporary employee, this notice shall also indicate the nature of the project and expected duration of employment.

#### 5.02 Probationary Periods

- (a) A new employee entering service in a job covered by this Agreement shall be considered probationary for a period of three (3) months or sixty (60) paid days of employment, whichever shall last occur. A new employee hired into a job at Salary Group 6 and above shall be subject to a four (4) month job performance probation. An employee who is subject to a four (4) month performance probation shall be eligible for benefits as described in Article 6 of this Agreement after completing three (3) months or sixty (60) paid days of employment, whichever shall last occur.

A temporary employee who enters a regular position which is a different job title and classification from her/his previously held position shall be subject to the same probationary period as a new employee, as described above. Such an employee will be eligible for welfare benefits in accordance with the conditions set out in Article 6.02(b) of this Agreement. The employee may be terminated during this period as a result of inadequate performance and will receive payment in accordance with Article 5.02(b).

A regular employee serving a probation under the terms of this Article who secures another regular position which is a different job title and classification from her/his previously held position shall be subject to a three (3) month assessment period. The remainder of her/his probation will be served during this period. In the event the employee fails to achieve an acceptable level of performance by the end of the assessment period, the employee may be placed in a vacant position as close to her/his former classification and work location as possible. Should no such position be available, she/he may be terminated and receive payment in accordance with 5.02(b).

- (b) An employee may be terminated during their probationary period with:
- five (5) days notice or pay in lieu of notice if the employee has sixty (60) paid days or less of employment with the Corporation.
  - ten (10) days notice or pay in lieu of notice if the employee has more than sixty (60) paid days of employment with the Corporation.

Probationary and assessment periods as described above may be extended by mutual agreement of the parties.

### **5.03 Competency Related Inadequacies**

In situations where it can be demonstrated that a regular employee, not covered by Article 6.01, is failing to meet the performance expectations of her/his job due to competency-related inadequacies, the following provisions will apply:

- i) the Corporation will provide a written notice to the employee, with a copy to the Union, outlining the inadequacies.
- ii) the supervisor and the employee will work together, for a period of not less than three (3) months, in an endeavour to raise the employee's performance to an acceptable level of competency.
- iii) the employee will be apprised of her/his progress during the aforementioned period at intervals of not less than one (1) month.

Where an employee's performance fails to improve to an acceptable level by the end of the above-stated period, the Corporation will endeavour to place the employee in a job more suited to the employee's aptitude, skills, and abilities. In such instances, the Union will cooperate by waiving job postings, as required. Where necessary, employees placed in such positions will be provided with an orientation period equivalent to that of a new probationary employee as set out in Article 5.02.

Should no job be available which is suitable to the employee's aptitude, skills, and abilities, her/his employment may be terminated in accordance with Article 5.05. Following termination the employee will be considered for any job vacancy which comes available within the following six (6) months that is suited to the employee's aptitude, skills and abilities.

The period devoted to performance improvement will not be less than three (3) months, unless otherwise agreed by the parties, and may be extended by mutual agreement of the parties.

### **5.04 Discharge, Suspension Written Notification**

Employees may be discharged for a serious breach of discipline or conduct without notice.

Reasons for suspension or dismissal shall be in writing and issued to the employee and the Union by the close of business, the work day following the suspension/dismissal.

### **5.05 Written Notification - Non-Culpable Termination**

Employees who have completed their probationary period under 5.02 above, and who are terminated for reasons other than just cause, shall receive a minimum of ten (10) working days notice, or pay in lieu of notice, unless otherwise specifically provided in this Agreement. Copies of all termination or discharge notices will be provided to the Union at the same time as they are issued. Unless agreed with the Union, no employee who has completed her/his probationary period as described in Article 6.01(a) will be terminated during absence due to illness (except as provided for in Article 17.08), authorized leave of absence of any kind, or while under the provisions of a long term disability program.

## **5.06 Termination of Employees on Layoff**

Employees on lay-off in accordance with the provisions of Article 8, who are not recalled during the recall period, will be deemed terminated.

## **5.07 Personnel Files and Performance Assessments**

### **(a) Personnel Files**

i) A personnel file shall be maintained by the Corporation for each bargaining unit employee. Such a file may exist in hard copy and/or electronic form, and shall contain the following information (where applicable):

- letters of commendation.
- disciplinary documentation relating to incidents of culpable misconduct.
- factual information pertaining to the employee's work history, such as positions held, records of acting assignments, salary history, etc.
- documentation pertaining to the employee's work performance.

In addition to the above-noted information, other ancillary files may contain information concerning the employee's employment. The existence of any such ancillary files will be made known to the employee upon request.

ii) It is the intent that the personnel file be kept current, and that circumstances which require attention be brought forward without undue delay. A copy of all documents placed on an employee's personnel file, which are not of a routine administrative nature, will be provided to the affected employee at the time of filing.

iii) An employee may make entries into her/his personnel file for any reason. A copy of any such entry shall be provided to the employee's manager at the time of filing.

### **(b) Employee Access to Personnel Files and Ancillary Employment Information**

An employee shall have the right to review information pertaining to her/him from her/his personnel or ancillary files at any time, upon reasonable notice. The information will be made available within three (3) working days or such longer period as may be reasonable due to postal service. An employee may request and shall receive a copy of any employment record or document pertaining to her/him which is contained in her/his employment files.

An employee's right to access information pertaining to her/him from employment files will not apply to circumstances where that information is privileged, or restricted by act or statute.

(c) **Union Access to Employee Information**

The Union will have the same right of access to employment information as the employee, as set out in the preceding clause, providing the employee gives her/his authorization to the Corporation in writing. The authorization will not give repeated right of access to the Union unless the employee so stipulates. In giving the Union such access, the employee agrees to hold the Corporation harmless with respect to the Union's stewardship of that information.

(d) **Purging Personnel or Ancillary Files**

The Corporation agrees to remove from an employee's personnel file any adverse report, which is of a punitive nature, after eighteen (18 ) months provided no further such reports have been issued within that period.

All references to probationary notices will be removed from the employee's file after eighteen (18) months have passed since the successful completion of the probation and subject to the employee being actively employed and maintaining an acceptable level of performance during that time.

An employee may request the removal and destruction or amendment of any document in the personnel or ancillary files which she/he feels is irrelevant to her/his employment, or which would be prejudicial to the employee in an employment decision. Such request will not be unreasonably denied.

In the event that a document is so destroyed or amended, the Corporation agrees not to refer to the existence of the original document or circumstances in any hearing.

(e) **Performance Assessments**

Where a formal assessment of an employee's work performance is carried out, the employee shall be given sufficient opportunity to read and review the assessment. Provision shall be made on the assessment for the employee to sign it. Such signature shall not be evidence of agreement or disagreement with the assessment. A copy of the assessment shall be provided to the employee after she/he has signed it, and such assessment shall not be changed without the knowledge of the employee.

(f) **Letters of Expectation**

The Corporation agrees to remove from an employee's personnel or ancillary files any letter of expectation after eighteen (18) months provided no similar reports have been issued within that period.

## **5.08 Burden of Proof**

In all cases of discipline, the initial burden of proof of just cause will rest with the Corporation.

## **5.09 Workload**

The Corporation agrees to make every reasonable effort to ensure that the workload is evenly distributed amongst employees within the same job classification, department and headquarters.

Where the Union has reason to believe that workload is not evenly distributed, as described above, the matter will be referred to the Joint Consultation Committee for resolution before a grievance is initiated.

## ARTICLE 6

### EMPLOYEE DEFINITIONS AND BENEFITS

Except as specifically limited in this Article, or as limited elsewhere in this Agreement, all employees shall receive all of the benefits and provisions of this Agreement.

#### 6.01 Probationary Employees

(a) **Definition**

All employees entering service with the Corporation except as defined in 6.05 or as otherwise provided for in this Agreement, shall be considered probationary for a period of three (3) months or sixty (60) paid days of employment, whichever shall last occur. During the probationary period the following shall apply:

(b) **Benefit Limitations**

In accordance with Article 4.03, the employee

- i) shall not attain seniority until completion of the probationary period.
- ii) may be terminated in accordance with Article 5.02(b), and will not be considered laid off or have any rights of recall.
- iii) shall not be entitled to benefits under technological or procedural change.
- iv) shall be eligible to apply for other positions within the bargaining unit, except that selection preference will be equal to that of an outside hire.

#### 6.02 Full-Time Regular Employees

(a) **Definition**

A full-time regular employee is one hired to fill an ongoing position vacated by a regular employee or to fill a new position or additional position which is of a continuing nature.

(b) **Benefit Limitations**

Full-time regular employees shall be entitled to all benefits of this Agreement except as limited during the probationary period. During the probationary period full-time regular employees shall not be eligible for coverage under the Dental Plan and the Long Term Disability Plan, but shall receive coverage under the B.C. Medical Plan, the Extended Health Benefits Plan and the Group Insurance Plan.

Upon completion of the probationary period, a full-time regular employee will be credited with service back to the date of hire for the purpose of determining all the benefits under this Agreement.

Except as provided for in 6.04(a) ii), by agreement with the Union the Corporation may hire a temporary employee to fill a full-time regular position as defined above.

A full-time temporary employee who is successful in securing a regular position while a temporary employee shall have the term of employment since her/his last date of hire as a temporary employee applied towards the waiting periods for all welfare benefit plans. Those who have served the required waiting periods will be immediately eligible for coverage under those welfare benefit plans provided to full-time regular employees.

### **6.03 Part-Time Regular Employees**

#### **(a) Definition**

A part-time regular employee is one hired to fill a position which is of a continuing part-time nature. Except as may be varied below, a part-time regular employee will work according to a regular part-time schedule, but unless agreed with the Union, will not work more than seventy-five percent (75%) of the normal monthly hours as established in Article 12. Employees who work more than seventy-five percent (75%) of the normal monthly hours shall be considered as a full-time regular employee and will receive all benefits thereto. A part-time regular employee's schedule may be varied by agreement with the employee.

#### **(b) Hours of Work**

Part-time regular employees may be regularly scheduled to work up to the normal hours in a work day, as defined elsewhere in this Agreement. By agreement with the part-time employee and the Corporation, part-time regular employees may be regularly scheduled to work up to nine and one-half (9 ½) hours per day at straight time. In addition to scheduled base hours, extra hours may be offered on a voluntary basis to the maximum number of hours normally worked by a full-time regular employee. Either a job steward or a local Union officer will be notified prior to implementation of such an arrangement.

#### **(c) Benefit Limitations**

- i) will conclude their probationary periods after having worked the equivalent hours as described for the probationary period.
- ii) will be credited with seniority and service back to date of hire upon completion of the probationary period, and such credit during that period and henceforth shall be in accordance with the hours worked for the Corporation provided the employee retains membership in the Union for that period.
- iii) will be laid off in accordance with the principle of inverse seniority within their department.
- iv) will be entitled to coverage under the Dental Plan, Long Term Disability Plan, group life insurance plan, B.C. medical services plan and Extended Health Benefits Plan on a cost share basis in accordance with hours worked. The percentage of premiums paid by

the employee will be determined, based on the rolling average of the percentage of full-time hours worked over the previous six pay periods.

The welfare benefit provisions set out above will apply to all newly hired part-time regular employees, and existing employees securing a part-time regular position. Existing part-time regular employees, as at August 25, 1992, and who continue as part-time regular employees, have the option of enrolling in the welfare benefit programs, thereby discontinuing receipt of the 8% paid in lieu of benefits, or declining enrolment and continuing to receive the 8% in lieu of these benefits.

- v) will be entitled to receive sick leave on a pro-rata basis to cover scheduled days of work.
- vi) will be remunerated for statutory holidays, as set out in Article 16.01, at the rate of 4.4% of gross earnings, and shall receive 2% of gross earnings for each week of earned vacation entitlement, as provided for in Article 15.03, during each calendar year. A part-time regular employee who wishes to take vacation upon completion of the service requirements may request the applicable percentage of earnings to date, subject to a maximum of 2 such requests in a calendar year. The amount paid out in such instances will be deducted in the calculation of vacation and holiday pay at year-end. The above compensation represents the part-time employees' total claim for vacation and holiday pay, except that at the discretion of the Corporation such employees may be paid for holidays as they occur provided such is deducted from total compensation above.
- vii) may be terminated in accordance with this Agreement, except that pay in lieu of any notice shall be calculated on the basis of scheduled working days or hours within the period of required notice. Any severance pay which may be due as a result of action taken under Article 8 will be calculated on a pro rata basis in relation to the time worked.
- viii) will receive salary step increases in accordance with their accumulated service.
- ix) part-time regular employees will have the right to apply for full-time regular positions within the Corporation after the completion of their probationary period but seniority shall be determined under ii) above.
- x) will have their salaries calculated by multiplying their appropriate hourly rate times the hours worked.

## **6.04 Full-Time Temporary Employees**

### **(a) Definition**

Full-time temporary employees may be hired without job posting under the following conditions provided they are paid not less than the rate for a full daily shift for each day worked and are working a normal work week schedule as established under Article 12 or Article 13. It is the intent that the Corporation will appoint regular employees within the applicable department to acting positions within that department wherever practical in advance of hiring temporary employees.

Should no full-time regular employee be available from within the applicable department, upon an employee's written request, the Corporation, where practical, will use full-time regular employees from other departments within the same headquarters. Such usage will be subject to the availability of employees who are capable of performing the work, and the practicality of releasing such employees from their current/regular work assignment(s).

- i) Full-time temporary employees may be hired in connection with specific temporary projects or temporary variations in work where such project or variation is for six (6) months or less. The parties, by mutual agreement, may agree to a period in excess of six (6) months.

During a period of continuous service, full-time temporary employees will earn service credits towards eligibility for length of service increases as per Article 11.06.

Full-time temporary employees who assume a lower level position during a period of continuous employment will receive a salary in the lower level position which is commensurate with their accrued service; that is, their rate of pay will be determined on the basis of having accrued their period of continuous service in the lower level job in the first instance.

- ii) Full-time temporary employees may be hired for employee replacement during vacations, sick leave, leave of absence and to fill vacancies temporarily while jobs are being posted and filled.

### **(b) Benefit Limitations**

Full-time temporary employees shall be entitled to all the benefits of this Agreement, except that full-time temporary employees:

- i) will be governed by Article 6.01 during their probationary period.
- ii) will not have any rights under the layoff and recall provisions of Article 8. However, the Corporation will advise such employees of a pending layoff as early as possible.

- iii) will not have any rights under technological or procedural change.
- iv) will be paid 10.4% of gross earnings with each pay period in lieu of annual vacation and general holiday leave.
- v) will not be entitled to coverage under the Dental Plan, Long Term Disability Plan, Group Life Insurance Plan, B.C. Medical Services plan, or Extended Health Benefits Plan. In lieu thereof, full-time temporary employees will be paid at the rate of 108% of the rate they would have otherwise attained.
- vi) will be entitled to benefits under the short term disability plan upon the completion of her/his probationary period in accordance with Article 17.03.
- vii) can apply for other bargaining unit positions and receive selection preference in accordance with Article 7.03(c) after completion of the probationary period. If selected, the Corporation may require the temporary employee to fulfill her/his temporary assignment before commencing her/his new position.

## **6.05 Part-Time Temporary Employees**

### **(a) Definition**

Part-time temporary employees will work less than seventy-five percent (75%) of the regularly scheduled hours per day and/or week and/or per month as set out in Articles 12 and 13 and such work will be in connection with a specific part-time temporary project which will be for six (6) months or less unless otherwise mutually agreed by the parties.

### **(b) Benefit Limitations**

Unless otherwise specifically agreed by the Union, part-time temporary employees will be paid an hourly rate which will be 108% of the hourly rate which is at the mid-point of the salary range for the appropriate classification. The enhanced rate shall be in lieu of all other benefits except that any benefit required by law will be in addition to the enhanced rate.

Part-time temporary employees will receive 10.4% of gross earnings at termination in lieu of holiday pay as set out in Article 16 and in lieu of vacation entitlements.

### **(c) Term of Employment**

A part-time temporary will only be hired by mutual agreement between the parties except that the Corporation may hire part-time temporary employees on an as and when basis for specific projects or short term requirements of two (2) calendar weeks or less without agreement.

Part-time temporary employees may be hired for up to five (5) calendar weeks without agreement for employee replacement during vacations, sick leave and leave of absence.

#### **6.06 Work Experience Students**

Individuals who are granted work experience status will not be considered employees for the purposes of this Agreement and will receive no pay. Work experience students will not be used in a manner which results in the denial of an opportunity that would otherwise be offered to a regular employee, and will not be used to fill regular or temporary vacancies.

## ARTICLE 7

### JOB POSTINGS AND COMPETITIONS

#### 7.01 Job Postings

- (a) Except as otherwise provided for in this Agreement, all regular job vacancies will be posted in accordance with this Article unless otherwise specifically agreed to by the Union.
- (b) Except as provided for elsewhere in this Agreement, all regular job vacancies will be posted for five (5) working days. Job vacancies which are posted throughout the Corporation will be advertised on the Corporation's electronic systems. Except as provided in Article 7.01(n), a regular job vacancy which arises through attrition, and which the Corporation intends to replace as a full-time regular position will be posted within twenty-one (21) calendar days of being assumed by an acting incumbent.
- (c) The closing date of any job posting will not expire until the job has been posted for a minimum of five (5) working days. Any applicant will have her/his job application accepted by the Corporation provided it is received by the Corporation by the closing date.
- (d) The job posting shall contain all relevant job information including job title, work location, required knowledge, skills and abilities, or equivalent, salary range, special conditions, status (full-time or part-time, etc.), and the closing date of the competition. Should any of these conditions change after the job is posted, modifications will be issued and attached to the posting with the closing date amended consistent with the minimum five (5) day posting requirement.
- (e) Late applications due to sickness, vacation or other authorized leave of absence will be accepted, provided such application is received within five (5) calendar days of the posting close. In situations where late applications are submitted, the cause for the application being late must be indicated on the application form.

In situations of mass postings, employees whose personal, non-work related, circumstances have changed following the closing date of the posting (e.g. spouse has been relocated) may submit a late application for consideration for future vacancies and inclusion (integration) into the applicable placement inventory, provided such application is received by the Corporation within ninety (90) calendar days of the closing date.

- (f) The Corporation will provide copies of all job postings to the Union office as part of the normal posting distribution.
- (g) A list of the names and seniority dates of the successful applicant(s) will be posted on the intranet. The Union will be advised of the names of all applicants, and the name and seniority of the successful applicant(s).
- (h) Unless otherwise agreed to by the parties, the Union shall be advised one (1) calendar week prior to any hire from outside the bargaining unit when there are bargaining unit applicants involved in the specific job posting and the Corporation will provide the following information:

- i) the posting number of the position to be filled.
  - ii) names of bargaining unit applicants who applied to the position.
  - iii) reasons for selection outside the bargaining unit.
- (i) Applicants for posted positions who are interviewed will be given time off without loss of pay for that purpose and will be reimbursed for all expenses incurred as in Article 20.
- (j) The successful applicant shall assume the duties of the new job not later than six (6) weeks from the date of notification of selection, unless otherwise agreed with the employee. Temporary employees who successfully apply for other positions may be retained in their temporary position for their period of temporary assignment at the discretion of the Corporation. In any event, however, employees will be paid at the new higher rate either the date they assume the new position or four (4) weeks from the date of notification of selection, whichever first occurs.
- (k) The parties hereto agree that in certain limited instances, and particularly those involving the replacement of specialized personnel, it is unlikely that a job posting will produce applicants from within the bargaining unit who will have the prerequisite knowledge, skills and abilities, or equivalent to perform such jobs. In order to expedite the hiring process in such instances, the Corporation may advertise outside the bargaining unit during the posting period provided the Union is notified in advance and the job posting contains a statement outlining the Corporation's action and reason thereto. The statement will further request employees who believe they have the prerequisite knowledge, skills and abilities, or equivalent, to ensure that they submit their applications for consideration. The Corporation does agree, however, that the practice as set out above will be avoided wherever possible in the interest of good employee relations.
- (l) Jobs which are posted as part of a mass posting - e.g. Claims Adjuster jobs - and which are not filled within a period of six (6) months, shall be reposted prior to being filled. All other jobs which are not filled within a period of four (4) months shall be reposted prior to being filled.
- (m) The parties recognize that a lack of space in a headquarters can make it necessary to house departments, or parts of departments, which would otherwise be housed in that headquarters, in a satellite office in a separate building.  
  
It is agreed, for purposes of this Article, that when this occurs, the satellite office of that department shall be considered as one and the same with the headquarters office, such that employees of that department in the satellite office will have the same access to job postings as if they were in the headquarters office.
- (n) A regular job vacancy that arises through attrition, and which the Corporation intends to replace as a full-time regular position, and newly created regular position vacancies, may be held open by the Corporation for a period of up to six (6) months, or a longer period if deemed necessary by the Corporation, but not to exceed one (1) year. Such vacancies may be filled through the use of short-term appointments where the Corporation considers that such positions may be suitable for staff who are being displaced from other regular positions, and for staff who may require special placement accommodations due to disability or

diminished work capabilities. The Corporation will provide the Union with a list of regular job vacancies on a monthly basis.

## **7.02 Appointments to Jobs**

Except as otherwise provided in this Agreement, employees may apply for regular positions during their probationary/assessment period, as described in Article 5.02, but will receive consideration as an outside applicant. Temporary employees who are successful in attaining a regular position may be held in their temporary positions until the conclusion of their temporary assignment, at the Corporation's option.

## **7.03 Job Selection**

- (a) Except as limited in Articles 6.01(b) iv) and 7.02, preference in appointment to bargaining unit positions will be given to regular employees of the Corporation who are members of the bargaining unit. For the purposes of this clause, employees on the recall list are considered regular employees.
- (b) Job selections and promotions shall be on the basis of knowledge, skills and ability to perform the vacant job (as at the time of posting). Where the knowledge, skills and ability are relatively equal, seniority will be the determining factor.

In cases where two or more employees have the same seniority date, and one of those employees will be selected for a posted position, if all other things are equal, the date of the employee's first application for employment with the Corporation will determine the order of seniority.

- (c) After employees covered by Article 7.03(a) and except as limited by Articles 6.01(b) iv) and 7.02, preference in appointment to bargaining unit positions will be given to temporary employees who are members of the bargaining unit.
- (d) The Corporation will consider referrals for jobs in the bargaining unit from Local 378 in the event that the vacancy cannot be filled from within the Corporation.

## **7.04 Job Selection Disputes**

- (a) The Union will initiate the grievance at Stage III of the Grievance Procedure as set out in Article 3 within fifteen (15) calendar days of the date the employee received written notification/email.
- (b) In cases where a selection grievance is initiated, the selected employee may assume the position on a temporary basis until the grievance has been resolved.

Where the placement of the selected employee would involve the relocation of that employee's principal residence and the Corporation elects to fill the position, it will be filled on an interim basis (either through an acting, alternate or temporary assignment), pending resolution of the grievance. In such an instance Article 7.01(j) will not apply.

- (c) The parties agree to expedite the resolution of job selection disputes by utilizing a binding alternate dispute resolution process.

- (d) In the event of a re-selection for a regular position as a result of a selection grievance or ADR award, any employee involved in the re-selection may select a job steward from within the same headquarters to witness the re-selection. The job steward will be entitled to be present for all re-selection interviews and tests, with no loss of pay.

#### **7.05 Limited Postings and Standing Applications**

- (a) Job vacancies in Salary Group 2 will not be posted.
- (b) Job vacancies in Salary Group 3 will be posted in the applicable headquarters only.
- (c) Any job vacancy in Salary Group 4 at any headquarters within any of the cities and municipalities of Vancouver, Burnaby, New Westminster, Coquitlam, Surrey, Delta, Richmond, West Vancouver and North Vancouver will be posted at all Corporation work locations within all of those cities and municipalities.
- (d) Job vacancies in Salary Group 4 at any headquarters other than those described in Article 7.05(c) above will be posted at the applicable headquarters only.
- (e) Should any employee wish to be considered for any specific job in Salary Groups 2 to 4 inclusive, which the Corporation is not required to post at her/his headquarters, she/he may apply by submitting in writing a standing application for that job to the Manager, Human Resources Business Services. The employee in such instances will be advised of all vacancies and selections for that job on the same basis as if the specific job were bulletined. The employee will have complete recourse to the Grievance Procedure as outlined in this Article to resolve any dispute.

Standing applications will not be accepted for positions in Salary Group 5 and above.

Employees are required to reaffirm their standing application every four (4) months.

#### **7.06 Agreed Trainee Jobs**

- (a) The purpose of a trainee classification is to provide for the upgrading of an employee's knowledge, skills and abilities under a coordinated training program in order to meet the requirements of an end level position, and to define a salary progression which is commensurate with the employee's satisfactory progress through the training program.

Where a need for trainees is identified, the pay group for that trainee position will be established through the application of Article 10. The length of the training period appropriate to the trainee position and the salary progression through the trainee salary range, will be established by mutual agreement of the parties.

Upon successful completion of their trainee program, trainees will be classified to the end level job and confirmed to a permanent headquarters.

- (b) Any employee will have the right to grieve any selection or decision under 7.06(a) in accordance with the procedures of this Article.

(See Appendix "D")

## **7.07 Lateral Transfers**

- (a) Except as agreed to by the parties, or where there are no other fully qualified eligible applicants, the Corporation will not accept an application by a regular employee for a lateral transfer (i.e. to a job in the same pay grade as her/his present job) unless eighteen (18) months have elapsed since the date the employee was last hired or secured a transfer, promotion or voluntary demotion pursuant to this Article provided the voluntary demotion was not for health reasons.

The following provisions govern the determination of the start date in a position for the purposes of applying the above:

- i) Promotions

The effective date of the employee's appointment, or four (4) weeks from the date of written notification of selection, whichever first occurs

- ii) New hires, transfers and demotions

The effective date of the employee's appointment in the new position

Each employee will be advised, in writing, of her/his start date (as calculated above).

- (b) Trainees who successfully complete their training program, and who are reclassified to the end-level position, will be eligible to apply for a lateral transfer following twelve (12) months from the date of reclassification.

- (c) Unless otherwise agreed by the parties, the above clauses will not apply in the following cases:

- i) the employee has moved location at the direction of the Corporation since she/he first secured a position pursuant to this Article, or

- ii) a placement has occurred due to the procedures set out in Article 8, Article 9, or any other placement of a non-voluntary nature.

- (d) Where restrictions on an employee's ability to access a lateral transfer expire during the term of a mass posting, the employee may become eligible for lateral transfers upon completion of the waiting periods outlined in 7.07(c) above, subject to all of the following:

- i) the employee submitted an application within the time period of the original posting

- ii) the location the employee is requesting becomes vacant after the date the waiting period expires (vacancy determined by the date the position request - HR241 is received in Human Resources).

- iii) there remain no other qualified internal applicants, requesting the same location, who were eligible and

selected into the mass posting inventory at the time of the original posting.

(e) The following provisions are understood and agreed upon:

The parties to this Agreement will cooperate in facilitating exchange transfers between regular employees to enable each employee's headquarters to be nearer her/his place of residence, subject to Article 7.07 and the following conditions:

- i) this will be a voluntary action at the employees' request;
- ii) there will be no expenses paid by the Corporation;
- iii) the exchange transfer must be at equal job levels;
- iv) the exchange transfer must be between employees who are each capable of performing the new job;
- v) the Corporation must concur with the exchange transfer and such exchange transfer shall not be unreasonably denied, subject to Article 7.07;
- vi) this will be a once only opportunity for any regular employee;
- (vii) the Corporation will establish a registry on the e-mail system for employees who wish to exchange location with another employee.

#### **7.08 Employee Initiated Requests to Revert to Full-Time Status**

Where the Corporation has previously accommodated an employee's request to move from full-time to part-time regular status within a job classification and department, and the employee wishes to revert to full-time status in the same job classification and department, the Corporation will accommodate the employee, subject to the availability of a full-time position.

## ARTICLE 8

### LAYOFF AND RECALL

#### 8.01 Layoff

(a) Notification

If a reduction of regular employees is necessary due to a shortage of work, or for reasons beyond the control of the Corporation, the Corporation shall meet with, and advise the Union of the proposed reduction and the jobs affected as soon as possible and no reduction in staff shall occur until the following procedures are applied.

(b) Temporary Assignments

Prior to layoff of any regular employees the Corporation will end the assignment of any temporary employee, in that department, provided the affected employee has the prerequisite qualifications or an equivalency to enable the employee to immediately perform the assignment such that there is no loss of productivity.

(c) Contractor (in-house) Assignments

Prior to layoff of any regular employee from a department the Corporation will, where practical, end the assignment of a contractor in that department provided the affected employee has the prerequisite qualifications or an equivalency to enable the employee to immediately perform the assignment such that there is no loss of productivity and provided the work is assessed to be at an equal or lower level to that being performed by the employee.

(d) Layoff by Seniority

The basic principle in applying layoff to any regular employee shall be layoff by seniority (i.e. the most junior employee in the department in the affected job classification shall be the first laid off, providing the retained employee can perform the job). (see Letter No. 2)

(e) Pre-layoff Canvass

Prior to issuing formal notice of layoff to regular employee(s) under Article 8 or 9, the Corporation may, at its discretion, canvass all employees in affected job classifications, within affected departments to invite.

- i) Placement into other vacant regular positions in a job the employee previously held and performed at a satisfactory level, or an equivalent or lower level job within the Corporation, provided the employee has the

Prerequisite skills, aptitudes, education and experience, or equivalency, and can perform the job within the normal orientation period for the position, and/or,

- ii) Resignation with severance pay as provided for in Article 8.03, except that such pay will be limited to a maximum of six (6) months. In addition, the Corporation may, at its discretion, canvass employees in other job classifications within affected departments, or other departments, divisions, headquarters and/or regions, who would not otherwise be affected, but whose positions could be used to place affected employees. Seniority will prevail where the Corporation limits the number of employees leaving.

The Corporation will advise the Union immediately of the results of the pre-layoff canvass. The Union will cooperate in any pre-layoff canvass by waiving postings as required.

## **8.02 Vacancy Rights and Bumping Rights**

The Corporation will endeavour to place regular employees affected by layoff in other vacant positions within the region in which she/he is employed, provided the employee has the prerequisite education and experience, or equivalent, and can perform the job within a reasonable period of orientation. Such a period of orientation not to exceed that which is prescribed in the job profile. The Union will cooperate by waiving job postings as required.

The employee may elect to exercise her/his bumping rights if:

- i) there are no positions available in the region, or
- ii) the employee can bump into a position of higher pay grade than the position available, or
- iii) the available position(s) would involve relocation that carried an entitlement to moving expenses under Article 20.08.

Should there be a position available which does not involve relocation which carries an entitlement to moving expenses under Article 20.08, and the employee does not elect to exercise her/his bumping rights, the employee will either accept such a position or be deemed to have elected layoff and receive severance pay in accordance with 8.03. Where an employee declines such placement into a vacant position, and elects layoff, her/his rights of recall will be limited to only those positions in a higher pay grade than the one offered at the time of layoff.

### **Bumping Rights**

- (a) Subject to the limitations specified, any regular employee who is subject to layoff under the terms of this Agreement may bump the least senior employee from an equivalent or lower level job on the following basis:
  - i) the least senior employee in the same job classification (i.e. job profile); or

- ii) the least senior employee in a job the redundant employee previously permanently held since the date of last hire with the Corporation.

Provided the employee has the prerequisite education and experience, or equivalent, and can perform the job within a reasonable period of orientation. Such period of orientation not to exceed thirty (30) working days.

- (b) Any regular employee with less than two (2) years seniority may exercise her/his bumping rights in accordance with 8.02(a) in the following order:
  - i) in the headquarters where she/he is employed.
  - ii) in any headquarters where she/he was previously employed.

Employees electing to exercise their bumping rights in accordance with item ii) above will not be eligible for moving expenses as defined in Article 20.08 of the Agreement.

- (c) Any regular employee with more than two (2) years but less than eight (8) years seniority may exercise her/his bumping rights in accordance with 8.02(a) in the following order:

- i) in the headquarters where she/he is employed.
- ii) in the region in which she/he is employed.

- (d) Any regular employee with more than eight (8) years seniority may exercise her/his bumping rights in accordance with 8.02(a) in the following order:

- i) in the headquarters where she/he is employed.
- ii) in the region in which she/he is employed.
- iii) in the Corporation.

- (e) Employees who have the opportunity to exercise their bumping rights under Article 8.02(c) or (d) and who have the opportunity to bump into two (2) or more jobs will exercise their bumping rights within the same municipality or city prior to bumping Corporation-wide, except that such condition will not negate the employee's right to bump into the highest salary grade job available.

- (f) Regular employees who are bumped under the foregoing provisions may in turn exercise their seniority to bump other employees in accordance with this Article.

- (g) Lack of space in a headquarters may require overflow premises to accommodate employees of a department who would otherwise be located in that headquarters if space permitted. Where this occurs, all such premises of that department shall be deemed to be a single headquarters for the purposes of establishing bumping rights under this Article.

### **8.03 Notice and Severance Pay**

(a) Any regular employee who is laid off will receive written notice of layoff and severance pay as follows:

- i) employees who have less than three (3) years service with the Corporation since the last date of hire will receive two (2) calendar weeks written notice.
- ii) employees who have three (3) or more years service with the Corporation since the last date of hire will receive four (4) calendar weeks written notice.

Any regular employee who has received written notice of layoff in accordance with the foregoing and who does not or is unable to elect bumping rights under Article 8.02 will be laid off with severance pay, subject to a maximum of fifty-two (52) weeks, as follows:

- i) three weeks pay for employees with up to two (2) full years service.
- ii) two weeks pay for each full year of service in excess of two (2) years, up to five (5) years.
- iii) three weeks pay for each full year of service in excess of five (5) years.

(b) A regular employee who receives severance pay, if she/he returns to work for the Corporation, will reimburse the Corporation for any portion of severance pay which exceeds the period of layoff prior to her/his return to work. An employee who receives severance pay because of more than one layoff shall not receive total severance pay which will exceed the amount of severance entitlement defined in 8.03(a) (i.e. severance pay is not cumulative with each layoff).

### **8.04 Salary on Transfer to Lower Level Jobs**

A regular employee who transfers or bumps to a lower level job under the conditions of this Article will continue to receive her/his salary on such transfer along with increases on their appropriate anniversary dates provided, however, that she/he will not receive a salary which is higher than the maximum of the lower level job.

### **8.05 Reinstatement to Former Position**

A regular employee who accepts a lower level position under this Article shall have the right to reinstatement of her/his former position or one substantially derived from it, if such becomes available within one (1) year from the date of accepting the lower level position. The job, in such instances, will not be posted and the employee shall receive the salary she/he would have attained assuming she/he had not transferred to a lower level job.

### **8.06 Recall List and Procedure**

(a) Employees with less than five (5) years continuous service shall be placed on a recall list for six (6) months. Employees with five (5) or more years continuous service shall be placed on a recall list for twelve (12) months.

- (b) Employees on the recall list will be considered automatic applicants to job vacancies posted in accordance with the provisions of Article 7, provided the position is within the department from which they were subject to layoff.

New employees will not be hired until employees on the recall list who have the prerequisite education and experience or equivalent to perform the job are recalled in their order of seniority and in the following order:

- i) recall will first be offered to employees on the recall list who have five (5) or more years of seniority at the time of recall.
  - ii) should there be no employee on the recall list with five (5) or more years of seniority at the time of recall, or should eligible employees decline recall in accordance with 8.06(d) or (e) below, recall will next be offered to the employee on the recall list, who has previously worked within that region.
  - iii) should there be no employee on the recall list eligible for recall under i) and ii) above, the Corporation may hire from outside the bargaining unit.
  - iv) new in-house work (that is normally performed by bargaining unit employees) will not be contracted until employees on the recall list from the affected department, who have the prerequisite qualifications or equivalency to perform the job, are recalled in their order of seniority.
- (c) Employees who are recalled will be given a salary on rehire which is not less than the salary they would have received assuming they had not been laid off except that such salary will not be below the minimum or above the maximum of the salary range.
- (d) Notice of recall will be sent by registered mail to the last known address of all employees on the recall list who are eligible for recall under 8.06(b). Such employees will have fourteen (14) calendar days from the date the letter is registered in which to respond and report to work, with employees being rehired in order of their seniority. An employee must respond to recall to a lower level job, but may decline such and remain on the recall list. An employee who fails to respond to any notice of recall will be deemed to be terminated. The notice of recall will clearly state this requirement.
- (e) An employee on layoff who fails to respond and report to work on recall to a job of a continuing nature of equal or higher salary grade than that job from which she/he was laid off at the same headquarters shall be terminated by the Corporation.
- (f) Employees on layoff will keep the Corporation informed of their current address for recall. Should an employee change her/his address during the period of layoff, she/he will inform the Corporation of such change by registered mail.
- (g) Should a temporary position become available at the headquarters from which an employee was laid off and for which the laid off employee has the prerequisite education and experience or equivalent to perform the

job, the Corporation will attempt to contact the employee (by telephone) to determine her/his interest in the position. The employee's decision not to accept the position, whatever level it may be, will not prejudice her/his previously established rights of recall into regular position vacancies.

- (h) Should the affected employee accept the temporary position, her/his status during her/his employment with the Corporation in that position will be considered that of a regular employee except that she/he will continue to be eligible for recall into a regular position vacancy during her/his period of employment in the temporary position. In the event the employee is subsequently laid off while holding a temporary position, she/he will not be eligible to exercise her/his bumping rights and will be subject to recall in accordance with her/his original recall rights when laid off from a regular position. In such cases the employee's period of recall as defined in Article 8.06(a) will recommence. The terms of Article 8.03 will apply in total to an employee affected by this clause.

#### **8.07 Copies of Recall Lists and Notices to the Union**

Copies of recall lists and all notices of recall shall be sent to the Union office.

## ARTICLE 9

### TECHNOLOGICAL AND PROCEDURAL CHANGE

#### 9.01 Notice of Change

The Corporation will provide the Union with as much notice as possible, but in any event not less than sixty (60) calendar days when a significant number of employees are affected, prior to introducing automation or new equipment or new procedures which could result in the displacement or downgrading of any regular employee covered by this Agreement. In any event, the Corporation may implement the change after the sixty (60) day period so long as the rights of employees under this Article are not abrogated.

In relation to providing the Union with notice of technological and procedural change, as set out above, the Corporation will meet with the Union during the first thirty (30) days of the sixty (60) day notice period to review planned implementation procedures, and to consider any alternative approaches proposed by the Union.

#### 9.02 Cooperation in Placement of Displaced Employees

Prior to the application of the following procedures, the parties hereto agree that they will cooperate in facilitating the placement of employees displaced as a result of 9.01 above by attrition wherever possible.

The basic principle in applying displacement to any regular employee shall be last hired, first laid off provided the retained employee(s) can perform the job. (See Letter No. 2).

#### 9.03 Displacement of Employees

Any full-time regular employee who is displaced under this Article will be entitled to the following considerations in the following order.

The parties agree that the terms and conditions of Article 8.02 will apply in the event of bumping under this Article.

- (a) The Corporation will place the employee in an available position of equal salary grade within the same headquarters or within the same region that the employee can perform after appropriate training and orientation, the period of which shall not exceed three (3) months. The Union will cooperate with such placements by waiving job postings as required. The employee will either accept the available position (unless it involves relocation that would entitle the employee to moving expenses under Article 20.08), or elect to terminate and receive severance pay in accordance with 9.03(d).
- (b) If no position at an equal salary grade within the same headquarters or within the same region is available, or if such position is available and has been rejected by the employee because it involves relocation that carries an entitlement to moving expenses under Article 20.08(a), the Corporation will offer the employee an available position at a lower salary grade within the same headquarters or within the same region that the employee can perform after appropriate training and orientation, the period of which shall not exceed three (3) months. The Union will cooperate with such placements by waiving job postings as required.

The employee will accept the position being offered unless acceptance would involve relocation that would entitle the employee to moving expenses under Article 20.08(a), or unless the employee elects to exercise her/his bumping rights into an alternate position in accordance with Article 8.02. For the purposes of this Article, employees in the Northern Interior, Southern Interior and Vancouver Island regions will be allowed a one-time bump opportunity corporate wide after exhausting the options in Article 8.02. The exercising of these bumping rights, however, must result in the employee either securing a position in a higher pay grade than the one being offered, or securing a position in a location other than the location of the position being offered and which is consistent with the order of bumping as described in 8.02. In the event the employee does not accept placement in an available position for reasons other than described herein, the employee will elect to terminate and receive severance pay in accordance with 9.03(d).

- (c) When an employee who has been displaced under this Article cannot be placed or rejects placement because it involves relocation that carries an entitlement to moving expenses under Article 20.08(a), and subsequently elects not to exercise her/his bumping rights or exhausts her/his bumping rights, the employee will be laid off and will receive severance pay in accordance with Article 9.03(d). An employee who is laid off shall be placed on the recall list in accordance with the period defined in Article 8.06(a).
- (d) An employee who elects to terminate under 9.03(a) or 9.03(b), or who is laid off under 9.03(c), will receive severance pay in accordance with Article 8.03.
- (e) An employee who is placed or bumps into a lower grade job will receive salary protection in accordance with Article 9.05.

#### **9.04 Salary Protection**

A full-time regular employee who is placed or bumps into a lower level job will receive salary protection effective from the date she/he assumes the lower level job, as follows:

##### **Period of Protected Salary Treatment**

- (a) Up to and including three (3) years service, one (1) month of protected treatment for each full year of service.
- (b) More than three (3) years of service, three (3) months protected treatment plus two (2) months protected treatment for each full year of service in excess of three (3) years.
- (c) More than five (5) years of service, entitlement will be as calculated per item (b), or twelve (12) months protected treatment, whichever is greater.

After the expiry of the protected salary period, the affected employee will have her/his salary red-circled if such is above the maximum of the lower level job.

## **ARTICLE 10**

### **JOB CLASSIFICATIONS - PROFILES - EVALUATION**

#### **10.01 Job Classifications**

All bargaining unit employees will be covered by a job classification which will be set out in Appendix "A".

The Corporation will provide a job profile for each bargaining unit job classification set out in Appendix "A", and for each new job classification or revised job classification as established under this Article.

The Corporation will provide copies of job profiles to the Union office at the time they are implemented. Job profiles applicable to each department of the Corporation will be available within the department, and a copy of the employee's job profile will be available to the employee upon request.

#### **10.02 Job Classification Pay Grade Assignment**

Job classifications will be described, evaluated, and assigned a pay grade by the Compensation and Research Department. New job classifications will not be bulletined until the job profile has been prepared, evaluated and assigned a pay grade.

#### **10.03 Changes in Duties and Responsibilities**

Duties and responsibilities of job classifications may be changed by the Corporation subject to the changes being properly documented into the job profile. Such jobs will be evaluated and assigned a pay grade by the Compensation and Research Department.

#### **10.04 Updating Appendix "A" - Job Classifications**

Appendix "A" will be updated as appropriate by the Compensation and Research Department to reflect completed evaluations.

#### **10.05 Minor Duties**

Job profiles prepared in accordance with this Article will summarize job duties and responsibilities, and will form part of this Agreement. Minor duties, which are ancillary to one or more of the duties defined in the job profile, may be omitted provided such duties are related to those set out in the job profile, and provided such duties do not affect the value of the job.

#### **10.06 Consultation with Affected Employee(S)**

Job profiles will be prepared by the Compensation and Research Department after consultation with the affected employee or a representative group of affected employees and/or the appropriate manager(s) or designate(s). The job profiles will be developed on the basis of information gathered through this consultation as well as the input provided through the Position Questionnaire, which will be completed and initialled by the affected employee or a representative group of affected employees and/or the appropriate manager(s) or designate(s).

#### **10.07 Job Profile Modifications**

- (a) A "Position Questionnaire" recording changes in job duties and responsibilities which are of a continuing nature, except for minor duties as described in Article 10.05, will be completed by the affected employee(s) and/or by the applicable manager or her/his designate and will be forwarded to the Compensation and Research Department within ten (10) working days of the changes occurring. When changes are confirmed to be of a continuing nature, copies will be provided by the Compensation and Research Department to the Union office within ten (10) days.
- (b) It will not be necessary to prepare Position Questionnaires for changes in job duties and responsibilities which will be of a temporary or non-recurring nature. In the event of a disagreement between the employee and her/his manager in regard to this assessment, the employee may submit a Position Questionnaire to the Compensation and Research Department, which will subsequently distribute copies in accordance with Article 10.07(a).
- (c) As Position Questionnaires are received, the Compensation and Research Department will arrange for Compensation Analysts to rewrite the job profile when the scope and substance of the changes affect the rating of the job or the general nature of the job.
- (d) The parties to the Agreement agree that it is in the best interest of all parties to maintain the job profiles in an up-to-date form.

#### **10.08 Work in Lower Level Classifications**

Employees may be required to temporarily perform lower level work provided such employees suffer no reduction in pay grade. It is the intent of this clause that the Corporation will not assign such work in a discriminatory manner.

#### **10.09 Work in Higher Level Classifications**

Employees may be requested to temporarily perform higher level work subject to such work being offered on an equitable and rotational basis to those employees capable of performing the work. In such instances, employees will receive salary in the acting capacity in accordance with Article 11.14 and 11.15.

### **10.10 Job Evaluation Plan**

The parties agree that the amended Deloitte & Touche Job Evaluation Plan will apply during the life of this Agreement. It is the intent of this Article that all jobs will be classified fairly and equitably relative to each other.

The parties may explore alternate compensation plans during the life of this Agreement and may mutually agree to implement such plans.

### **10.11 Job Evaluation Appeal Officer**

The Union will appoint two bargaining unit employees to be Job Evaluation Appeal Officers, selected in accordance with job qualifications determined and agreed to by the Parties, to conduct job evaluation reviews on an as needed basis, in accordance with Article 10.14(d) and 10.14(e) of the Job Evaluation Appeal Procedure. One appointee will serve as the principal Officer and the other will serve as back-up in situations of absence or excessive workload.

Job evaluation reviews will be focused on the area(s) in dispute following the completion of the process in Article 10.14(c) of the job evaluation appeal procedure and will take into account supporting baseline classifications in the Job Evaluation Plan. Such reviews will be carried out in an expedient and cost effective manner consistent with the timeframes set out in Article 10.14(d) and 10.14(e).

The Job Evaluation Appeal Officer will be paid not less than the maximum of Salary Group ten (10) or her/his regular salary with the Corporation, whichever is greater, for the period(s) when she/he is acting as a Job Evaluation Appeal Officer.

The Corporation will pay for all reasonable expenses incurred by the Job Evaluation Appeal Officer in the performance of her/his functions as set out in this Article. Pay for time worked in connection with Job Evaluation Appeal Officer's duties will be limited to straight time earnings during regular working hours.

The Job Evaluation Appeal Officer will adhere to standard Corporation policies, and will submit an accounting of time spent and associated expenses, together with a summary of activities related to each job evaluation appeal as and when required, which will be forwarded to the Manager, Compensation and Research.

The Job Evaluation Appeal Officer will schedule her/his time in such a way as to cause minimal disruption to her/his regular job with the Corporation.

### **10.12 Joint Job Evaluation Appeal Committee**

A Joint Job Evaluation Appeal Committee will be established consisting of two (2) members of the Corporation's management staff, and two (2) members of the Union staff. All costs of each party's representatives will be borne by that party. The Committee will meet on a scheduled basis every thirty (30) days, if required to adjudicate job evaluation/job profile appeals which cannot be resolved through the Job Evaluation Appeal Officers. Meetings may be rescheduled by mutual agreement and such agreement will not be unreasonably denied. Job Evaluation Appeal Officers (i.e. any of the four (4) appointees) and Human Resources Advisors may act as resource personnel to the Committee, and will attend such meetings as required by the respective parties. Affected employees and managers may provide input to such meetings, if requested by the respective parties.

### **10.13 Standing Arbitrator**

The parties agree to employ and share all costs of a named individual, chosen for her/his expertise in job evaluation, to act as a Standing Arbitrator. The Standing Arbitrator will be paid on a basis agreed to by the parties, and will function as Chairperson to the Joint Job Evaluation Appeal Committee. In the event that an appeal cannot be resolved by the Joint Job Evaluation Appeal Committee, the Arbitrator will resolve the appeal through the application of the Corporation's Job Evaluation Plan. This may include on-the-job review if required.

### **10.14 Job Evaluation Appeals**

Where an employee believes her/his job has not been properly evaluated under the Plan, the employee shall have the right to appeal the evaluation of her/his job through the Union. Such an appeal shall be in accordance with the provisions of this Article. Where an employee believes that the duties she/he performs are more properly characterized by a job profile other than her/his own, such a dispute shall be processed as a grievance under Article 3.06.

- (a) New job classifications prepared, evaluated, and assigned a pay grade by the Corporation, pursuant to Articles 10.02 and 10.03, may be subject to appeal within sixty (60) calendar days of confirmation of the salary group by the Compensation and Research Department. In such instances, the appeal will be initiated at paragraph (e) following.
- (b) For current job classifications, if an employee believes that the job she/he occupies has been materially modified since the most recent evaluation and is not properly evaluated, she/he shall complete and forward Part 1 of the Job Evaluation Review Form to her/his immediate manager and to the Union, requesting written classification information (job profile, job evaluation factor analysis, and job questionnaire as appropriate) describing duties and responsibilities. The Corporation shall provide such information within seven (7) days of the request.
- (c) The employee and her/his immediate manager shall meet to discuss the current work performed and compare it with the duties performed at the time of the most recent evaluation. The Job Steward may attend this meeting at the employee's request.
- (d) Following the discussion in point (c) above, if the employee still believes that the job she/he occupies is materially different and has not been properly evaluated, the employee shall complete Part 2 of the Job Evaluation Review Form and forward it to the Compensation and Research Department and the Union within fifteen (15) calendar days of receipt of the written classification information, or within fifteen (15) calendar days when the response was due under Article 10.14(b) above. The Corporation shall respond with written job evaluation rationale within thirty (30) calendar days of receipt of Part 2 of the Job Evaluation Review Form.
- (e) If there remains a dispute respecting job level, the Union Job Evaluation Appeal Officer will complete Part 3 of the Job Evaluation Review Form and submit completed Parts 1, 2 and 3 of the form to the Corporation within fifteen (15) calendar days of receipt of the Corporation's written response under Article 10.14(d) or when the response was due. Part 3 of the form will provide a written explanation of why the job level sought is more appropriate than the existing job level, focusing on the area(s) in dispute, including reference to supporting baseline classification(s) in the job evaluation plan. The Corporation shall review the appeal and respond

to the Union Job Evaluation Appeal Officer with a comprehensive explanation of its decision within thirty (30) calendar days of receipt of the appeal under Article 10.14(e).

- (f) If the above procedure does not lead to a satisfactory resolution, the Union Job Evaluation Appeal Officer may submit the matter within fifteen (15) calendar days of receipt of the response from the Corporation or when the written response was due, to a standing arbitrator who shall make a final and binding decision as to how the job should be rated according to the Plan.

The parties shall jointly agree upon a list of Standing Arbitrators. The Standing Arbitrator shall be assigned to hearings depending upon availability, on a rotating basis from the list of standing arbitrators. The order of the rotation may be varied by mutual agreement of the parties. The Corporation and the Union shall each pay an equal share of the fees and expenses of the Standing Arbitrator in each case. It is agreed that, whenever possible, the parties will hold the arbitration hearings at either the Corporation's or the Union's offices.

The arbitration hearings shall be of an expedited nature. It is agreed that formal participation at the arbitration hearings shall, except at the discretion of the arbitrator, be limited to one (1) representative and one (1) supporting witness from each party.

- (g) The time limits referred to in this Article may be extended by mutual agreement, and such agreement will not be unreasonably denied.
- (h) For appeals received after the date of signing this Agreement, the effective date of any resulting change in salary group level shall be the date of receipt of part 2 of the job evaluation appeal form, pursuant to Article 10.14(d) above.

### **10.15 Pay Level Changes**

Pay levels of job classifications set out in Appendix "A" will only be changed through the application of the Job Evaluation Plan and related procedures as set out in this Article.

The parties agree that the rating of jobs listed in the classification schedule forming Appendix "B" of the Pay Equity Memorandum of Agreement, as evaluated through submitted questionnaires, are correct as at their respective implementation dates(s). Such jobs will serve as a baseline for subsequent evaluations of new or amended jobs, and will be used by the parties in the resolution of job evaluation appeals.

# ARTICLE 11

## SALARY ADMINISTRATION

### 11.01 Pay According to Job Classifications and Salary Group

Except as limited below, all employees covered by the Agreement will be classified and paid under one of the job classifications and salary groups set out in Appendix "A" except that job classifications and salary groups subsequently developed under Article 10 will be included and form part of Appendix "A".

All employees hired from outside the bargaining unit into job classifications in salary groups 1-7 except employees hired under Letters of Understanding D-2, D-7 and 15 will be paid five percent (5%) less than Step 1 of the applicable salary group for a period of six (6) months.

This provision will only affect an employee once. For example, a temporary employee hired under this clause who is released by the Corporation and is subsequently recalled or rehired will not be subject to the five percent (5%) reduction.

At the conclusion of six (6) months, employees will progress along the salary scale as per Article 11.06 of the applicable salary group.

Should there be any conflict between the language of Article 11.01 and any other provision of the collective agreement, the language of Article 11.01 will apply.

### 11.02 Bi-Weekly Pay and Calculation

Employees will be paid on a bi-weekly basis with the bi-weekly salary calculated at 46.154% of the employees' normal monthly rate rounded to the nearest cent.

### 11.03 Hourly Rate Calculation

Employees' normal hourly rate for overtime and premium pay calculations shall be calculated to the nearest cent by dividing the employees' bi-weekly salary as established in Article 11.02 by seventy (70).

### 11.04 Minimum Rate

No employee will receive less than the minimum rate for the job.

### 11.05 Rate Upon Hiring

New employees will be hired at the minimum rate for the job except that the Corporation may hire up to the midpoint of the salary range at its option, to recognize related experience. New employees may be hired above the midpoint of the salary range provided agreement is reached with the Union.

### 11.06 Length of Service Increases

- (a) Except as limited by Article 11.07, an employee whose salary falls between the minimum and the maximum of the salary range shall receive length of service increases along the salary scale on the following basis:

- i) all regular employees hired prior to the signing of this Agreement will retain their previously established length of service date unless promoted as per item iii) below.
  - ii) new employees, hired subsequent to the signing of this Agreement, will have their length of service increase date for their entry job determined by reference to their date of hire.
  - iii) any regular employees who receive a promotion subsequent to the signing of this Agreement, will receive a salary adjustment in accordance with Article 11.08, and will have their length of service date adjusted to reflect their date of promotion.
- (b) An employee in Salary Groups 2 and 3 will progress along the salary scale at six (6) month intervals until she/he reaches the maximum of the salary range.
- An employee in Salary Groups 4 to 13 will progress along the salary scale at one-year intervals except that an employee who is hired at or promoted to Step 1 will receive a length of service increase after six (6) months service. Such an employee will thereafter receive length of service increases at annual intervals until she/he reaches the maximum of the salary range.
- Except as otherwise provided in this Agreement, length of service increase dates will be moved back to reflect the number of working days taken as leave without pay whenever such leave exceeds one calendar month.
- (c) An employee whose salary is on a step of the salary range will receive a length of service increase to the next step of the range. If an employee is promoted into a job in Salary Groups 5 to 13, and the new salary falls below the mid-point between Step 1 and Step 2 of the new scale, the salary will be set to Step 1 of the range. If a promoted employee's salary falls at, or above, the mid-point between Step 1 and Step 2 of the new range, the salary will be set to Step 2 of the range. An employee whose salary falls between any other steps on the salary range will receive length of service increases which equal the dollar difference between the steps in which the employee's salary fell before the increase except that no employee will receive a length of service increase which would place her/him above the maximum salary for the job.

**11.07 Withholding and Reinstatement of Length of Service Increases**

Length of service increases as set out in Article 11.06 may only be withheld for inadequate performance and after the employee has been given written notice of her/his inadequacies and the intention to withhold, such notice to be given not less than one calendar month prior to the date of the increase. The Union will be notified in writing of such action.

The length of service increase may be withheld for a period not to exceed three (3) calendar months but notwithstanding this, an employee will not be eligible for a length of service increase while on probation in accordance with Article 5.03 of this Agreement. When the employee has restored her/his performance, she/he will regain her/his position in the salary scale on a non-retroactive basis.

### **11.08 Rate of Pay upon Promotion**

An employee who is promoted from one salary group to another will receive no less than a one salary step increase in wages. Where the employee is promoted to a salary group with a minimum salary level which is higher than the employee's rate of pay at the time of promotion, the employee will be moved to that minimum salary rate.

Employees who currently are paid at a rate of pay which is between wage steps in any given salary group, upon promotion, will receive no less than five (5) percent increase above their current salary at the time of promotion including movement to the next higher salary step should the new rate, after the five (5) percent adjustment fall between salary steps in the new salary range.

### **11.09 Pay on Performing Higher Graded Job Duties**

An employee who performs part or all of a higher graded job on a regular continuing basis, daily or weekly, shall have the duties and responsibilities reflected in her/his job profile and pay grade as set out in Article 10.

### **11.10 Pay on Transfer to a Lower Level Job Voluntarily or Due to Inadequate Performance**

Except as modified in this Section, an employee who transfers to a lower level job at her/his request or as a result of inadequate performance under Article 5.03 shall retain her/his salary provided such salary is not above the maximum of the lower graded job. If her/his salary is above the maximum it shall be reduced to the maximum of the lower graded job.

An employee under this clause who has less than six (6) months service in the higher level job will receive a salary under this clause on reverting to a lower level job which would be that salary which she/he would have attained assuming she/he had not transferred to the higher level job in the first instance.

An employee under this clause who has less than six (6) months service since being hired into the higher level job will receive a salary in the lower level job equivalent to that which she/he would have attained assuming she/he had been hired into the lower level job in the first instance.

An employee who has entered a trainee program for an end-level position which is at a higher pay grade, and who subsequently returns to her/his previous job at her/his request, or as a result of failure to successfully complete the requirements of the trainee program, will receive a salary under this clause on reverting to her/his previous job which would be that salary which she/he would have attained assuming she/he had not transferred to the trainee job in the first instance.

### **11.11 Pay on Transfer to a Lower Level Job for Health Reasons**

An employee who transfers to a lower graded job as a result of poor health will have her/his salary regressed at a rate of one salary step per year at each anniversary of the commencement in the work at the lower level job until her/his salary is reduced to the maximum of the lower graded job.

An employee who returns to work full-time to a lower graded job under the rehabilitation program of the LTD Plan shall receive the normal salary for the job classification for all hours worked (i.e. no more than the maximum step of the salary group for the job classification). The difference between this present salary and

her/his salary prior to disability will be paid through LTD benefit to provide up to 100% of her/his previous net pay, or to a lesser amount as may be determined by the maximum benefit payable through the LTD Plan.

An employee who returns to work part-time under the rehabilitation program of the LTD Plan shall receive the normal salary for the job classification for all hours worked (i.e. no more than the maximum step of the salary group for the job classification). The difference between this present salary and her/his salary prior to disability will be paid through LTD benefit to provide up to 85% (prorated) of her/his previous net pay.

Subject to changes being acceptable to the carrier.

### **11.12 Involuntary Transfers to Other Jobs**

An employee who transfers to other jobs under the conditions of Article 8 or Article 9, shall receive salary treatment in accordance with the appropriate Articles. An employee who remains in the same job, but whose job rating is changed under Article 10, shall receive salary treatment in accordance with Articles 11.17 and 11.18(c).

### **11.13 Pay on Temporary Performance of Lower Grade Work**

An employee who temporarily performs lower graded work in accordance with Article 10 shall not suffer any loss of earnings or salary progression during such period.

### **11.14 Pay for Acting Appointments**

(a) An employee who is temporarily appointed to a higher level position in an acting capacity will have her/his salary adjusted in accordance with Article 11.08 except that no accrual adjustment will be made to the regular rate of pay before applying the promotion formula. Such adjustments will not apply for appointments of three (3) days or less. (Should such period exceed three (3) consecutive days, the employee's salary will be adjusted from the commencement of such period in accordance with the foregoing). (See Letter No. 12)

(b) Notwithstanding the provisions of Article 11.14(a), an employee who is temporarily appointed to a higher level position in an acting capacity which is two (2) levels or less shall receive full salary adjustment of 5% per salary group.

If a temporary promotion is three groups or more above her/his current level, the Compensation and Research Department will review the contents of the higher job group to determine the responsibilities to be assumed and will establish the appropriate job level for the period but the minimum increase will be two groups.

(c) An employee who performs a higher level position in an acting capacity under the foregoing on reverting to her/his former position will receive the salary that she/he would have attained assuming she/he had remained in her/his former position.

(d) An employee's acting adjustment will be discontinued upon the discontinuance of the appointment in accordance with Article 11.16(a), except where the employee is unable to perform the acting assignment due to illness or injury. In such instances, the acting adjustment will be

continued for either five (5) days or to the scheduled end date of the assignment, whichever occurs first.

- (e) Where an employee is assigned additional duties, beyond the scope of her or his regular assignment, the provisions of Article 10 will apply.

#### **11.15 Length of Service Increases during Acting Appointment**

An employee who performs a higher level position in an acting capacity shall receive any length of service increases that she/he would have been eligible to receive in her/his regular position and will have the acting promotional increase applied thereto.

#### **11.16 Notification and Limitation of Acting Appointments**

- (a) Employees who temporarily perform higher level work in an acting capacity will be advised in writing, with a copy to the Union, stating the commencement date, job title, salary adjustment, and duration of the acting capacity.

Acting assignments may be discontinued by the Corporation, at its discretion, where there is no longer a requirement for such assignment, or where the employee is no longer available for, or capable of performing, the assignment.

In instances where the employee is unable to perform the acting assignment due to illness or injury, the acting assignment will be continued for five (5) days or to the scheduled end date of the assignment, whichever occurs first.

- (b) Acting appointments will be limited to projects or work assignments not exceeding six (6) months in duration. Extensions to such appointments beyond six (6) months will be by mutual agreement with the Union.

#### **11.17 Salary and Length of Service Adjustment on Reclassification**

- (a) An employee whose position is reclassified to a higher pay group as a result of a change in job content, including stated job qualifications, will have her/his salary adjusted in accordance with Article 11.08, and will have her/his length of service date adjusted to reflect the date of reclassification.
- (b) An employee whose position is reclassified to a higher pay group without a change in job content will have her/his salary adjusted to the same point in the new range as she/he occupied in her/his former pay group, and will retain her/his previous length of service date.

#### **11.18 Application of Wage Increases to Red Circled Salaries**

- (a) If an employee's salary is in excess of the maximum salary for her/his position (i.e. is red-circled) prior to the granting of a general increase and her/his present salary becomes less than the new maximum for the range after applying the general increase to the range, she/he will receive the difference between her/his present salary and the new maximum of the range. She/he will receive the full value of any subsequent general increases during the term of this Agreement unless her/his salary again becomes red-circled prior to the granting of a subsequent general

increase, in which case the treatment set out in this Article 11.18(a) will apply.

- (b) If an employee's salary is in excess of the maximum salary for her/his position (i.e. is red-circled) prior to the granting of a general increase and her/his present salary continues to be more than the new maximum for the range after the general increase has been applied to the range, her/his salary will remain unchanged. At such point as her/his salary falls within the range as a result of the application of a subsequent general increase during the term of this Agreement, she/he will be treated as in Article 11.18(a) preceding.
- (c) Notwithstanding Articles 11.18(a) and 11.18(b), an employee whose salary is red-circled as a result of the application of Article 10 (Job Evaluation) will receive 100% of any general increase applied within a twelve (12) month period following the re-evaluation. Thereafter, the employee will receive 70% of all subsequent general increases, or the difference between her/his salary and the new maximum for her/his range after applying the general increase, whichever is greater.

#### **11.19 Definitions**

- (a) Protected salary treatment as described in Article 9.05 means that upon assuming a lower level job an employee will retain this existing salary and will receive all scheduled salary increases for the specified period.
- (b) Red-circled treatment where used in this Agreement means that an employee will retain her/his established salary but will not be entitled to any further salary increases until the maximum of the salary range for her/his job classification equals or exceeds her/his salary.

#### **11.20 Placement during Period of Salary Protection**

An employee who is in receipt of any form of salary protection will accept placement in a higher level position, up to the level of the job which attracted the salary treatment, which comes available at the employee's current headquarters provided she/he can reasonably perform the work. Otherwise, the employee's salary will be reduced to the maximum of the pay grade for the position she/he holds, and the Corporation will not be obliged to place the employee in any other such higher position.

## ARTICLE 12

### HOURS OF WORK

#### 12.01

##### (a) Claims Department - Claim Centre Employees

The hours of work for all full-time regular Claims Centre employees are as follows:

- i) Work day - 7 hours 50 minutes, Monday to Friday, broken by a forty (40) minute unpaid lunch period at or near the mid-point of the employee's work day. Work may be scheduled to provide coverage from 7:30 a.m. to 6:00 p.m.
- ii) Work period - 9 days every 2 weeks. All employees will work Monday to Thursday each week with one-half of the employees being scheduled off each Friday on a rotating basis. In the case of a statutory holiday falling on a Friday when an employee is scheduled off, the employee will be scheduled off on the preceding day.
- iii) Work scheduling and assignment - regular work periods will commence not earlier than 7:30 a.m. and end not later than 6:00 p.m. Starting times will be offered to employees on the basis of seniority within the applicable job classifications (subject to operational requirements respecting trainees, and the need to provide an adequate balance of resources).

##### (b) Claims Branch Offices, Claims Resident Offices, and Salvage Operations Outside Lower Mainland

The hours of work for full-time regular employees in the departments set out above are as follows:

- i) Work day - seven and one-half (7 1/2) hours per day, broken by a one (1) hour unpaid lunch period at or near the mid-point of the shift. The duration of the lunch period and the starting time for the shift will be in accordance with current practice and subject to change under Article 12.08.
- ii) Work week - five (5) days, Monday to Friday.

**(c) Centralized Estimating Facilities**

The hours of work for all full-time regular CEF employees are as follows:

- i) Work day - seven hours 50 minutes per day, Sunday to Saturday. Work may be scheduled to provide coverage from 7:00 a.m. to 6:00 p.m.
- ii) Work period - 9 days every 2 weeks. In the case of a statutory holiday falling on an employee's scheduled day off, the employee will be scheduled off on the preceding day.

**12.02 Data Centre Operational Services - Continuous Operations**

The hours of work for full-time Data Centre Operational Services employees in continuous operations will be as follows:

- (a) Work day - 7:00 a.m. to 7:15 p.m. or 7:00 p.m. to 7:15 a.m. Starting times may be varied by mutual agreement of the manager and the employee(s).
- (b) Work week - three (3) days consecutive per week (except on shift change) Monday to Sunday and days off in accordance with Article 13.08.

Management and the employees may agree to variations in the duration of the work week to result in employees working fewer weekends in whole or in part throughout the year without impairing the efficiency of data centre operational services or adding to its operating costs. It is recognized that when this results in more than a three (3) day work week, the additional hours in that week over three (3) days will not be at overtime rates. In the event of failure to agree on an alternate work week variation, the three (3) days consecutive per week schedule will prevail.

- (c) Unpaid lunch period of thirty-five (35) minutes.
- (d) In the event an employee is scheduled for meetings or education courses on a day that would usually be scheduled off, then the employee will be paid at straight time for the duration of the meeting/course, subject to a minimum payment of 4 hours, and to the provisions of Article 13.08(3). If notice of less than twenty-four (24) hours is received, the employee affected will be paid at overtime rates.

### 12.03 Extended Shifts

The hours of work for full-time employees in the departments specified will be as follows:

- (a) Day shift - Micrographics, Microimaging, Autoplan Document Processing, Customer Collections, Mail Services, Data Services Administration, Litigation, and Facilities.
  - i) Work day - seven and one-half (7 1/2) hours per day starting no earlier than 7:15 a.m. and ending not later than 6:00 p.m., depending on departmental requirements.
  - ii) Work week - five (5) days, Monday to Friday.
- (b) Second short shift - Customer Collections, Data Services Administration, and Litigation.
  - i) Work day - six hours and forty-five minutes (6 3/4 hours) per day starting no earlier than 4:00 p.m. and ending not later than 11:00 p.m., including a thirty (30) minute paid lunch period at or near the mid-point of the shift (no paid rest periods as per Article 12.09).
  - ii) Work week - five (5) days, Monday to Friday.
  - iii) Employees on the second short shift will be paid the same bi-weekly rate as the day shift with the shift premium paid in the form of reduced hours.
- (c) Second Shift - Microimaging, Autoplan Document Processing, Mail Services, Data Services Administration, and Facilities.
  - i) Work day - seven and one-half (7 1/2) hours per day starting no earlier than 1:00 p.m. and ending not later than 11:30 p.m., depending on departmental requirements, including a thirty (30) minute paid lunch period at or near the mid-point of the shift (no paid rest periods as per Article 12.09).
  - ii) Work week - five (5) days, Monday to Friday.
  - iii) The employees will receive the same bi-weekly rate as the day shift, and in addition they will receive a shift premium in accordance with Article 13.01 ii).
- (d) Third Shift - Mail Services
  - i) Work day - seven and one-half (7 1/2) hours per day starting no earlier than 12:00 midnight and ending not later than 8:00 a.m., with a thirty (30) minute unpaid lunch period at or near the mid-point of the shift.
  - ii) Work week - five (5) days, Monday to Friday.
  - iii) The employees will receive the same bi-weekly rate as the day shift, and in addition they will receive a shift premium in accordance with Article 13.01 ii).

## 12.04 Variable Business Week

Unless otherwise provided for in this Agreement, the hours of work for full-time employees in the following departments will be as follows:

(a) Telephone Claims Department

Hours of Operation: Twenty-four (24) hours per day, Sunday to Saturday.

Work Week: Five (5) consecutive days per week, Sunday to Saturday.

Work Day: Seven and one-half (7 1/2) hours, to be scheduled within the hours of operation.

Employees may vary their work week above, subject to agreement between the employee and their manager (i.e. employees will not be required to vary their work week).

i) Weekend Work Scheduling

Part-time regular employees will be scheduled for weekend operations (to a maximum of 50% of available part-time staff) prior to scheduling any full-time regular employees for weekend work except as mutually agreed to by any full-time regular employees.

Full-time regular supervisory employees may be scheduled to work weekends on a rotational basis, or as otherwise mutually agreed amongst affected staff.

ii) Part-time Regular Employees

Part-time regular employees may be scheduled to work up to 126 hours per calendar month. In addition to scheduled base hours, extra hours may be offered on a voluntary sign-up basis in accordance with 6.03(b).

Extra hours which come available between Sunday and Saturday, and which can be scheduled to provide at least one (1) day of notice, shall be offered to part-time regular employees on a rotational basis by seniority. Other extra hours which come available during the work day between Sunday and Saturday will be offered to part-time regular employees in attendance at work on a seniority basis prior to offering such work to employees not in attendance.

Overtime rates will apply to all time worked in excess of seven and one-half (7 1/2) hours per day or in excess of the scheduled hours per day if the scheduled hours exceed seven and one-half (7 1/2) hours. Overtime rates will also apply to all time worked in excess of thirty-seven and one-half (37 1/2) hours per calendar week (i.e. Sunday to Saturday, inclusive).

Part-time regular employees who are required to work additional, previously unscheduled hours - i.e. beyond those designated as base hours and voluntary additional hours - will be compensated for time worked at overtime rates. This specifically relates to situations where employees are called in to work at a time that they would otherwise be scheduled off.

- (b) Lower Mainland Salvage Operations (Queensborough)
  - Hours of Operation: 7:30 a.m. to 6:00 p.m., Sunday to Saturday.
  - Work Week: Five (5) consecutive days per week, Sunday to Saturday.
  - Work Day: Seven and one-half (7 1/2) hours, to be scheduled within the hours of operation.
  
- (c) Autoplan Field Operations and Customer Contact
  - Hours of Operation: 7:15 a.m. to 9:00 p.m., Monday to Friday  
8:00 a.m. to 6:00 p.m., Saturday.
  - Work Week: Five (5) consecutive days per week, Monday to Saturday.
  - Work Day: Seven and one-half (7 1/2) hours, to be scheduled within the hours of operation.

Any shift starting after 12:01 p.m. will receive a shift premium in accordance with Article 13.01 ii).
  
- (d) Facilities (Service Desk)
  - Hours of Operation: 6:30 a.m. to 7:00 p.m., Monday to Saturday.
  - Work Week: Five (5) consecutive days per week, Monday to Saturday.
  - Work Day: Seven and one-half (7 1/2) hours, to be scheduled within the hours of operation.
  
- (e) Facilities (Building Operations Coordinators)
  - Hours of Operation: 6:30 a.m. to 6:00 p.m., Sunday to Saturday.
  - Work Week: Five (5) consecutive days per week, Sunday to Saturday.
  - Work Day: Seven and one-half (7 1/2) hours, to be scheduled within the hours of operation.

- (f) Ongoing Services, Telecommunications Customer Services and Peripheral Operations, Application Systems Development, Operations and Technical Support (Victoria), and Systems Planning and Change Management (Victoria)
- Hours of Operation: 6:30 a.m. - 9:00 p.m., Monday to Friday.  
6:30 a.m. - 7:00 p.m., Saturday and Sunday.
- Work Week: Five (5) consecutive days per week, Sunday to Saturday.
- Work Day: Seven and one-half (7 1/2) hours per day.
- Any shift starting after 12:01 p.m. will receive a shift premium in accordance with Article 13.01 ii).
- (g) Driver Service Centres
- Hours of Operation: 7:30 a.m. to 6:00 p.m., Monday to Saturday.
- Work Week: Five (5) consecutive days per week, Monday to Saturday.
- Work Day: Seven and one-half (7 1/2) hours, to be scheduled within the hours of operation.
- (h) Expressways
- Work Week: Five (5) days, Monday to Saturday.
- Work Day: Seven and one-half (7 1/2) hours per day, Monday to Saturday. The duration of the lunch period and the starting time for shifts will be in accordance with current practice and subject to change under Article 12.08. However, starting times for shifts and business hours will be aligned with the mall hours in which the expressway is located.
- (i) Traffic Camera Ticket Administration
- Hours of Operation: 7:00 a.m. - 9:00 p.m., Monday to Friday.  
7:00 a.m. - 6:00 p.m., Saturday and Sunday.
- Work Week: Five (5) consecutive days per week, Sunday to Saturday.
- Work Day: Seven and one-half (7 1/2) hours to be scheduled within the hours of operation.

## 12.05 Flexible Work Week

Subject to providing the coverage which meets the unique operational requirements of the affected department(s), the scheduling principle underlying the flexible work week is that each employee will establish her/his own work schedule in accordance with the provisions set out in paragraphs (a) and (b) below. The manager and employee will periodically meet to review the work schedule to ensure that operational requirements are being met.

### (a) Flex Time (Monday to Friday)

The hours of work for the full-time positions set out below:

Rehabilitation Coordinator  
Heavy Equipment Appraiser  
Supervisor Commercial Claims  
Research Project Advisor  
Research Communications Specialist

Will be as follows:

- i) Work Week - position incumbents will work thirty-seven and one-half (37 1/2) hours per week Monday through Friday on a flexible time basis.
- ii) Premium - position incumbents will be paid a five percent (5%) premium on gross salary in recognition of the requirement for flexible hours as described in (i).
- iii) Overtime will be paid on hours worked in excess of thirty-seven and one-half (37 1/2) hours per week at the rate of:
  - 1 1/2 x for the first hour
  - 2 x for the subsequent hours, and for any hours worked on a scheduled day off.
- iv) Sick leave entitlement will be paid on the basis of a thirty-seven and one-half (37 1/2) hour work week.

### (b) Flex Time (Sunday to Saturday)

The hours of work for the full-time positions set out below:

Regional Coordinator, Marketing & Communication  
Coordinator, Programs & Events  
Regional Loss Prevention Coordinator  
Commercial Vehicle Safety Alliance (CVSA) Program  
Specialized Head Injury Examiner  
Claims Examiner, Material Damage  
Claims Examiner, Head Office  
Driving School Inspector  
Autoplan Field Supervisors  
Insurance Sales Representatives

Will be as follows:

- i) Work Period - position incumbents will work seventy-five (75) hours per bi-weekly period on a flexible time basis, and will be scheduled off work for at least four (4) calendar days in that period. No employee will be required to work two (2) consecutive weekends under these flex time arrangements.
- ii) Premium - position incumbents will be paid a five percent (5%) premium on gross salary in recognition of the requirement for flexible hours as described in (i).
- iii) Overtime will be paid on hours worked in excess of seventy-five (75) hours per bi-weekly period at the rate of:
  - 1 1/2 x for the first hour
  - 2 x for the subsequent hours, and for any hours worked on a scheduled day off
- iv) Sick leave entitlement will be paid on the basis of a thirty-seven and one-half (37 1/2) hour work week.

#### **12.06 Variable Hours**

The hours of work for all full-time employees not specifically referenced in Articles 12.01 to 12.05 inclusive will be as follows:

- (a) Work day - seven and one-half (7 1/2) hours per day.
- (b) Work week - five (5) days, Monday to Friday, inclusive.
- (c) Business hours - will fall within 8:00 a.m. to 5:00 p.m. These are the hours that departments may operate and sufficient coverage must be provided throughout these hours, as required.
- (d) Core hours - 10:00 a.m. to 3:00 p.m. This is the period of time during each day when every employee must be at work (excluding the lunch period).
- (e) Start/finish times and lunch period

Employees may select to start not earlier than 7:00 a.m. and finish not later than 6:00 p.m. Selections will be subject to adequate coverage being provided in all areas during business hours and to other operating requirements.

Employees will pre-select their start/finish times and duration of the lunch period, as per Article 12.09(c), for management approval for a two (2) week interval with pre-selection to occur not later than Wednesday of the week immediately preceding the two (2) week interval. Such approval will not be unreasonably denied.

In the event two or more employees pre-select the same start/finish and/or lunch times, and all employee selections cannot be accommodated due to operational requirements, selections will be approved on a seniority basis.

## 12.07 Scheduled Time Off Provisions

Full-time regular employees in positions covered under the hours of work provisions outlined in Articles 12.01(b), 12.03, 12.04, 12.05 and 12.06 will be entitled to the time off provisions as set out herein.

- (a) Employees will earn an entitlement of one (1) day off for time worked in each of the following periods:
  - January 1 to January 23
  - January 24 to February 15
  - February 16 to March 10
  - March 11 to April 2
  - April 3 to April 26
  - April 27 to May 20
  - May 21 to June 11
  - June 12 to July 4
  - July 5 to July 27
  - July 28 to August 20
  - August 21 to September 11
  - September 12 to October 3
  - October 4 to October 25
  - October 26 to November 15
  - November 16 to December 8
  - December 9 to December 31
- (b) Employees will request scheduled time off under this Article at least seven (7) working days in advance, and the scheduling of such time off will be subject to management approval.
- (c) Scheduled time off will normally be taken in not less than full day increments. At the employee's option however, it may be taken in half-day increments.
- (d) Scheduled time off will not take precedence over another employee's vacation leave.
- (e) Scheduled time off will be taken in the period in which it is earned except that employees shall be allowed to accrue up to ten (10) days which can be taken in a continuous period.
- (f) Employees who take scheduled time off within any of the above shown periods and who fail to work the full period, will repay the Corporation the pro-rata portion of unearned entitlement for that period at the appropriate hourly rate.
- (g) Employees who start work in positions which carry an entitlement to scheduled days off in accordance with this Article during one of the above shown periods, or whose time worked in such a position is only a portion of any of the above periods, will earn the appropriate pro-rata portion of the day off to be paid at the appropriate hourly rate.
- (h) Time worked will exclude maternity leave, long term disability, and any other leave without pay of more than ten (10) working days.
- (i) Part-time regular employees and all temporary employees

Employees will work the hours as described in this Article except that such employees will be paid at the appropriate hourly rate for all time worked in lieu of scheduled time off.

#### **12.08 Starting Times**

- (a) The starting times as set out in this Article may be varied up to one (1) hour in either direction of the regular starting time, by mutual agreement of the manager and the employee(s). In the event of a disagreement respecting shift variances, the starting times and lunch periods as established in the applicable Articles will prevail. Where possible, employees will be given opportunities to select their work periods from among the established work schedules for their respective departments.
- (b) The daily and weekly hours of work as set out in this Article may be varied during the life of the Agreement by mutual agreement of the parties.

#### **12.09 Rest Periods and Lunch Periods**

- (a) Computer Centre - all employees shall have three (3) fifteen (15) minute paid rest periods per shift.
- (b) Claims Centres and all other operations (Head Office, Branch Offices, Resident Locations) - all employees except those covered by Article 12.03(b) and (c) shall be permitted a paid rest period of fifteen (15) consecutive minutes in the first and second half of a shift.
- (c) Lunch Periods - except as otherwise provided in this Agreement, employees may select lunch periods from thirty (30) minutes to ninety (90) minutes at or near the mid-point of the shift, subject to adequate coverage being provided in all areas during business hours or hours of operation and to other operating requirements.

#### **12.10 Work Scheduling**

Except for employees covered under the provisions of Article 12.02 and 12.06, the following provisions will be applicable to all employees:

- (a) Employee work schedules (i.e. start/stop times) will be established so as to provide for adequate coverage during business hours.
- (b) Work schedules will be prepared and posted within the department for sign-up by employees on a seniority basis.
- (c) Work schedules will cover periods of not less than three (3) calendar months.
- (d) Employees will be provided not less than two (2) clear weeks notice of schedule changes prior to the effective date of implementation, except for individual adjustments that may occur on a voluntary basis as a result of employee attrition or absence.

#### **12.11 Weekend Provisions**

##### **(a) Weekend Scheduling**

Work schedules will be prepared and posted for sign-up by all employees on a seniority basis. In cases where an employee has significant

personal circumstances which cause her/him to be unable to work weekends, every reasonable effort will be made to accommodate the affected employee. Such accommodation will be within the constraints of meeting the Corporation's business needs without incurring additional costs. Failing resolution, the shift will be filled in the order of reverse seniority.

(b) **Weekend Premium**

Compensation for employees covered by Articles 12.01(c) and 12.04 for time actually worked on a scheduled weekend will be at one and one-half (1 1/2) times the employee's base rate. Sick leave, where applicable, will be based on straight time rates. Employees scheduled to work the afternoon shift or night shift who are receiving the applicable shift premium as described in Article 13.01 will not be entitled to the weekend premium.

# ARTICLE 13

## SHIFT WORK AND PREMIUMS

### 13.01 Definition (Excluding Data Processing)

- i) Normal Day Shift:  
Any shift starting between 6:00 a.m. and 12:00 p.m. and running for seven (7) hours or more shall be considered to be the day shift.
- ii) Afternoon Shift:  
Any shift starting between the hours of 12:01 p.m. and 6:00 p.m. shall be considered to be the afternoon shift and will enjoy a 12% premium of gross salary.
- iii) Night Shift:  
Any shift starting between the hours of 6:01 p.m. and 5:59 a.m. shall be considered to be the night shift and will enjoy a 12% premium of gross salary.

Notwithstanding the above, the parties agree that part-time regular employees who work less than a full daily shift and who start and finish within the normal hours of work for day shift employees will not be entitled to a shift premium regardless of start time.

### 13.02 Definition of Data Centre Shift

It is understood that Data Centre employees as described in Article 12.02 will work three (3) 11 hour 40 minute shifts per week, with the days worked during the week changing every eight (8) weeks, and the shift rotating between day and night shift each week. Employees on these shifts will enjoy an 8.5% premium on their gross salary.

### 13.03 Mutual Exchange of Working Hours

Subject to approval by the Manager or her/his designate, employees within the same job classification may request a mutual exchange of working hours. Each employee shall assume the hours of work of the employee she/he replaces but shall continue to receive her/his own regular rate of pay. If premium payment is involved, the premium will be paid to the employee working the work period to which the premium rate applies.

### 13.04 Temporary Changes of Shift

Shift employees may be required to temporarily change their shift to cover the absence of other employees or to meet temporary work requirements. However, such changes will be administered in an equitable manner amongst the employees affected. The Corporation will provide notice of not less than twenty-four (24) hours from the end of the employee's last shift to the start of the new shift. If notice of less than twenty-four (24) hours is received, the employee affected will be paid for the first shift at overtime rates.

### **13.05 List of Shift Jobs**

The jobs in this category are listed below and shall be subject to change upon mutual agreement between the parties.

Continuous Shift - Three Day work week at 11 Hours 40 Minutes per Shift:

Operator II

Operator III

Operator IV

Second Short Shift:

Clerk II, Legal Document Processing

Legal Document Processing Clerk

Mail/Delivery Clerk

Unit Leader - Writ Handling

Writ Handling Clerk

Second Shift:

Broker Enquiry Unit Representative

Caretaker I

Caretaker II

Coordinator Automated Unit

Coordinator Distribution Unit

Mail Clerk

Microimaging Operator

Microimaging Production Coordinator

Office Assistant II

Printer Machine Operator

Supervisor, Broker Enquiry

Supervisor, Telephone Claims Handling

Telecentre Adjuster

Telecommunications Installer

Customer Access Representative

Call Centre Trainer - Customer Contact

Third Shift:

Coordinator Automated Unit

Coordinator Distribution Unit

Mail Clerk

Office Assistant II

Printer Machine Operator

Supervisor, Telephone Claims Handling

Telecentre Adjuster

Customer Access Representative

Call Centre Trainer - Customer Contact

### **13.06 Hours of Work for Shift Jobs Varied by Mutual Agreement**

The hours of work for any existing shift job will not be varied unless by mutual agreement between the parties to the Agreement.

### **13.07 Introduction of Shift Jobs by Mutual Agreement**

Unless as otherwise mutually agreed by the parties to the Agreement, the Corporation will not introduce shift jobs other than as stated in Article 13.05.

### **13.08 Work Year, Holidays and Vacation - Data Centre**

For the purpose of this Section, Data Centre employees who work continuous operation in accordance with Article 12.02 shall be governed by the following rules:

1. They shall be scheduled to work 150 shifts (totalling 1750 hours as described in Article 12.02) in each calendar year, less vacation entitlement.
2. They shall work statutory holidays which are scheduled work days at the premium rate of 1 1/2 times the normal rate of pay, except that no data centre employee shall be scheduled to work both Christmas Day and New Year's Day. Christmas Day shall be the period between 7:00 p.m., December 24 to 7:00 p.m., December 25; New Year's Day shall be the period between 7:00 p.m., December 31 to 7:00 p.m., January 1.
3. If at the end of the calendar year a shift worker has not worked or has exceeded the prescribed hours (1750 hours), the excess or deficit will be carried over and integrated into the schedule for the first quarter of the following calendar year.
4. When a statutory holiday falls within the vacation period of a shift employee, it shall not entitle that employee to an additional day off, as the statutory holidays are not included in the scheduled 1750 hours.

## **ARTICLE 14**

### **OVERTIME, CALL-OUTS, STANDBY AND MEAL ALLOWANCES**

#### **14.01 Equitable Distribution of Overtime**

Overtime will be offered in an equitable manner amongst the employees in a department who are able to perform the work. Such overtime will first be offered to employees on a voluntary basis in the order of seniority. If there are no volunteers, overtime will be assigned based on reverse seniority.

#### **14.02 Notification of Overtime**

Except in emergency situations, employees will be notified of any overtime requests not later than the end of the work day preceding the day on which the overtime is to be worked.

#### **14.03 Overtime Rate Calculation**

Overtime rates will be calculated using hourly rates established in Article 11. Shift or standby premiums will not form part of the hourly rate calculations for overtime purposes. Overtime will be calculated to the next highest fifteen (15) minutes, however, the minimum overtime pay for any overtime worked shall be one-half hour.

#### **14.04 Overtime Rates**

All time worked in excess of the regular daily or weekly hours of work as established in Articles 12 and 13 shall be paid at overtime rates as follows:

- (a) Time worked prior to or following a regular shift or work day will be paid at one and one-half (1 1/2) times the employee's hourly rate for the first hour of overtime and at two (2) times the employee's hourly rate thereafter. Overtime worked in excess of five (5) overtime hours per calendar week (i.e. Sunday to Saturday inclusive) will be paid at two (2) times the employee's hourly rate.
- (b) Time worked on a scheduled day off will be paid at two (2) times the employee's hourly rate. An employee who works two (2) hours or less on a scheduled day off will receive a minimum payment equivalent to two (2) hours at overtime rates. Payments under this Article will not include time spent by an employee in travelling to and from her/his normal work location.
- (c) Time worked on holidays as set out in Article 16 and during an employee's annual vacation will be paid at two (2) times the appropriate hourly rate plus regular salary for all time worked.

#### **14.05 Overtime Call Out**

An employee who is called out for work after her/his regular day or on a scheduled day off shall be paid for a minimum of three (3) hours and for time spent travelling to and from her/his home at the appropriate overtime rates. If the call-out period

extends into an employee's regularly scheduled shift, the time spent returning to her/his home will not be paid as time worked.

#### **14.06 Shift Workers Working on Paid Holidays**

Shift workers scheduled to work on paid holidays as part of their regular work week will be governed by Article 13.08 with respect to premium payment for work on such days.

#### **14.07 Minimum Rest Period, Call-Outs**

- (a) An employee who has worked overtime shall return to work on her/his next regular shift following the overtime provided she/he received eight (8) hours rest and provided also that she/he can do so by 1:00 p.m. (if a day worker). An employee who reports for work as required above, or whose eight (8) hours rest period extends beyond 1:00 p.m., and therefore does not report, shall qualify for full pay for her/his regular shift.
- (b) An employee who is called out and reports for work after overtime and before the expiration of her/his eight (8) hours rest, shall receive double time (2 x) payment for those hours which coincide with the working hours of her/his normal shift plus her/his regular salary for the day.
- (c) Notwithstanding the above, an employee who is called out prior to the start of her/his next regular shift shall be governed by the following:
  - i) If the call out originates more than four (4) hours prior to the next regular shift the employee will receive not less than the minimum call-out payment as per 14.05 and will return home following completion of the call-out period. The employee will then return to work her/his regular shift (or portion thereof) after eight (8) hours rest provided she/he can do so by 1:00 p.m. (if a day worker). The employee will be paid for her/his regular shift regardless of the actual time worked.
  - ii) If the call out originates four (4) hours or less prior to the start of the employee's next regular shift, the employee will receive a call-out premium equal to two (2) hours pay at straight time rates, and in addition will be paid at overtime rates from the time of call out to the start of her/his regular shift. The employee will remain to work her/his full regular shift at straight time rates, except that by agreement with the manager, an employee may return home after completing the equivalent number of hours worked on a regular shift from the start of the call-out. In such instances, any hours worked which coincide with the employee's regular shift will be paid at straight time rates, and any hours of her/his regular shift which are not worked will not be paid.
- (d) For employees working other than the day shift the times quoted in (a) and (b) above will be interpreted relative to the hours of the shift worked.

#### **14.08 Meal Allowances**

- (a) Where an employee is required to work less than two (2) hours beyond her/his regular shift, a one-half (1/2) hour unpaid meal period will be allowed.
- (b) An employee will be paid for a one-half (1/2) hour meal period at the prevailing overtime rates, and the Corporation will provide a meal allowance of \$10.00 to the employee:
  - i) where the actual overtime worked, exclusive of any meal period, is two (2) hours or longer beyond the regular day or shift.
  - ii) where an employee is called out and works four (4) hours overtime.
  - iii) where an employee is required to work four (4) hours overtime beyond an overtime meal period actually taken. Where this overtime follows a regular shift, the first meal period may be taken at the employee's discretion.
- (c) Where overtime work is pre-scheduled for normal days off and employees have been properly notified in advance as provided in Article 13.04, and work is to commence within two (2) hours of the normal starting time, the Corporation will not be required to provide lunch or pay for meal time if taken.

#### **14.09 Banking Overtime**

- (a) Regular employees who work overtime may transfer to an overtime leave bank up to 100% of the overtime hours earned to be taken as time off in lieu of wages providing that the total number of hours transferred to the overtime leave bank in any calendar year shall not exceed 37.5 hours.

Overtime leave will be subject to essential departmental requirements and it will not be unreasonably denied. It must be taken prior to any leave of absence without pay unless otherwise agreed by the parties. It will not take precedence over another employee's vacation leave. It will be taken in the calendar year in which it is banked except that up to 15 hours of overtime banked after October 1st in any calendar year can be taken in the first quarter of the following calendar year if it is not possible to take it in the calendar year in which it is banked.

Overtime which remains in the overtime leave bank at the last date when it can be taken will be paid out at the prevailing hourly rate within 30 days thereafter or within such longer period as the parties may agree, with agreement not to be unreasonably denied.
- (b) Overtime leave shall be the equivalent in hours to the overtime payment entitlement, e.g. one (1) hour of overtime worked prior to or following a regular shift or work-day at time and one-half rate equals one and one-half hours paid leave.

## **14.10 Standby and Telephone Consultation**

### **(a) Standby Duty**

An employee scheduled on standby (i.e. an employee who is required to be available for work), whether or not she/he carries a pocket pager, will be paid two (2) hours at straight time for the 24-hour period commencing daily at 8:00 a.m., Monday to Thursday, inclusive, three (3) hours at straight time for the 24-hour period commencing 8:00 a.m., Friday and four (4) hours at straight time for the 24-hour period commencing at 8:00 a.m. on a Saturday, Sunday or Statutory Holiday.

Where possible, standby will be signed up on a voluntary basis with schedules posted at least 96 hours in advance. Should an employee be given less than 96 hours notice of standby duty, she/he will be under no compulsion to accept such duty.

No employee will be compelled to accept standby on two (2) consecutive weekends or on two (2) consecutive holiday weekends.

Pay for standby duty will not be considered as overtime for the purpose of Article 14.09, Banking Overtime.

### **(b) Telephone Consultation**

Where an employee is consulted by a supervisor or her/his delegate by telephone outside of her/his normal hours of work concerning a problem of work, a telephone consultation premium will be paid as follows:

- i) pay per telephone consultation equivalent to one-half hour or the length of the call, whichever is greater, at overtime rates, for calls prior to 11:00 p.m.; and one (1) hour's pay at double time for calls between 11:00 p.m. and 7:00 a.m., except as indicated in ii) below.
- ii) if a second or successive telephone consultation takes place within one-half hour of the end of a preceding call, it will be construed as being part of the preceding call and therefore not be paid unless the combined time exceeds the minimum paid period in i) above.
- iii) the telephone consultation premium will be paid whether or not an employee is on standby duty.
- iv) where a telephone consultation results in a call-out as provided for in Article 14.05, overtime will commence at the outset of consultation and the first hour of the call-out will be paid at the prevailing overtime rate, or the rate provided in item i) above, whichever is greater.

## **14.11 Taxi Allowance**

In situations where an employee whose shift normally finishes not later than 11:00 p.m. is required to work overtime beyond midnight, the Corporation will reimburse the employee for actual taxi expenses incurred in returning home. In all cases the employee will be required to verify such expenses by way of a receipt.

## ARTICLE 15

### ANNUAL VACATIONS

#### 15.01 Vacation

Except as otherwise provided in this Agreement, the provisions of this Section will apply to all bargaining unit employees.

- (a) Employees will indicate when they wish to take vacation for the current calendar year, and whether they wish to carry over any of their vacation entitlement into the next calendar year in accordance with Article 15.10 of this Agreement, by March 31st of the current calendar year. Employees who fail to indicate their vacation preference by March 31st will forfeit their preferential rights and unless otherwise agreed to by the manager will be required to request vacation time not less than six (6) weeks in advance of the period being requested.
- (b) A vacation schedule will be prepared and posted.
- (c) Vacation credits will accrue to the employee during the period between July 1st of the previous year and June 30th of the current year. Any fraction of a day's credit will be treated as a whole day.
- (d) An employee may take vacation leave in each calendar year (January 1st to December 31st) equal to the number of vacation credits accruing to the employee.

#### 15.02 Minimum 3 Month Service

An employee may not take any vacation leave until she/he has completed three (3) months service.

#### 15.03 Vacation Entitlement

Vacation entitlements for all regular employees shall be as follows:

- (a) In the calendar year in which the employee's first (1st) to seventh (7th) anniversary of service occurs:
  - 15 days in each calendar year for employees who work a five-day work week.
  - 14 days in each calendar year for employees who work a nine-day fortnight.
  - 9 days in each calendar year for employees who work three (3) consecutive days per week in accordance with Article 12.02.

- (b) In the calendar year in which the employee's eighth (8th) to sixteenth (16th) anniversary of service occurs:
  - 20 days in each calendar year for employees who work a five-day work week.
  - 18 days in each calendar year for employees who work a nine-day fortnight.
  - 12 days in each calendar year for employees who work three (3) consecutive days per week in accordance with Article 12.02.
- (c) In the calendar year in which the employee's seventeenth (17th) to twenty-fourth (24th) anniversary of service occurs:
  - 25 days in each calendar year for employees who work a five-day work week.
  - 23 days in each calendar year for employees who work a nine-day fortnight.
  - 15 days in each calendar year for employees who work three (3) consecutive days per week in accordance with Article 12.02.
- (d) In the calendar year in which the employee's twenty-fifth (25th) to twenty-ninth (29) anniversary of service occurs:
  - 30 days in each calendar year for employees who work a five-day work week.
  - 27 days in each calendar year for employees who work a nine-day fortnight.
  - 18 days in each calendar year for employees who work three (3) consecutive days per week in accordance with Article 12.02.
- (e) In the calendar year in which the employee's thirtieth (30th) anniversary of service occurs, and in each calendar year thereafter:
  - 35 days in each calendar year for employees who work a five-day work week
  - 32 days in each calendar year for employees who work a nine-day fortnight.
  - 21 days in each calendar year for employees who work three (3) consecutive days per week in accordance with Article 12.02.

#### **15.04 Minimum and Continuous Periods**

A minimum of 50% of an employee's base vacation entitlement will be taken per year, of which at least one (1) week (where applicable) will be taken as a continuous period.

#### **15.05 Pay Out Upon Termination**

- (a) Upon termination, regular employees will be paid out for any unused portion of vacation entitlements on the basis of days earned in accordance with Article 15.03. Employees who terminate between July 1 and December 31 will be paid out on the basis of days accrued in

accordance with their entitlement for the current calendar year. Any fraction of a day's credit will be treated as a whole day.

- (b) Employees who have taken vacation and were paid their full vacation credits and terminate before reaching their anniversary date for which they were allowed vacation credits, will have deducted from their final pay the difference from vacation monies received and their entitlement in accordance with this Article.

#### **15.06 Pay for Full Time Temporary Employees**

A full-time temporary employee will be paid 10.4% of her/his gross earnings with each pay period in lieu of annual vacation and general holiday leave.

#### **15.07 Pay In Advance**

An employee can draw vacation pay in advance of her/his vacation leave by submitting a written request for receipt not less than three (3) weeks in advance of the vacation period to the Time Accounting Coordinator.

#### **15.08 Paid Holidays Falling Within the Vacation Period**

Employees will receive an extra day's vacation with pay for any of the paid holidays listed in Article 16, which fall within the paid vacation period.

#### **15.09 Disruption of Vacation Due to Illness and Bereavement**

- (a) An employee whose vacation leave is seriously disrupted by an illness or injury incurred after her/his vacation has begun may be entitled to reschedule or extend her/his vacation for the period of disability (but not to exceed the amount of scheduled vacation) providing that the nature and period of the disability is substantiated by a doctor's certificate and provided that the entitlement to and timing of the rescheduled or extended vacation leave is first agreed with the employee's manager. Employees are advised to notify the manager immediately, where possible, of the illness or injury causing the disruption of vacation leave. Rescheduled or extended vacation leave under this Article will not take precedence over another employee's vacation leave.
- (b) An employee who becomes entitled to bereavement leave pursuant to Article 19.01 immediately prior to her/his scheduled vacation (such as to overlap with her/his vacation) may reschedule that portion of the vacation time which runs concurrently with the bereavement leave. Such rescheduled vacation will be subject to essential departmental requirements.

#### **15.10 Vacation Carry Over**

- (a) Except as noted in (b) below, an employee may carry over up to 50% of her/his current year (base) vacation entitlement from one calendar year to the next. Such carry over may not be accumulated or accrued from year to year. For example, an employee's total vacation entitlement in a given year cannot exceed the sum of her/his current year (base) entitlement plus 50% of her/his previous year's base entitlement. At the end of a calendar year, any unused vacation credits which exceed 50% of an employee's current year base entitlement will be paid out to the employee.

- (b) An employee may contribute the cash equivalent of any unused vacation entitlement to her/his deferred salary plan in December of each year. The amount contributed may not result in deferred income plan contributions in excess of the maximum annual amount allowable under the plan.

#### **15.11 Vacation Pay while Relieving on Higher Grouped Job**

- (a) An employee relieving on a higher grouped job at the time she/he goes on vacation will be paid at the higher rate during her/his vacation provided the vacation is both preceded and followed by working time on the higher job and provided also that there is a minimum of twenty (20) working days at the higher level.
- (b) If an employee is required to postpone her/his annual vacation in order to relieve on a higher level job for an uninterrupted period of not less than twenty (20) working days, she/he shall nevertheless qualify for vacation pay at the higher rate as set out in (a) above.

#### **15.12 Vacation Scheduling**

Scheduling of vacations shall be subject to departmental requirements. Employees will indicate their preference for vacation periods on the basis of seniority within the department and the employee's preference will not be unreasonably denied. Employees who transfer to a department after vacation periods are scheduled will be placed at the bottom of the seniority list and will not exercise their seniority position until the scheduling of the following year's vacation. Where employees choose to break their vacation into two or more periods, no employee's second choice, etc., will take preference over a junior employee's first choice, etc.

It is the intent of this Article that employees' seniority preferences be exercised amongst employees who are performing work on the same job level or pay grade, or within a work unit of a department, whenever possible.

#### **15.13 Accrual of Vacation Credits while on Leave**

- (a) Employees who are on sick leave, long term disability, or in receipt of Workers' Compensation illness or injury benefits, or a combination of the above, will accrue vacation credits for the period of absence up to a maximum of four (4) continuous months providing the employee returns to work.
- (b) Employees who are on approved maternity leave or parental leave will accrue vacation credits throughout the period of approved leave providing the employee returns to work.
- (c) Employees on authorized absences other than those covered by paragraphs (a) or (b) preceding will accrue vacation credits for the period of absence up to a maximum of two (2) continuous months providing the employee returns to work.

# ARTICLE 16

## PAID HOLIDAYS

### 16.01 Paid Holidays

- (a) For the purpose of this Agreement, the following days shall be paid holidays:

New Year's Day	Labour Day
Good Friday	Thanksgiving Day
Easter Monday	Remembrance Day
Victoria Day	Christmas Day
Canada Day	Boxing Day
B.C. Day	

- (b) In addition, any other general holiday(s) proclaimed by the Government of Canada or the Government of British Columbia will be recognized by the Corporation as a holiday with pay.

### 16.02 Date of Observance

- (a) Should the provincial or Federal Government(s) proclaim a day in lieu of any of the holidays listed in 16.01(a), the day proclaimed shall become the holiday for the purpose of interpreting this Article.
- (b) When a paid holiday falls on a Saturday and/or a Sunday, and another day is not proclaimed in lieu thereof in accordance with paragraph (a), a day off in lieu thereof will be given on a working day immediately preceding or immediately following the paid holiday, to be chosen by the Corporation.

### 16.03 Holiday Pay

An employee will receive normal straight time earnings for any holiday described in this Article provided that on the working day immediately before and on the working day immediately following the holiday she/he was at work, on annual vacation, or on approved leave of absence not exceeding ten (10) working days.

An employee who is on sick leave either the day immediately before or the day immediately following the holiday, will receive normal straight time earnings for the holiday. Employees who are on sick leave the day immediately before and the day immediately following the holiday will be paid for the holiday under the terms of the short term disability plan.

### 16.04 Holiday Falling on Employee's Vacation

Any holiday described in 16.01 and 16.02 which falls in an employee's vacation period shall be recognized and an additional day off without loss of pay will be granted.

### 16.05 Notice for Work on Paid Holiday

Except as may be otherwise provided by this Agreement, employees required to work on a paid holiday or a day designated in lieu thereof shall be notified by the

Corporation of such requirement not later than fourteen (14) calendar days in advance.

**16.06 Holiday Pay for Full Time Temporary Employees**

A full-time temporary employee will be paid 10.4% of her/his gross earnings with each pay period in lieu of annual vacation and general holiday leave.

**16.07 Holiday Pay during Acting Appointment**

An employee relieving on a higher grouped job and receiving acting pay at the time of a holiday as described in this Article will be paid at the higher rate for the holiday provided the holiday is both preceded and followed by working time on the higher job.

# ARTICLE 17

## PAID SICK LEAVE

### 17.01 Eligibility

All eligible employees who incur illness or injury are entitled to and shall receive paid sick leave in accordance with this Article.

### 17.02 Full-Time Regular Employees

- (a) Except as limited in (b), each full-time regular employee has a paid sick leave entitlement of 400 hours. The first 150 hours of paid sick leave will be at full pay and the balance is at 75% pay. All absences due to illness or injury, beginning with the first day of absence, are charged against the employee's entitlement. When the employee has returned to work for sixty (60) calendar days since the last day of absence due to illness or injury, the employee's paid sick leave entitlement of 400 hours is renewed once in a calendar year and a portion of this may be at full pay as determined by any full pay entitlement that remains to the employee's credit.
- (b) Each full-time regular employee who is completing her/his probationary period as described in Article 6.01(a) has a sick leave entitlement of up to seventy-five (75) hours at full pay. All absences due to illness or injury, beginning with the first day of absence, are charged against this seventy-five (75) hour entitlement. There is no further sick leave entitlement beyond this seventy-five (75) hours during the probationary period.

### 17.03 Full-Time Temporary Employees

A full-time temporary employee is not entitled to paid sick leave until she/he has completed her/his probationary period as described in Article 6.01(a). After completing her/his probationary period she/he is entitled to up to seventy-five (75) hours of paid sick leave at full pay. All absences due to illness or injury after completion of her/his probationary period, beginning with the first day of absence, are charged against this seventy-five (75) hour entitlement. There is no further paid sick leave entitlement beyond this seventy-five (75) hours during the period of employment.

In the event that a full-time temporary employee secures a regular position in the Corporation without an effective break in service, the employee's paid sick leave entitlement on assuming that regular position will be as though she/he had been hired as a regular employee effective the last date of hire as a temporary employee, less any paid sick leave taken while a temporary employee.

### 17.04 Part-Time Regular Employees

A part-time regular employee is entitled to the same sick leave entitlement as a full-time regular employee except that such employee's entitlement is prorated on the basis of her/his scheduled hours of work in that year as a percentage of the annual scheduled hours of work of a full-time regular employee. Coverage applies to scheduled work days only.

**17.05 Entitlement**

A regular employee's full pay entitlement is renewed on January 1st of each calendar year, except that in the case of an employee who is absent on 75% pay due to illness or injury on the last working day of the previous calendar year, renewal is deferred until the first day in the new calendar year on which the employee returns to work, and except that the renewed entitlement for a regular employee who is on probation in accordance with Article 6.01(a) will not be effective until the employee's probationary period is complete and the employee's full pay sick leave entitlement for the new calendar year will be reduced by the amount of full pay sick leave she/he has already taken in that year.

Unused entitlements may not be carried over from one calendar year to the next.

**17.06 Full Pay Defined**

Except as otherwise provided in this Agreement, "full pay" means normal pay and includes during the first one hundred fifty (150) hours of the period of absence, any salary increase the employee was scheduled to receive, but does not include payment for any overtime hours scheduled but not worked.

**17.07 Termination during Sick Leave**

Employees who have completed their probationary period as described in Article 6.01(a) will not be terminated during absence due to injury or illness without the specific agreement of the Union except that this will not apply if the notice of termination precedes the date on which absence due to illness or injury commenced and when a temporary employee who is absent due to illness or injury reaches the end of her/his term of employment. Employees who terminate while absent due to illness or injury will not be entitled to paid sick leave beyond the effective date of termination.

**17.08 No Reduction Due to Other Disability Benefits**

Except as provided for in Article 17.14 benefits payable under this Article will be paid regardless of illness benefits payable by the Employment Insurance Act or by any supplementary private coverage.

**17.09 WCB Benefits Augmented and Entitlement by Status**

Where disability payments are payable under the Workers' Compensation Act, the employee shall have her/his WCB benefit augmented by the Corporation so as to provide 85% of the employee's normal pay. Such pay will be subject to normal corporate and statutory deductions.

This benefit will be payable in accordance with the following schedule:

<b>Employee Status</b>	<b>Period of Entitlement</b>
1. Full-time regular employee	525 hours (15 weeks)
2. Part-time regular employee	same entitlement as a full-time regular employee except that such employee's entitlement is prorated on the basis of her/his scheduled hours of work in that year as a percentage of the annual scheduled hours of work of a full-time employee.

3. Full-time temporary employee 70 hours (2 weeks)
4. Part-time temporary employee no entitlement
5. Probationary employee 70 hours (2 weeks)  
as described in 6.01(a)

Payments under Article 17.09 shall not affect the employee's paid sick leave entitlement.

#### **17.10 Benefit Restrictions**

The following do not qualify for benefits pursuant to this Article:

- (a) The first day of absence for each separate occurrence of disability in excess of three (3) occurrences per calendar year.
- (b) The first two (2) days of absence for each separate occurrence of disability in excess of five (5) occurrences per calendar year.
- (c) For the purposes of (a) and (b) above, recurring absences for regularly scheduled treatment by a qualified medical practitioner of an ongoing or prolonged illness or injury will be considered as one (1) occurrence.
- (d) Maternity leave.
- (e) Disabilities occurring during leaves of absence without pay. Entitlement resumes when the designated period of such leave expires and the employee returns to work.
- (f) Any absence when the employee has been suspended for just cause.
- (g) Any absence where an employee is locked out or on a strike authorized by the Union.

#### **17.11 Medical/Dental Appointments**

Full-time regular employees and full-time temporary employees who have completed their probationary period, will be granted reasonable leave without loss of pay to attend medical and dental appointments which they are unable to schedule outside of working hours.

#### **17.12 Medical Information**

The parties agree that the intent of the sick leave plan is to provide an employee with a level of income protection in the event the employee is absent from work due to illness or injury. The parties further agree that in situations of absence due to such illness or injury, it is the employee's responsibility to take appropriate measures to ensure proper diagnosis, treatment, and recovery from the disabling condition. To that end, the following provisions have been established:

- (a) In cases of infrequent but lengthy absences (i.e. in excess of three (3) consecutive days) due to serious illness or injury, the Corporation may require the employee to submit a completed Occupational Health Fitness Assessment from the employee's own doctor or some other form of medical documentation to substantiate the nature, extent, and duration of the illness or injury. In such instances, the cost of completion of the form will be borne by the Corporation. The Corporation may also require a

second medical opinion, the costs of which shall be borne by the Corporation.

- (b) In cases where an employee has in excess of three (3) sick leave occurrences in a calendar year, the Corporation may require the employee to offer a satisfactory explanation for her/his absence, including completion of the Occupational Health Fitness Assessment by the employee's own doctor. The Corporation may also require a second qualified medical opinion. The costs, if any, of either of the above will be borne by the Corporation.
- (c) An employee who is required to submit medical documentation pursuant to this Article will be given adequate notice to secure it. With the exception of Article 17.12(e), the cost of providing such documentation will be borne by the Corporation.
- (d) The Corporation may require completion of an Occupational Health Fitness Assessment confirming the employee's fitness to return to work after a serious injury or prolonged illness. The Corporation may also require a second qualified medical opinion. The costs, if any, of either of the above will be borne by the Corporation.
- (e) The Corporation and the Union have agreed to cooperate in preventing improper utilization of the sick leave program and where the Corporation has reasonable grounds to believe that an employee is improperly utilizing the program, the employee will be required to substantiate her/his absence with a completed Occupational Health Fitness Assessment signed by her/his own doctor. The employee may also be required to undergo a medical examination by a doctor selected by the Corporation, the costs of which shall be borne by the Corporation.

### **17.13 Sick Leave Recovery**

An employee may use sick leave entitlements for time lost through accidental injuries (other than WCB claims, as provided for in Article 17.09). Should an employee, who is in receipt of paid sick leave benefits as a result of such injuries, commence an action for damages against a third party as a result of accidental injuries, and should that action include a claim for lost wages, the employee will enter into an agreement with the Corporation to reimburse the Corporation the full amount of all sick leave benefits received as a result of her/his absence from work. Upon receipt of such monies, the Corporation shall credit the employee with the number of sick days equivalent thereto.

### **17.14 Family Illness**

Except as provided for in Article 19.02, employees may utilize their sick leave entitlements to attend to the illness of a dependent family member, living under the same roof as the employee, up to a maximum of five (5) days per calendar year when other care givers are not readily available. Each absence after the second occurrence of family illness leave will be counted as an occurrence for the purposes of Article 17.10(a) and (b).

### **17.15 Sick Leave Privacy Protection**

The Corporation will respect the privacy of employees on sick leave. Contact initiated by the employee's manager will be for essential emergency or administrative purposes. Such contact will be limited to correspondence and/or by telephone.

# ARTICLE 18

## WELFARE BENEFIT PLANS

### 18.01

#### (a) **Medical and Extended Health Benefits**

Full-time regular and part-time regular employees who satisfy the eligibility conditions of the Medical Services Plan of British Columbia will receive coverage under this plan unless they are covered by a spouse elsewhere and elect to maintain that other coverage.

Full-time regular and part-time regular employees who satisfy the eligibility conditions will receive extended health benefits equivalent to the current coverages as set out in the supplement to this Collective Agreement, including eyeglass coverage of \$300 every 2 calendar years, and hearing aid coverage of \$1000 every 5 calendar years per adult and every 2 calendar years per dependent child, unless they are covered by a spouse elsewhere and elect to maintain that other coverage.

The premium for these plans will be borne by the Corporation in full for full-time regular employees, and on a pro-rata basis for part-time regular employees.

Effective the first day of the month following ratification of these recommendations, Article 18.01 (a) and the benefits supplement in the Collective Agreement will be amended to provide the following:

- Eyewear or eye examinations\* - up to a maximum reimbursed under the plan of \$300.00 per member or dependent every two (2) calendar years.
- Physiotherapy/massage – 80% of the cost of combined services\* to a maximum reimbursement under the plan of \$250.00 per member or dependent every calendar year.
- Chiropractic – 80% of the costs of services\* up to a maximum reimbursed under the plan of \$400.00 per member or dependent every calendar year.
- Naturopathic – 80% of the cost of services\* up to a maximum reimbursed of \$200.00 per member or dependent per calendar year.
- Podiatry – 80% of the cost of services\* reimbursed under the plan of \$100.00 per member or dependent every calendar year.

\* based on reasonable and customary charges for these services in B.C.

#### (b) **Dental Plan**

All full-time regular and part-time regular employees who satisfy the eligibility conditions of the Plan shall be covered under a Dental Plan provided by the Corporation which will provide benefits of Plan a (100%), Plan b (65% co-insurance effective October 1, 2000 and 70% co-

insurance effective October 1, 2001), and Plan c (50% co-insurance, to a lifetime maximum of \$4,000 effective October 1, 2000 and \$5,000 effective October 1, 2001). Enrolment in this Dental Plan shall be a condition of employment for all full-time regular and part-time regular employees after completion of the prescribed waiting period, except that employees covered by other Dental Plans will not be covered under this Plan if they elect to maintain coverage under those other Dental Plans.

The premiums for these plans will be borne by the Corporation in full for full-time regular employees, and on a pro-rata basis for part-time regular employees.

## **18.02 Insurance Benefits**

### **(a) Group Life Insurance**

The Corporation agrees that it will provide Group Life Insurance coverage for each full-time regular and part-time regular employee. Such insurance will provide coverage of two (2) times the employee's regular annual salary rounded to the next one thousand dollars, plus dependents coverage as set out below:

Employee Coverage	Two (2) times annual salary.
Spouse's Coverage	Fifty Percent (50%) of employee coverage.
Dependent Children's Coverage	Five percent (5%) of employee coverage for each dependent child.

The premiums for these plans will be borne by the Corporation in full for full-time regular employees, and on a pro-rata basis for part-time regular employees.

- (b) The Corporation will continue to provide a voluntary provision so that an employee will be able to purchase additional coverage of up to three times the employee's regular annual salary rounded to the next higher one thousand dollars at nominal cost to the employee.
- (c) The Corporation will implement a voluntary Accidental Death and Dismemberment coverage which will allow employees the option to purchase benefits ranging from \$25,000 to \$150,000, in multiples of \$25,000. In addition, the employee may purchase coverage for her/his spouse and dependent children.

## **18.03 Coverage while on Leave Without Pay**

- (a) Employees who are on leave of absence without pay (excluding maternity leave) in excess of one (1) calendar month are required to reimburse the Corporation for the total premium cost of all welfare plans on a month-to-month basis in advance. Employees who fail to reimburse the Corporation pursuant to this provision may have their coverage terminated by the Corporation.
- (b) Employees who commence maternity leave will have their coverage continued for medical, dental, extended health, and basic group life benefits at no cost to the employees. Such employees will be required to reimburse the Corporation for premium costs associated with voluntary group life and accidental death and dismemberment (if enrolled in these

plans), and long term disability. In addition, employees may continue to make regular pension plan contributions (if enrolled).

#### **18.04 Coverage while on Other Leaves**

Employees who are off work on leave of absence with pay, short term disability, long term disability, or Workers' Compensation, will continue to receive coverage under the welfare plans set out in Articles 18.01(a) and (b), and 18.02(a) at no cost to the employee.

#### **18.05 Coverage during Labour Dispute**

Employees who are absent because of a labour dispute, including a strike or lockout, will have their coverage under this Article continued but the employees are required to reimburse the Corporation for the full cost of premiums for the period.

Should such dispute last in excess of fourteen (14) calendar days, the parties affected will meet and agree on a procedure acceptable to the Corporation for reimbursing the Corporation for such premiums.

#### **18.06 No Coverage while on Layoff**

Employees on layoff will not be covered by the welfare benefits of this Agreement.

#### **18.07 Long Term Disability Plan**

- (a) All full-time regular employees are required to participate in the Long Term Disability Plan upon the completion of the required qualifying period.
- (b) The terms and conditions of the Plan shall be determined by the Union, subject to a waiting period consistent with the short term disability plan.
- (c) The cost of the Plan will be paid 100% by the employees.
- (d) The Corporation will withhold the appropriate premiums through payroll deductions and remit same to the designated carrier in a manner prescribed by the carrier.

#### **18.08 Travel Accident Insurance**

Regular employees will be covered under a Travel Accident Insurance Plan for amounts up to \$150,000 against death or injury sustained while travelling on company business.

#### **18.09 Joint Employee Assistance Program**

The parties to this Agreement agree to provide a Joint Employee Assistance Program during the life of the Agreement.

# ARTICLE 19

## LEAVE OF ABSENCE

### 19.01 Bereavement Leave

Leave of absence without loss of pay of up to five (5) days will be granted to regular employees (and temporary employees who have accumulated more than three (3) months service with the Corporation) - who are otherwise scheduled to be at work - in the event of the death of a spouse, common law spouse, same sex spouse, son, daughter, mother, father, sister, brother, mother-in-law, father-in-law, grandparent, grand parent-in-law or any other person who was acting in loco parentis.

The Corporation may, at its discretion, grant further bereavement leave, contingent on the circumstances.

### 19.02 Special Leave

Any regular employee (or temporary employee who has accumulated more than three (3) months service with the Corporation) will be entitled to reasonable leave without loss of pay for legitimate and unavoidable personal reasons which will include but shall not be limited to:

- serious household or domestic emergency
- paternity - birth of employee's child (one (1) day per calendar year)
- attend funeral as pallbearer or mourner
- attend her/his formal hearing to become a Canadian citizen
- full period of any quarantine
- moving household furniture and effects when it is not possible to move on a weekend or scheduled day off, except that such leave with pay will not be allowed more than once in any twelve (12) month period, however, an employee may be granted such leave of absence without pay in circumstances where the employee is not eligible for such leave with pay.

As well, leave of absence for other legitimate personal reasons acceptable to the Corporation may be granted.

### 19.03 Court Leave

When a regular employee, other than employees on leave of absence without pay, is summoned to Jury Duty, subpoenaed as a witness, or representing the Corporation in her/his official capacity, leave of absence with pay will be granted provided such court action is not occasioned by the employee's private affairs.

Where court action is occasioned by the employee's private affairs, leave of absence without pay will be granted.

Time spent at court by an employee in her/his official capacity shall be at the appropriate rate of pay.

#### **19.04 Examination Leave**

A regular employee who writes a final course or year-end examination during or immediately following a regularly scheduled work shift will be entitled to reasonable time off to write the examination. In addition, such an employee will be entitled to leave of up to four (4) working hours without loss of pay in order to prepare for the examination. An employee who completes the writing of an examination not less than three (3) hours prior to the end of her/his shift will be expected to return.

#### **19.05 Maternity Leave**

A regular employee shall be eligible for up to twenty-six (26) weeks maternity leave to be taken in accordance with the Employment Standards Act. At the request of the employee, the Corporation will provide the employee with a written statement of conditions applying to maternity leave.

An employee desiring to return to work following maternity leave shall notify the Corporation at least two (2) weeks prior to the desired date of return. On return from maternity leave, the employee will be reinstated in her former position and receive the same salary and benefits as she received prior to such leave including any general salary increases and benefit changes which occurred during the period that she was on maternity leave.

#### **19.06 Parental/Adoption Leave**

- (a) A regular employee shall be eligible for up to twelve (12) consecutive weeks parental leave, to be taken in accordance with the provisions of the Employment Standards Act. For the purposes of adopting an infant, a regular employee shall be eligible for up to twenty-six (26) consecutive weeks adoption leave.
- (b) A request for parental/adoption leave must be submitted in writing at least 4 weeks before the day specified in the request as the day on which the employee proposes to commence parental/adoption leave. Such request must be accompanied by: (i) a certificate of a medical practitioner or other evidence stating the date of birth of the child or the probable date of birth of the child (if a certificate has not been provided in conjunction with a request for maternity leave); or, (ii) in the case of adoption, a letter from the agency that placed the child providing evidence of the adoption of the child.
- (c) Parental leave shall commence:
  - i) in the case of a natural mother, immediately following the end of the maternity leave.
  - ii) in the case of a natural father, following the birth of the child and within the 52 week period after the birth date of the new born child.

Adoption leave shall commence:

- i) In the case of an adopting mother or father, following the adoption of the child and within the 52 week period after the date the adopted child comes into the actual care and custody of the mother or father.

- (d) In the case of a natural mother or father, if a medical practitioner certifies that an additional period of parental care is required because the new born child suffers from a physical, psychological or emotional condition, the employee is entitled to a further parental leave of absence from work, without pay, for a period not exceeding a total of 5 consecutive weeks as specified in the certificate, commencing immediately following the end of the normal 12 week parental leave.
- (e) Notwithstanding the above, an employee's combined entitlement to parental and maternity leave shall not exceed a total of 38 consecutive weeks. An employee's entitlement to adoption leave shall not exceed twenty-six (26) consecutive weeks.

### **19.07 Public Office**

Leave of absence without pay will be granted employees who:

- i) run for elected office - municipal, provincial, federal.
- ii) are elected to public office.

### **19.08 Leave Without Pay**

Subject to departmental requirements an employee who has completed two (2) years of continuous service will be allowed up to ten (10) consecutive working days leave without pay in any calendar year upon request, and an employee's request will not be unreasonably denied. Such leave will not take precedence over another employee's vacation leave.

### **19.09 General Leave Without Pay**

Notwithstanding any provision for leave in this Agreement, an employee may be granted leave of absence without pay provided her/his reason for leave is satisfactory to the Corporation.

### **19.10 Military Leave**

Up to two (2) weeks leave of absence per year will be granted to regular employees in order to attend Canadian Armed Forces (Reserve) Training Camps. Employees having such requirements will make their request for such leave known to their manager at the earliest possible time so as not to conflict with the department's annual vacation scheduling. During such leaves the employees' pay will be topped up to yield 100% of their normal salary with the Corporation.

### **19.11 Educational Leave**

Employees who have completed five (5) years of service with the Corporation will be granted up to one (1) year leave of absence without pay to undertake courses or studies to enhance their present and future career prospects with the Corporation. Such leave will be subject to the following conditions:

- (a) The employee will make her/his leave request known to her/his manager not less than six (6) weeks prior to the anticipated commencement date.
- (b) Upon notification of a request for such leave, the Corporation may proceed to fill the resultant job vacancy on a permanent basis where the employee's leave of absence exceeds six (6) months.

- (c) An employee who is granted a six (6) month or less educational leave will be reinstated in their former position upon return from leave. An employee who is granted an educational leave of more than six (6) months will be reinstated into a comparable position within twenty (20) road miles of her/his last headquarters if her/his original position has been backfilled. The Union will waive postings as required.
- (d) An employee who is on educational leave will be deemed terminated if she/he:
  - i) fails to return to work at the completion of her/his leave; or
  - ii) undertakes employment in a vocation similar to that in which she/he was engaged with the Corporation, or becomes involved in a business interest which would pose a conflict of interest with her/his employment with the Corporation.
- (e) An employee who returns to work at the completion of her/his educational leave will not be eligible to request another educational leave until she/he has completed a further five (5) years of service with the Corporation.
- (f) The employee will be paid out for all earned paid leave entitlements at the commencement of her/his educational leave, and will commence accrual for such leave entitlements upon reinstatement.
- (g) The employee will be entitled to continued coverage of basic medical and extended health benefits, dental, and group life insurance during the period of educational leave, provided the employee does not obtain similar coverage through any other means, and subject to the Corporation being reimbursed the full costs of such benefits on a month-to-month basis in advance. The employee will not be entitled to paid sick leave or long term disability from the commencement of her/his educational leave until she/he returns to active employment.

### **19.12 Long Service Leave**

Employees who have completed not less than eight (8) years of continuous service with the Corporation will be granted a leave of absence without pay for a period of six (6) to twelve (12) months, subject to the following conditions:

- (a) The employee must be actively employed at the time her/his long service leave is to commence, and it may not be combined with any other unpaid leave provisions.
- (b) The employee must have served not less than one (1) year of active employment in her/his present job classification immediately prior to the requested leave, and have achieved at least a satisfactory performance rating.
- (c) The employee will make her/his leave request known to her/his manager not less than six (6) weeks prior to the anticipated commencement date.
- (d) Upon notification of a request for such leave, the Corporation may proceed to fill the resultant job vacancy on a permanent basis where the employee's leave of absence exceeds six (6) months.

- (e) An employee who is granted a six (6) month long service leave will be reinstated in their former position upon return from leave. An employee who is granted a long service leave of more than six (6) months will be reinstated in a comparable position within twenty (20) road miles of her/his last headquarters if her/his original position has been backfilled. The Union will waive postings as required.
- (f) The employee will be paid out for all earned paid leave entitlements at the commencement of her/his long service leave, and will commence accrual for such leave entitlements upon reinstatement.
- (g) The employee will be entitled to continued coverage of basic medical and extended health benefits, dental, and group life insurance during the period of long service leave, provided the employee does not obtain similar coverage through any other means, and subject to the Corporation being reimbursed the full costs of such benefits on a month-to-month basis in advance. The employee will not be entitled to paid sick leave or long term disability from the commencement of her/his long service leave until she/he returns to active employment.
- (h) An employee who is on long service leave will be deemed terminated if she/he:
  - i) fails to return to work at the completion of her/his long service leave; or
  - ii) undertakes employment in a vocation similar to that in which she/he was engaged with the Corporation, or becomes involved in a business interest which would pose a conflict of interest with her/his employment with the Corporation.
- (i) An employee who returns to work at the completion of her/his long service leave will not be eligible to request another such leave until she/he has completed a further eight (8) years service.

### **19.13 Service Requirements for Leaves of Absence**

Employees taking either education leave, long service leave, or general leave without pay (in conjunction with the deferred salary plan), must complete not less than three (3) years of active employment following such leave, before becoming eligible to take another of the above-noted leaves. This understanding does not negate the service requirements set out in Articles 19.11 and 19.12 for education and long service leaves respectively.

### **19.14 Deferred Salary Plan**

The Corporation agrees to continue to maintain and administer a deferred salary plan consistent with the following:

#### **Definition**

The deferred salary plan, hereinafter referred to as the DSP, is a program which permits employees to defer salary, for the purpose of funding an approved leave of absence without pay.

### **Compliance with Revenue Canada Regulations**

Deferred salary programs are subject to the Revenue Canada Income Tax Regulations and many of the requirements contained in this letter are necessary to comply with such regulations. Failure to comply with the regulations could have significant tax implications for the employee.

While the Corporation and the Union may provide information with respect to the DSP, employees are encouraged to seek advice from a qualified professional or Revenue Canada with respect to the income tax implications prior to entry into the DSP. Once enrolled, employees must direct all questions with respect to the administration of the DSP to the financial institution. Neither the Corporation nor the Union shall be liable to any participant for investments made in the Plan.

Notwithstanding any provisions within this DSP, the DSP must comply with all relevant acts, statutes, and regulations.

### **Plan Selection and Administration**

The Corporation will select a financial institution to oversee the administration of the DSP in a manner consistent with the intent of this DSP.

Administrative expenses of the DSP will be paid out of the plan itself.

### **Eligibility**

Regular employees who have completed two full years continuous employment with the Corporation may participate in the DSP.

### **Requests for Leave**

The DSP must be taken in conjunction with a leave of absence without pay already provided for in the Collective Agreement, to which the employee is eligible. All Applicable provisions for such leaves will apply to any request for leave made in conjunction with the DSP, except as noted elsewhere in this DSP.

Where the employee wishes to take leave and collect a deferred salary in accordance with the terms of this DSP, the duration of the leave must be for not less than six (6) months and not more than twelve (12) months. However, where the deferred salary leave is taken in conjunction with education leave, such leave may be for a minimum of three (3) months.

An employee participating in the Plan must take the deferred leave within six years of joining the Plan.

## ARTICLE 20

### MOVING, TRAVELLING, SPECIAL ENTITLEMENTS

#### 20.01 Headquarters

Each employee will have an established headquarters which will be the location where the employee normally works, reports for work, or the location to which she/he returns between jobs. In certain instances an employee's job may require her/him to regularly work out of one or more alternate headquarters within a local region. In addition, by mutual agreement between an employee and her/his manager, an employee may attend an alternate headquarters for the purpose of performing her/his job. Under this clause the homes of resident adjusters will be considered the established headquarters for those employees and classifications in the absence of a permanent Corporation office.

For the purposes of this Article, local region will be defined as the area within twenty (20) kilometres of the employee's established headquarters.

#### 20.02 General Provisions - Transportation and Travel Time

(a) Transportation - General

Unless otherwise specifically limited below, employees (other than those employees who have assigned vehicles) who are required to travel on Corporation business will be provided with transportation by the Corporation at no cost to the employee except that employees may utilize their personal vehicle subject to the conditions outlined in Article 20.05.

(b) Travel Time - General

Unless otherwise established in this Agreement, all time spent in travel prior to or after regular hours or on scheduled days off excluding time spent in daily travel to and from the employee's established headquarters to work their regular work schedule will be paid as time worked.

(c) It is understood and agreed that employees who are away from their established headquarters and are utilizing a Corporation vehicle, will be entitled to use such vehicle for reasonable personal use after regular working hours.

(d) It is understood and agreed that the Corporation will provide studded snow tires on request and survival kits in Corporation vehicles when such vehicles are to be operated in northern and southern regions as defined in Article 8 when such equipment is deemed to be necessary for the safety and well-being of the operator.

#### 20.03 Commercial Travel

The Corporation will pay the equivalent of economy air fare for air travel, and for other forms of travel will pay the cost equivalent to first class standards plus sleeping accommodation where required for employees travelling on Corporation business. All time spent travelling and waiting for connections for public transportation will be paid as time worked except that when an employee is provided with accommodation at her/his place of departure such pay shall not start until the employee is required to depart her/his place of accommodation to catch

the scheduled transportation. Pay for travel time on a day on which no work is performed will be limited to a day's pay at the prevailing rate.

#### **20.04 Travel - Involving No Change in Lodging**

Employees who are required to report to a temporary headquarters which does not involve any change in lodging will be reimbursed for additional transportation cost incurred or be provided with transportation by the Corporation and will have the difference in travelling time in excess of that which they normally spend reporting to or returning from their established headquarters and their residence paid as time worked.

The parties recognize that there should be reasonable give and take between the employees and Corporation and therefore employees will not claim for daily travelling differences which are fifteen (15) minutes or less.

#### **20.05 Use of Personal Vehicles**

Employees who elect and who are permitted by the Corporation to use their personal vehicles in lieu of transportation supplied by the Corporation shall receive forty-four (44c) cents per kilometre at ratification, for all distances travelled on Corporation business.

#### **20.06 Expense Claims**

Employees travelling on Corporation business or working away from their established/alternate headquarters will be reimbursed for reasonable expenses as set out below by submitting the appropriate Corporation form:

- (a) Accommodation expenses.
- (b) Meal allowances will include actual expenses incurred for all meals and gratuities. Receipts will be required for individual meals above the following amounts:

Breakfast -	\$ 7.00
Lunch -	\$ 8.00
Dinner -	\$15.00
- (c) Personal vehicle mileage expenses subject to 20.05 and other travel expenses which will include taxis and parking.
- (d) Reasonable Corporation promotion expenses where incurred provided such claims are supported by receipts with comments relative to dates, persons, places, and reasons thereto.
- (e) Reasonable miscellaneous expenses where incurred (such as laundry, valet, telephone, etc.). Any one item in excess of five (\$5.00) dollars will be supported by receipts.

#### **20.07 Monetary Advances**

Employees will receive monetary advances on request when travelling or incurring expenses on Corporation business.

## 20.08 Moving Expenses

Full-time regular employees will be reimbursed for moving expenses when the employee's established headquarters is changed for reasons set out in 20.08(a) or 20.08(b).

Moving expenses will be paid in accordance with 20.09(a) (full expenses) or 20.09(b) (limited expenses) when all of the following conditions have been met:

- i) the employee must be moving from, and to, a full-time regular position; and
- ii) the employee must actually incur a change in residence; and
- iii) the new headquarters must be further from the original residence than was the previous headquarters; and
- iv) the new headquarters must be more than (eighty) 80 road kilometres away from the original residence; and
- v) the new residence must be closer to the new headquarters than is the old residence to the new headquarters; and
- vi) the employee must initiate her/his move to the new residence within (three) 3 months of moving to her/his new headquarters; and
- vii) the employee must submit her/his claim for all moving expenses, including supporting documentation, within twelve (12) months of moving to her/his new headquarters, unless a longer period is agreed to in writing by the Corporation.

(a) Full moving expenses will be paid in accordance with 20.09(a), where the change in headquarters results from:

- i) the location of the employee's headquarters being changed by the Corporation, except as limited by 20.08(c).
- ii) a move as a result of the employee being displaced under Article 9 - technological and procedural change.
- iii) a move as a result of the employee receiving a promotion under Article 7 except as limited under 20.08(b) iii) or 20.08(b) iv).

(b) Limited moving expenses will be paid in accordance with 20.09(b) where the change in headquarters results from:

- i) a move as a result of the employee being displaced under Article 8 - layoff and recall.
- ii) a move as a result of the employee voluntarily transferring to a job of equal or lower salary level under the terms of Article 7. Unless otherwise agreed by the Corporation, employees in such instances will

not receive any moving expenses if they have less than five (5) years continuous service or if they have received a move paid by the Corporation in the preceding five (5) years.

- iii) a move as a result of an employee receiving a promotion under Article 7 which requires a change in headquarters within Greater Victoria, or within or between the Municipalities or Cities of Vancouver, Burnaby, New Westminster, Coquitlam, Surrey, Delta, Richmond, West Vancouver, North Vancouver.
  - iv) a move as a result of an employee receiving a promotion under Article 7 into any Salary Group Seven (7) and below, except for Commercial Inspector Trainees, Claims Adjuster Trainees and Estimator Trainees who are promoted outside of, or into, or out of the geographical area comprised of the Municipalities or Cities set out in 20.08(b) iii) who will be paid expenses in accordance with 20.09(a).
- (c) An employee whose change in headquarters results from a transfer or demotion due to inadequate performance will not be entitled to moving expenses unless otherwise agreed by the Corporation.
  - (d) The employee who receives limited moving expenses as a result of a voluntary transfer to a job of equal or lower salary level will reimburse the Corporation for all moving expenses received in those instances where the employee voluntarily leaves the employment of the Corporation within one (1) year of the date of the move.

## **20.09 Moving Expenses Defined**

- (a) Full expenses are defined as follows:

### **Moving**

- i) Costs of
  - packing and unpacking of household furniture and equipment.
  - mover's charge.
  - insurance against damage to household effects in transit.
  - legal expenses incurred in connection with a purchase of a house at a new location.
  - storage of household furniture and equipment which is being moved to the employee's new residence for up to one month, or for such longer period as may be approved by the corporation.
  - legal expenses incurred in connection with discharge of a mortgage in the sale of a principal residence at the former location.

- provincial property purchase tax and net G.S.T., as applicable, associated with the purchase of a new principal residence. This provision will apply only in instances where the employee is disposing of an owned principal residence at her/his former location.

ii) Provided any claim hereunder is supported by receipted vouchers, the Corporation will pay an amount not exceeding \$800.00 for incidental expenses. These incidental expenses include cost of cleaning existing residence, disconnecting and reconnecting appliances, altering rugs or drapes.

iii) The employee will be responsible for

- making arrangements for the move, for securing at least two competitive bids, for the selection of a reputable carrier, and prior to signing the contract, submitting the quotation for approval to the Corporation.
- placing of the insurance on her/his household effects in transit.
- obtaining reimbursement from carriers for any damage to effects in transit.

**Home Disposal**

i) **Rental Premises**

Under this provision, the Corporation will guarantee to the employee or her/his landlord:

- payment of the rental at her/his old location until the lease is terminated or a sublet arranged, whichever occurs first.
- payment of any bonus or cancellation fee to the landlord, providing it is approved in advance.

ii) **Owned Premises**

- real estate commission:  
  
earned real estate commission relating to the sale of the employee's principal residence, not exceeding seven percent (7%) of the selling price, shall be paid by the Corporation. Where there is established by the local real estate board a customary commission in excess of seven percent (7%) of the selling price for residential property, prior written approval for any amount in excess of seven percent (7%) must be obtained from the Corporation.

- mortgage interest and property taxes  
 where the employee is selling a principal residence and purchasing another principal residence and where the sale and purchase of these residences overlaps such that mortgage interest and property taxes are being paid temporarily on both residences, the Corporation will pay to the employee the mortgage interest and property taxes on one of these principal residences subject to the following conditions:
  - the Corporation's payments will apply to the period beginning with the commencement of duplicate mortgage interest and property tax payments and ending when the duplicate payments end or when three months have expired, whichever is the earlier; and
  - the Corporation's payment will apply to the principal residence where the sum of mortgage interest and property taxes is lower and will be the actual amount of such mortgage interest and property taxes subject to a maximum of \$800.00 per month (or a pro-rata portion thereof in the case of part months); and
  - the employee will support her/his claim for payment with documentation which confirms both the existence of duplicate mortgage interest and property tax payments and the amounts of same.
  - definition of principal residence:  
 the employee's principal residence shall be that property owned by the employee, her/his husband/wife or jointly, used for permanent living accommodation and considered to be her/his mailing address. This definition specifically excludes summer cottages, business ventures such as apartments, rented quarters or business establishments.

### **Travelling and Living Expenses**

The Corporation will pay all reasonable charges for:

- i) Transportation of entire family via air, rail or car. If the employee's own car is used, standard mileage rates will prevail. This includes meal, lodging enroute and normal living expenses.
- ii) In the event that the employee precedes her/his family to the new location, the Corporation will pay her/his personal living expenses for a reasonable period required to find reasonable living accommodation.

(b) Limited expenses are defined as follows:

**Moving**

- i) Costs of
  - packing and unpacking of household furniture and equipment.
  - mover's charges.
  - insurance against damage to household effects in transit.
- ii) Provided any claim hereunder is supported by receipted vouchers, the Corporation will pay an amount not exceeding \$800.00 for incidental expenses. These incidental expenses include cost of cleaning existing residence, disconnecting and reconnecting appliances, altering rugs or drapes.
- iii) The employee will be responsible for:
  - making arrangements for the move, for securing at least two competitive bids, for the selection of a reputable carrier, and prior to signing the contract, submitting the quotation for approval to the Corporation.
  - placing of the insurance on her/his household effects in transit.
  - obtaining reimbursement from carriers for any damage to effects in transit.

**Travelling and Living Expenses**

The Corporation will pay all reasonable charges for:

- i) Transportation of entire family via air, rail or car. If the employee's own car is used, standard mileage rates will prevail. This includes meal, lodging enroute and normal living expenses.
- ii) In the event that the employee precedes her/his family to the new location, the Corporation will pay her/his personal living expenses for a reasonable period required to find reasonable living accommodation.

**20.10 Special Allowances**

(a) Language Premium

Ongoing need

Employees who are regularly required to use a language other than English in the performance of their job duties will receive a premium of 5% of their regular monthly salary, which will be paid on a bi-weekly basis.

Regular use is defined as having an ongoing expectation that this skill will actually be used, on average, 3 days per week.

The premium is applied on top of the regular job rate for an existing job profile, in the same way as a shift premium and applies only when the employee is actually in a position that has been designated as requiring that skill.

This designation may be applied to any position in an office, based on operational requirements. Managers may also rotate the designation amongst employees for fixed periods of time if an office has a number of eligible employees who can provide the service. The premium may be discontinued at any time, with two weeks notice.

Employees chosen to be designated second language providers must be performing satisfactorily in their current positions, and be available to perform the duties when required.

#### Incidental Use

Employees who are required, at the specific request of their managers, to use a language other than English on an incidental, but not regular basis, will be paid an additional 5% of their regular daily rate for each day they actually use another language in the performance of their job duties. This payment will be made on the basis of records kept by the employees, and approved by their managers on a quarterly basis. For any period of 4 consecutive weeks where an employee uses the other language on average 3 days per week the employee will receive the 5% premium for the entire 4 week period.

#### Pilot Projects

Employees who are part of a pilot project and are required to use a language other than English, will be paid an additional 5% of their regular daily rate for each day they actually use the other language for the purposes of the pilot project. This payment will be made on the basis of records kept by the employees, and approved by their managers on a quarterly basis. All such projects must be approved in advance by the manager.

#### Fluency Testing

All employees will be required to successfully pass a fluency test in order to receive the premium for either ongoing or incidental second language requirements, or for pilot projects.

(b) First-Aid Attendant Premium

Employees designated as First-Aid Attendants, who are required to be holders of a valid Occupational First-Aid Certificate, will receive a premium of \$30.00 per month for a level "1" certificate and \$100.00 per month for a level "2" certificate, or greater.

(c) Driver Examiner Substitution Pay

Employees who temporarily perform the Driver Examiner function will receive substitution pay, as determined by Article 11.14, for all work performed. Such pay will be calculated and paid on a monthly basis.

## 20.11 Training/Travel Guidelines

The Corporation and the Union believe in the benefits of employee training and development. The purpose of training is to provide for upgrading of an employee's knowledge, skills and abilities in order to meet the requirements of their present position, or to develop toward future career alternatives.

The following provisions are intended to apply to job training courses which are directed by the Corporation. In situations where such training occurs away from an employee's established headquarters, and/or when the hours of training vary from an employee's normal hours of work, the employee will attend the hours of the training program, subject to the following:

1. The method of travel and time of departure should be discussed between the employee and manager in advance, to obtain management approval on travel arrangements.  
  
By agreement with the manager, these guidelines may be varied to accommodate travel arrangements requested by the employee, however, authorized payments for travel time will be based on the least cost alternative.
2. On a day dedicated to training:
  - (a) All surplus travel time will be paid at straight time rates regardless of when it occurs.
  - (b) Accrued time in training (inclusive of travel time related to attendance at the training course) which is in excess of the normal hours accrued in an employee's work day (inclusive of time normally spent in travel to and from work) will be paid at straight time rates.
  - (c) Where formal (classroom) training extends beyond 6:00 p.m., such that the total accrued hours in training for the day (exclusive of travel time) exceeds the employee's (normal) regular daily hours, these training hours which exceed the normal daily hours will be paid at overtime rates.
3. On a day in which both training and normal work is performed:
  - (a) Accrued time in travel, work, and training which is in excess of the normal hours accrued, in an employee's work day (inclusive of time normally spent in travel to and from work) will be paid at one and one-half (1 1/2) times the employee's hourly rate.
  - (b) Where formal (classroom) training extends beyond 6:00 p.m. such that the total accrued hours for the day (exclusive of travel time), exceeds the employee's (normal) regular daily hours, these training hours will be paid at overtime rates.
4. If training occurs on an employee's regularly scheduled day off, the employee will have the day off rescheduled (without further compensation).
5. Time spent in travel on a Sunday, related to attendance at a training course, will be paid at straight time rates. When such travel commences prior to 5:00 p.m. the employee will be paid for the period from commencement of travel to 5:00 p.m., or to the time the employee arrives

at their destination whichever time is latest. Any payment for Sunday travel related to attendance at a training course is limited to a maximum of a normal day's pay at straight time rates.

6. Time spent on a Saturday, related to attendance at a training course, will be paid at straight time rates. When such travel commences later than 8:30 a.m., the employee will be paid from 8:30 a.m. to the time at which the employee arrives at their destination. Any payment for Saturday travel related to attendance at a training course is limited to a maximum of a normal day's pay at straight time rates.
7. Under this Article, employees may elect to bank any premium hours accrued in lieu of receiving pay, subject to the terms of Article 14.09.

# ARTICLE 21

## TRAINING AND DEVELOPMENT

### 21.01 Training Assistance

It is the general intent of this Agreement that a policy of promotion from within will be followed throughout the Corporation and to this end the Corporation will, where practical, assist all employees to develop their capacities to the maximum degree possible in line with their present and future careers. This assistance may be in the form of financial aid or on-the-job training in accordance with the following provisions, however, provision of training assistance does not imply any promise or obligation to promote.

An employee wishing to take the benefits of this Article must submit a written application for such benefits and receive Corporation approval prior to enrolment in such course. Application for training assistance will be made through the employee's department manager. Such applications will be in writing and will set out the details of the proposed course(s).

### 21.02 Joint Training Committee

- (a) There shall be a Joint Training Committee consisting of three (3) management and three (3) employee representatives designated by the Union. The Committee shall function on a continuing basis and shall meet at least two (2) times per year, and at any other times the Committee deems necessary, under a rotating chairperson. The function of the Committee shall be to examine the training needs of employees covered by this Agreement. Reports and recommendations arising from these meetings will be forwarded to the Manager, Operations Education, with a copy to the Union President.

The Committee will meet during working hours and such time will be paid as time worked.

- (b) The Joint Training Committee shall consider and review: training needs of employees and career planning; trends in education and employee development; and any other training issues.

### 21.03 Financial Aid, Training Courses

Employees may apply for financial assistance to undertake a course of outside training. The degree of financial aid assumed by the Corporation will depend upon the circumstances. In general, the Corporation will provide for categories of financial aid as follows:

- (a) Full cost of training will be borne by the Corporation where training is at the direction of management and carries the appropriate approval.
- (b) The Corporation will reimburse the full cost of books and tuition fees and such other expenses as may be approved by the Corporation of any

Course where such training is directly related to the employee's job. The Corporation will make full reimbursement to the employee upon the successful completion of each term in the case of courses lasting more than one (1) year.

- (c) The Corporation will reimburse 50% of the full cost of books and tuition fees of any course approved by the Corporation where such training could be of future use to the employee in working for the Corporation. The Corporation will make such reimbursement to the employee upon the successful completion of the course.

#### **21.04 Training Approval**

- (a) The manager will consider the benefit of the requested training to the enhancement of the employee's performance in her/his current position and/or to the advancement of the employee, and the applicability of the training to Corporation qualification requirements. Applications will not be unreasonably denied.
- (b) Managers shall respond to the training application within a reasonable time, normally within thirty (30) calendar days. An employee shall be entitled to written reasons where an application for training cannot be acted upon.

#### **21.05 Career Planning**

- (a) The parties acknowledge that technological or procedural changes may affect the nature and requirements of specific jobs which affect employees and their career goals. The parties agree that steps should be taken to ensure the impact of such changes is minimized, wherever possible. To facilitate this principle the Corporation will provide the Joint Training Committee with a copy of any notice of technological or procedural change, issued to the Union in accordance with Article 9.01, which may affect the nature or requirements of any job classification.
- (b) Upon receipt of such information from the Corporation, the Joint Training Committee may meet and make recommendations for the training of employees so affected. The Committee may review the training requirements of employees so affected on a priority basis.

## **ARTICLE 22**

### **HEALTH AND SAFETY**

#### **22.01 Protective Clothing and Equipment**

Where required, protective clothing such as smocks, safety hats, coveralls, etc., will be supplied by the Corporation at no cost to the employee.

Where employees are required to wear protective footwear the Corporation will reimburse employees up to \$110.00 (plus tax) for the purchase and/or replacement of such footwear. In situations where "winter" or rubber boots are also required, the Corporation will reimburse employees up to an additional \$110.00 (plus tax).

Where an employee cannot be fitted with "ready made" protective footwear, the Corporation will provide the employee with protective footwear that meets WCB regulations, at no cost to the employee.

The Corporation will continue to provide protective clothing and equipment as in effect at the date of signing of the Agreement, and in such other circumstances as required.

#### **22.02 Joint Occupational Health, Safety and Environmental Committee**

There shall be established a Joint Occupational Health, Safety and Environmental Committee composed of four (4) employees appointed by the Corporation and four (4) employees appointed by the Union. The Committee shall meet every three (3) months or more often at the request of either party, to review matters pertinent to Occupational Health and Safety, and may consider recommendations from worksite Occupational Health and Safety Committees.

Employee representatives shall be on leave of absence without loss of pay for time spent on this committee.

#### **22.03 Joint Worksite Occupational Health and Safety Committees**

Pursuant to Division 4 of the Workers Compensation Act, there shall be established at each worksite, where there are twenty (20) or more employees, a Joint Worksite Occupational Health and Safety Committee composed of two (2) employees appointed by the Corporation and two (2) employees appointed by the Union. A worksite with less than twenty (20) employees but more than nine (9) employees must have a designated Worker Health and Safety Representative who will bring up safety issues as a permanent agenda item at staff meetings. The Head Office Committee will be set up in similar fashion but with five (5) representatives of each party.

Employee Representatives shall be on leave of absence without loss of pay for time spent on this committee.

The scope of these Committees as established under the terms of Division 4 of the Workers Compensation Act may be extended as required to enable the Committees to make recommendations to management relating to improved working conditions.

#### **22.04 Statutory Health and Safety Compliance**

The Corporation and the Union agree to cooperate fully in matters pertaining to the prevention of accidents and occupational disease and in the promotion of the health and safety of all employees.

There shall be full compliance with all applicable statutes and regulations pertaining to Occupational Health and Safety.

#### **22.05 Unsafe Work Conditions**

No employee shall be disciplined for refusing work which she/he has reasonable cause to believe is unsafe and where she/he acts in compliance with sections 3.12 and 3.13 of the WCB regulation.

#### **22.06 Investigation of Accidents**

- (a) Employees who experience a work-related injury or illness are required to report the incident to WCB in accordance with WCB regulations.
- (b) Whenever a lost time accident, medical aid or near miss event occurs, a Union appointed member of the applicable Joint Worksite Occupational Health and Safety Committee and the manager shall conduct an investigation and report their findings, including the first aid forms, form 7(a) and incident report to the WCB, within seventy-two (72) hours of the event. The Union Representative on the Joint Worksite Occupational Health and Safety Committee will submit copies of the findings to the Union.
- (c) The parties agree to provide each other with notice of any appeals they initiate relating to decisions made by the Workers' Compensation Board respecting any employee claim, and the Corporation will provide the Union with a copy of any notice of appeal received, respecting any employee claim.

#### **22.07 Repetitive Strain Injuries**

- (a) The parties agree that there is a shared interest in minimizing and/or eliminating musculoskeletal strain injuries or illnesses that are work related.
- (b) Joint Worksite Occupational Health and Safety Committee responsibilities will include incident investigation for reported incidents, recommendation of safe work practices and the performance of regular worksite inspections to identify and make recommendations regarding risk factors that may contribute to repetitive strain injuries.
- (c) The Corporation agrees to provide statistical information related to the work performed which may have caused a work-related repetitive strain injury.

## **22.08 Use of Video Display Terminals**

### **Preamble**

The Corporation and the Union believe it is in the best interests of the employee and the Corporation to develop and administer a policy addressing the use of video display terminals (VDT's).

The following policy outlines the considerations that will apply in regard to VDT operation.

### **Training**

The Corporation and the Union recognize the need for operator involvement and training with the introduction and on-going use of VDT's.

The Workers' Compensation Board of British Columbia Industrial Health and Safety Regulations state that every employer shall ensure the adequate direction and instruction of workers in the safe performance of their duties and that supervisors are responsible for proper instruction of workers under her/his direction, and for ensuring that their work is performed without undue risk.

The Corporation will develop and administer, as part of its educational offerings, a course entitled "Ergonomics and Human Factors" which will incorporate - what VDT's are; an overview of work processes in the unit/department where VDT's are used; the rationale for eye examinations; rationale for rest or stretch breaks; ergonomic factor awareness and adjustments of equipment and relaxation exercises. The course will be used subsequently by the supervisors as a training/orientation module for subordinate staff. The course will be a requirement for areas where use of VDT's is considered as continuous or intermittent and will be elective for areas where usage is determined to be casual.

### **Provisions for Pregnant Employees**

Where practical, and upon written request from a pregnant employee, the Corporation will endeavour to place the employee in another non-VDT associated position in accordance with the following:

#### **(a) Temporary Lateral Exchange of Employees**

This will be a voluntary, mutually agreed upon, action at the employee's request. There will be no expenses paid by the Corporation. The exchange transfer must be at equal job levels. The exchange transfer must be between employees who are each imminently capable of performing the new job (i.e. no more than one week's orientation).

Such exchange transfer shall not be unreasonably denied.

#### **(b) Temporary Exchange of Employees**

This will be a voluntary, mutually agreed upon, action at the employee's request. There will be no expenses paid by the Corporation. The exchange transfer must be between employees who are each imminently capable of performing the new job (i.e. no more than one week's orientation). Such exchange transfer shall not be unreasonably denied. Where such placement is to a lower level position the employee's salary will be treated in accordance with Article 11.10 of the Collective Agreement.

(c) **Temporary Vacancy Placement**

This will be a voluntary, mutually agreed upon, action at the employee's request. The basis of alternate job placement will be the employee's imminent ability to perform the job in question (i.e. no more than one week's orientation). There will be no expenses paid by the Corporation. Where such placement is to a lower level position the employee's salary will be treated in accordance with Article 11.10 of the Collective Agreement.

- (d) Alternatively, or in the event reassignment is not deemed practicable, the employee will be permitted to commence a leave without pay through to the beginning of her normal period of maternity leave.

**Stretch Breaks**

Where practical, jobs involving VDT usage will be designed to avoid continuous usage (where continuous usage is defined as use which is uninterrupted by alternate work assignments, with all work assignments relating to dedicated attention to the VDT).

In the interests of avoiding occupational fatigue which may arise from the continuous and dedicated usage of VDT equipment, employees are encouraged to use relaxation exercises from time to time (see "Simple Exercises for the VDT Operator").

Employees whose work requires the continuous usage of VDT's will be allowed stretch breaks for this purpose as needed, within the guidelines of a five (5) minute break in every one (1) hour of continuous usage.

Scheduled rest breaks as provided for in the Collective Agreement will be considered as satisfying the need for a stretch break in the applicable time period.

**Visual**

The Corporation will provide a baseline ophthalmological examination to all regular employees whose usage of VDT's on a continuous basis exceeds 1 hour per day or whose intermittent usage exceeds 4 hours per day. Follow-up examinations will be the employee's responsibility. Corrective lenses, where necessary, will be the employee's responsibility to procure (in most instances under the extended health care plan). Employees who are required to use VDT's and who develop visual impairment or visually related disabilities which limit their ability to perform their job will be handled on the basis of a medical disability - provided they have functioned in the position for at least 6 months.

**Ergonomics**

The Corporation will select VDT equipment/hardware, work station layout, lighting, etc., in accordance with Federal, Provincial, and WCB Safety Standards. The Corporation relies principally on testing information provided through suppliers and other bonafide independent sources in assessing the quality of any new equipment purchase.

The Corporation will make available to the Joint Worksite Occupational Health and Safety Committee listings of machine types in use. Employees who experience technical difficulty or malfunction with VDT equipment are encouraged to contact the ISD help desk. Responses to such calls are principally diagnostic in nature.

Employees who continue to have concerns or complaints respecting any particular device will be encouraged to report the concern to their supervisor in writing, with a copy to the Joint Worksite Occupational Health and Safety Committee.

### **Simple Exercises for the VDT Operator**

These exercises are intended to release the muscle tension in your body, enhance blood flow, and prevent the onset of fatigue and strain that VDT operators may experience.

#### **1. Body Exercises for The Work Place**

- (a) **Head** - starting with your chin down on your chest, slowly roll your head up to the left, breathing in until you are looking at the ceiling. Then roll down the other side, breathing out. Repeat, rotating in the other direction.
- (b) **Shoulders** - raise your shoulders to your ears - up high and drop, up high and drop. Alternate by lifting one shoulder at a time and letting it drop. Repeat several times.
- (c) **Arms** - lift your arms straight out ahead to shoulder level, and rotate them with the back of the hands facing each other. Then rotate them with palms face upward. Keep switching back and forth.
- (d) **Hands** - tightly clench your hands into fists, then snap your fingers open. Repeat.
- (e) **Spine** - sit forward in your chair feet firmly on the floor. Place your right hand on your left knee and your other hand behind your back. Breathing out, slowly twist to your left, turn your shoulders so that they face sideways and your head looks behind. Use the hand on your knee to help you turn. Breathe in again and slowly come back to the centre. Switch arms and repeat to the other side.
- (f) **Abdomen** - place your hands on your knees. Slightly bend your upper body forward. Exhale all air; then, holding your breath out, pull in the stomach muscles, hold a few seconds and release. Take a deep breath, exhale completely again and repeat.
- (g) **Legs** - holding onto the sides of your chair, point one leg straight out in front, then lift the whole leg a few inches. Lower and lift, lower and lift. Rest, then change legs.
- (h) **Ankles** - sitting, cross one leg over the other. Draw circles with one foot by rotating the ankle, first one way a few times, then the other. Change legs and do the other foot.
- (i) **Feet** - sitting, raise one leg straight ahead. Point your foot out straight, then pull it up toward you. Repeat several times. Change legs and repeat.

- (j) **Whole Body Movement** - stand up and walk around, stretching and bending as you go. If you feel really energetic, participate in an exercise class, go for a jog, or have a racquet ball game.

## 2. **Eye Exercises for the Work Place**

- (a) Moving only the eyes, look up to the ceiling, look down to the floor, look up, down, up, down. Rest, closing the eyes.
- (b) Open the eyes again. This time look to the left, then to the right. Repeat several times, then rest.
- (c) Now look up to the upper left corner, then down to the lower right. Repeat.
- (d) Look to the upper right, lower left, upper right, etc.
- (e) Make circles with the eyes looking as far as you can up, to the side, down and to the side. Change directions.
- (f) Hold up a finger a few inches from your eyes. Focus on it, then slowly move it away from you, keeping your eyes on it. Then focus into the distance, back to the finger and slowly bring the finger back to a few inches in front of your eyes. Close your eyes and relax. This key exercise allows the ciliary muscles supporting the lens of the eye to relax.
- (g) Finally, relax. Close your eyes for a few minutes, rest your arms in your lap, stretch your legs out in front of you, and mentally transport yourself out of your immediate work environment. Relax. Slowly return to your environment, and open your eyes. You will feel refreshed.

## **ARTICLE 23**

### **STRIKES AND LOCKOUTS**

During the life of this Agreement the Union will not authorize any strike or walkout and the Corporation will not cause any lockout. Under this clause it will be no violation of the Agreement for employees to refuse to cross a legal picket line of a trade Union.

## **ARTICLE 24**

### **SAVINGS CLAUSE**

If any article, section, paragraph, clause, or phrase of this Agreement shall by Provincial, Federal, or other law, or by decision of any court be declared or held illegal, void, or unenforceable, the remaining portions of this Agreement shall continue to be valid and in full force and effect.

## ARTICLE 25

### UNION-MANAGEMENT JOINT CONSULTATION

ICBC and the COPE recognize the benefits of establishing a mechanism for the ongoing discussion of concerns and problems that may arise during the term of the Collective Agreement between the parties.

#### **Objectives and Functions**

The union-management consultation mechanism will provide a process whereby representatives from the union and management will meet from time to time to discuss issues of concern to any of the parties.

This consultation process is one in which the parties seek information, provide advice and exchange views on specific matters; it is a means of fostering understanding of the other parties' problems and attitudes towards specific issues and developments within the business. The consultation process allows the parties the opportunity to develop meaningful dialogue, to bring forth their differing points of view, and in a spirit of good faith, attempt to find solutions to concerns and problems raised by each other.

The overall objective of union-management consultation is to provide an effective ongoing communication between Union and management so as to develop a positive climate conducive to the discussion of problems, if not to their resolution.

Union-management consultation does not imply agreement on issues discussed nor does it in any way interfere with management's authority or obligation to manage, or the union's legal rights under the Labour Relations Code of British Columbia, or the Collective Agreement.

#### **Matters for Discussion**

Since the purpose of the union-management consultation mechanism is to reduce tension and promote understanding between the parties, generally there shall be no limitation on the issues that may be raised in consultation.

#### **Meetings**

Meetings will be scheduled once every four (4) months although more frequent meetings may be held if the parties are agreed that there are sufficient matters for discussion.

#### **Participants**

When the Employer meets with the Union the total number of official Union and employer representatives will not exceed twelve (12), six (6) from the union and six (6) from the employer.

Other advisors, observers, and visitors may attend the consultation meetings but only with the concurrence of both the union and the employer; these persons will not be able to actively participate in the proceedings except with the Agreement of both the union and the employer.

**Procedures**

The employer and the union shall establish a pre-determined schedule of meetings for each calendar year. In advance of each meeting, the parties may each submit matters for discussion. An agenda will be prepared and circulated at least fourteen (14) days in advance of each meeting; if there are papers, memoranda or reports related to the item(s) on the agenda, they should be distributed at the same time as the agenda.

During the course of the meeting a non-adversarial climate should be maintained; therefore, formal proceedings such as motion and votes will not be utilized.

**Minutes**

Minutes will be distributed by the Employer to all participants following each consultation meeting. The minutes will show clearly what subjects were raised and by whom, the type of discussion that ensued by each party, and any subsequent position(s) or decision(s) taken, including the "Status" of the issue.

## **ARTICLE 26**

### **ELECTRONIC MONITORING**

#### **26.01 Notice of Monitoring**

The Corporation agrees to provide the Union with notice of equipment and facilities which have the capability of monitoring and/or measuring individual employee and/or group performance. The Corporation further agrees to advise employees of the monitoring and measuring capabilities of all job related equipment prior to its application.

#### **26.02 Performance Monitoring**

In situations where the existence of employee performance difficulties is evident, such that closer monitoring is required, the employee will be advised that such monitoring is to occur.

#### **26.03 Monitoring Guidelines**

The Corporation will not install monitoring equipment for reasons not related to the Corporation's business. The Corporation will advise employees of the location of equipment which is installed on a permanent basis for reasons of security. Specialized equipment - i.e. not regularly installed for security reasons - will not be installed for purposes of monitoring employees without reasonable cause.

## ARTICLE 27

### JOB SHARING

#### 27.01 Definition

Job sharing is an alternative work arrangement whereby the duties and responsibilities of a full-time position may be structured in a manner that accommodates the employment of two regular employees on a work/time sharing basis. It is the intent that the combined performance and time worked by the two job sharing partners will equate to that of a full-time regular employee in that position. Neither of the partners in a job share relationship shall work less than 40% of the normally scheduled hours of work of the full-time regular position.

#### 27.02 Employee Definitions and Benefits - Job Share Employee

- (a) A job-share employee will be classified as a part-time regular employee and shall be entitled to benefits as described in Article 6.03.
- (b) For the purposes of applying the overtime and shift differential provisions of this Agreement the job share position will be treated as a full-time regular position. Accordingly, the combined time worked by the two incumbents will fall within the normal daily and weekly hours of work for the full-time position. Any time worked through the combined efforts of the two incumbents which exceeds or falls outside of the normal full-time daily or weekly hours of work for the position shall be paid at overtime rates (to the employee performing the work). Shift premiums will be paid in accordance with the normal shift for the full-time position.

#### 27.03 Initiation

- (a) The initiation of job sharing arrangements as set out below will be subject to the Agreement of the Corporation and shall not exceed 10% of the current full-time regular complement of employees in any given department unless otherwise agreed to by the Union.
- (b) Any two full-time regular employees may initiate a request to share one of their current positions. Both employees must presently be in or have previously held the job classification in question. In such instances the position to be shared may be filled by the two employees without posting.  
  
Notwithstanding the above, the parties may, by mutual agreement approve job share arrangements that involve regular part-time or temporary employees.
- (c) Full-time regular positions posted in accordance with Article 7 may indicate if job share applications will be considered. For such postings, full-time applicants will have preference over job share applicants. Job share applicants must presently be in or have previously held the job classification in question.
- (d) The Corporation shall inform the Union of all job sharing arrangements as they occur.

#### **27.04 Discontinuance**

In the event that one of the employees in a job sharing arrangement can no longer fulfill their obligation as a job share employee and where the Corporation does not wish the position to continue as a job share position the position will be dealt with in the following manner:

- (a) Where the Corporation elects to replace the full-time regular (job share) position with a part-time regular (non-job share) position then the remaining employee shall have the option to remain in the position without posting as a part-time regular (non-job share) employee.
- (b) Where the Corporation elects to fill the position as a full-time regular (non-job share) position then the remaining employee in the job share position will have the option of filling the position without posting on a full-time basis.
- (c) If the remaining job share employee declines the option of filling the position the remaining employee will be deemed to have voluntarily resigned and the job vacancy will be posted and filled in accordance with the provisions of Article 7.

#### **27.05 Continuance**

In the event that one of the employees in a job sharing arrangement can no longer fulfill their obligation as a job share employee and where the Corporation and the remaining job share employee wish the position to continue as a job share position the position will be dealt with in the following manner:

- (a) A candidate will first be selected from the job share bulletin board.
- (b) If there are no qualified candidates on the bulletin board acceptable to both the employee and Corporation, the position would be posted in accordance with Article 7 noting that job share applications will be considered on a preferential basis.
- (c) If no suitable internal applicant is willing to share the full-time position as a job share position and there are qualified applicants wishing the position on a full-time basis, the remaining employee will have the option to fill the position full-time, on a preferential basis.

If the remaining job share employee declines the full-time position she/he will be deemed to have voluntarily resigned and the vacancy may be filled on a full-time basis in accordance with Article 7 from applicants to the posting.

- (d) Should there be no suitable applicants for the position the remaining job share employee may be retained as a regular part-time (non-job share) employee in the position or it may be filled from outside the bargaining unit either on a job share or full-time basis at the Corporation's option.

In the event the Corporation fills the position with a full-time employee from outside the bargaining unit the remaining job share employee will be deemed to have resigned.

#### **27.06 Job Share Partner Absence**

Where an employee in a job share arrangement is absent from work for any reason the Corporation shall first offer the work to the remaining job share employee during the period of said absence. In such instances the extra hours worked (up to the equivalent of a full-time position) will be paid at straight time rates. The job share employee will retain her/his status as a part-time regular employee for the duration of the partner's absence. Where the remaining job share employee declines to accept the work so offered the Corporation may proceed to fill the vacancy with a part-time temporary employee.

#### **27.07 Corporation Initiated Discontinuance**

Should the job share arrangement be discontinued by the Corporation with the effect that both incumbents would be displaced then the provisions of Article 8 will apply.

#### **27.08 Application of Collective Agreement**

Nothing in this Article is intended to limit, restrict or modify the application of the Collective Agreement beyond the provisions contained herein which specifically relate to the accommodation of job sharing arrangements.

## ARTICLE 28

### DISCRIMINATION AND HARASSMENT

#### 28.01 No Discrimination, Sexual, Racial, or Personal Harassment

The parties recognize the right of all employees to work in an environment free from sexual, racial, and personal harassment.

Neither the Union nor the Corporation, in carrying out its obligations under the Collective Agreement, will discriminate in matters of hiring, training, promotion, transfer, layoff, discharge, or otherwise, because of race, colour, ancestry, place of origin, political belief, religion, marital status, family status, physical or mental disability, sex, sexual orientation, age, criminal conviction for which a pardon has been granted. Definition of these protected classes will be consistent with the definitions in the B.C. Human Rights Code.

Notwithstanding the above, the parties agree that should any new protected classes be added to the Human Rights Code during the life of this Agreement that they will be deemed to be included in this language.

#### 28.02 Definitions

##### (a) Discrimination

Discrimination shall include the denial of opportunity to a person or a class of people, based on any of the grounds prohibited under the B.C. Human Rights Code.

##### (b) Sexual Harassment

Sexual harassment is comment or conduct of a sexual nature - verbal, physical or by innuendo - including sexual advances, requests for sexual favours, suggestive comments or gestures, physical contact, including assault, when any of the following occurs:

- i) the conduct is engaged in, or the comment is made by a person who knows, or ought reasonably to know, that the conduct or comment is unwanted or unwelcome.
- ii) the conduct or comment has the effect of creating an intimidating, humiliating, hostile or offensive work environment, and may include the expression of sexist attitudes, language or behavior.
- iii) the conduct or comment is accompanied by a reward, or the express or implied promise of a reward, for compliance.
- iv) the conduct or comment is accompanied by reprisal or an express or implied threat of reprisal, for refusal to comply.

- v) The conduct or comment is accompanied by the actual denial of opportunity, or express or implied threat of the denial of opportunity.

Sexual harassment most commonly occurs in the form of behavior by men towards women; however, sexual harassment may also occur between men, between women, or as behavior by women towards men, and is not restricted to interactions between supervisors and subordinates.

(c) **Racial Harassment**

Racial harassment is defined as objectionable comment or conduct of a racial nature, which results in intimidating, humiliating, hostile or offensive work environment.

(d) **Personal Harassment**

Personal harassment is defined by the parties as behavior which denies an individual her or his dignity or respect by creating an intimidating, humiliating, hostile, or offensive work environment and which may constitute discrimination on the basis of any of the grounds prohibited under the B.C. Human Rights Code.

**28.03 Complaint Handling**

- (a) Possible avenues of complaint or grievance under the Collective Agreement:

- i) resolution of the complaint between the complainant and the respondent.
- ii) referral of the complaint to Respectful Workplace Mediation.
- iii) referral of the complaint to a Complaint Officer for mediation or investigation.
- iv) filing a grievance in accordance with Article 3.

Once a complaint or grievance is filed with respect to an allegation of discrimination and/or harassment, the process selected will be carried through to conclusion and there will not be access to the process not selected.

- (b) Complaints must be referred to a Complaint Officer within six (6) months of the latest incident of alleged harassment.

- (c) A complaint shall be treated in the strictest confidence, except to the extent necessary to fully and properly investigate the complaint, including providing the respondent a copy of the complaint and providing the Vice-President, Human Resources, and a Union Representative with any agreement reached between the parties or a report of any investigation.

- (d) It is agreed by the parties that the notes of investigation of the Complaint Officer shall remain confidential.

- (e) Nothing in this Article precludes the Corporation or the Union from conducting its own investigation and from taking appropriate action, even if the employee withdraws a written complaint or grievance.
- (f) No employee shall be subject to reprisal, threat of reprisal, or discipline as a result of filing a bona fide complaint of harassment or discrimination. If as a result of an investigation, a complaint is found to be vexatious, it will be considered a form of harassment and will be dealt with in accordance with this Article.

#### **28.04 Harassment Advisors**

Harassment Advisors are people trained to explain the options available to the complainant and to recommend a course of action to the complainant. They have no authority to investigate a complaint or to attempt to mediate a resolution.

There will be six (6) ICBC employees appointed as Harassment Advisors, with three (3) being appointed by the Corporation and three (3) being appointed by the Union. The make-up of the group will reflect the diversity of the ICBC workforce.

The parties mutually agree to maintain a list of Harassment Advisors whose names will be published and made available to employees via the e-mail bulletin board system.

Harassment Advisors will be given reasonable leave, without loss of pay, during their regular work day to respond to requests from employees for guidance in handling harassment complaints.

#### **28.05 Complaint Officers**

Complaint Officers are external consultants who have been trained to mediate and resolve issues of harassment and discrimination. Complaint Officers will respond to all formal (written) complaints. Complaint Officers may attempt to mediate a solution to the complaint or, after an investigation has been conducted, they may submit recommendations for remedial action to the Vice-President, Human Resources (or an assigned designate), a Union Representative, the complainant, and the respondent. The parties mutually agree to maintain a list of Complaint Officers. If the Complaint Officer finds that the complaint is substantiated, the costs associated with the Complaint Officer will be borne by the Corporation. If the Complaint Officer finds that the complaint is not substantiated, the costs associated with the Complaint Officer will be borne by the Union. All other costs associated with the application of Article 28 will be borne by the Corporation.

#### **28.06 Filing a Complaint**

- (a) An employee who believes that she/he has a complaint of harassment is encouraged to make a direct request of the alleged harassor that the offensive behavior or actions cease.
- (b) If the request is unsuccessful or if it is considered inappropriate or uncomfortable to make such a request, the complainant may seek the confidential advice of a Harassment Advisor, the Union, or the Manager, Labour Relations.

- (c) The person receiving the complaint will notify the Manager, Labour Relations and a Union Representative of the nature of the complaint and the name of the alleged harassor. At this stage the name of the complainant may be kept confidential if the complainant so wishes.
- (d) The person receiving the complaint will provide the complainant with advice on what options are available and if the employee requests, will assist in the filing of a formal complaint.
- (e) Formal complaints must be in writing, giving the particulars of the complaint, including the name of the complainant. Complaints will be forwarded to the Manager, Labour Relations, or designate, who will assign the next Complaint Officer in the rotation, subject to the availability of the Complaint Officer.
- (f) Within three (3) working days of receipt of the complaint, the Complaint Officer will:
  - i) confirm receipt of the complaint with the complainant.
  - ii) notify the respondent of the allegation(s), and provide the respondent with a copy of the complaint and advise the complainant of this notification.
- (g) Within five (5) working days of notification by the Complaint Officer that a complaint has been filed, or within such reasonable time as may be authorized by the Complaint Officer, the respondent or her/his representative will be given an opportunity to respond to the Complaint Officer regarding the allegations.

**28.07 Complaint Officer Investigation**

- (a) Within ten (10) working days of receipt of the signed complaint, the Complaint Officer shall commence an investigation. The investigation shall be completed within twenty (20) working days from the commencement of the investigation or as soon thereafter as practicable.
- (b) At any time during the investigation, the Complaint Officer may, with the consent of all parties, attempt to mediate a resolution to the complaint. Notification of such settlement or resolution will be provided to the original complaint recipients.
- (c) In the event there is no mediation, or a mediation does not result in an agreement, the Complaint Officer shall, within ten (10) working days of completing the investigation, provide to the Vice-President, Human Resources (or an assigned designate), a Union Representative and to the complainant and the respondent, a confidential written report containing the result of the investigation and recommended remedial action.
- (d) Within five (5) working days of receipt of the Complaint Officer's report, the Vice-President, Human Resources (or an assigned designate), will respond in writing to the complainant, a Union Representative and the respondent, outlining the action to be taken.
- (e) Any disciplinary action taken by the Corporation may be grieved by the affected employee.
- (f) During any investigation and/or Grievance Procedure, the Corporation agrees to monitor the working environment of individuals involved and

make such alternate work arrangements as are necessary to protect their rights. During the course of the investigation, it may be necessary to limit the contact between the complainant and the respondent. However, a complainant will not be moved to another work location, without her or his consent.

## **28.08 Respectful Work Place Mediation Procedure**

### **(a) Intent of Procedure**

Pursuant to the provisions of this Article, the following procedure will apply when dealing with personal harassment complaints; that is, complaints other than those related to grounds prohibited under the B.C. Human Rights Code. The intent of this procedure is to promote early intervention and access to mediation as a means of facilitating, where possible, a resolution. The Union and the Corporation agree to promote the use of a mediated approach prior to engaging the formal complaint procedure as set out in 28.06 and 28.07 above. Where mediation occurs it will be conducted without prejudice to any further action by either party. Either party to the mediation may withdraw from the mediation process at any time.

### **(b) Requesting Mediation**

- i) Prior to requesting mediation, an employee who believes she/he is the recipient of inappropriate or unacceptable behaviour is encouraged to deal directly with the person(s) whose behaviour is at issue in an effort to come to a resolution.
- ii) If dealing directly with the person is either unsuccessful, or is considered inappropriate, the complainant may seek the confidential advice of a Harassment Advisor, the Union, the Manager, Labour Relations or Human Resources Advisor.
- iii) Requests for mediation may be initiated through a Harassment Advisor, the Union, a Human Resources advisor or the Manager, Labour Relations. The nature of the offending behaviour, relevant dates, and the name of the person whose behaviour is at issue will be submitted in writing, signed by the complainant, to the Manager, Labour Relations. The Manager, Labour Relations will provide a copy of all mediation requests to the Coordinator appointed by the Union.

### **(c) Mediation Process**

- i) The Manager, Labour Relations will assign a Mediator within five (5) working days of receipt of the signed mediation request. Mediator assignment will be on a rotational basis from a list of candidates deemed qualified and acceptable to the parties. Costs associated with Mediators will be borne by the Corporation. The mediation will be completed within ten (10) working days from the date of assignment, or as soon thereafter as practicable.

- ii) Each party may be accompanied in the mediation process by a readily available Corporation/Union Representative for support.
- iii) The Mediator will, in situations where the mediation results in a resolution, generate a settlement agreement within five (5) working days of the conclusion of the mediation. Settlement agreements will not alter, modify or amend any part of the Collective Agreement and will be administered in accordance with the terms of the Collective Agreement. The settlement agreement will be signed and exchanged by both parties with copies going to the Union coordinator and the Manager, Labour Relations.
- iv) Should either party to the settlement agreement, within the first six months of the Agreement, be of the opinion the Agreement has been breached, she/he will make her/his views known to either the Union coordinator or the Manager, Labour Relations. The coordinator and Manager, Labour Relations will work with the parties in an effort to restore the Agreement. This may involve referring the parties back to the original Mediator.
- v) Any initial issue arising between the parties to the settlement agreement, beyond the first six months of the Agreement, will be deemed to be a new issue and will be dealt with through the appropriate mechanism.
- vi) In situations where, in the opinion of the Mediator, a resolution is not to be found, the Mediator will conclude the mediation. This will be done in consultation with the Union coordinator and the Manager, Labour Relations. The Mediator will, within ten (10) working days of the conclusion of mediation, issue a report to the Union coordinator and Manager, Labour Relations outlining the reasons for concluding the mediation.

## **ARTICLE 29**

### **EMPLOYMENT EQUITY**

#### **Joint Employment Equity Advisory Committee**

The Corporation and the Union agree to establish a Joint Employment Equity Advisory Committee comprised of three (3) management representatives (one of whom may be a member of the Board of Directors) and three (3) Union Representatives. The Joint Committee should be gender balanced and participation of designated group members should be encouraged.

The purpose of this Joint Committee will be to function as an Advisory Committee, and will assist the Corporation in reviewing and recommending policy, and policy changes, which promote employment equity principles. The Joint Committee will ensure compliance of corporate policies and practices with respect to current applicable legislation, provide interpretation of board policy and COPE issues, and serve as a forum to discuss employee concerns about diversity and work and family life issues.

## ARTICLE 30

### GENERAL PROVISIONS

#### 30.01 Indemnity

- (a) The Corporation agrees not to seek indemnity against an employee whose actions result in a judgment against the Corporation. The Corporation agrees to pay any judgment against an employee arising out of the performance of her/his duties. The Corporation also agrees to pay legal costs incurred in the proceedings, including those of the employee.
- (b) The Corporation shall provide either for the retaining of legal representation of its choice for the employee or pay the reasonable legal fees of counsel retained by the employee, in the defence of any legal proceedings initiated by a person other than an employee involving the employee which arises as a consequence of her/his employment with the Corporation. The Corporation shall decide which form of legal representation they will provide for the employee and notify the employee as soon as possible. The Corporation shall have full authority in the conduct of the action including the right to settle the claim of the plaintiff at any time in the manner it deems advisable.
- (c) (a) and (b) above will only apply in circumstances where the employee was acting in good faith in the proper performance of her/his regular job duties and there was no criminal intent involved.
- (d) In order that the provisions in (a) and (b) above shall be binding upon the Corporation, the employee shall notify the Corporation immediately, in writing, of any incident or course of events which may lead to legal action against her/him or the Corporation, and the intention or knowledge of such possible legal action is evidenced by any of the following circumstances:
  - i) when the employee is first approached by any person or organization notifying her/him of intended legal action against her/him or the Corporation.
  - ii) when the employee herself/himself requires or retains legal counsel in regard to the incident or course of events.
  - iii) where any investigative body or authority first notifies the employee of any investigation or other proceeding which might lead to legal action against the employee or the Corporation.
  - iv) when information first becomes known to the employee in the light of which it is a reasonable assumption that the employee would conclude that she/he or the Corporation might be the object of legal action; or
  - v) when the employee receives notice of any legal proceedings of any nature or kind that involve the employee or the Corporation.

## **ARTICLE 31**

### **COPE, LOCAL 378 / ICBC PENSION PLAN**

#### **31.01 Amending the Plan**

The parties agree that amendments can be made to the plan by Agreement of the parties and the trustees.

# APPENDIX “A”

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
2	Clerk II Legal Document Processing	4	Centralised Estimating Facility Maintenance Worker
3	Accounting Assistant I Cheque Control		Clerk Typist II - General
	ADP Support Clerk		Clerk Typist II Claims
	Batch Management Clerk		Clerk Typist II Employee Benefits
	Caretaker General Maintenance		Client Record Services Clerk
	Caretaker I		Collections Support Clerk
	Clerk II Autoplan Document Processing		Commercial Transport and Inspection Department Clerk
	Clerk II Special Coverages		Commercial Vehicle Safety Alliance Clerk
	Clerk Typist I		Compliance Clerk
	Clerk Typist I Claims		Correspondence Processing Clerk
	Collections Support Clerk		CSN Maintenance Clerk
	Customer Contact Support Clerk		Customer Accounting Clerk
	Document Retrieval Clerk		Customer Contact Assistant I
	Files & Library Clerk		Customer Accounting Support Clerk
	Information Access & Privacy Clerk		Customer Service Support Clerk
	Mail/Delivery Clerk		Data Entry Operator
	Receptionist/Switchboard Operator		Data Services Operator
	Tape Operator		Driver Training and Certification Clerk
	Warehouse Stock Clerk		Edit Clerk
4	Accreditation Program Support Assistant		Fair Practices Review Clerk
	Administration Clerk		Garage and Fleets Support Assistant
	Administrative Driving Prohibition & Vehicle Impoundment Clerk		ISD Administrative Resources Assistant I
	Administrative Salvage Assistant I		Education Administrative Assistant
	Administrative Support Clerk		Government and Corporate Relations Clerk
	Administrative Support Clerk Traffic Camera		Interjurisdictional Licensing Clerk
	Agency Receipt System Clerk		Inventory Allotment Clerk
	Agency Reconciliation Clerk		Junior Contract Assistant
	Alternate Dispute Assistant		Junior Payroll Assistant
	Autoplan Document Processing Representative I		Legal Action Clerk
	Autoplan Services Assistant		Legal Document Processing Clerk
	Autoplan Services Clerk		Licensing Clerk
	Caretaker II		Mail Clerk
	Central Cashier		Mail Clerk – Victoria
			Microfilm Retrieval Operator
			Microimaging Operator
		4	Office Assistant – Driver Licensing

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Standards		Accounting Assistant Corporate Services
	Office Assistant - Operations		Accounting Assistant II Accounts Payable
	Office Assistant - PACM		Accounting Assistant II Autoplan 12
	Office Assistant II		Accounting Assistant II Customer Accounting
	Operator I Print & Mail Services		Accounting Assistant II Database Control
	Payment Inquiry Clerk		Accounting Assistant Vendor
	Office Assistant Public Affairs & Field Services		Accounts Payable Clerk
	Premium Review Clerk		Adjudication Clerk
	Purchasing Clerk		Administrative Assistant Actuarial
	Purchasing Support Assistant		Administrative Assistant Building Operations
	Receiving and Shipping Clerk		Administrative Assistant Security
	Receptionist		Administrative Assistant Traffic Safety Initiatives
	Receptionist PACM		Administrative Clerk Facilities Planning
	Records Retention Administrative Clerk		Administrative Salvage Assistant II
	Records Retention Clerk		Alternate Dispute Assistant II
	Staffing Assistant Customer Service Support		Administrative Support Assistant Traffic Camera
	Refund/Fee Accounts Clerk		Automated Vehicle Inspection System Clerk
	Returned Cheques Clerk		Autoplan Document Processing Representative II
	SIU Office Assistant		Autoplan Education Services Assistant
	Skip Tracing Representative		Bank Reconciliation & Statistics Clerk
	Special Accounts Clerk		Banking Operations Reconciliation Clerk
	Staffing Assistant		Claims Support Assistant
	Staffing Assistant TCD		Cashier/Office Clerk
	Subrogation Clerk		Cheque Control Clerk
	Time Accounting Clerk		Clerk IV Out of Province Claims
	Time Accounting Clerk TCD		Collections Assistant
	Time Accounting Clerk Workforce Services		
	Traffic Accident Reporting Clerk		
	Traffic Camera Ticket Processing Clerk		
	Road Safety Planning Clerk		
	Vehicle Services Clerk		
	Violation Ticket Payment Clerk		
	Violation Ticket Problems Clerk		
	Warehouse Driver		
	Weigh Scale Accounts Clerk		
		5	Commercial Vehicle Inspection Program Clerk
5	Accounting Assistant - Information Services		Commission/Liaison Clerk
			Contract Assistant

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Corporate Services Regional Assistant		Patrolperson
	Credit Card Reconciliation Clerk		Payroll Assistant
	Customer Access Representative		Phone Agent
	Customer Contact Assistant II		Print Shop Operator I
	Customer Contact Representative I		Printer/Machine Operator
	Customer Service Assistant		Receptionist/Screenner
	Dangerous Goods/Commercial Vehicle Safety Alliance Clerk		Record Management Service Assistant
	Distribution Specialist		Regional Compliance Clerk
	Driver Training & Assessment Standards Representative		Rehabilitation Support Assistant
	Employee Recognition Coordinator		Revenue Accounting Clerk
	Equipment Operator		Revenue Administration Reconciliation Clerk
	Facilities Service Desk Assistant		Revenue Administration Secretary
	Fines Adjustment Clerk		Revenue Stock Reconciliation Clerk
	HR Services Assistant		Secretary Autoplan Operations
	Head Office Claims Support Assistant		Secretary Claims
	Intermediate Administrative Support Clerk		Secretary District Compliance
	Inventory Control Clerk		Secretary General
	Inventory Systems Clerk		Secretary Licensing Programs
	ISD Administrative Resources Assistant II		Secretary Policy & Programs
	Learning Services Assistant		Secretary Provincial Compliance
	Legal Recovery Clerk		Secretary Regional Loss Prevention
	Investigations Assistant		Secretary Commercial Transport
	Investment Operations Assistant		Senior Cashier
	Junior Legal Secretary		Service Centre Administrator
	Junior Vehicle Registration & Licensing Representative		Senior Traffic Camera Clerk
	Legal Clerk		Special Investigations Unit Research Assistant
	MD Research & Training Assistant		Statistics Clerk
	MD Supplier System Coordinator		Suspension Clerk
	Micrographics Clerk		Telecommunications Customer Service Assistant
	Motor Carrier Clerk		Vehicle Records Representative
	National Safety Code Assistant		Violation Ticket Dispute Clerk
	National Safety Code Clerk	5	Word Processing Operator Claims
5	National Safety Code Systems & Processing Clerk		WCB Liaison Assistant
	Office Assistant III		Word Processing Operator
	Office Assistant IV		Word Processing Operator II Claims
	Out of Province Recovery Clerk		Workforce System Administrator
			Writ Handling Clerk
			Accounting Assistant Corporate Accounting
			Accounting Assistant Autoplan

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Financing		Coordinator Time Accounting
	Accounting Assistant Customer Accounting		Customer Service Autoplan Sales Representative
	Accounting Assistant II Agency Banking Services		Data Analyst I
	Accounting Assistant III Accounting Services.		Driver Training & Assessment Standards Assistant
	Administrative Assistant Claims		Facilities Systems Coordinator
	Administrative Assistant Collections		Financial Systems Test Analyst
	Administrative Assistant Corporate Control		Group Leader Agency Reconciliation
	Administrative Assistant General		Group Leader Inventory Allotment
	Administrative Assistant Information Services		Help Line Support Analyst
	Administrative Assistant Litigation		Illustrator
	Administrative Assistant Operations		Information Technician I
	Administrative Assistant Special Counsel		Information & Privacy Administrator
	Administrative Coordinator Building Operations		Internal Audit Support Assistant
	Administrative Assistant PACM Safety		ISD Administrative Resources Assistant III
	ADP Technical Support Representative		ISD Education Assistant
	Assessment Assistant		Junior Project Planner
	Assistant Storage & Space Administrator		Learning Centre Assistant
	Buyer		Legal Secretary Corporate Law
	CAFM Operator		Legal Secretary Litigation
			Legal Secretary Special Counsel
			Legal Support Assistant
			Licensing/Insurance Representative
			MD Supplier Program Coordinator
			Microimaging Production Coordinator
			National Safety Code Coordinator
6	Claims Forms Coordinator		Nominal Index Systems Coordinator
	Claims Systems Support Representative		Operator II
	Claims Systems Trainer		Operator II Print & Mail Services
	Claims Test Analyst I		Payroll Administrator
	Client Service Representative		Personnel Assistant
	Collections Analyst		
6	Commercial Customer Service Representative	6	Planning Assistant
	Communications Assistant		Project Administrative Assistant
	Corporate Customer Support Representative		Project Assistant
	Corporate Records Assistant		Print Shop Operator II
	Corporate Security Assistant		Production Coordinator - PACM
			Programmer - Claims
			Programmer Strategic Systems
			Purchasing Systems Administrator

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Quality Control Analyst		Contract Coordinator
	Records Management Coordinator		Coordinator Mail Services Automated
	Regional Salvage Assistant		Coordinator Mail Services Distribution
	Rehabilitation Assistant I		Corporate Information Systems Coordinator
	Salvage Parts Administrator		Customer Collections Representative
	Salvage Technical Assistant		Customer Contact Representative II
	Senior Administrative Support Clerk		Data Warehouse Technical Support Analyst
	Senior Banking Operations Clerk		Design Technician
	Senior Writ Handling Clerk		Display & Promotional Material Coordinator
	Skip Tracer		Driver Examiner I
	Supply Analyst I		Driver Test Analyst
	Test Analyst I		Electronic Document Analyst I
	Systems Coordinator		Emissions Prevention Technician Environment/Emergency Coordinator
	Technical Services Coordinator		Financial Administrator
	Technical Support Specialist		Forms Analyst
	Telecommunications Installer		Head Cashier
	Tractor Trailer Driver		Help Line Support Analyst I
	Training & Procedures Assistant		Human Resources Systems Product Specialist
	User Analyst		Human Resources Systems Support Specialist II
	Vehicle Registration Support Representative		Inventory Analyst
	Vehicle Services Assistant		Insurance Rating Analyst
	Web Designer I		ISD Administrative Coordinator
7	Accounts Payable Unit Leader		Junior Coordinator Programs & Events
	Accounting Assistant Corporate Accounting		7 Knowledgebase Administrator
	Administrative Coordinator Corporate Research		Laboratory Technician/Photographer
	Administrative Support Leader Litigation		Legal Secretary Corporate Law
	Agency Accounting Assistant		Legal Secretary Litigation
	Asset Control Officer		Microfiche Camera Technician
	Asset Protection Planner		Project Accounting Analyst
7	Autoplan Field Operations Coordinator		Regional Salvage Coordinator
	Broker Enquiry Representative		Rehabilitation Benefits Assistant
	Business Support Analyst		Supervisor Client Records Services
	Claims Office Trainer		
	Client Computing Analyst I		
	Commercial Customer Service Representative		
	Computer Graphics Artist		

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	National Safety Code Supervisor		Voice Communication Specialist
	Office Supervisor		
	PACM Systems Coordinator	8	Accounts Coordinator Customer
	Supervisor Payments		Accounting
	Programmer Analyst I Claims Registrar		Assistant Accountant Corporate Accounting
	Revenue Accounting Coordinator		Assistant Accountant MSA
	Reviewing Officer		Assistant Supervisor Expressway
	Security Administrator - Victoria		Associate Operations Support Analyst
	Senior Payroll Assistant		
	Subrogation/Claims Recovery Representative		Autoplan Document Processing Trainer & Evaluator
	Supervisor Administrative Driving Prohibition & Vehicle Impoundment Programs		Claims Recovery Representative
	Supervisor Client Records		Building Operations Coordinator
	Supervisor Compliance Accounts		Call Centre Trainer
	Supervisor Data Entry & Microfilm/Retrieval		Call Centre Trainer - Customer Contact
	Supervisor Driver Training & Certification		Claims Test Analyst II
	Supervisor Edit		Client Computing Analyst II
	Supervisor Is Administration Victoria		Compliance Auditor
	Supervisor Licensing		Coordinator Autoplan Operations & Sales
	Supervisor Office Operations		Coordinator Information Risk Management
	Supervisor Service Support Unit		Coordinator Data Security
	Supervisor Support Services		Customer Contact Support Coordinator
	Supervisor Support Unit		Customer Contact Representative III
	Supervisor Traffic Accident Reporting		Data Analyst II
	Supervisor Traffic Camera		Driver Examiner II
	Systems Support Analyst		Electronic Document Analyst II
	Supervisor Warehouse		
7	Telecommunications Analyst I	8	Energy Management Systems Administrator
	Telecommunications Service Representative		Financial Analyst
	Telecommunications Systems Management Analyst I		Help Line Support Analyst II
	Telecommunications Voice & Workstation Design Analyst I		Implementation Training Coordinator
	Total Loss Handler		Information Technician II
	Unit Leader Writ Handling		Motor Carrier Inspector
	Vehicle Registration & Licensing Representative		Network Terminal Operator Operator III
			Out of Province Salvage Expedito

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Programmer Analyst II		Test Analyst II
	Programmer Analyst II Claims		Telecommunications Voice &
	Project Planner		Workstation Design Analyst II
	Research Advisor		Test Implementation Coordinator
	Public Affairs Information		Traffic Camera System
	Coordinator		Administrator
	Purchasing Analyst		Training & Procedures Coordinator
	Resource & Development Officer		User Analyst II
	Revenue Research Officer		Web DesignerII
	Salvage Technical Supervisor		Vehicle Services Administrator
	Senior Licensing Insurance		
	Representative	9	Accounting Analyst
	Senior Telecommunications		Accountant I
	Installer		Accounting Analyst Is
	Stand Alone Driver Examiner		Accounts Payable Accounting
	Supervisor Adjudication & Violation		Analyst/Systems Coordinator
	Tickets		Assistant Supervisor Driver Service
	Supervisor ADP Support Services		Centre
	Supervisor Autoplan Services		Budget & Resource Analyst
	Supervisor Violation Ticket/Dispute		Business Analyst Finance
	Processing		Business Analyst I
	Supervisor Adjudication Unit		Business Analyst I Customer
	Supervisor Administration		Access
	Supervisor BI & Technical Support		Business Analyst I Operations
	Supervisor Client Service		Business Analyst I Claims
	Representatives		Business Methods Analyst
	Supervisor Edit		Carrier Safety Inspector
	Supervisor Payments		Claims Adjuster
	Supervisor Payroll		Collections Operations Support
	Supervisor Print & Mail Services		Analyst
	Supply Analyst II	9	Coordinator Programs & Events
			Coordinator Speciality Vehicles
8	Systems & Clerical Services		Commercial Transport Advisor
	Coordinator		Commercial Transport Inspector
	Systems Programmer		Commercial Transport Inspector
	Technical Writer		Stand Alone
	Technical Writer Claims Systems		Coordinator PACM Programs &
	Technical Writer Licensing		Events
	Operations		Corporate Information Analyst I
	Telecentre Adjuster		Curriculum Advisor Driver Trainer &
	Telecommunications Analyst II		Assessment Standards
	Telecommunications Coordinator		Driver Training Technical Analyst
	Telecommunications Systems		Curriculum Advisor Driver Training
	Management Analyst II		& Certification

# APPENDIX “A”

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Driver Examiner Trainer		Senior Forms Analyst
	Driving School Inspector		Senior Inventory Analyst
	EDS Education Planner		Supervisor Autoplan Sales &
	Education Planner		Customer Service Assistants
	Education Planner Operations		Supervisor Banking & Revenue
	Emergency Specialist		Operations
	Estimator		Supervisor Broker Enquiry Unit
	Financial Analyst I		Supervisor Claims Administration
	Help Line Support Analyst III		Supervisor Customer Collections
	Instructor Driver Examiners		Supervisor Customer Contact
	Instructor Learning Services		Supervisor Digital Graphics
	Instructor Learning Services Claims		Supervisor Driver Examination Unit
	Investment Coordinator		Supervisor I Driver Service Centre
	Human Resources Systems		Supervisor Vehicle Services
	Technical Analyst		Technical Analyst
	Information & Privacy Analyst		Supervisor Limited Service Driver
	Information Officer		Service Centre
	Investment Performance Analyst		Supervisor Word Processing
	ISD Standards Editor		Systems Technical Analyst
	Legal Assistant Collections		Corporate Research
	Legal Assistant Litigation		Technical Specialist
	Management Accounting Analyst		Technical Specialist – Licensing
	Mortgage Administration &		User Analyst III
	Investment Analyst		
	Operations Financial Analyst	10	Accountant Autoplan 12
	Paralegal		Accountant Corporate Services
	Product Analyst		Corporate Actuarial Software
	Provincial Loss Prevention		Engineer
	Coordinator		ADP Technical Operations
			Coordinator
9	Regional Coordinator Customer	10	Auditor
	Service		Autoplan Field Supervisor
	Project Support Analyst		Business Analyst II
	Regional Coordinator Marketing &		Business Analyst II Customer
	Communication		Access
	Regional Loss Prevention		Business Analyst II Operations
	Coordinator		Business Analyst II Claims
	Rehabilitation Benefits		Client Computing Analyst III
	Administrator		Collections Business Analyst
	Research Information Specialist		Commercial Loss Prevention
	Senior Autoplan Education		Representative
	Instructor		Coordinator Data Centre Facilities
	Senior Commercial Customer		Customer Accounting Operations
	Service Representative		Coordinator

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Creative Services Coordinator		Supervisor Building Maintenance
	Dangerous Goods Inspector		Supervisor Claims Business Systems
	Data Analyst III		Supervisor II Driver Service Centre
	Data Centre Operations Coordinator		Supervisor CAFM
	Data Integration Advisor		Supervisor Driver Service Centre
	EDS Technology Planner		Supervisor Permanent Weigh Scale
	Emissions Control Coordinator		Supervisor Photographic & Imaging Services
	Emissions Control Inspector		Supervisor Telephone Claims
	Environmental Compliance Specialist		Supervisor Vehicle Registration Support
	Estimator II		Supervisor Print Shop
	Financial Systems User Analyst		Supervisor Telephone Claims Handling
	Help Line Support Coordinator		Supervisor Vehicle Registration & Licensing
	IBA Change Implementation Coordinator		Telecommunications Analyst III
	Information Analyst I		Telecommunications Planner
	Inspector Portable Weigh Scale		Telecommunications Systems Analyst III
	Legal Billing Analyst		Web Analyst
	Legislative Analyst		Telecommunications Systems Management Analyst III
	Marketing Analyst		Telecommunications Voice & Workstation Design Analyst III
	Marketing Communications Specialist		
	Operations Coordinator		
	Operations Support Analyst		
	Operator IV		
	Policy & Program Analyst		
	Problem & Change Coordinator		
	Programmer Analyst III	11	Area Vehicle Inspector
	Programmer Analyst III Claims	11	Accountant II
10	Programmer Analyst III Data Base Administration		Associate Data Administrator
	Programmer Analyst III Strategic Systems		Associate Database Administrator
	Property Administrator		Associate Systems Analyst
	Research Officer		Associate Systems Analyst Claims
	Senior Programmer Analyst		Associate Telecommunications Systems Management Analyst
	Regional Coordinator Marketing & Communication		Bodily Injury Adjuster
	Research Analyst		Business Analyst - Information Services
	Research Database Advisor		Business Analyst III
	Return to Work Coordinator		Business Analyst III - Corporate
	Senior Project Planner		Business Analyst III Human Resources
	Senior Systems Programmer		Business Analyst III Operations
	Storage Administrator		Claims Statistical Design & Analysis

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Advisor		Statistical Design Analyst
	Cash & Investment Performance Analyst		Supervisor III Driver Service Centre
	Corporate Information Analyst II		Supervisor Licensing & Insurance
	Corporate Planning Analyst		Supervisor Major Weigh Scale
	Customer Relations Advisor		Supervisor Material Damage
	Data Centre Automation Analyst		Supervisor Motor Carrier Department
	Dispute Process Advisor		Systems Administrator
	Education Technology Coordinator		Web Planner
	Examining Adjuster		Webmaster
	Examining Supervisor On-Going Claims Services	12	Commercial Account Representative
	Financial Analyst II		Corporate Information Analyst III
	Implementation Coordinator		Commercial Vehicle Safety Alliance (CVSA) Program Coordinator
	Information Analyst II		Research Communications Specialist
	Injury Mitigation Specialist		Coordinator Crash Analysis Support
	Instructor II Learning Services		Corporate Accounting & Reporting Analyst
	Insurance Analyst		End To End Architect
	Insurance Analyst III		Data Administrator
	Insurance Sales Representative		Database Administrator
	Paralegal Coordinator Claims Recovery		Heavy Equipment Appraiser
	Policy Advisor		Hr Business Systems Specialist
	Programmer Analyst IV	12	Information Analyst III
	Programmer Analyst IV Strategic Systems		Inspection & Carrier Safety Coordinator
	Rehabilitation Coordinator		Material Damage Research Coordinator
11	Research Project Advisor		Programmer Analyst V
	Road Improvement Data & Reporting Analyst		Project Evaluation Analyst
	Senior Accounting Analyst-Information Services		Real Estate Analyst
	Senior Area Vehicle Inspector		Research Communications Specialist
	Senior Information Officer		Road Engineering & Systems Advisor
	Senior Supply Analyst		Senior Accountant
	Senior Operations Support Analyst		Senior Accountant Agency
	Senior Problem & Change Coordinator		Senior Accountant Autoplan 12
	Senior Purchasing Analyst		Senior Accountant Banking Operations
	Senior Research & Evaluation Officer		Senior Accountant General Ledger
	Specialty Vehicle Appraiser		
	Statistical Design & Analysis Advisor		

# APPENDIX "A"

## INSURANCE CORPORATION OF BRITISH COLUMBIA

### JOB CLASSIFICATIONS BY SALARY GROUP

Salary Group	Job Title	Salary Group	Job Title
	Senior Accountant Insurance Accounting		Analyst
	Senior Auditor	13	Accountant III
	Senior Business Analyst		Actuarial Systems Analyst
	Senior Business Analyst Autoplan 12		Application Infrastructure Architect
	Senior Business Analyst Claims		Business Intelligence Specialist
	Senior Marketing Analyst		Claims Examiner Head Office
	Senior Business Analyst Finance		Claims Examiner Material Damage
	Senior Data Centre Automation Analyst		Data Centre Services Specialist
	Senior Insurance Analyst		Disaster Recovery and Facilities Planner
	Senior Network Planner		Driver Management Specialist
	Senior Operations Support Analyst		Dynamics Engineer
	Senior Research & Evaluation Officer		Information Technology Acquisition/Budget Administrator
	Senior Storage Administrator		Performance Modeling Specialist
	Specialised Head Injury Examiner		Senior Corporate Information Analyst
	Statistics & Data Analyst		Senior Data Administrator
	Strategic Sourcing Analyst		Senior Database Administrator
	Supervising Area Vehicle Inspector		Senior End To End Architect
	Supervisor Commercial Customer Service		Senior Financial Analyst
	Systems Analyst Claims		Senior Functional Analyst
	Systems Analyst Data Security	13	Senior Insurance Analyst
12	Systems Analyst Decision Support Services		Senior Programmer Analyst
	Systems Analyst Strategic Systems Technical Leader		Senior Reporting Analyst
	Systems Analyst Information Risk Management		Senior Database Administrator - Victoria
	Technical Specialist		Senior Systems Analyst Decision Support Services
	Technology Infrastructure Analyst		Senior Systems Analyst Strategic Systems
	Telecommunications Network Analyst		Senior Technical Specialist
	Telecommunications Services Analyst		Senior Telecommunications Network Analyst
	Telecommunications Systems Management Analyst		Senior Telecommunications Systems Management Analyst
	Telecommunications Voice & Workstation Design Analyst IV		Senior Telecommunications Voice & Workstation Design Analyst
	Vehicle Design & Operations Specialist		Transportation Economist
	Web Development Technical		

**APPENDIX "A"**

**INSURANCE CORPORATION OF BRITISH COLUMBIA**

**JOB CLASSIFICATIONS  
BY SALARY GROUP**

**Salary  
Group Job Title**

**Salary  
Group Job Title**

**APPENDIX "B"**

**SALARY STRUCTURE**

**EFFECTIVE DATE: July 1, 2006**

<b>Salary Group</b>	<b>Entry Level</b>	<b>Step 1</b>	<b>Step 2</b>	<b>Step 3</b>	<b>Step 4</b>	<b>Step 5</b>
1 Annual	---	---	---	---	---	---
Monthly	---	---	---	---	---	---
Bi-Weekly	---	---	---	---	---	---
Hourly	---	---	---	---	---	---
2 Annual	---	---	---	27,822.90	---	29,925.62
Monthly	---	---	---	2,318.58	---	2,493.80
Bi-Weekly	---	---	---	1,070.12	---	1,150.99
Hourly	---	---	---	15.29	---	16.44
3 Annual	---	28,440.57	---	30,589.97	---	32,912.11
Monthly	---	2,370.05	---	2,549.16	---	2,742.68
Bi-Weekly	1,039.18	1,093.87	---	1,176.54	---	1,265.85
Hourly	14.85	15.63	---	16.81	---	18.08
4 Annual	---	30,589.97	---	32,912.11	---	35,424.11
Monthly	---	2,549.16	---	2,742.68	---	2,952.01
Bi-Weekly	1,117.71	1,176.54	---	1,265.85	---	1,362.47
Hourly	15.97	16.81	---	18.08	---	19.46
5 Annual	---	32,908.89	34,142.01	35,420.64	36,749.61	38,130.92
Monthly	---	2,742.41	2,845.17	2,951.72	3,062.47	3,177.58
Bi-Weekly	1,202.44	1,265.73	1,313.16	1,362.34	1,413.45	1,466.58
Hourly	17.18	18.08	18.76	19.46	20.19	20.95

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2006

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
6 Annual	---	35,420.64	36,749.61	38,130.92	39,614.03	41,157.49
Monthly	---	2,951.72	3,062.47	3,177.58	3,301.17	3,429.79
Bi-Weekly	1,294.22	1,362.34	1,413.45	1,466.58	1,523.62	1,582.99
Hourly	18.49	19.46	20.19	20.95	21.77	22.61
7 Annual	---	38,130.92	39,614.03	41,157.49	42,712.49	44,349.26
Monthly	---	3,177.58	3,301.17	3,429.79	3,559.37	3,695.77
Bi-Weekly	1,393.25	1,466.58	1,523.62	1,582.99	1,642.79	1,705.75
Hourly	19.90	20.95	21.77	22.61	23.47	24.37
8 Annual	---	41,274.27	42,833.67	44,475.09	46,211.94	48,037.88
Monthly	---	3,439.52	3,569.47	3,706.26	3,851.00	4,003.16
Bi-Weekly	---	1,587.48	1,647.45	1,710.59	1,777.39	1,847.62
Hourly	---	22.68	23.54	24.44	25.39	26.39
9 Annual	---	44,475.09	46,211.94	48,037.88	49,903.87	51,927.13
Monthly	---	3,706.26	3,851.00	4,003.16	4,158.66	4,327.26
Bi-Weekly	---	1,710.59	1,777.39	1,847.62	1,919.39	1,997.20
Hourly	---	24.44	25.39	26.39	27.42	28.53

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2006

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
10 Annual	---	48,037.88	49,903.87	51,927.13	54,013.23	56,131.24
Monthly	---	4,003.16	4,158.66	4,327.26	4,501.10	4,677.60
Bi-Weekly	---	1,847.62	1,919.39	1,997.20	2,077.44	2,158.90
Hourly	---	26.39	27.42	28.53	29.68	30.84
11 Annual	---	52,180.43	54,276.70	56,405.06	58,690.42	61,040.75
Monthly	---	4,348.37	4,523.06	4,700.42	4,890.87	5,086.73
Bi-Weekly	---	2,006.95	2,087.57	2,169.43	2,257.33	2,347.73
Hourly	---	28.67	29.82	30.99	32.25	33.54
12 Annual	---	56,405.06	58,690.42	61,040.75	63,516.63	66,119.37
Monthly	---	4,700.42	4,890.87	5,086.73	5,293.05	5,509.95
Bi-Weekly	---	2,169.43	2,257.33	2,347.73	2,442.96	2,543.06
Hourly	---	30.99	32.25	33.54	34.90	36.33
13 Annual	---	61,040.75	63,516.63	66,119.37	68,784.33	71,544.48
Monthly	---	5,086.73	5,293.05	5,509.95	5,732.03	5,962.04
Bi-Weekly	---	2,347.73	2,442.96	2,543.06	2,645.56	2,751.72
Hourly	---	33.54	34.90	36.33	37.79	39.31

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2007

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
1 Annual	---	---	---	---	---	---
Monthly	---	---	---	---	---	---
Bi-Weekly	---	---	---	---	---	---
Hourly	---	---	---	---	---	---
2 Annual	---	---	---	27,822.90	---	29,925.62
Monthly	---	---	---	2,318.58	---	2,493.80
Bi-Weekly	---	---	---	1,070.12	---	1,150.99
Hourly	---	---	---	15.29	---	16.44
3 Annual	---	29,066.26	---	31,262.95	---	33,636.18
Monthly	---	2,422.19	---	2,605.25	---	2,803.01
Bi-Weekly	1,062.04	1,117.94	---	1,202.43	---	1,293.70
Hourly	15.17	15.97	---	17.18	---	18.48
4 Annual	---	31,262.95	---	33,636.18	---	36,203.44
Monthly	---	2,605.25	---	2,803.01	---	3,016.95
Bi-Weekly	1,142.30	1,202.43	---	1,293.70	---	1,392.44
Hourly	16.32	17.18	---	18.48	---	19.89
5 Annual	---	33,632.89	34,893.13	36,199.89	37,558.10	38,969.80
Monthly	---	2,802.74	2,907.76	3,016.66	3,129.84	3,247.48
Bi-Weekly	1,228.90	1,293.58	1,342.05	1,392.31	1,444.55	1,498.84
Hourly	17.56	18.48	19.17	19.89	20.64	21.41

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2007

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
6	Annual	36,199.89	37,558.10	38,969.80	40,485.54	42,062.95
	Monthly	3,016.66	3,129.84	3,247.48	3,373.79	3,505.25
	Bi-Weekly	1,392.31	1,444.55	1,498.84	1,557.14	1,617.81
	Hourly	19.89	20.64	21.41	22.24	23.11
7	Annual	38,969.80	40,485.54	42,062.95	43,652.16	45,324.94
	Monthly	3,247.48	3,373.79	3,505.25	3,637.68	3,777.08
	Bi-Weekly	1,498.84	1,557.14	1,617.81	1,678.93	1,743.27
	Hourly	21.41	22.24	23.11	23.98	24.90
8	Annual	42,306.13	43,904.51	45,586.97	47,367.24	49,238.83
	Monthly	3,525.51	3,658.71	3,798.91	3,947.27	4,103.24
	Bi-Weekly	1,627.16	1,688.64	1,753.35	1,821.82	1,893.81
	Hourly	23.25	24.12	25.05	26.03	27.05
9	Annual	45,586.97	47,367.24	49,238.82	51,151.47	53,225.31
	Monthly	3,798.91	3,947.27	4,103.24	4,262.62	4,435.44
	Bi-Weekly	1,753.35	1,821.82	1,893.81	1,967.37	2,047.13
	Hourly	25.05	26.03	27.05	28.11	29.25

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2007

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
10 Annual	---	49,238.83	51,151.47	53,225.31	55,363.56	57,534.52
Monthly	---	4,103.24	4,262.62	4,435.44	4,613.63	4,794.54
Bi-Weekly	---	1,893.81	1,967.37	2,047.13	2,129.38	2,212.87
Hourly	---	27.05	28.11	29.25	30.42	31.61
11 Annual	---	53,745.84	55,905.00	58,097.21	60,451.13	62,871.97
Monthly	---	4,478.82	4,658.75	4,841.43	5,037.59	5,239.33
Bi-Weekly	---	2,067.16	2,150.20	2,234.52	2,325.05	2,418.16
Hourly	---	29.53	30.72	31.92	33.22	34.55
12 Annual	---	58,097.21	60,451.13	62,871.97	65,422.13	68,102.95
Monthly	---	4,841.43	5,037.59	5,239.33	5,451.84	5,675.25
Bi-Weekly	---	2,234.52	2,325.05	2,418.16	2,516.24	2,619.35
Hourly	---	31.92	33.22	34.55	35.95	37.42
13 Annual	---	62,871.97	65,422.13	68,102.95	70,847.86	73,690.81
Monthly	---	5,239.33	5,451.84	5,675.25	5,903.99	6,140.90
Bi-Weekly	---	2,418.16	2,516.24	2,619.35	2,724.93	2,834.27
Hourly	---	34.55	35.95	37.42	38.93	40.49

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2008

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
1 Annual	---	---	---	---	---	---
Monthly	---	---	---	---	---	---
Bi-Weekly	---	---	---	---	---	---
Hourly	---	---	---	---	---	---
2 Annual	---	27,822.90	---	---	---	29,925.62
Monthly	---	2,318.58	---	---	---	2,493.80
Bi-Weekly	---	1,070.12	---	---	---	1,150.99
Hourly	---	15.29	---	---	---	16.44
3 Annual	---	29,647.59	---	31,888.21	---	34,308.90
Monthly	---	2,470.63	---	2,657.35	---	2,859.08
Bi-Weekly	1,083.28	1,140.30	---	1,226.47	---	1,319.58
Hourly	15.48	16.29	---	17.52	---	18.85
4 Annual	---	31,888.21	---	34,308.90	---	36,927.51
Monthly	---	2,657.35	---	2,859.08	---	3,077.29
Bi-Weekly	1,165.15	1,226.47	---	1,319.58	---	1,420.29
Hourly	16.65	17.52	---	18.85	---	20.29
5 Annual	---	34,339.18	35,625.89	36,960.09	38,346.82	39,788.17
Monthly	---	2,861.60	2,968.82	3,080.01	3,195.57	3,315.68
Bi-Weekly	1,254.70	1,320.74	1,370.23	1,421.55	1,474.88	1,530.32
Hourly	17.92	18.87	19.57	20.31	21.07	21.86

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2008

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
6	Annual	36,960.09	38,346.82	39,788.17	41,335.74	42,946.27
	Monthly	3,080.01	3,195.57	3,315.68	3,444.65	3,578.86
	Bi-Weekly	1,421.55	1,474.88	1,530.32	1,589.84	1,651.79
	Hourly	20.31	21.07	21.86	22.71	23.60
7	Annual	39,788.17	41,335.74	42,946.27	44,568.86	46,276.76
	Monthly	3,315.68	3,444.65	3,578.86	3,714.07	3,856.40
	Bi-Weekly	1,530.32	1,589.84	1,651.79	1,714.19	1,779.88
	Hourly	21.86	22.71	23.60	24.49	25.43
8	Annual	43,469.55	45,111.88	46,840.61	48,669.84	50,592.90
	Monthly	3,622.46	3,759.32	3,903.38	4,055.82	4,216.08
	Bi-Weekly	1,671.91	1,735.08	1,801.57	1,871.92	1,945.89
	Hourly	23.88	24.79	25.74	26.74	27.80
9	Annual	46,840.61	48,669.84	50,592.90	52,558.14	54,689.01
	Monthly	3,903.38	4,055.82	4,216.08	4,379.85	4,557.42
	Bi-Weekly	1,801.57	1,871.92	1,945.89	2,021.47	2,103.43
	Hourly	25.74	26.74	27.80	28.88	30.05

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2008

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
10 Annual	---	50,592.90	52,558.14	54,689.01	56,886.06	59,116.72
Monthly	---	4,216.08	4,379.85	4,557.42	4,740.51	4,926.39
Bi-Weekly	---	1,945.89	2,021.47	2,103.43	2,187.93	2,273.73
Hourly	---	27.80	28.88	30.05	31.26	32.48
11 Annual	---	55,385.09	57,610.10	59,869.17	62,294.89	64,789.57
Monthly	---	4,615.42	4,800.84	4,989.10	5,191.24	5,399.13
Bi-Weekly	---	2,130.20	2,215.78	2,302.67	2,395.97	2,491.91
Hourly	---	30.43	31.65	32.90	34.23	35.60
12 Annual	---	59,869.17	62,294.89	64,789.57	67,417.50	70,180.09
Monthly	---	4,989.10	5,191.24	5,399.13	5,618.13	5,848.34
Bi-Weekly	---	2,302.67	2,395.97	2,491.91	2,592.99	2,699.24
Hourly	---	32.90	34.23	35.60	37.04	38.56
13 Annual	---	64,789.57	67,417.50	70,180.09	73,008.72	75,938.38
Monthly	---	5,399.13	5,618.13	5,848.34	6,084.06	6,328.20
Bi-Weekly	---	2,491.91	2,592.99	2,699.24	2,808.04	2,920.72
Hourly	---	35.60	37.04	38.56	40.11	41.72

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2009

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
1	Annual	---	---	---	---	---
	Monthly	---	---	---	---	---
	Bi-Weekly	---	---	---	---	---
	Hourly	---	---	---	---	---
2	Annual	---	---	27,822.90	---	29,925.62
	Monthly	---	---	2,318.58	---	2,493.80
	Bi-Weekly	---	---	1,070.12	---	1,150.99
	Hourly	---	---	15.29	---	16.44
3	Annual	30,240.54	---	32,525.97	---	34,995.08
	Monthly	2,520.05	---	2,710.50	---	2,916.26
	Bi-Weekly	1,163.10	---	1,251.00	---	1,345.97
	Hourly	16.62	---	17.87	---	19.23
4	Annual	32,525.97	---	34,995.08	---	37,666.06
	Monthly	2,710.50	---	2,916.26	---	3,138.84
	Bi-Weekly	1,251.00	---	1,345.97	---	1,448.70
	Hourly	17.87	---	19.23	---	20.70
5	Annual	35,025.96	36,338.40	37,699.29	39,113.76	40,583.93
	Monthly	2,918.83	3,028.20	3,141.61	3,259.48	3,381.99
	Bi-Weekly	1,347.16	1,397.64	1,449.98	1,504.38	1,560.93
	Hourly	19.25	19.97	20.71	21.49	22.30

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2009

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
6	Annual	37,699.29	39,113.76	40,583.93	42,162.45	43,805.20
	Monthly	3,141.61	3,259.48	3,381.99	3,513.54	3,650.43
	Bi-Weekly	1,449.98	1,504.38	1,560.93	1,621.64	1,684.82
	Hourly	20.71	21.49	22.30	23.17	24.07
7	Annual	40,583.93	42,162.45	43,805.20	45,460.24	47,202.30
	Monthly	3,381.99	3,513.54	3,650.43	3,788.35	3,933.52
	Bi-Weekly	1,560.93	1,621.64	1,684.82	1,748.48	1,815.48
	Hourly	22.30	23.17	24.07	24.98	25.94
8	Annual	44,730.17	46,420.12	48,198.99	50,081.27	52,060.09
	Monthly	3,727.51	3,868.34	4,016.58	4,173.44	4,338.34
	Bi-Weekly	1,720.40	1,785.40	1,853.81	1,926.21	2,002.32
	Hourly	24.58	25.51	26.48	27.52	28.60
9	Annual	48,198.99	50,081.27	52,060.09	54,082.33	56,274.99
	Monthly	4,016.58	4,173.44	4,338.34	4,506.86	4,689.58
	Bi-Weekly	1,853.81	1,926.21	2,002.32	2,080.10	2,164.43
	Hourly	26.48	27.52	28.60	29.72	30.92

## APPENDIX "B"

### SALARY STRUCTURE

EFFECTIVE DATE: July 1, 2009

Salary Group	Entry Level	Step 1	Step 2	Step 3	Step 4	Step 5
10 Annual	---	52,060.09	54,082.33	56,274.99	58,535.76	60,831.11
Monthly	---	4,338.34	4,506.86	4,689.58	4,877.98	5,069.26
Bi-Weekly	---	2,002.32	2,080.10	2,164.43	2,251.38	2,339.67
Hourly	---	28.60	29.72	30.92	32.16	33.42
11 Annual	---	57,102.03	59,396.01	61,725.11	64,226.03	66,798.05
Monthly	---	4,758.50	4,949.67	5,143.76	5,352.17	5,566.50
Bi-Weekly	---	2,196.24	2,284.47	2,374.05	2,470.24	2,569.16
Hourly	---	31.37	32.64	33.92	35.29	36.70
12 Annual	---	61,725.11	64,226.03	66,798.05	69,507.44	72,355.67
Monthly	---	5,143.76	5,352.17	5,566.50	5,792.29	6,029.64
Bi-Weekly	---	2,374.05	2,470.24	2,569.16	2,673.37	2,782.92
Hourly	---	33.92	35.29	36.70	38.19	39.76
13 Annual	---	66,798.05	69,507.44	72,355.67	75,271.99	78,292.46
Monthly	---	5,566.50	5,792.29	6,029.64	6,272.67	6,524.37
Bi-Weekly	---	2,569.16	2,673.37	2,782.92	2,895.09	3,011.26
Hourly	---	36.70	38.19	39.76	41.36	43.02

## APPENDIX "D"

LETTER NO. D-1

### LETTER OF UNDERSTANDING

#### RE: B.I. ADJUSTER TRAINEES

The provisions set out in this Letter of Understanding are intended to support the Corporation's hiring practices relating to the development of Bodily Injury Adjusters. The letter shall take effect January 1, 1995.

##### 1. Internal Selections

B.I. Adjuster Trainees selected from within the bargaining unit will be entitled to all of the provisions of the Collective Agreement during the twelve (12) month training period. Salary progression during this period will be as follows:

- i) Unless otherwise provided for in the Collective Agreement, no employee entering the programme will receive a salary in excess of Step 5 of Salary Group 11. Selected incumbents whose salary is in excess of Step 5 of Salary Group 10 will receive no increments (as described below) for the duration of the twelve (12) month training programme. The employee's length of service date will be adjusted to reflect the date of entry into the training programme.
- ii) Internally selected incumbents not covered by paragraph i) preceding will have their salary increased by a pro-rata portion of their next length of service increase plus one (1) step, or will be paid a minimum of Step 1 of Salary Group 10 (as defined in Appendix "B" of the Collective Agreement), whichever is greater. The employee's length of service date will be adjusted to reflect the date of entry into the training programme.
- iii) Upon successful completion of six (6) months of the training programme, incumbents will be paid at their current salary plus one (1) step (subject to a maximum of Step 5 of Salary Group 10).
- iv) Upon successful completion of the twelve (12) month training programme, incumbents will be classified as B.I. Adjusters and will advance to Step 1 of Salary Group 11 (as defined in Appendix "B" of the Collective Agreement) or will be paid at their current salary plus one (1) step, whichever is greater. Incumbents will thereafter progress along the salary scale in the normal manner as defined in Article 11.06 of the Collective Agreement.

## 2. **Outside Hires**

B.I. Adjuster Trainees hired from outside the bargaining unit will be entitled to all of the provisions of the Collective Agreement, except as amended by the following:

### (a) **Definition and Benefit Limitations**

New hires shall be considered probationary as described below for the duration of the twelve (12) month training programme, and during such probationary period the following benefit limitations shall apply:

- i) shall not attain seniority until completion of six (6) months employment.
- ii) for any reasons other than just cause (e.g. performance, conduct, etc.), may be terminated during their probationary period with:
  - five (5) days notice or pay in lieu of notice if the employee has sixty (60) paid days or less of employment with the corporation.
  - ten (10) days notice or pay in lieu of notice if the employee has more than sixty (60) paid days of employment with the corporation.
- iii) shall not be entitled to benefits under Technological and Procedural Change.
- iv) shall not be eligible to apply for other positions within the bargaining unit unless otherwise mutually agreed by the parties.
- v) shall be eligible for all welfare benefits as set out in the Collective Agreement, upon completion of three (3) months or sixty (60) paid days, whichever shall last occur.

### (b) **Salary progression of Outside Hires**

Outside hires will normally start at Step 1 of Salary Group 10 in Appendix "B" of the Collective Agreement and will progress to Step 2 of Salary Group 10 after successful completion of the initial six (6) months of the training programme, and to Step 1 of Salary Group 11 after successful completion of the full training programme. Incumbents will thereafter progress along the salary scale in the normal manner as defined in Article 11.06.

The Corporation may advance the start point of an outside hire into the training programme in recognition of relevant training and experience. In such instances, the Corporation may hire up to the mid-point of Salary Group 10. Salary progression thereafter will be in accordance with that set out in paragraph 1. iv) preceding.

In situations where an outside hire is brought into the training programme at an advanced starting point, the employee's job performance probation,

as set out in item no.2(a) ii) preceding, will be reduced by a commensurate amount, subject to the minimum four (4) month probation.

**3. Orientation and Training**

The Corporation will provide the B.I. Adjuster Trainee with a formal orientation and training programme which will involve periodic classroom instruction, and on-the-job instruction and orientation throughout the applicable training period.

**4. Recruitment and Placement**

The Corporation will post B.I. Adjuster vacancies as B.I. Adjuster jobs. In cases where the Corporation will accept trainee applicants, such will be stated on the posting notice. In these instances, the Corporation will accept applicants on the basis of trainees prior to considering outside applicants.

The Corporation will give preference in selection and in choice of location to fully qualified applicants prior to recruiting a trainee to a given location.

During the period of training, trainees will be assigned to locations which have the facilities necessary to support the training programme.

A trainee who is assigned to a location becomes the employee of record for potential permanent assignment to that headquarters upon completion of the training programme.

B.I. Adjuster vacancies will be first posted as B.I. Adjuster positions prior to assigning the trainee to a location that is different from her/his original assigned headquarters.

Unless otherwise agreed by the parties, B.I. Adjuster Trainees will not be eligible to apply for lateral transfers, or for other posted positions, during the period they are classified as trainees.

Upon successful completion of the aforementioned training programme, B.I. Adjuster Trainees will be classified to the position of B.I. Adjuster.

All salary rates and salary progression processes described herein are based on the currently established job classifications and salary structure and may be subject to revision by the parties in the event of changes to either of these factors.

**For the Union**

D.B. McPherson

Date: September 5, 1996

**For the Corporation**

D.E. Thomas

Date: September 5, 1996

## LETTER OF UNDERSTANDING

### RE: ESTIMATOR TRAINEES

#### 1. Internal Selections

Estimator Trainees selected from within the bargaining unit will be entitled to all the provisions of the Collective Agreement during the twenty-four (24) month training period. Salary progression during this period will be as follows:

- i) Unless otherwise provided for in the Collective Agreement, no employee entering the programme will receive a salary in excess of Step 5 of Salary Group 9. Selected incumbents whose salary is in excess of Step 5 of Salary Group 8 will receive no increments (as described below) for the duration of the twenty-four (24) month training programme. The employee's length of service date will be adjusted to reflect the date of entry into the training programme.
- ii) Internally selected incumbents not covered by paragraph i) preceding will have their salary increased by a pro-rata portion of their next length of service increase, or will be paid a minimum of Step 1 of Salary Group 5 (as defined in Appendix "B" of the Collective Agreement), whichever is greater. The employee's length of service date will be adjusted to reflect the date of entry into the training programme.
- iii) Upon successful completion of six (6) months of the training programme, incumbents will advance to Step 1 of Salary Group 6 (as defined in Appendix "B" of the Collective Agreement), or remain at their current salary, whichever is greater.
- iv) Upon successful completion of twelve (12) months of the training programme, incumbents will advance to Step 1 of Salary Group 7 (as defined in Appendix "B" of the Collective Agreement), or remain at their current salary, whichever is greater.
- v) Upon successful completion of eighteen (18) months of the training programme, incumbents will advance to Step 1 of Salary Group 8 (as defined in Appendix "B" of the Collective Agreement), or remain at their current salary, whichever is greater.
- vi) Upon successful completion of the twenty-four (24) month training programme, incumbents will be classified as Estimators and will advance to Step 1 of Salary Group 9 (as defined in Appendix "B" of the Collective Agreement), or will be paid at

their current salary plus one (1) step, whichever is greater. Incumbents will thereafter progress along the salary scale in the normal manner as defined in Article 11.06 of the Collective Agreement.

## **2. Outside Hires**

Estimator Trainees hired from outside the bargaining unit will be entitled to all of the provisions of the Collective Agreement, except as amended by the following provisions:

The Corporation may advance the point at which trainees enter the programme in recognition of directly relevant job experience.

The probation period for new hires who receive credit toward an advanced entry point into the training programme will be reduced by an amount equivalent to the advanced entry credit, subject to a minimum probation period of four (4) months.

### **(a) Definition and Benefit Limitations**

New hires shall be considered probationary for a period of twenty-four (24) months, and during such probationary period the following benefit limitations shall apply:

- i) shall not attain seniority until completion of the probationary period.
- ii) may be terminated during their probationary period with:
  - five (5) days notice or pay in lieu of notice if the employee has sixty (60) paid days or less of employment with the corporation.
  - ten (10) days notice or pay in lieu of notice if the employee has more than sixty (60) paid days of employment with the corporation.
- iii) shall not be entitled to benefits under Technological and Procedural Change.
- iv) shall not be eligible to apply for other positions within the bargaining unit unless otherwise mutually agreed by the parties.
- v) shall be eligible for all welfare benefits as set out in the Collective Agreement, upon completion of three (3) months or sixty (60) paid days, whichever shall last occur.

### **(b) Salary Progression of Outside Hires**

Outside hires will start at Step 1 of Salary Group 5 (in Appendix "B" of the Collective Agreement), and will progress to Step 1 of Salary Group 6 after successful completion of the initial six (6) months of the training programme; to Step 1 of Salary Group 7 after successful completion of twelve (12) months of the training programme; to Step 1 of Salary Group 8 after successful completion of eighteen (18) months of the

training programme; to Step 1 of Salary Group 9 after successful completion of the training programme. Incumbents will thereafter progress along the salary scale in the normal manner as defined in Article 11.06.

**3. Orientation and Training**

The Corporation will provide the Estimator Trainee with a formal orientation and training programme which will involve classroom instruction, and on-the-job instruction and orientation of at least six (6) months in duration.

**4. Recruitment and Placement**

The Corporation will post Estimator vacancies as Estimator jobs. In cases where the Corporation will accept trainee applicants, such will be stated on the posting notice. In these instances, the Corporation will accept applicants on the basis of trainees prior to considering outside applicants.

The Corporation will give preference in selection and in choice of location to fully qualified applicants prior to recruiting a trainee to a given location.

During the period of training, trainees will be assigned to locations which have the facilities necessary to support the training programme.

A trainee who is assigned to a location becomes the employee of record for potential permanent assignment to that headquarters upon completion of the training programme.

Estimator vacancies will be first posted as Estimator positions prior to assigning the trainee to a location that is different from her/his original assigned headquarters.

Unless otherwise agreed by the parties, Estimator Trainees will not be eligible to apply for lateral transfers, or for other posted positions, during the period they are classified as trainees.

Upon successful completion of the aforementioned training programme, Estimator Trainees will be classified to the position of Estimator.

All salary rates and salary progression processes described herein are based on the currently established job classifications and salary structure and may be subject to revision by the parties in the event of changes to either of these factors.

**For the Union**

D.B. McPherson

Date: July 13, 1994

**For the Corporation**

D.E. Thomas

Date: July 13, 1994

## LETTER OF UNDERSTANDING

### RE: CLAIMS ADJUSTER TRAINEES

The provisions set out in this Letter of Understanding are intended to support the Corporation's hiring practices relating to the development of Claims Adjusters. This letter shall take effect July 1, 1994.

#### 1. Internal Selections

- (a) Claims Adjuster Trainees selected from within the bargaining unit will be entitled to all the provisions of the Collective Agreement during the twenty-four (24) month training period. Salary progression during this period will be as follows:
- i) Unless otherwise provided for in the Collective Agreement, no employee entering the programme will receive a salary in excess of Step 5 of Salary Group 9. Selected incumbents whose salary is in excess of the stated maximum at any stage of the programme will not be entitled to the salary increment at that stage.
  - ii) Internally selected incumbents (not covered by paragraph i) preceding) will have their salary increased by a pro-rata portion of their next length of service increment plus one (1) step. Unless otherwise provided for, no employee at this stage of the programme will receive a salary which is less than Step 1 of Salary Group 7 or greater than Step 5 of Salary Group 7 (as defined in Appendix "B" of the Collective Agreement). All incumbents entering the programme will have their length of service date adjusted to reflect the date of entry into the training programme.
  - iii) Upon successful completion of six (6) months of the training programme, incumbents selected in accordance with paragraph ii) preceding will advance to Step 2 of Salary Group 7, or will be paid their current salary plus one (1) step, whichever is greater (subject to a maximum of Step 5 of Salary Group 7).
  - iv) Upon successful completion of twelve (12) months of the training programme, incumbents will advance to Step 1 of Salary Group 8, or will be paid their current salary plus one (1) step, whichever is greater (subject to a maximum of Step 5 of Salary Group 8).
  - v) Upon successful completion of eighteen (18) months of the training programme, incumbents will advance to Step 2 of Salary Group 8, or will be paid their current salary plus one (1) step,

whichever is greater (subject to a maximum of Step 5 of Salary Group 8).

vi) Upon successful completion of the twenty-four (24) month training programme, incumbents will be classified as Claims Adjusters and will advance to Step 1 of Salary Group 9, or will be paid their current salary plus one (1) step, whichever is greater (subject to a maximum of Step 5 of Salary Group 9). Incumbents will thereafter progress along the salary scale in the normal manner as defined in Article 11.06 of the Collective Agreement.

(b) The Corporation may advance the start point of an internal hire into the training programme in recognition of relevant training and experience. In such instances, the Corporation may hire up to Step 2 of Salary Group 8. Actual positioning in the training programme will reflect on commensurate level of knowledge and skill. Salary progression thereafter will be in accordance with that set out in Section 1(a) preceding (depending upon the stage of the training programme which the internal hire is brought into).

## 2. **Outside Hires**

Claims Adjuster Trainees hired from outside the bargaining unit will be entitled to all the provisions of the Collective Agreement, except as amended by the following:

### (a) **Definition and Benefit Limitations**

New hires shall be considered probationary as described below for the duration of the twenty-four (24) month training programme, and during such probationary period the following benefit limitations shall apply:

- i) shall not attain seniority until completion of six (6) months employment.
- ii) for any reason other than just cause (such as performance, conduct, etc.), may be terminated during their probationary period with:
  - five (5) days notice or pay in lieu of notice if the employee has sixty (60) paid days or less of employment with the Corporation.
  - ten (10) days notice or pay in lieu of notice if the employee has more than sixty (60) paid days of employment with the Corporation.
- iii) shall not be entitled to benefits under Technological and Procedural Change.
- iv) shall not be eligible to apply for other positions within the bargaining unit unless otherwise mutually agreed by the parties.

- v) shall be eligible for all welfare benefits as set out in the Collective Agreement, upon completion of three (3) months or sixty (60) paid days, whichever shall last occur.

Outside hires who successfully complete twelve (12) months of the training programme, but who do not subsequently achieve a performance level which would allow progression to the Claims Adjuster job, will be considered for placement in a lower classification within the job hierarchy (e.g. Telecentre Adjuster) subject to the availability of such position. Such placement will be deemed a demotion for purposes of salary administration and related entitlements.

**(b) Salary Progression of Outside Hire**

Outside hires will normally start at Step 1 of Salary Group 7, and will progress in accordance with the schedule described for internal selections (as per Section 1(a) preceding).

The Corporation may advance the start point of an outside hire into the training programme in recognition of relevant training and experience. In such instances, the Corporation may hire up to Step 2 of Salary Group 8. Actual positioning in the training programme will reflect on commensurate level of knowledge and skill. Salary progression thereafter will be in accordance with that set out in Section 1(a) preceding (depending upon the stage of the training programme which the outside hire is brought into).

In situations where an outside hire is brought into the training programme at an advanced starting point, the employee's job performance probation, as set out in item no. 2(a) ii) preceding, will be reduced by a commensurate amount, subject to the minimum four (4) month probation.

**3. Orientation and Training**

The Corporation will provide the Claims Adjuster Trainee with a formal orientation and training programme which will involve periodic classroom instruction, and on-the-job instruction and orientation throughout the applicable training period.

**4. Recruitment and Placement**

The Corporation will post Claims Adjuster vacancies as Claims Adjuster jobs. In cases where the Corporation will accept trainee applicants, such will be stated on the posting notice. In these instances, the Corporation will accept applicants on the basis of trainees prior to considering outside applicants.

The Corporation will give preference in selection and in choice of location to fully qualified applicants prior to recruiting a trainee to a given location.

During the period of training, trainees will be assigned to locations which have the facilities necessary to support the training programme.

A trainee who is assigned to a location becomes the employee of record for potential permanent assignment to that headquarters upon completion of the training programme.

Claims Adjuster vacancies will be first posted as Claims Adjuster positions prior to assigning the Trainee to a location that is different from her/his original assigned headquarters.

Unless otherwise agreed by the parties, Claims Adjuster Trainees will not be eligible to apply for lateral transfers, or for other posted positions, during the period they are classified as trainees.

Upon successful completion of the aforementioned training programme, Claims Adjuster Trainees will be classified to the position of Claims Adjuster.

All salary rates and salary progression processes described herein are based on the currently established job classifications and salary structure and may be subject to revision by the parties in the event of changes to either of these factors.

**For the Union**

D.B. McPherson

Date: September 5, 1996

Revised: June 17, 1999

**For the Corporation**

D.E. Thomas

Date: September 5, 1996

## LETTER OF UNDERSTANDING

### RE: CLAIMS EXAMINER HEAD OFFICE AND CLAIMS EXAMINER MATERIAL DAMAGE TRAINEES

#### 1. Internal Selections

Trainees selected from within the bargaining unit will be entitled to all the provisions of the Collective Agreement during the eighteen (18) month training period. Salary progression during this period will be as follows:

- i) Unless otherwise provided for in the Collective Agreement, no employee entering the programme will receive a salary in excess of Step 5 of Salary Group 13. Selected incumbents whose salary is in excess of Step 5 of Salary Group 12 will receive no increments (as described below) for the duration of the eighteen (18) month training programme. The employee's length of service date will be adjusted to reflect the date of entry into the training programme.
- ii) Internally selected incumbents not covered by paragraph i) preceding will have their salary increased by a pro-rata portion of their next length of service increment plus one (1) step (subject to a maximum of Step 5 of Salary Group 12), or will be paid a minimum of Step 1 of Salary Group 11, whichever is greater. The employee's length of service date will be adjusted to reflect the date of entry into the training programme.  
  
Examining adjusters selected into the applicable trainee programme will have their salary increased as per paragraph ii) above, except that no employee will receive less than the equivalent of her/his current salary plus the utility premium.
- iii) Upon successful completion of six (6) months of the training programme, incumbents will be paid at their current salary plus one (1) step (subject to a maximum of Step 5 of Salary Group 12).
- iv) Upon successful completion of the applicable eighteen (18) month training programme, incumbents will be classified as Claims Examiner Head Office or Claims Examiner Material Damage and will advance to Step 1 of Salary Group 13, or will be paid at their current salary plus one (1) step, whichever is greater. Incumbents will thereafter progress along the salary scale in the normal manner as defined in Article 11.06 of the Collective Agreement.

## 2. **Outside Hires**

Claims Examiners hired from outside the bargaining unit will be entitled to all of the provisions of the Collective Agreement, except as amended by the following:

### (a) **Definition and Benefit Limitations**

New hires shall be considered probationary as described below for the duration of the eighteen (18) month training programme, and during such probationary period the following benefit limitations shall apply:

- i) shall not attain seniority until completion of six (6) months employment.
- ii) for reasons other than just cause (e.g. performance, conduct, etc.), may be terminated during their probationary period with:
  - five (5) days notice or pay in lieu of notice if the employee has sixty (60) paid days or less of employment with the Corporation.
  - ten (10) days notice or pay in lieu of notice if the employee has more than sixty (60) paid days of employment with the Corporation.
- iii) shall not be entitled to benefits under Technological and Procedural Change.
- iv) shall not be eligible for other positions within the bargaining unit unless otherwise mutually agreed by the parties.
- v) shall be eligible for all welfare benefits as set out in the Collective Agreement, upon completion of three (3) months or sixty (60) paid days, whichever shall last occur.

### (b) **Salary Progression of Outside Hires**

Outside hires will normally start at Step 1 of Salary Group 11, and will progress in accordance with the schedule described for internal selections (as per Section 1. preceding).

The Corporation may advance the start point of an outside hire into the training programme in recognition of relevant training and experience. In such instances, the Corporation may hire up to the mid-point of Salary Group 11. Actual positioning in the training programme will reflect on commensurate level of knowledge and skill. Salary progression thereafter will be in accordance with that set out in paragraph 1 preceding.

In situations where an outside hire is brought into the training programme at an advanced starting point, the employee's job performance probation, as set out in item no.2(a) ii) preceding, will be reduced by a commensurate amount, subject to the minimum four (4) month probation.

**3. Orientation and Training**

The Corporation will provide the Trainee with a formal orientation and training programme which will involve periodic classroom instruction, and on-the-job instruction and orientation throughout the applicable training period.

**4. Placement**

Upon successful completion of the aforementioned training programme, trainees will be classified to their applicable end level position.

Unless otherwise agreed by the parties, trainees will not be eligible to apply for lateral transfers, or for other posted positions, during the period they are classified as trainees.

All salary rates and salary progression described herein are based on the currently established job classification and salary structure, and may be subject to revision in the event of changes to either of these factors.

**For the Union**

D.B. McPherson

Date: September 5, 1996

Revised: June 17, 1999

**For the Corporation**

D.E. Thomas

Date: September 5, 1996

# APPENDIX "E"

LETTER NO. 1

## LETTER OF UNDERSTANDING

### RE: FOUR-DAY WEEK - TCD

Full-time regular employees scheduled to work the four-day week in the Telephone Claims Department, will be governed by the following terms and conditions:

#### Hours of Work

- Hours of Operation: Twenty-four (24) hours per day, Sunday to Saturday.
- Work Day: Eight hours and fifty minutes (8 5/6 hours), to be scheduled within hours of operation.
- Work Week: Four days per week, Sunday to Saturday.

#### Scheduled Time Off Provisions

Employees working the four-day work week will neither earn TO days nor schedule TO days already earned. At the employee's option, any existing TO day entitlement will be either paid out, or frozen for the period of time during which they are working the four-day work week.

#### Vacation Entitlement

Employees working the four-day work week will earn vacation in accordance with the following:

- (a) 12 days in each calendar year in which the employee's first to seventh anniversary date occurs.
- (b) 16 days in each calendar year in which the employee's eighth to sixteenth anniversary date occurs.
- (c) 20 days in each calendar year in which the employee's seventeenth to twenty-fourth anniversary date occurs.
- (d) 24 days in each calendar year in which the employee's twenty-fifth to twenty-ninth anniversary date occurs.
- (e) 28 days in each calendar year in which the employee's thirtieth anniversary date occurs, and in each calendar year thereafter.

#### Paid Holidays

Paid holidays will be in accordance with Article 16.

**Lunch Periods**

Employees working the four-day work week may select either one unpaid sixty-minute lunch period or two thirty-minute unpaid lunch periods. These options may be varied by mutual agreement between the employee and manager, but will be subject to operational requirements.

**Work Scheduling**

Work scheduling will be in accordance with Article 12.10.

**For the Union**

D.B. McPherson

Date: June 23, 1998

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: ORGANIZATION TITLE CHANGES

In keeping with nomenclature presently in use at the Corporation, the following definitions will apply for the application of Article 8 and Article 9:

Department is defined as the organizational unit reporting to the first level of line management with the following exceptions:

- i) Driver Services Centres, Claim Centres and Claims Branch Offices will be deemed departments.
- ii) Organizational units in a single headquarters performing the same work, which for the purposes of span of control have broken into several units, will be deemed a single department.

Divisions are:

Operations  
Finance and Administration  
Human Resources (including Executive Offices) and Corporate Law  
Public Affairs and Corporate Marketing  
Government and Corporate Relations

#### For the Union

D.B. McPherson

Date: June 23, 1998

Revised: July 20, 1999

#### For the Corporation

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: FOUR-DAY WEEK CENTRALIZED ESTIMATING FACILITY

#### Terms and Conditions of CEF Four-Day Work Week

Full-time regular employees at CEF scheduled to work the four-day work week will be governed by the following conditions:

#### Hours of Work

Hours of Operation: 7:00 a.m. - 6:00 p.m., Sunday to Saturday.

Work Day: Nine hours and forty-five minutes (9.75 hours) to be scheduled within hours of operation.

Work Week: Four consecutive days per week, followed by four consecutive days off, Sunday to Saturday.

#### Lunch Periods

Employees working the four-day work week may select either one sixty-minute unpaid lunch period, or two thirty-minute unpaid lunch periods. These options may be varied by mutual agreement between the employee and manager, but will be subject to operational requirements.

#### Work Scheduling

Employees shall be scheduled to work an average of 182.5 days (totalling 1781 hours) in each calendar year, less vacation and paid holiday entitlement.

If at the end of the calendar year an employee working the four-day week has not worked or has exceeded the prescribed hours (1781 hours), the excess or deficit will be carried over and integrated into the schedule for the following calendar year.

In the event an employee is scheduled for meetings or education courses on a day that would usually be scheduled off, then the employee will be paid at straight time for the duration of the meeting/course, subject to a minimum payment of four (4) hours, and the prescribed number of annual working hours noted above. If notice of less than twenty-four (24) hours is received, the employee affected will be paid at overtime rates.

#### Scheduled Time Off Provisions

Employees working the four-day work week will not earn TO days in accordance with Article 12.07. Any accrued TO days will be paid out upon appointment to the four-day week shift.

**Vacation Entitlement**

Employees working the four-day week will earn vacation in accordance with the following:

- (a) 11 days in each calendar year in which the employee's first to seventh anniversary date occurs.
- (b) 15 days in each calendar year in which the employee's eighth to sixteenth anniversary date occurs.
- (c) 19 days in each calendar year in which the employee's seventeenth to twenty-fourth anniversary date occurs.
- (d) 22 days in each calendar year in which the employee's twenty-fifth to twenty-ninth anniversary date occurs.
- (e) 26 days in each calendar year in which the employee's thirtieth anniversary date occurs, and in each calendar year thereafter.

**Paid Holidays**

CEF operations will continue on all Paid Holidays except Christmas and New Year's Day.

Employees who would otherwise be regularly scheduled to work Christmas and/or New Year's Day will receive the day off with pay as per Article 16.03. Employees not scheduled to work Christmas and/or New Year's Day will receive a day in lieu, to be scheduled subject to operational requirements.

Employees scheduled to work any other paid holidays will receive 1 1/2 times their normal rate of pay for hours worked on the holiday. Sick leave, where applicable, will be at straight time rates.

**Weekend Premium**

Article 12.11(b) will not apply to employees participating in the four-day work week.

**Operational Requirements**

Should operational requirements change such that the four-day week is no longer viable from a business perspective, upon providing reasonable written notice to the Union, the Corporation may discontinue the four-day week shift and all full-time employees will change over to the normal hours of work as set out in Article 12.01(c).

**For the Union**

D.B. McPherson

Date: June 23, 1998

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: CORPORATION SPONSORED EVENTS

Selected employees who volunteer for events sponsored by the Corporation, which promote the Corporation's business objectives and which are outside an employee's regular work schedule, will receive a seventy-five dollar (\$75) per diem in lieu of travel and all other related expenses for a minimum four (4) hour shift. Upon request, a letter recognizing the employee's contribution will be placed on the employee's personnel file.

However, where attendance at such an event is considered a regular component of the employee's job classification, or where the time spent at the event is during the employee's normal hours of work, such time will be considered as time worked and compensated for at the appropriate rate. In such instances, the employee will be reimbursed for reasonable expenses incurred, but no per diem will be paid. An employee wishing to volunteer for such events during her or his normal business hours must obtain prior approval from her or his manager.

**For the Union**

D.B. McPherson

Date: June 23, 1998

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: CO-OPERATIVE EDUCATION STUDENTS INFORMATION SERVICES DEPARTMENT

The parties agree to the hiring of students who are participating in a co-operative education program. Such students will be subject to the conditions set out below. Students hired under the terms of this letter will be enrolled in studies relating to the computer sciences, and will be engaged in work activities in the Information Services Department which lead to entry level positions within the Information Services Department.

1. All students will become and remain members of the Union for the term of their employment with the Corporation.
2. Hirings will be limited to no more than eighteen (18) students at any one time, and no more than fifty (50) students in any calendar year.
3. Student projects will normally be for a 3-4 month period and on occasion may elect consecutive work terms, and students will normally be located in Head Office.
4. Students will receive salary treatment in accordance with the following schedule. Students will be paid on an hourly basis, and will receive 10.4% of gross earnings with each pay period in lieu of statutory holiday and annual vacation leave. Students will not be covered by any of the welfare benefits set out in the Collective Agreement and will not receive compensation in lieu thereof.

#### **First Work Term**

80% of step one of the current salary group for the applicable entry level job.

#### **Second Work Term**

85% of step one of the current salary group for the applicable entry level job.

#### **Third Work Term**

90% of step one of the current salary group for the applicable entry level job.

**Fourth Work Term**

95% of step one of the current salary group for the applicable entry level job.

**For the Union**

R. Tuckwood

Date: April 13, 1995

Revised: July 20, 1999

**For the Corporation**

D.E. Thomas

Date: April 13, 1995

## LETTER OF UNDERSTANDING

### RE: JOINT RETURN TO WORK PROGRAM

The parties believe in a planned and structured approach to returning employees to work following an injury or illness. The parties also believe through a cooperative and innovative approach to return to work, employees will be returned to full, active work duties as quickly as is reasonably possible. With this in mind, the Corporation and Union agree to establish a Joint Return to Work Committee to begin a process which will enhance the current program, establish program goals, objectives and guiding principles which will form the foundation of an effective program. Additionally, the joint program will, as a part of its mandate, regularly review caseload volumes, survey results conducted, appropriate statistical data collected, and any feedback received by the Joint Committee in this regard.

The parties agree that in returning employees to active service as quickly as possible, the employee(s) will not be compromised when addressing their health, safety, or dignity, the health and safety of other employee(s), or the ongoing operation of any department.

Within sixty (60) days of ratification a "Joint Return to Work Advisory Committee" will be established consisting of two (2) representatives from ICBC and two (2) representatives from the Union. The Committee members will begin to meet on a regularly scheduled basis in an effort to scope out the role of the Committee and to further develop the joint approach to issues which may fall within an effective return to work program. In addition to the members of the Advisory Committee noted above, a full-time return to work (RTW) coordinator will be appointed by the union to work as an active participant, at the working level, working with active files to return employees who are on the program to active service. This coordinator will be administratively responsible to the Manager, Human Resources Employee Services.

The RTW Coordinator will be appointed on the basis of requisite skills, education, and experience required to perform the job successfully. Such qualifications will be developed jointly by the parties. A classification profile will be prepared and evaluated by the Compensation and Research Department to reflect the duties performed.

A representative of the Union will be included in all training and orientation sessions held for RTW Coordinators.

The program developed will be formally monitored and reviewed once each year. The Joint Committee will evaluate the program direction and make joint recommendations to the Vice-President, Human Resources and the President of the Union, respecting the continuation of the program beyond the duration of the term of this Collective Agreement.

The Corporation will bear the costs associated with the foregoing program.

**For the Union**

D.B. McPherson

Date: June 23, 1998

Revised: October 5, 1999

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: MVB (PHASE I) MERGER

The parties agree to the following provisions respecting the transfer of former Government (MVB) employees to ICBC.

1. Payment for Statutory Holidays - Auxiliary Employees

The Corporation agrees, on a one-time-only basis, to compensate eligible (former) MVB Auxiliary Employees who transferred to ICBC on March 24, 1997, for Good Friday, April 4, 1997, and Easter Monday, April 9, 1997, at the rate of 1 day's pay for each Statutory Holiday.

2. Seniority Crediting - MVB Regular Employees

In determining seniority for MVB regular employees who have transferred or will transfer to ICBC, the Corporation agrees to recognize any auxiliary time served immediately preceding the employee's reclassification to regular status, as time accruing to their corporate seniority.

The Corporation will meet with the Union immediately following ratification to discuss the administration of this provision.

3. PEA Employees

Employees belonging to the professional employees' association who have transferred or will transfer to the ICBC/COPE bargaining unit as a result of the MVB merger, will have their overtime premium of 7% maintained on a red-circled basis. This is subject to the understanding that overtime will only be claimed for compensation which exceeds the difference between their normal base salary and the red-circled amount in a given calendar year, as calculated at year-end.

**For the Union**

D.B. McPherson

Date: June 23, 1998

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: RETURN OF EMPLOYEES WHO WERE FORMERLY MEMBERS OF THE BARGAINING UNIT TO POSITIONS IN THE BARGAINING UNIT

The Corporation and the Union recognize that employees in bargaining unit positions may move to positions which are excluded from the bargaining unit, and that a return to the bargaining unit at a later date may be required or desired. In instances where an employee moves from a bargaining unit position to an excluded position, the Corporation may hold the employee's bargaining unit position, or a comparable position, open for a period of up to four (4) months in order to facilitate the individual's return to the bargaining unit.

Employees returning to the bargaining unit under the terms of this Letter of Understanding will be responsible for reimbursement of dues to the Union.

**For the Union**

R. Tuckwood

Date: April 13, 1995

**For the Corporation**

D.E. Thomas

Date: April 13, 1995

## LETTER OF UNDERSTANDING

### RE: GAINSHARING

#### **Philosophy**

The parties recognize that ICBC operates in a competitive market environment and that customers have choices.

In order for ICBC to achieve the targets set by the Corporation, the Corporation relies on a dedicated workforce striving for operational excellence.

To that end ICBC commits to the introduction of annual lump sum gainsharing incentives for all eligible bargaining unit employees. Achieving lump sum payments will be based on the Corporation achieving annual strategic targets as set by the Corporation.

#### **Application**

Provided the measurable gainsharing targets are met during the "periods of measurement" set out in this Letter of Understanding, payouts may be realized for eligible bargaining unit employees, based on the "gainsharing rewards" indicated, as a percentage of straight-time bargaining unit payroll.

Employees eligible for payouts will be employees who provided "active service" during a measurement period, and, retirees excepted, be in the active service of the Corporation as of December 31 for the target year.

"Active service" for the purposes of this Letter of Understanding includes any approved leave of absence with pay and includes absences under Articles 19.05 and 19.06.

With respect to employees who were on a leave of absence without pay for part of a period of measurement, the payout will be pro-rated for the time period actually worked.

Payouts will be pro-rated for employees who have provided less than full time regular employment during the period being measured.

**2006 Gainsharing Rewards**

<b>Corporate</b>	<b>Target</b>	<b>Meet</b>	<b>Exceed</b>
Net Income	\$131M	1%	1.33%
Customer Satisfaction Autoplan (95%) Driver Services (90%) Claims (82%)	89%	1%	1.34%
Combined Ratio Loss Ratio (89.9%) Expense Ratio (20.1%)	110%	1%	1.33%
Total Opportunity		3%	4%

**2007 Gainsharing Rewards**

<b>Corporate</b>	<b>Target</b>	<b>Meet</b>	<b>Exceed</b>
Net Income	Tbd	1%	1.33%
Customer Satisfaction Autoplan Driver Services Claims	Tbd	1%	1.34%
Combined Ratio Loss Ratio Expense Ratio	Tbd	1%	1.33%
Total Opportunity		3%	4%

**2008 Gainsharing Rewards**

<b>Corporate</b>	<b>Target</b>	<b>Meet</b>	<b>Exceed</b>
Net Income	Tbd	1%	1.33%
Customer Satisfaction Autoplan Driver Services Claims	Tbd	1%	1.34%
Combined Ratio Loss Ratio Expense Ratio	Tbd	1%	1.33%
Total Opportunity		3%	4%

**2009 Gainsharing Rewards**

<b>Corporate</b>	<b>Target</b>	<b>Meet</b>	<b>Exceed</b>
Net Income	Tbd	1%	1.33%
Customer Satisfaction Autoplan Driver Services Claims	Tbd	1%	1.34%
Combined Ratio Loss Ratio Expense Ratio	Tbd	1%	1.33%
Total Opportunity		3%	4%

**2010 Gainsharing Rewards**

<b>Corporate</b>	<b>Target</b>	<b>Meet</b>	<b>Exceed</b>
Net Income	Tbd	1%	1.33%
Customer Satisfaction Autoplan Driver Services Claims	Tbd	1%	1.34%
Combined Ratio Loss Ratio Expense Ratio	Tbd	1%	1.33%
<b>Total Opportunity</b>		<b>3%</b>	<b>4%</b>

Lump sum payments earned by eligible employees will be paid April 30 in the following year.

**Target Years**

- Year 2006 (January to December)
- Year 2007 (January to December)
- Year 2008 (January to December)
- Year 2009 (January to December)
- Year 2010 (January to June) ( ½ of the amounts set out in 2010 above)

**Joint Committee – Gainsharing**

The parties agree that in order to remain focused on ongoing business improvement, regular scheduled meetings will take place within thirty (30) days following the release of corporate quarterly results throughout the target years identified in this Letter of Understanding.

The parties agree that the Committee will consist of four (4) representatives from the Union and four (4) representatives from the Corporation. The Committee will focus discussions on the previous quarter's financial results and associated targets and measurements set by the Corporation referred to in the performance plan. Through these discussions the Committee may choose to make representations, to the Executive of the Corporation, through the office of the Vice President Human Resources, respecting any targets or measurements the Committee, feel should be reviewed for the following year, provided a majority of the Committee

Representatives are in agreement. Any such considerations the Committee may wish to make must be made within thirty (30) days following the release of the Corporation's third quarter results in any given year. The Committee will be provided with a response to any considerations put forward by the Vice President Human Resources following executive consideration.

The parties agree that any issues arising as a result of the application of this Letter of Understanding will be put before an agreed upon third party who will have jurisdiction over the application of those matters.

**For the Union**

D. Park

Date: November 4, 2004

Revised: March 29, 2006

**For the Corporation**

D. E. Cox

Date: November 4, 2004

## LETTER OF UNDERSTANDING

### RE: REGIONAL DEFINITIONS

For the purpose of Article 7.05 and 8.02, the Province of British Columbia is divided into four regions:

1. Vancouver Island.
2. The Lower Mainland, being the Greater Vancouver Regional District and adjoining municipalities extending north to include Squamish and Powell River and extending east to include Hope.
3. The Southern Interior, being that portion of the interior of British Columbia to the east of Hope extending to the Alberta border and to the north of Hope extending to the Trans-Canada Highway No. 1 and including communities located on the Trans-Canada Highway No. 1; and
4. The Northern Interior, being that portion of the interior of British Columbia north of the Trans-Canada Highway No. 1 excluding headquarters located in the Vancouver Island, Lower Mainland and Southern Interior Regions.

**For the Union**

D. McPherson

Date: June 23, 1998

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

**LETTER OF UNDERSTANDING****RE: ACTING APPOINTMENTS - CLAIMS ADJUSTING  
HIERARCHY**

Acting appointments in the claims adjusting hierarchy will be made in accordance with the provisions of Article 11.14, except that salary adjustments will be as defined by the following schedule:

- |    |   |  |
|----|---|--|
| 1. | Employees outside of the adjusting hierarchy acting as Telecentre Adjuster, Claims Adjuster | 1 step increase, or Step 1 of Salary Group 7, whichever is greater (subject to a maximum of Step 5 of Salary Group 7). |
| 2. | Telecentre Adjuster acting as a Claims Adjuster   | 1 step increase, or Step 1 of Salary Group 8, whichever is greater.  |
| 3. | Telecentre Adjuster acting as a Bodily Injury Adjuster                                      | 1 step increase, or Step 1 of Salary Group 9, whichever is greater.  |
| 4. | Claims Adjuster Trainee acting as a Bodily Injury Adjuster                                  | 1 step increase, or Step 2 of Salary Group 9, whichever is greater.  |
| 5. | Claims Adjuster acting as a Bodily Injury Adjuster  | 1 step increase, or Step 1 of Salary Group 10, whichever is greater.   |
| 6. | Bodily Injury Adjuster acting as an Examining Adjuster                                      | The 5% utility premium.  |
| 7. | Bodily Injury Adjuster acting as a Head Office Claims Examiner                              | 1 step increase, or Step 1 of Salary Group 12, whichever is greater.   |
| 8. | Examining Adjuster acting as a Head Office Claims Examiner                                  | Retention of 5% utility premium or Step 1 of Salary Group 12, whichever is greater.                                    |

**For the Union**

D.B. McPherson

Date: June 23, 1998

Revised: June 17, 1999

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: TELECOMMUTING

Telecommuting is defined as “recurring scheduled work that is done from a location remote to the regular designated worksite(s)”. Such locations would include the employee’s home or a satellite office. The Corporation and the Union support a part-time telecommuting pilot to start during the term of this Collective Agreement.

1. Telecommuting is voluntary and may be terminated with a minimum of two (2) weeks notice by the Corporation or employee. The parties agree that no employee shall be required to telecommute.
2. While involved in telecommuting, employees retain all rights and benefits of the Collective Agreement, including WCB coverage during the hours the employee is working. Salary, benefits, and job responsibilities will not change due to participation in telecommuting.
3. The Corporation will provide the Union and Joint Committee with all names of bargaining unit members who are telecommuting, as well as a list of agreed to telecommuting hours.
4. Employee selection for telecommuting shall be on a fair and equitable basis, subject to the arrangement being operationally practical and feasible.
5. The Corporation agrees that at least one (1) bargaining unit member from the Occupational Health and Safety Committee will participate in a visit to the home-based office to ensure a safe working environment.
6. No employee shall telecommute more than three (3) days per week without mutual consent of the parties (i.e. 3 days on a 5-day work week or 2 days on a 4-day work week).
7. The Corporation will provide employees working from home with the equipment necessary to perform the tasks identified for telecommuting. The Corporation will consider requests to provide appropriate furniture during the pilot on a case by case basis, where employees do not have such furniture. Employees will be expected to properly handle and house corporate property. Employees will also be expected to ensure that all long distance costs associated with the Corporation-provided business line are for Corporation business purposes only.
8. Liability for the cost of maintenance or replacement of corporate property will be the Corporation’s. Further, the employee will not be required to incur additional insurance costs as a result of telecommuting.

9. The Manager and employee will mutually set the hours of work subject to operational requirements. However, such hours will not exceed an employee's normal weekly hours. All hours will be paid at the employee's normal straight-time earnings, except where overtime is approved by the employee's manager.
10. The home office or satellite office will be the employee's established worksite for the agreed to work hours on the agreed to telecommuting days. At all other times, the established headquarters is the regular office location.
11. Employees who work at home will manage dependent care and personal responsibilities separately from work, in a way that allows them to successfully meet job responsibilities.
12. The employee is responsible for providing dedicated work space with adequate furniture for use during telecommuting days. The employee is also responsible for maintaining a safe work space which is free from hazards and other dangers to employees and equipment.
13. Employees who telecommute will be required to adhere to the Corporate Code of Ethics and to data security provisions as outlined by Data Security Department.
14. Any disputes in the application of this Letter of Understanding will first go to the Joint Committee for resolution. In the event an agreement is not reached, the matter will be subject to the grievance and arbitration procedure.
15. The length of this pilot project will be twelve (12) months. The parties can agree to expand this Agreement by consent of the Joint Committee.

**For the Union**

D.B. McPherson

Date: June 23, 1998

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: MATERIAL DAMAGE JOINT COMMITTEE

The parties agree to convene a Joint Committee during the life of this Agreement for the purpose of bringing forward and engaging in discussion on issues that affect Material Damage personnel.

The Joint Committee will be comprised of five (5) representatives selected by the Corporation and five (5) employees selected by the Union.

The Committee may make recommendations to the Vice-President, Operations, or designate, with a copy to the Union.

**For the Union**

D.B. McPherson

Date: June 23, 1998

Revised: July 21, 2000

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

**LETTER OF UNDERSTANDING**

**RE: PROGRAMMER ANALYST DEVELOPMENT PROGRAM**

**APPLICATION SYSTEMS DEVELOPMENT DEPARTMENT**

The purpose of this Letter of Understanding is to address the implementation of the Corporation's revised practices relating to the hiring and development of Programmers and Programmer Analysts, Application Systems Development.

The Programmer Analyst Development Program is designed to give incumbents in the Application Systems Development (ASD) Department the opportunity for progressive advancement and to further their professional development.

Progression through the defined stages of development over a 3-year term will be based on regularly scheduled performance reviews in conjunction with the assumption of progressively higher levels of duties, responsibilities and job demands. The program is designed to be completed in three (3) stages over a period of thirty-six (36) months.

	<b>Level</b>	<b>Classification</b>	<b>Duration</b>
<b>Stage 1</b>	1	Programmer	6 months
<b>Stage 2</b>	2	PA I	6 months
	3	PA I	6 months
<b>Stage 3</b>	4	PA II	6 months
	5	PA II	6 months
	6	PA II	6 months
			36 months

The parties agree that an incumbent's progress will be subject to performance reviews during each development stage. There will be a minimum of one (1) review for each level of the program.

## 1. Internal Selections

Programmer Analysts selected from within the bargaining unit will be entitled to all of the provisions of the Collective Agreement during the thirty six (36) month development period. Salary progression during this period will be as follows:

- i) Unless otherwise provided for in the Collective Agreement, no employee entering the programme will receive a salary in excess of Step 5 of Salary Group 10. Selected incumbents whose salary is in excess of Step 3 of Salary Group 8 will receive no increments (as described below) for the duration of the thirty six (36) month development programme. The employee's length of service date will be adjusted to reflect the date of entry into the development programme.
- ii) Internally selected incumbents not covered by paragraph i) preceding will have their salary increased by a pro-rata portion of their next length of service increment plus one (1) step, or will be paid a minimum of Step 1 of Salary Group 6 (as defined in Appendix "B" of the Collective Agreement), whichever is greater. The employee's length of service date will be adjusted to reflect the date of entry into the development programme.
- iii) Upon successful completion of six (6) months of the development programme, incumbents will advance to Step 1 of Salary Group 7, or will be paid their current salary plus one (1) step (as defined by Appendix "B" of the Collective Agreement), whichever is greater, (subject to a maximum of Step 5 of Salary Group 7).
- iv) Upon successful completion of twelve (12) months of the development programme, incumbents will advance to Step 2 of Salary Group 7, or will be paid their current salary plus one (1) step (as defined by Appendix "B" of the Collective Agreement), whichever is greater, (subject to a maximum of Step 5 of Salary Group 7).
- v) Upon successful completion of eighteen (18) months of the development programme, incumbents will advance to Step 1 of Salary Group 8, or will be paid their current salary plus one (1) step (as defined by Appendix "B" of the Collective Agreement), whichever is greater, (subject to a maximum of Step 5 of Salary Group 8).
- vi) Upon successful completion of twenty four (24) months of the development programme, incumbents will advance to Step 2 of Salary Group 8, or will be paid their current salary plus one (1) step (as defined by Appendix "B" of the Collective Agreement), whichever is greater, (subject to a maximum of Step 5 of Salary Group 8).
- vii) Upon successful completion of thirty (30) months of the development programme, incumbents will advance to Step 3 of Salary Group 8, or will be paid their current salary plus one (1) step (as defined by Appendix "B" of the Collective Agreement),

whichever is greater, (subject to a maximum of Step 5 of Salary Group 8).

- viii) Upon successful completion of thirty-six (36) months of the development programme, incumbents will be classified as Programmer Analyst III and will advance to Step 1 of Salary Group 10, or will be paid their current salary plus one (1) step, whichever is greater (subject to a maximum of Step 5 of Salary Group 10). Incumbents will thereafter progress along the salary scale in the normal manner as defined in Article 11.06 of the Collective Agreement.

## 2. **Outside Hires**

Programmer Analysts hired from outside the bargaining unit will be entitled to all of the provisions of the Collective Agreement, except as amended by the following:

### (a) **Definition and Benefit Limitations**

New hires shall be considered probationary as described below for the first six (6) months of the development programme, and during such probationary period the following benefit limitations shall apply:

- i) shall not attain seniority until completion of six (6) months employment.
- ii) for reasons other than just cause (e.g. performance, conduct, etc.), may be terminated during their probationary period with:
  - five (5) days notice or pay in lieu of notice if the employee has sixty (60) paid days or less of employment with the Corporation.
  - ten (10) days notice or pay in lieu of notice if the employee has more than sixty (60) paid days of employment with the Corporation.
- iii) shall not be entitled to benefits under Technological and Procedural Change.
- iv) shall not be eligible to apply for other positions within the bargaining unit unless otherwise mutually agreed by the parties.
- v) shall be eligible for all welfare benefits as set out in the Collective Agreement, upon completion of three (3) months or sixty (60) paid days, whichever shall last occur.

### (b) **Salary Progression of Outside Hires**

Outside hires will normally start at Step 1 of Salary Group 6, and will progress in accordance with the schedule described for internal selections (as per Section 1 preceding).

The Corporation may advance the start point of an outside hire in recognition of relevant training and experience. In such instances, the

Corporation may hire up to the mid-point of Salary Group 10. Actual positioning in the development programme will reflect on commensurate level of knowledge and skill. Salary progression thereafter will be in accordance with that set out in Section 1 preceding or Article 11.06, whichever is applicable.

In situations where an outside hire is brought into the development programme at an advanced starting point, the employee's job performance probation, as set out in item no. 2(a) preceding, will be reduced by a commensurate amount, subject to the minimum four (4) month probation.

### **3. Performance Deficiencies**

Any case of an incumbent who has successfully completed a stage of the program, but who subsequently does not achieve a performance level which would allow progression to the next stage, will be considered for placement into a classification equivalent to their last successfully completed stage (e.g. if stage 1 successfully completed then placement is as a Programmer; if Stage 2 successfully completed then placement is as a PA 1).

Upon appointment to the last successfully completed stage, an employee will attain the salary he/she would have earned had he/she not transferred to the higher level job.

In such instances, the incumbent concerned may apply for re-admission to the program after twelve months, subject to availability of such a position.

Reinstatement to the program will be at the level last successfully completed. Salary progression will be in accordance with that set out in Section 1.

### **4. Recruitment and Placement**

The Corporation will post Programmer, Programmer Analyst I, Programmer Analyst II, and Programmer Analyst III vacancies as Programmer Analyst Development Program, ASD vacancies. The Corporation may advance the start point of an applicant in recognition of relevant training and experience.

Unless otherwise agreed by the parties, Programmer Analyst Development Program incumbents will not be eligible to apply for lateral transfers, or for other posted positions, during the period they are classified as being in the program.

Upon successful completion of the aforementioned development programme, incumbents will be classified to the position of Programmer Analyst III.

All salary rates and salary progression described herein are based on the currently established job classification and salary structure, and may be subject to revision in the event of changes to either of these factors.

## Telecommunications Positions

Pursuant to the Agreement reached between the parties on July 21, 1999, it is understood that the following classifications are to be included as forming part of Letter of Understanding No. 26:

- Telecommunications Analyst I, II, III
- Telecommunications Voice and Work Stations Analyst I, II, III
- Telecommunications Systems Management Analyst I, II, III

**For the Union**

D.B. McPherson

Date: July 21, 1999

**For the Corporation**

D.E. Cox

Date: July 21, 1999

## LETTER OF UNDERSTANDING

### RE: MATERIAL DAMAGE DEVELOPMENT PROGRAM

The intent of this program is to provide a proficiency based, self-paced career path for Estimators.

Upon completion of the program, employees will be reclassified from Estimator I to Estimator II.

Individual vacancies that arise during the life of the Agreement will be posted as Estimator vacancies in accordance with Article 7 and/or Letter of Understanding No. D-2 - Estimator Trainees.

As this hierarchy is proficiency based, there will be no acting assignments between the Estimator I and II.

Estimator I's who have progressed to Step 5, Salary Group 9, and have been performing satisfactorily at that level for one year, will be granted advanced standing in the program. For such employees, placement level in the program will be determined by the Material Damage Joint Committee. Failing agreement at the Joint Committee, the matter will be referred to ADR for binding resolution.

Nothing in this document is intended to be prejudicial to the parties' rights under the Collective Agreement.

**For the Union**

D. Park

Date: October 5, 1999

Revised: March 29, 2006

**For the Corporation**

D.E. Cox

Date: October 5, 1999

## LETTER OF UNDERSTANDING

### RE: WELFARE BENEFITS FOR CORPORATION RETIREES

The Corporation agrees to provide limited welfare benefits for retirees of the Corporation as set out below:

1. **Eligibility**

To be eligible for limited welfare benefits as set out below, an employee must:

- (a) have reached retirement age and have retired, immediately following at least five (5) years of continuous service with the Corporation.
- (b) not be in receipt of similar benefits through any other means; and
- (c) be (on a continuing basis) a resident of British Columbia.

"Retirement age" for the purposes of this letter is defined as age fifty-five (55) or greater.

Employees transferring from Government who are eligible for public service superannuation retirement benefits are not eligible for post-retirement benefits under this letter.

2. **Limited Welfare Benefits**

Employees who meet the eligibility criteria set out above will be entitled to the following benefits:

- (a) Basic Medical (MSP).
- (b) Extended Health Benefits as follows:
  - prescription drugs
  - upgrade private/semi-private room
  - 80% coverage with \$25.00 deductible with a lifetime maximum of \$25,000

3. The foregoing will apply to eligible employees who retire following October 1, 1991.

**For the Union**

D.B. McPherson

Date: June 23, 1998

Revised: July 21, 2000

**For the Corporation**

D.E. Thomas

Date: June 23, 1998

## LETTER OF UNDERSTANDING

### RE: WORKLOADS - CLAIM CENTRES

The Corporation agrees to establish the following provisions as a means of addressing workload concerns in the Operations division.

1. **Workload Committees**

In each Claim Centre, a Workload Committee shall be established comprised of two (2) management representatives (not including the centre manager), and two (2) employees from within the centre who are elected or appointed through the Union. A chairperson shall be elected by the Committee members, and shall be a voting member of the Committee. The position of chairperson shall be rotated and alternated on a six (6) month basis. A quorum of the Committee shall be equal representation of at least one (1) employee representative and one (1) management representative. Alternate representatives or replacements may be designated from each group. Decisions and recommendations of the Committee shall be on the basis of majority vote.

The Committee shall meet during regular business hours, and employees participating in the Committee shall do so without loss of pay.

2. **Committee Functions and Responsibilities**

The function of the Workload Committee is to investigate, assess, and attempt to resolve employee concerns respecting work volume by making written recommendations to management which serve the objective of ensuring a fair workload in relation to normal productivity expectations and applicable standards for the job. Such recommendations will take into account any extenuating circumstances such as weather, short term volume fluctuations arising from temporary staffing shortages, etc.

3. **Process**

(a) The Workload Committee shall meet within ten (10) working days of the call of any committee member in response to receiving a written concern regarding work volumes from an individual staff member or group of staff.

(b) Written decisions and recommendations of the Committee will be forwarded to the centre manager for consideration and response, with copies to each complainant. If the Committee is unable to reach a majority recommendation, the individual recommendations of committee members may be submitted to the centre manager for consideration and response, with copies to each complainant. The centre manager will provide a written response to the Committee, identifying intended actions, within

ten (10) working days of receipt of the Committee's recommendations. Copies of the response will be provided to each complainant.

- (c) Should the Committee or the complainant(s) not be satisfied with the intended actions of the centre manager, the Committee may develop alternate recommendations for resubmission to the centre manager, or refer those originally developed to the manager's superior for her/his review, accompanied by reasons for non-acceptance of the centre manager's response. The senior manager will provide a written response to the Committee, with a copy to each complainant and the centre manager, within ten (10) working days of receipt of the recommendations of the Committee.
- (d) Should the response of the senior manager not be acceptable to the Committee or the complainant(s), the matter may be referred in writing, to the Vice-President of the operations division for resolution. The Vice-President, or her/his designate, will render her/his decision within fifteen (15) working days of receipt of the Committee's referral. The Vice-President's response will be the final disposition of the matter.

Time limits as set out above may be extended by agreement between the Workload Committee and the applicable manager, or Vice-President, and such agreement will not be unreasonably denied.

- 4. Workload Committees shall be provided with pertinent employee productivity information and/or any applicable volume standards. Where no such standards have been established for any particular job classification, the Committee may include in its recommendations to management that such standards be developed.
- 5. Employees will be advised of any applicable work volume standards for their respective job classification at the time the standards are established.
- 6. No reprisal will be taken against an employee as a result of initiating a workload complaint through the Workload Committee.

**For the Union**

W. J. Farrall

Date: June 3, 2003

**For the Corporation**

D.E. Cox

Date: June 3, 2003

## LETTER OF UNDERSTANDING

### EXTENDED HOURS OF WORK LOCATIONS

The Parties agree that this Letter of Understanding will super cede Letter of Understanding 19 and apply when the Corporation proposes changes to the normal work hours, for work areas set out below, from the specific work hours set out in the Collective Agreement to hours, Monday to Friday, which could have normal start times from 6:00am and which could have normal finish times up to 8:00 pm.

Claim Centres, Claims Branch Offices, Central Estimating Facilities, Salvage Operations, Driver Services Centres (Articles 12.01(a), 12.01(b), 12.01(c), 12.04(b) and 12.04(g).

#### Extended Hours of Work

- The Corporation will pay a 12% premium for all hours worked after 4:00 pm, to all regular employees at extended hours locations working any full shift that starts prior to 12:01 pm and extends beyond 6:00 pm.
- Security provisions to be in place for those employees who work the extended hours.
- A manager or supervisor will be scheduled on site at all times during hours of operation.
- Maintain mutual exchange of working hours in accordance with Article 13.03.
- Extended Hours can be implemented at any of the locations indicated above.
- All other provisions of the Collective Agreement will apply.

The process to apply with respect to any proposed changes by the Corporation to the hours of work in the work areas identified above will be as follows:

Don Munroe, or any available Umpire as listed below agreeable to the Parties, shall meet with the Corporation and the Union on an expedited basis and will render a non-binding decision on the matter referred to her/him within sixty (60) calendar days from the date that the Corporation provided the union with written notice of the proposed changes.

## HOURS OF WORK UMPIRES

- Lisa Hansen
- Bob Blasina
- Jim Dorsey
- Peter Cameron
- Ron Keras
- Joan Gordon

Costs of the Umpire will be borne by the Corporation.

This agreement will take effect May 1, 2006.

**LETTER OF UNDERSTANDING**

**RE: COMPLIANCE OPERATIONS AND MOTOR  
CARRIER JOB POSTING RIGHTS**

The Corporation and Union agree that employees who elect to transfer to the public service along with the Compliance Operations and Motor Carrier Department business transfer will continue to have in service status for all job posting vacancies at ICBC for the period of one (1) year from the date of transfer. Such employees will also have their seniority recognized in a manner as if they had not transferred from the bargaining unit when they apply for a bargaining unit position, provided they provide written confirmation of continuous employment from the new employer at the time of application. It is understood that such individuals will not be covered by the Collective Agreement except for the provisions of Article 7.01 (e), 7.03 and 7.04.

**For the Union**

W. J. Farrall

Date: June 12, 2003

**For the Corporation**

D.E. Cox

Date: June 12, 2003

**LETTER OF UNDERSTANDING**

**RE: USE OF PLAIN LANGUAGE**

The parties agree to promote the use of plain language in all of their correspondence and dealings. To this end the parties will undertake to review the Collective Agreement and replace bafflegab with clearly understandable language in the Agreement.

**For the Union**

R. Tuckwood

Date: April 13, 1995

**For the Corporation**

D.E. Thomas

Date: April 13, 1995

**LETTER OF UNDERSTANDING**

**RE: FISCAL DIVIDEND**

THE PARTIES AGREE AS FOLLOWS:

1.0 Fiscal Dividend Bonus:

- 1.1 If fiscal dividend funds are determined to be available, a Fiscal Dividend Bonus will be paid.
- 1.2 The quantum of the Fund accessible for the parties to this agreement will be based on the Province's audited financial statements as at March 31, 2010.

The Fund will be determined as follows:

- i The calculations will be based on the surplus, as calculated before deduction of any expense associated with the Fiscal Dividend Bonus, achieved in fiscal 2009-10, as published in the audited financial statements for that fiscal year, provided that the surplus is in excess of \$150 million.
- ii Only final surplus monies in excess of \$150 million will be part of the Fund, and the total quantum of the Fund for the entire public sector (including all categories of employees) will not exceed \$300 million.
- iii The quantum of the Fund will be constrained by the proportion of the public sector that is eligible to participate in the Fiscal Dividend Bonus i.e., 100% of the Fund will be available if 100% of all categories of employees in the public sector under the purview of the Public Sector Employers' Council participate, but if a lesser number participate, a proportionately lesser amount of the Fund will be available.
- iv Additionally, the Fund will be proportioned among all groups of public sector employees by ratio of group population to total population participating.

- 1.3 The Fiscal Dividend Bonus will be paid in equal amounts to each eligible employee who is on the active payroll on June 30, 2010.

**For the Union**

D. Park

Date: March 29, 2006

**For the Corporation**

D.E. Cox

Date: March 29, 2006

In witness whereof the parties hereto have affixed their signatures this 29<sup>th</sup> day of March 2006.

For:

**Insurance Corporation of British Columbia**

David E. Cox	Director, Labour Relations
Kim Martin	Senior Labour Relations Specialist
Mike Vizsolyi	Senior Labour Relations Advisor
Ed Novak	Regional Manager, Sales & Marketing
Ian Slade	Manager, Driver Service Center
Natalie Taylor	Manager, Lake City Claims Centre

For:

**Canadian Office & Professional Employees' Union  
Local 378**

Dave Park	Senior Union Representative
David Black	Vice-President
Steve Toomey	Executive Board Member
Chris Ayling	Executive Board Member
Audrey Barnes	Executive Board Member
Marilyn Bridges	Executive Board Member
Linda Diggins	Executive Board Member
Jaime Zygmunt	Union Representative

# BENEFITS SUPPLEMENT

## INTRODUCTION

The information found in the following document provides a summary of the benefits which are provided to employees who are members of the Canadian Office and Professional Employees' Union and who are employed by the Insurance Corporation of British Columbia.

All the benefits arise as a result of collective bargaining between the COPE (the Union) and ICBC (the Employer). Actual plan documents are too lengthy for distribution to all employees and the information in these pages is intended to provide a basic understanding of the benefit plans. If there are issues or questions, employees are encouraged to review the plan summaries made available through ICBC's intranet, employee benefits, or your Union job steward.

For reference purposes, you will find information on these benefits in the following Article numbers of the Collective Agreement between the COPE and ICBC:

<b>Benefit</b>	<b>Reference</b>
Medical Services Plan of British Columbia	Article 18.01(a)
Hospital Programs of British Columbia	Article 18.01(a)
Extended Health Care Plan	Article 18.01(a)
Dental Care Plan	Article 18.01(b)
Long Term Disability Plan	Article 18.07
Group Life and Accidental Death and Dismemberment Insurance Plan	Article 18.02
Travel Accident Insurance	Article 18.08

ICBC and the COPE, Local 378, are pleased to provide an excellent employee benefit program that is about the best in B.C. the benefits program is a result of many positive improvements through collective bargaining over the years.

# The Medical Services Plan of British Columbia

## The Plan

The Medical Services Plan of British Columbia provides basic medical coverage available to permanent residents of the Province.

Premiums for BC Medical Services Plan are paid 100% by ICBC for you and your eligible dependents for full-time employees and cost-shared with ICBC for part-time employees.

The amount of premium paid on your behalf is considered to be a taxable benefit to you and is added to your income when determining your bi-weekly income tax deduction.

Registration for medical coverage is voluntary. It is the responsibility of all residents who want coverage to ensure that they and their dependents are registered under the plan.

## Eligibility

Persons who have recently arrived in BC.

Coverage for new residents is available after completing a waiting period consisting of the remainder of the month of arrival in British Columbia plus two months.

## Eligible Dependents

Your legally married spouse or that person with whom you are currently living and have lived in a conjugal relationship for not less than one (1) year, and who is presented as your recognized spouse.

Your natural or adopted child or step child who is:

- Unmarried,
- Under age 19
- Not employed on a full-time basis ; and,
- Not eligible for insurance under this plan or any other group benefit program.

Your dependents coverage may be continued provided that they meet all the conditions above and are in full-time attendance at a school or university for a minimum of 10 hours per week.

A stepchild must be living with you to be eligible.

## Changes Affecting Coverage

You must notify the employee benefits if any change to your registration information is required due to marriage, addition of dependents, cancellation of coverage for dependents or termination of coverage.

## Benefits under the Plan (Services Covered)

The following services are covered under the plan.

- Medically required services provided by a physician enrolled with MSP;
- Maternity care provided by a physician
- Diagnostic services, including x-rays and laboratory services, provided at approved diagnostic facilities, when ordered by a registered physician, podiatrist, dental surgeon or oral surgeon;
- Dental and oral surgery, when medically required to be performed in hospital\*;
- Orthodontic services related to severe congenital facial abnormalities.

\* surgical removal of an impacted third molar (wisdom tooth) is an MSP insured service only when hospitalization is medically required, due to the extreme complexity of the extraction and where there is associated pathology. The removal of healthy wisdom teeth, even if impacted, is not a benefit.

## Services Not Covered by MSP

MSP does not provide coverage for the following:

- Services that are not deemed to be medically required, such as cosmetic surgery;
- Dental services, except as outlined under benefits;
- Routine eye examinations for persons 19 to 64 years of age;
- Eyeglasses, hearing aids, and other equipment or appliances;
- Prescription drugs (see BC [Pharmacare Plan](#));
- Chiropractic, massage therapy, naturopathy, physical therapy and non-surgical podiatry services;
- Annual or routine examinations where there is no medical requirement;
- Services of counsellors or psychologists;
- Medical examinations, certificates or tests required for:
  - Driving a motor vehicle
  - Employment
  - Life insurance
  - School or university
  - Recreational and sporting activities
  - Immigration purposes

## BC Pharmacare Plan

You and your dependents are eligible for benefits under the Provincial Government's Pharmacare Plan if you are covered under the Medical Services Plan of British Columbia.

The Pharmacare plan provides coverage for you for eligible drugs, ostomy supplies and permanent prosthetic items prescribed by your doctor, dentist or podiatrist. BC Pharmacare commences payment once your claims have exceeded a specified deductible amount in each calendar year. Your deductible is established when you register with Pharmacare and is based on your family income. Once you have attained the deductible, the Pharmacare deductible will begin payment. It is important that you register with Pharmacare to ensure full coverage.

# Extended Health Plan

## The Plan

The purpose of our Extended Health Care Plan is to provide you and your eligible dependents with assistance for costs related to treatment of medical conditions.

If there should be any difference between the wording of this summary and the provisions of the Group Extended Health Care Contract, together with subsequent riders to such contract, the provisions of the contract, as amended from time to time, shall prevail.

## Eligibility

All full-time regular and part-time regular employees are eligible for coverage.

Coverage for you and your eligible dependents will commence on the first day of the month following the date of employment. ICBC pays 100% of the cost for full-time employees and cost-shares for part-time employees.

## Eligible Dependents

Your legally married spouse or that person with whom you are currently living and have lived in a conjugal relationship for not less than one (1) year, and who is presented as your recognized spouse.

Your natural or adopted child or step child who is:

- Unmarried,
- Under age 21
- Not employed on a full-time basis ; and,
- Not eligible for insurance under this plan or any other group benefit program.

Your dependent's coverage may be continued beyond age 21 provided that they meet all the conditions above and are in full-time attendance at a school or university for a minimum of 10 hours per week or, if they are incapable in engaging in any substantially gainful activity and is dependent upon you for support, maintenance and care, due to a mental or physical disability. A child who is incapacitated on the date he or she reaches age 21 will continue to be an eligible dependent. However the child must have been covered by this plan immediately prior to this date.

A stepchild must be living with you to be eligible.

## Deductible/Reimbursement

Before any payments are made under the plan, an amount of \$25 is deducted in each calendar year from the eligible expenses.

After the deductible has been satisfied, 80% of eligible expenses will be reimbursed until \$1,000 has been paid in a calendar year. After \$1,000 has been paid in the calendar year, expenses will be reimbursed at 100%. Emergency Out-of-Province expenses are reimbursed at 100%.

The plan will reimburse based on reasonable and customary fees for the Province.

**note:** the plan shall not be liable for reimbursement in excess of \$350,000 lifetime to any one employee or any one dependent. Preauthorization is recommended from the carrier for expenses in excess of \$1,000 per person.

**Eligible Expenses (For Services within British Columbia)**

The following services are covered under the plan when performed within British Columbia where supporting documentation is provided. This is a summary for information purposes only.

<b>Eligible expense</b>	<b>Guidelines</b>	<b>Maximums</b>
Hospital	Upgrade to private or semi-private room	N/a
Orthopedic Shoes	Custom made shoes and modification when prescribed by physician or podiatrist	\$400 per calendar year for adult \$200 per calendar year for child
Hearing aids	Purchase of hearing aids when prescribed by ear, nose and throat specialist  Repairs, maintenance and batteries not included.	\$1,000 every 5 calendar years for adult  \$1000 every 2 calendar year for child
Chiropractors	Fees for visit to chiropractor licensed in the Province of BC.	\$400 per member or dependent in any calendar year
Naturopathy	Fees for visit to naturopathic physician licensed in the Province of BC  Includes testing	\$200 per member or dependent in any calendar year
Podiatrist	Fees of podiatrist registered or licensed in BC	\$100 per member or dependent in any calendar year
Eyewear/glasses	Charges incurred relative to purchase of corrective lenses and frames, contact lenses and/or eye examinations  Sunglasses and safety goggles	\$300 per member or dependent in any 2 calendar years

	not included	
Physiotherapist and Massage Practitioners	Fees of physiotherapist or massage therapist registered or licensed in BC (except if related to or resident with member)	Combined maximum of \$250 per member or dependent in any calendar year
Speech Therapist	Fees of speech therapist licenced in BC	\$400 per member or dependent in any calendar year
Counselling Services	Fees of registered or clinical psychologist or counsellor licensed in BC	\$500 per member in any calendar year \$100 per dependent in any calendar year
Acupuncture	Fees for acupuncture treatments performed by physician or surgeon licensed to perform acupuncture in BC	\$400 per member or dependent in any calendar year
Drugs and Medicines	Charges for drugs and medicines legally requiring a prescription  Includes insulin, syringes, oral contraceptives, diabetic testing supplies, injections of vitamin b12 for treatment of pernicious anemia, drugs prescribed for fertility purposes  Excludes: preventative medicines and vaccines, any vitamin preparation not expressly included, food and mineral supplements, those drugs not approved pursuant to the food and drug act for sale and distribution in Canada	Coverage based on generic equivalent where available unless physician has prescribed brand name with no exceptions.  Fertility drugs limited to \$15,000 per person lifetime.  Dispensing fee maximum based on provincial average.
Oxygen, Oxygen	Charges for oxygen, oxygen masks, regulators, blood and	N/a

Masks	blood plasma only when ordered by an attending physician	
Permanent Prothesis	Charges for permanent prothesis (artificial limbs, eyes and mastectomy forms) and braces. Only when ordered by attending physician.	N/a
Crutches, Canes, Walkers, Wheelchairs, Trusses	Charges for rental or when approved purchase	N/a
Ostomey/ileostomy Supplies	When ordered by attending physician	N/a
Orthotics	Charges for custom made orthotics when recommended by physician or podiatrist	\$400 per calendar year per adult \$200 per calendar year per child
Ambulance	Charges of licensed ambulance service in BC, including air ambulance to transport patient to nearest hospital where adequate treatment is available	N/a
Medical Equipment	Durable medical equipment such as manual hospital beds, respirator, oxygen equipment and other durable equipment usually found only in hospitals.	N/a
Wigs	Charges for wigs and hairpieces for patients with temporary hair loss as a result of medical treatment.	\$500 per lifetime

## Eligible Expenses (For Emergency Out-of-Province Services)

Treatment required as a result of a medical emergency which occurs while temporarily outside British Columbia provided the covered person who receives the treatment is also covered by medical services plan of BC during the absence.

**Note:** the carrier shall not be liable for reimbursement in excess of \$350,000 lifetime to any one employee or any one dependent for all claims made to the Extended Health Plan.

A medical emergency is a sudden, unexpected injury which occurs, or an unforeseen illness which begins while a covered person is traveling outside BC and requires immediate medical attention. Such emergency no longer exists when, in the opinion of the attending physician, the covered person is able to return to his normal Province of residence.

Eligible expense	Guidelines
Hospital	Room charges over and above that covered by the BC hospital program, in an emergency where patient is confined or treated in an acute general hospital
Physician	Customary charges for physician's and surgeon's services and laboratory and x-ray services when ordered by attending physician in an emergency, over and above amount allowed under the Medical Services Plan of BC.
Ambulance or Air Ambulance	Local ambulance or where required air ambulance to transport the patient to the nearest medical facility or hospital where adequate medical treatment is available.
Other Services	

## Exclusions

(a) Expenses for services or supplies covered or provided by a Government Agency or plan or third party. This includes any tax-supported agency and any other group or individual insurance.

(b) Expenses related to, or as a result of war, riot or insurrection.

(c) Expenses of a patient hospitalized at the time of enrollment.

(d) Except as outlined in this brochure, hearing aids or examinations for the prescription or fitting thereof, dentures or dental treatment and x-rays, professional services of physicians and surgeons in the Province of British Columbia or any person who renders a professional health service.

(e) Remedies prescribed by a naturopath or a podiatrist, HCG injections, elastic stockings, brassieres, arch supports, air humidifiers and purifiers, insulin pumps, services of Victorian Order of Nurses or graduate or licensed practical nurses, services of religious or spiritual healers, occupational therapy, services and supplies for cosmetic purposes, rest cures.

(f) Transportation charges incurred for elective treatment and/or diagnostic procedures or for health or health examinations of any kind.

(g) Out-of-Province expenses incurred due to therapeutic abortion, childbirth or complications relative to pregnancy occurring within two months of the expected termination date of pregnancy.

(h) Charges for pre-existing conditions requiring continuous or routine medical care while Out-of-Province.

### **Making a Claim**

1. Review plan summary and claims guidelines available on ICBC's intranet to determine what is eligible and what documentation is required.
2. Photocopy your receipts and any other documentation to be sent with your claim.
3. Mail completed claim form with original receipts and other required documentation to the carrier.

# Dental Plan

## The Plan

The purpose of our Dental Care Plan is to provide you and your eligible dependents with protection against the high costs of most dental work performed by a dentist who is a dental surgeon licensed by the College of Dental Surgeons of British Columbia to practice with the Dentistry Act of BC.

If there should be any differences between the wording of this summary and the provisions of the Dental Care Plan Agreements together with subsequent riders to such agreements, the provisions of the Agreements as amended from time to time, shall prevail.

The plan does not pay for duplicate, incomplete, or unsuccessful procedures. All fees are based on the BC Dental Fee Guide with allowances for specialists.

## Eligibility

All full-time regular and part-time regular employees are eligible for coverage. Coverage for you and your eligible dependents will commence on the first day of the month following three months of continuous service. ICBC pays 100% of the cost for this coverage for full-time employees and cost-shares for part-time employees.

## Eligible Dependents

Your legally married spouse or that person with whom you are currently living and have lived in a conjugal relationship for not less than one (1) year, and who is presented as your recognized spouse, your natural or adopted child or step child who is:

- Unmarried,
- Under age 21
- Not employed on a full-time basis ; and,
- Not eligible for insurance under this plan or any other group benefit program.

Your dependents coverage may be continued beyond age 21 provided that they meet all the conditions above and are in full-time attendance at a school or university for a minimum of 10 hours per week or, if they are incapable in engaging in any substantially gainful activity and is dependent upon you for support, maintenance and care, due to a mental or physical disability. A child who is incapacitated on the date he or she reaches age 21 will continue to be an eligible dependent. However the child must have been covered by this plan immediately prior to this date.

A stepchild must be living with you to be eligible.

## Eligible Expenses

The following services are covered under the plan when performed within British Columbia where supporting documentation is provided. This is a summary for information purposes only.

Eligible expense	Guidelines	Maximums
Plan A – Basic Services	Reimbursement at 100%	
Dental Examinations	Recall oral examinations 1 unit scaling and 1 unit polishing Topical fluoride Bitewing x-rays	Every 6 months
	Complete oral examination	1 every 2 calendar years
X –Rays	Full mouth series	1 every 2 calendar years
Fillings	Fillings with amalgam Replacement fillings provided filling is at least 12 months old and is damaged due to breakdown or significant decay	
Extractions		
Routine Diagnostic and Laboratory Procedures	Based on reasonable and customary fees	
Periodontics	Scaling	Combined maximum of 12 units per calendar year
Endontic	Root canals and therapy	Initial treatment plus one re-treatment per tooth per lifetime
Dentures	Full or partial removable dentures Replacement provided (see plan for detail)	
Plan B- Major Restorative	Reimbursement at 70%	
Crowns and Onlays	When the function of a tooth is impaired due to cuspal or incisal angle damage caused by trauma or decay	
Inlays	Provided covering at least 3 surfaces and cap tooth is missing	
Bridges	Fixed bridgework Replacement (see plan booklet)	Does not apply if tooth was missing prior to coverage being in effect
Plan C - Orthodontic	Reimbursement at 50%	
Orthodontic		Life time maximum \$5,000 per person

### Alternative Treatment

Where two or more courses of treatment covered under this benefit would produce professionally adequate results for a given condition, the plan will benefits as if the least expensive course of treatment were used.

## **Exclusions**

- (a) Self inflicted injuries.
- (b) War, insurrection, the hostile action of any armed forces or participation in a riot or civil commotion.
- (c) The committing of or attempt to commit an assault or criminal offense.
- (d) Injuries sustained with operating a motor vehicle while under the influence of any intoxicant, including alcohol.
- (e) Dental care which is cosmetic, unless required because of an accidental injury which occurred while the patient was covered under this benefit.
- (f) Anti-smoring or sleep apnea devises
- (g) Charges for broken appointments, third party examinations, travel to or from appointments, or completion of claim forms.
- (h) Services which are payable by any Government plan.
- (i) Services or supplies for which there would be normally be no charge in the absence of Group Benefit coverage.
- (j) Implants or any services rendered in conjunction with implants.
- (k) Treatment for full mouth reconstruction, for a vertical dimension, or for a correction of temporomandibular joint disfunction.
- (l) Replacement of removable dental appliances which have been lost, mislaid or stolen.
- (m) Laboratory fees or other such fees that exceed reasonable and customary charges.

## **Making a Claim**

Your dentist may elect to submit a claim to the carrier on your behalf and bill you for your portion, or she/he may elect to bill you for the full cost of treatment and require you to submit your own claim for reimbursement to the carrier. Claims should be completed as soon as possible after the dental treatment has been completed.

To avoid any misunderstanding about your claim, you should ask your dentist at the beginning of treatment whether she/he will submit the claim or require you to do so. You should also ask your dentist if her/his fees are in accordance with the fee guide of the College of Dental Surgeons of British Columbia. If they are higher, you will be required to pay the excess cost.

### **Termination of Coverage**

Your coverage and that of your registered dependents, if any, will terminate when your employment terminates. The coverage for a dependent child terminates when that child reaches 21 years of age, **and is not attending school**, or prior thereto on the date that the child marries or is by virtue of her or his own employment entitled to or eligible for dental care coverage.

All coverage ceases on the day this plan is terminated.

# Long Term Disability

## The Plan

These pages provide a general description of the Long Term Disability Plan for the members of the Canadian Office and Professional Employees' Union, Local 378, who are employed by the Insurance Corporation of British Columbia.

The plan which became effective on May 1, 1976 is underwritten by the Cooperators Life Insurance Company through a contract of insurance issued to the trustees of the Canadian Office & Professional Employees' Union, Local 378, Long Term Disability Fund and Plan.

## Eligibility

Eligibility for participation in the plan is determined by the Collective Agreement between the Union and the Corporation.

## Cost

In order that your Long Term Disability benefit payments (if you became disabled) are non-taxable you contribute the full cost of this benefit.

Premiums are deducted from your pay and remitted to the trust by the Corporation.

## Benefits

The plan will provide you with a monthly benefit, before reduction for other income as follows:

75% of the first \$500 of your "monthly earnings", plus 50% of your "monthly earnings" in excess of \$500 to a maximum monthly benefit of \$3,000.

Benefits will be reduced by:

- i) any amounts payable in respect of yourself from the Canada Pension Plan, Workers' Compensation Act or legislation of similar purpose;
- ii) any amount payable under any group insurance, wage continuation or pension plan of your employer that provides disability income; and
- iii) any amount of disability income provided by any compulsory act of law including no fault automobile insurance.

If you or your dependent children receive income as a result of your disability or you receive income from an employer (other than rehabilitation income described below) the total benefits payable under the plan will be reduced by the amount which "total disability income" exceeds 85% of your "net monthly earnings".

## **Commencement and Duration of Benefits**

You are entitled to benefits after the expiration of your sick leave benefits payable by the Corporation on the provision of appropriate medical evidence.

Benefits are payable monthly in arrears. You will receive benefit payments monthly for as long as your disability continues, but not beyond your 65th birthday.

Long term disability benefits will be payable for the first two years following expiration of your sick leave benefits payable by the Corporation if you are unable as a result of bodily injury or sickness to engage in your normal occupation. After two years, benefits will continue as long as your disability prevents you from engaging in any occupation or employment for wages or compensation for which you are or can reasonably become qualified by education, training or experience.

## **Rehabilitation**

As an incentive to encourage you to return to gainful employment prior to a full recovery after disability, the rehabilitation benefit permits you to perform certain work while you are still receiving disability benefits under the plan. The treatment of rehabilitative earnings differs depending on whether rehabilitative employment is secured with the Corporation or with another employer.

If rehabilitative employment is secured with the Corporation, your monthly benefit shall only be reduced by the excess that your "net rehabilitative earnings" plus the benefit otherwise payable under the plan exceed:

- i) 100% of your "net monthly earnings" if you return to work part-time; or
- ii) 100% of your "net monthly earnings" if you return to work full-time at a lower rate of monthly earnings.

If rehabilitative employment is secured with another employer your monthly benefit shall be reduced by 50% of "net rehabilitative earnings" with an overall limitation that benefits otherwise payable under the plan plus "net rehabilitative earnings" cannot exceed 100% of your "net monthly earnings".

## **Pre-Existing Conditions**

No monthly benefit shall be payable under this provision for any period of total disability which was caused by or resulting directly or indirectly from a pre-existing condition, unless you have not required treatment, medication or medical advice for a period of ninety (90) days while insured under this policy, or unless you have been insured under this policy for at least 12 months and have not been absent from work due to the pre-existing condition for at least 12 months. Time away from work up to 10 cumulative working days during the 12 month period will be interpreted as not being absent from work.

## **Leaves of Absence, Strikes or Lock-Outs**

Long term disability benefits will not commence being paid:

i) while you are on leave of absence including an approved pregnancy leave of absence except while on a leave of absence to serve as an employee of the Union.

ii) while you are on strike or are locked-out by the Corporation except when you are disabled prior to 12:01 a.m. on the date that such strike or lock-out commences.

### **How to Submit a Claim**

It is your responsibility to make a claim for Long Term Disability benefits.

Have your doctor complete the physician's statement claim form. Charges for obtaining the completed form are your responsibility.

Complete the employee's statement.

Forward all completed forms to the Cooperators. You will be provided with the complete mailing address when you are provided with the forms.

These pages are intended as a general description of the provision of the Long Term Disability Plan.

All provisions of the plan are subject to the terms and conditions of the plan document that shall govern in the event of a conflict with this description. A copy of the plan document can be obtained from the Union office.

### **Provisions/Limitations/Definitions**

To qualify for Long Term Disability benefits you must be under the care of a physician.

While you are receiving benefits, you are not required to pay Long Term Disability premiums.

No benefits will be payable for disability caused or resulting from:

- i) Intentionally self-inflicted bodily injury or sickness, while sane or insane.
- ii) Participation in a rebellion, riot or insurrection, disorderly conduct or participation in an unlawful assembly, war, whether war has been declared or not, or by full or part-time service in any armed forces.
- iii) Flying or air travel, except when flying or traveling as a passenger in an aircraft for which a certificate of airworthiness has been issued by the appropriate Government authority and which is operated by a properly licenced pilot.
- iv) Participation in or consequence of having participated in the commission of an offence under the Criminal Code of Canada or any other act of parliament or provincial statute or a similar offence under the laws of any other country.

v) Addictive non-medical consumption of drugs or alcohol unless you are under the care of a physician and following an approved course of treatment or are institutionalized for the condition.

vi) Normal termination of a pregnancy.

"Monthly Earnings" means your basic monthly earnings at the date of your disability exclusive of overtime, bonuses and commissions. For part-time employees, your "Monthly Earnings" are calculated as the average earnings over the six month period prior to your disability.

"Total Disability Income" does not include any benefit payable from a personal insurance policy (other than no fault automobile insurance), any disability benefit you were receiving prior to becoming disabled under this plan, or any cost of living or similar adjustments in benefits payable under the Canada Pension Plan or Workers' Compensation Act.

"Net Monthly Earnings" means your "Monthly Earnings" at the date of your disability reduced by compulsory statutory or Government deductions including income tax.

"Net Rehabilitative Earnings" means your earnings from rehabilitative employment reduced by compulsory statutory or Government deductions including income tax.

# Life Insurance

## The Plan

The purpose of this plan is to provide you and your dependents with financial security in the event that one of you should die.

## Basic Life Insurance

### Cost

The premiums are paid by ICBC for all full-time regular employees. ICBC cost shares the premium for all part-time regular employees. The premium paid by ICBC on your behalf is a taxable benefit.

## Basic Coverage (Mandatory)

(a) On your life

Life insurance equal to your regular annual salary rounded to the next higher multiple of \$1,000 if not an even multiple of \$1,000, times two (2).

(b) On the Lives of Your Dependents

On your spouse - life insurance equal to 50% of your basic life insurance.

On your dependent children - life insurance equal to 5% of your basic life insurance for each dependent child (minimum \$2,000 each).

## Eligible Dependents

Your legally married spouse or that person with whom you are currently living and have lived in a conjugal relationship for not less than one (1) year, and who is presented as your recognized spouse.

Your natural or adopted child or step child who is:

- Unmarried,
- Under age 21
- Not employed on a full-time basis ; and,
- Not eligible for insurance under this plan or any other group benefit program.

Your dependents coverage may be continued beyond age 21 provided that they meet all the conditions above and are in full-time attendance at a school or university for a minimum of 10 hours per week.

A stepchild must be living with you to be eligible.

## Voluntary Life Insurance (Optional)

This is term insurance on your life only which may be purchased by you in amounts equal to once, twice or three times your regular annual salary which has been rounded to the next higher multiple of \$1,000, if not an even multiple of \$1,000. Premiums are payable by you and are based on your age and whether or not you are

a smoker. Current rates can be obtained on ICBC's intranet or through employee benefits.

### **Disability Premium Waiver**

If while insured you become totally disabled, before attaining age 65, your group life insurance and that of your eligible dependents shall be continued for the amount then in effect during the period of your disability.

### **Conversion**

You may apply, during the 31-day period following termination of employment, for an individual policy of life insurance in an amount up to the amount of life insurance in force on your life and that of your spouse at the date of termination to a combined maximum of \$200,000. Dependent children's life insurance cannot be converted.

If there are any variances between these details and the provision of the policy, the latter shall govern.

# Accidental Death and Dismemberment Insurance Plan

## The Plan

The purpose of this plan is to provide you and your dependents with financial security in the event that one of you should die or suffer accidental dismemberment. Insurance is payable in the event of your death or dismemberment as a result of external, violent or accidental means.

## Coverage

You may purchase this insurance in multiples of \$40,000 (minimum \$40,000; maximum \$480,000) to cover you alone **or** you and all of your dependents. Your spouse's coverage is 50% of your coverage if you have no dependent children and 40% if you have dependent children. Each dependent child is covered for 5% of your coverage. You may insure yourself without insuring your dependents, but you cannot insure your dependents without insuring yourself and you cannot insure one dependent without insuring all dependents.

## Cost

The plan is voluntary and therefore you are responsible for the premiums. Current premium rates can be obtained on ICBC's intranet or from employee benefits.

## Benefits Payable

<b>Loss</b>	<b>Percentage of amount insured</b>
Life	100%
Both Hands	100%
Both Feet	100%
Sight of Both Eyes	100%
One Hand and One Foot	100%
One Hand and Sight of One Eye	100%
One Foot and Sight of One Eye	100%
Speech and Hearing	100%
One Arm	75%
One Leg	75%
One Hand	67%
One Foot	67%
Sight of One Eye	67%
Speech or Hearing	50%
Thumb and Index Finger of Either Hand	33%

## Hearing in One Ear

17%

The plan covers total and permanent loss of use as well as the actual severance of a limb or extremity.

The death or loss must occur within 365 days after the date of sustaining such injury.

If an insured individual sustains more than one loss as a result of any one accident, payment shall be made for that one loss for which the largest amount is payable.

Loss of sight, hearing or speech must be entire and irrecoverable.

### **Additional Benefits**

#### ***Common Disaster Benefit***

If you and your spouse are both fatally injured in the same accident, your spouse's insurance amount will be increased to match yours.

#### ***Day Care Benefit***

In the event of your death, the plan will reimburse up to \$5,000 per year for each eligible dependent child that attends a legally licensed day care centre.

#### ***Education Benefit***

In the event of your death, the plan will pay toward the cost of your dependent child's education, up to 2% of the amount of your insurance.

#### ***Family Transportation Benefit***

If you or your insured dependent are confined to a hospital which is at least 150 km from your normal residence, the plan will pay up to \$10,000 for the transportation and lodging of your immediate family.

#### ***Occupational Training Benefit***

In the event of your death, the plan will pay up to \$10,000 for your insured spouse to be trained in a gainful occupation.

#### ***Double Up Benefits for Paralysis***

This plan will double up your benefits if an accident results in quadriplegia, paraplegia or hemiplegia.

In the event of accidental death, payment of the accidental death and dismemberment benefit is made in addition to any payment under group life insurance.

### **Exceptions and Limitations**

The accidental death and dismemberment benefit is not payable for any loss which results from or is caused directly or indirectly by any of the following:

Suicide or intentionally self-inflicted injury, while sane or insane.

The insured individual's commission of, or attempt to commit, an assault or any criminal offence.

Insurrection or war, whether or not war be declared, any act incident to such insurrection or war, or participation in any riot.

Travel or flight in any aircraft, or descent from such aircraft, if the insured individual is a pilot or other member of the crew of the aircraft, or if such flight is made for purposes of instruction, training or testing.

Illness or disease of any kind, or medical or surgical treatment thereof, or any infection other than septic infection caused through a visible wound accidentally sustained.

Intentional use of drugs.

### **Disability Premium Waiver**

If while insured you become totally disabled, before attaining age 65, your accidental death and dismemberment and that of your eligible dependents shall be continued for the amount then in effect during the period of your disability.

### **Conversion**

You may apply, during the 31-day period following termination of employment, for an individual policy in an amount up to the amount of accidental death and dismemberment insurance in force on you and your spouse at the date of termination. Dependent children's insurance cannot be converted.

If there are any variances between these details and the provision of the policy, the latter shall govern.

# Travel Accident Insurance

## The plan

This plan insures all full-time and part-time regular employees against death or injury sustained while traveling on company business anywhere in the world. Such trip starts when you leave your residence or place of regular employment to go on the trip, whichever last occurs, and continues until such time as you return to your residence or place of regular employment, whichever first occurs. Coverage is extended to include incidental personal travel made in connection with a trip on company business. Coverage does not extend to travel on vacation (except when incidental to a business trip) or leave of absence and to travel to and from work.

## Benefits

The premiums are fully paid by ICBC. The extent of your coverage is as follows:

Loss of Life	\$150,000
Loss of Both Hands	150,000
Loss of Both Feet	150,000
Loss of Entire Sight of Both Eyes	150,000
Loss of One Hand and One Foot	150,000
Loss of One Hand and the Entire Sight of One Eye	150,000
Loss of One Foot and the Entire Sight of One Eye	150,000
Loss of One Arm	112,500
Loss of One Leg	112,500
Loss of One Hand	75,000
Loss of One Foot	75,000
Loss of the Entire Sight of One Eye	75,000
Loss of Thumb and Index Finger	37,500
Loss of Use of Both Hands	150,000
Loss of Use of Both Arms	150,000
Loss of Use of One Arm	112,500
Loss of Use of One Hand	75,000
Loss of Speech or Hearing	75,000
Loss of Speech and Hearing	150,000
Quadruplegia (Total Paralysis of Both Upper and Lower Limbs)	150,000
Paraplegia (Total Paralysis of Both Lower Limbs)	112,500
Hemiplegia (Total Paralysis of Upper and Lower Limbs of One Side of the Body)	75,000

"Loss of use" as above used with reference to hands and arms means total and irrecoverable loss of use thereof and must be continuous for twelve months.

"Loss" as above used with reference to speech means complete and irrecoverable loss of the ability to utter intelligible sounds; as used with reference to hearing means complete and irrecoverable loss of hearing in both ears.

"Loss" as above used with reference to quadriplegic, paraplegia and hemiplegia means the complete and irreversible paralysis of such limbs.

The total payable to all persons killed or injured as a result of any one accident is limited to \$1,000,000 and in the event that total claims from any one accident exceed \$1,000,000, the amount payable for each insured person is in the proportion that \$1,000,000 bears to the total amount of insurance that would have been payable had this limit not existed.

This travel accident insurance is over and above any group life or accidental death and dismemberment coverage that you might already have. You are automatically enrolled in the plan by virtue of your position as an employee of the Corporation.

Any benefits payable under this policy as a result of accidental death shall be payable to your estate. All other benefits shall be payable to you as the insured employee.

**2012.1 RR BCUC.81.1-2 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-17**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation Level Changes**

**81.1 Please confirm if the data contained in the following table is accurate, otherwise please update. Please complete the following table. If figures need to be revised from information filed in previous ICBC proceedings, please explain the reason for those adjustments.**

Table - COMPENSATION LEVEL CHANGES

Line #	EMPLOYEE GROUP	2006		2007		2008		2009		2010		2011 Outlook		2012 Forecast	
		\$	FTE #	\$	FTE #	\$	FTE #								
1	M&C Average Salary	\$ 117	838	\$ 120	855	\$ 126	890	\$ 128	972	\$ 139	968	\$ 135	1070	\$ 135	1086
2	M&C - higher than average salary	29%	22%	32%	23%	30%	22%	34%	25%						
3	M&C - Lower than average salary	71%	78%	68%	77%	70%	78%	66%	75%						
4	Bargaining Unit (BU) Average Salary	\$ 63	4083	\$ 65	4092	\$ 68	4044	\$ 69	4009	\$ 69	3961	\$ 69	3938	\$ 71	3929
5	BU - higher than average salary														
6	BU - Lower than average salary														

Note: Information filled in was provided in ICBC 2010 RRA Exhibit B-6 Response to IR BCUC.30.4

(\$ Millions)

Line #	EMPLOYEE GROUP	2006		2007		2008		2009		2010		2011 Outlook		2012 Forecast	
		\$	FTE #	\$	FTE #	\$	FTE #								
7	BU	\$ 259	4083	\$ 264	4092	\$ 273	4044	\$ 275	4009	\$ 273	3961	\$ 272	3938	\$ 278	3929
8	M&C	\$ 98	838	\$ 103	855	\$ 112	890	\$ 124	972	\$ 135	968	\$ 144	1070	\$ 147	1086
9	Other	-\$ 5	44	-\$ 7	58	-\$ 7	73	-\$ 10	85	-\$ 6	52	-\$ 7	74	-\$ 9	59
10	Total	\$ 352	4965	\$ 360	5005	\$ 378	5007	\$ 389	5066	\$ 402	4981	\$ 409	5082	\$ 416	5074

**81.2 Please review the trend and provide a rationale to indicate what (based on 2006 to 2009) would appear to be a trend of more managers receiving a higher than average salary.**

**Response:**

**81.1**

In the 2010 Streamlined Revenue Requirements Proceeding, in response to information request 2010.1 RR BCUC.30.4, ICBC provided the Commission with a table showing Management and Confidential average salary percentages for years 2006 to 2009. At that time, ICBC indicated that in order to calculate the average salary threshold, actual salary data at an individual level must be used. As such, "average salary" differs from "average compensation" in that it excludes actual employee benefit costs, which are managed and tracked corporately and are not allocated to the individual employee level.

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Please see Attachment A – Commission Table – Compensation Level Changes. The top section of the table shows Management and Confidential and Bargaining Unit average salary both lower and higher than the average threshold. Information for 2010 actual is available and therefore included. Information for 2011 outlook and 2012 forecast is not currently available. This table has been updated and is a close proxy to the information requested.

**81.2**

As shown in Attachment A, based on 2010 information, 20% of Management and Confidential employees received higher than average salary. These salary amounts accounted for 30% of total overall Management and Confidential salary costs. This is a decrease from 2009 actual results and is more similar with 2008.

ICBC does not believe that there is a specific trend of more managers receiving a higher than average salary. ICBC’s Management and Confidential salary structure is based on established salary ranges. Within each range individual employees will progress through the salary range based on their individual performance. The Management and Confidential compensation plan for ICBC is governed by ICBC’s Board of Directors and the Public Sector Employers’ Council (PSEC).

For the 2006 to 2010 period, performance-based Management and Confidential wage adjustments within the wage budget were approved by ICBC’s Board of Directors on an annual basis. ICBC’s relatively strong annual financial performance during this period also influenced the level of performance-based incentive pay for Management and Confidential employees.



# **2012.1 RR BCUC.81.1-2 – Attachment A – Commission Table – Compensation Level Changes**

**Table - COMPENSATION LEVEL CHANGES**

Line #	EMPLOYEE GROUP	2006		2007		2008		2009		2010		2011 Outlook *		2012 Forecast *	
		\$ %	FTE %	\$ %	FTE %	\$ %	FTE %								
1	M&C														
2	M&C - higher than average salary	29%	22%	32%	23%	30%	22%	34%	25%	30%	20%	n/a	n/a	n/a	n/a
3	M&C - Lower than average salary	71%	78%	68%	77%	70%	78%	66%	75%	70%	80%	n/a	n/a	n/a	n/a
4	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	n/a	n/a	n/a	n/a
5	Bargaining Unit (BU)														
6	BU - higher than average salary	54%	46%	54%	45%	51%	43%	54%	46%	56%	47%	n/a	n/a	n/a	n/a
7	BU - Lower than average salary	46%	54%	46%	55%	49%	57%	46%	54%	44%	53%	n/a	n/a	n/a	n/a
8	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	n/a	n/a	n/a	n/a

Note: Information filled in was provided in ICBC 2010 RRA Exhibit B-6 Response to IR BCUC .30.4

Average Compensation for ICBC Employees (Figure 7.8, page 7-17, Section D.2.1.3, Chapter 7, Revenue Requirements Application for the 2012 Policy Year)																	
Line #	EMPLOYEE GROUP	2006		2007		2008		2009		2010		2011 Outlook		2012 Forecast		% Change since 2006	Avg % Change since 2006
		\$	FTE #	\$	FTE #	\$	FTE #										
9	BU	\$ 259	4,083	\$ 264	4,092	\$ 273	4,044	\$ 275	4,009	\$ 273	3,961	\$ 272	3,938	\$ 278	3,929		
10	M&C	\$ 98	838	\$ 103	855	\$ 112	890	\$ 124	972	\$ 135	968	\$ 144	1,070	\$ 147	1,086		
11	Total ICBC - Compensation & FTEs	\$ 357	4,921	\$ 367	4,947	\$ 385	4,934	\$ 399	4,981	\$ 408	4,929	\$ 416	5,008	\$ 425	5,015		
	<b>(\$ Thousands)</b>																
12	Average Compensation per BU FTE	\$ 63		\$ 65		\$ 68		\$ 69		\$ 69		\$ 69		\$ 71		11.5%	1.92%
13	Average Compensation per M&C FTE	\$ 117		\$ 120		\$ 126		\$ 128		\$ 139		\$ 135		\$ 135		15.7%	2.62%
14	Average Compensation per ICBC FTE	\$ 73		\$ 74		\$ 78		\$ 80		\$ 83		\$ 83		\$ 85		16.8%	2.80%

\* Higher/lower than average salary is calculated using actual salary data at an individual level. Thus, information for 2011 outlook and 2012 forecast not available currently. Rounding may affect percentages.

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**2012.1 RR BCUC.81.3-5 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-17**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Compensation Level Changes**

**81.3 Would ICBC confirm that from 2006 to 2012 the M&C average salary increased by 15.7% or 2.62% per annum?**

**81.4 Would ICBC also confirm that from 2006 to 2012 compensation for the BU group has increased by 11.7% or 1.95% per annum?**

**81.5 Would ICBC confirm that the average compensation for the 1082 M&C employees forecast for 2012 is \$135,400 and that average compensation for BU employees is \$70,800?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.81.1-2, Attachment A – Commission Table – Compensation Level Changes.

**81.3**

ICBC confirms that from 2006 to 2012, Management and Confidential average compensation (inclusive of salary and employee benefits) increased by 15.7% or 2.62% per annum. The compensation increase for Management and Confidential employees during this period reflects ICBC's adoption of a labour market position for total compensation based on the markets in which ICBC competes for talent, and a change in the employee mix, with additional managers hired to address span of control, improve claims handling quality, and manage risk effectively.

**81.4**

ICBC calculates that from 2006 to 2012, Bargaining Unit average compensation (inclusive of salary and employee benefits) increased by 11.5% or 1.92% per annum. The increase in Bargaining Unit employee salaries and performance-based incentive pay was in keeping with the terms of the ICBC Collective Agreement 2006 to 2010 with COPE 378.

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## 81.5

For the 2012 forecast period, ICBC expects average compensation to reflect a modest increase due to length-of-service and in-range performance-based wage adjustments, and performance-based incentive pay performance targets to be met for both groups of ICBC employees. As per the Application, Chapter 7, Figure 7.8, average compensation per ICBC FTE is expected to be \$84,746 for 2012 forecast, with Management and Confidential average compensation calculated as approximately \$135,000 and Bargaining Unit average compensation as approximately \$71,000.

For a discussion of Management and Confidential and Bargaining Unit compensation changes in the 2007 to 2012 forecast period, please refer to the response to information request 2012.1 RR BCUC.77.0-1.

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**2012.1 RR BCUC.81.6 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-17  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Compensation Level Changes**

**Please provide the actual compensation for each of ICBC's top 5 paid executives as provided in ICBC's 2010 Streamlined Revenue Requirements Application, Exhibit B-6 2010.1 RR BCUC.30.6.**

**Response:**

Please see Attachment A – Top Five Executive Compensation 2006 to Forecast 2011.



# **2012.1 RR BCUC.81.6 – Attachment A – Top Five Executive Compensation 2006 to Forecast 2011**

**Actual Compensation - Top 5 Executives**  
(2006 - forecast 2011)

2006	Base Salary	Hiring Incentive	Incentive <sup>1</sup>	Long Term Incentive <sup>2</sup>	Pension <sup>3</sup>	Health & Wellness Benefits <sup>4</sup>	All Other Compensation <sup>5</sup>	Total
<b>Paul Taylor</b> President & CEO	\$300,000		\$68,250	\$47,514	\$44,400	\$7,232	\$21,580	\$488,976
<b>Geri Prior</b> Chief Financial Officer	\$180,600		\$61,995		\$23,100	\$7,400	\$16,546	\$289,641
<b>Donnie Wing</b> Sr VP Insurance, Marketing & Underwriting	\$175,440		\$55,055		\$22,800	\$7,311	\$24,405	\$285,011
<b>Keith Stewart</b> Vice President Information Services	\$175,440		\$55,055		\$22,800	\$7,283	\$25,129	\$285,707
<b>Camille Minogue</b> Chief Actuary	\$226,000		\$58,800		\$0 <sup>6</sup>	\$6,933	\$20,533	\$312,266

2007	Base Salary	Hiring Incentive	Incentive <sup>1</sup>	Long Term Incentive <sup>2</sup>	Pension <sup>3</sup>	Health & Wellness Benefits <sup>4</sup>	All Other Compensation <sup>5</sup>	Total
<b>Paul Taylor</b> President & CEO	\$300,000		\$77,062	\$73,202	\$45,100	\$7,809	\$21,586	\$524,759
<b>Geri Prior</b> Chief Financial Officer	\$260,600		\$119,713		\$37,100	\$8,147	\$31,530	\$457,091
<b>Donnie Wing</b> Sr VP Insurance, Marketing & Underwriting	\$224,300		\$103,038		\$30,300	\$8,073	\$21,556	\$387,267
<b>Keith Stewart</b> Vice President Information Services	\$210,400		\$96,653		\$29,100	\$8,023	\$28,572	\$372,748
<b>Camille Minogue</b> Chief Actuary	\$226,000		\$87,801		\$27,400	\$7,570	\$19,223	\$367,993

2008	Base Salary	Hiring Incentive	Incentive <sup>1</sup>	Long Term Incentive <sup>2</sup>	Pension <sup>3</sup>	Health & Wellness Benefits <sup>4</sup>	All Other Compensation <sup>5</sup>	Total
<b>Jon Schubert</b> <sup>a</sup> President & CEO	\$44,423	\$40,000	\$11,661		\$3,700	\$798	\$3,128	\$103,710
<b>Paul Taylor</b> <sup>b</sup> President & CEO	\$103,846		\$0		\$16,000	\$2,717	\$17,545	\$140,109
<b>Geri Prior</b> <sup>c</sup> Chief Financial Officer	\$287,413		\$130,019		\$41,600	\$8,638	\$22,140	\$489,810
<b>Donnie Wing</b> <sup>d</sup> Sr VP Insurance, Marketing & Underwriting	\$248,140		\$90,540		\$33,700	\$8,457	\$30,635	\$411,472
<b>Craig Horton</b> <sup>e</sup> Sr VP Claims	\$246,755	\$15,000	\$98,671		\$38,800	\$5,201	\$22,182	\$426,609
<b>Camille Minogue</b> Chief Actuary/VP Business Intel Competency Ctr	\$238,053		\$79,486		\$30,800	\$7,734	\$20,128	\$376,201

**Notes**

- a. Jon Schubert joined ICBC on November 15, 2008  
b. Paul Taylor left ICBC on May 2, 2008  
c. Geri Prior acted as Interim CEO from May 2, 2008 to November 14, 2008  
d. Donnie Wing acted as Chief Financial Officer from May 2, 2008 to November 14, 2008  
e. Craig Horton joined ICBC on August 16, 2007

2009	Base Salary	Hiring Incentive	Incentive <sup>1</sup>	Long Term Incentive <sup>2</sup>	Pension <sup>3</sup>	Health & Wellness Benefits <sup>4</sup>	All Other Compensation <sup>5</sup>	Total
<b>Jon Schubert</b> President & CEO	\$330,000		\$115,500		\$49,170	\$9,198	\$3,438	\$507,306
<b>Geri Prior</b> Chief Financial Officer	\$288,811		\$145,308		\$43,033	\$10,003	\$27,835	\$514,990
<b>Craig Horton</b> Sr VP Claims	\$261,429		\$122,382		\$38,953	\$7,278	\$22,277	\$452,319
<b>Camille Minogue</b> Chief Actuary/VP Business Intel Competency Ctr	\$245,118		\$91,797		\$36,523	\$8,962	\$20,184	\$402,584
<b>Donnie Wing</b> Sr VP Insurance, Marketing & Underwriting	\$241,519		\$100,381		\$35,986	\$9,632	\$22,328	\$409,846

2010	Base Salary	Hiring Incentive	Incentive <sup>1</sup>	Long Term Incentive <sup>2</sup>	Pension <sup>3</sup>	Health & Wellness Benefits <sup>4</sup>	All Other Compensation <sup>5</sup>	Total
<b>Jon Schubert</b> President & CEO	\$330,000		\$115,500		\$61,479	\$11,275	\$3,923	\$522,178
<b>Geri Prior</b> Chief Financial Officer	\$294,711		\$135,228		\$59,332	\$13,592	\$19,915	\$522,777
<b>Keith Stewart</b> <sup>f</sup> Chief Information Officer (up to Jan 13, 2010)	\$11,335				\$1,564	\$7,958	\$477,907	\$498,764
<b>Ward Chapin</b> <sup>g</sup> Chief Information Officer	\$103,942		\$104,087		\$28,708	\$4,788	\$10,841	\$252,366
<b>Craig Horton</b> Sr VP Claims	\$261,600		\$129,741		\$54,005	\$7,756	\$22,423	\$475,524
<b>Donnie Wing</b> SVP Corporate Affairs	\$241,600		\$109,590		\$48,464	\$12,465	\$29,202	\$441,321

**Notes**

- f. Keith Stewart earned \$11,335 in salary and another \$477,907 in 'other' compensation, which includes salary continuance for 11 months of \$202K, severance of \$68K and \$188K in vacation pay and paid time off earned between 1990 and 2002.  
The paid time off program was eliminated in 2003 and those employees who had time off banked were permitted to keep it.  
g. Ward Chapin joined ICBC on June 14, 2010, replacing Keith Stewart.

2011 (forecast) <sup>h</sup>	Base Salary	Hiring Incentive	Incentive <sup>1</sup>	Long Term Incentive <sup>2</sup>	Pension <sup>3</sup>	Health & Wellness Benefits <sup>4</sup>	All Other Compensation <sup>5</sup>	Total
<b>Jon Schubert</b> President & CEO	\$330,000				\$61,479	\$11,275	\$3,923	\$406,677
<b>Geri Prior</b> Chief Financial Officer	\$294,800				\$59,332	\$13,592	\$19,915	\$387,639
<b>Craig Horton</b> Sr VP Claims	\$274,448				\$54,005	\$7,756	\$22,423	\$358,632
<b>Camille Minogue</b> Chief Actuary/VP Business Intel Competency Ctr	\$252,600				\$47,633	\$8,837	\$20,258	\$329,328
<b>Mark Blucher</b> SVP Insurance	\$251,087				\$46,332	\$6,765	\$27,620	\$331,804

**Notes**

- h. 2011 estimates for pension and benefits are based on 2010 numbers.

**Notes**

- 1 Dollar value of all amounts paid under the Short Term Incentive Plan (STIP) in recognition of performance in the fiscal year specified but paid in the following fiscal year. For 2011, STIP is still to be determined.  
2 Long Term Incentive Plan applied exclusively to previous CEO.  
3 Current service cost for contributory defined benefit pension plan and the supplemental employee retirement plan (SERP)  
4 The dollar value of employer contributions to non-statutory benefits, such as Extended Health, Dental, Group Life.  
5 All other compensation not reported elsewhere, including:  
- Perquisite allowance  
- Dollar value of statutory employer contribution such as CPP, EI, and WorkSafeBC  
- Vacation or leave payout  
6 The 2006 pension expenses for Camille Minogue is not available on the same basis as the other executives

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**2012.1 RR BCUC.81.7 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-17  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Compensation Level Changes**

**If the average compensation of the 5 executives increased by more than inflation, please provide further explanation on why the increase is warranted and what actions are taken to lessen the impact of Executive compensation on the Basic Insurance rate payers. Please ensure that this response is at the individual executive level and in the format provide in ICBC's 2010 Streamlined Revenue Requirements Application, Exhibit B-6 2010.1 RR BCUC.30.6.1.**

**Response:**

ICBC's executive compensation plan includes a base salary package as well as an at-risk element designed to:

- 1) Reward outstanding performance.
- 2) Attract and retain hard-to-recruit executive positions.
- 3) Ensure market competitiveness.

In 2007, ICBC moved to a performance-based compensation system, and adopted a specific market position of the median (P50) of the Government/Canadian general industry/Insurance industry market for both base salary and the short-term incentive plan. This market position was the result of a compensation review first discussed as part of the 2006 Revenue Requirements proceeding and approved by Public Sector Employers' Council (PSEC) and government in 2007.

Since then, ICBC's compensation increases have been in accordance with its compensation plan as approved by its Board of Directors and PSEC.

Operating expenses and salaries are not contributing to the proposed Basic insurance rate increase. ICBC is committed to containing operating expense increases below the level of inflation.

Please see Attachment A – Top Five Executive Increase 2006 to 2010 for explanations.



## **2012.1 RR BCUC.81.7 – Attachment A – Top Five Executive Increase 2006 to 2010**

<b>Jon Schubert</b>	<b>Base Salary</b>	<b>Hiring Incentive</b>	<b>Incentive <sup>1</sup></b>	<b>Long Term Incentive <sup>2</sup></b>	<b>Pension <sup>3</sup></b>	<b>Health &amp; Wellness Benefits <sup>4</sup></b>	<b>All Other Compensation <sup>5</sup></b>	<b>Total</b>
2006								
2007								
2008	\$44,423	\$40,000	\$11,661	\$0	\$3,700	\$798	\$3,128	\$103,710
2009	\$330,000	\$0	\$115,500	\$0	\$49,170	\$9,198	\$3,438	\$507,306
2010	\$330,000	\$0	\$115,500	\$0	\$61,479	\$11,275	\$3,923	\$522,178

<b>Paul Taylor</b>	<b>Base Salary</b>	<b>Hiring Incentive</b>	<b>Incentive <sup>1</sup></b>	<b>Long Term Incentive <sup>2</sup></b>	<b>Pension <sup>3</sup></b>	<b>Health &amp; Wellness Benefits <sup>4</sup></b>	<b>All Other Compensation <sup>5</sup></b>	<b>Total</b>
2006	\$300,000	\$0	\$68,250	\$47,514	\$44,400	\$7,232	\$21,580	\$488,976
2007	\$300,000	\$0	\$77,062	\$73,202	\$45,100	\$7,809	\$21,586	\$524,759
2008	\$103,846	\$0	\$0	\$0	\$16,000	\$2,717	\$17,545	\$140,109
2009								
2010								

<b>Geri Prior</b>	<b>Base Salary</b>	<b>Hiring Incentive</b>	<b>Incentive <sup>1</sup></b>	<b>Long Term Incentive <sup>2</sup></b>	<b>Pension <sup>3</sup></b>	<b>Health &amp; Wellness Benefits <sup>4</sup></b>	<b>All Other Compensation <sup>5</sup></b>	<b>Total</b>
2006	\$180,600	\$0	\$61,995	\$0	\$23,100	\$7,400	\$16,546	\$289,641
2007	\$260,600	\$0	\$119,713	\$0	\$37,100	\$8,147	\$31,530	\$457,091
2008	\$287,413	\$0	\$130,019	\$0	\$41,600	\$8,638	\$22,140	\$489,810
2009	\$288,811	\$0	\$145,308	\$0	\$43,033	\$10,003	\$27,835	\$514,990
2010	\$294,711	\$0	\$135,228	\$0	\$59,332	\$13,592	\$19,915	\$522,777

<b>Keith Stewart</b>	<b>Base Salary</b>	<b>Hiring Incentive</b>	<b>Incentive <sup>1</sup></b>	<b>Long Term Incentive <sup>2</sup></b>	<b>Pension <sup>3</sup></b>	<b>Health &amp; Wellness Benefits <sup>4</sup></b>	<b>All Other Compensation <sup>5</sup></b>	<b>Total</b>
2006	\$175,440		\$55,055		\$22,800	\$7,283	\$25,129	\$285,707
2007	\$210,400		\$96,653		\$29,100	\$8,023	\$28,572	\$372,748
2008								
2009								
2010	\$11,335				\$1,564	\$7,958	\$477,907	\$498,764

<b>Craig Horton</b>	<b>Base Salary</b>	<b>Hiring Incentive</b>	<b>Incentive <sup>1</sup></b>	<b>Long Term Incentive <sup>2</sup></b>	<b>Pension <sup>3</sup></b>	<b>Health &amp; Wellness Benefits <sup>4</sup></b>	<b>All Other Compensation <sup>5</sup></b>	<b>Total</b>
2006								
2007								
2008	\$246,755	\$15,000	\$98,671	\$0	\$38,800	\$5,201	\$22,182	\$426,609
2009	\$261,429	\$0	\$122,382	\$0	\$38,953	\$7,278	\$22,277	\$452,319
2010	\$261,600	\$0	\$129,741	\$0	\$54,005	\$7,756	\$22,423	\$475,524

<b>Camille Minogue</b>	<b>Base Salary</b>	<b>Hiring Incentive</b>	<b>Incentive <sup>1</sup></b>	<b>Long Term Incentive <sup>2</sup></b>	<b>Pension <sup>3</sup></b>	<b>Health &amp; Wellness Benefits <sup>4</sup></b>	<b>All Other Compensation <sup>5</sup></b>	<b>Total</b>
2006	\$226,000	\$0	\$58,800	\$0	\$0	\$6,933	\$20,533	\$312,266
2007	\$226,000	\$0	\$87,801	\$0	\$27,400	\$7,570	\$19,223	\$367,993
2008	\$238,053	\$0	\$79,486	\$0	\$30,800	\$7,734	\$20,128	\$376,201
2009	\$245,118	\$0	\$91,797	\$0	\$36,523	\$8,962	\$20,184	\$402,584
2010								

<b>Donnie Wing</b>	<b>Base Salary</b>	<b>Hiring Incentive</b>	<b>Incentive <sup>1</sup></b>	<b>Long Term Incentive <sup>2</sup></b>	<b>Pension <sup>3</sup></b>	<b>Health &amp; Wellness Benefits <sup>4</sup></b>	<b>All Other Compensation <sup>5</sup></b>	<b>Total</b>
2006	\$175,440	\$0	\$55,055	\$0	\$22,800	\$7,311	\$24,405	\$285,011
2007	\$224,300	\$0	\$103,038	\$0	\$30,300	\$8,073	\$21,556	\$387,267
2008	\$248,140	\$0	\$90,540	\$0	\$33,700	\$8,457	\$30,635	\$411,472
2009	\$241,519	\$0	\$100,381	\$0	\$35,986	\$9,632	\$22,328	\$409,846
2010	\$241,600	\$0	\$109,590	\$0	\$48,464	\$12,465	\$29,202	\$441,321

**Higher than average salary is caused by the following factors:**

- i. market review
- ii. higher salary increase and incentive payment to recognize outstanding performance
- iii. higher salary increase to address risk of flight (retention)
- iv. expansion of responsibilities / acting assignments
- v. higher salary increase to address salary inversion
- vi. staggered payment from long term incentive plan
- vii. joining ICBC midyear, payment prorated.

**Notes**

- 1 Dollar value of all amounts paid under the Short Term Incentive Plan (STIP) in recognition of performance in the fiscal year specified but paid in the following fiscal year.
- 2 Long Term Incentive Plan applied exclusively to previous CEO.
- 3 Current service cost for contributory defined benefit pension plan and the supplemental employee retirement plan (SERP)
- 4 The dollar value of employer contributions to non-statutory benefits, such as Extended Health, Dental, Group Life.
- 5 All other compensation not reported elsewhere, including:
  - Perquisite allowance
  - Dollar value of statutory employer contribution such as CPP, EI, and WorkSafeBC
  - Vacation or leave payout

**2012.1 RR BCUC.81.8 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-17**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation Level Changes**

Please provide total compensation by division and by employee groups for 2007 to 2010 actual, 2011 Outlook and 2012 Forecast using the following table template, referred to as Compensation and Expenses by Employee Group. If the following table is not appropriate, please provide an appropriate table that presents the information.

Table - COMPENSATION AND EXPENSES BY EMPLOYEE GROUP

Line #	EMPLOYEE GROUP	FTE #	Salary \$	Bonus/ Gain- shairing \$	Pension Benefits	Post Retiremen t Benefits	Other Benefits	Total Compensasati on	Expenses Paid	Total Compensatio n and Expenses	Expenses as a % of Compensati on
1	BU	#	\$	\$	\$	\$	\$	\$	\$	\$	%
2	M&C										
3	Executive										
4	Total										
Note: For each of the years 2007 to 2010 Actual and 2011 Outlook and 2012 Forecast											

**Response:**

Expenses paid to employees are tracked on a cash basis. For a comparison of expenses paid to employee remuneration, please refer to the response to information request 2012.1 RR BCUC.124.2. The table requested by the Commission in information request 2012.1 RR BCUC.124.2 has been completed and reflects the ratio of expenses to remuneration over the 2007 to 2010 period. Since the amounts paid are based on actual results, 2011 data is currently not yet available.

ICBC presents FTE data by three employee groups: Bargaining Unit, Management and Confidential, and Contractors. All executive employees are included in the Management and Confidential employee group. For a discussion in regards to executive compensation, please see the responses to information requests 2012.1 RR BCUC.81.6 and 2012.1 RR BCUC.81.7.

Please see Attachment A – Table - Compensation and Benefits by Employee Group by Year for the 2007 to 2012 forecast period.

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ICBC is unable to present total compensation by division by employee group. Whereas employee salary amounts may be attributed to divisions, the cost of employee benefits are centralized corporately and not allocated either to the individual employee level or to the divisional level.

The template provided by the Commission has been amended to reflect actual results for the 2007 to 2010 period. 2011 outlook and 2012 forecast compensation amounts by employee group were calculated based on FTE estimates, employee staff mix, and compensation level changes information available in the third quarter of 2011. The estimated cost of employee benefits including pensions was calculated based on total compensation using a standard benefit ratio associated with compensation dollars. It is ICBC's practice, at the end of each fiscal year, to reconcile and compare the actual cost of employee benefits to the estimated expenses.



## **2012.1 RR BCUC.81.8 – Attachment A –Table – Compensation and Benefits by Employee Group by Year**

Table - COMPENSATION AND BENEFITS BY EMPLOYEE GROUP BY YEAR

(\$Millions)

2007 (CGAAP)								
Line #	EMPLOYEE GROUP	FTE #	Salary \$	Bonus/ Gain-sharing \$	Pension Benefits	Post Retirement Benefits	Other Benefits	Total Compensation
1	BU	4,092	206	8	(2)	11	31	254
2	M&C	855	87	10	5	4	7	113
3	<b>Total</b>	<b>4,947</b>	<b>293</b>	<b>18</b>	<b>3</b>	<b>15</b>	<b>38</b>	<b>367</b>

2008 (CGAAP)								
Line #	EMPLOYEE GROUP	FTE #	Salary \$	Bonus/ Gain-sharing \$	Pension Benefits	Post Retirement Benefits	Other Benefits	Total Compensation
1	BU	4,044	223	9	(3)	9	35	273
2	M&C	890	84	11	5	3	9	112
3	<b>Total</b>	<b>4,934</b>	<b>307</b>	<b>20</b>	<b>2</b>	<b>12</b>	<b>44</b>	<b>385</b>

2009 (CGAAP)								
Line #	EMPLOYEE GROUP	FTE #	Salary \$	Bonus/ Gain-sharing \$	Pension Benefits	Post Retirement Benefits	Other Benefits	Total Compensation
1	BU	4,009	224	9	(6)	8	40	275
2	M&C	972	91	14	9	3	7	124
3	<b>Total</b>	<b>4,981</b>	<b>315</b>	<b>23</b>	<b>3</b>	<b>11</b>	<b>47</b>	<b>399</b>

2010 (CGAAP) (IFRS) <sup>(1)</sup>								
Line #	EMPLOYEE GROUP	FTE #	Salary \$	Bonus/ Gain-sharing \$	Pension Benefits	Post Retirement Benefits	Other Benefits	Total Compensation
1	BU	3,961	223	9	(11)	12	40	273
2	M&C	968	96	19	12	5	3	135
3	<b>Total</b>	<b>4,929</b>	<b>319</b>	<b>28</b>	<b>1</b>	<b>17</b>	<b>43</b>	<b>408</b>

<sup>(1)</sup> The impact of the changes in accounting standards from CGAAP to IFRS, in regards to pension and post-retirement benefit expenses of \$14 million, has been excluded from this analysis. In the Application, this amount was presented under Unique Items, Figure 7.5.

2011 Outlook (IFRS)					
Line #	EMPLOYEE GROUP	FTE #	Salary \$ & Bonus/Gain-sharing \$ <sup>(3)</sup>	Total Benefits \$ <sup>(4)</sup>	Total Compensation
1	BU	3,938	225	47	272
2	M&C	1,070	119	25	144
3	<b>Total</b>	<b>5,008</b>	<b>344</b>	<b>72</b>	<b>416</b>

2012 Forecast (IFRS)					
Line #	EMPLOYEE GROUP	FTE #	Salary \$ & Bonus/Gain-sharing \$ <sup>(2)</sup>	Total Benefits \$ <sup>(3)</sup>	Total Compensation
1	BU	3,929	230	48	278
2	M&C	1,086	122	25	147
3	<b>Total</b>	<b>5,015</b>	<b>352</b>	<b>73</b>	<b>425</b>

<sup>(2)</sup> 2011 outlook and 2012 forecast for salary and bonus/gainsharing: calculated based on FTE estimates, employee mix, and compensation level changes.

<sup>(3)</sup> 2011 outlook and 2012 forecast for employee benefits including pensions: estimated based on total compensation using a standard benefit ratio associated with compensation dollars. At the end of every year, the actual cost of employee benefits is reconciled and compared to the estimated expenses.

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**2012.1 RR BCUC.81.8.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-17**

**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**

**Compensation Level Changes**

**Based on the information provided, please prepare a table that shows the dollar amounts of increases for total compensation and expenses for each year commencing with 2007 Actual up to 2012 Forecast.**

**Response:**

Please see Attachment A – Table – Compensation and Benefit Increases which shows the dollar amounts and percentages of increases for total compensation, broken down by salary and benefit components, for the 2007 to 2012 forecast period.

As discussed in the Application, Chapter 7, Section D.2.1, compensation expenses account for approximately 74% of the base operating expenses and include salaries, benefits, and performance-based incentive pay. Compensation increases for the 2007 to 2012 forecast period are attributed to the increase in number of ICBC FTEs, employee staff mix, and compensation level changes. In spite of compensation increases, ICBC has contained the increase in operating expenses within inflation. Operating expenses do not contribute to the Basic insurance rate increase requirement for the 2012 policy year.

Please also see the response to information request 2012.1 RR BCUC.77.0-1 for further details in regards to Management and Confidential and Bargaining Unit compensation changes.



## **2012.1 RR BCUC.81.8.1 – Attachment A – Table – Compensation and Benefit Increases**

Table - Compensation and Benefit Increases

(\$Millions)

Line #	EMPLOYEE GROUP	Actual	Actual			Actual			Actual			Outlook			Forecast			# Change since 2007	% Change since 2007
		2007	2008	# Δ	% Δ	2009	# Δ	% Δ	2010	# Δ	% Δ	2011	# Δ	% Δ	2012	# Δ	% Δ		
1	Salary	293	307	14	4.8%	315	8	2.6%	319	4	1.3%								
2	Bonus/Gainsharing	18	20	2	11.1%	23	3	15.0%	28	5	21.7%								
3	<b>Subtotal - Salaries <sup>(1)</sup></b>	<b>311</b>	<b>327</b>	<b>16</b>	<b>5.1%</b>	<b>338</b>	<b>11</b>	<b>3.4%</b>	<b>347</b>	<b>9</b>	<b>2.7%</b>	<b>344</b>	<b>(3)</b>	<b>(0.9%)</b>	<b>352</b>	<b>8</b>	<b>2.3%</b>	<b>41</b>	<b>13.2%</b>
4	Pension Benefits	3	2	(1)	(33.3%)	3	1	50.0%	1	(2)	(66.7%)								
5	Post Retirement Benefit	15	12	(3)	(20.0%)	11	(1)	(8.3%)	17	6	54.5%								
6	Other Benefits	38	44	6	15.8%	47	3	6.8%	43	(4)	(8.5%)								
7	<b>Subtotal - Benefits <sup>(2)</sup></b>	<b>56</b>	<b>58</b>	<b>2</b>	<b>3.6%</b>	<b>61</b>	<b>3</b>	<b>5.2%</b>	<b>61</b>	<b>-</b>	<b>0.0%</b>	<b>72</b>	<b>11</b>	<b>18.0%</b>	<b>73</b>	<b>1</b>	<b>1.4%</b>	<b>17</b>	<b>30.4%</b>
8	<b>Total Compensation</b>	<b>367</b>	<b>385</b>	<b>18</b>	<b>4.9%</b>	<b>399</b>	<b>14</b>	<b>3.6%</b>	<b>408</b>	<b>9</b>	<b>2.3%</b>	<b>416</b>	<b>8</b>	<b>2.0%</b>	<b>425</b>	<b>9</b>	<b>2.2%</b>	<b>58</b>	<b>15.8%</b>

Note: Rounding may affect totals.

<sup>(1)</sup> 2011 outlook and 2012 forecast for salary and bonus/gainsharing: calculated based on FTE estimates, employee mix, and compensation level changes.

<sup>(2)</sup> 2011 outlook and 2012 forecast for employee benefits including pensions: estimated based on total compensation using a standard benefit ratio associated with compensation dollars. At the end of every year, the actual cost of employee benefits is reconciled and compared to the estimated expenses.

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**2012.1 RR BCUC.82.1 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-18  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Compensation Level Changes**

**Paragraph 57 of the ICBC evidence states:**

**“Performance-based compensation provides an incentive to employees to focus their efforts on agreed-upon objectives which are important to customers and to the corporate strategy. Performance-based compensation is common in public and private sector organizations, including many insurance companies. During 2010 ICBC reviewed its performance-based incentive pay policy for Management and Confidential staff by ensuring that performance objectives and targets were more challenging to achieve.”[Emphasis Added]**

**Please quantify and explain the incentive pay policy for Management and indicate how that policy is aligned with the objectives and strategies as detailed in the Appendix 11B, Service Plan 2011-2013 on p. 14.**

**Response:**

ICBC’s Short-Term Incentive Plan (STIP) policy aligns with its corporate objectives and strategies and drives the Management and Confidential workforce toward accomplishment of those objectives. The purpose of STIP is to incent eligible Management and Confidential employees to accomplish Corporate, Divisional, and Individual objectives by:

- a. Promoting an understanding of Corporate and Divisional strategic plans.
- b. Providing incentives for the achievement of goals which support Corporate, Divisional, and Individual objectives.

To support ICBC’s corporate strategies and vision, measures are developed in alignment with ICBC’s objectives as detailed in the 2011-2013 Service Plan on page 14 which are:

- a. Improve Customer Perception.
- b. Improve Employee Experience.
- c. Maintain Financial Stability.

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Annual performance against objectives under each of these strategies is assessed at a Corporate and Divisional level. Individual objectives that support the Divisional objectives are also measured. The assessment of achievement for Bargaining Unit employees is solely on Corporate level measures.

ICBC's Transformation Program (TP) also plays a key role to support ICBC in achieving its corporate strategies. To recognize the importance of multiple projects through the TP, which continually enhances customers' experience while maintaining financial stability, measures on achievement of TP are also included as part of the STIP measures.

With the addition of the TP objectives, 2012 Corporate STIP measures which are aligned under each of the Service Plan strategies, are outlined below:

**Improve Customer Perception**

- Customer Experience: A measure of how customers perceive ICBC after an interaction. It includes satisfaction with service and how a customer feels about overall experience and is compiled through the results of externally administered surveys conducted after five moment of truth interactions between customers and ICBC.
- Customer Advocacy: A measure of customers' willingness to speak positively about ICBC. It is compiled through the results of externally administered surveys asking whether customers would be willing to speak positively about ICBC after five moment of truth interactions between customers and ICBC, and a public perception survey of randomly chosen customers.

**Improve Employee Experience**

- Employee Experience: Employee Engagement, as measured from an annual employee opinion survey. Employee Engagement is a corporate measure for the Vice President level and above and a measure at a divisional level for Directors and Managers with staff.

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**Maintain Financial Stability**

- Financial Stability: Combined Ratio, an accepted industry measure of financial performance. The Combined Ratio compares the ratio of costs (claims, claims-related costs, administrative costs, premium taxes and commissions, and Non-insurance costs) to insurance premium dollars earned.

**Transformation Program**

- Transformational Change: Achievement of key milestones in each plan year on the TP.

**Financial Trigger**

A financial trigger is built in within the Plan to ensure a minimum level of Corporate performance occurs and that this funds ICBC's ability to pay a performance-based incentive. The financial trigger is determined by the outcome of net income for a Plan Year and will be reviewed on an annual basis to ensure its relativity to ICBC's financial forecast in a given Plan Year.

The final STIP payment for all eligible Management and Confidential employees is subject to the outcome of net income for a Plan Year. If net income is below target, different portions of the STIP components by employee group may be reduced or eliminated to better reflect the level of influence on corporate and divisional measures as well as to further support performance-based compensation program.

The STIP payment is re-earnable each Plan year and must first meet the pre-defined corporate financial trigger before any payment is made. The financial trigger and STIP payouts at different net income levels will be set by the Board based on corporate financial health on an annual basis.

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Please see Attachment A – Weighting of Corporate Measures for further explanation on quantification of the STIP plan, including how each corporate level measure is weighted and Attachment B – Weighting of Objectives by Management and Confidential Employee Level for weighting percentage by corporate, divisional, and individual objectives.



## **2012.1 RR BCUC.82.1 – Attachment A – Weighting of Corporate Measures**

<b>IMPROVE CUSTOMER PERCEPTION</b>		
<b>Measure</b>	<b>Objective Weighting (VP and above)</b>	<b>Objective Weighting (Director and below)</b>
Customer Experience	20.0%	20.0%
Customer Advocacy (BBQ)	10.0%	10.0%
<b>IMPROVE EMPLOYEE EXPERIENCE (VP and above only)</b>		
<b>Measure</b>	<b>Objective Weighting (VP and above)</b>	<b>Objective Weighting (Director and below)</b>
Employee Engagement	10%	0%
Strategy Index	5%	0%
<b>MAINTAIN FINANCIAL STABILITY</b>		
<b>Measure</b>	<b>Objective Weighting (VP and above)</b>	<b>Objective Weighting (Director and below)</b>
Combined Ratio	30%	40%
<b>DRIVE TRANSFORMATIONAL CHANGE</b>		
<b>Measure</b>	<b>Objective Weighting (VP and above)</b>	<b>Objective Weighting (Director and below)</b>
Achieve Transformation Program Goals for each performance year	25%	30%
Total	100.0%	100.0%



## **2012.1 RR BCUC.82.1 – Attachment B – Weighting of Objectives by Management and Confidential Employee Level**

Objective	Weighting % by Employee Level					
	CEO	Executive & VP	Investment VP	Director	Other M&C (band 1-8)	Investment Manager
Corporate	75%	50%	30%	30%	20%	20%
Divisional	na	30%	30%	30%	30%	20%
Individual	25%	20%	40%	40%	50%	60%

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**2012.1 RR BCUC.82.2 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-18**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation Level Changes**

Paragraph 57 of the ICBC evidence states:

**“Performance-based compensation provides an incentive to employees to focus their efforts on agreed-upon objectives which are important to customers and to the corporate strategy. Performance-based compensation is common in public and private sector organizations, including many insurance companies. During 2010 ICBC reviewed its performance-based incentive pay policy for Management and Confidential staff by ensuring that performance objectives and targets were more challenging to achieve.”[Emphasis Added]**

**For each of the objectives of the Corporate Strategy, please indicate how the selection of targets for 2011 to 2013 feeds into the incentive pay policy.**

**Response:**

As per the response to information request 2012.1 RR.BCUC.82.1, Short-term Incentive Plan (STIP) measures are developed in alignment with ICBC objectives as detailed in the 2011-2013 Service Plan on page 14 which are:

- Improve Customer Perception.
- Improve Employee Experience.
- Maintain Financial Stability.

Targets for each of the measures that align with the objectives are selected to ensure and incent corporate progress and performance toward these objectives.

Corporate performance measures and targets for STIP are determined by ICBC’s Board of Directors, through its Human Resources and Compensation Committee, based on recommendations from the CEO in consultation with the Executive Committee. The selection of targets for STIP can be quantitative or qualitative. They must meet SMART criteria:

- **Specific**
- **Measurable**

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- **Attainable**
- **Relevant**
- **Time-bound**

Divisional performance measures are determined by the CEO, in consultation with the Executive Committee, based on recommendations from each division. The CEO advises the Board's Human Resources and Compensation Committee of divisional measures and targets prior to implementation, to demonstrate congruity with corporate objectives. ICBC's Human Resources Division provides advice and support to the various divisions to ensure that proposed measures meet SMART criteria, and that measures proposed are consistent across divisions. ICBC's Finance Division works with each division to ensure the rigour of financial and other quantitative measures, and the establishment of targets.

All corporate and division metrics have threshold, target, and maximum performance targets. Recognition of achievement and the subsequent reward payment for each component varies on a calibrated scale between 0% and 150% based upon actual results, with the threshold set at 50% of target, target at 100%, and performance maximum at 150%.

Please see Attachment A – [ICBC STIP Targets Methodology](#) for details on the targets that fall under each of the corporate strategies, including the methodology utilized to set the targets.



# 2012.1 RR BCUC.82.2 – Attachment A – ICBC STIP Targets Methodology

Measure	Definition	Methodology for Determining Outcome	Comment
<b>Improve Customer Perception</b>			
Customer Experience	How customers perceive ICBC after an interaction. Includes satisfaction with service and how customer feels about overall experience	Results of monthly externally administered surveys conducted after five moment of truth interactions between customers and ICBC	By utilizing the two year trending the target seeks incremental improvement over previous year's performance.
Customer Advocacy (BBQ)	A measure of customers' willingness to speak positively about ICBC	Results of monthly externally administered surveys asking whether customers would be willing to speak positively about ICBC after five moment of truth interactions between customers and ICBC, and a public perception survey of randomly chosen customers	By utilizing the two year trending the target seeks incremental improvement over previous year's performance.
<b>Improve Employee Experience</b>			
Employee Engagement	Measures the willingness of employees to provide discretionary effort in alignment with the Company's strategic objectives	ICBC's corporate score on the Hewitt employee engagement survey (not including results of Leadership Survey completed by EEC members)	Target seeks incremental improvement towards 2014 target (65%) while recognizing that functional review will likely result in change and the effect of collective bargaining in a net zero environment
Strategy Index <i>(new measure added effective 2012)</i>	Measures employees awareness and alignment to the 2014 Strategy	Average of four questions posed in annual Employee Opinion Survey	Company seeks incremental improvement in employee understanding and support for the 2014 Strategy
<b>Maintain Financial Stability</b>			
Combined Ratio	Combined ratio measures overall profitability and is calculated as the ratio of all costs (claims, claims-related, administrative, acquisition and non-insurance costs) to all insurance premium dollars earned	Determined by Finance Division and confirmed by external auditors	Target calculated based on achieving budget; threshold and performance max based on historical analysis conducted by Finance Division
<b>Drive Transformational Change</b>			
Achievement of TP Goals	Measures the success of the corporation in achieving key milestones in each performance year on the Transformation project	Assessment of level of achievement and quality of work on key milestones, as determined by the Business Transformation Committee of the Board	Measure identifies key subset of TP goals for each performance year. Assessment would include milestone achievement and assessment of quality of work completed

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**2012.1 RR BCUC.82.3 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-18**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation Level Changes**

Paragraph 57 of the ICBC evidence states:

**“Performance-based compensation provides an incentive to employees to focus their efforts on agreed-upon objectives which are important to customers and to the corporate strategy. Performance-based compensation is common in public and private sector organizations, including many insurance companies. During 2010 ICBC reviewed its performance-based incentive pay policy for Management and Confidential staff by ensuring that performance objectives and targets were more challenging to achieve.”[Emphasis Added]**

**In most of the Performance Measures shown on p. 23 of the Service Plan 2011-2013 Strategy Summary, ICBC appears to be showing good results in actual and outlook years, however, targets are set below the previous two years’ results. How does this target setting as detailed in the Service Plan align with the statement “ensuring that performance objectives and targets were more challenging to achieve”?**

**Response:**

The performance measures and targets shown on page 23 of the 2011–2013 Service Plan Strategy Summary are not all selected as compensable measures for ICBC’s Short-Term Incentive Plan (STIP). Employee Engagement is selected as a compensable Corporate STIP objective at the executive level and the target is set to a more challenging level each year with the 2014 objective being 65% Corporate employee engagement. Combined Ratio is also selected effective 2012 as an addition of compensable Corporate measure at all levels. These are the only two Service Plan measures that are also compensable STIP measures for 2012. Please refer to ICBC’s 2012–2014 Service Plan in the response to information request 2012.1 RR BCUC.120.1 for more details. Please also see the responses to information requests 2012.1 RR BCUC.82.1 and 2012.1 RR BCUC.82.2 for further explanation.

**2012.1 RR BCUC.82.4 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-18**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation Level Changes**

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Please complete the following table for each of the years from 2007 actual to 2012 Forecast.

**Table - VARIABLE PAY**

Line #	Variable Pay Results	Forecast Target %	Actual Target %	Actual Median %	Actual Minimum %	Actual Maximum %
	<b>EMPLOYEE GROUP</b>					
1	Executive	%	%	%	%	%
2	M&C					
3	Vice President					
4	Director					
5	Manager					
6	Confidential					
7	Total M&C					
8	BU					
9	Other - if applicable					
10	Total Corporation					
Years to complete -2007 2008, 2009, 2010 Actual, 2011 Outlook, 2012 Forecast						

**Response:**

ICBC’s Short-Term Incentive Plan (STIP) is an annual incentive program that provides eligible Management and Confidential employees an opportunity to earn a one-time additional payment

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based on the relative achievement of annual corporate, divisional, and individual performance. The target payment opportunity for each Management and Confidential employee varies according to position level and ranges from 10% to 35%.

ICBC offers an annual gainshare program to its Bargaining Unit employees. The application of gainshare is defined in the collective agreement. The assessment is solely on achievement of corporate performance objectives, the same ones applied to the Management and Confidential STIP program. The gainshare program provides for a set payment of 3% if all corporate targets are met or a 4% payment if all targets are exceeded across the identified measures.

The 2012 forecast (i.e., to be paid in 2013) is not available. Further, in all years save for 2012 which is still a forecast, the forecast target percentage was the actual target percentage, and so an additional column, of forecast target percentage was not added. Please see Attachment A – Variable Pay 2007 to Outlook 2011 Management and Confidential and Attachment B – Variable Pay 2007 to Outlook 2011 Bargaining Unit for details.



# **2012.1 RR BCUC.82.4 – Attachment A – Variable Pay 2007 to Outlook 2011 Management and Confidential**

**Table - MANAGEMENT & CONFIDENTIAL VARIABLE PAY**

**2007 Variable Pay**

		Eligible EEs <sup>1</sup> for Variable Pay							
	Employee Group	Actual Target %	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
1	Executive	35.0%	37.2%	25.7%	45.9%	6	6	100.0%	0.0%
2	M&C								
3	Vice President	28.0%	36.1%	29.1%	38.9%	11	11	100.0%	0.0%
4	Director	24.0%	30.9%	21.3%	36.0%	36	36	100.0%	0.0%
5	Manager	12.0%-22.0%	14.1%	6.3%	30.5%	562	562	100.0%	0.0%
6	Confidential	10.0%-12.0%	13.5%	6.3%	17.1%	279	277	99.3%	0.7%
7	Total M&C					894	892	99.8%	0.2%

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Management Group's Short-Term Incentive Plan

**2008 Variable Pay**

		Eligible EEs <sup>1</sup> for Variable Pay							
	Employee Group	Actual Target %	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
1	Executive	35.0%	36.5%	26.3%	45.2%	8	8	100.0%	0.0%
2	M&C								
3	Vice President	28.0%	30.6%	26.4%	33.4%	12	12	100.0%	0.0%
4	Director	24.0%	24.6%	19.8%	47.5% <sup>2</sup>	40	40	100.0%	0.0%
5	Manager	12.0%-22.0%	12.2%	6.2%	33.0%	604	604	100.0%	0.0%
6	Confidential	10.0%-12.0%	12.2%	5.2%	21.0% <sup>2</sup>	312	306	98.1%	1.9%
7	Total M&C					976	970	99.4%	0.6%

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Management Group's Short-Term Incentive Plan

<sup>2</sup> For Investment department only

**2009 Variable Pay**

		Eligible EEs <sup>1</sup> for Variable Pay							
	Employee Group	Actual Target %	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
1	Executive	35.0%	43.4%	35.0%	50.3%	10	10	100.0%	0.0%
2	M&C								
3	Vice President	28.0%-30.0%	37.5%	33.3%	50.0% <sup>2</sup>	11	11	100.0%	0.0%
4	Director	24.0%	32.7%	21.4%	35.1%	38	38	100.0%	0.0%
5	Manager	12.0%-22.0%	14.7%	5.6%	35.1% <sup>2</sup>	633	627	99.1%	0.9%
6	Confidential	10.0%-12.0%	14.7%	6.8%	27.2% <sup>2</sup>	348	341	98.0%	2.0%
7	Total M&C					1,040	1,027	98.8%	1.2%

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Management Group's Short-Term Incentive Plan

<sup>2</sup> For Investment department only

**2010 Variable Pay**

		Eligible EEs <sup>1</sup> for Variable Pay							
	Employee Group	Actual Target %	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
1	Executive	35.0%	45.9%	35.0%	50.0%	11	11	100.0%	0.0%
2	M&C								
3	Vice President	28.0%-30.0%	39.5%	36.3%	49.7% <sup>2</sup>	10	10	100.0%	0.0%
4	Director	24.0%	30.9%	25.4%	35.9%	44	44	100.0%	0.0%
5	Manager	12.0%-22.0%	14.0%	9.5%	34.5% <sup>2</sup>	716	712	99.4%	0.6%
6	Confidential	10.0%-12.0%	13.9%	8.1%	17.7%	334	332	99.4%	0.6%
7	Total M&C					1,115	1,109	99.5%	0.5%

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Management Group's Short-Term Incentive Plan

<sup>2</sup> For Investment department only

## 2011 Variable Pay Outlook

		Eligible EEs <sup>1</sup> for Variable Pay							
	Employee Group	Actual Target %	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's <sup>2</sup> for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
1	Executive	35.0%	*	*	*	11	*	*	*
2	M&C								
3	Vice President	28.0%-30.0%	*	*	*	12	*	*	*
4	Director	24.0%	*	*	*	49	*	*	*
5	Manager	12.0%-22.0%	*	*	*	686	*	*	*
6	Confidential	10.0%-12.0%	*	*	*	360	*	*	*
7	Total M&C					1,118			

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Management Group's Short-Term Incentive Plan

<sup>2</sup> Based on 2011 employee (permanent only) headcount numbers as of Dec 31/11.

\* Information is undetermined at this time.

## 2012 Variable Pay Forecast

		Eligible EEs <sup>1</sup> for Variable Pay							
	Employee Group	Forecast Target %	Forecast Median %	Forecast Minimum %	Forecast Maximum %	Forecast No. of Eligible EE's <sup>2</sup> for Variable Pay	Forecast No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
1	Executive	35.0%	*	*	*	11	*	*	*
2	M&C								
3	Vice President	28.0%-30.0%	*	*	*	12	*	*	*
4	Director	24.0%	*	*	*	49	*	*	*
5	Manager	12.0%-22.0%	*	*	*	686	*	*	*
6	Confidential	10.0%-12.0%	*	*	*	360	*	*	*
7	Total M&C					1,118			

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Management Group's Short-Term Incentive Plan

<sup>2</sup> Based on 2011 employee (permanent only) headcount numbers as of Dec 31/11.

\* Information is unavailable at this time.



# **2012.1 RR BCUC.82.4 – Attachment B – Variable Pay 2007 to Outlook 2011 Bargaining Unit**

**Table - BARGAINING UNIT VARIABLE PAY**

**2007 Variable Pay**

	Eligible EEs <sup>1</sup> for Variable Pay							
	Actual Target % <sup>2</sup>	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's <sup>3</sup> for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
BU	3.0%	4.0%	n/a	n/a	4,577	4,577	100.0%	0.0%

<sup>1</sup>Based on headcount (not FTE) for eligibility to participate in the Bargaining Unit's Gainsharing Plan.

<sup>2</sup>As per 2006-2010 collective agreement

<sup>3</sup>Based on bargaining unit's gainsharing targets, as a percentage of straight-time bargaining unit payroll. The full 2007 gainsharing payout was \$2,069.00 per FTE.

**2008 Variable Pay**

	Eligible EEs <sup>1</sup> for Variable Pay							
	Actual Target % <sup>2</sup>	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's <sup>3</sup> for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
BU	3.0%	4.0%	n/a	n/a	4,521	4,521	100.0%	0.0%

<sup>1</sup>Based on headcount (not FTE) for eligibility to participate in the Bargaining Unit's Gainsharing Plan.

<sup>2</sup>As per 2006-2010 collective agreement

<sup>3</sup>Based on bargaining unit's gainsharing targets, as a percentage of straight-time bargaining unit payroll. The full 2008 gainsharing payout was \$2,127.50 per FTE.

**2009 Variable Pay**

	Eligible EEs <sup>1</sup> for Variable Pay							
	Actual Target % <sup>2</sup>	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's <sup>3</sup> for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
BU	3.0%	4.0%	n/a	n/a	4,513	4,513	100.0%	0.0%

<sup>1</sup>Based on headcount (not FTE) for eligibility to participate in the Bargaining Unit's Gainsharing Plan.

<sup>2</sup>As per 2006-2010 collective agreement

<sup>3</sup>Based on bargaining unit's gainsharing targets, as a percentage of straight-time bargaining unit payroll. The full 2009 gainsharing payout was \$2,179.50 per FTE.

## 2010 Variable Pay

Eligible EEs <sup>1</sup> for Variable Pay								
	Actual Target % <sup>2</sup>	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's <sup>3</sup> for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
BU	3.0%	4.0%	n/a	n/a	4,543	4,543	100.0%	0.0%

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Bargaining Unit's Gainsharing Plan.

<sup>2</sup> As per 2006-2010 collective agreement

<sup>3</sup> Based on bargaining unit's gainsharing targets, as a percentage of straight-time bargaining unit payroll. The full 2010 gainsharing payout was \$2,209.00 per FTE.

## 2011 Variable Pay Outlook

Eligible EEs <sup>1</sup> for Variable Pay								
	Actual Target % <sup>2</sup>	Average Actual Median %	Actual Minimum %	Actual Maximum %	No. of Eligible EE's <sup>3</sup> for Variable Pay	No. of Eligible EE's Received Variable Pay	% of Eligible EE's Received Variable Pay	% of Eligible EE's Did Not Receive Variable Pay
BU	3.0%	*	n/a	n/a	4,544	*	*	*

<sup>1</sup> Based on headcount (not FTE) for eligibility to participate in the Bargaining Unit's Gainsharing Plan.

<sup>2</sup> As per 2006-2010 collective agreement

<sup>3</sup> Based on 2011 employee (permanent and temporary) headcount numbers as of Dec 31/11.

\* Information is undetermined at this time.

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**2012.1 RR BCUC.82.4.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-18**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation Level Changes**

Paragraph 57 of the ICBC evidence states:

**“Performance-based compensation provides an incentive to employees to focus their efforts on agreed-upon objectives which are important to customers and to the corporate strategy. Performance-based compensation is common in public and private sector organizations, including many insurance companies. During 2010 ICBC reviewed its performance-based incentive pay policy for Management and Confidential staff by ensuring that performance objectives and targets were more challenging to achieve.”[Emphasis Added]**

**For each of the years, what percentage of FTE’s eligible for variable pay received variable pay and what percentage did not?**

**Response:**

ICBC offers variable pay programs to its eligible Management and Confidential and Bargaining Unit employees. The calculation of variable pay is based on eligible earnings of each employee count, not on a FTE basis. Please see response to information request 2012.1 RR BCUC.82.4, Attachment A – Variable Pay 2007 to forecast 2012 Management and Confidential and Attachment B – Variable Pay 2007 to forecast 2012 Bargaining Unit for the requested information.

ICBC continues to strengthen the link between performance and reward and to increase the degree of measurement in its compensation programs. ICBC’s Board of Directors has approved two more changes to the incentive pay policies for further enhancement of the program which will impact on percentage of eligible employees to receive incentive payment.

- Include a financial trigger for the Short-Term Incentive Plan (STIP) that activates some or all of the components of the STIP based on achievement of certain levels of net income. This amendment is retroactive to the 2011 STIP previously approved by the Board.
- Limit the STIP payable to employees rated ‘Contributing’ and ‘Developing’.

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**2012.1 RR BCUC.82.4.2 Reference: OPERATING EXPENSE AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-18  
OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION  
Compensation Level Changes**

Paragraph 57 of the ICBC evidence states:

**“Performance-based compensation provides an incentive to employees to focus their efforts on agreed-upon objectives which are important to customers and to the corporate strategy. Performance-based compensation is common in public and private sector organizations, including many insurance companies. During 2010 ICBC reviewed its performance-based incentive pay policy for Management and Confidential staff by ensuring that performance objectives and targets were more challenging to achieve.”[Emphasis Added]**

**Please prepare a second table for the employee categories listed in the table above that indicates the number of FTE’s eligible for variable pay versus the number of FTE’s receiving variable pay.**

**Response:**

Please see responses to information requests 2012.1 RR BCUC.82.4 and 2012.1 RR BCUC.82.4.1 for details.

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**2012.1 RR BCUC.82.5 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Section D.2.1.3, p. 7-18**  
**OPERATING EXPENSES FOR ACTUARIAL RATE INDICATION**  
**Compensation Level Changes**

**Paragraph 57 of the ICBC evidence states:**

**“Performance-based compensation provides an incentive to employees to focus their efforts on agreed-upon objectives which are important to customers and to the corporate strategy. Performance-based compensation is common in public and private sector organizations, including many insurance companies. During 2010 ICBC reviewed its performance-based incentive pay policy for Management and Confidential staff by ensuring that performance objectives and targets were more challenging to achieve.”[Emphasis Added]**

**Have there been any changes to the variable pay (bonuses) assumptions, method of calculating variable pay or policies regarding variable pay since the filing of the RRA? If so, what is the impact to the operating costs and the Basic Insurance rate indication?**

**Response:**

Since the filing of the Application, there have not been any changes to the variable pay assumptions. There have been two changes made to the policy regarding the Short Term Incentive Plan (STIP), which has strengthened the rigour over earning STIP and will impact the calculation of STIP.

The first change is tied to ICBC’s corporate net income which is a key measure of its financial performance. The main change to the variable pay plan is an amendment to incorporate a financial trigger tied to net income effective for the 2011 and future performance years. Depending on the year-end net income results, any STIP payouts may be affected by the level of ICBC’s net income. Creating a stronger tie between corporate financial performance and incentive pay is a common business practice, and incentives paid out to employees should also reflect the company’s ability to fund the incentive program.

If the financial trigger comes into effect in any year, actual operating expenses could be lower than plan because the amount of STIP payment would be lower than what was accrued. For 2012, the operating expense plan included in the actuarial rate indication has been set based on the achievement of a certain level of performance and no change is required at this time.

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The financial trigger will be applied as follows:

- If ICBC has a net loss in any performance year, there will be no STIP payment at any level.
- To ensure ability to fund any STIP payment, if net income earned is up to approximate net income of two times the STIP Plan payout at target, there will be no payout for the CEO or Executive Committee members, and payouts for other Management and Confidential employees will be limited to a discounted individual portion of STIP.
- If net income earned is between approximate net income of two times the STIP Plan payout at target and 75% of net income target, there will be a discounted payout at all levels.
- If the net income is higher than 75% of the target net income, the plan will pay out in accordance with ICBC's performance against corporate targets.

The financial trigger will be reviewed on an annual basis against ICBC's corporate financial health, and may be adjusted from time to time.

The second change to the policy is to limit the STIP payable to employees rated as "Contributing" or "Developing."

Since its inception, ICBC's management and Board of Directors have worked together to increase the rigour of the plan, and to better align it to the business to help drive performance.

**2012.1 RR BCUC.83.1 Reference: Operating Expenses and Allocation Information  
Exhibit B-1-1, Chapter 7, Section D.2.1  
Pay Groupings per Job Classification/Position**

**Please complete the following table and provide the percentage change in salary scales per job classification/position segmented by affiliation from 2007 to 2012. If this table is not appropriate, please provide an appropriate table that presents the information.**

**Table - PAY GROUPINGS PER JOB CLASSIFICATION/POSITION**

GENERAL SALARY INCREASE PER JOB CLASSIFICATION/POSITION SEGMENTED BY AFFILIATION (% CHANGE)								
Line#	EMPLOYEE GROUP	2007	2008	2009	2010	2011 Outlook	2012 Forecast	% Change since 2007
1	Executive	%	%	%	%	%	%	%
2	M&C							
3	Vice President							
4	Director							
5	Manager							
6	Confidential							
7	BU							

Note: Please provide % change from previous year

**Response:**

Each year, ICBC's Board of Directors reviews its compensation programs including determining adjustments, if any, to the management salary structure (i.e., salary ranges) in keeping with ICBC's adopted compensation comparator market and which is the median (P50) of a weighted sample of:

- Canadian public sector.
- Canadian P&C insurance companies.
- Canadian general industry with revenue between \$1 and \$10 billion.

This market position was the result of a compensation review first discussed with the Commission as part of the 2006 Revenue Requirements proceeding and approved by the Public Sector Employers' Council (PSEC) and government in 2007.

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ICBC uses market reference data from a variety of sources, but in particular uses survey data from the Conference Board of Canada to propose salary range increases for ICBC's Board of Directors' consideration. This is consistent with ICBC's early representations to the Commission in the August 2005 Revenue Requirements Application, Chapter 8.

Movement of Management and Confidential salary ranges does not result in any change or increase to Management and Confidential salaries. It is simply a movement of the salary ranges. Any adjustments to Management and Confidential employee wages are based on annual performance and an annual wage budget (if any) as approved by ICBC's Board of Directors. In comparison, the movements to the Bargaining Unit (BU) salary ranges are directly accretive to base wage as negotiated with COPE 378 in collective agreement negotiations for those years.

In 2007, as approved by ICBC's Board of Directors and PSEC in a 2006 compensation review, ICBC implemented a new compensation system to reduce 15 salary ranges to 11 broad band salary ranges for Management and Confidential employees. The 15 salary range system was a fixed salary step rate program, whereas the 11 broad band system has a control point (midpoint) with movement through salary ranges based on performance only. Due to this change, the request to report "% change" in 2007 from 2006 for Management and Confidential would not produce any valid result.

Please see Attachment A – Salary Range Increase by Employee Group for details.



## **2012.1 RR BCUC.83.1 – Attachment A – Salary Range Increase by Employee Group**

<b>SALARY RANGE INCREASE BY EMPLOYEE GROUP (% CHANGE)</b>								
<b>Line #</b>	<b>EMPLOYEE GROUP</b>	<b>2007<sup>1</sup></b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>% Change since 2008<sup>2</sup></b>
1	Executive	N/A	3.20%	2.80%	0%	2.00%	0%	<b>8.21%</b>
2	M&C							
3	Vice President	N/A	3.20%	2.80%	0%	2.00%	0%	<b>8.21%</b>
4	Director	N/A	3.20%	2.80%	0%	2.00%	0%	<b>8.21%</b>
5	Manager	N/A	3.20%	2.80%	0%	2.00%	0%	<b>8.21%</b>
6	Confidential	N/A	3.20%	2.80%	0%	2.00%	0%	<b>8.21%</b>
7	BU	2.50%	2.54%	2.55%	0%	0%	0%	<b>5.13%<sup>3</sup></b>

Note: Please provide % change from previous year

<sup>1</sup> In 2007, ICBC reduced its 15-band salary step structure to an 11-band performance based salary range structure for the Management Group employees.

<sup>2</sup> Calculations are based on the midpoint % change between 2012 and 2008; due to the inauguration of the salary structure for the Management Group in 2007, ICBC is unable to report the change from 2007.

<sup>3</sup> The calculation for BU is based on the average % change between 2009 and 2007; increase % between 2010 and 2012 pending the renewal of the collective agreement.

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**2012.1 RR BCUC.84.1 Reference: OPERATING EXPENSES AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.4.4, p. 7-22  
Professional Services and Employee Absenteeism**

**In paragraph 75, the ICBC evidence states:**

**“Professional services include the cost of outside legal, actuarial, audit, pension, and strategic consulting expertise. The costs for these services increased to \$16 million in 2010 due to the initiation of translator services in response to the needs of changing customer demographics and an enhanced employee care management program to address employee absenteeism.”**

**Please reconcile the \$16 million with amounts being projected for 2011 and 2012 including the division of costs between translator services and the enhanced employee care management program.**

**Response:**

Professional services in 2010 of \$16 million consisted largely of outside legal costs, pension consulting, and strategic consulting expenses, with the balance of costs for actuarial, audit, enhanced employee care management, and translator services. The increase in 2010 over 2009 is due to the enhanced employee care management and translator services; however, these items only make up a small portion of total professional fees.

Professional services in 2011 are projected to be \$2 million lower than the 2010 levels due to lower anticipated costs for outside legal services of \$1 million and lower pension plan fees of \$1 million. The costs for translator services and the enhanced employee care management program are consistent with 2010 costs.

The types of expenditures in the 2012 plan are forecast to be consistent with the 2011 outlook.

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**2012.1 RR BCUC.84.2 Reference: OPERATING EXPENSES AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.4.4, p. 7-22  
Professional Services and Employee Absenteeism**

**In paragraph 75, the ICBC evidence states:**

**“Professional services include the cost of outside legal, actuarial, audit, pension, and strategic consulting expertise. The costs for these services increased to \$16 million in 2010 due to the initiation of translator services in response to the needs of changing customer demographics and an enhanced employee care management program to address employee absenteeism.”**

**Please explain and describe the enhanced employee care management program.**

**Response:**

The enhanced employee care management program involves assisting employees who have been off work due to illness or injury to return to work as quickly as is medically possible through active disability management services. The Disability Management Specialists and the Return to Work Coordinator in the Employee Wellness Department contact employees who have been off work for more than three days to obtain the necessary medical information, where it is appropriate to do so, in order to create a return to work plan for the employee. The Disability Management Specialists and Return to Work Coordinator work with employees' doctors and other medical professionals to facilitate an expeditious return to work for employees who have been off ill or injured.

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**2012.1 RR BCUC.84.3 Reference: OPERATING EXPENSES AND ALLOCATION  
INFORMATION  
Exhibit B-1-1, Chapter 7, Section D.2.4.4, p. 7-22  
Professional Services and Employee Absenteeism**

**In paragraph 75, the ICBC evidence states:**

**“Professional services include the cost of outside legal, actuarial, audit, pension, and strategic consulting expertise. The costs for these services increased to \$16 million in 2010 due to the initiation of translator services in response to the needs of changing customer demographics and an enhanced employee care management program to address employee absenteeism.”**

**When was ICBC aware of the issue of employee absenteeism and how has it developed since then? Please explain in light of employee affiliation (i.e. Management and Confidential, and Bargaining Unit).**

**Response:**

Managing employee absenteeism has always been part of ICBC’s management strategy. In 2008, sick leave started to trend upwards and ICBC began to consider various return to work strategies. In 2009, the Employee Wellness Department started to be more proactive in assisting employees to return to work. In February 2010, the enhanced employee care management program was launched, with the commencement of active disability management for employees who were off work due to illness and injury.

Since the commencement of more proactive contact with employees and the launch of enhanced employee care management, ICBC is starting to see a decrease in sick leave. Please refer to the table provided in the response to information request 2012.1 RR BCUC.84.4. The enhanced employee care management program is applicable to all employees, Management and Confidential and Bargaining Unit employees alike. As is illustrated by the table provided in the response to information request 2012.1 RR BCUC.84.4, there have been improvements in time lost since 2008 for both the Management and Confidential and the Bargaining Unit groups.

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**2012.1 RR BCUC.84.4 Reference: OPERATING EXPENSES AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.4.4, p. 7-22  
Professional Services and Employee Absenteeism**

**In paragraph 75, the ICBC evidence states:**

**“Professional services include the cost of outside legal, actuarial, audit, pension, and strategic consulting expertise. The costs for these services increased to \$16 million in 2010 due to the initiation of translator services in response to the needs of changing customer demographics and an enhanced employee care management program to address employee absenteeism.”**

**Please provide the information on absenteeism days per employee in a year segmented by the types of leave that are available to each employee group, M&C, BU and Executive. This should include but not be limited to sick leave. Please provide this information in tabular format for each of the last 5 years.**

**Response:**

Please see Attachment A – Employee Absenteeism 2007 to 2011 for types of absence that ICBC’s enhanced employee care programs currently address and have further influence on.



## **2012.1 RR BCUC.84.4 – Attachment A – Employee Absenteeism 2007 to 2011**

	Days per Employee				
	2011	2010	2009	2008	2007
	Rate	Rate	Rate	Rate	Rate
<b>Bargaining Unit</b>					
Sick	6.40	6.53	6.67	6.93	6.48
WCB	0.16	0.07	0.10	0.12	0.06
Family Sick	0.50	0.47	0.55	0.54	0.48
Long Term Sick	13.92	13.68	14.04	14.11	12.39
Medical/Dental	0.83	0.82	0.82	0.82	0.77
Personal Absence	0.08	0.07	0.08	0.07	0.07
Bereavement/Funeral Leave	0.40	0.41	0.43	0.45	0.41
<b>Executives</b>					
Sick	0.27	0.10	0.00	0.00	0.32
Medical/Dental	0.00	0.00	0.00	0.15	0.00
Bereavement/Funeral Leave	0.00	0.10	0.12	0.46	0.32
<b>Management Group (Excludes Executives)</b>					
Sick	3.37	3.49	3.67	3.68	3.61
WCB	0.06	0.08	0.00	0.01	0.00
Family Sick	0.24	0.19	0.25	0.24	0.23
Long Term Sick	4.67	4.98	5.06	5.21	4.98
Medical/Dental	0.53	0.50	0.50	0.48	0.49
Personal Absence	0.02	0.01	0.02	0.02	0.02
Bereavement/Funeral Leave	0.39	0.37	0.38	0.38	0.48

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**2012.1 RR BCUC.84.4.1 Reference: OPERATING EXPENSES AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section D.2.4.4, p. 7-22  
Professional Services and Employee Absenteeism**

**In paragraph 75, the ICBC evidence states:**

**“Professional services include the cost of outside legal, actuarial, audit, pension, and strategic consulting expertise. The costs for these services increased to \$16 million in 2010 due to the initiation of translator services in response to the needs of changing customer demographics and an enhanced employee care management program to address employee absenteeism.”**

**Please qualify and quantify the benefits to be obtained with the investment in the employee care management program referring to the information provided on employee absenteeism.**

**Response:**

From 2008 to 2011, there was a decrease of 3.3% in time lost due to absenteeism in the Bargaining Unit, while in the Management Group the decrease was 7.5%. The enhanced employee care management program is reducing the number of days that employees are absent through proactive intervention, which allows ICBC to facilitate an expeditious return to work through modified job duties and modified hours, where necessary.

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**2012.1 RR BCUC.85.1-2 Reference: OPERATING EXPENSES AND ALLOCATION  
INFORMATION**

**Exhibit B-1-1, Chapter 7, Section F, p. 7-32**

**Cost Control Measures**

**In paragraph 107, ICBC evidence states:**

**“Through ICBC’s cost control measures and management initiatives, operating expenses will not contribute to the rate increase requested in this Application.”**

**85.1 Please describe and quantify all cost control measures and management initiatives considered even though they may or may not have been implemented. Please explain the rationale behind the choices.**

**85.2 Could further cost controls have been implemented that would have helped contribute to a reduction of the rate indication or did control measures only get included to the extent that operating expenses no longer contributed to a rate increase?**

**Response:**

**85.1**

ICBC conducted a review of all operating costs and challenged itself to identify opportunities that would result in net savings, keep costs within inflation, and reduce the impact of operating costs on the actuarial rate indication.

In considering where net cost savings could be realized, ICBC needed to balance reducing operating costs and adversely impacting claims costs. ICBC identified the following five cost control measures, which were initiated in 2011 and included in the review of 2012 operating costs:

- **Management of staff vacancies** – Please see the response to information request 2012.1 RR BCUC.70.1 for a description of this cost control measure. ICBC’s approach to managing staffing vacancies was initiated in 2011 and carried over into the 2012 fiscal year. The mandate to hiring only vital positions led to a reduction of approximately 82 planned FTEs and approximately \$8 million in the 2012 operating cost budget. The rationale behind this initiative was to ensure ICBC operated with existing staffing levels and that only vital positions were hired.

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- **Strategic project prioritizing** – Please see the response to information request 2012.1 RR BCUC.70.1 for a description of this cost control measure. Over the past five years, ICBC’s project costs (including maintenance) have averaged \$28 million per year. Given ICBC’s mandate to keep operating costs within inflation and reduce the impact on the actuarial rate indication, ICBC used strategic project prioritization to reduce project costs in 2012 below historical levels. The rationale behind this initiative was to ensure that all projects were consistent with the corporate strategy and that project costs were managed prudently.
- **Conducted detailed budget reviews** – Please see the response to information request 2012.1 RR BCUC.70.1 for a description of this cost control measure. Detailed budget reviews of all operating costs resulted in savings of approximately \$13 million due to reductions in the following areas: employee-related costs of \$2 million, discretionary costs of \$6 million, and other costs of \$5 million. The rationale behind this initiative was to review all cost elements to ensure costs were being managed prudently and to identify any net operating cost savings.
- **Functional Review** – ICBC initiated a review of corporate support functions aimed at outlining and assessing the current delivery model. The rationale behind this initiative is to ensure that services are being delivered in an effective manner.
- **Discretionary Spending Guidelines** – ICBC initiated a review of discretionary spending policies and guidelines. The rationale behind this initiative was to ensure that in this challenging economic environment ICBC was mindful of every dollar and focused on containing costs at every level. ICBC is expecting this initiative to contain costs within inflation.

## 85.2

ICBC initiated cost controls that would result in net savings or contain costs. The favorable outcome, that operating expense did not impact the actuarial rate indication, of the cost control

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exercise was a byproduct of the efforts to reduce costs and not the stated goal. ICBC is always looking at opportunities to streamline its processes for efficiency gains. ICBC is committed to contain operating cost increases and to look for potential future savings in order to keep Basic insurance rates low.

**2012.1 RR BCUC.86.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7, Appendix 7 B, p. 7B-1**  
**Historical Information**

Commission Staff Table 4 - FTE's PER POLICY

#		2005	2006	2007	2008	2009	2010 (CGAAP)	Outlook 2011	Forecast 2012
1	Net Premiums Earned (p. 7B-1)	\$ 1,736,760,000	\$ 1,824,477,000	\$ 1,957,078,000	\$ 2,047,635,000	\$ 2,061,254,000	\$ 2,066,572,000		
2	Average premium of policy (p. 7B-1)	\$ 591	\$ 619	\$ 638	\$ 641	\$ 636	\$ 630		
3	Estimate average number of policies	2,938,680	2,947,459	3,067,520	3,194,438	3,240,965	3,280,273		
4	FTE's (p. 7-15 Figure 7.7)	4960	4965	5005	5007	5066	4981	5082	5074
5	FTE's per 1000 policies	1.688	1.685	1.632	1.567	1.563	1.518		
Note: Prior to 2008, Information extracted from ICBC 2010 RRA Exh B-2 7D-1 and for 2005 FTE ICBC 2007 RRA Exhibit B-11-1 Attachment A BCUC IR 50.6									

**Please complete Commission Staff Table 4 and calculate the FTE's per 1000 policies from 2005 Actual to 2012 Forecast. Please confirm if the data from 2005 through 2010 contained in Commission Staff Table 4 is accurate, otherwise please update.**

**Response:**

Please see Attachment A – Commission Staff Table 4 – FTEs Per Policy.

Commission Staff Table 4 has been revised for 2005 actual FTEs and updated for 2011 outlook and 2012 forecast.

FTEs per 1,000 policies calculation has been amended to utilize Autoplan policies earned as being number of policies (numerator). Autoplan policies earned are disclosed in ICBC's 2009 and 2010 Annual Report (Appendix 11 C to the Application).

FTEs per 1,000 policies have decreased from 1.671 in 2005 to 1.518 in 2010. Although FTEs have increased over this period, the growth in policies has increased consistently and significantly more. For 2011 outlook and 2012 forecast, based on current vehicle growth expectations, ICBC expects to maintain approximately 1.5 FTEs per 1,000 policies.



## **2012.1 RR BCUC.86.1 – Attachment A – Commission Staff Table 4 – FTEs Per Policy**

**Commission Staff Table 4 - FTE's PER POLICY**

Line #		2005	2006	2007	2008	2009	2010	Outlook 2011	Forecast 2012
1	Net Premiums Earned (p. 7B-1)	\$ 1,736,760,000	\$ 1,824,477,000	\$ 1,957,078,000	\$ 2,047,635,000	\$ 2,061,254,000	\$ 2,066,572,000		
2	Average premium of policy (p. 7B-1)	\$ 591	\$ 619	\$ 638	\$ 641	\$ 636	\$ 630		
3	Estimate average number of policies	2,938,680	2,947,459	3,067,520	3,194,438	3,240,965	3,280,273		
4	<b>Policies (Autoplan policies earned)*</b>	<b>2,921,000</b>	<b>3,012,000</b>	<b>3,108,000</b>	<b>3,193,000</b>	<b>3,225,000</b>	<b>3,281,000</b>	<b>3,317,000</b>	<b>3,367,000</b>
5	<b>FTE's (p. 7-15 Figure 7.7)</b>	<b>4,880</b>	<b>4,965</b>	<b>5,005</b>	<b>5,007</b>	<b>5,066</b>	<b>4,981</b>	<b>5,082</b>	<b>5,074</b>
6	<b>FTE's per 1000 policies**</b>	<b>1.671</b>	<b>1.648</b>	<b>1.610</b>	<b>1.568</b>	<b>1.571</b>	<b>1.518</b>	<b>1.532</b>	<b>1.507</b>

\* Policies, also referred to as Autoplan policies earned, for 2005 is from ICBC's 2009 Annual Report; for years 2006-2010, from ICBC's 2010 Annual Report; and for 2011 outlook and 2012 forecast, calculated based on current vehicle growth expectations

\*\* FTE's per 1000 policies is calculated as Autoplan policies earned divided by FTE's

Note: Prior to 2007, Information extracted from ICBC 2010 RRA, Chapter 7, page 7D-1 Historical Information table - Corporate FTE's.

**2012.1 RR BCUC.87.1 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7**  
**General Questions**

Based on the information provided by ICBC in its 2010 Streamlined Revenue Requirements Application, Exhibit B-6 ICBC Response to IR 2010.1RR BCUC.38.3, Commission Staff have prepared the following Commission Staff Table 5.

**Commission Staff Table 5 - OPERATING EXPENSE FORECASTING VARIANCES - BASIC INSURANCE**

(\$ Millions)									
Line #		2006	2007	2008	2009	2010 (CGAAP)	2011 (IFRS)	5 Year Average 2006-2010	6 Year Average 2006-2011
1	Forecast	\$ 539	\$ 528	\$ 552	\$ 573	\$ 592		\$ 557	
2	Actual (1)	\$ 512	\$ 522	\$ 537	\$ 560	\$ 575	\$ 594	\$ 541	
3	\$ Variance	\$ 27	\$ 6	\$ 15	\$ 13	\$ 17		\$ 16	
4	% Variance	5.0%	1.1%	2.7%	2.3%	2.9%		2.8%	
(1): 2011 IFRS Actual Column 6 Row 1 should include 2011 Outlook or Actual if Available									

Please confirm if the data contained in Commission Staff Table 5 is accurate, otherwise please update.

**Response:**

The table is labeled as Basic insurance but the information contained in it is for total corporate operating expenses excluding Olympics and the Transformation Program. The information as shown for total corporate operating expenses excluding Olympics and the Transformation Program is accurate. Please see the response to information request 2012.1 RR BCUC.87.3 for the completed table.

**2012.1 RR BCUC.87.2 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7**  
**General Questions**

Based on the information provided by ICBC in its 2010 Streamlined Revenue Requirements Application, Exhibit B-6 ICBC Response to IR 2010.1RR BCUC.38.3, Commission Staff have prepared the following Commission Staff Table 5.

**Commission Staff Table 5 - OPERATING EXPENSE FORECASTING VARIANCES - BASIC INSURANCE**

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3	\$ Variance	\$ 27	\$ 6	\$ 15	\$ 13	\$ 17		\$ 16	
4	% Variance	5.0%	1.1%	2.7%	2.3%	2.9%		2.8%	
(1): 2011 IFRS Actual Column 6 Row 1 should include 2011 Outlook or Actual if Available									

**In consideration of the trend from 2006 to 2010, please explain why ICBC is confident that the 2012 Forecast is appropriate.**

**Response:**

ICBC understands the question to be referencing the fact that ICBC's actual operating expenses have been below the forecast cost in each of the years 2006 to 2010, and asking whether this suggests that the 2012 forecast is overstated. In responding, ICBC will first explain why the experience in past years should not be extrapolated to 2012, and then elaborate on why ICBC believes that the 2012 forecast is reasonable based on the available information.

Variances in 2006 to 2009 have been largely due to one-off items (e.g., Collective Agreement negotiations, timing of expenses that are subject to government influence such as Intersection Safety Camera upgrades), and fluctuations in pension expense primarily due to changes in the discount rate. The variance in 2010 is largely due to lower compensation resulting from a lower number of FTEs due to the secondment of staff to work on TP projects, as discussed in Chapter 7, page 7-16 of the Application.

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The variance in 2011 was the result of a deliberate change in approach in management of operating expenses part way through 2011 that was intended to reduce pressure on rates for 2012. Also see the response to information request 2012.1 RR BCUC.87.4. In 2011, ICBC conducted a thorough review of operating costs and challenged itself to identify all areas where costs could be reduced or spending managed. ICBC conducted detailed budget reviews, prioritized projects and managed project scope and costs, and managed staff vacancies. These cost control measures are further described in the response to 2012.1 RR BCUC.70.1. These measures have had the short-term impact of saving \$26 million in comparison to the 2011 Original Plan as per the Service Plan. Additionally, a further \$10 million has been excluded from the 2011 operating expense outlook used for the actuarial rate indication. The \$10 million relates to the annual pension and post-retirement benefit adjustment, which arises due to the variation in the rate which is used to discount pension liabilities.

In 2012, ICBC is committed to maintaining the lower operating cost structure achieved through the cost savings measures in 2011 and to continue to manage operating costs in the fiscally prudent manner. For 2012 operating costs, depreciation is expected to increase by \$5 million over the 2011 outlook, resulting from ICBC's investment in the areas of information technology and facilities capital projects. Despite cost pressures, the 2012 Plan as Revised, as shown in Chapter 7, Figure 7.2 in the Application, is 1.8% higher than the 2011 Plan as Revised. The 1.8% increase reflects ICBC's goal to contain the increases in corporate operating expenses below the level of inflation.

ICBC will continue to look for cost savings, but believes that the material savings achievable in 2012 have been captured. To the extent that ICBC is able to identify opportunities for further savings going forward, those will be reflected in the baseline for determining Basic insurance rates in subsequent years.

**2012.1 RR BCUC.87.3 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7**  
**General Questions**

Based on the information provided by ICBC in its 2010 Streamlined Revenue Requirements Application, Exhibit B-6 ICBC Response to IR 2010.1RR BCUC.38.3, Commission Staff have prepared the following Commission Staff Table 5.

**Commission Staff Table 5 - OPERATING EXPENSE FORECASTING VARIANCES - BASIC INSURANCE**

		(\$ Millions)							
Line #		2006	2007	2008	2009	2010 (CGAAP)	2011 (IFRS)	5 Year Average 2006-2010	6 Year Average 2006-2011
1	Forecast	\$ 539	\$ 528	\$ 552	\$ 573	\$ 592		\$ 557	
2	Actual (1)	\$ 512	\$ 522	\$ 537	\$ 560	\$ 575	\$ 594	\$ 541	
3	\$ Variance	\$ 27	\$ 6	\$ 15	\$ 13	\$ 17		\$ 16	
4	% Variance	5.0%	1.1%	2.7%	2.3%	2.9%		2.8%	
(1): 2011 IFRS Actual Column 6 Row 1 should include 2011 Outlook or Actual if Available									

Please complete the table to include 2011 Forecast and calculate a 6 Year average.

Response:

**CORPORATE OPERATING EXPENSE VARIANCES**

		(\$ Millions)								
Line #		2006	2007	2008	2009	2010 (CGAAP)	2010 (IFRS)	2011 (IFRS)	5 Year Average 2006-2010	6 Year Average 2006-2011
1	Forecast	\$ 539	\$ 528	\$ 552	\$ 573	\$ 592	\$ 606	\$ 620	\$ 557	\$ 567
2	Actual	\$ 512	\$ 522	\$ 537	\$ 560	\$ 575	\$ 589	\$ 594	\$ 541	\$ 550
3	\$ Variance	\$ 27	\$ 6	\$ 15	\$ 13	\$ 17	\$ 17	\$ 26	\$ 16	\$ 17
4	% Variance	5.0%	1.1%	2.7%	2.3%	2.9%	2.8%	4.2%	2.8%	3.0%

The table, which includes corporate (i.e., for both Basic and Optional insurance) operating expense variances, is completed and includes the 2011 forecast, 2011 outlook, and a 6-Year Average. Both the 5-Year Average and 6-Year Average as shown use 2010 (CGAAP) in the calculations.

The 2011 forecast at \$620 million is the Original Plan per the Service Plan, as indicated in Figure 7.2 of the Application, after excluding an amount of \$10 million relating to the annual

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pension and post-retirement benefit adjustment, which arises from the variation in the rate which is used to discount pension liabilities. The 2011 outlook of \$594 million reflects ICBC's initiation in the second half of 2011 of a suite of cost control measures, which has had the short-term impact of saving \$26 million. The 2011 outlook is an increase of \$5 million (0.8%) over the 2010 actual operating expenses restated under IFRS. The 0.8% increase reflects ICBC's goal of managing operating costs within inflation. Additionally, the 2011 variance of \$26 million was a direct effort by ICBC to affect short-term savings. If this variance was excluded, the 6-Year Average would drop from 3.0% to 2.3%.

**2012.1 RR BCUC.87.4 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7**  
**General Questions**

Based on the information provided by ICBC in its 2010 Streamlined Revenue Requirements Application, Exhibit B-6 ICBC Response to IR 2010.1RR BCUC.38.3, Commission Staff have prepared the following Commission Staff Table 5.

**Commission Staff Table 5 - OPERATING EXPENSE FORECASTING VARIANCES - BASIC INSURANCE**

(\$ Millions)									
Line #		2006	2007	2008	2009	2010 (CGAAP)	2011 (IFRS)	5 Year Average 2006-2010	6 Year Average 2006-2011
1	Forecast	\$ 539	\$ 528	\$ 552	\$ 573	\$ 592		\$ 557	
2	Actual (1)	\$ 512	\$ 522	\$ 537	\$ 560	\$ 575	\$ 594	\$ 541	
3	\$ Variance	\$ 27	\$ 6	\$ 15	\$ 13	\$ 17		\$ 16	
4	% Variance	5.0%	1.1%	2.7%	2.3%	2.9%		2.8%	
(1): 2011 IFRS Actual Column 6 Row 1 should include 2011 Outlook or Actual if Available									

Please breakdown Commission Staff Table 5 between Base Operating Expense, Government Initiatives, and Unique items showing actual and forecast for each breakdown for 2006, 2007, 2008, 2009, 2010, and 2011 Outlook.

Response:

	(\$ millions)						
	2006	2007	2008	2009	2010 (CGAAP)	2010 (IFRS)	2011 (IFRS)
<b>Forecast</b>							
Base Operating Expenses	\$ 501	\$ 506	\$ 535	\$ 546	\$ 559	\$ 559	\$ 582
Government Initiatives	23	18	24	30	34	34	33
Unique Items	15	4	(7)	(3)	(1)	13	5
Total forecast	539	528	552	573	592	606	620
<b>Actual</b>							
Base Operating Expenses	481	507	525	539	544	544	553
Government Initiatives	23	19	21	28	33	33	36
Unique Items	8	(4)	(9)	(7)	(2)	12	5
Total actual	512	522	537	560	575	589	594
<b>Variance</b>							
Base Operating Expenses	20	(1)	10	7	15	15	29
Government Initiatives	-	(1)	3	2	1	1	(3)
Unique Items	7	8	2	4	1	1	-
Total variance	\$ 27	\$ 6	\$ 15	\$ 13	\$ 17	\$ 17	\$ 26

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As explained on page 7C-2 of Appendix 7 C of the 2010 Streamlined Revenue Requirements Application, the favourable variance in 2006 under Base operating expense is largely due to lower than planned compensation, expenditures on corporate projects, road safety expenditures, and better than plan miscellaneous revenues and recoveries. The variance under unique items is due to the pension and post-retirement benefit adjustment due to changes in discount rates.

The favourable variance in 2007 under unique items is due to pension and post-retirement benefit adjustment due to changes in discount rates and facility exit costs.

As discussed in the response to information request 2010.1 RR BCUC.38.2, in 2008, the variance in Base operating expenses is attributed to the timing of corporate projects and road safety expenditures and unfilled vacancies. The variance under Government Initiatives is largely due to expenditures on the Intersection Safety Camera program. The unique items variance is due to changes in pension expense due to changes in discount rates.

As discussed in the response to information request 2010.1 RR BCUC.38.2, in 2009, the variance in Base operating expenses is due to better than plan bad debt recoveries and lower than plan regulatory costs.

The favourable variance in 2010 under Base operating expenses is due to lower compensation, computer and other costs associated with non-TP projects.

In 2011, the total favourable variance relates to the reduction of corporate operating expenses resulting from the suite of cost control measures that ICBC initiated in the second half of 2011. See the response to information request 2012.1 RR BCUC.70.1 for details related to these cost control measures.

**2012.1 RR BCUC.87.5 Reference: OPERATING EXPENSE AND ALLOCATION INFORMATION**  
**Exhibit B-1-1, Chapter 7**  
**General Questions**

Based on the information provided by ICBC in its 2010 Streamlined Revenue Requirements Application, Exhibit B-6 ICBC Response to IR 2010.1RR BCUC.38.3, Commission Staff have prepared the following Commission Staff Table 5.

**Commission Staff Table 5 - OPERATING EXPENSE FORECASTING VARIANCES - BASIC INSURANCE**

(\$ Millions)									
Line#		2006	2007	2008	2009	2010 (CGAAP)	2011 (IFRS)	5 Year Average 2006-2010	6 Year Average 2006-2011
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3	\$ Variance	\$ 27	\$ 6	\$ 15	\$ 13	\$ 17		\$ 16	
4	% Variance	5.0%	1.1%	2.7%	2.3%	2.9%		2.8%	
(1): 2011 IFRS Actual Column 6 Row 1 should include 2011 Outlook or Actual if Available									

**87.5 As a sensitivity analysis, if operating expenses were reduced by \$10 million, what is the impact on the Basic Insurance rate indication?**

**87.5.1 If operating expenses were increased by \$10 million, what is the impact on the Basic Insurance rate indication?**

**Response:**

If operating expenses were reduced by \$10 million, the Basic insurance operating expenses would decrease by about \$6 million. This would have an impact of -0.3 percentage points on the Basic insurance actuarial rate indication.

If operating expenses were increased by \$10 million, the Basic insurance operating expenses would increase by about \$6 million. This would have an impact of +0.3 percentage points on the Basic insurance actuarial rate indication.

Please see the response to information request 2012.1 RR BCUC.19.1, Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application and information requests.

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**2012.1 RR BCUC.88.1 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, Section C.2, pp. 8-4 to 8-5  
Government Initiatives Funded by User Fees or Cost Recovery**

**88.1 With respect to the Enhanced Driver's Licence and Enhanced Identification Card (EDL/EIC), ICBC in paragraph 11 states:**

**"This program [EDL/EIC] is expected to incur on-going operating losses. Discussions between ICBC and government are ongoing to reduce on-going operating losses and determine an appropriate funding mechanism."**

**When does ICBC expect this discussion conclude with an agreement on the appropriate funding mechanism?**

**88.1.1 If an agreement has been reached, please file the agreement and adjust the PY 2012 rate indication accordingly.**

**Response:**

**88.1**

ICBC has now completed further analysis in regards to the Enhanced Driver's Licence and Enhanced Identification Card (EDL/EIC) program. Based on this updated information, it is anticipated that future operating costs will be covered by the existing 'user pay' process as per the initial agreement between ICBC and government.

**88.1.1**

The EDL/EIC program was established as a government initiative fully funded through user fees. As such, the program's ongoing costs do not impact either ICBC's operating expenses or the policy year 2012 rate indication.

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**2012.1 RR BCUC.88.2 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, Section C.2, pp. 8-4 to 8-5  
Government Initiatives Funded by User Fees or Cost Recovery**

**With respect to the Motorcycle Safety Initiative, ICBC claims that it received funding from the government for one-time costs incurred for preliminary work for the Motorcycle Safety Initiative in 2010. Please confirm that the Motorcycle Safety Initiative, including any advertisements, is paid for by funding from the government and not paid by Basic Insurance. If not, why not?**

**Response:**

ICBC has received funds from government to recover the majority of the one-time project costs associated with the Motorcycle Safety Initiative. As per Appendix 8 A, Service Agreement Addendum for 2010, \$106,000 was funded through ICBC's Change Management Fund (CMF), which is an annual fund established in accordance with the Service Agreement between ICBC and government to support changes to Non-insurance services. As the CMF is an annual allocation included in the ongoing costs of Non-insurance services, financing granted from this fund does not affect the actuarial rate indication.

**2012.1 RR BCUC.88.3 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, Section C.2, pp. 8-4 to 8-5  
Government Initiatives Funded by User Fees or Cost Recovery**

**With respect to the Port Mann Bridge Tolling, ICBC indicates that the Port Mann Bridge Tolling initiative is being funded through cost recovery from the Transportation Investment Corporation. Please provide an update on the funding and cost recovery model for this project.**

**Response:**

The cost recovery model is based on an agreement ICBC has with the Transportation Investment Corporation (TI Corp). The agreement states that ICBC will be reimbursed for capital costs, implementation costs, ongoing costs, and future system upgrade costs upon providing satisfactory evidence to the TI Corp.

In 2011, ICBC incurred total costs of \$387,465, which were billed to TI Corp. To date, \$270,060 has been received and the remainder was submitted to TI Corp for payment on January 31, 2012.

The table below outlines the amounts billed and recovered.

**Port Mann Bridge Tolling Initiative – update as at January 31,2012**

2011 Total Incurred Costs	\$	387,465
2011 Total Billed and Received	\$	(270,060)
<hr/>		
2011 Total Recoverable	\$	117,405

2012 To Date Incurred Costs	\$	11,510
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The Port Mann Bridge Tolling initiative is funded through cost recovery so there is no impact to ICBC’s operating expenses or Basic insurance rates.

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**2012.1 RR BCUC.89.1 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver's licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**Given the large rate increase proposed for PY 2012, has ICBC considered delaying this program until next year, or have it discontinued?**

**Response:**

In Chapter 8, Appendix 8 B, ICBC advised the Commission that implementation of Canadian Driver Licence Agreement (CDLA) was to start in 2012. Implementation of this initiative has now been postponed and will now start in 2013 with completion scheduled for 2014.

Participation in the CDLA program is at the direction of government, which has committed at the federal level to sign the Agreement. ICBC does not have authority to discontinue the program.

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**2012.1 RR BCUC.89.2 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver's licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**89.2 Please explain which Canadian jurisdiction has already completed the process needed to satisfy the CDLA.**

**89.2.1 Which Canadian jurisdiction is still in the process of implementing the CDLA?**

**Response:**

**89.2**

No jurisdiction has completed the process needed to satisfy the Canadian Driver Licence Agreement (CDLA) to date. Four jurisdictions (Alberta, Saskatchewan, Manitoba, and Prince Edward Island) have indicated that they are in a position to commence implementing the CDLA in 2012 and have agreed to complete their applications to allow the Canadian Council of Motor Transport Administrators to explore the commencement of the agreement.

**89.2.1**

All Canadian jurisdictions are still in the process of adapting their driver licensing processes and systems to meet the requirements of the CDLA. Once a jurisdiction feels they have met all the required CDLA elements, their application will be sent to the CDLA Board of Directors for review and approval.

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**2012.1 RR BCUC.89.3 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver’s licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**Please provide the breakdown of items contained in the estimated one-time expenses of \$3.3 million and annual operating expenses of \$1.2 million. How do these expenses compare to other Canadian jurisdictions?**

**Response:**

The Canadian Council of Motor Transport Administrators (CCMTA) initially indicated that Canadian Driver Licensing Agreement (CDLA) identification requirements would have to apply to all transactions; this was the basis for ICBC’s cost estimates. There were, however, concerns regarding the potential impacts to customers and operational costs associated with this requirement. Further discussions resulted in an agreement that only first time BC Driver’s Licence and BC Identification Card applicants will be subject to these requirements. As a result, a reduction in the volume of transactions that will be affected by these changes has significantly reduced the projected impacts and operational costs to approximately \$641,000 per year. ICBC has also been able to decrease the one-time expenses due to efficiencies gained by implementing some aspects of the CDLA in conjunction with other programs. As a result, estimated one-time expenses are now \$3.2 million. Details of these costs are shown in the tables below.

<b>ONE TIME COSTS</b>		
<b>Capital Costs</b>		<b>\$000's</b>
	Workstation & Facilities Costs	223
<b>Project Development Expenses**</b>		
	Resources (Non IT, Policy, Testing, Change Management, Training, etc)	1,790
<b>Other</b>	Resources (IT)	853
	Computers, Contingency	353
		<b>3,219</b>
** Project Development Expenses are primarily associated with project team resources involved in the development, testing and implementation of changes.		

<b>ONGOING COSTS</b>		
Financial Impact		<b>\$000's</b>
	Compensation (14 FTEs)	632
	Other (Telephone, Electronic ID costs)	9
		<b>641</b>

In addition to the above changes in costs, the implementation of CDLA has been postponed and will now start in 2013 with completion scheduled for 2014.

Canadian jurisdictions do not currently provide information to CCMTA on their CDLA development or anticipated ongoing operational costs, so a comparison is not possible at this time.

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**2012.1 RR BCUC.89.3.1 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver's licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**What is the implementation cost impact if ICBC is to further delay the program, if any? Would there be a cost advantage to wait for other jurisdictions to complete their process first, then for ICBC to implement? Please discuss.**

**Response:**

ICBC expects minimal cost impacts as a result of delaying the implementation of the Canadian Driver Licence Agreement. There is a potential minor inflationary risk that could possibly affect project resource and ongoing operating cost estimates. Conversely, there are likely only minimal cost advantages to waiting for other jurisdictions, for example, the potential to benefit from any process efficiencies detected by the early adopters.

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**2012.1 RR BCUC.89.3.2 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver's licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**Please update the Budget schedule and demonstrate potential savings to offset the program cost.**

**Response:**

As per the table in the response to information request 2012.1 RR BCUC.89.3, the updated Budget Schedule is as follows:

One Time Costs: \$3.2 million

Ongoing Costs: \$641,000

ICBC currently does not have quantifiable savings estimates to offset program costs. As per the Memorandum of Understanding (MOU) signed by all Ministers in 2005, it was agreed that all provinces would commit to meeting CDLA requirements. As the body responsible for delivering Driver Licensing services on behalf of the government, it is ICBC's role to implement the CDLA.

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**2012.1 RR BCUC.89.4 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver’s licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**Please explain the impact on policyholders, brokers, and ICBC’s computer processing system capabilities as a result of the CDLA, considering that the process is to improve the driver licence security by aligning BC’s driver licensing and identification requirements with those of other Canadian jurisdictions.**

**Response:**

Canadian Driver Licence Agreement’s (CDLA) primary security benefits result from the strengthening and aligning of driver’s licence and identification card issuance across Canadian jurisdictions and establishing improved document security and integrity standards.

Only original BC driver’s licence and identification card applicants will be impacted by these new standards, as the CDLA’s scope does not include renewal or duplicate transactions. The implementation of the CDLA will result in these applicants having to now provide two pieces of approved proof of BC residency and proof of legal presence in Canada. Drivers who have a limited term of legal presence in Canada (e.g., work permit) will be issued a BC driver’s licence or identification card that expires at the same time as their authority to remain in Canada.

There are no operational impacts anticipated for brokers, as the security-based CDLA changes are limited to driver’s licence and identification card issuance transactions and improved card design and fraud controls. Nationally-aligned card design and anti-fraud standards will help improve the quality and consistency of identification being presented to brokers.

BC already met the CDLA’s card design and anti-fraud standards as part of the 2009 Digital Picture Identification project. To meet the remaining driver licensing application security enhancements, systems changes will be required to transition to the new six element identification requirement structure and allow for licence/card issuance to be limited to an individual’s term of legal presence in Canada.

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**2012.1 RR BCUC.89.5 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver's licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**Please comment if the CDLA has contemplated funding by user fees or cost recovery in the future (either partially or entirely), rather than funded by ICBC.**

**Response:**

ICBC is still in the planning stages for implementing the Canadian Driver Licence Agreement (CDLA), including whether future user fees or cost recovery could be used to recover program implementation costs and fund ongoing operational costs. While there are no new licensing transactions being established through the CDLA that would lend themselves to establishing a new fee, future consideration could be given to increasing the driver's licence issuance and renewal fees and providing ICBC with the authority to retain these additional fees to cover its CDLA costs. However, it should be noted that decisions regarding fee amounts and retention rest with government. Unlike the Enhanced Driver's Licence and Enhanced Identification Card program, the CDLA will not result in additional functionality being added to BC's driver's licences and identification cards that would be valued by the public to support the establishment of a new user fee.

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**2012.1 RR BCUC.89.6 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8B-1  
Canadian Driver Licence Agreement (CDLA)**

**On p. 8-4, ICBC indicates that the CDLA program has been delayed for a number of years and implementation is now scheduled to start in 2012.**

**On p. 8B-1, ICBC notes that the CDLA formalizes the exchange of driver's licences and records between Canadian jurisdictions and promotes the principle of one driver, one record, one licence.**

**Please explain if the CDLA has any linkages to the EDL/EIC initiative that is funded by user fees or cost recovery. Please discuss the implications, similarities and differences, if applicable.**

**Response:**

The Canadian Driver Licence Agreement (CDLA) is designed to enhance the application and issuance processes for driver's licences and identification cards. BC's Enhanced Driver's Licence and Enhanced Identification Card (EDL/EIC) program is built on the foundation of provincial driver licensing and identification card systems, adding additional identification and operational requirements to support the granting of United States land and water border-crossing privileges.

BC's EDL/EIC program is built on a cost recovery model that charges an additional fee on top of the regular BC driver's licence or identification card fee to cover the specific EDL/EIC processing and issuance costs. For example, the \$35 additional fee charged for original EDL/EIC applications covers the additional 20 minute appointment these individuals must attend, the additional EDL/EIC card features, and the expanded review and audit procedures required to support the security of the card.

ICBC is still in the planning stages for implementing the CDLA, including whether future user fees or cost recovery could be used to recover program implementation costs and fund ongoing operational costs. While there are no new licensing transactions being established through the CDLA that would lend themselves to establishing a new fee for possible recovery, future consideration could be given to increasing the driver licence issuance and renewal fees and providing ICBC with the authority to retain these additional fees to cover CDLA costs. However,

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it should be noted that decisions regarding fee amounts and retention rest with government. Unlike the EDL/EIC program, the CDLA will not result in additional functionality being added to BC's driver's licences and identification cards that would be valued by the public to support the establishment of a new user fee.

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**2012.1 RR BCUC.90.1 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8C-1  
Impaired Driving Initiative**

**On p. 8-4, ICBC states that the Impaired Driving Initiative includes the new roadside prohibitions and changes to vehicle impoundment introduced by government in 2010, and that potential claims savings may exist, but it is anticipated that it will take several years to be demonstrable.**

**On p. 8C-1, ICBC’s program objectives include automating the semi-manual processes and re-developing system interfaces between ICBC and the Office of the Superintendent of Motor Vehicles’ (OSMV) new core operating system in 2012.**

**Are there any recent court determinations and challenges to any roadside prohibitions and changes related to impaired driving? Please discuss how any new changes since 2010 would affect ICBC’s Impaired Driving Initiative.**

**Response:**

On November 30, 2011, the BC Supreme Court (the Court) ruled that parts of the impaired driving law that came into force in September 2010 were unconstitutional, specifically those sections that gave enforcement officers the authority to issue immediate 90-day roadside prohibitions to drivers who registered a blood-alcohol content greater than .08 (a “fail”) on a roadside breath test. The Court upheld the constitutionality of the “warn” range Immediate Roadside Prohibitions (IRPs).

Subsequently, the Court confirmed on December 23, 2011 that a “failure to blow” resulting in a 90-day IRP does not infringe the *Canadian Charter of Rights and Freedoms*. The Court also suspended the declaration of invalidity for the “fail” parts of IRP legislation until June 30, 2012, to give the BC Legislature time to amend the legislation.

The provincial government is contemplating legislative amendments during the Spring 2012 legislative session to address the problematic sections of the impaired driving law. Until the legislation moves forward, it is not possible to be certain what systems changes, if any, will be required by ICBC.

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It is not known at this time if the Court will make the order retroactive, thereby striking down all 90-day roadside prohibitions (approximately 15,000). A further hearing will be held on a future date.

Immediately after the Court decision, the police reverted to using sanctions still available to them under the *Motor Vehicle Act*, including an immediate 24 hour prohibition and, following further testing at the police station, a possible 90-day driving prohibition, and possible *Criminal Code of Canada* charges.

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**2012.1 RR BCUC.90.2 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8C-1  
Impaired Driving Initiative**

**On p. 8-4, ICBC states that the Impaired Driving Initiative includes the new roadside prohibitions and changes to vehicle impoundment introduced by government in 2010, and that potential claims savings may exist, but it is anticipated that it will take several years to be demonstrable.**

**On p. 8C-1, ICBC's program objectives include automating the semi-manual processes and re-developing system interfaces between ICBC and the Office of the Superintendent of Motor Vehicles' (OSMV) new core operating system in 2012.**

**Please explain if this new core operating system cited in the Impaired Driving Initiative has any linkages to the CDLA initiative, since both initiatives involves the OSMV.**

**Response:**

The new core operating system cited in the Impaired Driving Initiative is not linked in any way with the CDLA initiative. The Office of the Superintendent of Motor Vehicles' development of a new core operating system is independent of ICBC's existing contraventions database and drivers system. Successful implementation of CDLA will be dependent on the latter.

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**2012.1 RR BCUC.90.3 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8C-1  
Impaired Driving Initiative**

**On p. 8-4, ICBC states that the Impaired Driving Initiative includes the new roadside prohibitions and changes to vehicle impoundment introduced by government in 2010, and that potential claims savings may exist, but it is anticipated that it will take several years to be demonstrable.**

**On p. 8C-1, ICBC's program objectives include automating the semi-manual processes and re-developing system interfaces between ICBC and the Office of the Superintendent of Motor Vehicles' (OSMV) new core operating system in 2012.**

**Please explain the flexibility of this new core operating system that is to be implemented in 2012. Would ICBC require additional system changes for any new legislative changes to impaired driving provisions?**

**Response:**

Please refer to the response to information request 2012.1 RR BCUC.90.1 for background information.

It is ICBC's understanding that the Office of the Superintendent of Motor Vehicles' (OSMV) new Core Operating System (COS) will be flexible enough to adapt to changes in legislation, as is the case with ICBC's Driver Licensing systems. ICBC expects to continue its partnership with OSMV to understand legislative changes and their impacts on COS and ICBC systems, and to establish the required development and testing effort to ensure associated operational policy and business procedures are implemented successfully.

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**2012.1 RR BCUC.90.4 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8C-1  
Impaired Driving Initiative**

**On p. 8-4, ICBC states that the Impaired Driving Initiative includes the new roadside prohibitions and changes to vehicle impoundment introduced by government in 2010, and that potential claims savings may exist, but it is anticipated that it will take several years to be demonstrable.**

**On p. 8C-1, ICBC's program objectives include automating the semi-manual processes and re-developing system interfaces between ICBC and the Office of the Superintendent of Motor Vehicles' (OSMV) new core operating system in 2012.**

**90.4 Please provide the breakdown of items contained in the estimated one-time expenses of \$3 million and annual operating expenses of \$800,000.**

**90.4.1 Are these estimated expenses separate from the Road Safety investment 2011 forecast of \$1,309,000 under Impaired Driving in Figure 10.7 on p. 10-18?**

**Response:**

**90.4**

As the initial phase of the Impaired Driving Initiative program has now been implemented, further analysis has been completed to assess the actual impacts realized. As a result of this review, the annual operating expense estimate has significantly reduced to approximately \$310,000 per year. Further analysis was also completed to assess the costs associated with enhancements required to align ICBC with government's Core Operating System changes, which have experienced some unforeseen delays. The result is an increase to the estimate of one-time costs to \$3.6 million. Details of these costs are shown in the tables below.

<b>ONE TIME COSTS</b>	<b>\$000's</b>
<b>Hardware/Software Costs</b>	10
<b>Project Development Expenses</b>	
Resources (Non IT: Policy, Testing, Training, Business Analysis, etc)	<b>2,195</b>
Resources (IT)	<u><b>1,305</b></u>
	<u><b>3,500</b></u> 3,500
<b>Non Resource Expenses</b>	
Training, Photocopying, Travel, Brochures, Meetings, Postage etc	89.5
<b>One Time Operating Costs (Other)</b>	
Updating Driver Licensing Manuals, phone costs, card costs, workstation set up costs etc	11
<b>TOTAL</b>	<u><u><b>3,611*</b></u></u>

*\* Rounded*

<b>ONGOING COSTS</b>	<b>\$000's</b>
<b>Staffing Costs</b>	214.3
8.4 FTEs	
<b>DPID Costs (Digital Picture Identification- Image Capture at Offices)</b>	84.4
<b>Other</b>	11
Phone Costs, Corrections, Consumables	
<b>TOTAL</b>	<u><u><b>310*</b></u></u>

*\* Rounded*

### 90.4.1

Yes, these estimated expenses are separate from the Road Safety investment forecast in Chapter 10, Figure 10.7. The estimates stated in Appendix 8 A Service Agreement Addendum

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for 2010 are referring to the One Time Project Development costs, and the Ongoing Operating Costs.

The Ongoing Operating Costs include increased card production and employee resource costs associated with the administration of the actual program.

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**2012.1 RR BCUC.90.5 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, p. 8-4 and Appendix 8 B, p. 8C-1  
Impaired Driving Initiative**

**On p. 8-4, ICBC states that the Impaired Driving Initiative includes the new roadside prohibitions and changes to vehicle impoundment introduced by government in 2010, and that potential claims savings may exist, but it is anticipated that it will take several years to be demonstrable.**

**On p. 8C-1, ICBC's program objectives include automating the semi-manual processes and re-developing system interfaces between ICBC and the Office of the Superintendent of Motor Vehicles' (OSMV) new core operating system in 2012.**

**Please update the Budget schedule shown on p. 8C-1 for 2011 and forecast 2012.**

**Response:**

As per the table in the response to information request 2012.1 RR BCUC.90.4, the updated budget schedule is as follows:

One Time: \$3.6 million

Ongoing Expenses: \$310,000/year

As noted in the response to information request 2012.1 RR BCUC.90.4, the estimate of ongoing expenses has been reduced to \$310,000 due to lower than anticipated volumes. There are also one-time costs in 2011 and forecast for 2012 due to a one-time impact of the timing of the required changes to the Driver Risk Premium system. As a result, the 2012 forecasted financial impact for ongoing expenses is \$473,000 and \$310,000 annually in future years.

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**2012.1 RR BCUC.91.1 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, Appendix 8 D, Service Agreement Appendices, pp. 20 to 21  
The Estimated Cost of Non-Insurance Services**

**Page 20 of the Appendices to the Service Agreement between the Ministry of Public Safety and Solicitor General and the Insurance Corporation of British Columbia notes:**

**“... However, some commissions are recorded by ICBC as subtractions from revenue and are therefore included in Appendix E.”**

**Does IFRS allow for the netting of costs such as commissions from revenues?**

**Response:**

International Financial Reporting Standards (IFRS) requires that income and expenses be reported separately in the income statement except when offsetting reflects the substance of the transaction. IFRS also defines revenue measurement as the fair value of the consideration received or receivable.

As noted in the Application, Chapter 8 in Appendix 8 D, Appendix E, page 18, ICBC in some circumstances records revenue net of commissions paid to collection agencies. These revenues are various fines that ICBC collects on behalf of the government. Where the collection is problematic, ICBC engages the services of collection agencies. When collected, the agencies will remit back to ICBC the fine amount, net of their commission. The amount of these annual commissions for collection agencies is insignificant.

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**2012.1 RR BCUC.91.2 Reference: REPORTING ON GOVERNMENT INITIATIVES  
Exhibit B-1-1, Chapter 8, Appendix 8 D, Service Agreement Appendices, pp. 20 to 21  
The Estimated Cost of Non-Insurance Services**

**Page 20 of the Appendices to the Service Agreement between the Ministry of Public Safety and Solicitor General and the Insurance Corporation of British Columbia notes:**

**“... However, some commissions are recorded by ICBC as subtractions from revenue and are therefore included in Appendix E.”**

**For each Type of Service included in Table F.1, please indicate the cost and the amount recovered and the over or under-recovered amount.**

**Response:**

The amounts in Table F.1 that offset costs are primarily miscellaneous revenue.

Under Driver Services, miscellaneous revenues comprises primarily Graduated Licensing Program (GLP) Level 2 Fees and Road Test Cancellation fees. ICBC’s authority to retain fees is established under section 17 of the *Insurance Corporation Act*. This section allows ICBC to retain part or all of its costs related to carrying out its duties under the *Motor Vehicle Act* and the *Commercial Transport Act*, with Treasury Board prescribing what and how much of the costs ICBC can keep. Under the *Permitted Cost of Administering Drivers’ Test and Missed Test Fees in Motor Vehicle Fees Regulation*, ICBC is permitted to keep all of the fees it collects for delivering the recoverable class 5 and 6 road tests and all road test cancellation fees.

Miscellaneous revenues in Driver Services in 2010 amounted to \$5.4 million, of which GLP Level 2 Fees were \$5.1 million and Road Test Cancellation Fees were \$0.3 million. GLP Level 2 Fees are class 5 road test fees excluding re-examinations. The GLP Level 2 Fees ICBC charges substantively cover the costs ICBC incurs across the driver licensing service framework for providing this service. Road Test Cancellation Fees are fees charged to individuals who do not provide ICBC with 48 hours cancellation notice or are not able to provide a valid reason for cancellation. ICBC charges cancellation fees in an effort to minimize the wait times for its customers awaiting an appointment, as well as covering the costs of lost time and potential revenues.

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Miscellaneous revenue in Non-insurance Administrative and Other comprises primarily US Filing Fees. Miscellaneous revenues in 2010 amounted to \$0.4 million, of which US Filing Fees were \$0.3 million and various smaller revenue and expense recovery items were \$0.1 million. US filing fees are fees for providing proof of financial responsibility. Commercial carriers that travel through the US must file proof of financial responsibility with the US Federal Motor Carrier Safety Administration (FMCSA). The FMCSA amended its liability regulations for Canadian motor carriers and as a result of the amendment, ICBC eliminated this fee through a Commission-approved amendment to the Basic Insurance Tariff effective December 1, 2011. Through elimination of the fee, ICBC is passing its savings on to customers.

There are no miscellaneous revenues under Commissions. The last costs ICBC incurred in Commercial Vehicle Services were in 2006.

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**2012.1 RR BCUC.92.1 Reference: PERFORMANCE MEASURES**

**Exhibit B-1-1, Chapter 9, Section A, p. 9-2**

**Figure 9.1 – Performance Measures Results, 2011 Forecast and 2011 Outlook**

**Figure 9.1 shows performance measures results, including 2011 Forecast and 2011 Outlook.**

**Please expand Figure 9.1 to include performance measures forecast in 2008, 2009, and 2010, instead of showing only actual results for those three years. Please show and briefly explain variances.**

**Response:**

Please see Attachment A – Performance Measures Results, 2008 to 2011 Targets, and 2011 Outlook for an expanded Figure 9.1 to include performance measure targets in 2008, 2009, and 2010.

For an explanation of the performance measure variances please see the following attachments:

- Attachment B – 2010 Explanatory Notes to Performance Statistics
- Attachment C – 2009 Explanatory Notes to Performance Statistics
- Attachment D – 2008 Explanatory Notes to Performance Statistics



# **2012.1 RR BCUC.92.1 – Attachment A – Performance Measures Results, 2008 to 2011 Targets, and 2011 Outlook**



Performance Measures Results, 2008 to 2011 Targets, and 2011 Outlook

Performance Measures Results, 2008 to 2011 Targets, and 2011 Outlook

PERFORMANCE MEASURES		2008 Target	2008 Actual	2009 Target	2009 Actual	2010 Target	2010 Actual	2011 Forecast	2011 Outlook
Service	Insurance Services Satisfaction	93%	93%	93%	96%	93%	97%	93%	96%
	Driver Licensing Satisfaction	91%	93%	91%	93%	92%	94%	93%	93%
	Claims Services Satisfaction (BCUC)	83%	83%	83%	81%	83%	84%	83%	83%
		67%	66%	66%	70%	67%	76%	73%	73%
	New Claims Initiation								
	Calls answered in 210 seconds	n/a	87%	n/a	87%	n/a	89%	n/a	n/a
	Calls answered in 120 seconds	n/a	82%	n/a	82%	n/a	83%	n/a	n/a
	Calls answered in 100 seconds	80%	80%	80%	81%	80%	82%	80%	80%
	Customer Contact Service Level								
	Calls answered in 90 seconds	66%	72%	66%	73%	68%	74%	70%	75%
Customer Approval Index	n/a	56%	n/a	59%	n/a	59%	n/a	n/a	
Legal Representation Rate	36%	37%	37%	39%	39%	40%	40%	40%	
Complaints Heard by the Fairness Commissioner	n/a	160	n/a	183	n/a	203	n/a	n/a	



Performance Measures Results, 2008 to 2011 Targets, and 2011 Outlook

PERFORMANCE MEASURES		2008 Target	2008 Actual	2009 Target	2009 Actual	2010 Target	2010 Actual	2011 Forecast	2011 Outlook
Financial	Basic Loss Ratio*	98.6%	87.7%	95.8%	93.6%	95.1%	96.7%	99.2%	106.8%
	Basic Insurance Expense Ratio:								
	Basic Administrative Cost Ratio*	4.1%	3.7%	3.9%	4.1%	4.3%	4.3%	4.9%	4.7%
	Basic Premium Tax Ratio	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
	Basic Commissions Ratio	<u>2.3%</u>	<u>2.2%</u>	<u>2.3%</u>	<u>2.2%</u>	<u>2.4%</u>	<u>2.4%</u>	<u>2.5%</u>	<u>2.5%</u>
	Basic Insurance Expense Ratio*	10.8%	10.3%	10.6%	10.7%	11.1%	11.1%	11.8%	11.6%
	Basic Non-insurance Expense	5.0%	5.1%	5.4%	5.1%	5.1%	5.2%	5.7%	5.4%
	Investment Return **	Benchmark + 0.269%	Benchmark +0.64%	Benchmark + 0.269%	Benchmark +0.55%	Benchmark +0.275%	Benchmark +0.60%	Policy Market Benchmark Return	Policy Market Benchmark Return
Injury Severity	Bodily Injury Paid Severity	\$28,906	\$27,563	\$29,008	\$29,256	\$30,497	\$32,072	\$33,457	\$33,457
	Below \$40,000	n/a	\$9,357	n/a	\$9,671	n/a	\$9,859	n/a	n/a
	Above \$40,000	n/a	\$134,137	n/a	\$132,451	n/a	\$141,167	n/a	n/a
	Accident Benefit Paid Severity	\$1,787	\$1,762	\$1,832	\$1,860	\$1,844	\$1,985***	\$2,037***	\$2,037***
Efficiency	Cost Per Policy In Force*	\$339	\$334	\$351	\$347	\$359	\$354	\$358	\$357
	Claims Efficiency Ratio	19.6%	21.2%	21.2%	21.6%	21.6%	19.9%	20.1%	18.2%
Directorial	New Driver Comparative Crash	n/a	1.13	n/a	1.05	n/a	1.04	n/a	n/a
	Crash Rate	n/a	1,015	n/a	1,000	n/a	940	n/a	n/a
	Injured Person Rate	n/a	285	n/a	275	n/a	280	n/a	n/a



# **2012.1 RR BCUC.92.1 – Attachment B – 2010 Explanatory Notes to Performance Statistics**



## 2010 Explanatory Notes to Performance Statistics

### 1. **Insurance Services Satisfaction**

The 2010 actual was 97%, a four percentage point improvement from the 2010 target. Please see ICBC's 2010 Annual Report, page 15, for further information.

### 2. **Driver Licensing Satisfaction**

The 2010 result for ICBC's customer satisfaction for driver licensing was 94%, two percentage points higher than plan. Please see ICBC's 2010 Annual Report, page 16, for further information.

### 3. **Claims Services Satisfaction (BCUC)**

The 2010 Claims Services Satisfaction of 84% was one percentage point better than the 2010 target of 83%. Accident Benefit Only Satisfaction of 76% was nine percentage points better than the 2010 target. Improving customer perception continues to be a key objective of ICBC's corporate strategy.

### 4. **New Claims Initiation**

The 2010 Actual of 82% was two percentage points better than the target of 80% of calls answered in 100 seconds. The 210 second and 120 second results for 2010 (89% and 83% respectively) were slightly better than the 2009 results (87% and 82% respectively).

### 5. **Customer Contact Service Level**

The Customer Contact Service Level result of 74% was above the 2010 target as a result of proactive management of attrition and continued improvement of training coordination.



## 6. Customer Approval Index

The Customer Approval Index includes general questions about rates, service, and road safety and is not limited to the Basic insurance business. To qualify for the Customer Approval Index survey, the survey respondent must either hold an ICBC insurance policy and/or a valid BC driver's licence. There is no requirement for the survey respondent to have had a claim with ICBC. The majority of respondents (representative of BC population) have not had a claim, but only had contact with ICBC through their insurance policy renewal or through the renewal of their driver's licence.

This measure does not have a target.<sup>1</sup> The 2010 Customer Approval Index of 59% was consistent with the 2009 score.

## 7. Legal Representation Rate

The 2010 actual Legal Representation Rate of 40% was one percentage point over the target of 39%.

## 8. Complaints Heard by the Fairness Commissioner

The Complaints Heard by the ICBC Fairness Commissioner measure is the number of files where a complaint is received by the Fairness Commissioner and the files closed in that year. The number of files closed by the Fairness Commissioner in 2010 was 203, higher than the 183 files closed in 2009. Claims services comprise 52% of the total, slightly less than 2009.

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<sup>1</sup> As described in Chapter 8 of the 2007 Revenue Requirements Application, ICBC uses the Customer Approval Index results to better understand public perception and to develop communications that promote informed opinions and a better understanding of the value of ICBC. The index results do not measure customer service and for this reason, ICBC does not set a corporate target for the Customer Approval Index.

**9. Basic Loss Ratio**

The 2010 Basic Loss Ratio of 96.7% was higher than the target of 95.1% due to:

- Current year claims costs were higher than plan due to higher than expected frequency of injury claims offset by lower than expected frequency of property damage claims.
- Discounting adjustment was unfavourable in comparison to plan as a result of lower prevailing interest rates (2010 actual = 4.46%, 2010 plan = 4.64%).
- Premiums earned (denominator) were lower than expected mostly due to lower average premium per policy written resulting from a shift in Claim-Rated Scale discount levels and rate classes.

These unfavourable variances were offset by:

- Prior years' claims adjustments were lower than expected due to favourable development and continuing savings from claims management initiatives.
- Claims handling and road safety costs were both favourable to plan.

**10. Basic Insurance Expense Ratio**

The 2010 Basic Administrative Cost Ratio, the 2010 Basic Premium Tax Ratio, and the 2010 Basic Commissions Ratio were all consistent with plan.

**11. Basic Non-insurance Expense Ratio**

The 2010 Basic Non-insurance Expense Ratio (5.2%) was slightly higher than the target of 5.1% as a result of higher than expected non-insurance operating costs combined with lower than expected premiums earned.

**12. Investment Return**

Please see ICBC's 2010 Annual Report, page 22, for further information.



### **13. Injury Severity**

#### **a. Bodily Injury Paid Severity**

The 2010 actual Bodily Injury Paid Severity of \$32,072 was 5.2% above the target of \$30,497, mainly due to the higher number of file closures in the Above \$40,000 payment range.

#### **b. Accident Benefit Paid Severity**

The 2010 actual Accident Benefit Paid Severity of \$1,985 was 7.7% above the 2010 target of \$1,844, mainly due to increased closures during 2010 of files which had had payments over an extended number of years.

In 2010, ICBC purchased Structured Settlements on a pilot basis to provide more flexibility and payment options for some customers entitled to long-term disability benefits. Including these Structured Settlements, the 2010 Accident Benefit Paid Severity is \$2,139.

### **14. Cost Per Policy In Force**

The 2010 actual cost per policy (\$354) was better than the target (\$359) by \$5. The number of policies in force was higher than expected while the total costs were lower than plan. Both internal operating costs and external expenses were lower than expected (\$11 favourable). Premium taxes and commissions were consistent with plan while the adjustment to deferred premium acquisition costs (DPAC) was higher than expected (\$6 unfavourable).

### **15. Claims Efficiency Ratio**

This measure is defined as the percentage of claims handling costs per dollar of claims paid. The Claims Efficiency Ratio should be assessed in conjunction with the Basic Loss Ratio. Some claims handling costs within the current ICBC cost structure are fixed in nature and thus, cannot be readily changed. As such, an increase in claims payments may yield a lower Claims Efficiency Ratio which is, in fact, adverse to our objective of claims and loss management (see Basic Loss Ratio).



In 2010, claims handling costs (numerator) were lower than expected whereas claims paid during the year (denominator) were higher than expected. The net result was a lower Claims Efficiency Ratio of 19.9% in comparison to the target of 21.6%.

**16. New Driver Comparative Crash Rate, Crash Rate and Injured Person Rate**

ICBC does not develop targets for New Driver Comparative Crash Rate, Crash Rate, or Injured Person Rate as it uses them only as a high level indicator of the effectiveness of road safety programs and not as a measure. The Crash Rate in 2010 (940) was approximately 6% lower than in 2009 (1,000). The Injured Person Rate in 2010 (280) increased by 1.8% from 2009 (275) and the New Driver Comparative Crash Rate in 2010 (1.04) decreased by 1% as compared to 2009 (1.05).



# **2012.1 RR BCUC.92.1 – Attachment C – 2009 Explanatory Notes to Performance Statistics**



## 2009 Explanatory Notes to Performance Statistics

### 1. **Insurance Services Satisfaction**

For 2009, the results were 96%, which represents a high level of customer satisfaction with Autoplan transactions at brokers' offices. See 2009 ICBC Annual Report, page 16.

### 2. **Driver Licensing Satisfaction**

Above plan. See 2009 ICBC Annual Report, page 17.

### 3. **Claims Services Satisfaction (BCUC)**

The Claims Services Satisfaction was slightly below (2 percentage points) the 2009 target. Accident Benefit Only Satisfaction was higher (4 percentage points) than the 2009 target.

### 4. **New Claims Initiation**

There was a slight increase (1 percentage point) from 2009 target for calls answered within 100 seconds. The 210 second and 120 second results are consistent with the 2008 results (87% and 82% respectively).

### 5. **Customer Contact Service Level**

The Customer Contact Service Level result of 73% is above the 2009 target as a result of proactive management of attrition, improved training coordination, and because new call types, such as Enhanced Driver Licence, did not have as great an impact as was expected in 2009.

### 6. **Customer Approval Index**

The Customer Approval Index includes general questions about rates, service, and road safety and is not limited to the Basic insurance business. To qualify for the



Customer Approval Index survey, the survey respondent must either hold an ICBC insurance policy and/or a valid BC driver's licence. There is no requirement for the survey respondent to have had a claim with ICBC. The majority of respondents (representative of BC population) have not had a claim, but only had contact with ICBC through their insurance policy renewal or through the renewal of their driver's licence.

This measure does not have a target.<sup>1</sup> The 2009 Customer Approval Index of 59% is higher than the prior two years but consistent with years previous to 2007.

### **7. Legal Representation Rate**

The 2009 actual Legal Representation Rate is 2 percentage points over target.

### **8. Complaints Heard by the Fairness Commissioner**

The Complaints Heard by the ICBC Fairness Commissioner measure is the number of files where a complaint is received by the Fairness Commissioner and the file closed in that year. The number of files closed by the Fairness Commissioner in 2009 was 183, slightly higher than the 2008 files closed of 160. Claims services comprise 55% of the total, slightly higher than 2008.

### **9. Basic Loss Ratio**

The 2009 Basic Loss Ratio of 93.6% was better than the target of 95.8% due to:

- Current year claim costs were lower than expected mainly due to favourable frequency trends, good driving conditions, and the general economic condition.
- Prior years' claims adjustments were favourable to plan due to the positive development of bodily injury and accident benefit claims.
- Claims handling and road safety costs were lower than plan, contributing to the overall favourable variance.

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<sup>1</sup> As described in Chapter 8 of the 2007 Revenue Requirements Application, ICBC uses the Customer Approval Index results to better understand public perception and to develop communications that promote informed opinions and a better understanding of the value of ICBC. The index results do not measure customer service and for this reason, ICBC does not set a corporate target for the Customer Approval Index.



These favourable variances were offset by:

- Discounting adjustment was unfavourable in comparison to plan as a result of a decrease in the rate used to discount claims.
- Premiums earned were lower than expected.

### **10. Basic Insurance Expense Ratio**

The 2009 Basic Administrative Cost Ratio of 4.1% was higher than the target of 3.9% due to higher than plan administrative costs and lower than plan premiums earned. In 2009, operating expenses increased as a result of general inflationary increases and compensation increases.

The 2009 Basic Premium Tax Ratio and the 2009 Basic Commissions Ratio were consistent with plan.

### **11. Basic Non-insurance Expense Ratio**

The 2009 Basic Non-insurance Expense Ratio (5.1%) was better than the target (5.4%) due to lower than plan non-insurance operating costs.

### **12. Investment Return**

See 2009 ICBC Annual Report, page 24.

### **13. Injury Severity**

The 2009 actual Bodily Injury Paid Severity is slightly above (less than 1%) the 2009 target. The 2009 actual Accident Benefit Paid Severity is slightly above (1.5%) the 2009 target.

### **14. Cost Per Policy In Force**

The 2009 actual cost per policy (\$347) was better than plan (\$351) by \$4. The number of policies in force was higher than plan and the total costs were lower than plan. Overall, internal operating costs, commission expenses, and the adjustment to deferred premium acquisition costs (DPAC) were favourable to plan.



**15. Claims Efficiency Ratio**

This measure is defined as the percentage of claims handling costs per dollar of claims paid. It is important to look at the Claims Efficiency Ratio in conjunction with the Basic Loss Ratio in order to evaluate the efficiency of ICBC's services. When claims payments (denominator) are lower, the Claims Efficiency Ratio may increase; however, the loss ratio would be favourable as claims payments decrease.

The 2009 actual result of 21.6% was unfavourable to the target of 21.2% primarily due to claims paid during the year being lower than plan. Some claims handling costs within the current ICBC cost structure are fixed in nature and thus, cannot be readily changed. Claims payments were approximately \$52 million less than plan due to lower than expected number of claims resulting from favourable driving conditions and the general economic condition, lower claims handling and road safety costs, and prior years' claims improvements (see Basic Loss Ratio).

**16. New Driver Comparative Crash Rate, Crash Rate and Injured Person Rate**

ICBC does not develop targets for New Driver Comparative Crash Rate, Crash Rate, or Injured Person Rate as it uses them only as a high level indicator of the effectiveness of road safety programs and not as a measure. The 2009 results show improvements in all three directional measures. The Crash Rate in 2009 (1,000) was approximately 1.5% lower than in 2008 (1,015). The Injured Person Rate in 2009 (275) decreased by 3.5% from 2008 (285) and the New Driver Comparative Crash Rate in 2009 (1.05) decreased by 7.1% as compared to 2008 (1.13).



# **2012.1 RR BCUC.92.1 – Attachment D – 2008 Explanatory Notes to Performance Statistics**



## 2008 Explanatory Notes to Performance Statistics

### 1. **Insurance Services Satisfaction**

No variance from plan. See 2008 ICBC Annual Report, page 16.

### 2. **Driver Licensing Satisfaction**

Above plan. See 2008 ICBC Annual Report, page 17.

### 3. **Claims Services Satisfaction (BCUC)**

No variance in Claims Services Satisfaction from 2008 target. Accident Benefit satisfaction was slightly below (1%) 2008 target.

### 4. **New Claims Initiation**

No variance from 2008 target for calls answered within 100 seconds (80%). The 210 second and 120 second results exceed the 2007 actual results (85% in 2007 and 87% in 2008 for 210 seconds and 80% in 2007 and 82% in 2008 for 120 seconds).

### 5. **Customer Contact Service Level**

The Customer Contact Service Level result is above the 2008 target due to proactive management of employee attrition, improved training coordination, and stability in call types, with no new call types added for 2008.

### 6. **Customer Approval Index**

The Customer Approval Index includes general questions about rates, service, and road safety and is not limited to the Basic insurance business. To qualify for the customer approval index survey, the survey respondent must either hold an ICBC insurance policy and/or a valid BC driver's licence. There is no requirement for the survey respondent to have had a claim with ICBC. The majority of respondents (representative of BC population) have not had a claim, but only had contact with



ICBC through their insurance policy renewal or through the renewal of their driver's licence.

This measure does not have a target.<sup>1</sup> The 2008 Customer Approval Index of 56% is consistent with the prior year result of 56%.

### **7. Legal Representation Rate**

The 2008 actual Legal Representation Rate is 1% over plan. However, while the Legal Representation Rate did experience a small increase, the newly represented exposure count (numerator) was lower in 2008 than in 2007.

### **8. Complaints Heard by the Fairness Commissioner**

The Complaints heard by the Fairness Commissioner measure is the number of files where a complaint is heard by the Fairness Commissioner and the file closed in the year. The number of files closed by the Fairness Commissioner in 2008 (160) decreased in comparison to the previous year (186). This can mostly be ascribed to a reduction in files related to Claims Services, which comprise approximately 50% of the total.

### **9. Basic Loss Ratio**

The 2008 Basic Loss Ratio of 87.7% was better than the target of 98.6% due to:

- Current year claim costs were lower than expected in both injury and material damage coverages due to favourable driving conditions resulting in lower than planned reported claims volume.
- Prior years' claims adjustments were favourable in comparison to plan due to an improvement in injury coverages offset by an unfavourable emergence in property damage claims.

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<sup>1</sup> As described in Chapter 8 of its March 2007 Revenue Requirements Application, ICBC uses the Customer Approval Index results to better understand public perception and to develop communications that promote informed opinions and a better understanding of the value of ICBC. The index results do not measure customer service and for this reason, ICBC does not set a corporate target for the Customer Approval Index.



- Claims handling and road safety initiatives contributed to the overall favourable claims outcome.
- Discounting adjustment was unfavourable in comparison to plan as a result of a decrease in the rate used to discount claims.

**10. Basic Insurance Expense Ratio**

The 2008 Basic Administrative Cost Ratio of 3.7% was better than target due to lower than plan administrative costs.

The 2008 Basic Premium Tax Ratio and the 2008 Basic Commissions Ratio were consistent with plan.

**11. Basic Non-insurance Expense Ratio**

The 2008 Basic Non-insurance Expense Ratio (5.1%) was slightly higher than plan (5.0%).

**12. Investment Return**

See 2008 ICBC Annual Report, pages 21 and 22.

**13. Injury Severity**

The 2008 actual bodily injury paid severity is approximately 5% under the 2008 target, which is based on a five-year trend. The decrease in 2008 actual bodily injury paid severity is primarily attributable to exposures paid above \$40,000, which were approximately 2.2% lower than the five-year trend. The 2008 actual accident benefit paid severity is slightly below (1.4%) the 2008 target.

**14. Cost Per Policy In Force**

The 2008 actual cost per policy (\$334) was better than plan (\$339) by \$5. Overall, both the number of policies in force and the total costs were lower than plan. Lower costs were comprised of lower than plan internal operating costs and commission expenses, and a favourable adjustment to deferred premium acquisition costs (DPAC).

**15. Claims Efficiency Ratio**

This measure is defined as the percentage of claims handling costs per dollar of claims paid. It is important to look at the Claims Efficiency Ratio in conjunction with the Basic Loss Ratio in order to evaluate the efficiency of ICBC's services. When claims payments (denominator) are lower, the Claims Efficiency Ratio may increase; however, the loss ratio would be favourable as our claims payments decrease.

The 2008 actual result of 21.2% was worse than the target of 19.6% primarily due to claims paid during the year being significantly lower than plan and costs not being aligned with this decline. Some of the claims handling costs within the current ICBC cost structure are fixed in nature and thus, cannot be readily changed. Claims payments were approximately \$175 million less than plan due to lower than expected number of claims resulting from favourable driving conditions, claims handling and road safety initiatives, prior years' claim improvements, and a decline in the growth of the number of vehicles on the road (see Basic Loss Ratio).

**16. New Driver Comparative Crash Rate, Crash Rate and Injured Person Rate**

ICBC does not develop targets for new driver comparative crash rate, crash rate, or injured person rate as it uses them only as a high level indicator of the effectiveness of road safety programs and not as a measure. The 2008 results show improvements in all three directional measures. The crash rate in 2008 (1,015) was approximately 5% lower than in 2007 (1,066). This is most likely due to a combination of economic changes, dry weather, and the continuing effect of road safety programs. There were not significant differences in the new driver comparative crash rate or the injured person rate.

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**2012.1 RR BCUC.92.2 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section A, p. 9-2  
Figure 9.1 – Performance Measures Results, 2011 Forecast and 2011 Outlook**

**Figure 9.1 shows performance measures results, including 2011 Forecast and 2011 Outlook.**

**Please complete the “n/a” fields in Figure 9.1. If the information is not available, please explain.**

**Response:**

The information is not available for the “n/a” fields in Chapter 9, Figure 9.1 of the Application. The explanations for why targets are not provided are set out in Chapter 9 of the Application as follows:

- New Claims Initiation on page 9-6, paragraph 21.
- Customer Approval Index on page 9-7, paragraph 29.
- Complaints Heard by the Fairness Commissioner on page 9-8, paragraph 34.
- New Driver Comparative Crash Rate, Crash Rate, and Injured Person Rate on page 9-15, paragraph 73.

Additional information is provided in the responses to information requests 2012.1 RR BCUC.93.1 on the Customer Approval Index and 2012.1 RR BCUC.101.1 on Directional Indicators.

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**2012.1 RR BCUC.92.3 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section A, p. 9-2  
Figure 9.1 – Performance Measures Results, 2011 Forecast and 2011 Outlook**

**Figure 9.1 shows performance measures results, including 2011 Forecast and 2011 Outlook.**

**Please clarify the term “Policy Market Benchmark Return” under investment return for 2011 forecast and 2011 outlook. Why are they presented differently than actual results in the previous three years?**

**Response:**

The policy benchmark return is a 4-year annualized return calculated as the average of individual asset class benchmark returns weighted according to the portfolio’s strategic asset mix. Asset class benchmarks and strategic asset mix are detailed in the Statement of Investment Policy and Procedures.

For performance purposes, ICBC has set a minimum performance target equal to the policy benchmark return. As of the December 1, 2011 filing date, the policy benchmark return for the 2011 forecast and outlook were not yet available because it is dependent on market performance to December 31, 2011. However, for the previous three years, ICBC is able to calculate the performance of its investment portfolio and compare it to the performance of the policy benchmark. Actual results show the difference between the ICBC investment portfolio return and policy benchmark return. Results show that the ICBC investment portfolio has outperformed the policy benchmark return in each of the last three years.

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**2012.1 RR BCUC.92.4 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section A, p. 9-2  
Figure 9.1 – Performance Measures Results, 2011 Forecast and 2011 Outlook**

**Figure 9.1 shows performance measures results, including 2011 Forecast and 2011 Outlook.**

**Please explain why the Basic Administrative Cost Ratio has been declining since 2008.**

**Response:**

Chapter 9, Figure 9.1 of the Application displays an increase in the Basic Administrative Cost Ratio since 2008. Increases in this ratio, as displayed in Figure 9.1, are in line with increases in operating expenses shown in Chapter 7, Figure 7.4 of the Application, coupled with very minimal increases in the premiums earned denominator.

The Basic Administrative Cost Ratio for 2011 Forecast of 4.9% reflects the costs included in the 2011 – 2013 Service Plan, whereas the 2011 Outlook ratio of 4.7% reflects reduced operating costs as a result of ICBC’s cost control measures to limit operating expense growth to within inflation.

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**2012.1 RR BCUC.92.5 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section A, p. 9-2  
Figure 9.1 – Performance Measures Results, 2011 Forecast and 2011 Outlook**

**Figure 9.1 shows performance measures results, including 2011 Forecast and 2011 Outlook.**

**Please update Figure 9.1 for actual 2011 results and 2012 forecast.**

**Response:**

ICBC provides target and actual performance measures for the most recent completed calendar year as part of its regular compliance reporting to the Commission. The information collected is also cross-referenced with the corporate Annual Report, which is typically made public at the end of May. ICBC will provide the requested information including, the 2012 targets, at the end of May in keeping with the existing reporting cycle and regulatory reporting requirements.

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**2012.1 RR BCUC.92.6 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section A, p. 9-2  
Figure 9.1 – Performance Measures Results, 2011 Forecast and 2011 Outlook**

**Figure 9.1 shows performance measures results, including 2011 Forecast and 2011 Outlook.**

**92.6 Are any of ICBC’s performance measures (Service, Financial, Efficiency, and Directional) comparable to other similar businesses or in other jurisdictions?**

**92.6.1 If so, how do ICBC’s performance measures perform in comparison to its counterparts?**

**92.6.2 If not, please demonstrate how ICBC ensures that its performance is in line with industry standards.**

**Response:**

**92.6**

The Basic insurance loss ratio is a component of the corporate loss ratio while the Basic Expense Ratio and the Non-insurance Expense Ratio are components of the corporate expense ratio. As indicated in the 2010 ICBC Annual Report, page 20, filed as Appendix 11 C of the Application, the corporate loss ratio and the corporate expense ratio are benchmarked against the Property and Casualty industry. The Basic insurance loss ratio is typically higher than the corporate loss ratio while the Basic insurance expense ratio is typically lower than the corporate expense ratio. Non-insurance costs are not typically incurred by insurance companies.

As indicated in the 2010 ICBC Annual Report, page 22, the investment return is benchmarked to standard market benchmarks. ICBC’s investment returns compare favourably to market returns.

**92.6.1**

Please see the response to 2012.1 RR BCUC.92.6.

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**92.6.2**

The performance measures discussed in Chapter 9 of the Application were agreed to as part of the May 2004 Negotiated Settlement Agreement and modified per the July 2006 Decision. Some of the performance measures reflected in Figure 9.1 are not industry standards and do not necessarily align with ICBC’s operating practices, which have evolved since 2004.

Examples of performance measures which no longer align with ICBC’s operating practices are two of the service measures (New Claims Initiation and Customer Contact Service Level) relating to ICBC’s call centres. These two measures are defined as the percentage of incoming calls that are answered within a specific threshold of time. Although these performance measures are used internally, they have limited value as regards providing call centre management a perspective of overall performance. No appropriate external benchmarks have been found for these measures.

As explained in Chapter 6 of the Application, ICBC works with the Service Quality Measurement Group Inc., a call centre research and surveying company that provides call centre benchmarking, tracking, surveying, certification, and awards, among other services. In 2011 the Claims Contact Centre (CCC) was awarded World Class Call Centre Certification by this company for the third year. At the end of 2011 CCC received a number of awards while the Driver Licensing call centre was awarded World Class Call Centre Certification.

As another example, the road safety directional indicators are measured relative to 10,000 policy years earned. This is not an industry standard measure used by other insurers. Most jurisdictions measure road safety indicators relative to population, active driver’s licences, or kilometres driven. As an insurance company, however, ICBC is able to link crashes with policies, which better represents the crash rate of actual drivers on the road. As described in the response to information request 2012.1 RR BCUC.107.3, ICBC does review crash and casualty rate comparisons (using consistent denominators) against other jurisdictions as part of its annual planning process.

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As part of the transformation process that ICBC is currently undergoing it is planning on reviewing its performance measures in the various customer facing and support divisions, as well as on a corporate basis. ICBC may propose to introduce changes to the performance measures in whole or in part for consideration by the Commission as part of future revenue requirements applications or other regulatory processes as appropriate.

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**2012.1 RR BCUC.93.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, B.1.6, p. 9-7  
Customer Approval Index**

**ICBC notes it uses the Customer Approval Index results to better understand public perception and to develop communications that promote informed opinions and a better understanding of the value of ICBC. ICBC does not set a corporate target for the Customer Approval Index as it is a directional measure.**

**Please explain why ICBC does not set a corporate target for the Customer Approval Index.**

**Response:**

ICBC does not set a corporate target for the Customer Approval Index because it is not indicative of service satisfaction. The Customer Approval Index is a directional measure that serves as an indicator of public perception. There is no requirement for survey respondents to have completed a recent ICBC transaction. A number of factors influence public perception – some are within the control of ICBC (e.g., customer service/satisfaction with a transaction, brochures, and information for customers) and some are not (e.g., what the news media reports, what people say about ICBC on social media).

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**2012.1 RR BCUC.93.1.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, B.1.6, p. 9-7  
Customer Approval Index**

**ICBC notes it uses the Customer Approval Index results to better understand public perception and to develop communications that promote informed opinions and a better understanding of the value of ICBC. ICBC does not set a corporate target for the Customer Approval Index as it is a directional measure.**

**How is a directional measure different from any other performance measures in the Service category?**

**Response:**

A directional measure is an indicator only. The Customer Approval Index is an indicator of public perception; respondents are not required to have completed a recent ICBC transaction. It differs from most of the other performance measures in the Service category, which are based on actual transactions and are indicative of service satisfaction.

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**2012.1 RR BCUC.93.2 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, B.1.6, p. 9-7  
Customer Approval Index**

**ICBC notes it uses the Customer Approval Index results to better understand public perception and to develop communications that promote informed opinions and a better understanding of the value of ICBC. ICBC does not set a corporate target for the Customer Approval Index as it is a directional measure.**

**Please explain the meaning of the 2010 Customer Approval Index of 59%.**

**Response:**

The Customer Approval Index is an indicator of public perception. In 2010, 2,000 people who had an ICBC insurance policy or a valid BC driver's license were surveyed. Of those surveyed, 59% reported they would speak positively about ICBC.

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**2012.1 RR BCUC.94.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.1.7, p. 9-7 and Figure 9.1  
Legal Representation Rate**

**In paragraph 30, ICBC states:**

**“The Legal Representation Rate is the ratio of newly represented bodily injury exposures in the current year... The Legal Representation Rate may provide some indication of service satisfaction related to bodily injury claims but claimants may have reasons unconnected to service for retaining counsel.”**

**Why is satisfaction the goal for the Legal Representation Rate?**

**Response:**

Service satisfaction is not the goal for the Legal Representation Rate; the Legal Representation Rate only provides some indication of service satisfaction as the reasons for choosing legal representation are not limited to service satisfaction.

Some claims may require representation due to complex medical or legal issues, or the amount involved. Some claimants may seek representation as the claims and settlement process can appear complex, due to factors such as language barriers or unfamiliarity. ICBC is seeking to address these latter issues through initiatives such as Language Line translation services and the streamlined telephone claims handling for low-risk/low-complexity claims in Centralized Claims Injury Centre with the adjuster team approach that allows for more ready access and frequent follow-up contact, as described in the response to information request 2012.1 RR BCUC.65.1.

ICBC views the Legal Representation Rate as providing an indication of service satisfaction for that segment of claims that ICBC could handle directly with the claimant without a legal process.

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**2012.1 RR BCUC.94.2 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.1.7, p. 9-7 and Figure 9.1  
Legal Representation Rate**

**In paragraph 32, ICBC states:**

**“The 2010 Legal Representation Rate of 40% has increased slightly from the 2009 actual of 39%.”**

**Please explain how ICBC’s enhanced claims handling practices since 2006 have impacted the Legal Representation Rate over time, if any.**

**Response:**

As stated in the response to information request 2012.1 RR BCUC.94.1, there are a number of factors that can have an impact on the Legal Representation Rate. As a result, ICBC cannot confirm a link between claims handling initiatives and the Legal Representation Rate.

The claims handling processes referenced in Chapter 6 of the Application that may have an impact on the Legal Representation Rate are those which include a focus on the customer experience: the Centralized Claims Injury Centre (CCIC), Claims Quality Review Service, the enhanced customer service training, and the “Connecting with your Customer” initiative.

The streamlined telephone claims handling process for low-risk/low-complexity bodily injury (BI) claims in CCIC results in a lower rate of representation for that segment of claims. With the expected expansion of CCIC from 18% in 2011 to 24% of all low-risk/low-complexity BI claims by the end of 2012, ICBC expects to continue to positively impact the Legal Representation Rate in that segment of BI claims.

The “Connecting with your Customer” program is aimed at enhancing management of BI claims through streamlined processes for determining coverage and updated direction on the payment of benefits. Process changes allow adjusters time to focus on meeting the claimants’ immediate needs and helping them to understand and navigate the claims process. This program was introduced in late 2011.

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Some claimants may seek representation due to factors such as language barriers. ICBC is seeking to address these issues through the Language Line translation services initiative.

The other initiatives that include a focus on customer experience are performance and training related. The Claims Quality Review Service that was implemented in 2009 includes as one of its review criteria whether the customer service commitments with respect to items such as regular, ongoing communication are met on a file-by-file basis in the files reviewed. The Customer Experience Learning program was delivered to all claims staff between 2009 and 2011, providing training on how to effectively adapt and connect with claimants' communication preferences. The impacts of these initiatives cannot be specifically attributed to the slight change in the Legal Representation Rate, due to the many factors that impact a claimant's decision to become represented.

While it is not possible to prove a link between the Legal Representation Rate and its claims handling initiatives, ICBC believes that by focusing on improving customer experience it can have a positive impact on Legal Representation Rates for that segment of claims that ICBC can handle directly with the claimant without a legal process.

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**2012.1 RR BCUC.95.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.1.8, p. 9-8 and Figure 9.1  
Complaints Heard by the Fairness Commissioner**

**Figure 9.1 shows that there are 203 complaints heard by the Fairness Commissioner in 2010, compared to 183 in 2009 and 160 in 2008. Please explain the increase in complaints heard by the Fairness Commissioner.**

**Response:**

The number of complaints received by the Fairness Commissioner rose in 2010, but the increase was not significant. With over six million ICBC transactions completed annually, the number of complaints received by the Fairness Commissioner involves a very small number of customers. In fact, 64% of these were resolved internally by ICBC's Customer Relations Department in 2010 and did not require involvement of the Fairness Commissioner. ICBC does not have any specific explanations as to the reason for this small increase.

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**2012.1 RR BCUC.96.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B, pp. 9-5 and 9-13  
Performance Measure Results**

**Figure 9.2 shows the claims services satisfaction and Figure 9.3 shows the cost per policy in force.**

**Please update Figures 9.2 and 9.3 with 2011 actual results explaining variances to forecast or to prior years.**

**Response:**

As discussed in the response to information request 2012.1 RR BCUC.92.5, the requested performance measures are included as part of ICBC's regular compliance reporting to the Commission. ICBC will provide the requested information at the end of May in keeping with the existing reporting cycle and regulatory reporting requirements.

**2012.1 RR BCUC.97.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.2.5, p. 9-12  
Accident Benefit Paid Severity**

On p. 9-12, ICBC states:

“Including these structured settlements, the 2010 Accident Benefit Paid Severity is \$2,139...The “2011 Accident Benefit Paid Severity forecast is based on five-year historical trends as to the number of files closed and the average payments during that five-year period. The 2011 Accident Benefit Paid Severity forecast of \$2,037 is 2.6% higher than 2010 actual.”

**97.1 Is the forecast of \$2,037 for Accident Benefit Paid Severity in 2011 higher or lower than 2010?**

**97.1.1 Please show the amounts for 2010 and 2011 with and without the structured settlements included.**

**Response:**

**97.1**

Calculated net of the impact of structured settlements purchased in 2010 and 2011, the 2011 Accident Benefit Paid Severity forecast of \$2,037 is 2.6% higher than the 2010 actual of \$1,985.

**97.1.1**

	Accident Benefits Paid Severity	
	2010 Actual	2011 Forecast
Including Structured Settlements	\$ 2,139	\$ 2,172
Net of Structured Settlements	\$ 1,985	\$ 2,037

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**2012.1 RR BCUC.98.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.3, p. 9-14  
Efficiency Measures – External Expenses**

**In paragraph 67, ICBC states:**

**“The 2011 outlook [for external expenses] is anticipated to be favourable, at \$62 per policy, based on lower than expected external expenses.”**

**98.1 Please explain the favourable external expenses per policy in 2011.**

**98.1.1 Does ICBC anticipate this favourable trend to continue? Why or why not?**

**Response:**

**98.1**

The favourable 2011 Outlook of \$62 per policy was due to lower than expected external expenses for private investigator and independent adjuster costs, and lower legal fees and disbursements as a result of lower trial activity.

**98.1.1**

The 2012 forecast for external expenses is expected to be higher than the 2011 Outlook, due to higher costs in line with the rate of inflation, and an expected return to historical levels of trial activity.

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**2012.1 RR BCUC.99.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, p. 9-14  
Efficiency Measures – Agreement with Broker Partners**

In paragraph 68, ICBC states:

**“ICBC has an agreement with its broker partners detailing the fee and broker compensation criteria for the period of the agreement. As a result, commissions increased by \$1 per policy in 2010. The 2011 outlook reflects an expected increase of \$3 per policy, due to higher fees as per the agreement with ICBC’s broker partners.”**

**99.1 Please explain the commissions increase by \$1 per policy in 2010 to the expected increase of \$3 per policy in 2011.**

**99.1.1 Please clarify if this increase sums to \$4 per policy over 2 years.**

**Response:**

**99.1**

The expected increase of \$3 per policy in 2011 was based upon conservative costing projections. The increases were established based on ICBC’s assessment of fair remuneration for brokers, including analysis with respect to inflation, broker input costs including labour and lease rates, and the insurance marketplace. The actual increase per policy in 2011 was \$2 per policy.

**99.1.1**

As noted in the response above, the actual increase per policy in 2011 was \$2. This figure, when added to the \$1 increase per policy in 2010, results in a total increase of \$3 over this two year period.

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**2012.1 RR BCUC.99.1.2 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, p. 9-14  
Efficiency Measures – Agreement with Broker Partners**

**In paragraph 68, ICBC states:**

**“ICBC has an agreement with its broker partners detailing the fee and broker compensation criteria for the period of the agreement. As a result, commissions increased by \$1 per policy in 2010. The 2011 outlook reflects an expected increase of \$3 per policy, due to higher fees as per the agreement with ICBC’s broker partners.”**

**Given the commissions increase in \$ per policy, please describe the negotiating process between ICBC and broker partners. What is the current status of negotiations between ICBC and broker partners?**

**Response:**

ICBC changed the process for establishing broker compensation in 2011 and no longer negotiates with broker associations. In mid-2011 ICBC began establishing fees unilaterally after a consultation process with all brokers. Brokers are invited to provide information through a survey with respect to business conditions, broker costs including lease and labour rates, and changes in their workload. Broker associations are then invited to offer comment or additional information that may be relevant to the establishment of fee levels. ICBC takes the information received through this process into consideration and then unilaterally establishes and announces Basic insurance fees for all brokers. This process will now occur annually and there will no longer be multi-year Basic insurance fee agreements.

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**2012.1 RR BCUC.99.1.2.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, p. 9-14  
Efficiency Measures – Agreement with Broker Partners**

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**How does ICBC benefit from commissions increases with broker partners?**

**Response:**

ICBC benefits from fee increases by ensuring the continued financial stability and accessibility of the Autoplan distribution network and by continuing to provide a positive experience for customers. Brokers are subject to changes in the business environment such as increases in the cost of labour, premises, and operating expenses, so fee increases allow brokers to maintain accessible locations for customers, increase their operating hours to meet customer demand, and to continue to invest in training for their staff to better serve customers.

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**2012.1 RR BCUC.99.1.2.2 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, p. 9-14  
Efficiency Measures – Agreement with Broker Partners**

**In paragraph 68, ICBC states:**

**“ICBC has an agreement with its broker partners detailing the fee and broker compensation criteria for the period of the agreement. As a result, commissions increased by \$1 per policy in 2010. The 2011 outlook reflects an expected increase of \$3 per policy, due to higher fees as per the agreement with ICBC’s broker partners.”**

**What impact would commissions increases have on Basic Insurance policyholders?**

**Response:**

The financial impact of the fee increases is, as noted in the response to information request 2012.1 RR BCUC.99.2, an estimated 0.1% increase on the actuarial rate indication. These increases result in benefits to policyholders that are outlined in the response to information request 2012.1 RR BCUC 99.1.2.1.

**2012.1 RR BCUC.99.2 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, p. 9-14  
Efficiency Measures – Agreement with Broker Partners**

In paragraph 68, ICBC states:

**“ICBC has an agreement with its broker partners detailing the fee and broker compensation criteria for the period of the agreement. As a result, commissions increased by \$1 per policy in 2010. The 2011 outlook reflects an expected increase of \$3 per policy, due to higher fees as per the agreement with ICBC’s broker partners.”**

**Please provide the data and graph showing the past five years of broker fees per policy and estimate the impact on the rate indication.**

**Response:**

The table with the information requested is shown below.

The impact of Basic insurance broker fees on the actuarial rate indication is a 0.1% increase.

**Basic Insurance Transaction Fee Schedule for Brokers 2007 - 2011**

		2007	2008	2009	2010	2011
New Plate Policies	Per item	\$12.20	\$12.68	\$13.19	\$13.46	\$13.73
Renewals	Per item	\$10.88	\$11.42	\$12.00	\$12.30	\$12.63
Endorsements (Mid-term changes)	Per item	\$9.23	\$9.65	\$10.06	\$10.26	\$10.41
Permits	Per item (Flat fee)	\$9.00	\$ 9.00	\$9.00	\$9.00	\$9.00
Transactions that were, until the summer of 1991, “Motor Licence Offices Only” (referred to as Motor Vehicle Branch 5%)	Per item in addition to the normal fee/commission for the transaction	\$18.72	\$19.47	\$ 20.13	\$20.74	\$21.36
Payment Plan Enrolment	Per item	\$8.50	\$8.50	\$8.50	\$8.50	\$8.50
Payment Plan Mid-term Payment	Per item	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00
Payment Plan Bank Account Changes	Per item (Flat fee)	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00

		<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Payment Plan Fleet vehicles	Per unit (maximum \$75.00 per fleet)	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00
Collection of outstanding ICBC debts (over \$25.00)	Per item	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00
Collection of outstanding Motor Vehicle debts (over \$25.00)	Per item	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00
Collection of outstanding ICBC & Motor Vehicle combined debts (over \$25.00)	Per item	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00

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**2012.1 RR BCUC.100.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.3.2, p. 9-15, Para. 72  
Claims Efficiency Ratio**

**On page 9-15, ICBC on paragraph 72 states:**

**“In 2010, whereas claims handling costs remained consistent with 2009 actual results, the increase in claims payments resulted in a lower Claims Efficiency Ratio of 19.9%, as compared to 21.6% in 2009 and 21.2% in 2008. The original 2011 forecast of 20.1% reflected moderate increases in both claims handling costs as well as claims payments. The 2011 outlook for the Claims Efficiency Ratio is now expected to be 18.2% due to lower claims handling costs as compared to higher claims payments, which is indicative of current claims costs trends.”**

**Please discuss whether ICBC is of the view that the past trend and 2011 expectation for the Claims Efficiency Ratio is of concern, why or why not?**

**Response:**

Yes, the reduction in the Claims Efficiency Ratio for 2011 outlook is a concern due to the nature of the decrease. Even though ICBC has contained the increase in claims handling costs (numerator) over the period, the primary reason for the decrease in Claims Efficiency Ratio is the expected increase in claims payments (denominator).

As stated in Chapter 9, paragraph 71, the Claims Efficiency Ratio should be assessed in conjunction with the Basic Loss Ratio. If the Claims Efficiency Ratio increases as a result of lower claims payments relative to claims handling costs, then the Basic Loss Ratio should decrease which would be a favourable outcome. If, however, claims payments continue to increase at a higher rate than claims handling costs, then the Claims Efficiency Ratio will decrease which would be adverse to ICBC’s objective of claims and loss management.

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**2012.1 RR BCUC.100.2 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.3.2, p. 9-15, Para. 72  
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**On page 9-15, ICBC on paragraph 72 states:**

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**Please discuss the expected Claims Efficiency Ratio for 2012, and what action ICBC is undertaking to correct this trend, if any is needed.**

**Response:**

ICBC expects a higher 2012 Claims Efficiency Ratio as a result of increases in certain external claims handling costs. As discussed in Chapter 9, page 9-14, paragraph 71, the Claims Efficiency Ratio should be assessed in conjunction with the Basic Loss Ratio. Even though the Claims Efficiency Ratio is expected to increase in the 2012 forecast period, the Basic Loss Ratio is expected to improve, which is favourable to ICBC's objective of claims and loss management.

For a discussion regarding ICBC's initiatives to help reduce claims costs, please see the response to information request 2012.1 RR BCUC.63.1.

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**2012.1 RR BCUC.101.1 Reference: PERFORMANCE MEASURES  
Exhibit B-1-1, Chapter 9, Section B.4, p. 9-15, Para. 73  
Directional Indicators**

**Paragraph 73 on p. 9-15 provides a high level indicator of the effectiveness of road safety programs, including the Crash Rate, the Injured Person Rate, and the New Driver Comparative Crash Rate.**

**Please update the statistics in paragraph 73 for 2011 actuals and comment on any indicators showing a negative or unfavourable trend.**

**Response:**

ICBC does not develop targets for New Driver Comparative Crash Rate, Crash Rate, or Injured Person Rate as it uses them only as a high level indicator of the effectiveness of Road Safety programs and not as a measure. The Crash Rate in 2011 (931) was lower than in 2010 (940). The Injured Person Rate in 2011 (288) increased from 2010 (280) and the New Driver Comparative Crash Rate in 2011 (1.02) decreased as compared to 2010 (1.04). The increase in the Injured Person Rate is consistent with an increase in bodily injury and accident benefit claims frequencies in 2010 and 2011 compared to 2009, as indicated in Chapter 9, Section B.2.1.

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**2012.1 RR BCUC.102.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section A, p. 10-1  
Exhibit B-1-1, Appendix 10 A  
Address Road Safety Matters**

**In a letter dated September 15, 2010 from the Commission to the Insurance Bureau of Canada (2010 Letter), ICBC is advised to address road safety matters in its next full revenue requirement application, which is in the context of this Application.**

**Paragraph 2 notes that ICBC has provided the materials in this Chapter in compliance with the 2010 Letter.**

**102.1 Please provide the page reference(s) in this Application that refers to road safety and associated allocations, particularly of branding costs, as cited as part of the 2010 Letter.**

**102.1.1 If information on branding costs is not included in this Application, please provide additional information to address this road safety matter as advised in the 2010 Letter.**

**Response:**

Allocation of road safety expenditures, specifically costs associated with education and awareness tactics, can be found in Chapter 10, page 10-20. ICBC did not use the specific term of “branding costs” in the Application, as ICBC’s education and awareness tactics use a number of different communication strategies, including advertising, public relations, and social marketing tactics. For driver behaviours, education and awareness tactics in support of program objectives of reducing injuries or the severity of injuries are linked to enforceable consequences.

In the January 2005 Decision, the Commission directed ICBC to develop a methodology to allocate costs with respect to advertising and branding:

The Commission Panel determines that to the extent that advertising and the use of the brands add value to loss management initiatives, those costs should be allocated to the product line beneficiaries of those expenditures. To the extent that expenditures on advertising and branding cannot be shown to directly and positively, affect their respective RSLM programs, they should be considered “white hat” investments and be allocated on some reasonable basis between Basic Insurance and Optional Insurance. In complying with this direction, ICBC should develop a defensible methodology that will achieve the allocation as

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directed and be understandable and practical in its application. Future filings should explain and incorporate this methodology.

ICBC performed this analysis and concluded that advertising is an integral component of the applicable program it supports and the advertising costs are allocated accordingly. For the promotion of highway safety, costs are allocated to Basic insurance. For the prevention of vehicle theft break-ins and vandalism, costs are allocated either on Comprehensive insurance market share, as approved by the Commission in the July 2006 Decision, or Optional insurance. In such circumstances the allocation issue as framed by the Commission does not arise. That is, road safety advertising is undertaken for the purpose of promoting and improving road safety, and auto crime prevention advertising is undertaken for the purpose of raising awareness with respect to auto crime issues. This attribution of advertising costs to either Basic insurance or Optional insurance based on the character of the particular program appropriately recognizes the line of business that is benefitting from the expenditure and is consistent with *Special Direction IC2*.

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**2012.1 RR BCUC.103.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D.2, p.10-9, Figure 10.3  
Support for Corporate Goals**

**Figure 10.3 shows the key assumptions and principles for the 2011 annual planning process.**

**Please explain how Road Safety will support corporate goals and measures. Have any Road Safety programs been deleted or modified as a result of the “Key Assumptions”?**

**Response:**

The key assumption, “Road Safety will support corporate goals and measures,” as stated in Chapter 10, Figure 10.3, was intended to demonstrate how Road Safety supports the corporate objectives outlined in ICBC’s 2011-2013 Service Plan.

Per the 2011 Road Safety Strategic Framework filed in Chapter 10, Figure 10.4, the strategic intent of the Road Safety Department is to “Protect customers from risks on the road by preventing and minimizing the impact of crashes and crime.” By doing so, Road Safety helps control claims costs, thus supporting the corporate objective of Maintain Financial Stability.

No Road Safety programs were deleted or modified as a result of the Key Assumptions developed for 2011.

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**2012.1 RR BCUC.104.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC's Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**104.1 Are there any new stand-alone education and awareness programs since the 2007/2008 Road Safety Strategic Review?**

**104.1.1 If so, please describe how each new stand-alone education and awareness program meets the measurable objectives and major outcomes in undertaking the Road Safety Strategic Review.**

**Response:**

No, there are no new stand-alone education and awareness programs in the Drivers category since the 2007/2008 Road Safety Strategic Review.

Please see the response to information request 2012.1 RR BCUC.108.3 for a discussion of an education and awareness tactic within the Safer Vehicles program.

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**2012.1 RR BCUC.104.1.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC’s Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**Please explain if there are any stand-alone education and awareness programs that have been discontinued after the 2007/2008 Road Safety Strategic Review but are not listed in Appendix 10 E.**

**Response:**

Since the 2007/2008 Road Safety Strategic Review, no further stand-alone education and awareness programs have been discontinued.

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**2012.1 RR BCUC.104.1.2.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC's Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**If applicable, please present each stand-alone education and awareness program as identified above in similar format as Appendix 10 E.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.104.1.2.

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**2012.1 RR BCUC.104.2 Reference: ROAD SAFETY  
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Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC's Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**Footnote 4 on p. 10-5 states:**

**"Certain corporate initiatives, such as the "Share a Wave and Win" campaign, that do not meet ICBC's and the Commission's definition of Road Safety are not considered road safety programs and are thus not allocated 100% to Basic insurance."**

**Please provide the allocation of the "Share a Wave and Win" campaign and the dollar amount that is allocated to Basic Insurance.**

**Response:**

The "Share a Wave and Win" campaign is allocated using the premiums written allocator. ICBC uses the premiums written allocator for this campaign because it is a proxy for the premium distribution of ICBC's customer base between Basic insurance and Optional insurance.

The cost of this campaign was \$1.7 million, of which 53.8% was allocated to Basic insurance and 46.2% was allocated to Optional insurance.

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**2012.1 RR BCUC.104.2.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC’s Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**If applicable, please describe whether this campaign consists of any measurable objectives or post-implementation review.**

**Response:**

For the “Share a Wave and Win” campaign, the measurable objectives are message recall, campaign recall, and brand link (i.e., recall that the campaign is from ICBC). This campaign is not part of a Road Safety program and therefore does not get evaluated in exactly the same way (i.e., a Road Safety post-implementation review).

Non-Road Safety campaigns such as “Share a Wave and Win” are reviewed after the campaign is complete to determine if objectives are achieved and to incorporate learning into future campaigns.

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**2012.1 RR BCUC.104.3 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC's Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**ICBC's research into best practices followed by road safety practitioners in other jurisdictions indicates that the most successful programs to change driver behaviour focus on enforceable consequences. Please provide references to ICBC's research followed by road safety practitioners in other jurisdictions.**

**Response:**

ICBC's research supporting the best practice of focusing on enforceable consequences in order to change driver behaviour can be found in Chapter 10, Appendix 10 C – Survey of Select Road Safety Public and Private Programs and Appendix 10 D – Rationale for Integrated, Multi-Component Road Safety Programs of the Application.

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**2012.1 RR BCUC.104.4 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC's Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**ICBC notes that it focuses on education and awareness tactics that can be tied to enforceable consequences. Examples of enforceable consequences include motor vehicle related convictions, insurance premium discounts or increases, and loss of driving privileges. Please provide a list of existing education and awareness driver programs that have (1) enforceable consequences and (2) not enforceable consequences.**

**Response:**

The existing education and awareness driver programs that have enforceable consequences are impaired driving, speeding, intersection safety, distractions, and occupant restraints.

There are no existing education and awareness driver programs that do not have enforceable consequences.

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**2012.1 RR BCUC.104.4.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC’s Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**With respect to existing education and awareness driver programs that have enforceable consequences, how does each program affect drivers? (e.g. convictions, discounts, driving privileges)**

**Response:**

ICBC focuses on education and awareness programs that are tied to enforceable consequences, as people are more likely to change their negative behaviour if there is a consequence for that behaviour. For drivers, the consequence may be a ticket or a conviction. This could lead to an increase in insurance premiums (either a Driver Penalty Point Premium or a Driver Risk Premium) or a suspension or loss of driving privileges or vehicle impoundment. ICBC partners with police to help increase drivers’ perceived risk of being caught.

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**2012.1 RR BCUC.104.4.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section C, pp. 10-5 to 10-8  
Exhibit B-1-1, Appendix 10 E  
Comprehensive Review of Education and Awareness Programs**

**ICBC's Road Safety Strategy Review includes eliminating stand-alone education and awareness programs. Appendix 10 E describes programs/tactics that are discontinued or transitioned as part of the 2007/2008 Road Safety Strategic Review.**

**With respect to existing education and awareness driver programs that do not have enforceable consequences, if any, should these programs be maintained, changed, or discontinued? Please explain in terms of effectiveness and associated costs.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.104.4.

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**2012.1 RR BCUC.105.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D.3, p. 10-10, Para. 27  
Road Safety Framework**

**On p. 10-10, ICBC notes that Figure 10.4 is the Road Safety Strategic Framework as modified during the annual planning cycle.**

**Please identify the modifications made to the Strategic Framework during the 2011 annual planning cycle. How did the modifications impact actual programs?**

**Response:**

One modification was made to the 2011 Road Safety Strategic Framework. The goal, "*Help* our customers to improve their unsafe driving behaviours" was changed to "*Support* our customers to improve their unsafe driving behaviours". This modification reflects the accountability that ICBC's customers hold in making changes to their driving behaviours.

This modification did not impact actual programs.

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**2012.1 RR BCUC.106.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D.5, p. 10-14, Para. 36  
Road Improvement Program**

**Under Roads in section B on p. 10-14, ICBC indicates that the Road Improvement Program has generated claims saving benefits with a return of 5 to 12 times the investment by funding improvements such as traffic signals and roundabouts at high crash locations across BC.**

**With the exceptional savings from the Road Improvement Program, please discuss whether ICBC is considering investing more into this program, why or why not?**

**Response:**

As a cost-sharing program, ICBC's ability to invest in road improvement projects that meet the return on investment goal is limited by the capacity and budget of the local road authorities and the Ministry of Transportation and Infrastructure. In 2012, the Road Improvement Program reduced investments in Ministerial projects, resulting in a slight decrease in the overall program budget.

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**2012.1 RR BCUC.106.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D.5, p. 10-14, Para. 36  
Road Improvement Program**

**Under Roads in section B on p. 10-14, ICBC indicates that the Road Improvement Program has generated claims saving benefits with a return of 5 to 12 times the investment by funding improvements such as traffic signals and roundabouts at high crash locations across BC.**

**Please discuss the involvement of municipalities in taking greater access to the Road Improvement Program. In ICBC's view, should there be any other entities that can share the responsibilities or costs of road improvements related matters?**

**Response:**

There is no restriction of access by municipalities to the Road Improvement Program other than the depletion of funds when the budget has been fully allocated. To that point, municipalities are treated on a first-come-first-served basis, with each potential project being assessed for crash saving benefits to ensure it will meet the investment criteria.

As ICBC has no authority over public highways and municipal roadways, any additional partnership opportunities would be at the discretion of the respective road authority.

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**2012.1 RR BCUC.107.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-8 to 10-11, p. 10-15  
Gather Information on Strategic and Programs**

**Since July 1, 2008 the change in collision reporting requirements for police has affected ICBC's ability to use the Traffic Accident System (TAS) data for driver-based program measuring and monitoring. Please provide a list of Road Safety programs that can affect ICBC's measuring and monitoring process as a result of TAS data changes.**

**Response:**

The Road Safety programs that can affect ICBC's measuring and monitoring process as a result of Traffic Accident System data changes are impaired driving, speeding, intersection safety, occupant restraints, and driver distractions.

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**2012.1 RR BCUC.107.1.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-8 to 10-11, p. 10-15  
Gather Information on Strategic and Programs**

**Can ICBC's interim approach of driver-based program performance measured through the use of driver attitudes, perceptions, and self-reported behavioural indicators provide the same quality of information that was previously available in TAS?**

**Response:**

No, attitudinal and self-reported behavioural indicators do not provide the same quality of information as contributing factor data previously available through the Traffic Accident System.

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**2012.1 RR BCUC.107.1.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-8 to 10-11, p. 10-15  
Gather Information on Strategic and Programs**

**ICBC states that it will therefore, during 2011 and 2012, explore the feasibility of using other performance measures to design, measure, and monitor driver-based programs. When does ICBC expect to have the results to this feasibility study? Please file when available.**

**Response:**

ICBC's Road Safety monitoring and evaluation framework is being developed in 2012. It will be filed with the Commission once completed.

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**2012.1 RR BCUC.107.1.3 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-8 to 10-11, p. 10-15  
Gather Information on Strategic and Programs**

**Please explain ICBC's methodology to ensure that the new performance measures to be explored during 2011 and 2012 to measure and monitor driver-based programs are comparable to previously available TAS data.**

**Response:**

In 2011, ICBC completed the following work on a Road Safety monitoring and evaluation framework:

- ICBC reviewed potential external data sources within BC (e.g., hospitalization, emergency room, and trauma data) to identify strengths and weaknesses, indicators of interest to ICBC, the methodology of collecting indicators, and data accessing protocols.
- Preliminary comparisons of these data sources with ICBC claims data and Traffic Accident System (TAS) data suggest that these other data sources do not capture all the appropriate indicators needed to measure and monitor Road Safety programs, although the data could be used as directional indicators.
- ICBC also reviewed how other jurisdictions and organizations (e.g., World Bank) monitor and evaluate prevention programs.
- Based on the work completed to date, ICBC is proposing a framework that uses indicators to monitor trends, combined with an evaluation strategy to evaluate impacts. These measures may not necessarily be comparable to TAS data, but they enable ICBC to link its program activities with intermediate outcomes such as changes in attitudes and self-reported behaviours.

In 2012, the following work will be undertaken:

- Indicators will be identified and validated based on program goals and objectives, and methods established for collecting and reporting on them.
- An evaluation framework will be developed based on a review of criteria from other jurisdictions on how, when, and at what level to evaluate programs. The framework will examine options for piloting programs or periodically testing programs in controlled settings where confounding factors are minimized and where program activities can be properly tracked.

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**2012.1 RR BCUC.107.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-8 to 10-11, p. 10-15  
Gather Information on Strategic and Programs**

**107.2 In paragraph 25 on p. 10-9, ICBC states that measuring the attribution of behavioural change to crash prevention outcome continues to be a challenge in all jurisdictions. Please explain the challenges associated with measuring behavioural change.**

**107.2.1 Please elaborate if ICBC's experience in dealing with these challenges is any different than other jurisdictions. Are there challenges that are unique to ICBC, and challenges that pose less impact on ICBC?**

**107.2.2 If applicable, please explain how these challenges in measuring behavioural change can impact ICBC's interim approach of driver-based program performance to measure through the use of driver attitudes, perceptions, and self-reported behavioural indicators.**

**Response:**

**107.2**

The main challenge associated with measuring behavioural change is not so much in measuring changes in crash rates, but in attributing any observed changes to a particular program. Most crashes involve multiple causal factors and driving behaviour is constantly influenced by many factors that are not related to any given program and most of which are not under the control of ICBC. Although it is possible to statistically control for the influence of some of these factors to some extent, the effort and cost involved in collecting such data is prohibitive, and even advanced statistical controls cannot remove all the "noise" from the data.

**107.2.1**

These challenges are common across jurisdictions. Compared to many jurisdictions, ICBC has the advantage of access to more data, including claims, licensing, and police-reported data. However, data quantity is no substitute for data quality. Police-reported data can no longer be used to track changes in collisions over time and claims data does not contain causal factor information. More importantly, even if data quality was vastly improved, causal attributions to specific programs would remain problematic.

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**107.2.2**

Measuring driver attitudes, perceptions, and self-reported behaviours actually helps ICBC to link program activities to their intended impact because these measures can be designed to capture program specific information such as references to specific program messages and calls to action. Collectively, these indicators help ICBC estimate the relationship between program goals, activities, and outcomes.

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**2012.1 RR BCUC.107.3 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-8 to 10-11, p. 10-15  
Gather Information on Strategic and Programs**

**107.3 In paragraph 29 on p. 10-11, ICBC states that the Safe Systems strategic framework focuses on the causes of crashes (drivers, roads, and vehicles), recognized in other jurisdictions as a holistic approach to road safety. ICBC has established criteria that assist management in assessing the relative importance of the causes of crashes. Please explain if ICBC compares any crash statistics against other jurisdictions.**

**107.3.1 If so, please provide references and demonstrate how BC crash statistics have performed against other jurisdictions for each of the last 5 years.**

**107.3.2 If not, since ICBC develops key assumptions for renewing its road safety strategic framework based on the review of BC crash data and information from other jurisdictions, would ICBC consider it useful to compare crash statistics against other jurisdictional benchmarks to measure and monitor programs?**

**Response:**

In order to understand the current state of road safety in BC, ICBC reviews data and other jurisdictional strategies and programs as part of its annual planning process. This process is outlined in Chapter 10, Section D.1, page 10-8, paragraphs 24 and 25. As stated in this Section, the process includes reviewing crash rate comparisons against other jurisdictions.

Please see Attachment A – 2005-2009 Casualty Rates by Province for a Transport Canada comparison of Canadian Motor Vehicle Traffic Collision Statistics. When reviewing how BC performs against other jurisdictions, ICBC takes into account factors that may contribute to provincial differences, such as traffic volumes, number of drivers per vehicles, average travel amounts, different definitions of causal factors, different definitions of fatalities (e.g., parking lot fatalities), geography (e.g., mountain highways), and weather (e.g., annual precipitation).

ICBC's Road Safety monitoring and evaluation framework (please see the response to information request 2012.1 RR BCUC.107.1.3), will consider the value of using jurisdictional comparisons as indicators for monitoring crash trends in BC.



## **2012.1 RR BCUC.107.3 – Attachment A – 2005-2009 Casualty Rates by Province**

# 2005-2009 Casualty Rates by Province

Fatalities per 100,000 Population					
	2005	2006	2007	2008	2009
NL	8.3	7.3	8.1	8.3	6.3
PEI	10.9	18.8	5.8	13.6	8.5
NS	7.7	9.2	10.6	8.8	7.7
NB	14.1	14.1	11.9	9.5	8.8
QUE	9.3	9.4	8.1	7.2	6.6
ONT	6.3	6.2	6.0	4.8	4.1
MAN	9.6	10.1	9.1	7.6	7.1
SASK	14.8	13.9	14.3	15.4	14.7
ALTA	14.3	13.4	13.0	11.4	9.6
<b>BC</b>	<b>10.8</b>	<b>9.6</b>	<b>9.7</b>	<b>8.1</b>	<b>8.4</b>
YT	19.4	41.6	15.3	24.1	20.8
NWT	4.7	4.8	11.5	11.4	11.4
NVT	6.7	0.0	0.0	12.6	6.2
<b>Canada</b>	<b>9.1</b>	<b>8.9</b>	<b>8.4</b>	<b>7.3</b>	<b>6.6</b>

Injuries per 100,000 Population					
	2005	2006	2007	2008	2009
NL	456.0	428.7	447.0	402.2	464.0
PEI	543.8	604.2	587.2	452.5	540.8
NS	523.8	513.4	655.2	754.1	804.4
NB	528.6	519.1	500.2	478.6	510.9
QUE	752.3	649.9	624.2	561.9	550.1
ONT	570.1	539.8	523.7	484.5	472.5
MAN	737.0	741.2	715.6	651.8	591.7
SASK	690.5	686.6	684.7	683.9	652.2
ALTA	752.4	769.1	698.7	612.2	522.2
<b>BC</b>	<b>675.6</b>	<b>586.0</b>	<b>602.5</b>	<b>502.5</b>	<b>451.4</b>
YT	626.0	746.1	638.4	723.5	517.1
NWT	432.7	267.6	358.3	395.7	302.2
NVT	240.1	214.4	48.0	129.7	130.5
<b>Canada</b>	<b>652.7</b>	<b>604.0</b>	<b>589.7</b>	<b>536.6</b>	<b>512.7</b>

Source:

Transport Canada

Canadian Motor Vehicle Traffic Collision Statistics: 2005

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2005-page5-653.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2006

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2006-page5-588.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2007

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2007-1039.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2008

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2008-1144.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2009

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2009-1173.htm>

# 2005-2009 Casualty Rates by Province

## Fatalities per Billion Vehicle-Kilometres

	2005	2006	2007	2008	2009
NL	9.8	8.5	9.4	8.0	6.9
PEI	11.3	25.0	5.6	14.9	9.4
NS	7.1	8.4	9.3	8.6	7.2
NB	13.6	12.3	11.0	9.6	8.3
QUE	10.6	10.3	8.8	8.1	7.1
ONT	6.3	6.0	6.2	5.0	4.2
MAN	10.3	9.9	7.9	8.1	7.3
SASK	13.2	12.2	10.6	12.2	11.8
ALTA	10.6	10.0	9.6	8.6	7.1
<b>BC</b>	<b>13.9</b>	<b>12.9</b>	<b>11.6</b>	<b>9.9</b>	<b>10.5</b>
YT	12.3	24.2	10.3	15.4	13.7
NWT	5.4	5.3	13.9	11.8	15.9
NVT	n.a.	n.a.	0.0	132.5	65.1
<b>Canada</b>	<b>9.3</b>	<b>8.9</b>	<b>8.3</b>	<b>7.4</b>	<b>6.6</b>

## Injuries per Billion Vehicle-Kilometres

	2005	2006	2007	2008	2009
NL	537.1	501.3	519.0	385.9	508.9
PEI	565.7	803.6	565.6	496.5	596.2
NS	487.7	470.8	577.9	743.6	751.5
NB	508.5	452.3	459.5	482.2	480.7
QUE	871.2	711.1	678.6	632.1	592.2
ONT	571.5	525.2	534.8	479.9	490.7
MAN	788.4	729.1	617.1	689.1	615.9
SASK	612.8	604.4	509.0	541.0	526.9
ALTA	555.1	570.7	513.2	464.2	385.6
<b>BC</b>	<b>873.3</b>	<b>789.5</b>	<b>725.5</b>	<b>613.1</b>	<b>562.6</b>
YT	396.4	434.5	427.0	461.4	341.1
NWT	505.7	294.3	435.0	408.8	419.8
NVT	n.a.	n.a.	461.5	1,357.6	1,368.1
<b>Canada</b>	<b>668.0</b>	<b>604.2</b>	<b>584.4</b>	<b>549.2</b>	<b>518.7</b>

Source:

Transport Canada

Canadian Motor Vehicle Traffic Collision Statistics: 2005

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2005-page5-653.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2006

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2006-page5-588.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2007

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2007-1039.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2008

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2008-1144.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2009

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2009-1173.htm>

## 2005-2009 Casualty Rates by Province

### Fatalities per 100,000 Licensed Drivers

	2005	2006	2007	2008	2009
NL	12.7	10.8	12.0	11.8	8.8
PEI	15.8	26.8	8.3	19.7	12.4
NS	11.0	13.0	14.9	11.7	10.6
NB	20.0	19.9	16.6	13.1	12.1
QUE	14.7	14.8	12.6	11.2	10.2
ONT	9.0	8.8	8.6	6.8	5.9
MAN	16.2	16.4	14.2	12.0	11.1
SASK	21.8	20.2	20.8	21.9	21.2
ALTA	19.1	17.9	17.6	15.3	12.8
BC	15.8	14.0	13.9	11.6	12.1
YT	25.5	55.3	20.7	32.4	27.6
NWT	6.3	6.3	20.5	20.6	20.5
NVT	n.a.	n.a.	0.0	n.a.	44.7
Canada	13.3	13.0	12.2	10.5	9.5

### Injuries per 100,000 Licensed Drivers

	2005	2006	2007	2008	2009
NL	693.6	638.9	661.3	571.1	647.3
PEI	789.5	863.9	837.5	654.3	787.5
NS	750.8	726.8	924.6	1,011.6	1,109.2
NB	751.0	729.5	693.9	661.0	700.2
QUE	1,212.4	1,027.1	977.3	875.9	856.6
ONT	816.0	772.3	749.0	661.7	678.3
MAN	1,246.6	1,202.9	1,113.0	1,027.6	929.6
SASK	1,012.9	999.8	993.7	973.0	943.5
ALTA	1,003.4	1,027.8	942.9	824.1	701.7
BC	987.7	855.3	864.2	719.1	648.4
YT	823.8	991.1	862.0	970.7	685.6
NWT	584.1	355.4	638.2	711.3	539.9
NVT	n.a.	n.a.	n.a.	n.a.	937.7
Canada	960.2	884.5	859.0	778.6	745.3

Source:

Transport Canada

Canadian Motor Vehicle Traffic Collision Statistics: 2005

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2005-page5-653.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2006

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2006-page5-588.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2007

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2007-1039.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2008

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2008-1144.htm>

Canadian Motor Vehicle Traffic Collision Statistics: 2009

<http://www.tc.gc.ca/eng/roadsafety/tp-tp3322-2009-1173.htm>

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**2012.1 RR BCUC.108.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-15  
Exhibit B-1-1, Appendix 10 B  
Safer Vehicles**

**According to Appendix 10 B ICBC plans to invest \$285,000 in 2011 for Safer Vehicles, compared to 2010 Actual expense of \$50,000. The increase in planned 2011 investment in the Safer Vehicles programs is primarily to support a Safer Vehicle Awareness Campaign.**

**Please explain the basis to increase \$235,000 or +500% in Safer Vehicles investments from 2010 to 2011, particularly in the Safer Vehicle Awareness Campaign.**

**Response:**

In 2010, Road Safety began development of the Safer Vehicle Awareness Campaign. The work completed in 2010 included research and focus groups to explore the perceptions and beliefs of BC vehicle buyers and to determine how best to design an effective, well-targeted education campaign. The actual Safer Vehicle Awareness Campaign, featuring print and online education, was subsequently implemented in 2011.

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**2012.1 RR BCUC.108.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-15  
Exhibit B-1-1, Appendix 10 B  
Safer Vehicles**

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**ICBC in its Objective states that in 2011, 32% of drivers who have bought or thought of buying a car mention safety as being in their 'Top 3' considerations when deciding which vehicle to buy, an increase of three percentage points from October 2010. Please explain the changes from 2010 to 2011 for which ICBC plans to invest \$235,000 more in Safer Vehicles to achieve three percentage points from 2010 to 2011.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.108.1, which provides information on what activities were undertaken in 2010.

In 2011, ICBC implemented a print and online campaign and enhanced the Safer Vehicles website to increase awareness of vehicle safety features. As a result of these activities, ICBC anticipated an increase of 3 percentage points from 2010 to 2011.

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**2012.1 RR BCUC.108.3 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-15  
Exhibit B-1-1, Appendix 10 B  
Safer Vehicles**

**According to Appendix 10 B ICBC plans to invest \$285,000 in 2011 for Safer Vehicles, compared to 2010 Actual expense of \$50,000. The increase in planned 2011 investment in the Safer Vehicles programs is primarily to support a Safer Vehicle Awareness Campaign.**

**108.3 According to Figure 10.8 on p. 10-20, allocation of 2010 Road Safety costs for the safer vehicles cost item is allocated 100% to Basic Insurance. The cost to Basic is \$50,000 in 2010. Please comment if the Safer Vehicle program is expected to be allocated 100% to Basic Insurance for the planned 2011 investment of \$285,000.**

**108.3.1 Please discuss if the Safer Vehicles program would exclusively benefit Basic Insurance policy holders. If so, how? If not, why not?**

**Response:**

**108.3**

Yes, the Safer Vehicle Program will be allocated 100% to Basic insurance. As set out in Chapter 10, paragraphs 59 to 60, the Safer Vehicles Program conforms to the definition of a road safety program.

ICBC takes its guidance from section 7(i) of the *Insurance Corporation Act (ICA)* to allocate road safety expenditures to Basic insurance. The ICA gives ICBC the power and capacity to promote and improve highway safety. *Special Direction IC2* also requires that all road safety expenditures be recovered through Basic insurance premiums.

**108.3.1**

The Safer Vehicles Program does not exclusively benefit Basic insurance policyholders but also benefits both customers who elect to purchase Optional insurance from ICBC and those who choose to purchase Optional insurance from other insurers.

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All road safety programs, including the Safer Vehicles Program, benefit the motoring public in BC because they are designed to prevent traffic crashes and prevent injuries resulting from traffic crashes or reduce their severity.

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**2012.1 RR BCUC.108.4 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, pp. 10-15  
Exhibit B-1-1, Appendix 10 B  
Safer Vehicles**

**According to Appendix 10 B ICBC plans to invest \$285,000 in 2011 for Safer Vehicles, compared to 2010 Actual expense of \$50,000. The increase in planned 2011 investment in the Safer Vehicles programs is primarily to support a Safer Vehicle Awareness Campaign.**

**What are the risks involved in this increased investment in the Safer Vehicle Awareness Campaign, in light of operational efficiency and effectiveness, and cost allocation matters, particularly of branding costs?**

**Response:**

ICBC has not identified any risks in the increased investment in the Safer Vehicle Awareness Campaign.

As set out in Chapter 10, page 10-12, paragraphs 59 and 60, the Safer Vehicles Program conforms to the definition of "road safety" and the associated costs for the program, including the awareness campaign, are allocated 100% to Basic insurance.

Specifically in regards to cost allocation matters and branding, please see the response to information request 2012.1 RR BCUC.102.1.

**2012.1 RR BCUC.109.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, p. 10-18  
Exhibit B-1-1, Appendix 10 B, p. 39  
Exhibit B-1-1, Chapter 8, Section C, p. 8-3  
Distracted Driving Awareness Campaign**

**ICBC on p. 39 of the 2011 Road Safety Business Plan notes in 2010 ICBC made an investment to support the new legislation restricting the use of handheld personal electronic devices, such as cell phones, while driving. In 2011 the focus will be limited to maintaining awareness through the distracted driving awareness campaigns.**

**Figure 10.7 on p. 10-18 shows a summary of the investment in Road Safety from 2007 Actual to 2011 Forecast (\$000's). The layout of Figure 10.7 is slightly adjusted as follows:**

	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Forecast
Driver Distractions					
Driver Distractions Awareness Campaign	\$0	\$0	\$0	\$2,129	\$610

**Please provide the breakdown of investments for years 2010 and 2011 in the Driver Distractions Awareness Campaign, in similar tabular format as the Budget schedule on p. 8A-2 in Chapter 8 of the 2010 Streamlined Revenue Requirements Application.**

**Response:**

Please find below a breakdown of investments for years 2010 and 2011 in the Driver Distractions Awareness Campaign:

(\$ 000's)	2010 Actual	2011 Actual
Media	\$ 1,394	\$ 342
Production	\$ 704	\$ 245
Regional Events / Other	\$ 22	\$ 12
Planning & Development	\$ 4	\$ -
Research / Survey	\$ 5	\$ 13
<b>Total Campaign</b>	<b>\$ 2,129</b>	<b>\$ 612</b>

**2012.1 RR BCUC.109.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section D, p. 10-18  
Exhibit B-1-1, Appendix 10 B, p. 39  
Exhibit B-1-1, Chapter 8, Section C, p. 8-3  
Distracted Driving Awareness Campaign**

ICBC on p. 39 of the 2011 Road Safety Business Plan notes in 2010 ICBC made an investment to support the new legislation restricting the use of handheld personal electronic devices, such as cell phones, while driving. In 2011 the focus will be limited to maintaining awareness through the distracted driving awareness campaigns. Figure 10.7 on p. 10-18 shows a summary of the investment in Road Safety from 2007 Actual to 2011 Forecast (\$000's). The layout of Figure 10.7 is slightly adjusted as follows:

	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Forecast
Driver Distractions					
Driver Distractions Awareness Campaign	\$0	\$0	\$0	\$2,129	\$610

**Please elaborate on the items that ICBC will be focusing on in 2011 to maintaining awareness through the distracted driving awareness campaigns.**

**Response:**

In 2011 ICBC focused on working with WorkSafe BC in order to reach a specific employee audience, the Grey Fleet. The Grey Fleet includes those drivers who are driving as part of their work, but do not drive an employer-provided vehicle (e.g., drivers who are reimbursed per kilometre for the distance they drive for their work). ICBC worked in partnership with WorkSafe BC to develop resources for this driving audience, as well as for their employers. This partnership was highlighted in a joint media conference with WorkSafe BC focusing on workers' safety. This partnership between WorkSafe BC and ICBC Road Safety was new, and enabled efficiencies through cost sharing for the development of television advertising to educate drivers on the risks and consequences of using personal electronic devices (PEDs) while driving.

Radio advertising occurred in September, which aligned with stepped-up police enforcement during that month. This advertising was province-wide and was also translated into various languages such as Cantonese, Mandarin, Hindi, and Punjabi. Other formats for promoting this issue included highway variable message boards and LED screens at the PNE in Vancouver.

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Also, online tips and materials were made available on [www.drivecellsafe.ca](http://www.drivecellsafe.ca) and [www.icbc.com](http://www.icbc.com).

ICBC focused on post-secondary students, partnering with contacts who are currently working on messaging for students (British Columbia Institute of Technology (BCIT), Simon Fraser University) to reduce their use of PEDs while walking, cycling, driving, and in class. A minor investment in support of activities in these contexts was made to BCIT. ICBC included film and advertising content developed through the 180 Film Contest and the Your Ad Here to reach the younger age group that these tactics were designed to appeal to.

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**2012.1 RR BCUC.110.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section E, p. 10-18  
News Release, B.C.'s tough impaired laws: one year, 45 lives saved, Office of the  
Premier, Ministry of Public Safety and Solicitor General  
Impaired Driving**

A news release by the Ministry of Public Safety and Solicitor General dated November 23, 2012 titled "B.C.'s tough impaired laws: one year, 45 lives saved" states:

*"B.C.'s first year with Canada's toughest roadside penalties for impaired driving saw alcohol-related motor vehicle deaths reduced by 40 per cent..."*

*From Oct. 1, 2010, to Sept. 30, 2011, the total number of alcohol-related motor vehicle deaths across B.C. was 68. This represents a decrease of 40 per cent from the 113 such deaths on average in each of the previous five years.*

*"For the first time in a decade, we've seen a real drop in the deaths associated with impaired driving..." said Minister of Public Safety and Solicitor General Shirley Bond."*

Source: [http://www2.news.gov.bc.ca/news\\_releases\\_2009-2013/2011PREM0155-001524.htm](http://www2.news.gov.bc.ca/news_releases_2009-2013/2011PREM0155-001524.htm)

Is ICBC aware of the data cited in the above news release that alcohol-related motor vehicle deaths have reduced by 40 per cent from Oct. 1, 2010, to Sept. 30, 2011?

Response:

Yes, ICBC is aware of the data cited in the November 23, 2011 news release referred to above.

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**2012.1 RR BCUC.110.1.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section E, p. 10-18  
News Release, B.C.'s tough impaired laws: one year, 45 lives saved, Office of the  
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**"B.C.'s first year with Canada's toughest roadside penalties for impaired driving saw alcohol-related motor vehicle deaths reduced by 40 per cent..."**

**From Oct. 1, 2010, to Sept. 30, 2011, the total number of alcohol-related motor vehicle deaths across B.C. was 68. This represents a decrease of 40 per cent from the 113 such deaths on average in each of the previous five years.**

**"For the first time in a decade, we've seen a real drop in the deaths associated with impaired driving..." said Minister of Public Safety and Solicitor General Shirley Bond."**

**Source: [http://www2.news.gov.bc.ca/news\\_releases\\_2009-2013/2011PREM0155-001524.htm](http://www2.news.gov.bc.ca/news_releases_2009-2013/2011PREM0155-001524.htm)**

**Please comment if the data cited in the above news release have any impact on the PY 2012 trends of bodily injury frequency and severity. Why or why not?**

**Response:**

It is not known whether or to what extent the data cited in the November 23, 2011 news release regarding motor vehicle deaths may impact the policy year 2012 trends of bodily injury (BI) frequency and severity. However, the latest BI frequency observations, which include any impact from the impaired driving penalties, are considered in the loss trend models.

Although a notable decline in alcohol-related deaths is described in the above news release, it is not known whether this represents an actual elimination of alcohol-related collisions (with or without fatal consequences) or simply a shift of collisions from fatal to non-fatal. The observed reduction in fatalities referred to above could be related to factors, such as increased vehicle safety, that are unrelated to the impaired driving sanctions and that may prevent deaths but not injuries. As noted in the Application, Chapter 10, page 10-15, the Traffic Accident System (TAS) data is currently the only source of observation information in BC about the human factors that contributed to any specific crash. However, a legislative change in 2008 has

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influenced the reporting of non-fatal crashes. As a result, TAS data cannot be used to isolate the presence or degree of any shift that may or may not have occurred in the frequency of fatal and injury alcohol-related crashes.

The new impaired driving penalties were introduced on September 20, 2010, and any crash reduction impact would have begun affecting claims occurring from that point forward. ICBC actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. By the end of 2011, the updated loss trend models would include consideration of changes in claims frequency or severity observed as a result of the new impaired driving laws.

It should also be noted that the new sanctions for impaired driving were introduced on the same day that new sanctions were introduced for excessive speeding, street racing, excessive tailgating, and reckless driving. Due to the simultaneous implementation of these laws, and the absence of contributing factor data in the claims system, it is difficult to separate the independent effects on claims of all the new sanctions. Any future evaluations of the 2010 impaired driving and excessive speed strategies (which actually include four components: education, public awareness, enforcement, and regulation) may provide estimates of the independent effects that have occurred in terms of the underlying driver behaviours (drunk driving and excessive speed) but not necessarily their separate impacts on claims.

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**2012.1 RR BCUC.110.1.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section E, p. 10-18  
News Release, B.C.'s tough impaired laws: one year, 45 lives saved, Office of the  
Premier, Ministry of Public Safety and Solicitor General  
Impaired Driving**

**A news release by the Ministry of Public Safety and Solicitor General dated November 23,  
2012 titled "B.C.'s tough impaired laws: one year, 45 lives saved" states:**

**"B.C.'s first year with Canada's toughest roadside penalties for impaired driving saw  
alcohol-related motor vehicle deaths reduced by 40 per cent..."**

**From Oct. 1, 2010, to Sept. 30, 2011, the total number of alcohol-related motor vehicle  
deaths across B.C. was 68. This represents a decrease of 40 per cent from the 113 such  
deaths on average in each of the previous five years.**

**"For the first time in a decade, we've seen a real drop in the deaths associated with  
impaired driving..." said Minister of Public Safety and Solicitor General Shirley Bond."**

**Source: [http://www2.news.gov.bc.ca/news\\_releases\\_2009-2013/2011PREM0155-001524.htm](http://www2.news.gov.bc.ca/news_releases_2009-2013/2011PREM0155-001524.htm)**

**110.1.2 Please explain if ICBC has assessed any prospective adjustments to the actuarial  
rate level indication analysis, as a result of the data cited in the above news release  
about alcohol-related motor vehicle deaths.**

**110.1.2.1 If so, please explain the methodology and quantify the accompanying impact on  
PY 2012 rate indication.**

**110.1.2.2 If not, please provide the reasons to dismiss the data cited in the above news  
release.**

**Response:**

**110.1.2**

ICBC has not assessed any prospective adjustments to the actuarial rate level indication for policy year 2012 for reductions in alcohol-related collisions. Although it may be speculated that the new impaired laws could result in an incremental decrease in Basic insurance claims within the scope of policy year 2012, no estimate was available for the amount of these costs.

One of the five criteria ICBC applies to determine eligibility of an event for prospective adjustment is that the effect on claims be "estimable". This means that expected effects

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attributable to the specific program can be quantified in terms of claims costs or savings. Where possible, this is based on internal ICBC data. If internal data is not available, external experience is sought through the review and analysis of research papers, articles, and studies by sources in other jurisdictions. Based on the relevance of the external information to the candidate event in BC, it may be used to estimate potential claims costs or savings. If insufficient evidence is available to provide a credible estimate for the candidate event in BC, then no prospective adjustment is made for that event. The systematic application of the criterion of “estimability” helps to ensure that the prospective adjustment process is based on credible evidence and not subject to speculative costs and savings. Taking into account relevant data that has a demonstrable bearing on the matter at hand is in accordance with accepted actuarial practice.

In the case of the impaired driving strategy, there was no prior, and continues not to be sufficient, evidence to provide a credible estimate for the impact on claims costs or savings. As noted in the Application, Chapter 10, page 10-15, the Traffic Accident System (TAS) data is currently the only source of observation information in BC about the human factors that contribute to any specific crash. However, a legislative change in 2008 has influenced the reporting of non-fatal crashes. As a result, TAS data cannot be used to isolate or predict overall changes in crashes over time. This means that the number of crashes attributable to impaired drivers cannot currently be measured or predicted accurately. Moreover, even if it were possible to measure the number of impaired crashes, insufficient data are available to permit the attribution of observed or expected changes to either the impaired driving legislation or, more generally, to the overall impaired driving strategy. There may be other factors that are contributing to changes in impaired driving crashes. Consequently, no expected effects of the impaired driving strategy on claims costs could be quantified by ICBC. Furthermore, due to the uniqueness of the sanctions introduced in BC, no estimates of expected effects were available from other jurisdictions. Therefore, no prospective adjustment was made for the impaired driving strategy.

It should be noted, however, that given the implementation of the new laws in September 2010, any impact that the new impaired driving strategy might be having on claims would have begun to occur in 2010 and 2011. ICBC actuaries monitor claims experience on a monthly basis, and

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update the trend models regularly throughout the year in order to take into account the most recent information. By the end of 2011, the updated loss trend models would include consideration of any changes in claims frequency observed as a result of the new penalties for impaired driving.

**110.1.2.2**

ICBC does not dismiss the data discussed in the news release above. For the reasons noted above, the data referenced in the news release are not sufficient to meet one of ICBC's criteria for a prospective adjustment (i.e., estimability). In addition, the data relate to effects that would already have begun to be expressed in 2010 and 2011 loss trends. Therefore, even if the data in the news release could be used to estimate and attribute effects to the impaired driving strategy, the inclusion of a prospective adjustment for policy year 2012 could result in a double counting of the expected benefits.

**2012.1 RR BCUC.110.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Section E, p. 10-18  
News Release, B.C.'s tough impaired laws: one year, 45 lives saved, Office of the  
Premier, Ministry of Public Safety and Solicitor General  
Impaired Driving**

ICBC's 2011 Road Safety Business Plan identifies Impaired Driving as one of the Driver programs. According to Figure 10.7, Road Safety Investments (\$000's) for Impaired Driving consist of \$1,309 for the 2011 Forecast, up from the 2010 Actual of \$891. The layout of Figure 10.7 is slightly adjusted as follows:

	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Forecast
<b>Impaired Driving</b>					
Impaired Driving Awareness Campaign	\$261	\$1,249	\$841	\$681	\$699
Community Partnerships	\$21	\$16	\$72	\$210	\$610
<b>Subtotal Impaired Driving</b>	<b>\$282</b>	<b>\$1,265</b>	<b>\$913</b>	<b>\$891</b>	<b>\$1,309</b>

**110.2 Please explain if ICBC has assessed any prospective adjustments to the actuarial rate level indication analysis, as a result of increased Impaired Driving investments for the 2011 Forecast.**

**110.2.1 If so, how does the implementation of the Impaired Driving and its related Road Safety programs affect the PY 2012 rate indication? Please explain the methodology and quantify its accompanying impact on PY 2012 rate indication.**

**110.2.2 If not, please explain why ICBC is not taking into consideration the Impaired Driving and its related Road Safety programs for PY 2012 rate indication.**

**Response:**

ICBC has not assessed any prospective adjustments to the actuarial rate level indication as a result of the 2011 forecast increase in Impaired Driving investments. The increase was to cover costs for a 2011 refresh of a designated driver television advertisement. Such refreshes are done to ensure currency of messaging. As noted in the response to information request 2012.1 RR BCUC.118.3, assessing the independent impacts of education and awareness campaigns on claims outcomes is inherently difficult and is not typically undertaken by ICBC.

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**2012.1 RR BCUC.111.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B  
Measurement Source**

**Many of the programs have a measurement source of the “Road Safety Driver Survey”. Are there other measurement sources that may provide more accurate and useful information? Please explain what other measurement statistics could be used for each program, in conjunction with the Road Safety Driver Survey as a measurement source.**

**Response:**

The Road Safety Driver Surveys provide information on drivers’ attitudes and self-reported behaviours. ICBC also uses other indicators when available and as appropriate to develop and monitor its programs, including:

- Observational studies, for example:
  - Seatbelts: Transport Canada (2011). Results of Transport Canada’s Rural and Urban Surveys of Seat Belt Use in Canada 2009-2010.
  - Impaired driving: Bierness (2010). Determining the Prevalence of Alcohol and Drug Use by Drivers: A Random Roadside Survey of Nighttime Drivers.
- Traffic Accident System (TAS) data (e.g., relative ranking of human factors that contribute to crashes, fatalities by contributing factor).
- Contraventions data (e.g., tickets issued).
- ICBC claims data (e.g., crash location, auto crime).
- ICBC actuarial data (e.g., penetration rates of vehicle safety features).

As referenced in the response to information request 2012.1 RR BCUC.107.1.2, ICBC is developing a monitoring and evaluation framework that will explore additional indicators that could be used to design, monitor, and evaluate each Road Safety program. This will be filed with the Commission once complete.

**2012.1 RR BCUC.112.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B, p. 6  
BC Trends**

The 2011 road safety business plan on p. 6 presents two charts for ICBC Reported Crash Rate and ICBC Reported Casualty Crash Rate. Please update the two charts on p. 6 with 2010 and 2011 data, if available.

**Response:**

The updated charts for ICBC Reported Crash Rate and ICBC Reported Casualty Crash Rate are below. Please note that the 2011 rates are not yet settled. Also, due to data settling in prior years, some rates may differ slightly from the charts that were previously filed.

Source: ICBC Data as of December 31, 2011.





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**2012.1 RR BCUC.113.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B, p. 14  
Speeding**

**On p. 14 of the 2011 road safety business plan, ICBC notes that in September 2010, the B.C. government introduced changes to the Motor Vehicle Act to include tougher penalties for drivers who speed excessively.**

**How has the government legislation to toughen penalties on drivers who speed excessively been factored into the PY2012 BI Frequency and Severity analysis and the PY2012 Rate Indication? Please elaborate.**

**Response:**

Government legislation to toughen penalties on drivers who speed excessively has not been factored explicitly into the policy year 2012 bodily injury and severity analysis, or the policy year 2012 actuarial rate indication analysis. Any claims savings resulting from this legislative change were not estimable at the time of the actuarial rate indication analysis.

Appropriate BC data to produce a credible estimate of claims savings were not available prior to the actuarial rate indication analysis, and no transferrable estimates of expected effects were available from other jurisdictions. Given the implementation of the new laws on September 2010, any impact that the excessive speeding penalties might have had on claims trends would have begun to occur in 2010 and 2011. ICBC actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. By the end of 2011, the updated loss trend models would include consideration of any changes in claims frequency observed as a result of the new penalties for excessive speeding.

It should also be noted that the new sanctions for excessive speeding were introduced on the same day that the new impaired driving penalties were introduced. Legislative changes related to street racing, excessive tailgating, and reckless driving were also implemented at that time. Due to the simultaneous implementation of these laws, and the absence of contributing factor data in the claims system, it is difficult to separate the independent effects on claims of all of the new sanctions. Any future evaluations of the 2010 impaired driving and excessive speed strategies (which actually include four components: education, public awareness, enforcement,

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and regulation) may provide estimates of the independent effects that have occurred in terms of the underlying driver behaviours (drunk driving and excessive speed) but not necessarily their separate impacts on claims.

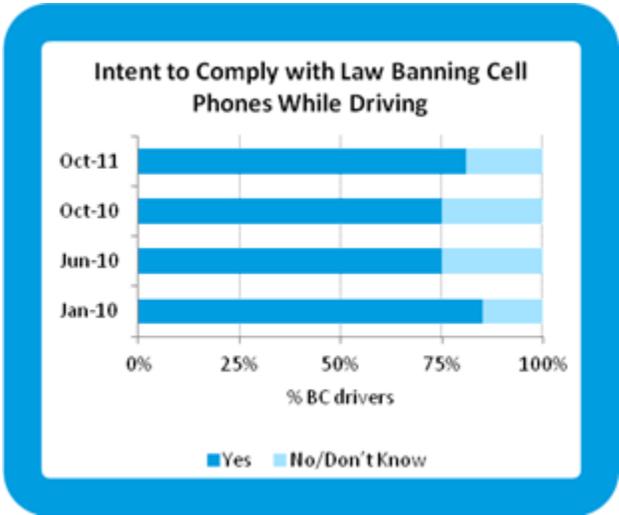
**2012.1 RR BCUC.114.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B, p. 27  
Distracted Driving**

ICBC on p. 27 notes that the OSMV estimates that driver distractions are involved in as many as 25% of crashes per year.

Please update the chart on “Intent to Comply with Law Banning Cell Phones while Driving” and explain why the intent to comply is declining.

Response:

Please find below an updated chart on “Intent to Comply with Law Banning Cell Phones while Driving”.



The January 2010 result that drivers intended to comply with the law was the highest at this time because the lead up to the introduction of the new law was significant in terms of both paid and unpaid earned media. There was a lot of interest from stakeholders, government, and media on the law itself and its potential impact on driver attitude and behaviour.

The question posed to drivers in January was on their intent to comply with the new law that would take effect the following month. At the mid-year mark, the question was not to gauge intent but determine drivers' practice of actually complying with the new law that took effect in February. Therefore, from this point on the chart tracks how drivers did comply once the law

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was in place. The decline in the measure could be attributed to a less robust perception of the law once implemented due to drivers not experiencing the full extent of enforcement and less media attention than leading up to the law's introduction. The increase in the measure in 2011 could be attributed to a shift in messaging from just informing drivers of the new legislation to educating them on the risks and consequences of driving while using a personal electronic device.

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**2012.1 RR BCUC.114.1.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B, p. 27  
Distracted Driving**

**ICBC on p. 27 notes that the OSMV estimates that driver distractions are involved in as many as 25% of crashes per year.**

**What can be done to improve this trend if OSMV estimates 25% of crashes involve driver distractions?**

**Response:**

In 2011, drivers responded more positively to complying with the law. Drivers are starting to be aware of the potential risks and consequences of using personal electronic devices as the message has shifted from making drivers aware of the legislation in 2010 to highlighting the dangers of talking and texting in relation to driving ability and providing specific tips and strategies to cope with this behaviour in 2011.

ICBC will continue to focus on education, awareness, and enforcement of the legislation.

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**2012.1 RR BCUC.115.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B, p. 29  
Road Programs**

**ICBC on p. 29 cites a December 2009 independent evaluation of ICBC-funded road improvements during the years 2004-2006. Please provide a copy of the December 2009 independent evaluation of road improvements.**

**Response:**

Please see Attachment A – 2009 Program Evaluation Report Road Improvement Program.



# **2012.1 RR BCUC.115.1 – Attachment A – 2009 Program Evaluation Report Road Improvement Program**



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# **2009 Program Evaluation Report Road Improvement Program**

Prepared for:

**Insurance Corporation of BC  
Road Improvement Program**

Prepared by:

**Tarek Sayed, Ph.D., P.Eng.,  
Professor of Civil Engineering  
University of British Columbia**

**Paul de Leur, Ph.D., P.Eng.,  
Road Improvement Program  
Insurance Corporation of BC**

**December 2009**

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## EXECUTIVE SUMMARY

### ES-1: EVALUATION OBJECTIVES

The objective of this study was to conduct a time-series (before to after) evaluation of the safety performance of a sample of locations that have been improved under the ICBC's Road Improvement Program. The overall effectiveness of the Road Improvement Program can be determined by:

- 1) Determining if the frequency and/or severity of collisions at the improvement sites has reduced after the implementation of the improvement; and by,
- 2) Quantifying the program costs versus the economic safety benefits to determine the return on ICBC's road safety investment.

Based on the results from this evaluation study, it is possible to determine whether the goals and objectives of ICBC's Road Improvement Program have been achieved.

### ES-2: EVALUATION METHODOLOGY

It is imperative that the evaluation methodology is rigorous, such that the results are robust and can withstand technical scrutiny. To ensure that this objective is achieved, the evaluation has incorporated the latest techniques in road safety evaluation.

There are three main factors that jeopardize the validity of time-series road safety evaluations. These factors, which are often referred to as confounding factors, include history, maturation and regression to the mean or sometimes referred to as regression artifacts. The methodology that has been used in this evaluation study addresses these three factors by making use of the following:

- 1) Comparison groups were used to correct for the confounding factors of history and maturation; and,
- 2) Reference groups were used to generate collision prediction models (CPMs) and, together with empirical Bayes refinement procedures, the regression artifacts were effectively addressed.

The methodology used for this evaluation study provides a high level of confidence in the results produced. To support the reliable methodology, it was also necessary to obtain reliable data for the evaluation.

### **ES-3: EVALUATION DATA**

To ensure accurate and reliable evaluation results, a significant effort was required to obtain the data that is necessary for a successful evaluation. Collision and traffic volume data was required for each site within three distinct groups of sites:

#### 1) Treatment Group Sites:

- These are the sites to be evaluated, where treatments (road improvements) were completed in 2004, 2005, or 2006, as part of the Road Improvement Program.
- A total of 102 treatment sites were selected for the evaluation.
- Specific criteria were established to select projects to ensure that the site selection was not biased and to respond to the resources that were available to complete the evaluation.
- A total of 42 treatment sites were urban intersections, with an ICBC contribution of \$1,653,700 and 60 treatment sites were rural highway segments, with a total ICBC contribution of \$2,935,600.
- The treatment sites that were selected characterize the types of projects that are completed as part of the Road Improvement Program.
- A detailed listing of the treatment sites selected for the evaluation can be found in **APPENDIX A** (urban sites) and **APPENDIX B** (rural sites).

#### 2) Comparison Group Sites:

- These are sites that have NOT been improved, but are subjected to similar traffic and environmental conditions as the treatment group sites.
- A total of 560 comparison sites were selected and were used to generate 60 different comparison groups, which were used in the evaluation process to correct for the confounding factors of history and maturation.

#### 3) Reference Group Sites:

- These are sites that are considered to be similar in design and operation to the treatment group sites.
- There were a total of 952 sites selected to generate 3 reference groups, which were used to develop collision prediction models that are combined with empirical Bayes procedures to address the regression artifacts.

It is also noted that for all three groups, claim-based collision data was used for the evaluation of urban sites and police-reported collision data was used for the rural sites.

## ES-4: EVALUATION RESULTS

### ES-4.1 Change in Collisions

The overall effectiveness in reducing collisions at the 102 treatment sites is provided below in Table ES-1. The results indicate that at the 42 urban intersections studied, there has been a 9.1% reduction in the property damage only (PDO) incidents and a 20.1% reduction in severe incidents. The overall effect for the 60 rural highway segments indicates that there has been a 16.6% reduction in PDO incidents and a 19.5% reduction in severe incidents. Considering all 102-treatment sites, there was an 11.9% reduction in PDO incidents and a 19.6% reduction in severe incidents.

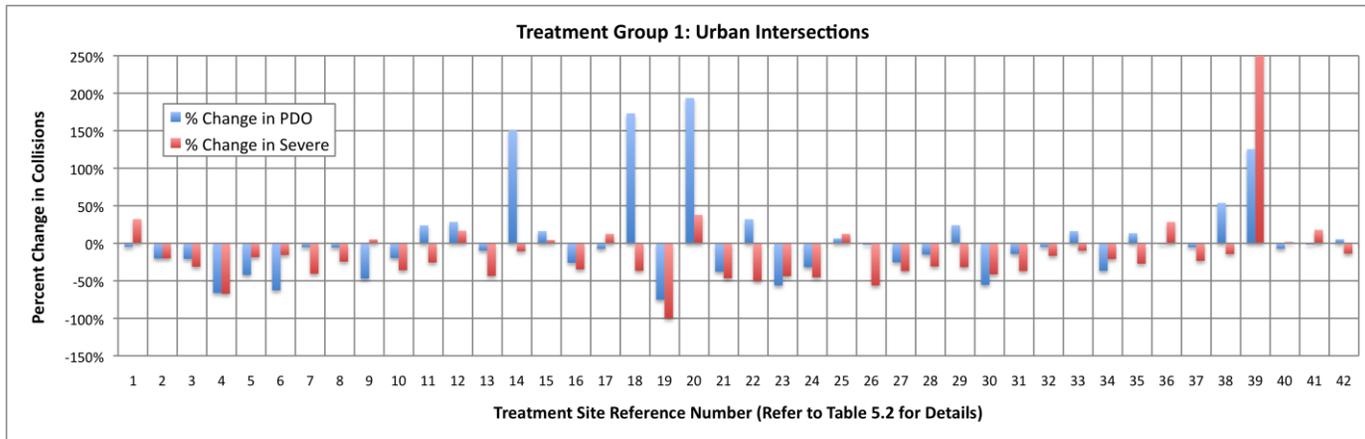
**Table ES-1: Collision Reductions for Treatment Sites**

Treatment Sites	Change in Collisions <sup>1</sup>	
	PDO Incidents	Severe Incidents
Urban Intersections (42 sites)	- 9.1%	- 20.1%
Rural Highway Segments (60 sites)	- 16.6%	- 19.5%
All Treatments Sites (102 sites)	- 11.9%	- 19.6%

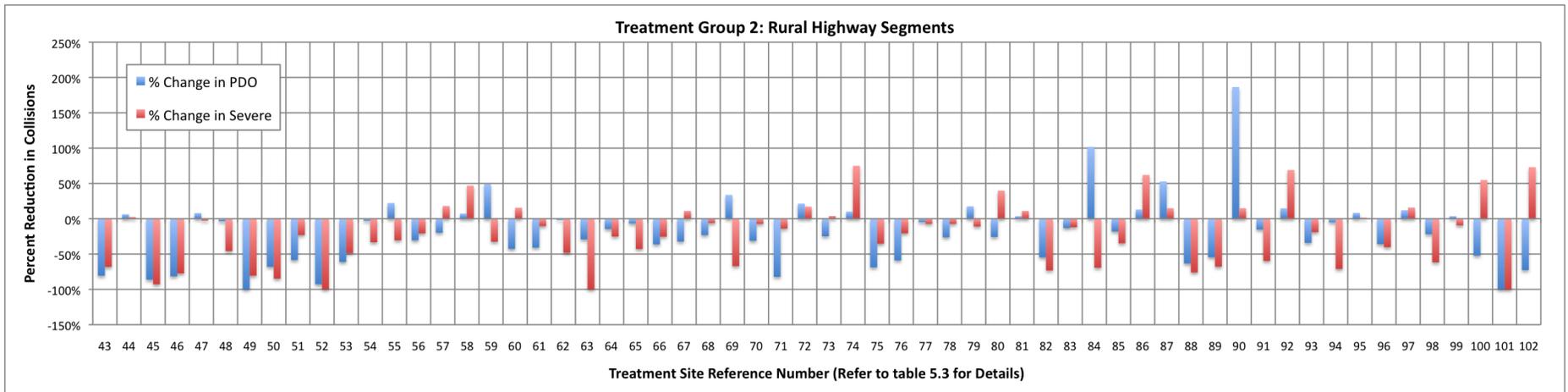
1. A negative value indicates a reduction in collisions.

The safety performance at each site is illustrated graphically in Figure ES-1 for the urban intersections and in Figure ES-2 for the rural highway segments. As can be seen from the figures, the majority of sites show a reduction in the frequency of PDO and/or severe collisions. However, it is noted that there are some locations where a net increase in collisions was determined.

- 26 of the urban intersections (62%) had a reduction in PDO incidents;
- 31 of the urban intersections (74%) had a reduction in severe incidents;
- 42 of the rural highway segments (70%) had a reduction in PDO incidents; and,
- 42 of the rural highway segments (70%) had a reduction in severe incidents.



**Figure ES.1: Change in Collisions for Treatment Group 1: Urban Intersections**



**Figure ES.2: Change in Collisions for Treatment Group 2: Rural Highway Segments**

#### ES-4.2 Economic Evaluation: Costs and Benefits

In addition to the change in collision frequency, it is also important to determine if ICBC's contribution to the road improvement projects achieves the desired return on investment. To determine this, two economic indicators are used, including the net present value (NPV) and the benefit cost ratio (B/C). The net present value is a measure to describe the equivalent present worth of a series of future economic safety benefits, which are discounted to a current value. The benefit cost ratio is a measure to express the economic benefits versus the costs for a project, and thus, when the B/C ratio is greater than 1.0, it means that the benefits are greater than the costs.

In determining the cost and benefits associated with the results, it is necessary to assign an average collision cost value. However, the average collision cost varies depending on the collision data source because of the difference in the level of reporting. As shown in Table ES-2, there is a difference in the average collision cost values between the urban and rural sites. This distinction is required due to the difference in the level of reporting of collisions (there are significantly more claim-based incidents reported as compared to police-reported incidents). Furthermore, it is noted that claims-based incident data is very useful for urban intersections, where an incident location can be easily identified. However, claims-based data is not useful for rural corridors since the identification of a precise location is very difficult. For rural highway corridors, the police reported data can be used to accurately define an incident location. The details on collision reporting differences and the average collision costs are provided in **APPENDIX E**.

**Table ES-2: Average Collision Cost Values**

<b>Collision Data Source</b>	<b>Property Damage Only Incidents</b>	<b>Severe (Fatal + Injury) Incidents</b>
Urban Sites (Claim-based data)	\$2,708	\$31,385
Rural Sites (Police reported data)	\$10,309	\$56,374

The NPV, expressed in millions of dollars, and the B/C for the treatment sites are based on a 2-year service life and a discount rate of 7% and are shown in Table ES-3 below.

**Table ES-3: Economic Evaluation for Treatment Sites (2-Year Service Life)**

<b>Treatment Sites</b>	<b>Net Present Value (NPV)</b>	<b>Benefit Cost Ratio (B/C)</b>
Urban Intersections (42 sites)	\$7.6M	5.6
Rural Highway Segments (60 sites)	\$13.7M	5.7
All Treatments Sites (102 sites)	\$21.3 M	5.6

It is duly noted, that for the projects included as part of this evaluation, the goal of the Road Improvement Program was to achieve a B/C ratio of at least 3.0: 1 on all projects. In other words, for every dollar invested in a road improvement project, there should be 3 dollars returned to ICBC over the project evaluated period as a result of a reduction in collisions / claims costs.

Therefore, as can be seen from the summary results that are presented above, the economic goals of ICBC’s Road Improvement Program have been achieved, with an overall B/C ratio of 5.6 over two years.

The detailed results for the NPV and the B/C for each treatment site over a 2-year period are provided in **APPENDIX A** for each urban intersection and in **APPENDIX B** for the rural highway segments. These detailed results revealed the following:

For the 42 urban intersections:

- 29 sites (69%) had a B/C greater than 1.0 and positive NPV over 2 years; and,

For the 60 rural highway segments:

- 41 sites (68%) had a B/C greater than 1.0 and positive NPV over 2 years.

It is noted that many of the road improvement projects are likely to have safety benefits extending well beyond the 2-year service life, which is the basis for the return on investment. For example, the safety benefits of many improvements, such as left-turn bays, passing lanes, and traffic signals, typically extend well beyond 2 years, and often can be effective for at least 5 years or more. Therefore, the NPV and the B/C for the treatments sites was also calculated over a five-year time period, which may be more representative of the true economic effectiveness of the safety improvements. The overall economic evaluation results for a five-year time period is provided in Table ES-4, which shows a significant NPV for the road improvement projects and that the B/C significantly exceeds the investment goals for the Road Improvement Program.

**Table ES-4: Economic Evaluation for Treatment Sites (5-Year Service Life)**

<b>Treatment Sites</b>	<b>Net Present Value (NPV)</b>	<b>Benefit Cost Ratio (B/C)</b>
Urban Signalized Intersections (42 sites)	\$19.6 M	12.7
Rural Highway Segments (60 sites)	\$35.0M	13.0
All Treatments Sites (102 sites)	\$54.1. M	12.8

The detailed results for the NPV and the B/C for each treatment site over a 5-year period are provided in **APPENDIX A** for each urban intersection and in **APPENDIX B** for the rural highway segments. These detailed results over a 5-year time period revealed the following:

For the 42 urban intersections:

- 31 sites (74%) had a B/C greater than 1.0 and positive NPV over 5 years.

For the 60 rural highway segments:

- 41 sites (68%) had a B/C greater than 1.0 and positive NPV over 5 years.

### **ES-4.3 Summary of Evaluation Results**

Based on the results from the 102 treatment sites that were investigated for the 2009 Evaluation of ICBC's Road Improvement Program, the following conclusions can be made. Again, please refer to **APPENDIX A** and **APPENDIX B** for the specific details of the results for each treatment site.

#### Collision Reduction Evaluation:

- 1) Overall, property damage only (PDO) collisions were reduced by 11.9%.
- 2) Overall, severe (fatal + injury) collisions were reduced by 19.6%.
- 3) A total of 68 sites (67%) reported a reduction in PDO collisions.
- 4) A total of 73 sites (72%) reported a reduction in severe collisions.

#### Economic Evaluation (Assuming a 2-Year Service Life):

- 1) Overall, the net present value for all 102 sites is \$21.3M over 2 years.
- 2) Overall, the B/C ratio for all 102 sites is 5.6 over 2 years.
- 3) A total of 70 sites (69%) reported a positive NPV (benefits) over 2 years.
- 4) A total of 70 sites (69%) reported a B/C greater than 1.0 over 2 years.

#### Economic Evaluation (Assuming a 5-year Service Life):

- 1) Overall, the net present value for all 102 sites is \$54.1M over 5 years.
- 2) Overall, the B/C ratio for all 102 sites is 12.8 over 5 years.
- 3) A total of 72 sites (71%) reported a positive NPV (benefits) over 5 years.
- 4) A total of 72 sites (71%) reported a B/C ratio greater than 1.0 over 5 years.

It is concluded that the goals of ICBC's Road Improvement Program have been achieved, with an overall reduction in the frequency and severity of collisions and an excellent return on road improvement investments.

## **1.0 INTRODUCTION**

### **1.1 Background**

The Insurance Corporation of British Columbia (ICBC) started a program known as the Road Improvement Program in 1989. Staff from ICBC recognized that tangible benefits, measured by a reduction in claim costs, could be achieved by providing funding for road safety improvements. At the outset of the program, there was limited funding available for road improvements and the program only targeted a very few locations; only those locations that offered the greatest potential to reduce collisions and the associated reduction in ICBC claim costs. Due to the success in reducing collisions and claim costs, the program has grown considerably since its inception in 1989, with a current annual budget of approximately \$10 million.

The approach used for ICBC's Road Improvement Program (RIP) is to establish effective partnerships with local road authorities in British Columbia and to work cooperatively to make sound investments in road safety improvements. ICBC's road authority partners are varied and have included local municipalities, the Ministry of Transportation, First Nations, BC Ferries, BC Parks, Public Works Canada, among others.

The common goal for ICBC and the partnering road authority is to reduce the frequency and severity of collisions, thereby reducing deaths, injuries and insurance claim costs. The road safety improvement partnership includes contributions from the both the road authority and from ICBC, which involves the following tasks:

- 1) Identify locations that may be suitable candidates for improvement;
- 2) Investigate the causal factors of the safety problem(s) at the site;
- 3) Develop the road improvement strategies / improvements; and
- 4) Calculate the level of ICBC investment for the project.

Over the years, ICBC's Road Improvement Program has had considerable success in partnering with road authorities in BC on many types of road safety projects. The types of improvement projects are highly varied, ranging from short-term, low cost safety improvements such as enhanced signing and delineation, to long-term, high-cost improvements such as roadway re-alignments and road widening.

## 1.2 Road Improvement Program Projects

Some examples of typical projects where ICBC's Road Improvement Program have been involved are presented in the following section.

A typical example of a short-term, low-cost safety improvement could be additional or enhanced roadway signage and delineation. The safety impacts of signs and delineation are typically the greatest within the first two years, while the sign or delineation device conveys a 'new' message or when the sign or delineation device has a high level of conspicuity for the targeted motorists. The example in Figure 1.1 below is a warning sign provided to alert motorists of the potential for hydroplaning.



**Figure 1.1: Example of Short-Term Sign: Hydroplaning Warning Sign**

Some signing and delineation projects can have a longer effectiveness period, such as the example project shown in Figures 1.2 and 1.3. This example shows a new and highly effective chevron warning sign (W-062). The chevron sign is designed to illuminate using bright, but low power LED technology during difficult visibility conditions in order to help guide motorists and delineate the roadway. The signs are also bi-directional.



**Figure 1.2: Example of Long-term Sign: LED Signs**



**Figure 1.3: Example of Long-Term Sign: Bi-Directional and Highly Reflective**

Another good example of a low-cost, but highly effective safety treatment is the use of shoulder rumble strips (SRS), installed on the shoulder area of a roadway or centreline rumble strips (CRS), installed on the centreline between opposing traffic, as shown below in Figures 1.4 and 1.5. ICBC's Road Improvement Program has provided funding for many rumble strip projects over the years.



**Figure 1.4: Example showing CRS Installation**



**Figure 1.5: Example of In-place CRS**

With the topography in many regions in BC, there is a need to address roadside safety. Roadside barrier and retaining walls can be very effective safety features of roadways to prevent errant vehicles from entering a hazardous roadside area, as shown in Figure 1.6 or to prevent a hazardous roadside from becoming a roadway hazard, as shown in Figure 1.7. The safety benefit associated with the roadside barrier clearly illustrates the high potential for a severe incident without a roadside barrier.



**Figure 1.6: Example of Roadside Barrier Installation**



**Figure 1.7: Example of Retaining Wall Installation**

Another important consideration of the Road Improvement Program involves the safe accommodation of vulnerable road users such as pedestrians and cyclists. Collisions between motor vehicles and vulnerable road users can be very severe, often resulting in life-altering injuries. Over the years, the Road Improvement Program has invested funds for projects that provide safer facilities for vulnerable road users. The example in Figure 1.8 shows before and after photographs of an intersection that has been improved for pedestrian needs, including crosswalks, walkways and lighting. The example in Figure 1.9 shows an urban project, which provides a mid-block pedestrian crossing facility, located near a school.



**Figure 1.8: Before to After Example of Accommodating Pedestrians: Rural**



**Figure 1.9: Example of Accommodating Pedestrians: Urban**

An example of a long-term, high-cost safety improvement is the widening of a road or highway. Engineering literature indicates that safety will be improved with additional highway lanes as a result of better traffic flow and safer passing opportunities.

ICBC has partnered with various road authorities in BC to share in the costs of roadway widening. Each candidate site is reviewed for its potential to reduce collisions and ICBC's contribution is based on this safety benefit potential. The example below shows both the before photo (Figure 1.10) and the after photo (Figure 1.11) of the widening project located on a rural highway.



**Figure 1.10: Example of Highway Widening Project (Before)**



**Figure 1.11: Example of Highway Widening Project (After)**

Another example of a high-cost, long-term road safety improvement is the re-alignment of an existing road or the construction of a new road. Each project is examined to determine the potential safety benefits before ICBC enters into a partnership with the authority that has jurisdiction over the roadway. As can be seen from the example below, an existing road has a sharp horizontal curve and difficult / skewed connections from the adjacent minor roadways (Figure 1.12: Before Photo). To address the safety problem, a new roadway was designed and built to flatten the sharp curve and re-align the connections at a safer, 90-degree intersection angle (Figure 1.13: After Photo).



**Figure 1.12: Example of Roadway Re-alignment (Before)**



**Figure 1.13: Example of Roadway Re-alignment (After)**

### **1.3 ICBC's Investment in Road Improvements**

The criteria for ICBC's level of investment for road improvement projects have changed over the years. Below is a summary of the evolution of the investment criteria for ICBC's Road Improvement Program.

Initially, ICBC's contribution for road improvement projects was calculated based on a target return on investment of 2.0:1 over two years. In other words, for every dollar that ICBC invested into a road improvement project, ICBC would expect to save at least two dollars in claims costs within two years. This initial investment criterion was selected to be aggressive such that ICBC could be assured that the funding dedicated to road safety improvements would realize benefits in terms of reduced claim costs at the locations that were improved. The 2.0:1 return over a 2-year time period investment criteria remained in place until the year 2002.

After an evaluation of the Road Improvement Program in 2001, which showed a 4.7:1 return on investment over a two year period, the funding criteria was changed to 3.0:1 in two years to better reflect the actual rate of return that ICBC was achieving. However, it was later determined that the 3.0:1 criteria, which was discussed in 2002 and implemented in 2003, was too aggressive, causing a significant reduction in the level of ICBC contribution, which in turn, marginalized ICBC's involvement in some projects. In other words, the levels of ICBC contribution become too low for some projects to attract road authority participation.

To address this issue, the funding criterion was changed again in 2007, such that ICBC would expect to achieve a 50% internal rate of return. This funding criterion would allow a more meaningful ICBC contribution for road improvement projects. In addition, the 50% internal rate of return criterion could also allow a project's service life to extend up to 5 years, to better reflect some projects that have benefits accruing beyond 2 years.

In 2009, another option for the allowable service life for projects was implemented. For projects that are expected to realize safety benefits well into the future, a service life of 10 years could be used to calculate ICBC contribution. It is noted however, that none of the projects evaluated as part of this study included the new investment criteria of 50% internal rate of return.

#### **1.4 Program Evaluation Objectives**

The objective of this study was to conduct a time-series (before to after) evaluation of the safety performance of a sample of locations that have been improved under the ICBC Road Improvement Program. The study evaluated the effectiveness of the program by quantifying the cost and benefits of each improvement project. The evaluation methodology used the latest knowledge and experience in the field of road safety evaluation, and included the following:

- 1) Use of collision data (ICBC claim data and police reported collision data);
- 2) The development and application of collision prediction models; and,
- 3) Accounting for the change in traffic volume at improvement sites.

Several evaluations have been completed over the years to determine whether the goals and objectives of ICBC's Road Improvement Program have been satisfied and to provide justification for ICBC's expenditure on road improvements. The first program evaluation was conducted in 1996 to ensure the cost-effectiveness of road safety investments in the various road improvement projects. There have been four subsequent program evaluations, conducted in 1997, 1998, 2001 and 2006, with the evaluation methodology improving over time. This report is the latest program evaluation, which focuses on the effectiveness of road improvement projects that were completed in 2004 to 2006. The evaluation methodology deploys state of the art techniques to ensure reliable and robust evaluation results.

#### **1.5 Evolution of the Program Evaluation Methodology**

To measure the success of the Road Improvement Program and to ensure the proper allocation of available funding, a study was initiated in 1993 to establish a framework for evaluating the economic feasibility of road safety improvement projects. The study described simple methods that could be used to quantify the costs and benefits of road improvements. Realizing the limitations of the 1993 study and the need to conduct a more accurate and robust economic evaluation of the road improvement program, another study was completed in 1996. The 1996 study demonstrated the need to consider the random nature of collision occurrence when conducting a formal program evaluation. The methodology reported in the 1996 study was useful for conducting reliable economic evaluations of safety improvement projects.

Since the preparation of the 1996 Program Evaluation study, there have been several advances in road safety research. The use of collision prediction models has become standard safety practice and is commonly used for time series safety evaluations. Methods for assessing the reliability of evaluation results are also more frequently used, and overall, a better understanding of evaluation techniques has been achieved. As a result, the methodology that was used in both the 2001 and 2006 Road Improvement Program Evaluation studies deployed advanced evaluation techniques that ensured reliable results. These techniques are also used for this 2009 Program Evaluation.

## **1.6 Program Evaluation Components**

An effective and robust program evaluation requires considerable effort. Sections of this report provide the details of the various components of the Road Improvement Program evaluation process. The main components of the evaluation are listed below, together with a short description.

1. Selection of sites to evaluate:

It is important to randomly select road improvement projects that will be representative of the overall program and the types of projects that are typically completed.

2. Compilation of the evaluation data:

It is also important to obtain and compile reliable data to accurately evaluate the effectiveness of road improvement projects, including the necessary collision data, project data and traffic volume data.

3. Formulating the evaluation methodology:

The evaluation methodology used should withstand technical scrutiny and incorporate the latest advances in road safety research such that reliable results can be obtained.

4. Development of collision prediction models:

The development and application of collision prediction models (CPMs) is necessary to improve the accuracy of road safety performance for the time-series evaluation.

5. The computation of results: Collision reduction and economic indicators:

The success of the Program is determined by computing the reduction in collisions, as well as two economic indicators, including the benefit-cost ratio (B/C) and the net present value (NPV).

## **1.7 Report Structure**

Chapter 1 of this report has provided a short introduction, listing the objectives and providing some general background information. Chapter 2 describes the importance and necessity of effective evaluation of road safety programs; the obstacles to performing a program evaluation; and the techniques to ensure effective evaluations are completed. Chapter 3 provides the details of the program evaluation methodology. Chapter 4 provides a discussion of the data elements used in road safety evaluations, including the data used for this evaluation. Chapter 5 details the results of the program evaluation, listing the reduction in collisions and the economic indicators of the results. Chapter 6 concludes the report by providing a short summary of the results and the conclusions from the evaluation assignment. A comprehensive list of references and Appendices are provided at the end of this report.

## **2.0 EVALUATION OF ROAD SAFETY INITIATIVES**

This chapter of the report is intended to provide background information related to the completion of accurate and reliable road safety evaluations. It is similar to previous evaluation reports, but is included in the interest of completeness so that the reader can understand the complexity of accurate road safety evaluations.

### **2.1 Why Evaluate Road Safety**

There are several reasons to conduct a thorough and robust evaluation of road safety initiatives. These main reasons are summarized as follows:

- 1) In the majority of cases, the success of a road safety initiative is not self-evident, even to road safety professionals that have considerable practical experience and knowledge.
- 2) Road safety research has definitively indicated that the relationship between the various causal factors and the occurrence of collisions is not a clear and definitive relationship.
- 3) There is rarely a simple cause and effect relationship associated with road safety initiatives. Usually, several factors that influence safety in different ways operate simultaneously within a transportation system, including such things as changes in traffic volume level, the driver population, operating speeds, and weather conditions (among others).

### **2.2 What to Evaluate**

Evaluating a road safety initiative is usually undertaken by comparing the level of safety before the initiative was implemented, to the level of safety after the initiative was implemented. The level of safety can be defined in several ways, but most often the collision frequency is used, which will form the basis for this evaluation study.

Therefore, given that the requisite data is both available and reliable, the evaluation of the ICBC Road Improvement Program will be undertaken by comparing the number of collisions that occurred after the implementation of the various improvement projects that were funded by the Road Improvement Program, to what would have been the number of collisions at the locations if the road safety improvements not been implemented. The main assumption is that if nothing else happens, then a change in the number of collisions must be attributed to the safety initiative.

### **2.3 Road Safety Evaluation Challenges**

Several factors contribute to the difficulty in conducting a robust evaluation of a road safety initiative or program. The three main factors are described below.

1) Collision Data Availability and Quality:

At times, collision data can suffer from problems related to the timeliness of the data, data quality and reliability, and stability of the data source.

2) The Nature of Collision Data:

Collisions are rare events, which affects the sample size required for the before-after evaluation, thus requiring a lengthy observation time period. Collisions are also random events, which should be accounted for in the evaluation methodology.

3) Controlling for Confounding Factors:

A simple cause and effect relationship is rare in road safety and usually, there are several other factors operating simultaneously that may influence road safety performance. Therefore, the effect of these other factors should be separated from the treatment effect that is being investigated.

### **2.4 Threats to the Validity of Road Safety Evaluations**

The evaluation process should ensure that a noted change in the safety performance is caused by the safety initiative and not by other “confounding” factors or causes. If other factors are allowed to contribute to the noted change, then sound conclusions about the effect of the safety improvement or countermeasure cannot be made. While researchers have discussed up to 13 classes of confounding factors or rival explanations, this report focuses on 3 main factors that are most relevant to road safety evaluations. These factors include history, maturation and regression artifacts.

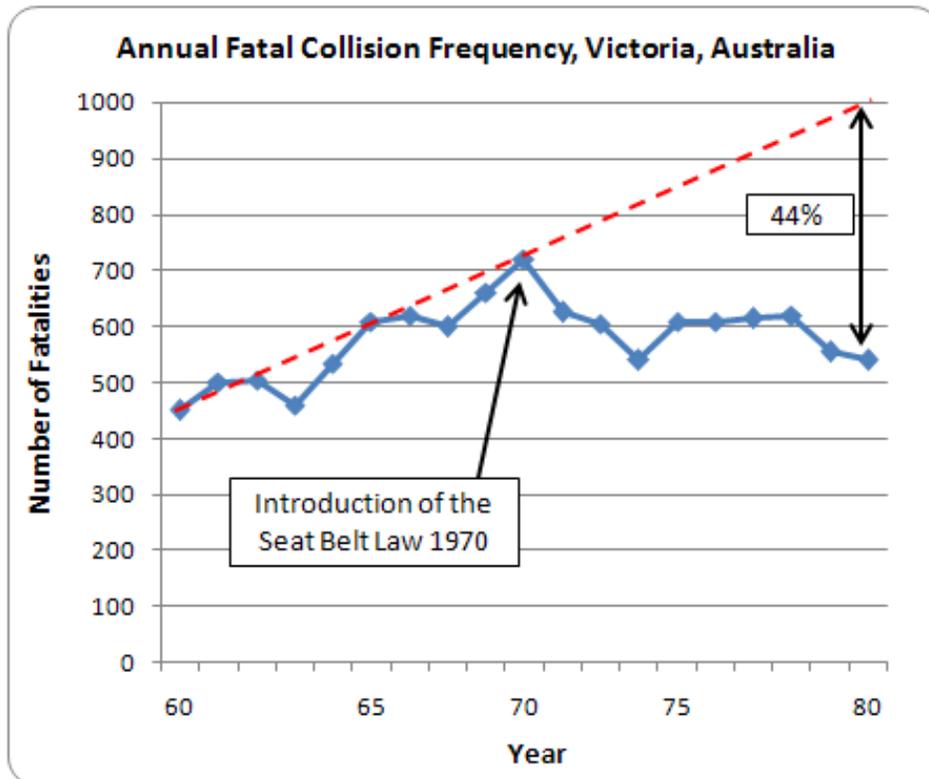
#### **2.4.1 Confounding Factor 1: History**

History refers to the possibility that factors, other than the initiative being investigated, caused all or part of the observed change in collision frequency. For example, if the countermeasure being evaluated is pavement grooving, used to improve the skid resistance and reduce rear-end collisions, then a significant reduction in the amount of rainfall before and after the countermeasure implementation may explain a change in collisions. Therefore, the evaluation should separate the countermeasure effect from the effect of any other factor.

### 2.4.2 Confounding Factor 2: Maturation

Maturation refers to the collision trend effect that occurs over time. For example, a comparison of collision frequency before and after the implementation of a specific initiative may indicate a reduction can be attributed to the initiative. However, a “rival” explanation would be that this reduction is part of a continuing decreasing trend that is occurring over many years.

An example of maturation is illustrated in Figure 2.1. The study results (Nichols, 1982) show the effect of seat belt laws on collisions in Victoria, Australia. The study reported reductions of 44% on fatalities, which was attributed to the effect of the safety belt law that was implemented in 1970, as shown in Figure 2.1. However, it is known that in all developed countries, the number of fatalities started to decrease in the seventies perhaps due to improved vehicle design. This trend can be a “rival” explanation to the reduction in collisions (Haight, 1986).

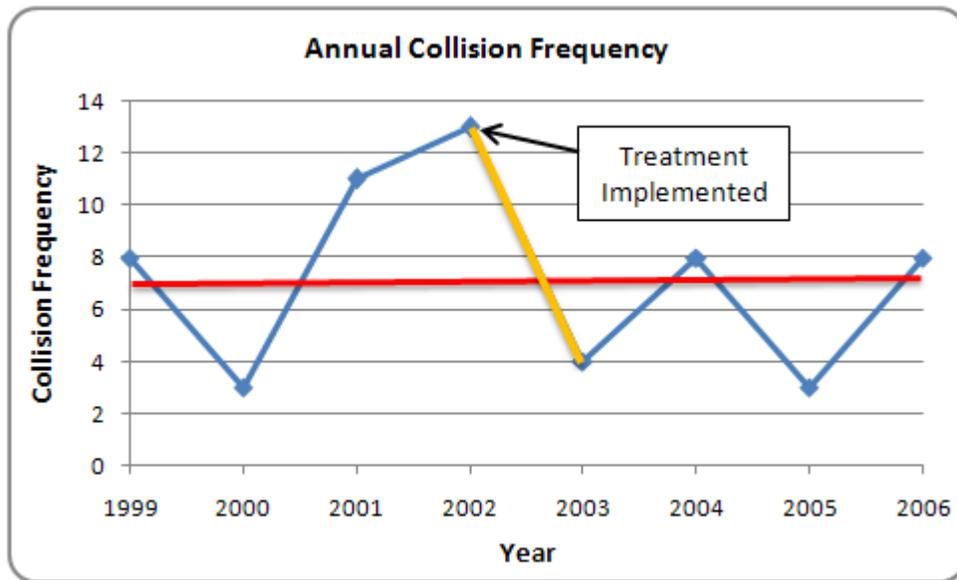


**Figure 2.1: Example of Misleading Trend Analysis: Maturation  
(According to Haight (1986))**

### 2.4.3 Confounding Factor 3: Regression Artifacts

Regression artifacts, or more commonly known as “regression to the mean”, refers to the tendency of extreme events to be followed by less extreme events, even if no change has occurred in the underlying mechanism which generates the process. In other words, “the highest value will get lower and the lowest value will get higher”. Often, road safety initiatives target sites because of a high occurrence of collisions. This high occurrence of collisions may ‘regress’ to a mean value in the after-treatment period regardless of the treatment effect. This will lead to an over-estimation of the treatment effect in terms of collision reduction. This regression to the mean bias is considered the most important source of error in the evaluation of road safety initiatives and must be considered for the results to be considered reliable.

To illustrate the effect of regression to the mean, assume that the points in Figure 2.2 represent the number of collisions that occur at a site from 1999-2006. Although the average number of collisions is about seven, the annual collision frequencies range from 3 to 13. If the site were selected for treatment in 2002 because of the high collision frequency recorded in the previous two years, then regardless of the effectiveness of the treatment, a subsequent analysis conducted in 2003 would reveal a significant drop in the collision frequency. This collision reduction would erroneously be attributed to the treatment effect and not to the real effect caused by the regression to the mean.



**Figure 2.2: Example of the Regression to the Mean (RTM) Effect**

## 2.5 Techniques to Enhance Effectiveness Evaluations

This section of the report provides an overview of the techniques that can be used to overcome the three main threats to the validity of effective road safety evaluation, namely history, maturation and regression artifacts. These evaluation techniques allow for an accurate and reliable estimate of the safety benefits associated with road safety initiatives.

### 2.5.1 History and Maturation

To account for the effects of history and maturation, it is usually proposed to make use of what is known as a “comparison group” of sites. To use this approach, a group of sites that are considered to be similar to the treated sites are selected and the collision data for these comparison sites is obtained. By comparing the change in the collision frequency in the comparison group of sites to the change in collision frequency at the treated sites, the effect of the treatment (i.e., the improvement) can be calculated.

To illustrate the use of a comparison group for a road safety evaluation, consider the collision data presented in Table 2.1. Assume that the data represents the number of collisions that occur at 10 treatment sites and at 10 comparison sites for a similar before and after time period. If no comparison group were to be used, then it would be concluded that collisions were reduced by 20 from the before to the after time periods, representing a 10% reduction in collisions  $((200 - 180) / 200) = 10\%$ .

**Table 2.1: Simple Before and After Analysis  
With a Comparison Group**

TIME TREND	TOTAL COLLISIONS	
	Comparison Sites	Treatment Sites
Before	150 (A)	200 (B)
After	200 (C)	180 (D)

However, by using the comparison group, it is estimated that the treatment has actually reduced the collision frequency from about 267 collisions to 180 collisions, which is shown graphically in Figure 2.3.

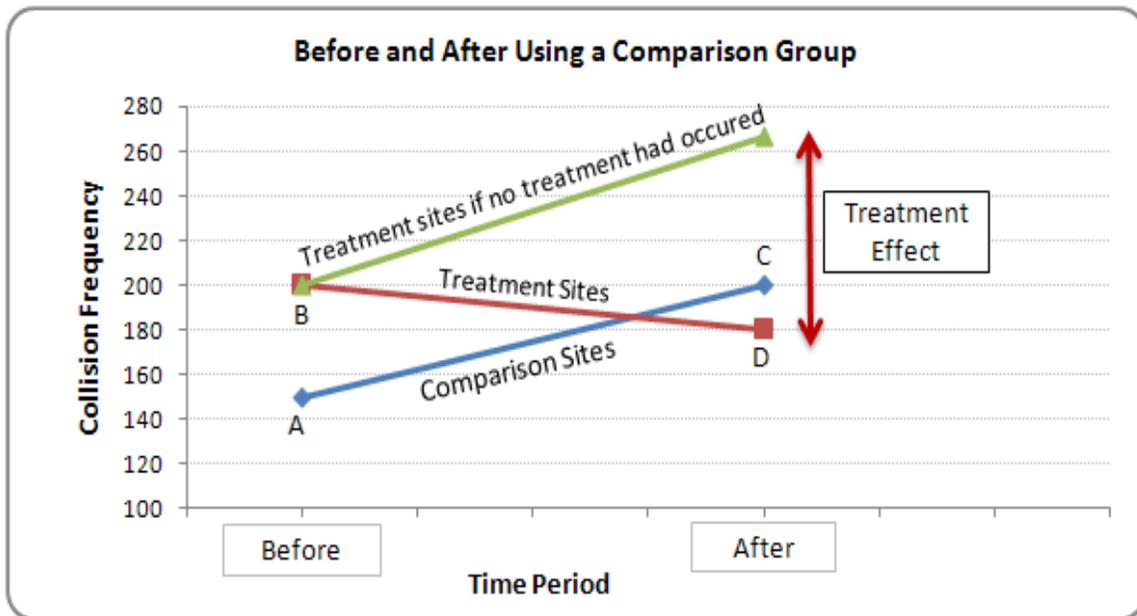


Figure 2.3: Before and After Analysis with a Comparison Group

The effect of the improvements at the treated sites can be determined by calculating the Odds Ratio (*O.R.*), which is shown below in equation (2.1). The Odds Ratio represents the ratio of the change of the collisions in the comparison group to the change of the collisions in the treatment group. Using the example from above, the Odds Ratio can be calculated as follows, with the values of A, B, C, and D, which were being previously defined in Table 2.1.

$$O.R. = \frac{A/C}{B/D} = \frac{150/200}{200/180} = 0.675 \quad (2.1)$$

The value of the *O.R.* minus 1 is used to indicate the magnitude and the direction of the effect of the road safety improvement at the treated site. For the example above, the improvement is calculated to be 32.5% effective in reducing collisions at the treated site, as shown below in equation (2.2).

$$\text{Effect} = O.R. - 1 \quad (2.2)$$

$$\text{Effect} = O.R. - 1 = 0.675 - 1.0 = -0.325$$

### 2.5.2 Regression Artifacts

To account for the regression to the mean, a technique known as the empirical Bayes (EB) technique is used. The main assumption of the EB approach is that there are two types of clues to the safety performance of a location:

- 1) The site's traffic and road characteristics; and
- 2) The site's historical collision data.

The EB approach makes use of both of these clues to produce a more accurate, location-specific safety estimate. The theoretical information in support of the Empirical Bayes approach is provided in **APPENDIX C**.

The EB approach is used to refine the estimate of the expected number of collisions at a location by combining the observed number of collisions that occur at a location with the predicted number of collisions. The predicted number of collisions is obtained from a collision prediction model that is generated from data for a reference population.

The development and utilization of prediction models for the EB approach to account for the regression artifacts, is presented in greater detail in Chapter 3 of this report.

### 3.0 PROGRAM EVALUATION METHODOLOGY

#### 3.1 Methodology to Evaluate the RIP Program

The methodology that is used to evaluate ICBC's Road Improvement Program employs the use of collision prediction models (CPMs). CPMs are mathematical models that relate the collision frequency experienced by a road entity to the various traffic and geometric characteristics of this entity. The CPMs are developed using certain statistical techniques and have several applications such as evaluating the safety of various road facilities, identifying collision-prone locations, and evaluating the effectiveness of safety improvement measures.

Historically, two statistical modeling methods have been used to develop collision prediction models including: 1) conventional linear regression, and 2) generalized linear regression. Conventional linear regression modeling assumes a normal distribution error structure, whereas a generalized linear modeling approach (GLM) assumes a non-normal distribution error structure (usually Poisson or negative binomial). Recently, generalized linear regression modeling has been used almost exclusively to develop CPMs since conventional linear regression models lack the distributional property to adequately describe crashes. The inadequacy is due to the random, discrete, non-negative, and typically sporadic nature that characterize collision occurrence. This evaluation study uses generalized linear regression to develop the required CPMs.

Two functional forms were used for the collision prediction models that were developed in this study. The first model form is used for intersections and it relates the frequency of collisions as the product of traffic flows entering the intersection from the major and minor roadways of the intersections. The model form for intersections is shown below in equation (3.1.a).

$$E(\Lambda) = \alpha_0 V_1^{\alpha_1} V_2^{\alpha_2} \quad (3.1.a)$$

Where:  $E(\Lambda)$  = Expected collision frequency (collisions/3 years);  
 $V_1, V_2$  = Major / minor road traffic volume (AADT); and,  
 $\alpha_0, \alpha_1, \alpha_2$  = Model parameters.

The second functional form for the collision prediction models used in this study are for road segments and it relates the frequency of collisions to the product of traffic volume and segment length raised to powers. This model form is presented below in equation (3.1.b).

$$E(\Lambda) = \alpha_0 V^{\alpha_1} L^{\alpha_2} \quad (3.1.b)$$

Where:  $E(\Lambda)$  = Expected collision frequency (collisions/3 years);  
 $V$  = Road traffic volume (AADT);  
 $L$  = Road segment length (AADT); and,  
 $\alpha_0, \alpha_1, \alpha_2$  = Model parameters.

The variance of the expected collision frequency is given by equation (3.2):

$$\text{Var}(\Lambda) = \frac{E(\Lambda)^2}{\kappa} \quad (3.2)$$

Where:  $\kappa$  = The negative binomial parameter of the CPM; and  
 $E(\Lambda)$  = Expected collision frequency (collisions/3 years).

As presented in the previous chapter of this report, the reduction in the number of collisions at the treatment sites can be calculated by using the Odds Ratio (O.R.), according to equation (3.3). The effect of the treatment is determined by subtracting 1 from the Odds Ratio, as shown below in equation (3.4).

$$\text{O.R.} = \frac{A/C}{B/D} \quad (3.3)$$

$$\text{Treatment Effect} = \text{O.R.} - 1 \quad (3.4)$$

Where: O.R. = Odds Ratio;  
 $A$  = Safety at the comparison site in the before period;  
 $B$  = EB safety estimate at treated sites if no treatment occurred;  
 $C$  = Safety at the comparison sites in the after period; and,  
 $D$  = Safety at the comparison sites in the after period.

It should be noted that all quantities in the Odds Ratio are observed quantities (with an assumed Poisson distribution), with the exception of the quantity  $B$ , which must be calculated. The quantity  $B$  is calculated by utilizing CPMs and the empirical Bayes (EB) refinement procedure. The empirical Bayes safety estimate and its variance for a treatment site (site  $i$ ) is calculated using equations (3.5) and (3.6) as follows:

$$(EB)_{b=} \gamma_i \bullet E(\Lambda_i) + (1 - \gamma_i) \bullet (y_i) \quad \text{Var} (EB)_{b=} = \gamma_i \bullet (1 - \gamma_i) \bullet E(\Lambda_i) + (1 - \gamma_i)^2 \bullet (y_i) \quad (3.5)$$

$$\gamma_i = \frac{E(\Lambda_i)}{E(\Lambda_i) + \text{Var}(\Lambda_i)} = \frac{1}{1 + \frac{\text{Var}(\Lambda_i)}{E(\Lambda_i)}} \quad (3.6)$$

- Where:  $(EB)_{b=}$  = The empirical Bayes safety estimate;  
 $y_i$  = The observed collisions in the before period;  
 $E(\Lambda_i)$  = Expected collision frequency from the CPM.

The value  $B$  in the Odds Ratio is calculated using equation (3.7) (Sayed et al. (1)).

$$B = (EB)_{a=} = (EB)_{b=} \times \frac{E(\Lambda_i)_{a=}}{E(\Lambda_i)_{b=}} \quad (3.7)$$

- Where:  $(EB)_{a=}$  = The EB safety estimate at treatment site  $i$  in the after period if no treatment had taken place;  
 $(EB)_{b=}$  = The EB safety estimate at treatment site  $i$  in the before period;  
 $E(\Lambda_i)_{a=}$  = Predicted collisions at treatment site  $i$  in the after period; and,  
 $E(\Lambda_i)_{b=}$  = Predicted collisions at treatment site  $i$  in the before period.

To get the expected value and the variance of the Odds Ratio, the method of statistical differentials is used by applying equation (3.8) and equation (3.9) as shown below:

$$E\{Y\} = Y + \left[ \sum_1^n (\partial^2 Y / \partial X_i^2) \bullet \text{Var}\{X_i\} \right] / 2 \quad (3.8)$$

$$\text{Var}\{Y\} = \left[ \sum_1^n (\partial Y / \partial X_i)^2 \bullet \text{Var}\{X_i\} \right] \quad (3.9)$$

By applying equations (3.8) and (3.9) to the Odds Ratio as defined in equation (3.3), the following two equations (10) and (11) for the Odds Ratio can be obtained:

$$E(O.R.) = \left[ \frac{A/C}{B/D} \right] \times \left[ 1 + \frac{\text{Var}(B)}{B^2} + \frac{\text{Var}(C)}{C^2} \right] \quad (3.10)$$

$$\text{Var (O.R.)} = \left[ \frac{A/C}{B/D} \right]^2 \times \left[ \frac{\text{Var}(A)}{A^2} + \frac{\text{Var}(B)}{B^2} + \frac{\text{Var}(C)}{C^2} + \frac{\text{Var}(D)}{D^2} \right] \quad (3.11)$$

### 3.2 Calculating the Economic Effectiveness of the Program

Two indicators are used to measure the effectiveness of a road safety improvement project: the net present value (NPV) and the benefit-cost ratio (B/C). The first step in calculating these indicators is to convert the Odds Ratios for PDO and severe collisions into an annualized reduction (or increase) in collision frequency. These reductions (or increases) are then converted to annual benefits (or dis-benefits) using average collision costs. The expected B/C can be calculated by using equation (3.12) as follows:

$$E(B/C) = k_1 \times E(\text{pdo claims}) + k_2 \times E(\text{injury claims}) \quad (3.12)$$

$$k_1 = \frac{(\text{pdo.Cost}) \times (P/A, i, t)}{\text{Cost}_{\text{implementation}}}; \quad k_2 = \frac{(\text{inj.Cost}) \times (P/A, i, t)}{\text{Cost}_{\text{implementation}}}$$

Where:  $E(B/C)$  = Expected value of B/C ratio;  
 $\text{pdo.Cost}$  = Average PDO collision cost;  
 $\text{inj.Cost}$  = Average injury collision cost;  
 $t / i$  = Payback period (years) / discount rate (%); and,  
 $(P/A, i, t)$  = Present worth factor, given payback period, discount rate.

The expected net present value (NPV) is calculated using equation (3.13) as follows:

$$E(\text{NPV}) = \left[ k_1 \times E(\text{pdo claims}) + k_2 \times E(\text{injury claims}) \right] - \text{Cost}_{\text{implementation}} \quad (3.13)$$

Where:  $E(\text{NPV})$  = Expected value of NPV;  
 $k_1$  =  $(\text{pdo.Cost}) \times (P/A, i, t)$ ; and,  
 $k_2$  =  $(\text{inj.Cost}) \times (P/A, i, t)$ .

#### **4.0 PROGRAM EVALUATION DATA**

This chapter of the report provides the information related to the data used for the evaluation of ICBC's Road Improvement Program. The data for the evaluation can be separated into three distinct groups of sites. The three groups are listed below with a brief description. The details for each group and the corresponding data for each group are provided in subsequent sections of this chapter.

1) Treatment Group Sites:

This is the group of sites (projects) selected for the evaluation that have been improved with assistance from ICBC's Road Improvement Program.

2) Comparison Group Sites:

This is a group of sites that have not been improved, but are subjected to similar traffic and environmental conditions as the treatment group sites.

3) Reference Group Sites:

This is a large group of sites that are similar to the treatment sites, used to develop the collision prediction models necessary for the evaluation.

#### **4.1 Treatment Group Sites**

Treatment group sites for this evaluation report were selected from projects that were completed in 2004, 2005 and 2006. Specific criteria were established to select projects for the evaluation to ensure that the site selection was not biased and to respond to the resources that were available to complete the evaluation. The project selection criteria and the rationale are described below.

- 1) Projects from small communities were eliminated because of the difficulty in obtaining the data necessary for the evaluation, including an adequate group of comparison sites (as will be explained in a subsequent section).
- 2) For projects completed with ICBC's municipal road authority partners, signalized intersections were selected for evaluation. In addition, a sample of un-signalized intersections was also included for Greater Vancouver Region.
- 3) For projects completed with the Ministry of Transportation and Infrastructure (MOTI), only roadway segments were selected for inclusion in the evaluation as these represented the largest proportion of locations improved.
- 4) The ICBC contribution for the improvement project must exceed \$10,000.
- 5) The supporting data, including the traffic volume, must be available for each treatment site before and after the road improvements were implemented.

A total of 747 road improvement projects were completed in 2004, 2005 and 2006 and were candidates for inclusion in the evaluation. However, using the criteria described previously, a total of 102 sites were selected to serve as the treatment group of sites for the evaluation. This sample of projects would allow for a successful evaluation of the ICBC's Road Improvement Program and would generally reflect the typical activities of the Road Improvement Program, which includes improvements to both intersections and roadway segments, and undertaken in both urban and rural environments. As such, the treatment group of sites was divided into two distinct groups:

- 1) Treatment Group 1: Urban intersections; and,
- 2) Treatment Group 2: Rural highway segments.

The urban intersection treatment sites included a total of 42 intersections from three different ICBC regions: the Greater Vancouver Region (22 sites, including 14 signalized intersections and 8 un-signalized intersections), the North Central Region (6 sites) and the Fraser Valley Region (14 sites). The details for the 42 sites for Treatment Group 1 are shown in Table 4.1, which provides a reference identification number (sites numbered from 1 to 22 are in the Greater Vancouver Region, sites numbered 23 to 28 are in the North Central Region and sites numbered 29 to 42 are in the Fraser Valley Region). Also included is the implementation date for the project, the location and a brief project description.

The second treatment group (Treatment Group 2) included a total of 60 sites where road improvements were implemented on rural road segments. All of these locations were implemented on the provincial highway network (i.e., sites are located within the jurisdiction of the BC MOT on primary, numbered highways). The types of highways that were included in the evaluation were 2-lane rural, arterial, undivided highways (Service Class = RAU2) and rural, multi-lane, divided freeways (Service Class = RFD4). A summary of the locations for Treatment Group 2 is provided in Table 4.2, which includes a reference identification number (sites numbered from 43 to 102), the implementation date, a general description of the location, and some details of the improvements that were implemented at the site.

Accurate traffic volume and collision data was required for each site within the two treatment groups for a period of time before and after the implementation of the road improvement. The before data included was based on a 3 year time period before the implementation of the improvement and the after data ranged from 2 to 3 years after the safety improvement was implemented. Considerable effort was undertaken to collect reliable traffic volume data for the before and after time periods.

**Table 4.1 Treatment Group 1: Urban Intersections**

ID	Complete	Major Road	Minor Road	Project Description
1	2004	Hemlock Street	W 6th Avenue	New traffic signal installation
2	2004	Marine Drive	Hamilton Avenue	Intersection improvement
3	2004	Lougheed Hwy	King Edward Street	Left turn phase improvement
4	2004	Johnson Street	Glen Drive	Left turn lane installation
5	2004	Lougheed Hwy	Shaughnessy Street	Intersection improvement
6	2005	Mountain Hwy	Ross Road	New traffic signal installation
7	2005	Marine Drive	Fraser Street	Left turn phase improvement
8	2005	Marine Drive	Kerr Street	Left turn phase improvement
9	2005	Marine Drive	Elliott Street	Left turn phase improvement
10	2005	Boundary Road	E 22nd Street	Left turn phase improvement
11	2005	Granville Street	W 41st Avenue	Left turn phase improvement
12	2005	Clark Drive	E 1st Avenue	Left turn phase improvement
13	2005	232nd Street	Abernethy Way	New traffic signal installation
14	2005	240th Street	104th Avenue	New traffic signal installation
15	2005	Johnson Street	Delahaye Drive	New traffic signal installation
16	2005	Austin Avenue	Schoolhouse Street	Left turn lane installation
17	2005	Clark Drive	E 6th Avenue	Left turn lane installation
18	2006	W 49th Avenue	Alberta Street	New traffic signal installation
19	2006	Point Grey Road	Alma Street	New traffic signal installation
20	2006	Keith Road	Hendry Avenue	Intersection improvement
21	2006	Johnson Street	Durant Drive	New traffic signal installation
22	2006	United Blvd	Burbidge Street	Left turn lane installation
23	2004	Hwy 5	Mt Paul Way	Improve signal and intersection laning
24	2004	Bernard Ave	Gordon Dr	Improve visibility, upgrade signal head
25	2004	Springfield Rd	Gordon Dr	Upgrade signal head, coordination, & phasing
26	2005	Fortune Dr	Sydney - Seventh	Operational improvements and signal
27	2005	KLO Rd	Benvoulin Rd	Operational improvements and signal
28	2005	Hwy 33	Hollywood Rd	Signal head size and davit upgrades
29	2004	Vedder Rd	Watson Rd	Add thru lanes, LT lane & upgrade signal head
30	2004	McCallum St	McDougall/Cannon	Realignment and reduce intersections
31	2004	King George Hwy	64th Ave	Operational improvements and signal
32	2004	152nd St	104th Ave	Add EB and WB left turn signal phases
33	2004	152nd St	88th Ave	Operational improvements and signal
34	2004	96th Ave	134th St	Upgrade and widen intersection
35	2004	64th Ave	144 St	Widen, add thru lanes & add1 left turn lane

ID	Complete	Major Road	Minor Road	Project Description
36	2004	72nd Ave	140th St	Eastbound left-turn lane extension
37	2005	Westminster Hwy	No.4 Rd	Northbound left-turn lane extension
38	2005	152nd St	40th Ave	Eastbound left-turn lane extension
39	2006	Bradner Rd	Townshipline Rd	Traffic signal upgrades – 2nd primary heads
40	2006	Garden City Rd	Cambie Rd	Upgrade, widen & improve left-turn signals
41	2006	Steveston Hwy	No. 5 Rd	Upgrade, widen & install left-turn bays
42	2006	Fraser Hwy	184th St	Upgrade, widen, upgrade signals, LT bays

**Table 4.2 Treatment Group 2: Rural Highway Segments**

ID	Complete	Location Description	Project Description
43	2004	Highway 1: Hoffman's Bluff	Improve shoulder, super-elevation, install barrier, SRS, signing, pavement marking
44	2004	Highway 97: Swan Lake	Install shoulder rumble strips
45	2004	Highway 37: Onion Lake	Improve shoulder, widening, improve roadside, rumble strips (CRS and SRS), pavement marking and pavement treatments
46	2004	Highway 37: Cranberry Junction	Shoulder widening, pavement marking, pavement treatments
47	2004	Highway 19: Island Hwy	Improved delineation, guidance and installation of rumble strips
48	2004	Highway 97: South of 100 Mile	Installation of shoulder rumble strips
49	2004	Hwy 16: CNR Xsing / 35 Mile Curves / Carwash Rock	Improvements to three locations including, signing, delineation and guardrail
50	2004	Highway 16: Prince Rupert to Terrace	Installation of shoulder rumble strips
51	2004	Highway 37: Terrace to Kitimat	Installation of shoulder and centreline rumble strips
52	2004	Highway 16: East of Terrace	Installation of shoulder rumble strips
53	2004	Highway 11: Clayburn Rd to Harris Rd	Signing, delineation, pavement marking, channelization, accel/decel lanes, lighting, barrier, SRS, access management
54	2004	Highway 97: Swan Lake to Larkin	Improve highway by four laning, improve structure, construction of frontage road system
55	2004	Highway 99: Culliton to Cheakamus	Total reconstruction of existing poor Hwy, includes widening, realignment, marking.
56	2004	Highway 1: Annis Rd to Highway 9	Improve alignment, cross-section, super-e, roadside, barrier, signs, delineation, pavement marking, sight distance, drainage
57	2004	Highway 1: Vedder Interchange	Improvement to the interchange, including re-configuration
58	2005	Highway 11: Mission Bridge	Installation of concrete median barrier and improved delineation

ID	Complete	Location Description	Project Description
59	2005	Highway 3A: Nelson Arterial	Improve signal, signs, delineation, pavement, sight distance, channelization, accel/decel lanes, median, access control
60	2005	Highway 5: Near Merritt	Installation of shoulder and median rumble strips
61	2005	Highway 97: Near Lac La Hache	Installation of shoulder and median rumble strips
62	2005	Highway 97: Near 103 Mile	Shoulder widening, install median and roadside barrier
63	2005	Highway 49: Near Dawson Creek	Various corridor improvements including signing and delineation (refer to CH2MHill Report - Dated Feb 2005)
64	2005	Highway 17: Pat Bay Hwy	Improve delineation on Pat Bay Highway
65	2005	Highway 22: Near Trail	Installation of shoulder rumble strips
66	2005	Highway 97C: Coquahalla Connector	Improve signing and delineation
67	2005	Highway 97: Near Clinton	Improve delineation, pavement marking
68	2005	Highway 16: Near Houston	Improve delineation
69	2005	Highway 16: Near Prince Rupert	Improve delineation and signs on Highway 16 to address off road collisions.
70	2005	Highway 7: 285th to Silverdale	Four-laning on improved alignment on west section and realignment, widening and upgrading on eastern section
71	2005	Highway 97: Near Doyle Road	Realignment/Passing Lane, shoulder widening, frontage road, channelization
72	2005	Highway 97: Fort St. John Arterial	Four-laning, cross-section improvements and intersection improvements including turning bays
73	2005	Highway 97: Near Ponderosa	Improvements to the intersection, which includes capacity, signing pavement marking, an channelization
74	2005	Highway 97: Lynes Road	Installation of southbound Passing Lane
75	2005	Highway 97: Okanagan Lake Park	Four-laning and improvements to the horizontal curve realignment, improvements to the cross-section
76	2006	Highway 1: Vedder Canal - Sardis I/C	Cross-sectional improvement including shoulder widening
77	2006	Highway 18: Youbou Rd (Hwy 963)	Shoulder widening, improve delineation, pavement marking, pavement treatments
78	2006	Highway 19: Near Port Hardy	Improve delineation, pavement marking, pavement treatments
79	2006	Highway 1: Glacier to Donald	Install centerline rumble strips, pavement marking
80	2006	Highway 3: Midway to Cascade	Install centerline rumble strips, pavement marking
81	2006	Highway 3: Cascade to Castlegar	Install centerline rumble strips, pavement marking

<b>ID</b>	<b>Complete</b>	<b>Location Description</b>	<b>Project Description</b>
82	2006	Highway 5: McLure Ferry - Russel St	Install centerline and shoulder rumble strips, and improved pavement marking
83	2006	Highway 97: Marguerite Ferry	Install centerline and shoulder rumble strips, and improved pavement marking
84	2006	Highway 2: Near Pouce Coupe	Various Improvements (see CH2MHill Report - Dated Feb 2005)
85	2006	Highway 1: Malahat Hwy	Install barrier, Improve signing, delineation, and improved pavement marking
86	2006	Highway 5: Coquahalla Hwy	Improve delineation
87	2006	Highway 1: Young Rd to Prest Rd	Installation of Cable Barrier
88	2006	Highway 97C: Coquahalla Connector	Installation of shoulder rumble strips
89	2006	Highway 97C: Coquahalla Connector	Installation of shoulder rumble strips
90	2006	Highway 16: Prince Rupert to Terrace	Installation of Centerline Ruble Strips and improved pavement markings
91	2006	Highway 16: Terrace – Kitwanga	Installation of Centerline Ruble Strips and improved pavement markings
92	2006	Highway 16: Hazelton – Houston	Installation of Centerline Ruble Strips and improved pavement markings
93	2006	Highway 16: Houston to Burns Lake	Installation of Centerline Ruble Strips and improved pavement markings
94	2006	Highway 1: Kicking Horse Canyon	Phase 1 - 5 mile (Yoho) Bridge Replacement and 4-Laning
95	2006	Highway 3: 6th to Victoria	Highway Realignment and Widening
96	2006	Highway 5: Agate Bay Rd	Improve intersection with poor sight distance, add left turn slot and improve alignment
97	2006	Highway 99: Horseshoe Bay	4-lanes with continuous median barrier. Straightening, widening and improved sightlines
98	2006	Highway 99: Lions Bay	Improved 2 lanes and passing opportunities with 3 and 4 lanes. 4 lane sections will include median barriers
99	2006	Highway 99: Black Tusk	Improved 2 lanes and passing opportunities with 3 and 4 lanes. 4 lane sections will include median barriers
100	2006	Highway 99: Brittania Beach	Improve passing opportunities, wider shoulders, SRS, CRS, highly reflective markings, rock fall/debris catchments
101	2006	Highway 15: Truck Crossing	Extension of FAST Lane at Pacific Border Crossing to Improve Traffic Flow and Reduce Conflicts
102	2006	Highway 1: 30th St NE to Hwy 97B	Four-laning and Highway 97B Intersection Improvements

## 4.2 Comparison Group Sites

The comparison group of sites is used to correct for time trend effects, including the confounding factors of history and maturation. The comparison group sites were selected to ensure that they had similar traffic and environmental conditions as the treated sites. Therefore, proximity to treatment sites was the main criterion used for comparison group sites selection. Care was exercised in selecting the comparison group sites to ensure that the time periods for the treatment and comparison sites are similar and that the factors influencing safety are similar between the two groups of sites.

A total of 580 comparison sites were selected and used to generate 60 different comparison groups for the 102 treatment sites. The number of sites that served as a comparison group for each treatment site is shown in Tables 4.3 and 4.4. Similar to the treatment sites, the requisite before and after traffic volume and collision data was required for each comparison group site. The before traffic volume and collision data included a 3 year time period and the after traffic volume and collision data ranged from 2 to 3 years to match the treatment sites.

## 4.3 Reference Group Sites

A reference group is a large group of sites, which are similar in character to treatment sites, used to develop a predictive model to estimate the collisions at an intersection or on a segment. The collision prediction models (CPMs) developed from the reference groups are used to correct for the problems created by regression to the mean.

A total of 952 locations were selected as reference group locations, with each site requiring traffic volume and collision data for 3 years before the implementation of the safety improvement. Only before data is required for the reference group sites. Using these sites, several different reference groups were generated for the two treatment groups as listed below and as shown in Tables 4.3 and 4.4.

- 1) Treatment Group 1: Urban Intersections (Sites 1 – 42)
  - a. Greater Vancouver Region (GVE) (Sites 1-22): 286 Sites
    - i. Signalized Intersections in GVE): 236 Sites
    - ii. Un-Signalized Intersections in GVE: 50 Sites
  - b. North Central Region (Sites 23 – 28): 104 Sites
  - c. Fraser Valley Sites (Sites 29 – 42): 85 Sites

2) Treatment Group 2: Rural Highway Segments (Sites 43 -102)

- a. Rural 2-Lane Arterial Undivided Highways (RAU2): 355 Sites
- b. Rural multi-Lane Divided Freeways (RFD4): 142 Sites

Using the categorization of the projects as listed above, a total of eighteen different reference groups were produced. These 18 reference groups are based on the six categories listed above and the three different 'before' time periods (2001 to 2003, 2002 to 2004 and 2003 to 2005).

**Table 4.3 Treatment Group 1: Urban Intersections - Evaluation Information**

ID	Complete	Major Road	Minor Road	Reference Group	Comparison Group	Comparison Group Sites
1	2004	Hemlock Street	W 6th Avenue	1	1-A	10
2	2004	Marine Drive	Hamilton Avenue	4	1-E	9
3	2004	Lougheed Hwy	King Edward Street	4	1-M	10
4	2004	Johnson Street	Glen Drive	4	1-L	7
5	2004	Lougheed Hwy	Shaughnessy Street	4	1-M	10
6	2005	Mountain Hwy	Ross Road	2	1-D	10
7	2005	Marine Drive	Fraser Street	7	1-F	8
8	2005	Marine Drive	Kerr Street	7	1-F	8
9	2005	Marine Drive	Elliott Street	7	1-F	8
10	2005	Boundary Road	E 22nd Street	7	1-G	9
11	2005	Granville Street	W 41st Avenue	7	1-H	8
12	2005	Clark Drive	E 1st Avenue	7	1-K	8
13	2005	232nd Street	Abernethy Way	2	1-F	8
14	2005	240th Street	104th Avenue	2	1-F	8
15	2005	Johnson Street	Delahaye Drive	5	1-L	7
16	2005	Austin Avenue	Schoolhouse Street	5	1-M	10
17	2005	Clark Drive	E 6th Avenue	7	1-K	8
18	2006	W 49th Avenue	Alberta Street	3	1-B	10
19	2006	Point Grey Road	Alma Street	3	1-C	9
20	2006	Keith Road	Hendry Avenue	6	1-D	10
21	2006	Johnson Street	Durant Drive	6	1-L	7
22	2006	United Blvd	Burbidge Street	6	1-M	10
23	2004	Hwy 5	Mt Paul Way	8	2-A	10
24	2004	Bernard Ave	Gordon Dr	8	2-C	10
25	2004	Springfield Rd	Gordon Dr	8	2-C	10
26	2005	Fortune Dr	Sydney - Seventh	9	2-B	9
27	2005	KLO Rd	Benvoulin Rd	9	2-C	10
28	2005	Hwy 33	Hollywood Rd	9	2-C	10
29	2004	Vedder Rd	Watson Rd	11	3-A	8
30	2004	McCallum St	McDougall/Cannon	11	3-C	9

ID	Complete	Major Road	Minor Road	Reference Group	Comparison Group	Comparison Group Sites
31	2004	King George Hwy	64th Ave	11	3-D	9
32	2004	152nd St	104th Ave	11	3-D	9
33	2004	152nd St	88th Ave	11	3-D	9
34	2004	96th Ave	134th St	11	3-E	10
35	2004	64th Ave	144 St	11	3-D	9
36	2004	72nd Ave	140th St	11	3-E	10
37	2005	Westminster Hwy	No.4 Rd	12	3-F	10
38	2005	152nd St	40th Ave	12	3-E	10
39	2006	Bradner Rd	Townshipline Rd	13	3-H	9
40	2006	Garden City Rd	Cambie Rd	13	3-F	10
41	2006	Steveston Hwy	No. 5 Rd	13	3-F	10
42	2006	Fraser Hwy	184th St	13	3-D	9

**Table 4.4 Treatment Group 2: Rural Highway Segments - Evaluation Information**

ID	Complete	Location Description	Reference Group	Comparison Group	Comparison Group Sites
43	2004	Highway 1: Hoffman's Bluff	13	C1	10
44	2004	Highway 97: Swan Lake	13	C2	10
45	2004	Highway 37: Onion Lake	13	C4	10
46	2004	Highway 37: Cranberry Junction	13	C5	10
47	2004	Highway 19: Island Hwy	16	C6	10
48	2004	Highway 97: South of 100 Mile	13	C2	10
49	2004	Hwy 16: CNR / Carwash Rock / 35 Mile	13	C4	10
50	2004	Highway 16: Prince Rupert to Terrace	13	C4	10
51	2004	Highway 37: Terrace to Kitimat	13	C4	10
52	2004	Highway 16: East of Terrace	13	C4	10
53	2004	Highway 11: Clayburn Rd to Harris Rd	13	C7	10
54	2004	Highway 97: Swan Lake to Larkin	13	C3	10
55	2004	Highway 99: Culliton to Cheakamus	13	C8	10
56	2004	Highway 1: Annis Rd to Highway 9	16	C9	10
57	2004	Highway 1: Vedder Interchange	16	C9	10
58	2005	Highway 11: Mission Bridge	17	C10	10
59	2005	Highway 3A: Nelson Arterial	14	C11	10
60	2005	Highway 5: Near Merritt	17	C12	10
61	2005	Highway 97: Near Lac La Hache	14	C13	10
62	2005	Highway 97: Near 103 Mile	14	C13	10
63	2005	Highway 49: Near Dawson Creek	14	C14	10
64	2005	Highway 17: Pat Bay Hwy	17	C15	10
65	2005	Highway 22: Near Trail	14	C16	10
66	2005	Highway 97C: Coquahalla Connector	14	C17	10
67	2005	Highway 97: Near Clinton	14	C18	10

<b>ID</b>	<b>Complete</b>	<b>Location Description</b>	<b>Reference Group</b>	<b>Comparison Group</b>	<b>Comparison Group Sites</b>
68	2005	Highway 16: Near Houston	14	C19	10
69	2005	Highway 16: Near Prince Rupert	14	C20	10
70	2005	Highway 7: 285th to Silverdale	14	C21	10
71	2005	Highway 97: Near Doyle Road	14	C13	10
72	2005	Highway 97: Fort St. John Arterial	14	C22	10
73	2005	Highway 97: Near Ponderosa	14	C23	10
74	2005	Highway 97: Lynes Road	14	C24	10
75	2005	Highway 97: Okanagan Lake Park	14	C23	10
76	2006	Highway 1: Vedder Canal - Sardis I/C	18	C25	10
77	2006	Highway 18: Youbou Rd (Hwy 963)	15	C26	10
78	2006	Highway 19: Near Port Hardy	15	C27	10
79	2006	Highway 1: Glacier to Donald	15	C28	10
80	2006	Highway 3: Midway to Cascade	15	C29	10
81	2006	Highway 3: Cascade to Castlegar	15	C29	10
82	2006	Highway 5: McLure Ferry - Russel St	15	C30	10
83	2006	Highway 97: Marguerite Ferry - French	15	C31	10
84	2006	Highway 2: Near Pouce Coupe	15	C32	10
85	2006	Highway 1: Malahat Hwy	15	C33	10
86	2006	Highway 5: Coquahalla Hwy	18	C30	10
87	2006	Highway 1: Young Rd to Prest Rd	18	C25	10
88	2006	Highway 97C: Coquahalla Connector	18	C30	10
89	2006	Highway 97C: Coquahalla Connector	18	C30	10
90	2006	Highway 16: Prince Rupert to Terrace	15	C34	10
91	2006	Highway 16: Terrace - Kitwanga	15	C34	10
92	2006	Highway 16: Hazelton - Houston	15	C35	10
93	2006	Highway 16: Houston to Burns Lake	15	C35	10
94	2006	Highway 1: Kicking Horse Canyon	15	C28	10
95	2006	Highway 3: 6th to Victoria	15	C36	10
96	2006	Highway 5: Agate Bay Rd	15	C30	10
97	2006	Highway 99: Horseshoe Bay	15	C37	10
98	2006	Highway 99: Lions Bay	15	C37	10
99	2006	Highway 99: Black Tusk	15	C37	10
100	2006	Highway 99: Britania Beach	15	C37	10
101	2006	Highway 15: Truck Crossing	15	C38	10
102	2006	Highway 1: 30th St NE to Hwy 97B	15	C39	10

## 5.0 PROGRAM EVALUATION RESULTS

This section of the report presents the results from the evaluation of the ICBC Road Improvement Program, with the results divided into two sections. The first section presents the results of the collision prediction model development, which is a necessary element of the program evaluation. The second section presents the changes in safety performance resulting from the implementation of various safety improvements at the treatment sites as well as the various economic indicators to measure the success of the program.

### 5.1 Evaluation Results: Collision Prediction Models (CPMs)

As previously mentioned, the 102 treatment sites belong to 18 different reference groups of sites. Each reference group was used to develop two models, one to predict the frequency of property damage only (PDO) collisions and the other to predict the severe collision frequency (i.e., injuries and fatalities). Thus, a total of 36 different collision prediction models were developed using the GLM approach, which is described in greater detail in **APPENDIX D**.

As presented in Chapter 3, two functional forms were used in the development of the CPMs for this study, one for urban intersections and the other for rural road segments. The functional form used to develop the CPMs for the intersections is based on the product of the two roadway volumes entering the intersection as shown in equation (5.1.a). The second functional form used to develop CPMs for road segments was based on the product of traffic volume on segment and the length of the segment, raised to powers. This model form is presented in equation (5.1.b).

$$E(\Lambda) = \alpha_0 V_1^{\alpha_1} V_2^{\alpha_2} \quad (5.1.a)$$

$$E(\Lambda) = \alpha_0 V^{\alpha_1} L^{\alpha_2} \quad (5.1.b)$$

Where:  $E(\Lambda)$  = Expected collision frequency (collisions/3 years)  
 $V_1 / V_2$  = Major / minor road traffic volume (AADT)  
 $V$  = Road traffic volume on segments (AADT)  
 $L$  = Road segment length (AADT)  
 $\alpha_0, \alpha_1, \alpha_2$  = Model parameters.

The 36 different collision prediction models that were developed for this evaluation are listed below, based on the two treatments groups and the details of the models, including the corresponding model parameters are provided in Table 5.1.A to 5.1.D, for the four different groups of models.

### **Treatment Group 1: Urban Intersections**

#### **Group A: Greater Vancouver Region (GVE) (Sites 1 to 22):**

##### Property Damage Only (PDO) Collisions: List of CPMs:

Model A1: GVE Non-signalized intersections treated in 2004

Model A2: GVE Non-signalized intersections treated in 2005

Model A3: GVE Non-signalized intersections treated in 2006

Model A4: GVE Signalized intersections treated in 2004

Model A5: GVE Signalized intersections treated in 2005

Model A6: GVE Signalized intersections treated in 2006

##### Severe Collisions (Fatal + Injury): List of CPMs

Model B1: GVE Non-signalized intersections treated in 2004

Model B2: GVE Non-signalized intersections treated in 2005

Model B3: GVE Non-signalized intersections treated in 2006

Model B4: GVE Signalized intersections treated in 2004

Model B5: GVE Signalized intersections treated in 2005

Model B6: GVE Signalized intersections treated in 2006

#### **Group B: North Central Region (NCR) (Site 23 to 28):**

##### Property Damage Only (PDO) Collisions: List of CPMs:

Model A7: NCR Signalized intersections treated in 2004

Model A8: NCR Signalized intersections treated in 2005

Model A9 NCR Signalized intersections treated in 2006

##### Severe Collisions (Fatal + Injury): List of CPMs

Model B7: NCR Signalized intersections treated in 2004

Model B8: NCR Signalized intersections treated in 2005

Model B9: NCR Signalized intersections treated in 2006

Group C: Fraser Valley Region (FVR) (Site 29 to 42):

Property Damage Only (PDO) Collisions: List of CPMs:

Model A10: FVR Signalized intersections treated in 2004

Model A11: FVR Signalized intersections treated in 2005

Model A12: FVR Signalized intersections treated in 2006

Severe Collisions (Fatal + Injury): List of CPMs

Model B10: FVR Signalized intersections treated in 2004

Model B11: FVR Signalized intersections treated in 2005

Model B12: FVR Signalized intersections treated in 2006

**Treatment Group 2: Rural Highway Segments (Sites 43 to 102):**

Group D: Rural Highway Segments:

Property Damage Only (PDO) Collisions: List of CPMs:

Model A13: Rural 2-lane Undivided Arterials treated in 2004

Model A14: Rural 2-lane Undivided Arterials treated in 2005

Model A15: Rural 2-lane Undivided Arterials treated in 2006

Model A16: Rural 4-lane Divided Freeways treated in 2004

Model A17: Rural 4-lane Divided Freeways treated in 2005

Model A18: Rural 4-lane Divided Freeways treated in 2006

Severe Collisions (Fatal + Injury): List of CPMs

Model B13: Rural 2-lane Undivided Arterials treated in 2004

Model B14: Rural 2-lane Undivided Arterials treated in 2005

Model B15: Rural 2-lane Undivided Arterials treated in 2006

Model B16: Rural 4-lane Divided Freeways treated in 2004

Model B17: Rural 4-lane Divided Freeways treated in 2005

Model B18: Rural 4-lane Divided Freeways treated in 2006

**Table 5.1.A: CPMs: Treatment Group 1: Group A: Greater Vancouver Region**

Reference	Severity	Model No.	Collision Prediction Model (CPM)	κ
Greater Vancouver Region (Treatment Sites 1 – 22)	PDO	A1	Collisions / 3yrs = 0.00000981 × (AADT <sub>mjrd</sub> ) <sup>0.8338</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.7651</sup>	9.22
		A2	Collisions / 3yrs = 0.00000722 × (AADT <sub>mjrd</sub> ) <sup>0.8964</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.7189</sup>	6.51
		A3	Collisions / 2yrs = 0.000000171 × (AADT <sub>mjrd</sub> ) <sup>1.1824</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.8185</sup>	20.12
		A4	Collisions / 3yrs = 0.0000267 × (AADT <sub>mjrd</sub> ) <sup>0.7138</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.7794</sup>	2.47
		A5	Collisions / 3yrs = 0.0000166 × (AADT <sub>mjrd</sub> ) <sup>0.7703</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.7671</sup>	2.71
		A6	Collisions / 2yrs = 0.0000648 × (AADT <sub>mjrd</sub> ) <sup>0.8902</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.7334</sup>	2.73
	Severe	B1	Collisions / 3yrs = 0.0000212 × (AADT <sub>mjrd</sub> ) <sup>0.8677</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5870</sup>	4.69
		B2	Collisions / 3yrs = 0.0000704 × (AADT <sub>mjrd</sub> ) <sup>0.7785</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5509</sup>	3.12
		B3	Collisions / 2yrs = 0.0000492 × (AADT <sub>mjrd</sub> ) <sup>0.8257</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5251</sup>	2.72
		B4	Collisions / 3yrs = 0.0000103 × (AADT <sub>mjrd</sub> ) <sup>0.8912</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.6300</sup>	2.64
		B5	Collisions / 3yrs = 0.0000387 × (AADT <sub>mjrd</sub> ) <sup>0.7551</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.6417</sup>	2.19
		B6	Collisions / 2yrs = 0.0000159 × (AADT <sub>mjrd</sub> ) <sup>0.8673</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.6108</sup>	2.18

**Table 5.1.B: CPMs: Treatment Group 1: Group B: North Central Region**

Reference	Severity	Model No.	Collision Prediction Model (CPM)	κ
North Central Region (Treatment Sites 23 – 28)	PDO	A7	Collisions / 3yrs = 0.000129 × (AADT <sub>mjrd</sub> ) <sup>0.7038</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5855</sup>	4.20
		A8	Collisions / 3yrs = 0.0000423 × (AADT <sub>mjrd</sub> ) <sup>0.8135</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5909</sup>	4.45
		A9	Collisions / 2yrs = 0.0000365 × (AADT <sub>mjrd</sub> ) <sup>0.7917</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.6362</sup>	4.47
	Severe	B7	Collisions / 3yrs = 0.0000149 × (AADT <sub>mjrd</sub> ) <sup>0.9245</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5584</sup>	4.71
		B8	Collisions / 3yrs = 0.0000133 × (AADT <sub>mjrd</sub> ) <sup>0.9116</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5847</sup>	5.36
		B9	Collisions / 2yrs = 0.00000773 × (AADT <sub>mjrd</sub> ) <sup>0.9592</sup> × (AADT <sub>mnrdr</sub> ) <sup>0.5912</sup>	6.13

**Table 5.1.C: CPMs: Treatment Group 1: Group C: Fraser Valley Region**

Reference	Severity	Model No.	Collision Prediction Model (CPM)	κ
Fraser valley Region (Treatment Sites 29 – 42)	PDO	A10	$\text{Collisions} / 3\text{yrs} = 0.0000509 \times (\text{AADT}_{\text{mjrd}})^{0.5963} \times (\text{AADT}_{\text{mnr}})^{0.8644}$	6.27
		A11	$\text{Collisions} / 3\text{yrs} = 0.0000506 \times (\text{AADT}_{\text{mjrd}})^{0.6571} \times (\text{AADT}_{\text{mnr}})^{0.7999}$	8.40
		A12	$\text{Collisions} / 2\text{yrs} = 0.00000959 \times (\text{AADT}_{\text{mjrd}})^{0.7900} \times (\text{AADT}_{\text{mnr}})^{0.8359}$	12.52
	Severe	B10	$\text{Collisions} / 3\text{yrs} = 0.0000277 \times (\text{AADT}_{\text{mjrd}})^{0.7357} \times (\text{AADT}_{\text{mnr}})^{0.7422}$	4.75
		B11	$\text{Collisions} / 3\text{yrs} = 0.0000995 \times (\text{AADT}_{\text{mjrd}})^{0.6161} \times (\text{AADT}_{\text{mnr}})^{0.7281}$	6.51
		B12	$\text{Collisions} / 2\text{yrs} = 0.000031 \times (\text{AADT}_{\text{mjrd}})^{0.7639} \times (\text{AADT}_{\text{mnr}})^{0.7005}$	8.55

**Table 5.1.D: CPMs: Treatment Group 2: Group D: Rural Highway Segments**

Reference	Severity	Model No.	Collision Prediction Model (CPM)	κ
Rural Highway Segments (Treatment Sites 43 – 102)	PDO	A13	$\text{Collisions} / 3\text{yrs} = 0.00906 \times (\text{AADT})^{0.6317} \times (\text{L})^{0.9539}$	3.87
		A14	$\text{Collisions} / 3\text{yrs} = 0.0122 \times (\text{AADT})^{0.6103} \times (\text{L})^{0.9151}$	3.37
		A15	$\text{Collisions} / 2\text{yrs} = 0.00739 \times (\text{AADT})^{0.6519} \times (\text{L})^{0.9697}$	3.37
		A16	$\text{Collisions} / 3\text{yrs} = 0.285 \times (\text{AADT})^{0.2889} \times (\text{L})^{0.7151}$	2.09
		A17	$\text{Collisions} / 3\text{yrs} = 0.0657 \times (\text{AADT})^{0.4227} \times (\text{L})^{0.8623}$	5.56
		A18	$\text{Collisions} / 2\text{yrs} = 0.0299 \times (\text{AADT})^{0.5231} \times (\text{L})^{0.8632}$	5.93
	Severe	B13	$\text{Collisions} / 3\text{yrs} = 0.00561 \times (\text{AADT})^{0.6599} \times (\text{L})^{0.9682}$	6.57
		B14	$\text{Collisions} / 3\text{yrs} = 0.00667 \times (\text{AADT})^{0.6379} \times (\text{L})^{0.9791}$	4.90
		B15	$\text{Collisions} / 2\text{yrs} = 0.00456 \times (\text{AADT})^{0.6576} \times (\text{L})^{1.0633}$	4.39
		B16	$\text{Collisions} / 3\text{yrs} = 0.195 \times (\text{AADT})^{0.2612} \times (\text{L})^{0.8419}$	2.56
		B17	$\text{Collisions} / 3\text{yrs} = 0.0651 \times (\text{AADT})^{0.3621} \times (\text{L})^{0.9444}$	7.04
		B18	$\text{Collisions} / 2\text{yrs} = 0.0183 \times (\text{AADT})^{0.5078} \times (\text{L})^{0.9450}$	6.09

Two statistical measures were used to assess the significance and goodness of fit of the prediction models, including the *Pearson*  $\chi^2$  statistic (equation 5.2) and the scaled deviance (equation 5.3). Both the *Pearson*  $\chi^2$  and the scaled deviance (SD) statistics are asymptotically  $\chi^2$  distributed with  $n-p-1$  degrees of freedom and thus, for a well-fitted model, the expected value of the *Pearson*  $\chi^2$  and the SD will be approximately equal to the number of degrees of freedom (Maycock and Hall, 1984).

$$\text{Pearson } \chi^2 = \sum_{i=1}^n \frac{[y_i - E(\Lambda_i)]^2}{\text{Var}(y_i)} \quad (5.2)$$

$$\text{SD} = 2 \sum_{i=1}^n y_i \ln \left( \frac{y_i}{E(\Lambda_i)} \right) - (y_i - \kappa) \ln \left( \frac{y_i + \kappa}{E(\Lambda_i) + \kappa} \right) \quad (5.3)$$

- Where:  $y_i$  = Observed number of collisions at location ( $i$ );  
 $E(\Lambda_i)$  = Predicted collisions for location ( $i$ ) obtained from CPM;  
 $\kappa$  = The negative binomial parameter of the CPM;  
 $n$  = Number of locations used to develop the model; and;  
 $\text{Var}(y_i)$  = The variance of the observed collisions.

The details of the goodness-of-fit measures for the developed CPMs are shown in **APPENDIX D**. All models showed a good fit to the data.

## 5.2 Evaluation Results: ICBC's Road Improvement Program

This section of the evaluation report presents the results that show the effectiveness of ICBC's Road Improvement Program in achieving its objectives, namely, a reduction in the frequency and/or severity of collisions, as well as obtaining a desired return on road improvement investments.

### 5.2.1 Change in Collisions

The first indicator of the success of the Road Improvement Program is a reduction in the frequency and/or severity of collisions at the locations that have been subjected to road improvements. For each site in the two Treatment Groups, the change in the collision frequency for both PDO collisions and severe collisions were calculated.

The results for the change in PDO and severe collisions are shown in several figures and are summarized in two tables, presented as follows:

Figure 5.1: Change in Collisions for Urban Intersections (Sites 1 to 42)

Figure 5.2: Change in Collisions for Rural Highway Segments (Sites 43 to 102)

Figure 5.3: Change in Collisions for Greater Vancouver Region (Sites 1 to 22)

Figure 5.4: Change in Collisions for North Central Region (Sites 23 to 28)

Figure 5.5: Change in Collision for Fraser Valley Sites (Sites 29 to 42)

Figure 5.6: Change in Collision for Un-Signalized Intersection Sites (GVE)

Figure 5.7: Change in Collisions for Rural, 2-Lane, Undivided Highway (RAU2)

Figure 5.8: Change in Collisions for Rural, Multi-Lane Divided Freeway (RFD4)

Table 5.2: Results for Treatment Group 1: Urban Intersections (Sites 1 – 42)

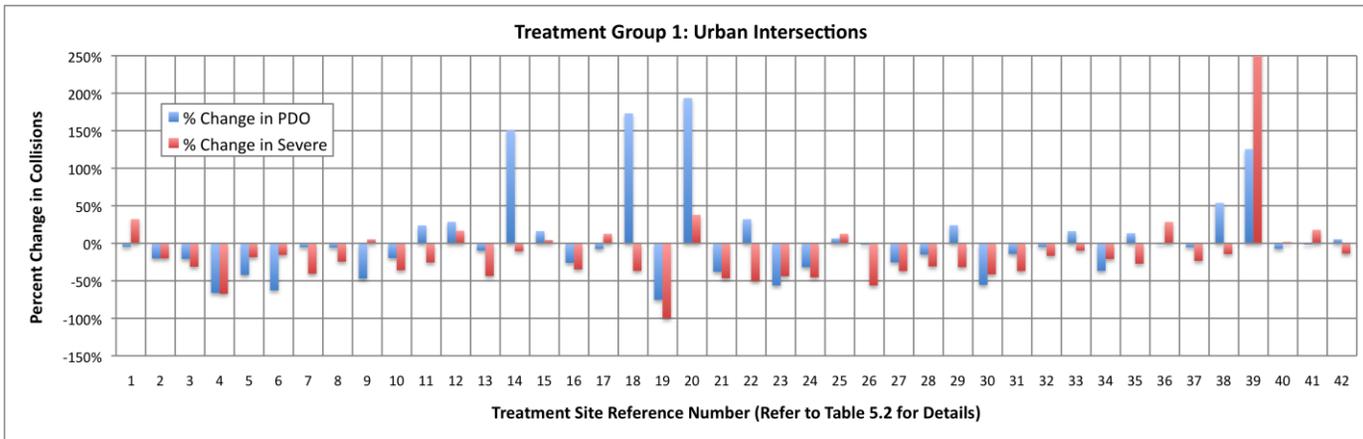
Table 5.3: Results for Treatment Group 2: Rural Road Segments (Sites 43 – 102)

As can be seen from the results presented in Figure 5.1 and in Table 5.2, the change in collisions at the 42 treated urban intersections includes:

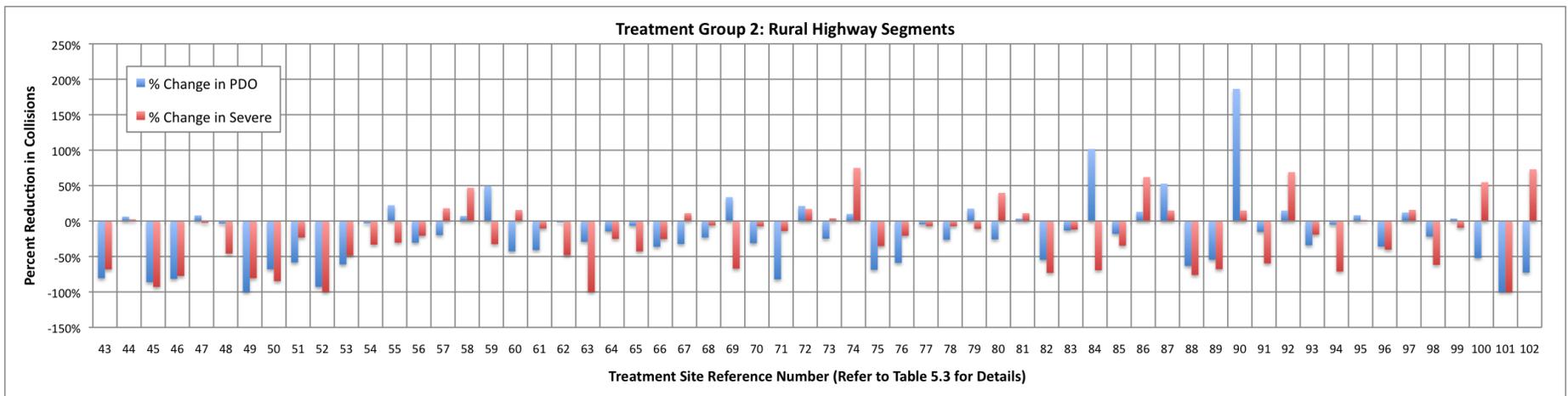
- Change in PDO incidents range from a reduction of 75% to an increase of 193%;
- Change in severe incidents range from a reduction of 100% to an increase of 321%;
- 26 of the urban intersections (62%) had a reduction in PDO incidents;
- 31 of the urban intersections (74%) had a reduction in severe incidents; and,
- Overall, PDO incidents reduced by 9.1% and severe incidents reduced by 20.1%.

The results presented in Figure 5.1 and Table 5.3 indicate that the change in collisions at the 60 treated rural highway segments includes:

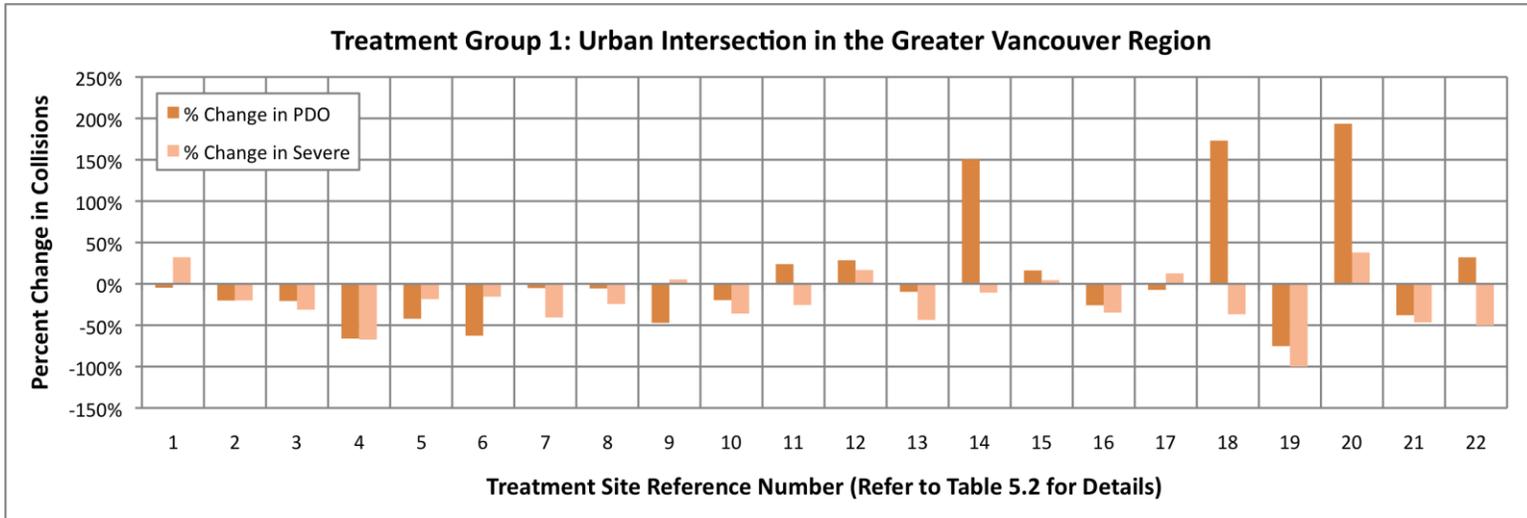
- Change in PDO incidents range from a reduction of 100% to an increase of 186%;
- Change in severe incidents range from a reduction of 100% to an increase of 75%;
- A total of 42 sites (70%) experienced a reduction in PDO incidents;
- A total of 42 sites (70%) experienced a reduction in severe incidents; and,
- Overall, PDO incidents reduced by 16.6% and severe incidents reduced by 19.5%.



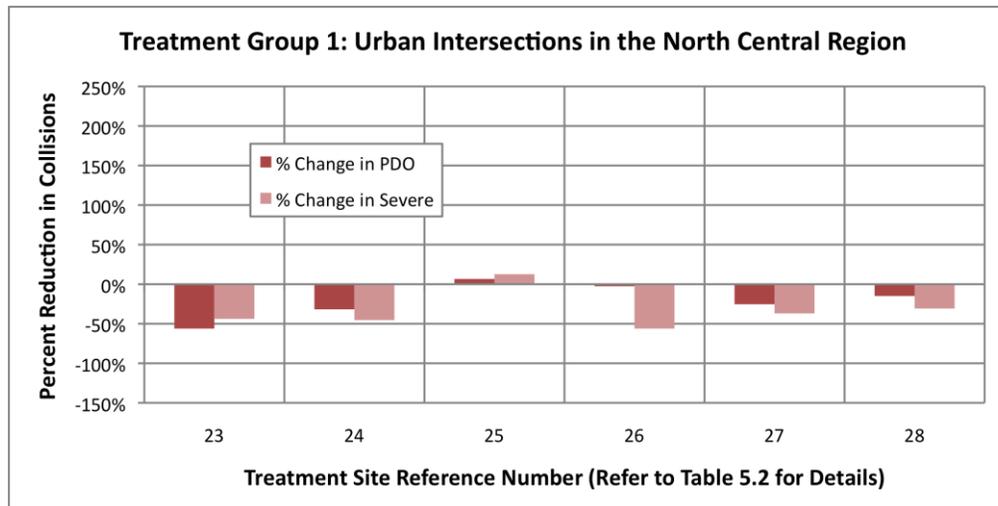
**Figure 5.1: Change in Collisions for Treatment Group 1: Urban Intersections**



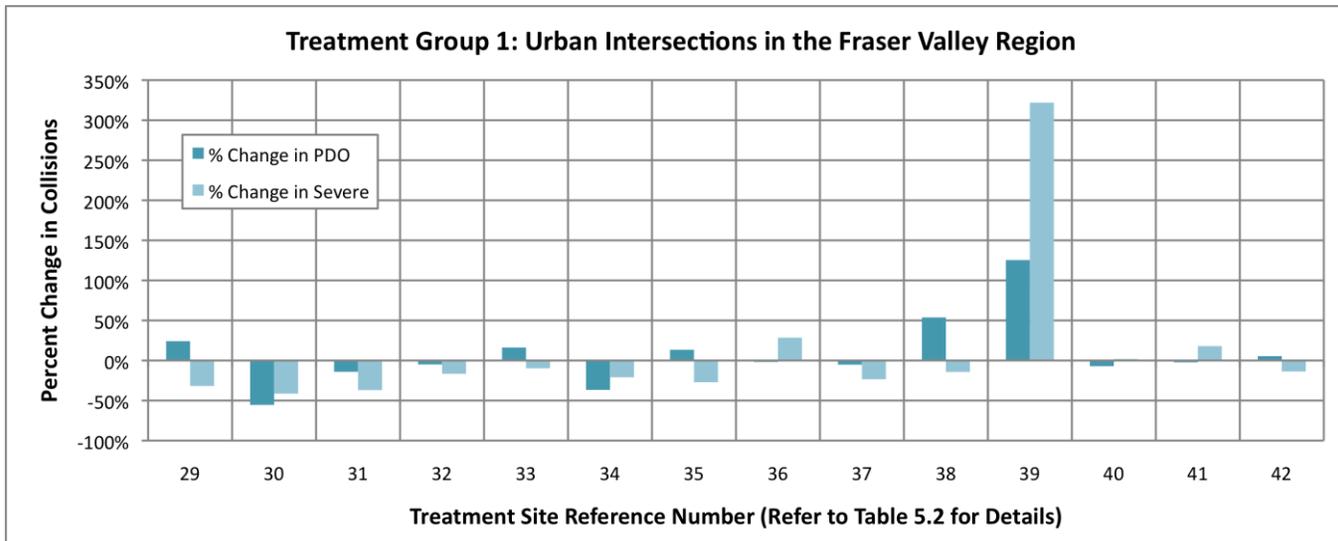
**Figure 5.2: Change in Collisions for Treatment Group 2: Rural Highway Segments**



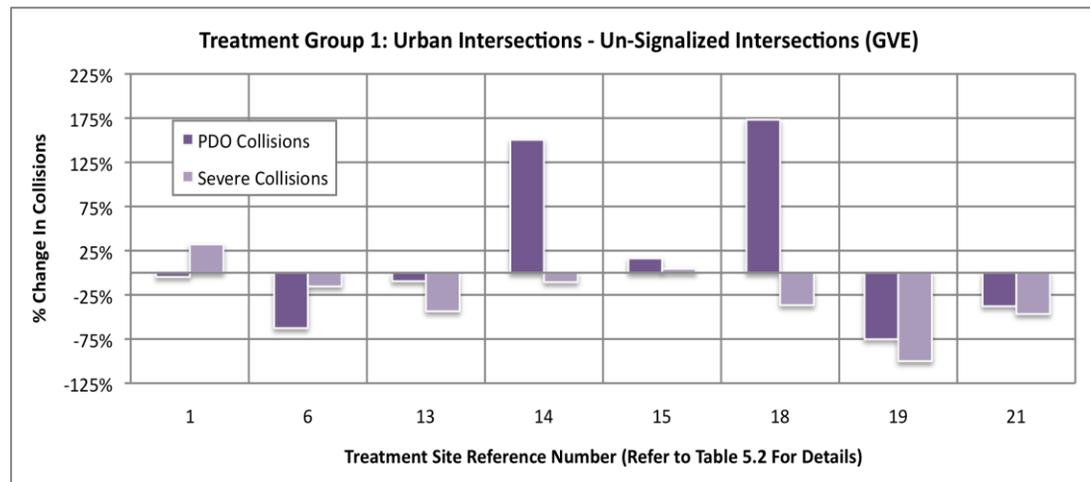
**Figure 5.3: Change in Collisions for Greater Vancouver Region (Sites 1 to 22)**



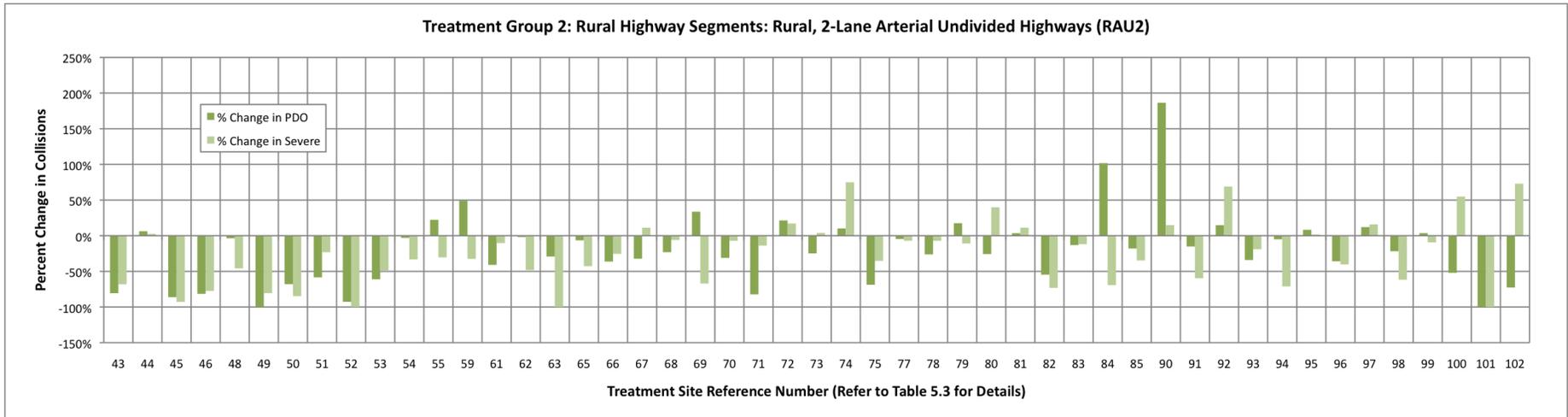
**Figure 5.4: Change in Collisions for North Central Region (Sites 23 to 28)**



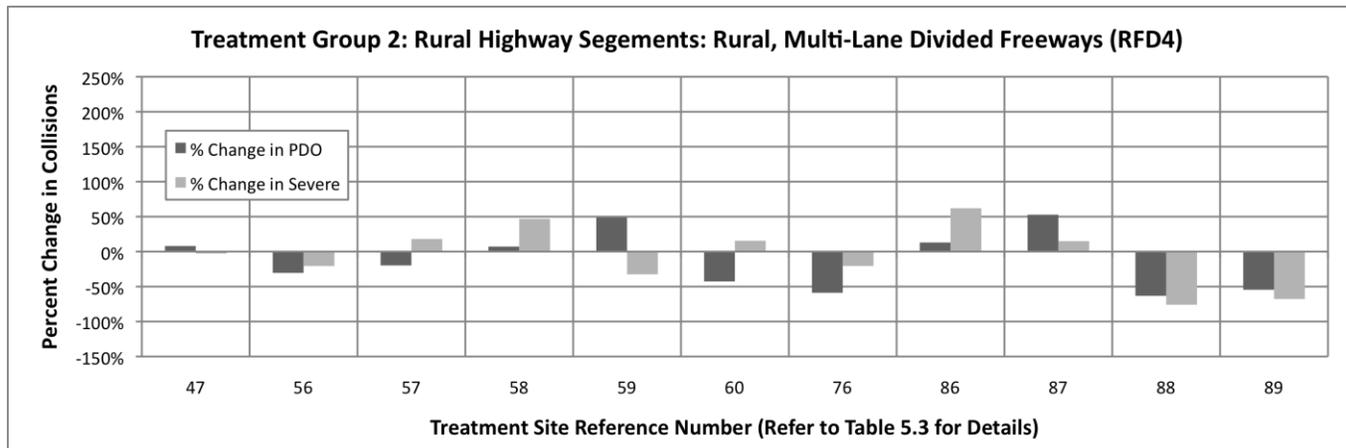
**Figure 5.5: Change in Collision for Fraser Valley Sites (Sites 29 to 42)**



**Figure 5.6: Change in Collision for Un-Signalized Intersection Sites (GVE)**



**Figure 5.7: Change in Collisions for Rural, 2-Lane, Undivided Highway (RAU2)**



**Figure 5.8: Change in Collisions for Rural, Multi-Lane Divided Freeway (RFD4)**

**Table 5.2: Summary of Evaluation Results for Treatment Group 1:  
Urban Intersections**

ID	Year	Major Road	Minor Road	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
					PDO	SEVERE	2-Year	5-Year	2-Year	5-Year
1	2004	Hemlock Street	W 6th Avenue	\$30,000	-4.7%	32.2%	-2.8	-6.4	(\$115.2)	(\$223.2)
2	2004	Marine Drive	Hamilton Avenue	\$46,000	-20.2%	-20.1%	3.8	8.6	\$129.1	\$351.2
3	2004	Lougheed Hwy	King Edward St	\$16,000	-20.7%	-31.2%	38.5	87.4	\$600.7	\$1,382.5
4	2004	Johnson Street	Glen Drive	\$60,000	-66.1%	-67.3%	12.0	27.2	\$659.4	\$1,571.4
5	2004	Lougheed Hwy	Shaughnessy St	\$62,200	-42.2%	-18.5%	23.0	52.2	\$1,369.1	\$3,183.8
6	2005	Mountain Hwy	Ross Road	\$50,000	-62.7%	-15.5%	0.9	2.1	(\$3.5)	\$55.5
7	2005	Marine Drive	Fraser Street	\$60,000	-5.1%	-40.6%	16.1	36.6	\$907.9	\$2,135.0
8	2005	Marine Drive	Kerr Street	\$20,000	-5.6%	-24.4%	17.9	40.5	\$337.2	\$790.0
9	2005	Marine Drive	Elliott Street	\$10,000	-47.1%	5.4%	1.3	2.8	\$2.5	\$18.4
10	2005	Boundary Road	E 22nd Street	\$25,000	-19.7%	-35.9%	10.7	24.3	\$243.0	\$582.7
11	2005	Granville Street	W 41st Avenue	\$60,000	23.9%	-25.6%	11.1	25.2	\$605.4	\$1,449.0
12	2005	Clark Drive	E 1st Avenue	\$60,000	28.5%	16.8%	-8.0	-18.0	(\$536.9)	(\$1,141.5)
13	2005	232nd Street	Abernethy Way	\$30,000	-9.6%	-43.6%	2.1	4.7	\$32.1	\$110.8
14	2005	240th Street	104th Avenue	\$30,000	150.5%	-10.7%	0.2	0.5	(\$22.8)	(\$13.7)
15	2005	Johnson Street	Delahaye Drive	\$45,000	16.3%	4.5%	-0.1	-0.3	(\$51.4)	(\$59.5)
16	2005	Austin Avenue	Schoolhouse St.	\$65,000	-25.9%	-34.8%	3.3	7.5	\$150.2	\$423.0
17	2005	Clark Drive	E 6th Avenue	\$115,000	-7.3%	12.7%	-0.7	-1.6	(\$198.3)	(\$303.8)
18	2006	W 49th Avenue	Alberta Street	\$60,000	173.2%	-36.7%	0.9	2.0	(\$8.2)	\$57.5
19	2006	Point Grey Road	Alma Street	\$25,000	-75.3%	-100.0%	6.8	15.4	\$145.2	\$361.0
20	2006	Keith Road	Hendry Avenue	\$15,000	193.5%	37.9%	-2.5	-5.7	(\$52.5)	(\$100.1)
21	2006	Johnson Street	Durant Drive	\$25,000	-37.9%	-46.7%	4.5	10.1	\$86.2	\$227.2
22	2006	United Blvd	Burbidge Street	\$35,000	32.1%	-50.2%	2.8	6.3	\$62.8	\$186.7
23	2004	Hwy 5	Mt Paul Way	\$31,200	-56.2%	-43.8%	6.9	15.7	\$185.1	\$459.3
24	2004	Bernard Ave	Gordon Dr	\$27,000	-31.8%	-45.4%	8.6	19.5	\$205.6	\$500.5
25	2004	Springfield Rd	Gordon Dr	\$27,000	6.6%	12.6%	-2.6	-6.0	(\$98.2)	(\$188.4)
26	2005	Fortune Dr	Sydney - Seventh	\$36,000	0.0%	-56.2%	5.5	12.5	\$162.5	\$414.2
27	2005	KLO Rd	Benvoulin Rd	\$55,000	-25.4%	-37.0%	7.8	17.7	\$375.3	\$920.9
28	2005	Hwy 33	Hollywood Rd	\$2,834	-15.0%	-30.8%	111.3	252.3	\$312.5	\$712.2
29	2004	Vedder Rd	Watson Rd	\$18,000	24.1%	-31.8%	17.2	39.0	\$291.1	\$683.0
30	2004	McCallum St	McDougal/Cannon	\$44,000	-55.5%	-41.4%	7.4	16.8	\$282.3	\$696.0
31	2004	King George Hwy	64th Ave	\$18,200	-14.1%	-37.0%	83.7	189.8	\$1,504.9	\$3,435.8
32	2004	152nd St	104th Ave	\$17,300	-4.9%	-16.6%	31.0	70.3	\$518.9	\$1,198.7
33	2004	152nd St	88th Ave	\$28,700	16.2%	-9.7%	6.6	15.0	\$161.5	\$402.6
34	2004	96th Ave	134th St	\$18,500	-36.7%	-20.9%	7.1	16.2	\$113.4	\$280.6
35	2004	64th Ave	144 St	\$97,200	13.4%	-27.1%	2.5	5.6	\$142.0	\$445.2
36	2004	72nd Ave	140th St	\$57,800	0.8%	28.5%	-5.8	-13.1	(\$391.0)	(\$813.4)
37	2005	Westminster Hwy	No.4 Rd	\$45,000	-5.2%	-23.4%	6.5	14.6	\$245.5	\$613.8
38	2005	152nd St	40th Ave	\$20,000	53.8%	-14.3%	2.2	5.0	\$23.7	\$79.2
39	2006	Bradner Rd	Townshipline Rd	\$21,000	125.4%	322.0%	-23.2	-52.6	(\$508.1)	(\$1,125.6)
40	2006	Garden City Rd	Cambie Rd	\$31,000	-7.1%	1.9%	-0.2	-0.4	(\$37.1)	(\$44.8)
41	2006	Steveston Hwy	No. 5 Rd	\$33,750	0.3%	17.9%	-7.8	-17.7	(\$297.4)	(\$631.7)
42	2006	Fraser Hwy	184th St	\$80,000	5.5%	-13.7%	1.9	4.2	\$68.0	\$255.7
<b>TOTAL:</b>				<b>\$1,653,684</b>	<b>-9.1%</b>	<b>-20.1%</b>	<b>5.6</b>	<b>12.7</b>	<b>\$7,602.6</b>	<b>\$19,337.6</b>

1) A negative value indicates a reduction in collisions.

**Table 5.3: Summary of Evaluation Results for Treatment Group 2:  
Rural Highway Segments**

ID	Year	Location Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
				PDO	SEVERE	2 Year	5 year	2 Year	5 year
43	2004	Highway 1: Hoffmans Bluff	\$23,500	-80.6%	-68.1%	7.0	15.9	\$141.3	\$350.2
44	2004	Highway 97: Swan Lake	\$46,400	6.3%	2.5%	-1.1	-2.6	(\$98.9)	(\$165.4)
45	2004	Highway 37: Onion Lake	\$72,900	-86.2%	-92.8%	20.0	45.3	\$1,382.2	\$3,227.0
46	2004	Highway 37: Cranberry Junction	\$18,100	-81.5%	-77.4%	15.4	34.9	\$260.2	\$613.1
47	2004	Highway 19: Island Hwy	\$90,000	8.0%	-2.8%	0.4	0.8	(\$56.7)	(\$14.4)
48	2004	Highway 97: South of 100 Mile	\$21,600	-3.6%	-45.8%	15.4	34.9	\$310.8	\$732.2
49	2004	Hwy 16: CNR / Carwash Rock / 35 Mile	\$18,400	-100.0%	-80.6%	8.3	18.9	\$135.0	\$329.4
50	2004	Highway 16: Prince Rupert to Terrace	\$18,400	-68.0%	-84.8%	84.9	192.6	\$1,544.6	\$3,526.1
51	2004	Highway 37: Terrace to Kitimat	\$80,000	-58.4%	-23.1%	5.5	12.4	\$357.6	\$912.5
52	2004	Highway 16: East of Terrace	\$40,000	-92.7%	-100.0%	21.6	48.9	\$823.2	\$1,917.5
53	2004	Highway 11: Clayburn Rd to Harris Rd	\$36,000	-61.1%	-48.5%	7.2	16.3	\$221.9	\$548.9
54	2004	Highway 97: Swan Lake to Larkin	\$89,600	-3.1%	-33.2%	2.1	4.8	\$101.3	\$343.2
55	2004	Highway 99: Culliton to Cheakamus	\$83,200	22.3%	-30.5%	2.1	4.7	\$89.0	\$307.4
56	2004	Highway 1: Annis Rd to Highway 9	\$87,700	-30.5%	-20.6%	2.8	6.3	\$156.1	\$465.3
57	2004	Highway 1: Vedder I/C	\$56,000	-19.8%	18.1%	-0.4	-0.9	(\$77.4)	(\$104.4)
58	2005	Highway 11: Mission Bridge	\$46,600	7.2%	46.9%	-4.8	-10.9	(\$270.6)	(\$554.6)
59	2005	Highway 3A: Nelson Arterial	\$52,100	48.9%	-32.5%	2.2	4.9	\$60.8	\$203.8
60	2005	Highway 5: Near Merritt	\$16,200	-42.7%	15.6%	0.3	0.7	(\$11.1)	(\$4.7)
61	2005	Highway 97: Near Lac La Hache	\$38,100	-40.9%	-10.4%	7.8	17.6	\$257.4	\$632.0
62	2005	Highway 97: Near 103 Mile	\$56,600	-0.1%	-48.1%	5.2	11.8	\$236.7	\$608.5
63	2005	Highway 49: Near Dawson Creek	\$62,200	-29.2%	-100.0%	3.7	8.5	\$170.2	\$464.7
64	2005	Highway 17: Pat Bay Hwy	\$26,250	-14.4%	-25.2%	83.2	188.7	\$2,157.4	\$4,925.8
65	2005	Highway 22: Near Trail	\$40,000	-6.5%	-42.8%	15.1	34.2	\$563.2	\$1,328.0
66	2005	Highway 97C: Coquahalla Connector	\$35,000	-36.2%	-25.4%	2.9	6.5	\$64.7	\$191.2
67	2005	Highway 97: Near Clinton	\$40,000	-32.3%	11.1%	-0.5	-1.2	(\$61.7)	(\$89.2)
68	2005	Highway 16: Near Houston	\$16,600	-23.1%	-6.0%	16.6	37.7	\$259.1	\$608.6
69	2005	Highway 16: Near Prince Rupert	\$18,400	33.7%	-67.1%	31.0	70.4	\$552.5	\$1,276.2
70	2005	Highway 7: 285th to Silverdale	\$89,300	-31.1%	-7.1%	1.4	3.1	\$31.5	\$184.6
71	2005	Highway 97: Near Doyle Road	\$38,100	-82.2%	-13.9%	2.1	4.8	\$41.7	\$142.8
72	2005	Highway 97: Fort St. John Arterial	\$99,200	21.4%	17.1%	-2.3	-5.3	(\$329.4)	(\$621.2)
73	2005	Highway 97: Near Ponderosa	\$65,600	-24.8%	3.9%	0.1	0.2	(\$60.8)	(\$54.7)
74	2005	Highway 97: Lynes Road	\$56,600	10.2%	75.0%	-2.8	-6.4	(\$217.0)	(\$420.3)
75	2005	Highway 97: Okanagan Lake Park	\$94,800	-68.7%	-35.3%	3.87	8.78	\$272.4	\$738.0

ID	Year	Location Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
				PDO	SEVERE	2 Year	5 year	2 Year	5 year
76	2006	Highway 1: Vedder Canal - Sardis I/C	\$21,500	-58.9%	-20.6%	23.67	53.69	\$487.5	\$1,132.8
77	2006	Highway 18: Youbou Rd (Hwy 963)	\$20,000	-4.7%	-7.1%	5.36	12.15	\$87.2	\$223.1
78	2006	Highway 19: Near Port Hardy	\$17,800	-26.2%	-7.1%	7.01	15.91	\$107.1	\$265.3
79	2006	Highway 1: Glacier to Donald	\$22,900	17.6%	-10.8%	5.05	11.44	\$92.7	\$239.1
80	2006	Highway 3: Midway to Cascade	\$46,800	-25.7%	39.8%	-21.37	-48.45	(\$1,046.8)	(\$2,314.5)
81	2006	Highway 3: Cascade to Castlegar	\$46,700	3.5%	11.2%	-6.12	-13.87	(\$332.3)	(\$694.4)
82	2006	Highway 5: McLure Ferry - Russel St	\$41,200	-54.7%	-73.2%	26.82	60.83	\$1,063.9	\$2,464.9
83	2006	Highway 97: Marguerite Ferry - French	\$51,700	-13.2%	-11.9%	3.86	8.75	\$147.8	\$400.7
84	2006	Highway 2: Near Pouce Coupe	\$25,000	101.8%	-69.4%	1.69	3.83	\$17.2	\$70.7
85	2006	Highway 1: Malahat Hwy	\$98,300	-18.0%	-34.7%	9.90	22.44	\$874.5	\$2,107.8
86	2006	Highway 5: Coquahalla Hwy	\$16,200	13.0%	62.0%	-54.47	123.53	(\$898.7)	(\$2,017.5)
87	2006	Highway 1: Young Rd to Prest Rd	\$56,000	52.8%	14.9%	-1.36	-3.09	(\$132.2)	(\$228.9)
88	2006	Highway 97C: Coquahalla Connector	\$75,000	-63.3%	-76.0%	35.78	81.14	\$2,608.4	\$6,010.4
89	2006	Highway 97C: Coquahalla Connector	\$75,000	-54.5%	-67.8%	33.90	76.88	\$2,467.5	\$5,690.9
90	2006	Highway 16: Prince Rupert to Terrace	\$18,400	186.5%	14.9%	-23.51	-53.30	(\$450.9)	(\$999.2)
91	2006	Highway 16: Terrace - Kitwanga	\$40,000	-15.1%	-59.7%	10.60	24.04	\$384.0	\$921.6
92	2006	Highway 16: Hazelton - Houston	\$54,600	14.8%	69.0%	-30.34	-68.81	(\$1,711.2)	(\$3,811.4)
93	2006	Highway 16: Houston to Burns Lake	\$16,600	-34.1%	-19.0%	43.20	97.98	\$700.6	\$1,609.8
94	2006	Highway 1: Kicking Horse Canyon	\$47,800	-5.0%	-71.2%	2.57	5.83	\$75.1	\$230.8
95	2006	Highway 3: 6th to Victoria	\$75,800	8.3%	1.6%	-0.20	-0.45	(\$90.9)	(\$110.0)
96	2006	Highway 5: Agate Bay Rd	\$23,700	-35.9%	-40.2%	3.08	6.98	\$49.2	\$141.7
97	2006	Highway 99: Horseshoe Bay	\$98,200	12.0%	15.8%	-1.16	-2.64	(\$212.6)	(\$357.6)
98	2006	Highway 99: Lions Bay	\$92,000	-21.8%	-61.7%	4.12	9.35	\$287.5	\$768.6
99	2006	Highway 99: Black Tusk	\$60,100	3.6%	-9.3%	4.51	10.22	\$210.8	\$554.2
100	2006	Highway 99: Britania Beach	\$58,200	-52.1%	54.9%	-2.03	-4.61	(\$176.5)	(\$326.5)
101	2006	Highway 15: Truck Crossing	\$36,400	-100.0%	-100.0%	4.50	10.21	\$127.5	\$335.3
102	2006	Highway 1: 30th St NE to Hwy 97B	\$26,200	-72.7%	73.0%	-1.28	-2.91	(\$59.9)	(\$102.5)
<b>TOTAL:</b>			<b>\$2,935,550</b>	<b>-16.6%</b>	<b>-19.5%</b>	<b>5.7</b>	<b>12.8</b>	<b>\$13,683.8</b>	<b>\$34,753.5</b>

1) A negative value indicates a reduction in collisions.

### 5.2.2 The Net Present Value (NPV) and the Benefit Cost Ratio (B/C)

The second objective used to gauge the success of the Road Improvement Program is whether ICBC's contribution to projects achieves the desired return on investment. To determine this, the net present value (NPV) and benefit – cost ratio (B/C) are calculated.

The first step in calculating the NPV and the B/C is to convert the treatment effect into an annualized reduction (or increase) in collisions. The reductions (or increases) are then converted into annual benefits (or dis-benefits) using average collision cost values as shown in Table 5.4. It is duly noted that a discount rate of 7% was used in the calculation of the NPV and the B/C, based on information provided by ICBC.

**Table 5.4: Average Collision Cost per Incident**

<b>Collision Data Source</b>	<b>Property Damage Only Incidents</b>	<b>Severe (Fatal + Injury) Incidents</b>
Urban Sites (Claim-based data)	\$2,708	\$31,385
Rural Sites (Police reported data)	\$10,309	\$56,374

As shown in Table 5.4, there is a difference in the average collision cost values between the urban and rural sites. This distinction is required due to the difference in the level of reporting of collisions (i.e., there are significantly more claim-based incidents reported as compared to police-reported incidents). Claims-based incident data is very useful for urban intersections, where an incident location can be easily identified. However, claims-based data is not too useful for rural corridors since the identification of a precise location is very difficult, whereas the police reported data accurately defines an incident location. The details for the average collision costs are provided in **APPENDIX E**.

The NPV and the B/C were first calculated using a 2-year payback period to determine if the safety benefits achieved the Road Improvement Program's investment goals. The investment target for the projects included in this evaluation was 3.0:1 over a two year time period, which is different than the previous evaluation, which had some projects with an investment target of 2.0:1 in two years. The 3.0:1 investment target means that for every dollar invested in an improvement project, there should be 3 dollars returned to ICBC as a result of a reduction in claims costs (within 2 years). The overall results for a 2-year time period are provided in Table 5.5.

**Table 5.5: Economic Evaluation for Treatment Sites (2-Year Service Life)**

<b>Treatment Sites</b>	<b>Net Present Value (NPV)</b>	<b>Benefit Cost Ratio (B/C)</b>
Urban Intersections (42 sites)	\$7.6M	5.6
Rural Highway Segments (60 sites)	\$13.7M	5.7
All Treatments Sites (102 sites)	\$21.3 M	5.6

Therefore, as can be seen from the summary results that are presented above, the economic goals of ICBC's Road Improvement Program have been achieved, with an overall B/C ratio of 5.6 over a two-year time period (i.e.,  $5.6 > 3.0$  investment target).

It is noted that the B/C results produced from this 2009 evaluation are somewhat higher than the B/C results reported in the 2006 Evaluation. In 2006, the evaluation produced a B/C of 4.9 for the urban sites, 4.1 for the rural sites and 4.4 overall, which are lower than the values listed in Table 5.5. There are 3 reasons that may account for the difference in the B/C results:

- 1) The average cost of collisions increased considerably, particularly the PDO collision costs, which increased from \$1,500 (2006) to \$2,707 (2009).
- 2) The discount rate used in the 2006 evaluation was 10%, while in this 2009 evaluation a discount rate of 7% was used.
- 3) The funding criteria for projects evaluated in 2006 included both the 2.0:1 and 3.0:1 criteria, whereas for the 2009 evaluation, all projects had the 3.0:1 criteria, resulting in lower contributions to projects.

Many of the road improvement projects are likely to have safety benefits that extend beyond the 2-year service life that is the basis for the return on investment. For example, the safety benefits of many improvements, such as left-turn bays, passing lanes, and traffic signals, typically extend well beyond 2 years, and often can be effective for at least 5 years or more. Therefore, the NPV and the B/C for the treatments sites were also calculated over a five-year time period, which may be more representative of the true economic effectiveness of the road safety improvements.

The overall economic evaluation results for a five-year time period are provided in Table 5.6, which shows a significant NPV for the road improvement projects and that the B/C significantly exceeds the investment goals for the Road Improvement Program.

**Table 5.6: Economic Evaluation for Treatment Sites (5-Year Service Life)**

<b>Treatment Sites</b>	<b>Net Present Value (NPV)</b>	<b>Benefit Cost Ratio (B/C)</b>
Urban Intersections (42 sites)	\$19.6 M	12.7
Rural Highway Segments (60 sites)	\$35.0M	13.0
All Treatments Sites (102 sites)	\$54.1. M	12.8

The detailed results for the NPV and the B/C for each treatment site were provided in Table 5.2 for each urban intersection and in Table 5.3 for the rural highway segments. These detailed results revealed the following:

For the 42 urban intersections:

- 29 sites (69%) had a B/C greater than 1.0 and positive NPV over 2 years; and,
- 31 sites (74%) had a B/C greater than 1.0 and positive NPV over 5 years.

For the 60 rural highway segments:

- 41 sites (68%) had a B/C greater than 1.0 and positive NPV over 2 years; and,
- 41 sites (68%) had a B/C greater than 1.0 and positive NPV over 5 years.

## **6.0 SUMMARY AND CONCLUSIONS**

### **6.1 Evaluation Objectives**

The objective of this evaluation study was to conduct a time-series (before to after) evaluation of the safety performance of a sample of locations that have been improved under the ICBC's Road Improvement Program. The overall effectiveness of the Road Improvement Program can be determined by:

- 1) Determining if the frequency and/or severity of collisions at the improvement sites has reduced after the implementation of the improvement; and by,
- 2) Quantifying the program costs versus the economic safety benefits to determine the return on road safety investment.

Based on the results from this evaluation study, it is possible to determine whether the goals and objectives of ICBC's Road Improvement Program have been achieved.

This evaluation report also provides some background information on the activities of the Road Improvement Program and a historical context for the evaluation.

### **6.2 Evaluation Methodology**

It is imperative that the evaluation methodology is rigorous, such that the results are robust and can withstand technical scrutiny. To ensure this is achieved, the evaluation has incorporated the latest techniques in road safety evaluation.

There are three factors that typically jeopardize the validity of time-series road safety evaluations, which are commonly referred to as history, maturation and regression to the mean (or regression artifacts). The methodology that was used in this evaluation study addresses these three factors by making use of the following:

- 1) Comparison groups were used to correct for the confounding factors of history and maturation; and,
- 2) Reference groups were used to generate collision prediction models (CPMs), and together with an empirical Bayes refinement procedure, the regression artifacts were effectively addressed.

The methodology that was used for this evaluation study provides a high level of confidence in the results that were produced.

### 6.3 Evaluation Data

To support a reliable methodology, it was also necessary to obtain reliable data for the evaluation. A significant effort was required to obtain the data that was necessary for a successful evaluation. Collision and traffic volume data was required for each site within three distinct groups of sites:

#### 1) Treatment Group Sites:

- These are the sites to be evaluated, where treatments (improvements) were completed in 2004, 2005, or 2006, part of the Road Improvement Program.
- A total of 102 treatment sites were selected for the evaluation.
- Specific criteria were established to select projects to ensure that the site selection was not biased and to respond to the resources that were available to complete the evaluation.
- A total of 42 of the treatment sites were urban intersections, with an ICBC contribution of \$1,653,700 and a total of 60 treatment sites were rural highway segments, with an ICBC contribution of \$2,935,600.
- The treatment sites that were selected characterize the types of projects that are typically completed as part of the Road Improvement Program.
- A detailed listing of the treatment sites selected for the evaluation can be found in **APPENDIX A** (urban sites) and **APPENDIX B** (rural sites).

#### 2) Comparison Group Sites:

- These are sites / locations that have NOT been improved, but are subjected to similar traffic and environmental conditions as the treatment group sites.
- A total of 560 comparison sites were selected and were used to generate 60 different comparison groups, which were used in the evaluation process to correct for the confounding factors of history and maturation.

#### 3) Reference Group Sites:

- These are sites that are considered to be similar in design and operation to the treatment group sites.
- There were a total of 952 sites selected to generate several reference groups, which were used to develop collision prediction models that are combined with empirical Bayes procedures to address the regression artifacts.

It is noted that for all three groups of sites, claim-based collision data was used for the evaluation of urban sites and police-reported collision data was used for the rural sites.

## **6.4 Evaluation Results**

### **6.4.1 Evaluation Results: Collision Prediction Models**

A very important part of the evaluation methodology required the development and application of collision prediction models (CPMs). For this study, 36 different collision prediction models were developed, as listed below. “A” models are CPMs for Property Damage Only (PDO) collisions and “B” models are CPMs for SEVERE collisions.

#### **Treatment Group 1: Urban Intersections**

##### **Group A: Greater Vancouver Region (GVE) (Sites 1 to 22):**

- Model A1 and B1: GVE Non-signalized intersections treated in 2004
- Model A2 and B2: GVE Non-signalized intersections treated in 2005
- Model A3 and B3: GVE Non-signalized intersections treated in 2006
- Model A4 and B4: GVE Signalized intersections treated in 2004
- Model A5 and B5: GVE Signalized intersections treated in 2005
- Model A6 and B6: GVE Signalized intersections treated in 2006

##### **Group B: North Central Region (NCR) (Site 23 to 33):**

- Model A7 and B7: NCR Signalized intersections treated in 2004
- Model A8 and B8: NCR Signalized intersections treated in 2005
- Model A9 and B9: NCR Signalized intersections treated in 2006

##### **Group C: Fraser Valley Region (FVR) (Site 34 to 42):**

- Model A10 and B10: FVR Signalized intersections treated in 2004
- Model A11 and B11: FVR Signalized intersections treated in 2005
- Model A12 and B12: FVR Signalized intersections treated in 2006

#### **Treatment Group 2: Rural Highway Segments (Sites 49 to 108):**

##### **Group D: Rural Highway Segments:**

- Model A13 and B13: Rural 2-lane Undivided Arterials treated in 2004
- Model A14 and B14: Rural 2-lane Undivided Arterials treated in 2005
- Model A15 and B15: Rural 2-lane Undivided Arterials treated in 2006
- Model A16 and B16: Rural 4-lane Divided Freeways treated in 2004
- Model A17 and B17: Rural 4-lane Divided Freeways treated in 2005
- Model A18 and B18: Rural 4-lane Divided Freeways treated in 2006

All CPMs that were developed were considered valid and fit the data very well.

#### 6.4.2 Evaluation Results: Change in Collisions

The overall effectiveness in reducing collisions at the 102 treatment sites is provided below in Table 6.1. The results indicate that at the 42 urban intersections studied, there has been an 9.1% reduction in the property damage only (PDO) incidents and a 20.1% reduction in severe incidents. The overall effect for the 60 rural highway segments indicates that there has been a 16.6% reduction in PDO incidents and a 19.5% reduction in severe incidents. Considering all 102-treatment sites, there was a 11.9% reduction in PDO incidents and a 19.6% reduction in severe incidents.

**Table 6.1: Collision Reductions for Treatment Sites**

Treatment Sites	Change in Collisions <sup>1</sup>	
	PDO Incidents	Severe Incidents
Urban Intersections (42 sites)	- 9.1%	- 20.1%
Rural Highway Segments (60 sites)	- 16.6%	- 19.5%
All Treatments Sites (102 sites)	- 11.9%	- 19.6%

1. A negative value indicates a reduction in collisions.

The safety performance at each treatment site was illustrated graphically in Figure 5.1 and 5.2 in chapter 5. The figures indicated that the majority of sites showed a reduction in the frequency of PDO and/or severe collisions, although some locations did indicate a net increase in collisions. A summary of the results for the change in collisions at the treatment sites is as follows:

- 1) 62% of the urban intersections had a reduction in PDO collisions;
- 2) 74% of the urban intersections had a reduction in severe collision;
- 3) 70% of the rural highway segments had a reduction in PDO collisions;
- 4) 70% of the rural highway segments had a reduction in severe collisions;
- 5) A total of 68 treatment sites (or 67%) had a reduction in PDO collisions; and,
- 6) A total of 73 treatment sites (or 72%) had a reduction in severe collisions.

### 6.4.3 Evaluation Results: Costs and Benefits

In determining the cost and benefits associated with the results, it is necessary to assign an average collision cost value. However, the average collision cost varies depending on the collision data source because of the difference in the level of reporting, as was described in Chapter 5 and APPENDIX E. For this evaluation, the average collision costs values shown in Table 6.2 were used.

**Table 6.2: Average Collision Cost Values**

<b>Collision Data Source</b>	<b>Property Damage Only Incidents</b>	<b>Severe (Fatal + Injury) Incidents</b>
Urban Sites (Claim-based data)	\$2,708	\$31,385
Rural Sites (Police reported data)	\$10,309	\$56,374

Two economic indicators were used to determine if ICBC's contribution to the road improvement projects achieves the desired return on investment, including the net present value (NPV) and the benefit cost ratio (B/C). The NPV, which is expressed in millions of dollars, and the B/C for the treatment sites were calculated based on a two year service life and a discount rate of 7%, with the results presented in Table 6.3.

**Table 6.3: Economic Evaluation for Treatment Sites (2-Year Service Life)**

<b>Treatment Sites</b>	<b>Net Present Value (NPV)</b>	<b>Benefit Cost Ratio (B/C)</b>
Urban Intersections (42 sites)	\$7.6M	5.6
Rural Highway Segments (60 sites)	\$13.7M	5.7
All Treatments Sites (102 sites)	\$21.3 M	5.6

It is noted that for the projects that were included in this evaluation, the goal of the Road Improvement Program was to achieve a B/C ratio of at least 3.0: 1 on all projects within 2 years.

Therefore, as can be seen from the summary results that are presented in Table 6.3, the economic goals of ICBC’s Road Improvement Program have been achieved, with the overall B/C ratio of 5.6 exceeding the ICBC investment goal of 3.0:1 (over 2 years).

Many of the road improvement projects are likely to have safety benefits that extend well beyond the 2-year service life. For example, the safety benefits of improvements such as left-turn bays, passing lanes, and traffic signals can offer safety benefits for at least 5 years. Therefore, the NPV and the B/C for the treated sites were also calculated over a five-year time period, which may be more representative of the true economic effectiveness of the safety improvements. These results are provided in Table 6.4, which shows a very high NPV and a B/C ratio that significantly exceeds the investment goals for the Road Improvement Program.

**Table 6.4: Economic Evaluation for Treatment Sites (5-Year Service Life)**

<b>Treatment Sites</b>	<b>Net Present Value (NPV)</b>	<b>Benefit Cost Ratio (B/C)</b>
Urban Intersections (42 sites)	\$19.6 M	12.7
Rural Highway Segments (60 sites)	\$35.0M	13.0
All Treatments Sites (102 sites)	\$54.1 M	12.8

The detailed results for the NPV and the B/C for each treatment site were provided in Table 5.2 for each urban intersection and in Table 5.3 for the rural highway segments. These detailed results revealed the following:

For the 42 urban intersections:

- 29 sites (69%) had a B/C greater than 1.0 and positive NPV over 2 years; and,
- 31 sites (74%) had a B/C greater than 1.0 and positive NPV over 5 years

For the 60 rural highway segments:

- 41 sites (68%) had a B/C greater than 1.0 and positive NPV over 2 years
- 41 sites (68%) had a B/C greater than 1.0 and positive NPV over 5 years.

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**APPENDIX A:**

**SUMMARY OF EVALUATION FOR TREATMENT GROUP 1:  
URBAN INTERSECTIONS (42 SITES)**

**Table A-1: Summary of Evaluation for Treatment Group 1: Urban Intersections**

ID	Year	Major Road	Minor Road	Improvement Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
						PDO	SEVERE	2-Year	5-Year	2-Year	5-Year
1	2004	Hemlock Street	W 6th Avenue	New traffic signal installation	\$30,000	-4.7%	32.2%	-2.8	-6.4	(\$115.2)	(\$223.2)
2	2004	Marine Drive	Hamilton Avenue	Intersection improvement	\$46,000	-20.2%	-20.1%	3.8	8.6	\$129.1	\$351.2
3	2004	Lougheed Hwy	King Edward St	Left turn phase improvement	\$16,000	-20.7%	-31.2%	38.5	87.4	\$600.7	\$1,382.5
4	2004	Johnson Street	Glen Drive	Left turn lane installation	\$60,000	-66.1%	-67.3%	12.0	27.2	\$659.4	\$1,571.4
5	2004	Lougheed Hwy	Shaughnessy St	Intersection improvement	\$62,200	-42.2%	-18.5%	23.0	52.2	\$1,369.1	\$3,183.8
6	2005	Mountain Hwy	Ross Road	New traffic signal installation	\$50,000	-62.7%	-15.5%	0.9	2.1	(\$3.5)	\$55.5
7	2005	Marine Drive	Fraser Street	Left turn phase improvement	\$60,000	-5.1%	-40.6%	16.1	36.6	\$907.9	\$2,135.0
8	2005	Marine Drive	Kerr Street	Left turn phase improvement	\$20,000	-5.6%	-24.4%	17.9	40.5	\$337.2	\$790.0
9	2005	Marine Drive	Elliott Street	Left turn phase improvement	\$10,000	-47.1%	5.4%	1.3	2.8	\$2.5	\$18.4
10	2005	Boundary Road	E 22nd Street	Left turn phase improvement	\$25,000	-19.7%	-35.9%	10.7	24.3	\$243.0	\$582.7
11	2005	Granville Street	W 41st Avenue	Left turn phase improvement	\$60,000	23.9%	-25.6%	11.1	25.2	\$605.4	\$1,449.0
12	2005	Clark Drive	E 1st Avenue	Left turn phase improvement	\$60,000	28.5%	16.8%	-8.0	-18.0	(\$536.9)	(\$1,141.5)
13	2005	232nd Street	Abernethy Way	New traffic signal installation	\$30,000	-9.6%	-43.6%	2.1	4.7	\$32.1	\$110.8
14	2005	240th Street	104th Avenue	New traffic signal installation	\$30,000	150.5%	-10.7%	0.2	0.5	(\$22.8)	(\$13.7)
15	2005	Johnson Street	Delahaye Drive	New traffic signal installation	\$45,000	16.3%	4.5%	-0.1	-0.3	(\$51.4)	(\$59.5)
16	2005	Austin Avenue	Schoolhouse St.	Left turn lane installation	\$65,000	-25.9%	-34.8%	3.3	7.5	\$150.2	\$423.0
17	2005	Clark Drive	E 6th Avenue	Left turn lane installation	\$115,000	-7.3%	12.7%	-0.7	-1.6	(\$198.3)	(\$303.8)
18	2006	W 49th Avenue	Alberta Street	New traffic signal installation	\$60,000	173.2%	-36.7%	0.9	2.0	(\$8.2)	\$57.5
19	2006	Point Grey Rd	Alma Street	New traffic signal installation	\$25,000	-75.3%	-100.0%	6.8	15.4	\$145.2	\$361.0
20	2006	Keith Road	Hendry Avenue	Intersection improvement	\$15,000	193.5%	37.9%	-2.5	-5.7	(\$52.5)	(\$100.1)
21	2006	Johnson Street	Durant Drive	New traffic signal installation	\$25,000	-37.9%	-46.7%	4.5	10.1	\$86.2	\$227.2
22	2006	United Blvd	Burbidge Street	Left turn lane installation	\$35,000	32.1%	-50.2%	2.8	6.3	\$62.8	\$186.7
23	2004	Hwy 5	Mt Paul Way	Improve signal and intersection laning	\$31,200	-56.2%	-43.8%	6.9	15.7	\$185.1	\$459.3
24	2004	Bernard Ave	Gordon Dr	Improve visibility, upgrade signal head	\$27,000	-31.8%	-45.4%	8.6	19.5	\$205.6	\$500.5
25	2004	Springfield Rd	Gordon Dr	Upgrade signal, coordination, & phasing	\$27,000	6.6%	12.6%	-2.6	-6.0	(\$98.2)	(\$188.4)

ID	Year	Major Road	Minor Road	Improvement Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
						PDO	SEVERE	2-Year	5-Year	2-Year	5-Year
26	2005	Fortune Dr	Sydney - Seventh	Operational improvements and signal	\$36,000	0.0%	-56.2%	5.5	12.5	\$162.5	\$414.2
27	2005	KLO Rd	Benvoulin Rd	Operational improvements and signal	\$55,000	-25.4%	-37.0%	7.8	17.7	\$375.3	\$920.9
28	2005	Hwy 33	Hollywood Rd	Signal head size and davit upgrades	\$2,834	-15.0%	-30.8%	111.3	252.3	\$312.5	\$712.2
29	2004	Vedder Rd	Watson Rd	Add thru lanes, LT lane & upgrade signal	\$18,000	24.1%	-31.8%	17.2	39.0	\$291.1	\$683.0
30	2004	McCallum St	McDougal/Cannon	Realignment and reduce intersections	\$44,000	-55.5%	-41.4%	7.4	16.8	\$282.3	\$696.0
31	2004	King George Hwy	64th Ave	Operational improvements and signal	\$18,200	-14.1%	-37.0%	83.7	189.8	\$1,504.9	\$3,435.8
32	2004	152nd St	104th Ave	Add EB and WB left turn signal phases	\$17,300	-4.9%	-16.6%	31.0	70.3	\$518.9	\$1,198.7
33	2004	152nd St	88th Ave	Operational improvements and signal	\$28,700	16.2%	-9.7%	6.6	15.0	\$161.5	\$402.6
34	2004	96th Ave	134th St	Upgrade and widen intersection	\$18,500	-36.7%	-20.9%	7.1	16.2	\$113.4	\$280.6
35	2004	64th Ave	144 St	Widen, add thru lanes & add1 left turn lane	\$97,200	13.4%	-27.1%	2.5	5.6	\$142.0	\$445.2
36	2004	72nd Ave	140th St	Eastbound left-turn lane extension	\$57,800	0.8%	28.5%	-5.8	-13.1	(\$391.0)	(\$813.4)
37	2005	Westminster Hwy	No.4 Rd	Northbound left-turn lane extension	\$45,000	-5.2%	-23.4%	6.5	14.6	\$245.5	\$613.8
38	2005	152nd St	40th Ave	Eastbound left-turn lane extension	\$20,000	53.8%	-14.3%	2.2	5.0	\$23.7	\$79.2
39	2006	Bradner Rd	Townshipline Rd	Traffic signal upgrades – 2nd primary heads	\$21,000	125.4%	322.0%	-23.2	-52.6	(\$508.1)	(\$1,125.6)
40	2006	Garden City Rd	Cambie Rd	Upgrade, widen & improve left-turn signals	\$31,000	-7.1%	1.9%	-0.2	-0.4	(\$37.1)	(\$44.8)
41	2006	Steveston Hwy	No. 5 Rd	Upgrade, widen & install left-turn bays	\$33,750	0.3%	17.9%	-7.8	-17.7	(\$297.4)	(\$631.7)
42	2006	Fraser Hwy	184th St	Installation of anti-skid pavement	\$80,000	5.5%	-13.7%	1.9	4.2	\$68.0	\$255.7
<b>TOTAL:</b>					<b>\$1,653,684</b>	<b>-9.1%</b>	<b>-20.1%</b>	<b>5.6</b>	<b>12.7</b>	<b>\$7,602.6</b>	<b>\$19,337.6</b>

1. A negative value indicates a reduction in collisions.

**APPENDIX B:**

**SUMMARY OF EVALUATION FOR TREATMENT GROUP 2:  
RURAL HIGHWAY SEGMENTS (60 SITES)**

**Table A-2: Evaluation Summary Treatment Group 2: Rural Highway Segments**

ID	Year	Location Description	Improvement Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
					PDO	SEVERE	2 Year	5 year	2 Year	5 year
43	2004	Highway 1: Hoffmans Bluff	Improve shoulder, super-elevation, install barrier, SRS, signing, pavement marking	\$23,500	-80.6%	-68.1%	7.0	15.9	\$141.3	\$350.2
44	2004	Highway 97: Swan Lake	Install shoulder rumble strips	\$46,400	6.3%	2.5%	-1.1	-2.6	(\$98.9)	(\$165.4)
45	2004	Highway 37: Onion Lake	Improve shoulder, roadside, widening, CRS and SRS, pavement marking and treatments	\$72,900	-86.2%	-92.8%	20.0	45.3	\$1,382.2	\$3,227.0
46	2004	Highway 37: Cranberry Junction	Shoulder widening, pavement marking, pavement treatments	\$18,100	-81.5%	-77.4%	15.4	34.9	\$260.2	\$613.1
47	2004	Highway 19: Island Hwy	Improved delineation, guidance and installation of rumble strips	\$90,000	8.0%	-2.8%	0.4	0.8	(\$56.7)	(\$14.4)
48	2004	Highway 97: South of 100 Mile	Installation of shoulder rumble strips	\$21,600	-3.6%	-45.8%	15.4	34.9	\$310.8	\$732.2
49	2004	Hwy 16: CNR / Carwash Rock / 35 Mile	Improvements to three locations including, signing, delineation and guardrail	\$18,400	-100.0%	-80.6%	8.3	18.9	\$135.0	\$329.4
50	2004	Highway 16: Prince Rupert to Terrace	Installation of shoulder rumble strips	\$18,400	-68.0%	-84.8%	84.9	192.6	\$1,544.6	\$3,526.1
51	2004	Highway 37: Terrace to Kitimat	Installation of shoulder and centreline rumble strips	\$80,000	-58.4%	-23.1%	5.5	12.4	\$357.6	\$912.5
52	2004	Highway 16: East of Terrace	Installation of shoulder rumble strips	\$40,000	-92.7%	-100.0%	21.6	48.9	\$823.2	\$1,917.5
53	2004	Highway 11: Clayburn Rd to Harris Rd	Signing, delineation, pavement marking, SRS, access mgmt Lighting, channelization, accel/decel lane, CMB	\$36,000	-61.1%	-48.5%	7.2	16.3	\$221.9	\$548.9
54	2004	Highway 97: Swan Lake to Larkin	Improve highway by four laning, improve structure, construction of frontage road system	\$89,600	-3.1%	-33.2%	2.1	4.8	\$101.3	\$343.2
55	2004	Highway 99: Culliton to Cheakamus	Total reconstruction of existing poor Hwy, includes widening, realignment, marking.	\$83,200	22.3%	-30.5%	2.1	4.7	\$89.0	\$307.4
56	2004	Highway 1: Annis Rd to Highway 9	Improve alignment, cross-section, roadside, barrier, signs, delineation, pavement marking, sight distance	\$87,700	-30.5%	-20.6%	2.8	6.3	\$156.1	\$465.3
57	2004	Highway 1: Vedder I/C	Improvement to the interchange, including re-configuration	\$56,000	-19.8%	18.1%	-0.4	-0.9	(\$77.4)	(\$104.4)
58	2005	Highway 11: Mission Bridge	Installation of concrete median barrier and improved delineation	\$46,600	7.2%	46.9%	-4.8	-10.9	(\$270.6)	(\$554.6)

ID	Year	Location Description	Improvement Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
					PDO	SEVERE	2 Year	5 year	2 Year	5 year
59	2005	Highway 3A: Nelson Arterial	Improve signal, signing, delineation, pavement, sight distance, channelization, accel/decel lanes, median	\$52,100	48.9%	-32.5%	2.2	4.9	\$60.8	\$203.8
60	2005	Highway 5: Near Merritt	Installation of shoulder and median rumble strips	\$16,200	-42.7%	15.6%	0.3	0.7	(\$11.1)	(\$4.7)
61	2005	Highway 97: Near Lac La Hache	Installation of shoulder and median rumble strips	\$38,100	-40.9%	-10.4%	7.8	17.6	\$257.4	\$632.0
62	2005	Highway 97: Near 103 Mile	Shoulder widening, install median and roadside barrier	\$56,600	-0.1%	-48.1%	5.2	11.8	\$236.7	\$608.5
63	2005	Highway 49: Near Dawson Creek	Various corridor improvements including signing and delineation (see CH2MHill Report - Dated Feb 2005)	\$62,200	-29.2%	-100.0%	3.7	8.5	\$170.2	\$464.7
64	2005	Highway 17: Pat Bay Hwy	Improve delineation on Pat Bay Highway	\$26,250	-14.4%	-25.2%	83.2	188.7	\$2,157.4	\$4,925.8
65	2005	Highway 22: Near Trail	Installation of shoulder rumble strips	\$40,000	-6.5%	-42.8%	15.1	34.2	\$563.2	\$1,328.0
66	2005	Highway 97C: Coquahalla Connector	Improve signing and delineation	\$35,000	-36.2%	-25.4%	2.9	6.5	\$64.7	\$191.2
67	2005	Highway 97: Near Clinton	Improve delineation, pavement marking	\$40,000	-32.3%	11.1%	-0.5	-1.2	(\$61.7)	(\$89.2)
68	2005	Highway 16: Near Houston	Improve delineation	\$16,600	-23.1%	-6.0%	16.6	37.7	\$259.1	\$608.6
69	2005	Highway 16: Near Prince Rupert	Improve delineation and signs on Highway 16 to address off road collisions.	\$18,400	33.7%	-67.1%	31.0	70.4	\$552.5	\$1,276.2
70	2005	Highway 7: 285th to Silverdale	Four-laning on improved alignment on west section and realignment, widening, upgrade eastern section	\$89,300	-31.1%	-7.1%	1.4	3.1	\$31.5	\$184.6
71	2005	Highway 97: Near Doyle Road	Realignment/Passing Lane, shoulder widening, frontage road, channelization	\$38,100	-82.2%	-13.9%	2.1	4.8	\$41.7	\$142.8
72	2005	Highway 97: Fort St. John Arterial	Four-laning, cross-section improvements and intersection improvements including turning bays	\$99,200	21.4%	17.1%	-2.3	-5.3	(\$329.4)	(\$621.2)
73	2005	Highway 97: Near Ponderosa	Improve intersection, which includes capacity, signing pavement marking, and channelization	\$65,600	-24.8%	3.9%	0.1	0.2	(\$60.8)	(\$54.7)
74	2005	Highway 97: Lynes Road	Installation of southbound Passing Lane	\$56,600	10.2%	75.0%	-2.8	-6.4	(\$217.0)	(\$420.3)
75	2005	Highway 97: Okanagan Lake Park	Four-laning and improvements to the horizontal alignment, improvements to the cross-section	\$94,800	-68.7%	-35.3%	3.87	8.78	\$272.4	\$738.0

ID	Year	Location Description	Improvement Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
					PDO	SEVERE	2 Year	5 year	2 Year	5 year
76	2006	Highway 1: Vedder Canal - Sardis I/C	Cross-sectional improvement including shoulder widening	\$21,500	-58.9%	-20.6%	23.67	53.69	\$487.5	\$1,132.8
77	2006	Highway 18: Youbou Rd (Hwy 963)	Shoulder widening, improve delineation, pavement marking, pavement treatments	\$20,000	-4.7%	-7.1%	5.36	12.15	\$87.2	\$223.1
78	2006	Highway 19: Near Port Hardy	Improve delineation, pavement marking, pavement treatments	\$17,800	-26.2%	-7.1%	7.01	15.91	\$107.1	\$265.3
79	2006	Highway 1: Glacier to Donald	Install centerline rumble strips, pavement marking	\$22,900	17.6%	-10.8%	5.05	11.44	\$92.7	\$239.1
80	2006	Highway 3: Midway to Cascade	Install centerline rumble strips, pavement marking	\$46,800	-25.7%	39.8%	-21.37	-48.45	(\$1,046.8)	(\$2,314.5)
81	2006	Highway 3: Cascade to Castlegar	Install centerline rumble strips, pavement marking	\$46,700	3.5%	11.2%	-6.12	-13.87	(\$332.3)	(\$694.4)
82	2006	Highway 5: McLure Ferry - Russel St	Install centerline and shoulder rumble strips, pavement marking	\$41,200	-54.7%	-73.2%	26.82	60.83	\$1,063.9	\$2,464.9
83	2006	Highway 97: Marguerite Ferry - French	Install centerline and shoulder rumble strips, pavement marking	\$51,700	-13.2%	-11.9%	3.86	8.75	\$147.8	\$400.7
84	2006	Highway 2: Near Pouce Coupe	Various Improvements (see CH2MHill Report - Dated Feb 2005)	\$25,000	101.8%	-69.4%	1.69	3.83	\$17.2	\$70.7
85	2006	Highway 1: Malahat Hwy	Install barrier, Improve signing, delineation, pavement marking	\$98,300	-18.0%	-34.7%	9.90	22.44	\$874.5	\$2,107.8
86	2006	Highway 5: Coquahalla Hwy	Improve delineation	\$16,200	13.0%	62.0%	-54.47	-123.53	(\$898.7)	(\$2,017.5)
87	2006	Highway 1: Young Rd to Prest Rd	Installation of Cable Barrier	\$56,000	52.8%	14.9%	-1.36	-3.09	(\$132.2)	(\$228.9)
88	2006	Highway 97C: Coquahalla Connector	Installation of shoulder rumble strips	\$75,000	-63.3%	-76.0%	35.78	81.14	\$2,608.4	\$6,010.4
89	2006	Highway 97C: Coquahalla Connector	Installation of shoulder rumble strips	\$75,000	-54.5%	-67.8%	33.90	76.88	\$2,467.5	\$5,690.9
90	2006	Highway 16: Prince Rupert to Terrace	Installation of Centerline Ruble Strips and pavement markings	\$18,400	186.5%	14.9%	-23.51	-53.30	(\$450.9)	(\$999.2)
91	2006	Highway 16: Terrace - Kitwanga	Installation of Centerline Ruble Strips and pavement markings	\$40,000	-15.1%	-59.7%	10.60	24.04	\$384.0	\$921.6
92	2006	Highway 16: Hazelton - Houston	Installation of Centerline Ruble Strips and pavement markings	\$54,600	14.8%	69.0%	-30.34	-68.81	(\$1,711.2)	(\$3,811.4)

ID	Year	Location Description	Improvement Description	ICBC Investment	% Change in Collisions <sup>1</sup>		Benefit - Cost (B/C) Ratio		Net Present Value (NPV) (\$1,000s)	
					PDO	SEVERE	2 Year	5 year	2 Year	5 year
93	2006	Highway 16: Houston to Burns Lake	Installation of Centerline Ruble Strips and pavement markings	\$16,600	-34.1%	-19.0%	43.20	97.98	\$700.6	\$1,609.8
94	2006	Highway 1: Kicking Horse Canyon	Phase 1 - 5 mile (Yoho) Bridge Replacement and 4-Laning	\$47,800	-5.0%	-71.2%	2.57	5.83	\$75.1	\$230.8
95	2006	Highway 3: 6th to Victoria	Highway Realignment and Widening	\$75,800	8.3%	1.6%	-0.20	-0.45	(\$90.9)	(\$110.0)
96	2006	Highway 5: Agate Bay Rd	Improve intersection with poor sight distance, add left turn slot and improve alignment	\$23,700	-35.9%	-40.2%	3.08	6.98	\$49.2	\$141.7
97	2006	Highway 99: Horseshoe Bay	4-lanes with continuous median barrier. Straightening, widening and improved sightlines	\$98,200	12.0%	15.8%	-1.16	-2.64	(\$212.6)	(\$357.6)
98	2006	Highway 99: Lions Bay	Improved 2 lanes and passing opportunities with 3 and 4 lanes. 4 lane sections with median barriers	\$92,000	-21.8%	-61.7%	4.12	9.35	\$287.5	\$768.6
99	2006	Highway 99: Black Tusk	Improved 2 lanes and passing opportunities with 3 and 4 lanes. 4 lane sections with median barriers	\$60,100	3.6%	-9.3%	4.51	10.22	\$210.8	\$554.2
100	2006	Highway 99: Britania Beach	Improved 3 lane section, passing opportunities, wider shoulders, SRS, CRS, HRP, rock fall catchments	\$58,200	-52.1%	54.9%	-2.03	-4.61	(\$176.5)	(\$326.5)
101	2006	Highway 15: Truck Crossing	Extension of FAST Lane at Pacific Border Crossing to Improve Traffic Flow and Reduce Conflicts	\$36,400	-100.0%	-100.0%	4.50	10.21	\$127.5	\$335.3
102	2006	Highway 1: 30th St NE to Hwy 97B	Four-laning and Highway 97B Intersection Improvements	\$26,200	-72.7%	73.0%	-1.28	-2.91	(\$59.9)	(\$102.5)
<b>TOTAL:</b>				<b>\$2,935,550</b>	<b>-16.6</b>	<b>-19.5</b>	<b>5.7</b>	<b>13.0</b>	<b>\$13,867.3</b>	<b>\$35,169.7</b>

1) A negative value indicates a reduction in collisions.

**APPENDIX C:**

**IMPROVING LOCATION SPECIFIC PREDICTION:  
THE EMPIRICAL BAYES REFINEMENT**

### Appendix C: Empirical Bayes Refinement

There are two clues to the safety of a location: its traffic and road characteristics, and its historical collision data (Hauer, 1992; Brüde and Larsson, 1988). The Empirical Bayes (EB) approach makes use of both of these clues. The EB approach is used to refine the estimate of the expected number of collisions at a location obtained from a prediction model, by combining it with the observed number of collisions at the location to yield a more accurate, location-specific safety estimate. The details concerning prediction models are provided in APPENDIX D.

This location-specific estimate is designated as the “EB safety estimate”, representing the best estimate of the safety of a location. The EB safety estimate for any location can be calculated by using the following equation (Hauer, 1992):

$$EB_{\text{safety estimate}} = \alpha \times E(\Lambda) + (1 - \alpha) \times \text{count} \quad (\text{C.1})$$

Where:  $\alpha = \frac{1}{1 + \frac{\text{Var}(E(\Lambda))}{E(\Lambda)}}$  (C.2)

count = Observed number of collisions;

$E(\Lambda)$  = Predicted collisions, estimated by the prediction model;

$\text{Var}(E(\Lambda))$  = Variance of the GLIM estimate.

Since  $\text{Var}(E(\Lambda)) = \frac{E(\Lambda)^2}{\kappa}$ , equation (C.1) is rearranged to yield equation (C.3) as follows:

$$EB_{\text{safety estimate}} = \left( \frac{E(\Lambda)}{\kappa + E(\Lambda)} \right) \times (\kappa + \text{count}) \quad (\text{C.3})$$

The variance of the EB estimate can be calculated using equation (C.4) as follows:

$$\text{Var}(EB_{\text{safety estimate}}) = \left( \frac{E(\Lambda)}{\kappa + E(\Lambda)} \right)^2 \times (\kappa + \text{count}) \quad (\text{C.4})$$

**APPENDIX D**

**COLLISION PREDICTION MODELS**

## **Appendix D: Collision Prediction Models**

### **D.1 Background**

Historically, two statistical modeling methods have been used to develop collision (CLAIM<sup>1</sup>) prediction models (CPMs): conventional linear regression and generalized linear regression. Recently however, generalized linear regression modeling (GLIM) has been used almost exclusively for the development of collision prediction models.

Several researchers (e.g. Jovanis and Chang 1986, Hauer et al. 1988, Miaou and Lum 1993) have demonstrated the inappropriateness of conventional linear regression for modeling discrete, non-negative, and rare events such as traffic collisions. These researchers demonstrated that the standard conditions under which conventional linear regression is appropriate (Normal model errors, constant error variance, and the existence of a linear relationship between the response variable and explanatory variable) and cannot be assumed to exist when modeling the occurrence of traffic collisions.

Currently, most safety researchers adopt a non-linear model form and a Poisson or negative binomial error structure in the development of collision prediction models. GLIM statistical software packages are used for the development of these models since they can be used for modeling data that follow a wide range of probability distributions that belong to the exponential family such as the Normal, Poisson, binomial, negative binomial, gamma, and many others. These computer packages also allow the flexibility of using several non-linear model forms that can be converted into linear forms through the use of several built-in link functions.

The road safety engineering literature contains significant information associated with collision prediction models, developed by Poisson or negative binomial regression. Furthermore, predictive models exist for various types of road facilities in urban and rural settings. However, it is emphasized that care must be exercised before applying collision prediction models developed in other jurisdictions and under differing conditions without ensuring the model is valid for local conditions.

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<sup>1</sup> It is assumed that the theoretical background and the methodology for collision prediction models are equally applicable to claims (see de Leur and Sayed, 2001)

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## D.2 The Generalized Linear Regression Modeling Approach

The GLIM approach used in this study is based on the work of Hauer et al. (1988) and Kulmala (1995). Let  $Y$  be a random variable that describes the number of collisions at a given location during a specific time period, and  $y$  be the observation of this variable during a period of time. The meaning of  $Y$ , denoted by  $\Lambda$ , is itself a random variable. Then for  $\Lambda = \lambda$ ,  $Y$  is Poisson distributed with parameter  $\lambda$  as shown in equation (D.1):

$$P(Y = y | \Lambda = \lambda) = \frac{\lambda^y e^{-\lambda}}{y!}; E(Y | \Lambda = \lambda) = \lambda; \text{Var}(Y | \Lambda = \lambda) = \lambda \quad (\text{D.1})$$

Since each location has its own regional characteristics with a unique mean collision frequency  $\Lambda$ , Hauer et al. (1988) have shown that for an imaginary group of locations with similar characteristics,  $\Lambda$  follows a gamma distribution with parameters  $\kappa$  and  $\kappa/\mu$ , where  $\kappa$  is the shape parameter of the distribution, denoted in equation (D.2):

$$f_{\Lambda}(\lambda) = \frac{(\kappa/\mu)^{\kappa} \lambda^{\kappa-1} e^{-(\kappa/\mu)\lambda}}{\Gamma(\kappa)} \quad (\text{D.2})$$

With a mean and variance given by equation (D.3) as follows:

$$E(\Lambda) = \mu; \text{Var}(\Lambda) = \frac{\mu^2}{\kappa} \quad (\text{D.3})$$

Hauer et al. (1988) have also shown that the point probability function of  $Y$  is given by the negative binomial distribution with an expected value and variance shown in equation (D.4):

$$E(Y) = \mu; \text{Var}(Y) = \mu + \frac{\mu^2}{\kappa} \quad (\text{D.4})$$

As shown in equation (B.4), the variance of the observed number of collisions is generally larger than its expected value. The only exception is when  $\kappa \rightarrow \infty$ , in which case the distribution of  $\Lambda$  is concentrated at a point and the negative binomial distribution becomes identical to the Poisson distribution.

### D.3 Model Structure

For Intersections, the model structure most commonly used relates collisions to the product of traffic flows entering the intersection. This type of models has been shown to be more suitable to represent the relationships between collisions and traffic flows at intersections (Hauer et al., 1988). In this model structure, collision frequency is a function of the product of traffic flows raised to a specific power (usually less than one). The model form is shown below in equation (D.5):

$$E(\Lambda) = \alpha_0 V_1^{\alpha_1} V_2^{\alpha_2} \quad (D.5)$$

Where:  $E(\Lambda)$  = Expected collision frequency,  
 $V_1$  = Major road traffic volume (AADT),  
 $V_2$  = Minor road traffic volume (AADT),  
 $\alpha_0, \alpha_1, \alpha_2$  = Model parameters.

There are many other variables that can affect collision occurrence such as the road geometric features. Kulmala (1995) proposed to model these additional variables along with traffic flows as shown in equation (D.6) as follows:

$$E(\Lambda) = \alpha_0 \times V_1^{\alpha_1} \times V_2^{\alpha_2} \times e^{\sum b_j x_j} \quad (D.6)$$

Where:  $x_j$  = Any additional variable and  $b_j$  is a model parameter.

For road sections, the model structure commonly used is shown in equation (D.7):

$$E(\Lambda) = \alpha_0 \times L^{\alpha_1} \times V^{\alpha_2} \times e^{\sum_{j=1}^m b_j x_j} \quad (D.7)$$

Where:  $E(\Lambda)$  = Predicted collision frequency,  
 $L$  = Segment length,  
 $V$  = Segment traffic volume (AADT),  
 $x_j$  = Any of variable additional to  $L$  and  $V$ , and,  
 $\alpha_0, \alpha_1, \alpha_2, b_j$  = Model parameters.

#### D.4 Model Development

The estimation of model parameters is carried out using the GLIM approach implemented by the GLIM 4 statistical software package (Numerical Algorithms Group, 1994). As described earlier, the GLIM approach to modeling traffic collision occurrence assumes an error structure that is Poisson or negative binomial. The decision on whether to use a Poisson or negative binomial error structure is based on the following methodology.

First, the model parameters are estimated based on a Poisson error structure. Then, the dispersion parameter ( $\sigma_d$ ) is calculated using equation (D.8) as follows:

$$\sigma_d = \frac{\text{Pearson}\chi^2}{n-p} \quad (\text{D.8})$$

Where:  $n$  = The number of observations,  
 $p$  = The number of model parameters, and  
 $\text{Pearson}\chi^2$  = As defined below.

$$\text{Pearson}\chi^2 = \sum_{i=1}^n \frac{[y_i - E(\Lambda_i)]^2}{\text{Var}(y_i)} \quad (\text{D.9})$$

Where:  $y_i$  = The observed number of collisions on segment  $i$ ,  
 $E(\Lambda_i)$  = The predicted number of collisions for segment  $i$  as obtained from the collision prediction model, and  
 $\text{Var}(y_i)$  = the variance of the observed number of collisions.

The dispersion parameter,  $\sigma_d$ , is noted by McCullagh and Nelder (1989) to be a useful statistic for assessing the amount of variation in the observed data. If  $\sigma_d$  turns out to be greater than 1.0, then the data have greater dispersion than is explained by the Poisson distribution, and a negative binomial regression model is fitted to the data.

## D.5 Model Goodness of Fit

Two statistical measures are used in this study to assess the goodness of fit of the developed GLIM models. The two statistical measures are those cited by McCullagh and Nelder (1989) for assessing a model's fit and includes, 1) the Pearson  $\chi^2$  statistic, defined previously in equation (D.9), and 2) the scaled deviance.

The scaled deviance is the likelihood ratio test statistic measuring twice the difference between the log likelihood's of the studied model and the full or saturated model. The full model has as many parameters as there are observations so that the model fits the data perfectly. Therefore, for the full model that possesses the maximum log likelihood that is achievable under the given data, provides a baseline for assessing the goodness of fit of an intermediate model with  $p$  parameters.

McCullagh and Nelder (1989) show that if the error structure is Poisson distributed, then the scaled deviance is determined using equation (D.10) as follows:

$$SD = 2 \sum_{i=1}^n y_i \ln \left( \frac{y_i}{E(\Lambda_i)} \right) \quad (D.10)$$

Alternatively, if the error structure follows the negative binomial distribution, the scaled deviance is given by equation (D.11) as follows:

$$SD = 2 \sum_{i=1}^n \left[ y_i \ln \left( \frac{y_i}{E(\Lambda_i)} \right) - (y_i + \kappa) \ln \left( \frac{y_i + \kappa}{E(\Lambda_i) + \kappa} \right) \right] \quad (D.11)$$

Both the scaled deviance and the Pearson  $\chi^2$  have  $\chi^2$  distributions for normal theory linear models. However, both are asymptotically  $\chi^2$  distributed with  $n-p$  degrees of freedom for other distributions of the exponential family.

The statistical significance of the model variables can be assessed using the t-ratio test. The t-ratio is the ratio between the estimated GLIM parameter coefficient and its standard error. For a significant variable at the 95% level of confidence, the t-ratio should be greater than 1.96.

**Table D5.1: Goodness of Fit Measures for CPMs**

Reference Group	Severity	Model Number	T-Statistic		SD ( $<\chi^2$ test)	Pearson $\chi^2$ ( $<\chi^2$ test)	No. Outliers Removed
			Parameter	t-ratio			
Greater Vancouver Region	PDO	A1	$a_0$	7.2683	55.198 (61.656)	54.201 (61.656)	2
			$a_1$	5.6491			
			$a_2$	13.1460			
		A2	$a_0$	6.5818	50.400 (60.481)	43.435 (60.481)	3
			$a_1$	5.3580			
			$a_2$	11.2328			
	A3	$a_0$	9.3780	46.838 (55.758)	41.378 (55.758)	7	
		$a_1$	7.8201				
		$a_2$	15.0460				
	A4	$a_0$	11.6967	245.739 (264.224)	220.416 (264.224)	5	
		$a_1$	7.7335				
		$a_2$	14.9597				
A5	$a_0$	12.4999	244.064 (264.224)	226.078 (264.224)	5		
	$a_1$	8.6745					
	$a_2$	15.3420					
A6	$a_0$	13.2132	243.667 (263.147)	216.358 (263.147)	6		
	$a_1$	9.7717					
	$a_2$	14.8162					
Severe	B1	$a_0$	5.5904	56.045 (64.001)	48.129 (64.001)	0	
		$a_1$	4.7030				
		$a_2$	8.2560				
	B2	$a_0$	4.5064	60.768 (64.001)	45.731 (64.001)	0	
		$a_1$	3.7627				
		$a_2$	6.9646				
B3	$a_0$	4.2229	61.767 (64.001)	41.607 (64.001)	0		
	$a_1$	3.5807					
	$a_2$	6.3495					
B4	$a_0$	12.3945	246.761 (263.147)	210.300 (263.147)	6		
	$a_1$	9.4207					
	$a_2$	12.5000					
B5	$a_0$	10.1904	252.174 (267.455)	271.185 (267.455)	2		
	$a_1$	7.5586					
	$a_2$	11.7313					
B6	$a_0$	10.6675	250.805 (267.455)	266.047 (267.455)	2		
	$a_1$	8.3555					
	$a_2$	11.1664					

**Table D5.2 and D5.3: Goodness of Fit Measures for CPMs**

Reference Group	Severity	Model Number	T-Statistic		SD ( $<\chi^2$ test)	Pearson $\chi^2$ ( $<\chi^2$ test)	No. Outliers Removed
			Parameter	t-ratio			
North Central Region	PDO	A7	$a_0$	8.6472	109.152 (123.225)	98.692 (123.225)	2
			$a_1$	6.2560			
			$a_2$	7.7756			
		A8	$a_0$	9.6639	105.197 (123.225)	99.425 (123.225)	2
			$a_1$	7.2894			
			$a_2$	8.0614			
	A9	$a_0$	9.7870	105.997 (123.225)	98.127 (123.225)	2	
		$a_1$	7.0941				
		$a_2$	8.6794				
	Severe	B7	$a_0$	10.6144	106.377 (124.342)	105.811 (124.342)	1
			$a_1$	8.3665			
			$a_2$	7.3377			
B8		$a_0$	11.0195	104.633 (123.225)	101.748 (123.225)	2	
		$a_1$	8.4407				
		$a_2$	8.0316				
B9	$a_0$	11.6041	101.710 (120.990)	95.518 (120.990)	4		
	$a_1$	9.0576					
	$a_2$	8.5434					

Reference Group	Severity	Model Number	T-Statistic		SD ( $<\chi^2$ test)	Pearson $\chi^2$ ( $<\chi^2$ test)	No. Outliers Removed
			Parameter	t-ratio			
Fraser Valley Region	PDO	A10	$a_0$	9.3979	85.312 (103.010)	73.274 (103.010)	1
			$a_1$	5.0792			
			$a_2$	10.1814			
		A11	$a_0$	10.2759	84.831 (104.139)	82.768 (104.139)	0
			$a_1$	6.1297			
			$a_2$	10.7369			
	A12	$a_0$	12.7906	81.291 (101.879)	83.309 (101.879)	2	
		$a_1$	7.9798				
		$a_2$	12.8798				
	Severe	B10	$a_0$	8.3207	86.249 (103.010)	75.627 (103.010)	1
			$a_1$	5.4577			
			$a_2$	7.7072			
B11		$a_0$	7.9860	83.845 (101.879)	77.041 (101.879)	2	
		$a_1$	4.9288				
		$a_2$	8.5760				
B12	$a_0$	10.0272	85.750 (104.139)	85.750 (104.139)	0		
	$a_1$	6.9194					
	$a_2$	9.3400					

**Table D5.4: Goodness of Fit Measures for CPMs**

Reference Group	Severity	Model Number	T-Statistic		SD ( $<\chi^2$ test)	Pearson $\chi^2$ ( $<\chi^2$ test)	No. Outliers Removed
			Parameter	t-ratio			
Rural Highway Segments	PDO	A13	a <sub>0</sub>	11.7182	370.113 (364.847)	312.936 (364.847)	9
			a <sub>1</sub>	14.6566			
			a <sub>2</sub>	20.5140			
		A14	a <sub>0</sub>	10.8401	376.386 (370.171)	304.625 (370.171)	5
			a <sub>1</sub>	13.8390			
			a <sub>2</sub>	19.4702			
	A15	a <sub>0</sub>	11.8955	374.098 (361.652)	283.908 (361.652)	13	
		a <sub>1</sub>	14.7489				
		a <sub>2</sub>	19.8709				
	A16	a <sub>0</sub>	1.6721	159.474 (164.216)	123.262 (164.216)	1	
		a <sub>1</sub>	3.7715				
		a <sub>2</sub>	13.1937				
	A17	a <sub>0</sub>	4.7819	141.628 (157.610)	130.561 (157.610)	7	
		a <sub>1</sub>	7.5080				
		a <sub>2</sub>	18.3079				
	A18	a <sub>0</sub>	6.7410	145.785 (163.116)	143.109 (163.116)	4	
		a <sub>1</sub>	10.2168				
		a <sub>2</sub>	19.6629				
Severe	B13	a <sub>0</sub>	14.9524	368.944 (368.042)	338.607 (368.042)	6	
		a <sub>1</sub>	18.1291				
		a <sub>2</sub>	22.9976				
	B14	a <sub>0</sub>	13.4013	369.132 (370.171)	323.565 (370.171)	5	
		a <sub>1</sub>	16.1494				
		a <sub>2</sub>	21.4715				
B15	a <sub>0</sub>	13.7533	383.639 (369.106)	321.057 (369.106)	6		
	a <sub>1</sub>	15.9612					
	a <sub>2</sub>	21.7444					
B16	a <sub>0</sub>	2.0797	161.003 (163.116)	113.196 (163.116)	2		
	a <sub>1</sub>	3.3147					
	a <sub>2</sub>	13.5136					
B17	a <sub>0</sub>	4.6512	141.925 (159.814)	135.982 (159.814)	5		
	a <sub>1</sub>	6.3526					
	a <sub>2</sub>	18.4094					
B18	a <sub>0</sub>	6.6249	148.478 (163.116)	148.907 (163.116)	4		
	a <sub>1</sub>	8.7101					
	a <sub>2</sub>	18.3495					

**APPENDIX E**

**AVERAGE COLLISION COST VALUES**

## **Appendix E: Average Collision Cost Values**

Two sources of collision data were used for this evaluation of ICBC's Road Improvement Program, including:

- 1) Claims-based incident data, which was obtained from the Business Intelligence Unit (BIU) at ICBC; and,
- 2) Police-reported incident data, which was obtained from the Highway Accident System (HAS) at the Ministry of Transportation (MOT).

Claim-based incident records are very useful for the examination of urban intersections when the location of an incident can be accurately located. The claim-based incident records can also be very useful for urban roadways that have many location identifiers, such as street addresses, that can be used by a reporting claimant to identify the exact location of a collision. However, for rural highways, the claim-based incident data is not very useful due to the inability of a claimant to identify the precise location of an incident on a section of highway that has very few location references.

For example, if an incident occurs on the Trans Canada Highway (Highway 1) between the communities of Hope and Chilliwack, the claimant reporting the incident to ICBC will have difficulty in identifying the precise location. The claimant might state that the incident occurred about 10 kilometers west of Hope, but this level of precision for the location is not adequate for the engineering analysis that is completed as part of the Road Improvement Program. Due to this problem, the claims-based incident data is not used for the analysis of road improvement projects on provincial highways.

Since the Ministry of Transportation is a significant and effective partner to the Road Improvement Program, it is necessary to use an alternate collision data source for the requisite analysis. The Ministry's Highway Accident System (HAS) is used, since it uses a system known as the Landmark Kilometer Inventory system (LKI) that the police use to identify the location of an incident. The LKI system can accurately locate the location of a collision to a level of precision of 100 meters. Furthermore, since the collisions are police-reported, there are many details concerning the incidents, such as causal factors and roadway design / operational details that are helpful in engineering analysis. Also, it is suggested that the potential for bias and/or errors in the reporting process is less for a police official (HAS data) as compared to a self-reported incident (claims data).

Since there is a difference in the two collision data processes, there is also a difference in the amount of data. The claims-based incident data is significantly more than the police reported data, which is true for all locations, not just provincial highways. This is due to the fact that someone involved in an incident will very likely go to ICBC to report the incident and then have his or her vehicle repaired. In contrast, the police cannot attend every collision due to resource limitations and the logistical difficulties associated with 100% attendance. Because of the differences in the data sets, it is necessary to reflect this difference in the average collision cost.

To determine the differences between the two collision data sets and to calculate the average collision cost, the data was obtained from the BIU and from HAS for incidents that occur on “highways”. The data is shown below in Tables E.1 for severe incidents (Fatal + Injury) and in Table E.2 for PDO incidents.

The collision data is provided for the years 2004 through to 2006, which match the years used in the evaluation. The frequency of claims-based data for each severity level is compared to the frequency of HAS data and a ratio is calculated for each year and then averaged over the time period. For severe incidents, this ratio is 1.878 and for PDO incidents, the ratio is 3.961. Then, using the average claim-based incident costs, which are \$31,385 for severe incidents and \$2,708 for PDO incidents, an average HAS-based incident cost can be calculated.

**Table E.1: Claims-Based Collision Data versus HAS Collision Data:  
SEVERE INCIDENTS**

Year	Ratio Claim/HAS	Average Severe Claim Cost	Average Severe HAS Cost
2004	1.83	30,553	\$55,912
2005	1.77	31,934	\$56,523
2006	1.79	31,669	\$56,688
			\$56,374

**Table E.2: Claims-Based Collision Data versus HAS Collision Data:  
PDO INCIDENTS**

Year	Ratio Claim/HAS	Average PDO Claim Cost	Average PDO HAS Cost
2004	3.85	2,614	\$10,064
2005	3.69	2,710	\$9,999
2006	3.88	2,800	\$10,864
			\$10,309

Thus, using the analysis presented above, the average collision cost values for the two different collision data sources that were used in this evaluation are presented below in Table E.3.

**Table E.3: Average Collision Cost per Incident**

Collision Data Source	Property Damage Only Incidents	Severe (Fatal + Injury) Incidents
Urban Sites (Claim-based collision data)	\$2,708	\$31,385
Rural Sites (Police reported collision data)	\$10,309	\$56,374

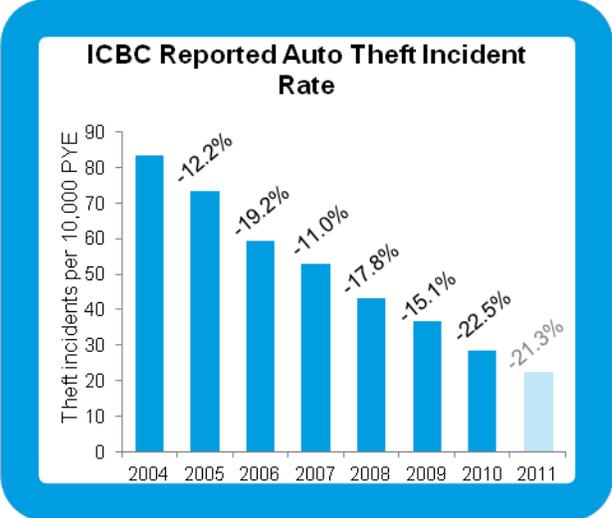
**2012.1 RR BCUC.116.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
 Exhibit B-1-1, Appendix 10 B, p. 34  
 Auto Crime**

**ICBC on p. 34 presents a chart that includes “ICBC Reported Auto Theft Incident Rate” with data as of December 31, 2010. Please update the chart on auto theft with the most recent data available.**

**Response:**

The updated chart for ICBC Reported Auto Theft Incident Rate appears below. Please note that the 2011 rates are not yet settled.

Source: ICBC Data as of December 31, 2011.



**2012.1 RR BCUC.117.1 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B, p. 40  
Road Safety Department Expenses**

**ICBC on p. 40 of the 2011 road safety business plan provides information on 2010-2011 Road Safety department expenses, including 2010 Actual and 2011 Plan expenses.**

**Please update the table of road safety departmental expenses to include 2009 and 2011 actuals, and 2012 Plan.**

**Response:**

**INVESTMENT SUMMARY**

**Road Safety Department Expenses (\$ 000's)**

		2009 Actual	2010 Actual	2011 Actual	2012 Plan
<b>Drivers</b>					
Impaired Driving	Impaired Driving Awareness Campaign	\$841	\$681	\$449	\$978
	Community Partnerships / Designated Driver	\$72	\$210	\$712	\$414
	<b>Subtotal Impaired Driving</b>	<b>\$913</b>	<b>\$891</b>	<b>\$1,161</b>	<b>\$1,392</b>
Speeding	Speed Awareness Campaign	\$950	\$622	\$849	\$650
	Roadside Speed Readerboards	\$177	\$148	\$162	\$177
	Youth Outreach	\$235	\$275	\$257	\$340
	Research	\$22	\$0	\$0	\$0
	<b>Subtotal Speeding</b>	<b>\$1,384</b>	<b>\$1,045</b>	<b>\$1,268</b>	<b>\$1,167</b>
Intersection Safety	Intersection Awareness Campaign	\$554	\$475	\$699	\$710
	Driver Distractions Awareness Campaign	\$0	\$2,129	\$612	\$515
Driver Distractions Occupant Restraints	Child Passenger Safety	\$188	\$254	\$158	\$174
	<b>SUBTOTAL DRIVERS</b>	<b>\$3,039</b>	<b>\$4,794</b>	<b>\$3,898</b>	<b>\$3,958</b>
<b>Roads</b>					
	Engineering retrofits	\$8,645	\$8,952	\$8,337	\$7,900
	<b>SUBTOTAL ROADS</b>	<b>\$8,645</b>	<b>\$8,952</b>	<b>\$8,337</b>	<b>\$7,900</b>
<b>Vehicles</b>					
Safer Vehicles Commercial	Safer Vehicles	\$14	\$50	\$240	\$280
Vehicle Safety	Commercial Vehicles	\$14	\$0	\$0	\$200

Auto Crime	Auto Crime Awareness Campaigns	\$162	\$181	\$135	\$95	
	High Risk Vehicle Immobilization	\$136	\$199	\$20	\$0	
	High Risk Auto Crime Partnerships	\$319	\$277	\$206	\$180	
	<b>Subtotal Auto Crime</b>	<b>\$617</b>	<b>\$657</b>	<b>\$361</b>	<b>\$275</b>	
	<b>SUBTOTAL VEHICLES</b>	<b>\$645</b>	<b>\$707</b>	<b>\$601</b>	<b>\$755</b>	
		<b>\$12,32</b>	<b>\$14,45</b>	<b>\$12,83</b>	<b>\$12,61</b>	
	<b>Subtotal Programs</b>	<b>9</b>	<b>3</b>	<b>6</b>	<b>3</b>	
		\$24,46	\$25,61	\$25,07	\$23,93	
	MOU	Enhanced Enforcement	4	5	3	3
		Research & Measurement Direct Expenses	\$144	\$196	\$122	\$308
<b>TOTAL DIRECT EXPENSES</b>		<b>7</b>	<b>4</b>	<b>1</b>	<b>4</b>	
Compensation		\$4,224	\$4,265	\$4,246	\$4,385	
General Expenses		\$1,419	\$1,227	\$1,305	\$1,407	
Compensation Traffic Camera Unit		\$0	\$0	\$0	\$291*	
General Expenses Traffic Camera Unit		\$0	\$0	\$0	\$4,634*	
<b>TOTAL ROAD SAFETY EXPENSES</b>		<b>\$42,580</b>	<b>\$45,756</b>	<b>\$43,582</b>	<b>\$47,571</b>	
Total Road Safety FTEs		42.7	43.9	42.8	50.6	

\* The 2012 plan for the Road Safety Department includes Traffic Camera Unit administration (previously in the Driver Licensing division.)

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**2012.1 RR BCUC.117.2 Reference: 2011 ROAD SAFETY BUSINESS PLAN  
Exhibit B-1-1, Appendix 10 B, p. 40  
Road Safety Department Expenses**

**ICBC on p. 40 of the 2011 road safety business plan provides information on 2010-2011 Road Safety department expenses, including 2010 Actual and 2011 Plan expenses.**

**Please explain why the compensation and general expenses have increased while the overall program expenditures are declining.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.117.1 for a summary of Road Safety departmental expenses for 2009 to 2011, and 2012 plan.

With the additional information now available, it can be seen that compensation expenses have actually remained fairly stable between 2009 and 2011, with a slight decrease in 2011 due to temporary vacancies and leaves. General expenses have also remained fairly stable over this period, with a slight increase in 2011, mainly due to corporate allocated expenses and building occupancy costs.

Direct expenses on Drivers, Roads, and Vehicles programs have also remained fairly stable over the period. In 2010, Driver program expenditures increased due to an investment to support the new distracted driving legislation (\$2.1 million). Outside of this investment, Drivers, Roads, and Vehicles program expenditures have increased only slightly from 2009 to 2011.

In 2012, the total Road Safety investment increased, mainly due to the Traffic Camera Administration Unit, which previously reported under the Driver Licensing Division, moving to the Road Safety Department.

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**2012.1 RR BCUC.118.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Appendix 10 D  
Rationale for Integrated, Multi-Component Road Safety Programs**

**118.1 On p. 3 of Appendix 10 D, ICBC states that the purpose of the review dated May 1, 2005 titled “Rationale for Integrated, Multi-Component Road Safety Programs” (2005 Review) was to address several key questions concerning the effectiveness of educational programs and in particular, media advertising for road safety. Please state the most recent ICBC definition of “Multi-Component Road Safety Programs”, if available.**

**118.1.1 Please provide a list of Multi-Component Road Safety Programs that applies to ICBC in the last five years.**

**118.1.2 Please demonstrate how each program fits ICBC’s definition of the Multi-Component Road Safety Program. If an ICBC definition is not available, please discuss in terms of scope.**

**Response:**

“Multi-component” programs use multiple strategies to address a road safety issue. As accepted by the Commission in the July 2006 Decision, ICBC defines road safety “strategy” as follows:

A high level approach to addressing a road safety issue (e.g., research, enforcement, road engineering, public awareness, education, regulation).

For example, a combination of education and enforcement strategies may be used to address a particular road safety issue, such as speeding. As referenced in the Appendix 10 D of the Application, combining multiple strategies has been shown to be more effective in changing driver behaviour than using a single strategy. ICBC follows this best practice for all its Driver programs.

The following table provides a list of ICBC’s Driver Road Safety programs in place from 2008 to 2012, all of which use multiple strategies to address the particular road safety issue.

<b>Multi-Component Road Safety Programs</b>	<b>Strategies Used</b>	<b>Tactics</b>
Impaired driving	Enforcement Education  Research	Enhanced enforcement Awareness campaigns Operation Red Nose Get Home Safe Community Outreach 2010 Roadside Survey of Nighttime Drivers
Speeding	Enforcement  Education	Enhanced enforcement Speed Watch (includes both education and enforcement) Fixed Speed Readerboards Awareness campaign Road Safety speakers Your Ad Here 180 Short Film Contest Trade Off
Intersection safety	Enforcement  Education	Enhanced enforcement Intersection Safety Cameras Awareness campaign
Occupant restraints	Enforcement Education	Enhanced enforcement Curriculum Education (K-10) Child Passenger Safety education
Driver distractions	Enforcement Education	Enhanced enforcement Awareness campaign

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**2012.1 RR BCUC.118.2 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Appendix 10 D  
Rationale for Integrated, Multi-Component Road Safety Programs**

**On p. 6 of the 2005 Review notes reviews of road safety programs reveal that the most common tactics employed around the world are education, enforcement, and engineering.**

**On p. 10-5 of Chapter 10, ICBC states that as part of the Road Safety Strategic Review process, ICBC shifted away from an approach that focused on solutions by classifying programs as engineering, enforcement, or education (the “3E” model) to an approach which focuses on the major causes of crashes: Drivers, Roads, and Vehicles (Safe Systems approach).**

**Please explain if the 2005 Review that refers to the “3E” model is still useful to consider ICBC’s current “Safe Systems approach”.**

**Response:**

ICBC’s Road Safety strategic framework follows international best practices for identifying the key risks on the road as well as implementing integrated solutions to address those risks.

The Safe Systems approach is used to identify and prioritize the major causes of crashes, taking into account the entire driving environment (i.e., driver behaviour, road engineering, and vehicle safety). The 3E model identifies solutions or strategies for addressing road safety issues (i.e., engineering, enforcement, and education). ICBC follows best practices by using multiple strategies to address a particular issue. Please see the response to information request 2012.1 RR BCUC.118.1 (specifically, 2012.1 RR BCUC.118.1.1).

The Safe Systems approach, complemented by the 3E model, ensures that ICBC is focused on the right programs and strategies to address the key risks on the road.

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**2012.1 RR BCUC.118.2.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Appendix 10 D  
Rationale for Integrated, Multi-Component Road Safety Programs**

**Is the 2005 Review the most recent review of research documents related to awareness campaigns? If applicable, please provide the most recent studies.**

**Response:**

Yes, the 2005 Review as filed in Appendix 10 D: Rationale for Integrated Multi-Component Road Safety Programs is the most recent compilation of research related to the rationale for integrated, multi-component Road Safety programs.

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**2012.1 RR BCUC.118.3 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Appendix 10 D  
Rationale for Integrated, Multi-Component Road Safety Programs**

**118.3 On page 4, the 2005 Review notes available data indicate benefit/cost ratios ranging between 7:1 and 19:1 for multi-component programs. Does ICBC conduct similar cost-benefit analyses?**

**118.3.1 If so, please provide a brief summary of campaign evaluations that contain cost-benefit information and the accompanying evaluation methodology/calculations.**

**118.3.2 If not, would ICBC consider it to be useful to conduct similar cost-benefit analyses? What are the resources needed?**

**Response:**

ICBC conducts cost-benefit analyses for programs where adequate cost data exist, benefits can be measured and attributed to specific investments, confounding impacts can be controlled, and baseline measures can be established. For example:

- In December 2009, an independent evaluation of ICBC-funded road improvements during the years 2004-2006 found that, measured over a 2-year period after a project's completion, ICBC saves \$5.6 in claims costs for every dollar invested. Please see the response to information request 2012.1 RR BCUC.115.1, Attachment A – 2009 Program Evaluation Report Road Improvement Program.
- The most recent research conducted by ICBC concluded that intersection safety cameras showed a 5% reduction in total crashes at ISC sites and a similar decrease in crashes resulting in injuries and fatalities. Please see the response to information request 2012.1 RR IBC.33.1, Attachment A for the Intersection Safety Cameras 2008 Update.

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While it would be useful to determine the cost benefits of all ICBC's Road Safety programs, it is not always possible to do so for education and awareness programs. The effectiveness of virtually all educational programs aimed at changing unsafe habits is inherently difficult to demonstrate, particularly as it applies to short-term, direct cause-and-effect relationships. As referenced on page 4 of Appendix 10 D of the Application,

... only about 6% of campaign evaluations [reviewed] contain some cost-benefit information ... very few reliable cost-benefit analyses associated with a specific program exist, ... [and] there is a dearth of controlled evaluation studies on the impact of advertising.

The measurement of success for education and awareness programs usually cannot be accomplished through the methods that ICBC uses to evaluate engineering initiatives. Because of this, and because there is a need to ensure that program resources are optimally allocated, ICBC does not conduct cost-benefit analyses for education and awareness campaigns.

ICBC uses intermediate indicators (such as advertising recall, changes in driver attitudes and self-reported behaviour, and level of program/activity participation) to gauge program impact/effectiveness. Such indicators can be used to infer at least some qualitative value for money spent on education programs since they have been associated with positive behavioural change in empirical studies around the world.

Please see the response to information request 2012.1 RR BCUC.107.1.3 for more detail on ICBC's methodology for developing a monitoring and evaluation framework for its Road Safety programs.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.118.4 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.118.4 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Appendix 10 D  
Rationale for Integrated, Multi-Component Road Safety Programs**

**On page 15, the 2005 Review notes findings by Delhomme et al (1999) as follows:**

- **“Local campaigns were more effective than provincial campaigns (10.5% vs. 7.4% reduction in crashes respectively).**
- **Short campaigns (30 to 100 days) and medium-term campaigns (100 to 200 days) were more effective than long-term ones (200 to more than 540 days), yielding 22% and 5% crash reductions respectively...”**

**Please describe ICBC’s experience of campaign effectiveness in terms of location and duration.**

**Response:**

ICBC conducts provincial Road Safety campaigns because the top contributing factors to crashes are relatively consistent across all regions of the province. Adaptations are made, however, to meet regional/local specific needs from either the community or key stakeholders. Activities to support this approach include tailored key messages to address specific crash causal factors, priorities, or community issues; regional media launches that follow provincial launches; and local activities such as Speedwatch.

The duration of campaigns is typically 30 to 60 days, or short-term. Their implementation relies on leveraging the message locally by business partners and volunteer groups and generating earned media through various communication activities.

ICBC has not evaluated the effectiveness of its campaigns in terms of location and duration. This will be explored as part of the Road Safety monitoring and evaluation framework described in the response to information request 2012.1 RR BCUC 107.1.3. However, by following best practices in program development and delivery, ICBC believes that its Road Safety programs have helped contribute to the overall decline in crashes in BC.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.118.5 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.118.5 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Appendix 10 D  
Rationale for Integrated, Multi-Component Road Safety Programs**

**On page 15, the 2005 Review notes findings by DeJong and Atkin (1995) that celebrity endorsements are not effective because celebrities may overwhelm the message, celebrity status is transient, and because a celebrity's reputation or actions may undermine the message. Does ICBC have any awareness campaigns that are linked to celebrities or celebrity's reputation? Please evaluate the effectiveness and costs of these awareness campaigns, if any.**

**Response:**

There are no ICBC Road Safety awareness campaigns that are linked to a celebrity or a celebrity's reputation.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.118.5.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.118.5.1 Reference: ROAD SAFETY  
Exhibit B-1-1, Chapter 10, Appendix 10 D  
Rationale for Integrated, Multi-Component Road Safety Programs**

**Do the findings by DeJong and Atkin (1995) also apply to ICBC’s marketing campaigns or other corporate initiatives? Why or why not? Please evaluate the effectiveness and costs of all ICBC awareness campaigns that are linked to celebrities or celebrity’s reputation.**

**Response:**

The review conducted by DeJong and Atkin refers to national television public service announcement campaigns for preventing alcohol-impaired driving among a general audience. As such, the authors’ findings would be limited to these kinds of prevention campaigns designed to change behaviour.

The findings by DeJong and Atkin are not applicable to ICBC’s marketing campaigns or other corporate initiatives (excluding Road Safety education and awareness programs), as they are not prevention campaigns designed to change behaviour.

Road Safety has not utilized any celebrities or celebrity reputations for any of its education and awareness campaigns. Corporately, ICBC developed a campaign which ran from late 2010 through 2011 called “Demystifying ICBC”. This campaign utilized Ms. Vicki Gabereau, a Canadian radio and television personality. Ms. Gabereau was selected for her journalistic approach and her ability to see things as customers do. The effectiveness of this campaign is measured in the same manner as the “Share a Wave and Win” campaign, which is set out in the response to information request 2012.1 RR BCUC.104.2.1. The cost and allocation of the “Demystifying ICBC” campaign are addressed in the response to information request 2012.1 RR IBC.25.1.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.119.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.119.1 Reference: 119.0 Reference: GENERAL APPENDICES  
Exhibit B-1-1, Chapter 11, Appendix 11 A  
Basic Insurance Information Sharing Exhibits**

**Exhibits in Appendix 11 A provide aggregated Basic Insurance data for premiums, sales volume and loss experience. Claims and Adjustment Expenses Incurred included in these exhibits are based on claim file estimates of the likely cost of any claims that have been reported as at December 31, 2010.**

**119.1 From the exhibits in Appendix 11 A, it appears that the information presented in claims frequency, average cost per claim, claim cost per earned vehicle, and earned incurred loss ratio generally either show a declining trend since 2006 or lower than total average for 2010. Please indicate if ICBC agrees with this general observation.**

**119.1.1 If ICBC agrees with the above observation, please explain how ICBC has taken these generally declining trends or lower than total average in claims costs into account for rate indication analysis, if any.**

**119.1.2 If ICBC disagrees with the above observation, please demonstrate that claims costs are generally rising with references to data presented in Appendix 11 A.**

**Response:**

**119.1**

ICBC agrees with the general observation, but it should be noted that the Basic Insurance Information Sharing Exhibits show reported values as of December 31, 2010. It is not appropriate to use reported data for assessing trends because the most recent years are largely incomplete, since claim settlements can take three or more years to occur.

**119.1.1**

The data in the Basic Insurance Information Sharing Exhibits is reported claims data as of December 31, 2010. Before being used in the actuarial rate indication analysis, reported claims data must first be developed to ultimate levels. This process is described in further detail in Chapter 3, Section E.4 of the Application, and shown in Exhibit Set C.

**119.1.2**

Please see the response to information request 2012.1 RR BCUC.119.1.1 above.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.120.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.120.1 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B  
Service Plan 2011-2013 dated February 2011**

**Please file the most recent service plan 2012 – 2014 indicating changes from the prior year, if available.**

**Response:**

For the most recent Service Plan, please see Attachment A – Insurance Corporation of British Columbia Service Plan 2012-2014.

There are no changes to ICBC's long-term corporate strategy from the prior year. ICBC's vision, mission, values, goal, and objectives remain the same.

The only material changes are the following:

- 1. Updates to the strategic context.** Updated information has been provided on the performance and issues facing the insurance industry globally, nationally, and within the auto insurance line. Changes in the regulatory environment as it relates to the *Bank Act*, implementation of International Financial Reporting Standards (IFRS), and the introduction of Bill 3: *Freedom of Information and Protection of Privacy Amendment Act* are also highlighted. The impacts of rising bodily injury claim costs and lower rates of return on ICBC's financial investments are discussed in a number of sections.
- 2. Updates to Strategy Summary.** Corporate targets for all objectives have been updated in accordance to the rolling three-year framework as prescribed for Service Plan.
- 3. Updates to Summary Financial Outlook.** This section has been updated with the best available outlooks and estimates based on information available at the time of the Service Plan preparation.



# **2012.1 RR BCUC.120.1 – Attachment A – Insurance Corporation of British Columbia Service Plan 2012-2014**



Insurance Corporation of British Columbia

# **Service Plan**

2012 – 2014

February 2012



**Insurance Corporation of British Columbia**  
**Library and Archives Canada Cataloguing in Publication Data**  
Insurance Corporation of British Columbia.  
Service plan. — 2002/2004-Annual.

Also available on the Internet.

Continues: Insurance Corporation of British Columbia. Performance plan.

1. Insurance Corporation of British Columbia – Planning – Periodicals. I. Title. II. Title: Insurance Corporation of British Columbia ... service plan.  
III. Title: ICBC service plan.

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Service Plan 2012–2014

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# Introduction

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## Purpose

The Insurance Corporation of British Columbia's (ICBC) 2012 – 2014 Service Plan presents an overview of our three-year plan to fulfill responsibilities for providing vehicle insurance, driver licensing, and vehicle licensing and registration services. In this Service Plan, we set out our performance accountability to the public by describing:

- Where we envision ourselves in three years;
- The goals and objectives we need to achieve to realize this vision; and
- How we define and measure progress on achieving these goals and objectives.

In 2013, we will publish our 2012 Annual Report detailing our progress in achieving the goals set out in this Service Plan. The Service Plan and Annual Report are companion documents and central to the broader accountability framework for Crown corporations. In developing the Service Plan, we have relied on guidance from various sources, including the following:

- The Letter of Expectations between ICBC and government, which can be found on [www.icbc.com](http://www.icbc.com).
- The provincial government's *Crown Corporation Service Plan Guidelines*, September 2011, which can be found on [www.gov.bc.ca/caro/attachments/service\\_plans/2015/crown\\_corporation\\_service\\_plan\\_guidelines\\_2011\\_14.pdf](http://www.gov.bc.ca/caro/attachments/service_plans/2015/crown_corporation_service_plan_guidelines_2011_14.pdf).
- The Legislative Assembly of BC's Select Standing Committee on Crown Corporations (SSCCC) in *A Guide to Operations*, April 2003, which can be found on [www.leg.bc.ca/cmt/37thparl/session-5/cc/media/A\\_Guide\\_To\\_The\\_Operations\\_\(28Apr03\).pdf](http://www.leg.bc.ca/cmt/37thparl/session-5/cc/media/A_Guide_To_The_Operations_(28Apr03).pdf).

## Balancing Accountability and Commercial Sensitivity

We are committed to providing customers and the public with information needed to understand our plans and to evaluate our performance against those plans. This is fundamental to the governance of any Crown corporation.

We compete with other insurance companies in the sale of optional vehicle insurance products in British Columbia (BC). Due to commercial concerns, this Service Plan does not provide specific competitive information pertaining to our Optional insurance business.

## Contact Information

Insurance Corporation of British Columbia  
151 West Esplanade  
North Vancouver, BC  
V7M 3H9

Telephone:  
Lower Mainland: 604-661-2800  
Elsewhere in BC, Canada or U.S.: 1-800-663-3051

Email address: [www.icbc.com/contact-us](http://www.icbc.com/contact-us)  
ICBC website: [www.icbc.com](http://www.icbc.com)

# Letter from the Chair of the Board

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The Honourable Kevin Falcon  
Minister of Finance and Deputy Premier  
Government of British Columbia

Dear Minister,

On behalf of ICBC's Board of Directors and employees, I am pleased to present our 2012 – 2014 Service Plan.

This Service Plan is prepared under the direction of the Board of Directors in accordance with the *Budget Transparency and Accountability Act* and the BC Reporting Principles. The plan is consistent with government's strategic priorities and fiscal plan as well as with ICBC's mandate and goals. The Board is accountable for the contents of the plan, including what has been included in the plan and how it has been reported. The performance measures and targets focus on aspects critical to ICBC's performance within its operating environment, and have been developed with due consideration of forecast conditions, risk assessments, and past performance. All significant assumptions, policy decisions, events, and identified risks, as of January 19, 2012 have been considered in preparing the plan.

Our Service Plan continues to be guided by our vision to be BC's preferred auto insurer, providing protection and peace of mind. Our overarching corporate goal is focused on our customers. Our strategic direction since the last Service Plan remains unchanged. We continue to be focused on our corporate goal with the objectives of improving customer perception, improving employee engagement, and maintaining financial stability to guide us. This Service Plan outlines how we will achieve these objectives and measures our success.

We provide our customers with some of the best insurance coverage in Canada. We've been able to match this level of service and coverage while keeping our rates as low as possible. Since 2007, we've implemented a number of rate decreases to both our Basic and Optional insurance rates. As a result, our customers who purchase both Basic and Optional insurance from us, on average pay approximately the same today for their auto insurance as they did in 2008.

However, in a changing environment, we are facing new pressures. Claims costs are up. We have seen an increase in both the number of bodily injury claims as well as the costs associated with those claims. Our investment returns have also fallen. Like others in the insurance sector, we are negatively affected by the challenging world financial markets.

After four years of not having to increase our rates, we found it necessary in December 2011 to submit an application to the British Columbia Utilities Commission for an increase to our Basic insurance rates for 2012. At the same time, we are decreasing Optional insurance rates for next year. On average, customers who buy both products from ICBC will see an increase of about \$27 per year. Whereas the Basic insurance rate increase is in response to the pressures we are facing, the reduction in our Optional rates is something we are able to do, thanks in part to the continued drop in auto crime in BC and a decrease in material damage claims. Going forward, part of our strategy is to remain focused on managing our costs. Our 2011 operating costs have already been reduced by \$26 million. The Board of Directors has added further rigor to ICBC's management incentive pay plan by establishing a net income trigger. For 2012 and beyond, if certain net income levels are not achieved, incentive plan payments will either be reduced or not made at all.

In the coming years, we will also remain committed to our business renewal efforts through the Transformation Program. The Transformation Program is critical to our strategy. It will transform our business by making much-needed investments in our aging technology and help put the right systems and business processes in place to support new ways of doing things. It will make things simpler for employees and partners and allow us to better serve our customers by making our services more hassle-free and transparent. This includes improved claims handling, more choice in how customers can deal with ICBC, and streamlined services. It also means listening to customers more, as demonstrated by the province-wide consultation and engagement that will be undertaken, as we consider possible changes to ensure Basic premium rates will be more reflective of driver risk.

Achieving our vision of being BC's preferred auto insurer will depend on our people being engaged, inspired, and confident in their roles and in the company. We will continue to focus on developing workforce capability, capacity, and implementation readiness to realize the benefits of business transformation and meeting the needs of British Columbians and new generations of customers.

A handwritten signature in black ink, reading "Nancy McKinstry". The signature is fluid and cursive, with a large loop at the end of the last name.

Nancy McKinstry  
*Chair, Board of Directors*

# Overview of ICBC

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The Insurance Corporation of British Columbia is a provincial Crown corporation established in 1973 to provide universal auto insurance to BC motorists. We're also responsible for driver licensing, and vehicle licensing and registration.

## Vision

ICBC will be BC's preferred auto insurer, providing protection and peace of mind.

## Mission

We deliver quality auto insurance products and services at competitive prices through a knowledgeable team committed to our customers.

## Values

### Integrity

- Our business is based on trust. We are honest, ethical, straightforward, and fair.

### Dedication to Customers

- We exist to serve our customers. We listen actively and are responsive to their needs.

### Accountability

- We hold ourselves and each other accountable for our actions and the success of our business.

### Caring

- We care about our customers' well-being and ensure they feel supported by treating them with dignity and respect.
- We care about each other's well-being and create an environment that promotes personal growth.
- We care about our communities by supporting road safety programs and being environmentally responsible.

## Insurance Services

ICBC is the sole provider of universal compulsory auto insurance (Basic insurance) in the province. Our Basic rates and service are regulated by the British Columbia Utilities Commission (BCUC). We also sell Optional auto insurance products in the competitive marketplace.

Under Basic insurance, private passenger and commercial vehicle owners are provided with up to:

- \$200,000 in third party liability protection;
- \$150,000 for medical and rehabilitation costs for each injured person;
- \$1 million at-fault underinsured motorist protection.

Buses, taxis, limousines, and extra-provincial trucking and transport vehicles have higher mandatory levels. Under Optional insurance, the coverages that we offer include, but are not limited to, extended third party liability, collision, comprehensive, and vehicle storage. For a complete list of our Optional insurance products, please visit [www.icbc.com](http://www.icbc.com).

Auto insurance in BC is based on a full tort system, which means that an injured party is entitled to take legal action against the at-fault party for damages. In addition, the insured injured party has access to accident benefits, including up to \$150,000 in medical and rehabilitation expenses and up to \$300 per week for wage loss through ICBC Basic insurance, regardless of fault. Our coverage level for medical and rehabilitation expenses is the highest in Canada when compared to any other province with a tort-based system.

In contrast, auto insurance in some other provinces in Canada is based on some variant of no-fault or mixed no-fault and tort systems. This means compensation can be based on predetermined benefit schedules, threshold schemes, and/or limited by caps or deductibles on pain and suffering awards and there may be limited or no ability to sue for additional damages.

ICBC operates as an integrated company that provides significant benefits to customers in terms of costs and convenience. With annual earned premiums of approximately \$3.7 billion,<sup>1</sup> approximately \$12.9 billion in assets, and approximately 5,300 full-time equivalent employees (including contractors), we are one of the largest property and casualty insurers in Canada. For more information on our products and the auto insurance system in BC, please visit [www.icbc.com](http://www.icbc.com).

<sup>1</sup> Please refer to the Summary Financial Outlook table on page 26.

## Loss Management Programs

ICBC invests in road safety initiatives and fraud prevention that help reduce claims costs, giving customers the best coverage at the lowest possible price. We work with a network of partners across the province to deliver road safety programs that help protect customers from risks on the road by preventing and minimizing the impact of crashes and crime. We minimize the adverse effect on premiums caused by fraud through various programs as well as working with law enforcement to prevent, detect, and investigate fraud. Our partners include the Ministry of Justice, the enforcement community, the Ministry of Attorney General, the Ministry of Transportation and Infrastructure, municipalities, community groups, and volunteers. For more information, please visit [www.icbc.com](http://www.icbc.com) under *Road Safety*.

## Non-Insurance Services

In addition to the Basic insurance and Optional insurance lines of business, we provide driver licensing services, vehicle licensing and registration services, and fines collection on behalf of the provincial government. We refer to the provision of these services as our non-insurance line of business. These non-insurance services are outlined in the Service Agreement between ICBC and the Province, and their costs are funded through Basic insurance premiums.

There have not been any significant shifts from our last Service Plan (*ICBC Service Plan 2011 – 2013*) in relation to our provision of insurance and non-insurance services, and in the delivery of loss management programs.

## Key Business Partners and Stakeholders

ICBC delivers its services in partnership with:

- Independent insurance brokers who provide auto insurance products and services to the public and are guided by the agreement with ICBC's broker partners;
- A broad base of suppliers in the automotive industry, guided by performance-based agreements with individual suppliers, and liaison groups such as the Automotive Retailers Association and New Car Dealers Association of BC;
- The medical community to assist injured customers in getting well;
- Government agents and appointed agents that provide driver and vehicle licensing and registration services as well as sell ICBC insurance products in a number of rural communities;
- The Office of the Superintendent of Motor Vehicles and Police Services within the Ministry of Public Safety and Solicitor General, with whom we work together in a number of areas, including driver licensing and road safety;
- Road authorities (e.g., the Ministry of Transportation and Infrastructure) and municipalities to share costs of road improvements that decrease the frequency and severity of crashes;
- Police and enforcement agencies to enhance road safety; and
- A host of diverse community organizations, including business improvement associations and auto crime groups that support the delivery of our safety and auto crime programs.

For more information, please visit the *Business Partners* page on [www.icbc.com](http://www.icbc.com).

# ICBC Points of Service

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ICBC offers insurance products to approximately 3.3 million policyholders through a province-wide network of approximately 900 independent brokers, government agents, and appointed agents. Our claims-handling services process approximately 900,000 claims per year through our 24-hour, 7-days-a-week, 365 days a year claims contact centre, our province-wide network of 38 claims servicing locations, and the various Express Glass and Repair facilities across the province. Further information about the claims process can be found through [www.icbc.com](http://www.icbc.com).

We also provide driver licensing services through 120 offices, including driver licensing centres, government agents, and appointed agents throughout the province.

We deliver our products and services in partnership with businesses and organizations in communities throughout British Columbia, including insurance brokers, auto repair facilities, and health service providers. Our partners are involved in different aspects of the insurance and claims processes such as the sale of our insurance product, repairs to damaged vehicles, provision of rehabilitation services, as well as management of road safety and loss management programs in conjunction with law enforcement agencies. For further information on our points of service in British Columbia, please visit [www.icbc.com](http://www.icbc.com).

## Operating Structure

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We operate our business through an integrated business model, providing Basic and Optional insurance products and services. This model provides benefits to our customers such as ease of service and economies of scale, which in turn lead to lower rates. While we operate and manage the company on an integrated basis, from a regulatory perspective we are required to identify or allocate premium revenues and costs as either Basic or Optional. More on the role of BCUC can be found in the next section, *Governance*.

We have re-organized our claims management structure to create more focus on specific types of customer claims, in particular bodily injury claims. We expect these changes in our claims management structure will result in more efficient, effective, and consistent claims handling.

There have not been any significant shifts or changes in our business areas, program delivery or internal operating environment from the previous year.

ICBC does not have any operational subsidiaries.

# Governance

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ICBC's governance is defined through legislation applicable to all Crown corporations, and legislation specific to the company itself. ICBC's corporate governance is further defined by the Government's Letter of Expectations between the minister responsible for ICBC as a representative of the Government of British Columbia, and the chair of ICBC's Board of Directors as a representative of ICBC. The Minister of Finance and Deputy Premier is the minister responsible for ICBC.

## Legislative Framework

As a Crown corporation, ICBC is subject to the *Budget Transparency and Accountability Act*, the *Financial Information Act*, the *Financial Administration Act*, and the *Freedom of Information and Protection of Privacy Act*. Under these provincial laws, we are accountable for making public our strategic plan (i.e., Service Plan) and performance against the plan (i.e., Annual Report). In addition, we are required to provide financial and other information in accordance with the requirements of applicable legislation. In terms of providing Basic and Optional insurance and non-insurance services on behalf of government, ICBC must adhere to a number of acts, including:

- *Insurance (Vehicle) Act*
- *Insurance Corporation Act*
- *Motor Vehicle Act*
- *Commercial Transport Act*
- *Motor Vehicle (All Terrain) Act*
- *Insurance Premium Tax Act*
- *Consumption Tax Rebate and Transition Act*
- *Social Services Tax Act*
- *Offence Act*

## ICBC as a Regulated Crown Entity

The BCUC, as the independent regulator for ICBC, approves Basic insurance rates and ensures that our provision of service for our Basic product is adequate, efficient, and reasonable. As we are the sole provider of Basic insurance, this regulatory environment is important for BC, providing customers with an independent and transparent review of our Basic insurance rates and an opportunity to be heard and involved in the review.

The BCUC's regulation of ICBC's Basic insurance business includes regular reviews of financial allocation between Basic and Optional insurance lines of business, revenue requirements for Basic insurance, and Basic rate design. Although the majority of premium revenues and costs are specifically identifiable as Basic or Optional, certain costs are not tracked separately. For those revenues and costs that are not specifically identified as Basic or Optional, a pro-rata method of allocation is used to allocate the revenues and costs between the two lines of business. This method allocates revenues and costs to each line of business based on the drivers of those revenues and costs, the degree of causality, and any directives from our independent regulator, the BCUC. Directives are applied on a prospective basis.

A breakdown of actual revenues and allocated costs can be found in the *Notes to Consolidated Financial Statements* section in our Annual Report. This can be found at [www.icbc.com](http://www.icbc.com). Information on the allocation methodology can be found in BCUC's decisions on our submissions, which can be viewed at [www.bcuc.com](http://www.bcuc.com).

We continue to work with the BCUC to achieve effective and efficient regulation that contributes to an open and transparent regulatory process for the setting of Basic insurance rates. More information on BCUC is available on its website, [www.bcuc.com](http://www.bcuc.com). ICBC's current regulatory proceedings can be found on [www.icbc.com](http://www.icbc.com) under *About ICBC*.

## Government's Letter of Expectations

The Government's Letter of Expectations between the Government of British Columbia and the Corporation is an agreement on their respective roles and responsibilities, and on the corporate mandate including high-level strategic priorities, public policy issues, and performance expectations. It is reviewed and updated annually. For specific information, please refer to the section on *Alignment with Government's Letter of Expectations* in this Service Plan.

## ICBC Board Governance

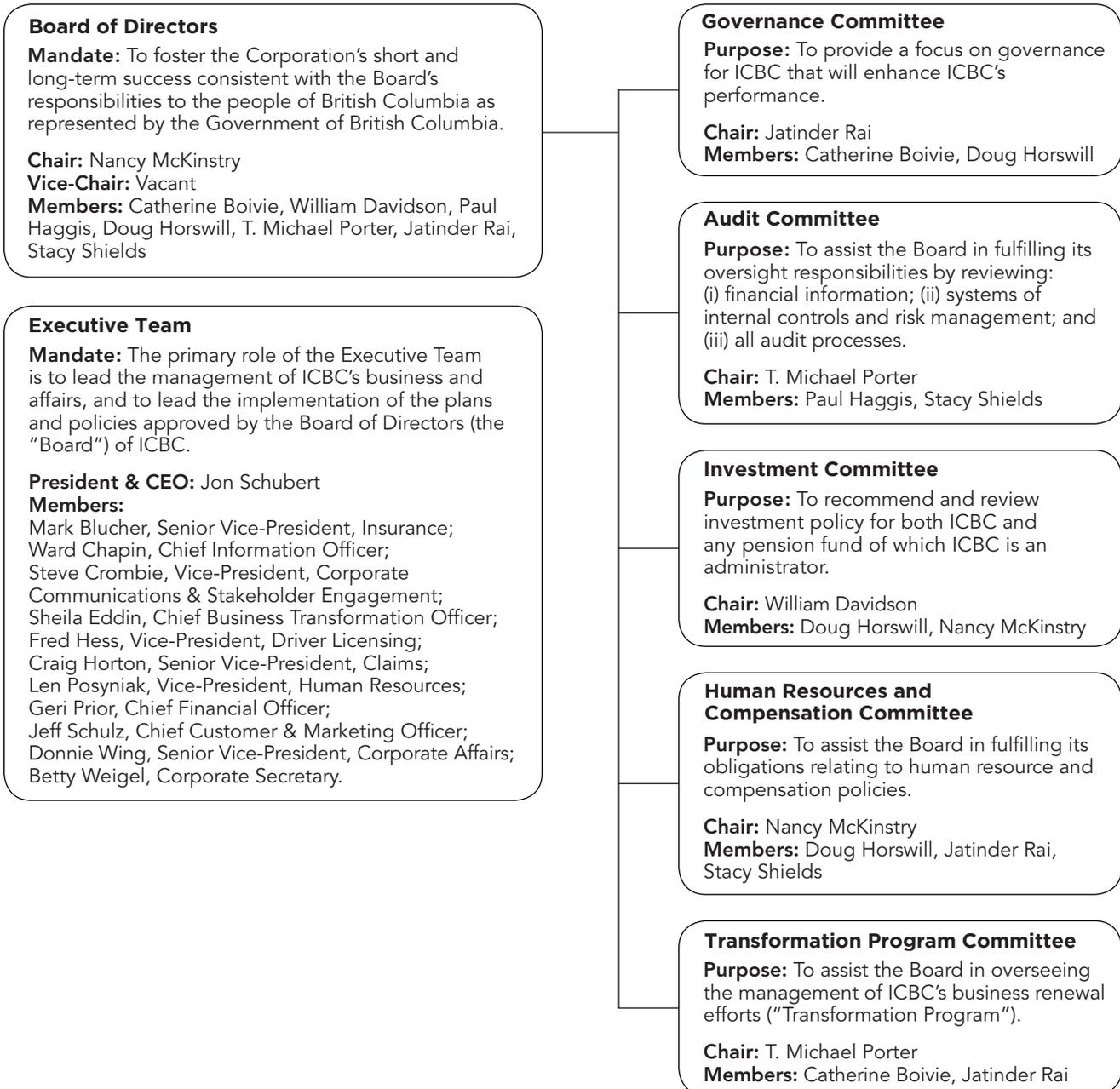
The Board of Directors guides ICBC in fulfilling its mandate and sets our corporate direction. The Board and management approve our vision, mission, and values that guide us. The Board sets goals for our performance and these goals and associated objectives are the basis upon which accountability and performance are evaluated. Performance against these goals and objectives is reviewed and reported regularly.

The governance processes and guidelines outlining how the Board will carry out its duties of stewardship and accountability are set out in the *Board Governance Manual*,

which is updated annually by the Board's Governance Committee. ICBC's Board complies with the *Board Resourcing and Development Office Guidelines* and has adopted the guiding principles included in the provincial government's *Governance Framework for Crown Corporations: Best Practices Governance and Disclosure Guidelines* ([www.fin.gov.bc.ca/brdo/governance/corporateguidelines.pdf](http://www.fin.gov.bc.ca/brdo/governance/corporateguidelines.pdf)). For more detail on these governance principles, please refer to the Annual Report.

Further information on Board policies and members is available on our website, [www.icbc.com](http://www.icbc.com) under *About ICBC*.

## Board Governance Structure — as of January 19, 2012



# Strategic Context

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Almost 40 years ago, ICBC was created to provide universal auto insurance to motorists in BC. ICBC is the sole provider of Basic auto insurance and driver-related services on behalf of the province. We are committed to becoming a more customer-centric and employee-oriented company, enabling the sustainment of public auto insurance in British Columbia. We remain committed to providing the best possible coverage at the lowest possible price while investing in the business and adopting new technologies to provide the services our customers want.

As we look to the future, the context of the external issues faced by ICBC and the insurance industry has been considered in ICBC's Plan. Growing populations, changing demographics and driving patterns, and new technologies, are influencing what customers want. At the same time, costs associated with repairs, personal injury, and property damage are increasing. We are currently operating in a challenging economic environment.

## Industry Context – Property and Casualty Insurance

The insurance industry, which includes both property and casualty insurance as well as life insurance, is affected by external factors including natural disasters, the economy, and regulatory trends, which impact profitability and rate stability. This section provides an overview of recent events that may pose risks to the insurance industry and its consumers.

2010 was one of the worst years on record for catastrophic events and related insurance claim payouts. 2011 is following in a similar vein with a large number of catastrophic events and severe weather conditions both in Canada and globally. Such events impact insurers' profitability, rates and reinsurance capacity. Despite this turbulence, many insurers were able to post positive financial results in 2010.

The Canadian property and casualty (P&C) market stabilized in 2010, with modestly positive financial results for P&C insurers. However, the industry posted its third straight underwriting loss, albeit smaller than in 2009. Underwriting losses are further exacerbated by low interest rates, which negatively impact investment income resulting in substandard returns on capital. Continued underwriting losses and pressures on investment income impair overall profitability and put pressure on capital levels.

Year to date 2011, catastrophic events, premium growth that is less than claims growth in some lines, volatility in investment markets, and global economic uncertainty continue to challenge the industry. The historically low interest rate environment we are currently in is forecast to continue through 2012. This is particularly challenging for insurance companies, which hold large fixed income portfolios; as such, the forecast for investment returns remains weak. Not surprisingly, the P&C industry's Q3 net investment income is down versus the same period last year.<sup>2</sup>

In 2010, some lines of business experienced premium growth in excess of claims growth; notable exceptions to this were the auto and hail lines. Correspondingly, auto insurance loss ratios deteriorated in 2010 versus 2009. The auto insurance industry has been experiencing increasing claims costs and recently has seen an increase in injury claims frequencies in some jurisdictions.

## Automobile Insurance in Canada

Automobile insurance is the largest class of insurance in the Canadian P&C industry accounting for nearly half of direct premiums written within the industry.<sup>3</sup> The automobile insurance product offered in each province differs, varying from full tort system in BC, to no-fault or mixed no-fault and tort systems.

Premium growth was strong throughout 2010 as 2009 rate increases took effect. However, premium growth continues to be slower than claims costs — net increase in premiums earned in 2010 was less than half the increase in claims costs.<sup>4</sup> The auto insurance line in BC, as well as in the rest of Canada, has been negatively affected by increased loss ratios.<sup>5</sup>

During 2010/2011, and continuing into 2012, several provinces introduced auto insurance product reforms that, over the longer term, will address rising claims cost trends. Ontario is the largest auto insurance market in Canada and operates under a threshold no-fault system. Ontario's reforms, effective September 2010, were focused on rate stabilization and ensuring affordability. These reforms, as well as an increased vigilance on fighting fraud, are slowly improving bottom lines in Ontario. The above, in combination with recent rate increases, have assisted in improving claims ratios in Ontario Q3 2011 versus Q3 2010.<sup>6</sup>

<sup>2</sup> Canadian Underwriter 2011 online edition, November 28

<sup>3</sup> Canadian Underwriter 2011 Statistical Issue, p. 53

<sup>4</sup> Canadian Underwriter 2011 Statistical Issue, p. 24

<sup>5</sup> MSA/Baron Outlook Report Q4 2010, p. 5

<sup>6</sup> Canadian Underwriter 2011 online edition, November 28

In Alberta, the Alberta Automobile Insurance Rate Board mandated a 5% decrease in premiums as a result of legal challenges resulting in a staying of the cap on minor injuries. Nova Scotia and New Brunswick reviewed their auto insurance systems at the end of 2010 and through the first half of 2011. From its review, reforms in Nova Scotia will be implemented over the next two years and include enhanced no-fault, revised limits, and an optional tort product for minor injuries.

The provincial insurance system reviews and reforms elsewhere in Canada are not expected to directly impact the auto insurance industry in BC. However, BC continues to be affected by economic uncertainty, as well as slower vehicle growth and rising claims costs.

### Regulatory Environment

Some of the key regulatory highlights relevant to the insurance industry include the following:

- The *Bank Act* has been revised to prohibit the promotion and sale of unauthorized insurance products by banks on their websites. This is consistent with existing regulation prohibiting this practice in bank branches, and applies equally to Credit Unions, which are now able to operate like banks.

- Implementation of International Financial Reporting Standards (IFRS) has implications on balance sheets and financial metrics. Effective January 2012, changes to the minimum capital test (MCT) will be introduced by OSFI and affect those provinces using this test. ICBC implemented IFRS within its organization effective January 2011 and the 2010 financial statement has been restated for comparative purposes. Our annual report, tabled in May 2012, will contain information on the impact of converting from Canadian Generally Accepted Accounting Principles to IFRS.

### Legislative Environment in British Columbia

In addition to the changes in the insurance regulatory environment, ICBC is also subject to the introduction of Bill 3: *Freedom of Information and Protection of Privacy Amendment Act* ("the Act"). The Act amends the access to information amongst government organizations and protection for privacy obligations. The extent of the impact to ICBC is pending finalization of all the compliance requirements within the Act.

## Key Strategic Issues and Risks

Looking ahead to 2012 – 2014, we have identified a number of issues and risks that could impact our future performance.

### Key Strategic Issues

#### Understanding and Meeting Increasing Customer Expectations

We operate in a complex and rapidly changing marketplace. Our customers want choice and convenience in accessing our services, including face-to-face, via telephone, the Internet or through social media channels. Our Transformation Program is focused on modernizing our legacy Information Technology (IT) systems to improve our customer and internal processes. In addition, a collaborative process with our stakeholders will help us to deliver this. All of this will require a strong change-management focus.

We must prioritize and allocate our finite resources between our various initiatives while continuing to run our operations.

#### High-Risk Drivers

High-risk drivers are a serious concern as they cause a disproportionate number of crashes and these crashes are very costly, which in turn affect all of our customers' insurance premiums. In an average year, approximately 200 people are killed and 11,200 are injured as a result of high-risk driving behaviours such as speed, following too closely, ignoring a traffic control device, failing to yield, and improper passing. An additional 125 people die and 2,900 are injured in motor vehicle crashes involving impaired driving. In 2012, ICBC will continue to partner with law enforcement and other stakeholders to raise awareness of the risks and consequences of high-risk driving behaviours.

#### Economic Environment

The Economic outlook for Canada and British Columbia remains uncertain and could potentially slow as global economic growth retreats on the fallout from the European sovereign debt crisis. The current economic environment, in combination with rising bodily injury costs, is putting pressure on our financial performance.

### Key Strategic Risks

ICBC's Corporate Risk Management Framework is approved by the Board of Directors and defines the approach used to assess and manage corporate risk. Consistent with good governance practices and insurance sector practices, ICBC manages risk from an organization-wide perspective.

The Corporate Risk Framework considers both external and internal environments and the risks and challenges associated with each. The framework is used by ICBC executives and Board of Directors to discuss and monitor strategic risks and mitigation strategies. Managing corporate risk is an ongoing process as new risks emerge over time, strategic risks evolve, existing risks change, the external environment changes, and risks may be reduced or eliminated through mitigation strategies or changes in the risk profile.

Our risk management practices encompass management, system, and financial controls designed to provide reasonable assurance that tangible and intangible assets are safeguarded, and transactions are properly authorized and recorded. The controls include written policies and procedures, an organizational structure that segregates duties, and a comprehensive program of periodic risk-based audits by the internal auditors who independently review and evaluate these controls. We continually monitor these internal controls, modifying and improving them as business conditions and operations change. Policies and processes that require employees to maintain the highest ethical standards have been instituted.

ICBC recognizes the inherent limitations in all risk management frameworks and believes the current framework provides an appropriate balance between costs and desired benefits. We believe that the systems of management controls provide reasonable assurance that the strategic business risks have been appropriately addressed. The quarterly review by management and the Board of Directors of these strategic business risks provides a regular review process to ensure mitigation strategies are in place to reduce these risks to acceptable levels.

The key strategic risks and mitigation strategies identified on the following pages are considered and incorporated into our corporate strategy, as outlined in this Service Plan, and into detailed operational plans.

Description of Risks:	Mitigation Strategies:
<b>Objective: Improve Customer Perception</b>	
<ul style="list-style-type: none"> <li> <b>Stakeholder Management</b>                      The risk that key stakeholders who influence customers hinder the ability to achieve ICBC’s strategy and business model.                 </li> </ul>	<ul style="list-style-type: none"> <li>We will seek ongoing consultation from stakeholders so that changes to enhance customers’ experiences and perceptions of price/value are supported by partners and stakeholders. We are actively engaging our stakeholders and business partners to enhance a shared commitment to achieving common business objectives.</li> </ul>
<ul style="list-style-type: none"> <li> <b>Privacy</b>                      The risk that customers’ and employees’ trust in ICBC will be diminished due to breaches by ICBC or business partners in safeguarding their personal information.                 </li> </ul>	<ul style="list-style-type: none"> <li>ICBC has data security measures and policies in place governing the access and use of corporate data. The policies address ICBC’s privacy obligations and include the responsibilities of employees with respect to access to, and handling of, customer information.</li> <li>ICBC’s Code of Ethics reflects its focus on protecting access to information. An annual review and completion of ICBC’s Code of Ethics and Information Security tutorials, along with Privacy Practices &amp; Responsibilities, are required for all employees and contractors.</li> <li>Privacy considerations have been embedded within the governance and approval processes for all projects, including our Business Renewal project, so that privacy is considered early in and throughout the project life cycle.</li> </ul>
<b>Objective: Improve Employee Experience</b>	
<ul style="list-style-type: none"> <li> <b>Workforce Planning</b>                      The risk that ICBC cannot deliver its core business or change initiatives due to alignment, capability, capacity, and readiness of its leaders and employees.                 </li> </ul>	<ul style="list-style-type: none"> <li>As we are undergoing business renewal efforts over the next 3–5 years, we are also actively managing workforce capacity and readiness of our leaders and employees to support delivery of our core business and change initiatives.</li> <li>Our business renewal efforts will improve our business processes so that it is easier for our employees to continue to meet customers’ needs.</li> <li>We will continue to focus on recruitment, compensation, training, and leadership development to attract, develop, and retain talent for the future.</li> <li>We have refined our performance management program so that each of our employees is aligned to the successful achievement of our objectives.</li> </ul>
<b>Objective: Maintain Financial Stability</b>	
<ul style="list-style-type: none"> <li> <b>Bodily Injury Claims Costs</b>                      The risk that insurance rates increase at a rate that is unacceptable to customers due to rising bodily injury claims costs.                 </li> </ul>	<ul style="list-style-type: none"> <li>Strategies to address crashes and claims costs are a priority for ICBC and include improvements to claims handling processes, public awareness campaigns on high-risk driving, the transition to risk-based pricing and other road safety activities.</li> <li>ICBC continues to develop and implement a number of strategies and initiatives to help address factors that are within ICBC’s control with respect to managing bodily injury claims costs. The strategies are: improvements to claims handling, increased management focus on bodily injury claims, and improvements to business indicator reporting and data analysis. ICBC continues to build on these three strategies, refining existing programs and introducing new initiatives to ensure that the benefits from claims initiatives remain sustainable over the long term.</li> </ul>
<ul style="list-style-type: none"> <li> <b>Financial Markets</b>                      The risk that market value of investments and/or investment income is negatively impacted by adverse changes in market credit or liquidity conditions, equity prices, interest rates or currency.                 </li> </ul>	<ul style="list-style-type: none"> <li>ICBC’s Investment Policy addresses ICBC’s risk tolerance and investment goals, and specifies a long-term investment asset mix and fixed income duration consistent with these objectives. The policy is based on prudence and regulatory requirements, and provides guidelines for balancing the levels of risk and return in ICBC’s investment portfolio.</li> <li>ICBC follows a long-term strategy and diversifies its investment holdings to manage investment return fluctuations.</li> <li>ICBC closely matches bond duration to its liabilities, which reduces ICBC’s overall interest rate risk.</li> <li>ICBC’s Corporate Credit Policy manages credit risk from an enterprise-wide perspective.</li> </ul>

Description of Risks:	Mitigation Strategies:
<b>Other Significant Corporate Risks</b>	
<ul style="list-style-type: none"> <li>• <b>Business Renewal</b> The risk that ICBC does not deliver on the core capabilities of ICBC's business Transformation Program underway due to its size and complexity.</li> </ul>	<ul style="list-style-type: none"> <li>• ICBC has developed a comprehensive governance model to provide oversight to the business transformation underway. The model includes oversight by a sub-committee of the Board of Directors, appointing a third-party independent risk advisor to the Board, and internal reviews to monitor that the program continues to meet its stated objectives.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Technology</b> The risk that information technology solutions and services required to support the changing business environment cannot be delivered in a timely and cost-effective manner.</li> </ul>	<ul style="list-style-type: none"> <li>• We are developing long-term technology requirements to address key opportunities to meet our future business needs.</li> <li>• We are using proven methods, tools, and experienced technology partners to deliver technology solutions within the expected timeframe (e.g., principle of buying rather than custom-building solutions to speed deployments with 'out-of-the-box' functionality).</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Access to Systems</b> The risk that system-dependent operations could be intentionally or accidentally compromised due to unauthorized access to and/or use of ICBC's systems/data.</li> </ul>	<ul style="list-style-type: none"> <li>• An enterprise-wide Information Technology Security Program is in place, as well as the ICBC Code of Ethics, governing access and use of corporate data.</li> <li>• Annual completion of Privacy/Information Security tutorial was mandatory for all employees by Q4 2011.</li> <li>• Policies and procedures are in place to initiate, authorize, and grant access to ICBC systems and data by employees, as well as certain business partners (e.g., brokers) and other third parties (e.g., government ministries).</li> <li>• System access controls include layered defenses, encryption of data on portable media, and access granted on a 'least privilege' principle (and revoked when employees change positions), and strong passwords.</li> <li>• Security requirements are considered in the acquisition and implementation of any new software packages.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Business Interruption</b> The risk that operations cannot be maintained or essential products and services cannot be provided due to business interruption arising from workforce, physical and/or technical events.</li> </ul>	<ul style="list-style-type: none"> <li>• ICBC's business interruption risk is managed through three related programs: Emergency Response Program (safe building evacuations, search and rescue, etc.), Business Continuity planning (continued essential customer services during interruption), and IT Disaster Recovery planning (ICBC's Data Centre).</li> <li>• ICBC conducts an annual test of both the Business Continuity plans and the IT Disaster Recovery Program with improvements made by management to ensure a successful recovery program.</li> <li>• In order to provide a secure and future-stable environment for ICBC's Information Systems, ICBC successfully relocated its end of life Head Office data center to a new shared facility.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Catastrophic Loss</b> The risk that ICBC's capital strength is eroded in the event of a major disaster.</li> </ul>	<ul style="list-style-type: none"> <li>• In the event of losses resulting from catastrophes such as an earthquake, ICBC has financial protection through a reinsurance program that is reviewed and renewed annually. Losses experienced in excess of a specified amount will be covered by the reinsurance policy up to the policy limits.</li> <li>• In addition to protection against individual catastrophic events, the reinsurance program protects ICBC against abnormally large losses by limiting the amount for which it is liable in any single event and in any given year.</li> </ul>

# Corporate Strategy

ICBC's corporate strategy is unchanged from the previous year as we continue to work towards our vision of being BC's preferred auto insurer, providing protection and peace of mind.

The environment that we operate in is changing; however, we remain focused on building trust with our customers by delivering an improved customer experience and offering products and services that provide the value customers want. As we work towards becoming a more customer-centric company, we are improving business processes and systems to deliver a better customer experience.

ICBC's Transformation Program, which is one of the key enablers of our strategy, will renew our business processes and systems. We are progressing with multiple projects that will collectively play a key role in supporting ICBC's objectives by being more responsive to our customers and their needs. This will be supported by engagement of customers and business partners in our renewal effort to ensure any changes we make help us meet our goal of exceeding customer expectations. We are also making our insurance pricing more reflective of driver risk by working on a new pricing model that will benefit lower risk drivers. All of this will be supported by implementing technology across the company that will be a common foundation for all business areas, including new work tools for employees and business partners who are critical to our future success.

ICBC has enjoyed a number of years with very strong financial results. Policyholders have benefited from this strong financial performance — for the past four years, our rates have not increased. At the same time, it has also helped us to build our capital levels. As such, we have been able to set aside funds for the Transformation Program through the Optional side of our business.

Our net income 2011 outlook is significantly lower compared to this time last year; something that is due to a combination of external factors including rising bodily injury claims costs

and lower rates of return on our financial investments.

The most significant cost pressure to our business continues to be the cost of bodily injury claims. Bodily injury costs are a major challenge for the insurance industry as a whole, particularly due to the increases in severity trends over the past several years. ICBC's higher claims costs can be predominantly attributed to bodily injury claims costs growing at a much higher rate than anticipated. Managing the growth of bodily injury claims costs remains a key strategic focus for ICBC, and strategies include claims handling based on risk, increased management oversight, and road safety enhancements.

In past years, we've been able to rely on our investment income to help keep rates down but we can no longer do so to the same extent. The uncertain world economic outlook, low interest rate environment, and increasing claims costs put pressure on our financial results. We will continue to maintain a conservative investment philosophy and manage our insurance operations prudently.

We have also initiated a comprehensive internal financial review to look for ways that we can reduce current operating costs, and maintain future costs at these lower levels. While our operating costs remain low compared to others in the industry, our goal is to limit any growth year-over-year to within the rate of inflation. As we look for ways to reduce operating costs, we remain committed to providing the best coverage at the lowest possible price and the renewal of our technology, systems, and processes to better serve customers in the future.

As such, we continue to be focused on three key strategies under our three corporate objectives. These strategies represent core areas of focus for the work that is underway to achieve our corporate goal and objectives over the next three years.

Goal	
We must improve our customers' experiences and perceptions of us. We will do this by listening to, better meeting the needs of, and trusting our customers while maintaining low and stable auto insurance rates. To be successful, all of us must be empowered, engaged, and accountable for the actions we take to achieve this goal.	
Objective	Strategies
<ul style="list-style-type: none"> <li>Improve Customer Perception</li> </ul>	<ul style="list-style-type: none"> <li>Understand our customers and exceed their expectations</li> </ul>
<ul style="list-style-type: none"> <li>Improve Employee Experience</li> </ul>	<ul style="list-style-type: none"> <li>Engaged, inspired, and confident leaders and employees</li> </ul>
<ul style="list-style-type: none"> <li>Maintain Financial Stability</li> </ul>	<ul style="list-style-type: none"> <li>Streamlined, efficient, and cost-effective systems and processes</li> </ul>

## Performance Management Systems

Our performance measures align to our corporate strategy, strategic goal and related objectives. Our strategic plan and performance against our plan are reported externally through the Service Plan and Annual Report.

In the setting of performance targets, one needs to consider ICBC's unique business model relative to other insurers in the P&C industry. Some of these unique traits include:

- Setting premiums to achieve and maintain our capital target rather than to maximize our return on capital;
- Operating exclusively within British Columbia under a full tort environment wherein the cost of settling a claim may be higher than in other jurisdictions that do not operate in the same system;
- Working under a mandate to provide automobile insurance to all drivers in BC;
- Establishing auto insurance rates that are not based on age, gender, or marital status; and
- Delivering a wide range of non-insurance services such as driver licensing, vehicle licensing and registration, and fines collection on behalf of the provincial government.

Due to this, we do not use industry benchmarks to set our corporate performance targets. However, we will use industry information for analysis and comparison purposes.

Our financial performance measures are derived from actual financial information, forecasted trends, and assumptions. Key corporate performance metrics such as the combined ratio, loss ratio, and expense ratio are analyzed against industry benchmarks and reported in the Annual Report.

Non-financial performance measures are generated by external sources. Independent firms are retained to conduct ongoing surveys of customers for the purposes of monitoring satisfaction and experience, as well as conducting an annual survey for the purpose of monitoring employee engagement. Other benchmarking studies focusing on specific areas of operation are also undertaken to support improvement in management practices internally.

Corporate performance measures are cascaded down to the respective divisions and down to individual performance plans as appropriate. This is accomplished through the alignment of divisional and individual accountabilities, measures, and targets to corporate strategy.

To review and monitor performance, we hold quarterly corporate performance updates with the executive and senior management. These updates include a review of all strategic performance measures, a forecast of year-end results, and a review of the corporate risk profile and potential issues impacting the corporate strategy. Divisions also report on their performance results and highlight business issues as part of this quarterly update.

The Audit Committee, composed of members of the Board of Directors, oversees the corporate risk management process and financial reporting. The committee meets no less than quarterly with management, our internal auditors, and representatives of our external auditors, to discuss auditing, financial reporting, and internal control matters. Beginning January 1, 2011, our financial statements are in accordance with International Financial Reporting Standards (IFRS) and are audited by our independent auditors on this basis.

## Improve Customer Perception

Improving our customers’ perceptions of ICBC is a key strategic focus, and we will achieve this with a commitment to understand what is important to our customers to exceed their expectations. In order to improve customers’ perceptions, we will continue to maintain the high levels of customer satisfaction that we have achieved in the past, work on improving our customers’ experiences, and continue to build trust with our customers. By improving how we get input from our customers and working on our relationships with our customers, we’re creating a customer-centric business model that will influence all of ICBC’s business changes going forward.

Customers have increasing expectations around price, choice, convenience, and service. Throughout 2012 – 2014 and beyond, we will be working to improve processes and efficiencies at each critical customer touch point. By delivering convenience and an improved customer experience, our customers’ perceptions of ICBC should improve. This will include making processes (interactions) more hassle-free and transparent for our customers. We will be implementing an integrated claims system that will make our claims handling processes more efficient by streamlining processes, requiring less paperwork, and saving time for our customers. We will also introduce more choice in how customers deal with ICBC, including face-to-face, via telephone or the Internet, as well as faster access to service through our key business partners such as our network of Express Repair shops.

As a part of our long-term strategy, we are also working to provide customers with improved pricing. Through public engagement, we will obtain our customers input on a range of options being considered in how we set premiums for Basic vehicle insurance coverage. Customer perception of price/value will be enhanced through improvements in our pricing as we continue to move in the direction of driver-based pricing where premium rates are more reflective of

driver risk and lower-risk drivers pay less and higher-risk drivers pay more.

In 2012, ICBC will continue to focus on improving driver safety and well-being in BC. We are committed to helping make roads safer and influence driving behaviour to reduce crashes, injury, and death. We will continue to partner with law enforcement and other stakeholders on intersection safety cameras and support enhanced enforcement through our *Impaired Driving* campaign, which raises awareness about the risks, consequences, and choices regarding this risky driving behaviour. We will also partner with local municipalities on road improvement projects and work to increase awareness of vehicle safety features among BC drivers.

We will focus on improving customer perception of ICBC by informing and educating customers about the services ICBC provides to customers, as well as subjects that they have interest in or currently have an incorrect understanding of. We will reach them through our external communication and marketing campaigns, icbc.com, and ongoing earned media, including social media. For example, the *Drive Smart* awareness campaign serves to remind drivers to remain safe, patient, courteous and alert while driving, and how speeding and rushing can affect driving abilities and decision making. On icbc.com, customers are also provided with information on how to raise concerns and have access to a fairness process within ICBC to ensure they are being treated fairly.

We will continue to work collaboratively with our partners and engage our key stakeholders to proactively improve customer relationships and their experience with our services. Ongoing community programs, including the United Way fundraising campaign and Giving Back to Communities, are other ways that ICBC cares for customers and local communities.

## Summary Performance Measures

Strategy	Performance Measures	2010 Actual	2011 Outlook	2012 Target	2013 Target	2014 Target
Understand our customers and exceed their expectations	Insurance Services Satisfaction	97%	97%	93%	93%	93%
	Driver Licensing Satisfaction	94%	94%	93%	92%	92%
	Claims Services Satisfaction	89%	89%	85%	85%	85%

## Performance Measures

ICBC measures customer service performance based on the percentage of satisfied customers for each major transaction type: insurance product purchase, driver licensing, and claims. The design of ICBC's measures and targets reflects the inherent differences of these three key transactions. An independent research firm is retained to conduct ongoing surveys of customers for the purpose of monitoring transactional satisfaction.

### Insurance Services Satisfaction

Independent insurance brokers process over three million policies each year. The insurance services satisfaction measure represents the percentage of customers satisfied with a recent insurance purchase transaction and is based on surveys of approximately 3,600 customers over the course of a year. This measure is typically over 90% and indicates the positive relationship ICBC and its brokers enjoy with customers.

Based on results to date, the 2011 outlook is expected to be 97%; no change from 2010 actual results.

In the 2012 – 2014 period, we have set our target at 93%, which reflects historical satisfaction levels as well as the changes foreseen. We intend to maintain a high level of customer satisfaction while preparing for the renewal of technology and the changes to business processes associated with our Transformation Program.

### Driver Licensing Satisfaction

Each year, ICBC conducts approximately 1.5 million transactions relating to the issuance of driver licences and driver exams. The driver licensing satisfaction measure is

used to determine the percentage of customers satisfied with their transaction with ICBC, which includes renewing a licence, taking a knowledge test or undergoing a road test. This measure is weighted by the number of transactions for each type of service and is drawn from a sample of over 6,000 customers surveyed throughout the year.

The 2011 outlook for ICBC's customer satisfaction for driver licensing is 94%; no change from 2010 actual results.

For 2012, the target has been set at 93%, which is consistent with historical norms. For 2013 and 2014, ICBC anticipates that with the implementation of new initiatives, we will need more time to explain these changes to our customers. This may have a negative impact on wait times and customer satisfaction levels may decrease during this transition period.

### Claims Services Satisfaction

Approximately 900,000 claims are processed each year through ICBC's call centre, claims centres and specialty departments such as, but not limited to, commercial claims and rehabilitation services throughout the province. The claims services satisfaction measure represents the percentage of customers satisfied with a recent ICBC claims transaction and is drawn from a sample of over 25,000 customers surveyed throughout the year.

Based on results to date, the 2011 outlook is expected to be 89%; no change from 2010 actual results.

For 2012 – 2014, ICBC expects that claims services satisfaction may be impacted by the implementation of a new claims management system and changes to business processes. The target of 85% has been set to reflect historical norms.

## Improve Employee Experience

ICBC’s corporate strategy hinges on the successful renewal of several major business systems and processes to enable a concentrated focus on customer needs. Making these changes requires the implementation of new roles and skills, organization design, and working environments for employees. All of this must be supported by a workplace that engages, inspires, and empowers our people, holds them accountable, and provides them with the necessary tools and support to deliver to their potential.

Among these supports is a strong commitment to employee training and development. In 2011, for the second year in a row, ICBC was named one of “BC’s Top 50 Employers” in a third-party competition sponsored by major business media organizations — and one of the main reasons cited was ICBC’s robust learning and development program. In addition to traditional classroom learning and support for outside education programs, ICBC is taking increased advantage of online learning technologies, offering employees access to hundreds of online courses.

ICBC’s objective for improved employee experience includes bolstering workforce capability and capacity, and establishing “organizational readiness” to ensure an effective transition towards a more customer-centric business model. To that end, we have improved our ability to manage change by adopting a more structured, disciplined approach to change management. This is overseen by a centralized change management team that ensures enterprise-wide

consistency in planning and implementing change to help employees adapt to new ways of working.

One of the ways ICBC is also working to improve employee engagement is to increase their involvement in business priorities. This face-to-face approach to sharing strategic information — especially important at a time of major system and process changes — will continue in 2012.

Building a culture of recognition and appreciation is another key factor in supporting an engaged workforce. ICBC is encouraging peer recognition as a way to nurture such a culture. The peer-driven DRIVE Council has been advising ICBC’s CEO on ways to improve recognition; the first such suggestion, an annual employee recognition awards program, was successfully launched in 2011. Further recognition enhancements are planned for 2012.

ICBC also continues to value diversity in its workforce. In 2011, we began implementation of a diversity strategy that included a company-wide survey to establish a baseline picture of its current workforce composition. The goals of the strategy are to ensure that ICBC reflects the diverse communities it serves, and that it attracts the best talent by being welcoming and inclusive. Work in 2012 will include a review of recruitment practices to identify any barriers to employment, and developing targeted community outreach and recruitment initiatives to attract a broader spectrum of qualified candidates.

## Summary Performance Measures

Strategy	Performance Measures	2010 Actual	2011 Outlook	2012 Target	2013 Target	2014 Target
Engaged, inspired, and confident leaders and employees	Employee Engagement	55%	54%	57%	N/A*	N/A*

\* Employee engagement is an annual measure. Targets are not set beyond the current year.

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## Performance Measures

### Employee Engagement

A successful employee engagement strategy helps foster a connection between employees, the work they do, and a belief that the company is socially responsible, offers meaningful recognition, rewards career growth, and enables innovative thinking and input into decision making in order to deliver outstanding customer service. Employee engagement is the willingness of employees to commit and to contribute to company success, along with increasing their emotional attachment to ICBC and intention to remain with the company.

ICBC's success in improving employee engagement is measured in part by using an employee opinion survey administered by a third party. The survey includes six engagement-related questions from which a score is rendered representing the percentage of respondents

whose average score on those questions is 4.5 or greater on a scale of 1 to 6.

The employee opinion survey was sent to all ICBC full-time equivalent employees (excluding contractors) in the fall of 2011. The engagement score, at 54%, was just slightly under the target of 55% — not an unexpected result given the scope and pace of change in ICBC as we pursue our strategic goals. We remain committed to significantly improving our engagement score over the next few years.

ICBC's employee engagement results have been reviewed in context with a number of other internal indicators around performance, recruitment, and retention. Our "scorecard" to measure the employee experience is continually being refined.

## Maintain Financial Stability

ICBC has enjoyed a number of years with very strong financial results. Policyholders have benefited from this strong financial performance: the average auto insurance premium our customers pay today, for those who purchase both Basic and Optional insurance from ICBC, is approximately the same as it was in 2008. Our net income 2011 outlook has fallen substantially due to increasing claims costs and diminishing investment returns. After four years of not having to increase our rates, we face a different reality today and have filed an application with BCUC to increase our Basic insurance rates for 2012. The majority of bodily injury costs reside on the Basic side of the business and this is the major contributor for increased rates. At the same time, we are decreasing our Optional insurance rates for next year and are able to do this because of fewer material damage claims and lower auto crime.

The most significant cost pressure to our business continues to be the cost of bodily injury claims. Bodily injury costs are a major challenge for the insurance industry as a whole,

particularly due to the increases in severity trends over the past several years. Managing the growth of bodily injury claims costs remains a key strategic focus for ICBC and strategies include claims handling based on risk and complexity and increased management oversight, and road safety and loss prevention enhancements.

We have also initiated a comprehensive internal financial review to look for ways that we can reduce current operating costs and maintain future costs at these lower levels. While our operating costs remain low compared to others in the industry, our goal is to limit any growth year-over-year to within the rate of inflation. Our ability to keep operating costs low, means they are not contributing to any of the required rate increase for 2012.

As we look for ways to reduce operating costs, we remain committed to providing the best coverage at the lowest possible price and renewing our aging technology, systems, and processes to better serve and provide greater value to our customers in the future.

## Summary Performance Measures

Strategy	Performance Measures	2010 <sup>(1)</sup> Actual	2011 <sup>(1)</sup> Outlook	2012 <sup>(1)</sup> Target	2013 <sup>(1)</sup> Target	2014 <sup>(1)</sup> Target
Streamlined, efficient, and cost-effective systems and processes	Minimum Capital Test <sup>(2)</sup>	210%	189%	Minimum 175%	Minimum 175%	Minimum 175%
	Combined Ratio	105.8%	109.6%	107.8%	106.3%	106.8%
	Loss Ratio	84.0%	86.8%	86.4%	85.8%	85.9%
	Insurance Expense Ratio	17.0%	17.2%	17.7%	17.4%	17.2%
	Transformation Program Expense Ratio	0.9%	0.9%	1.1%	1.1%	1.0%
	Non-insurance Expense Ratio	<u>3.0%</u>	<u>3.1%</u>	<u>3.2%</u>	<u>3.2%</u>	<u>3.2%</u>
	Expense Ratio (excluding DPAC) <sup>(3)</sup>	20.9%	21.2%	22.0%	21.7%	21.4%
Investment Return (Market Return)	Benchmark + 0.60%	Policy Market Benchmark Return				

### Notes

1. Financial information for all years 2010 to 2014 was prepared based on International Financial Reporting Standards (IFRS).
2. Minimum Capital Test (MCT) is based on the *Guidelines for MCT for Federally Regulated Property and Casualty Insurance Companies, No: A*, dated December 2010 issued by the Office of the Superintendent of Financial Institutions Canada. New Guidelines for MCT were issued October 2011, effective January 1, 2012. Pursuant to legislative change effective April 2010, ICBC transfers its Optional surplus capital to the Government of British Columbia on an annual basis.
3. Deferred premium acquisition costs (DPAC) are commissions and premium taxes related to unearned premiums that are deferred and amortized to income over the term of the related policies. An actuarial evaluation is performed to determine the amount allowable for deferral. The amount of the deferral is limited to the amount recoverable from unearned net Basic and Optional premiums. A premium deficiency exists when future claims and related expenses are expected to exceed unearned premiums. Premium deficiencies are recognized first by writing down the deferred premium acquisition costs with any remaining deficiency recognized as a liability.

## Performance Measures

### Minimum Capital Test (MCT)

MCT is an industry measure set by the Office of the Superintendent of Financial Institutions (OSFI) for federally regulated insurance companies across Canada. The MCT is used to determine whether a company has sufficient capital levels to protect policyholders from financial risk and provide long-term financial stability.

Pursuant to legislative change effective April 2010, ICBC now transfers its excess Optional capital to the Government of British Columbia on an annual basis.

The 2011 MCT outlook is forecast at 189%, as compared to the 2010 result of 210%. The MCT is lower due to a decrease in capital available as a result of the net loss in Basic insurance, the transfer of excess Optional capital to the government, accounting changes resulting from IFRS combined with a decrease in other components of equity resulting from lower unrealized gains.

The 2012 – 2014 MCT targets are set at minimum 175%.

### Combined Ratio

The combined ratio is a key measure of overall profitability within the insurance industry. This measure is calculated as the ratio of all costs (claims costs, claims-related costs, administrative costs, acquisition costs, and non-insurance costs) to all insurance premium dollars earned. A ratio below 100% indicates an underwriting profit while a ratio above 100% indicates an underwriting loss. ICBC's combined ratio is typically higher than the industry average. This is partially due to ICBC's mandate to deliver non-insurance services on behalf of government and these costs are reflected in the combined ratio. Also, ICBC uses its investment income to reduce premiums for its customers rather than to generate a return for shareholders as private insurers do. As a result of lower required premiums, our combined ratio is higher.

The 2011 outlook for the combined ratio is 109.6%. This is higher than the 2010 actual of 105.8% mainly due to higher claims costs. The impact of increased claims costs to the combined ratio is an increase of approximately three percentage points.

Claims costs were mainly impacted by an increase in the number of reported injury claims and a continued increase in injury claim costs.

Premiums earned reflect the flow-through of rate adjustments from prior years. Overall, the outlook for 2011 premiums earned is expected to be a modest increase of 0.2%. This modest increase impacts the combined ratio, the loss ratio, and the expense ratio since insurance premium dollars earned is the denominator in all cases.

For the years 2012 – 2014, combined ratio targets reflect current expectations regarding claims cost trends and operating costs. Operating costs will be managed within inflation while also allowing for an investment in business renewal and replacement of aging technology. The premiums earned assumes required rate changes for both the Basic and Optional insurance businesses. Any proposed changes to Basic insurance rates are subject to regulatory approval.

### Loss Ratio

The loss ratio is a key performance indicator within the insurance industry measuring profitability of the insurance product — the lower the percentage, the more profitable the product. This measure is calculated as the ratio of the total of claims costs and claims-related costs, including loss management costs, to total insurance premium dollars earned.

ICBC's loss ratio is typically higher than the P&C industry because our premiums are set to recover costs and to achieve and maintain capital targets. ICBC uses its investment income to offset rates for its customers, thereby allowing rates to be lower than they would be if ICBC had to generate an underwriting profit as private insurers do. As reflected in the expense ratio, we have lower relative operating costs and can pay more of each premium dollar towards claims and related costs; this results in a higher loss ratio. In addition, ICBC is also mandated to provide Basic insurance to all drivers in BC, including the category of high-risk drivers whose claims costs are proportionately higher. This results in a higher loss ratio for ICBC relative to those insurers who may limit their exposure to such business.

The 2011 outlook of 86.8% is higher than the 2010 actual of 84.0% primarily due to higher claims costs. Claims costs were unfavourable compared to the prior year mainly due to higher number of reported injury claims and increased claims costs.

### Expense Ratio

The expense ratio is a standard industry measure for assessing the percentage of each premium dollar that goes to an insurer's expenses. This measure is calculated as the ratio of non-claims costs to total insurance premium dollars earned. It includes operating costs that are not directly related to servicing claims such as general administration, commissions paid to brokers, taxes paid on premiums written, product design (underwriting), our investment in new systems and processes, and non-insurance costs such as those associated with driver and vehicle licensing and vehicle registration. To enable comparisons with industry benchmarks, the expense ratio excludes the impact of one-time, non-recurring items.

ICBC's expense ratio consists of three key components: the insurance expense ratio, the Transformation Program expense ratio and the non-insurance expense ratio. Segregating expenses in this manner allows ICBC to better manage the costs of operating its insurance and non-insurance businesses, and to reflect the costs of technology renewal and changes to business processes associated with our Transformation Program.

The 2011 outlook expense ratio of 21.2% is higher than the 2010 actual of 20.9% mainly due to higher acquisition costs. Operating costs and Transformation Program expenditures were consistent with 2010 actual results.

In spite of ongoing operating cost pressures, ICBC's results are lower than other automobile insurers. The overall P&C industry expense ratio for 2010 was approximately 30.2%.<sup>7</sup> For insurers who predominantly write auto insurance, the ratio was about 28.9%.<sup>8</sup> ICBC's expense ratio is lower than the industry average due to its ability to achieve economies of scale, the benefits of integrated operations, and lower marketing, underwriting, acquisition and general administration costs. We continue to manage and control our costs by operating efficiently and reducing non-critical business expenditures where possible.

As part of its operations, ICBC incurs non-insurance expenses in providing driver licensing, vehicle licensing and registration, and fines collection on behalf of government. The non-insurance expense ratio represents the ratio of the operations and administration costs of ICBC's non-insurance business to total insurance premium dollars earned. The non-insurance expense ratio outlook, at 3.1%, is slightly higher than historical results. Non-insurance expenses have increased due to additional staff hired to address improved service levels and enhance management overview.

The 2012 – 2014 targets reflect higher expense ratios due to the reinvestment into our business through renewing our aging technology, and depreciation associated with capital expenditures from prior years. In addition, our overall expenses will be impacted by suppliers' increased costs and higher acquisition costs in the future years. ICBC strives to manage and control the increase in operating costs within inflation.

### Investment Return

Investment income is typically a significant component of any insurer's overall net income and plays an important part in reducing the cost of insurance. ICBC investment assets arise from funds set aside for unpaid claims, unearned premiums, and retained earnings. At the end of 2011, ICBC's investment portfolio had a carrying value of approximately \$11.5 billion. The portfolio is managed in accordance with the Statement of Investment Policy and Procedures. This policy establishes guidelines for ICBC to manage the level of risk and return in the investment portfolio. The majority of investments are held in the form of fixed income investments such as bonds.

Equities are held to enhance returns. The asset mix was developed with the Corporation's liability profile and cash flow needs in mind to cover future claims payments, whereas the investment income generated is used to reduce the premiums that would otherwise need to be collected from our policyholders.

Investment returns, which incorporate both change in market value of assets and income generated, are closely monitored. Individual asset class returns are measured relative to the performance of standard market benchmarks. As well, the return of the overall portfolio is measured against a policy benchmark, calculated as the average of individual asset class benchmark returns and weighted according to the portfolio's strategic asset mix. Asset class benchmarks and strategic asset mix are outlined in the ICBC Statement of Investment Policy and Procedures.

Given the heavy weighting in fixed income instruments, the ICBC investment portfolio is subject to interest rate risk. An increase in the interest rate would decrease the market value of fixed income holdings. However, ICBC's claim liabilities would also decrease as a result of a higher discounting rate used. To mitigate interest rate risk, the duration of ICBC bonds has been reduced and closely matches the duration of claim liabilities. ICBC's investment income is very sensitive to the general level of interest rates such that an extended period of low interest rates will have a negative impact on future investment income.

ICBC's fixed income portfolio is subject to credit risk. Credit risk will remain heightened as the economy works to recover from its recent downturn. To mitigate this risk, it is ICBC's investment policy to hold government and investment grade bonds. ICBC also performs its own internal credit analysis. ICBC holds no exposure to European sovereign debt.

Economic growth is expected to be very modest in the upcoming year. Interest rates are expected to remain at historically low levels. The turbulence in the capital markets will likely continue, particularly in the equity and foreign exchange markets given the uncertainty around the strength of the economic recovery and European debt concerns. ICBC is vulnerable to deterioration in equity markets and to currency fluctuations. Nevertheless, these risks are not unique to ICBC and are proactively managed by the Investment Department.

The 2012 – 2014 investment portfolio performance targets are set at the policy market benchmark return, net of fees and operating expenses. For performance measurement purposes, ICBC does not forecast the policy market benchmark return as it is the result of market forces beyond the company's control.

An external performance measurement service independently calculates returns at the portfolio, asset class, and investment manager levels.

<sup>7</sup> MSA Benchmark Report, Property & Casualty, Canada 2011 (Expense Ratio for Total Canadian Property Casualty Industry (including Lloyd's but excluding ICBC and Saskatchewan Auto Fund))

<sup>8</sup> MSA Benchmark Report, Property & Casualty, Canada 2011 (Expense Ratio for Auto Writers excluding ICBC and Saskatchewan Auto Fund)

# Strategy Summary

ICBC's current objectives and targets on its high-level strategies are contained in the following table.

Objective	Strategy	Measures	Outlook <sup>(1)</sup>	Target		
			2011	2012	2013	2014
Improve Customer Perception	Understand our customers and exceed their expectations	Insurance Services Satisfaction	97%	93%	93%	93%
		Driver Licensing Satisfaction	94%	93%	92%	92%
		Claims Services Satisfaction	89%	85%	85%	85%
Improve Employee Experience	Engaged, inspired, and confident leaders and employees	Employee Engagement <sup>(2)</sup>	54%	57%	N/A	N/A
Maintain Financial Stability	Streamlined, efficient, and cost-effective systems and processes	Minimum Capital Test	189%	Minimum 175%	Minimum 175%	Minimum 175%
		Combined Ratio				
		• Claims & Claims-related Expenses & Insurance Expenses	106.5%	104.6%	103.1%	103.6%
		• Non-insurance Expenses	<u>3.1%</u>	<u>3.2%</u>	<u>3.2%</u>	<u>3.2%</u>
		Total	109.6%	107.8%	106.3%	106.8%
		Loss Ratio	86.8%	86.4%	85.8%	85.9%
		Expense Ratio				
• Insurance Expense Ratio	17.2%	17.7%	17.4%	17.2%		
• Transformation Program Expense Ratio	0.9%	1.1%	1.1%	1.0%		
• Non-insurance Expense Ratio	<u>3.1%</u>	<u>3.2%</u>	<u>3.2%</u>	<u>3.2%</u>		
Total	21.2%	22.0%	21.7%	21.4%		
		Investment Return	Policy Market Benchmark Return	Policy Market Benchmark Return	Policy Market Benchmark Return	Policy Market Benchmark Return

## Notes

1. Financial information for all years was prepared based on International Financial Reporting Standards (IFRS).

2. Employee engagement is an annual measure. Targets are not set beyond the current year.

# Alignment with Government's Letter of Expectations

The 2012 Government's Letter of Expectations affirms ICBC's mandate to provide Basic and Optional vehicle insurance to BC motorists, provide driver licensing and vehicle licensing and registration, and administer violation tickets and provide fee and fines collection services on behalf of the Province.

In addition to outlining government's general reporting framework and general directions, the 2012 letter also provides specific direction to ICBC, including the following:

Government's Letter of Expectations	ICBC Alignment
<b>Transformation Program</b>	
<ul style="list-style-type: none"> <li>Continue to invest in ICBC's systems, processes, and products as part of a Transformation Program to meet increasing customer expectations, better ensure the reliability of systems and improve options, and implement more streamlined processes for employees that will improve customer service.</li> <li>Conduct province-wide public engagement to gather input on a range of options for future Basic risk-sharing rate changes, the results of which will be shared with government and the public.</li> </ul>	<ul style="list-style-type: none"> <li>ICBC has begun its multi-year Transformation Program, which includes multiple projects that will collectively help ICBC improve services and options for customers and will provide employees with the tools they need to be successful and to be able to better meet customer expectations.</li> </ul>
<b>Capital Management Frameworks</b>	
<ul style="list-style-type: none"> <li>Comply with the capital management frameworks for Basic and Optional insurance established by government.</li> <li>ICBC will continue to review controllable costs in order to achieve the cost reduction targets agreed to by the Treasury Board.</li> </ul>	<ul style="list-style-type: none"> <li>ICBC is complying with the revised capital management frameworks for Basic and Optional insurance established by the government.</li> </ul>
<b>Road Safety Laws</b>	
<ul style="list-style-type: none"> <li>Support implementation of government's new impaired driving and motorcycle safety laws.</li> </ul>	<ul style="list-style-type: none"> <li>ICBC works with government and stakeholders on road safety and supports these initiatives through public education and awareness strategies.</li> </ul>
<b>Climate Change</b>	
<ul style="list-style-type: none"> <li>Contribute to the BC Provincial Government's climate action objectives and comply with the requirement to be carbon neutral in accordance with the <i>Greenhouse Gas Reduction Targets Act</i>.</li> </ul>	<ul style="list-style-type: none"> <li>ICBC established the 2007 baseline of the company's environmental footprint and implemented government's SMARTTOOL to track and report on the company's greenhouse gas emissions.</li> <li>ICBC has met the requirement to be carbon neutral by 2010.</li> <li>ICBC continues to implement initiatives to reduce our carbon footprint, e.g., continuing energy retrofits, further switch to 100% recycled office paper, building the new Driver Licensing Centre to LEED Gold standards, and a 10-month internal "Curb the Carbon" campaign to encourage employees to help reduce greenhouse gas emissions.</li> <li>ICBC has sponsored campaigns that help drivers understand how good driving practices can reduce fuel costs, lower carbon emissions, and improve road safety.</li> </ul>

Government's Letter of Expectations	ICBC Alignment
<b>Other Initiatives</b>	
<ul style="list-style-type: none"> <li>• Ensure government is advised in advance of the release of information requests under the <i>Freedom of Information and Protection of Privacy Act</i>.</li> <li>• Comply with the international Payment Card (PCI) Data Security Standards.</li> <li>• Continue to support government's policy objectives with respect to off-road vehicles, BC Services Card, climate action, and other road safety initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>• ICBC works with the Government of British Columbia through a process for <i>Freedom of Information and Protection of Privacy Act</i> requests that meets Government needs and does not delay response times.</li> <li>• ICBC is fully compliant with the international Payment Card (PCI) Data Security Standards.</li> <li>• ICBC is working with government on off-road vehicles, BC Services Card, and road safety-related initiatives, and legislative changes.</li> </ul>
<b>Administration of Government Initiatives</b>	
<ul style="list-style-type: none"> <li>• Work with government to prepare an annual plan for all ICBC projects that support government initiatives for approval by Treasury Board.</li> </ul>	<ul style="list-style-type: none"> <li>• ICBC is working with the provincial government to establish an annual planning process, including an annual plan, for all ICBC projects that are implemented in support of government initiatives.</li> </ul>
<b>Governance and Administrative Framework</b>	
<ul style="list-style-type: none"> <li>• Ensure that corporate priorities reflect government's goals.</li> <li>• Comply with government's requirements for Crown corporations, including reporting and information-sharing, Board appointment processes, <i>Public Sector Employers Act</i> and related requirements, rules related to lobbyists, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• ICBC continues to align corporate priorities with government's goals.</li> <li>• ICBC continues to comply with the Government of British Columbia's guidelines and directions for Crown corporations.</li> </ul>

Any additional direction will be incorporated throughout the year and reported in the Annual Report.

# Summary Financial Outlook

The financial forecasts take into consideration ICBC's plans to address the key strategic issues and risks facing the organization and changes in the external environment. Based on these plans, planning assumptions (see next page) are developed and are used to develop the financial forecasts below.

The net income outlook for 2011 is expected to be \$140 million, as compared to the 2010 actual of \$372 million. The decrease in net income is primarily due to higher claims costs, lower investment income, and higher acquisition costs (DPAC).

Claims costs were higher than prior year by \$114 million due primarily to higher number of reported injury claims and increased claims costs. As a result of higher claims costs, the DPAC adjustment was higher than prior year by \$29 million due to lower deferrable expenses allowed.

Investment income decreased by \$89 million primarily due to an impairment in the equity portfolio and a decrease in net realized bond gains.

Throughout 2012 – 2014, ICBC will continue to work on the Transformation Program in order to renew our business

and replace aging technology. This multi-year initiative will improve our customers' experiences by better meeting their needs, and enable our employees by putting the right systems and processes in place to better serve our customers. The forecast expenditures reflect current estimates and planning assumptions.

The forecast for 2012 – 2014 is based on ICBC's status quo business model and reflects current expectations of claims costs trends and investment market conditions. Based on current observations, claims costs are expected to be higher based on longer term claims cost trends. Investment income is forecast to be lower than historical results due to lower interest rates. Capital expenditures, primarily consisting of Transformation Program costs and the ongoing renewal of information technology and facilities, will fluctuate in the forecast period. The increase in operating expenses will be managed and controlled within inflationary levels and as per contractual agreements with external parties. Premiums earned will be impacted by changes in the Basic insurance rates, which are subject to regulatory approval. For the purpose of this forecast, required rate changes are assumed for both the Basic and Optional insurance businesses.

\$ Millions <sup>(1)</sup>	2010 (Actual)	2011 (Outlook)	2012 (Forecast)	2013 (Forecast)	2014 (Forecast)
Premiums earned	\$ 3,667	\$ 3,674	\$ 3,766	\$ 3,925	\$ 4,015
Service fees	55	50	51	51	52
Investment income	530	441	390	426	451
<b>Total revenue</b>	<b>4,252</b>	<b>4,165</b>	<b>4,207</b>	<b>4,402</b>	<b>4,518</b>
Claims incurred (including prior years' claims adjustments)	2,752	2,866	2,928	3,034	3,110
Claims services and loss management	330	321	328	334	340
Insurance operations expenses	176	177	193	206	206
Transformation program	35	32	42	42	39
Acquisition costs (including DPAC adjustment)	477	517	449	432	467
Non-insurance expenses	110	112	121	124	127
<b>Total expenses</b>	<b>3,880</b>	<b>4,025</b>	<b>4,061</b>	<b>4,172</b>	<b>4,289</b>
<b>Net income</b>	<b>372</b>	<b>140</b>	<b>146</b>	<b>230</b>	<b>229</b>
Other comprehensive income (loss)					
Net change in available-for-sale financial assets	67	(244)	44	(33)	(45)
Pension and post-retirement benefits actuarial loss	(92)	(68)			
Total comprehensive income	347	(172)	190	197	184
Total equity — beginning of year	3,428	3,199	2,926	2,935	2,967
Transfer of excess Optional capital to the Government of British Columbia	(576)	(101)	(181)	(165)	(151)
<b>Total equity — end of year</b>	<b>3,199</b>	<b>2,926</b>	<b>2,935</b>	<b>2,967</b>	<b>3,000</b>
<b>Represented by:</b>					
Retained earnings — end of year	2,683	2,654	2,619	2,684	2,762
Other components of equity	516	272	316	283	238
<b>Total equity — end of year</b>	<b>\$ 3,199</b>	<b>\$ 2,926</b>	<b>\$ 2,935</b>	<b>\$ 2,967</b>	<b>\$ 3,000</b>
<b>Capital expenditures<sup>(2)</sup></b>	<b>\$ 44</b>	<b>\$ 86</b>	<b>\$ 101</b>	<b>\$ 98</b>	<b>\$ 69</b>
<b>Long-term debt</b>	<b>Nil</b>	<b>Nil</b>	<b>Nil</b>	<b>Nil</b>	<b>Nil</b>

## Notes

1. Financial information for all years 2010 to 2014 was prepared based on International Financial Reporting Standards (IFRS).

2. Major categories of capital expenditure include: facilities (land, building, and leasehold), vehicles, furniture and equipment, IT systems (computer equipment and software). Looking ahead, ICBC expects an increase in capital expenditure in the IT systems category as critical business systems are renewed and in the facilities category as the company maintains or replaces aging infrastructure.

## Operating Costs by Nature

\$ Millions	2010 (Actual)	2011 (Outlook)	2012 (Forecast)	2013 (Forecast)	2014 (Forecast)
Premium taxes and commission	\$ 472	\$ 483	\$ 498	\$ 509	\$ 516
DPAC adjustments	31	60	(22)	(49)	(20)
Salaries and employee benefits	450	446	461		
Road improvements and other traffic safety programs	35	34	33		
Building operating expenses	32	32	33		
Professional and other services	42	37	44	678*	683*
Office administration	19	19	18		
Computer costs	19	23	24		
Depreciation and amortization	14	18	30		
Other expenses	14	7	14		
	<b>\$ 1,128</b>	<b>\$ 1,159</b>	<b>\$ 1,133</b>	<b>\$ 1,138</b>	<b>\$ 1,179</b>

\* Operating cost targets are not planned in detail beyond the current year but are estimated based on inflationary increases.

## Assumptions

- Based on the current activity and investment market conditions, changes to planning assumptions pertaining to premiums and investment returns have impacted future years' forecasts.
- Prior years' claims reflect changes in the discounted value of unpaid claims.
- The outlook is based on the status quo business model and the company's expected investment in the Transformation Program.
- For policy years 2012 to 2014, required rate changes are assumed for both the Basic and Optional insurance businesses. Any proposed changes to Basic insurance rates are subject to regulatory approval.
- Investment income as shown includes the expected interest, dividends, other income, and realized gains/losses from the investment portfolio.
- These results reflect the overall operations of the business including Basic and Optional insurance and non-insurance activities.
- Claims incurred reflect current claims trends, vehicle population growth, and inflation.
- Driver Penalty Point Premiums were partially replaced by Driver Risk Premiums in 2009. The amount of Driver Penalty Point Premiums and/or Driver Risk Premiums included in the forecast is based on current estimates.

## Forecast Risks and Sensitivities

### Premiums

- 1% fluctuation means \$37 – \$40 million in net premiums.

### Claims

- 1% fluctuation means \$29 – \$31 million in claims costs.
- 1% fluctuation in the unpaid claims balance means \$62 – \$72 million in claims costs.

### Investments

- 1% fluctuation in return means \$114 – \$122 million in investment income.
- 1% change in investment balance means \$4 – \$5 million in investment income.

### Market share

- 1% change in market share represents a \$4 – \$6 million impact on net income.



**HEAD OFFICE**

151 W Esplanade  
North Vancouver, BC  
V7M 3H9

604-661-2800  
1-800-663-3051

**ADDITIONAL INFORMATION**

Additional information about ICBC is available at [www.icbc.com](http://www.icbc.com)

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.121.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.121.1 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, p. 10  
Minor Auto Injuries**

**ICBC on p. 10 notes:**

**“In December 2009, the Supreme Court of Canada upheld Alberta’s cap on minor auto injuries.”**

**In light of the Supreme Court of Canada ruling, does ICBC see some merit for a cap on minor auto injuries?**

**Response:**

The Basic insurance coverage and benefits that ICBC provides are set by the provincial government through legislation and regulation. Changes to the Basic insurance coverage such as a cap on minor auto injuries are the jurisdiction of the BC Legislature.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.122.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.122.1 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, p. 19  
Employee Engagement**

**ICBC on p. 19 states:**

**“In 2011, we have set our target at 55%, equal to the 2010 actual result. One of the key factors affecting our employee experience is our outdated work tools and processes. Our goal is to maintain a workforce of engaged and committed employees while we do the transformative work necessary to modernize our systems and processes.”**

**Does ICBC consider an engagement score of 55% indicative of an engaged and committed employee base?**

**Response:**

ICBC is currently in what Aon Hewitt describes as the moderate employee engagement zone. ICBC's recent results are encouraging, and represent an improvement on previous years, but remain short of its stated goal of 65% engagement by 2014. ICBC also looks at other measures to assess employee alignment, for example, voluntary attrition excluding retirees was 1.7% in 2011.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.122.2 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.122.2 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, p. 19  
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**ICBC on p. 19 states:**

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**Please provide the summary of results from the most recent engagement survey.**

**Response:**

Please see Attachment A – [2011 Employee & Leadership Survey: Results Presentation](#) for a summary of results from the most recent engagement survey.



# **2012.1 RR BCUC.122.2 – Attachment A – 2011 Employee & Leadership Survey: Results Presentation**

# 2011 Employee & Leadership Survey: Results Presentation



Prepared for the Executive Committee

December 19<sup>th</sup>, 2011

building trust. driving confidence.

# Today's Discussion

## Employee Opinion Survey

- Background and Highlights
- Review of the 5-point Engagement Strategy
- Managing Performance
- 2014 Strategy Questions

## Leadership Team Survey

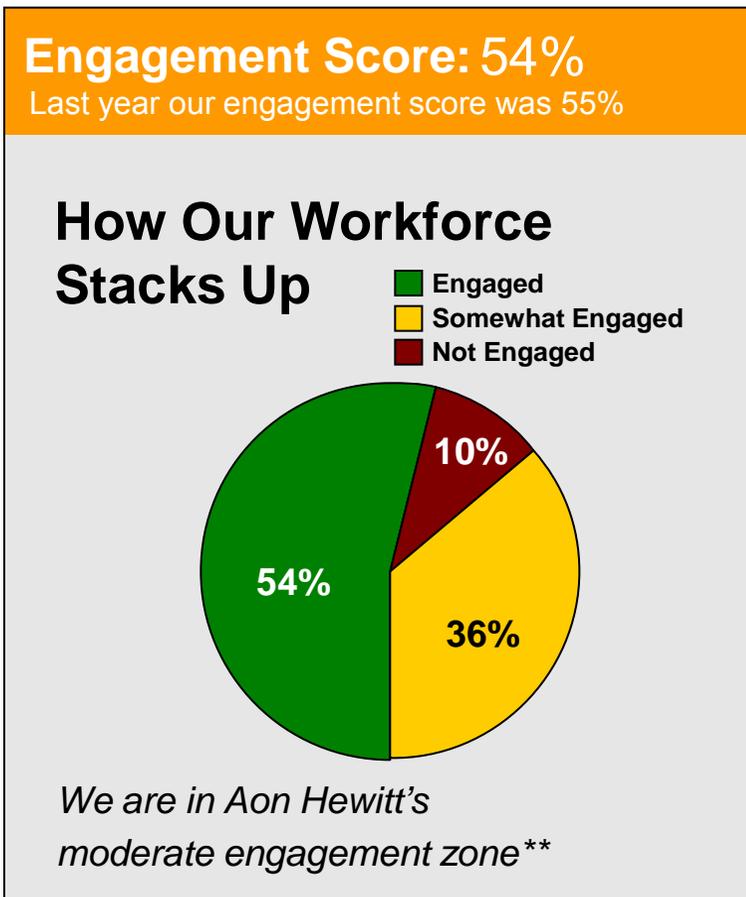
- Highlights

### *Appendices:*

- Appendix A: Additional Results and Demographic Data
- Appendix B: Additional Engagement Scores by Work Group

# Our Results at a Glance

Insurance Industry: 70% (12 organizations)  
Public Sector: 54% (37 organizations)  
Crown Corporations: 55% (15 organizations)  
Moderate Zone: 55%



- Our people are *most* satisfied with:**
- ▶ Co-workers
  - ▶ Physical Work Environment
  - ▶ Corporate Social Responsibility

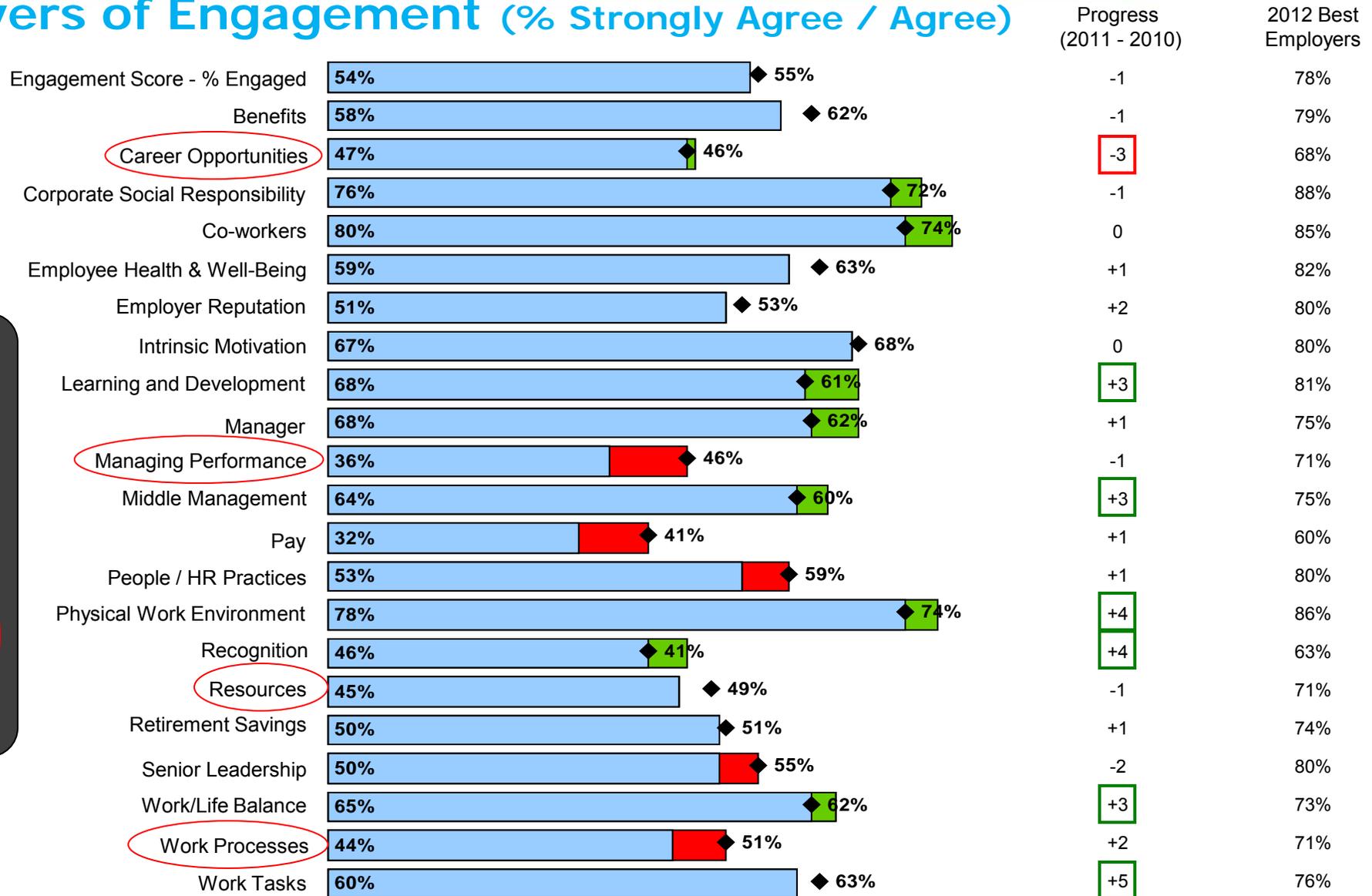
- Our people are *least* satisfied with:**
- ▶ Pay
  - ▶ Managing Performance
  - ▶ Work Processes

- ### Top Areas to Focus On\*
- ▶ Managing Performance
  - ▶ Work Processes, Career Opportunities, Employer Reputation

\* Engagement drivers with the greatest potential positive impact on engagement for your organization

\*\* Moderate Engagement Zone Average: 55% Engaged / 37% Somewhat Engaged / 8% Not Engaged

# Drivers of Engagement (% Strongly Agree / Agree)



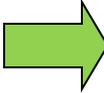
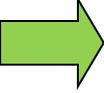
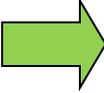
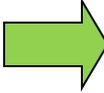
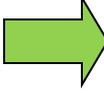
Most drivers are up, but not the most critical ones.

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Moderate Zone = average score for organizations in Aon Hewitt's 2008 - 2012 database with engagement in the range of 45% - 64%

# Checking in on the Employee Engagement Strategy

Five Areas of Focus	Survey Results / Progress	
<ul style="list-style-type: none"><li>Increase manager/staff involvement in business priorities</li></ul>		<ul style="list-style-type: none"><li>Understanding of the 2014 strategy has improved</li><li>Manager support scores are very strong (above high engagement organization average)</li></ul>
<ul style="list-style-type: none"><li>Improve the way we manage change</li></ul>		<ul style="list-style-type: none"><li>Scores for work processes and work tasks driver questions increased (2 and 5 points, respectively)</li><li>"My manager does an excellent job addressing employee questions/concerns" up 2 points</li></ul>
<ul style="list-style-type: none"><li>Build a culture of recognition and appreciation</li></ul>		<ul style="list-style-type: none"><li>Recognition driver score increased by 4 percentage-points (9 points in two years)</li><li>Scores increased for all recognition questions (2 to 6 percentage-point increases)</li></ul>
<ul style="list-style-type: none"><li>Listen more to employees</li></ul>		<ul style="list-style-type: none"><li>Manager effectiveness scores higher than the norm</li><li>Manager score sustained, middle manager score went up slightly (perceptions of manager / middle manager)</li></ul>
<ul style="list-style-type: none"><li>Invest in employee wellness and development</li></ul>		<ul style="list-style-type: none"><li>Learning and development score up 3 percentage-points</li><li>"My manager supports my health and wellbeing" up 2 points</li></ul>

# Where can we be most impactful to increase engagement?

Key Driver	Sub Driver	Potential Impact	Current Actions
<b>Managing Performance</b>	<ul style="list-style-type: none"> <li>•Process identifies my strengths and weaknesses</li> <li>•The way my performance is measured makes sense to me</li> </ul>	<b>+34%</b>	Performance Management Review (Mercer)
<b>Career Opportunities</b>	<ul style="list-style-type: none"> <li>•Sufficient opportunities to advance</li> <li>•Easy to move to different roles</li> </ul>	<b>+28%</b>	Claims Hierarchy, Learning Centre
<b>Recognition</b>	<ul style="list-style-type: none"> <li>•Appropriate (right people, right things)</li> <li>•Applied consistently</li> </ul>	<b>+24%</b>	Policy, DRIVE Council, Staff Relations
<b>Work Processes</b>	<ul style="list-style-type: none"> <li>•Clear processes &amp; procedures</li> <li>•I am involved in decisions that affect my job</li> </ul>	<b>+28%</b>	TP & other corporate projects
<b>Resources</b>	<ul style="list-style-type: none"> <li>•We have sufficient resources on our team to get our work done</li> </ul>	<b>+26%</b>	TP & other corporate projects
<b>Pay*</b>	<ul style="list-style-type: none"> <li>•My performance has a significant impact on my pay</li> </ul>	<b>+24%</b>	Collective Bargaining

*\*Note on "Pay": score for union employees: 22%, non-union: 63%*

# Performance Management – Deep Dive

**Recent performance conversation = higher engagement !**

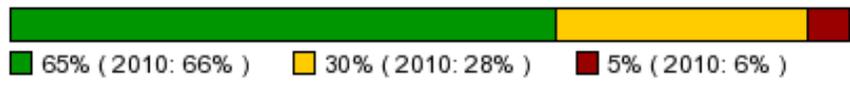
Most recent performance conversation with manager = This week (n=253)



Engagement Progress (2011 – 2010)

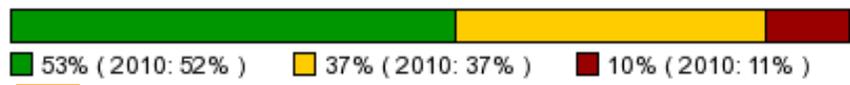
-5

Most recent performance conversation with manager = This month (n=672)



-1

Most recent performance conversation with manager = In the past 3 months (n=2594)



+1

Most recent performance conversation with manager = In the past 6 months (n=244)



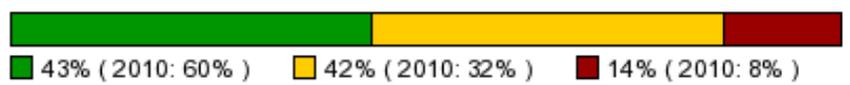
0

Most recent performance conversation with manager = In the past 12 months (n=85)



+1

Most recent performance conversation with manager = We have not discussed my performance (n=97)



-17

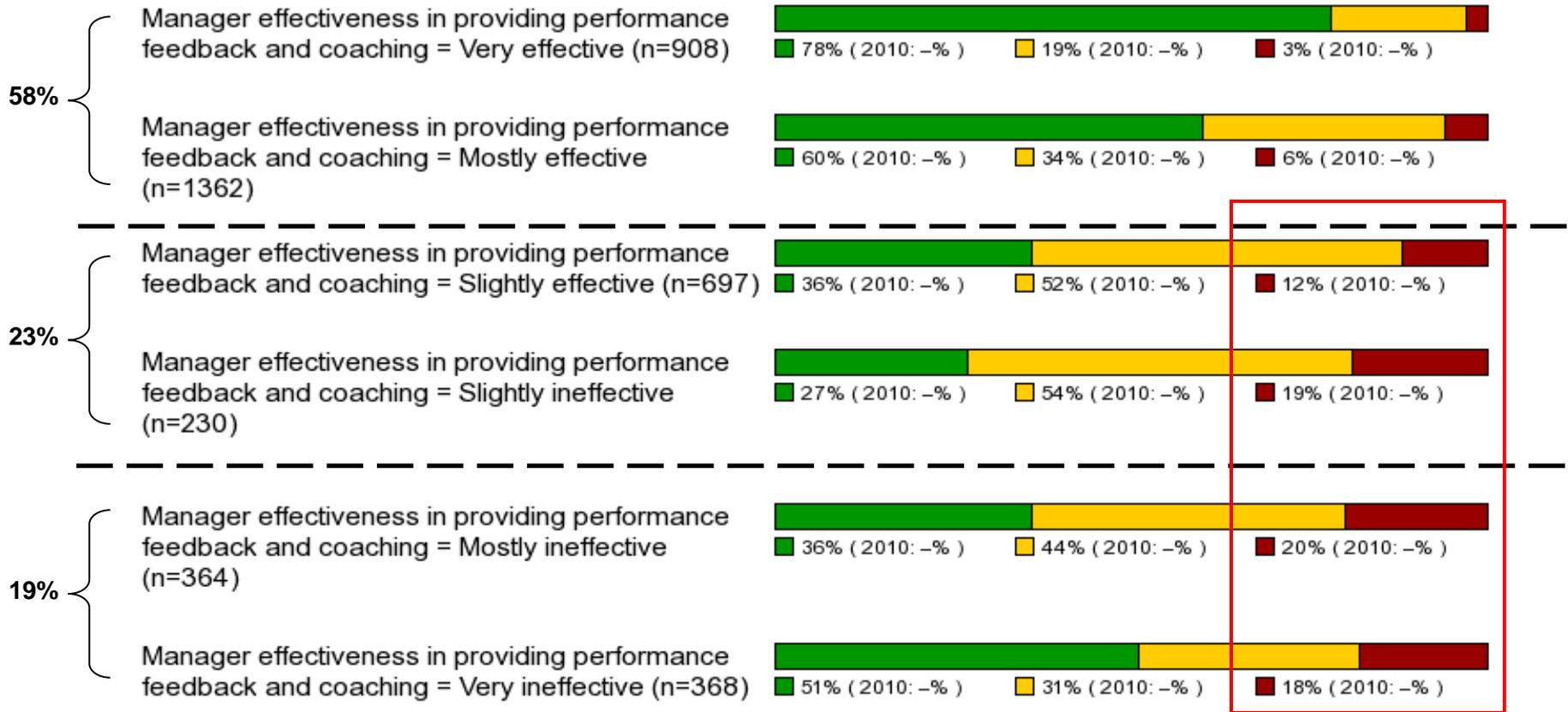


Note: Due to rounding, percentages may not sum to 100.

# Engagement by Feedback / Coaching Effectiveness



- Majority (58%) report “very” or “mostly” effective feedback and coaching
- Engagement significantly higher for those who report “very” or “mostly” effective feedback and coaching



-- indicates no 2010 report for the group

# Manager Verbatim

More than 120 non-managers and 30 managers provided verbatim comments relating to Managing Performance in this year's survey.

The themes from the survey align with the themes from Mercer's recent Performance Management Review

- Manager themes
  - Don't deal with poor performance / poor attitudes
  - Formal reviews happen too often
  - Targets: too hard to achieve / too many
  - Not enough focus on customer metrics
  - Irrelevant objectives / out of individual control
  - Development plan is cumbersome / not always relevant
  - Promotes micromanagement / too much auditing of employees' work
  - No two-way communication

# Non-manager Verbatim

- Non-manager themes (positive)
  - Good tool to gauge performance
  - Helps with career planning, opportunities, advancement
  - Provides recognition
- Non-manager themes (negative)
  - Managers too busy to do it well / happens to often
  - No value / waste of time / no impact on pay or promotion
  - Intimidating / negative focus
  - Don't deal with poor performers / poor attitudes
  - Too numbers driven / don't understand or agree w/ measurements
  - Subjective
  - Team failure = individual failure
  - Performance doesn't roll up to next level

## A sample comment from the survey

*“Overall, I am happy with my total compensation at ICBC. I understand ICBC is performance driven but I do not feel that my performance plan accurately depicts my role. Every year I am given additional tasks and I have been informed that they will not be included on my performance plan. This makes it difficult, if not impossible to get recognized for this work.*

*I have also been given objectives that are unattainable as the change never receives senior management approval. I find performance plans make me feel disengaged from my job.*

*I motivate myself to do a great job with every task I am given. I continue to look for opportunities to improve in areas to support ICBC corporate objectives. I understand ICBC may not recognize my efforts but I will continue to strive to exceed in my role.*

*In the future, I hope that ICBC assists with my motivation.”*

## 2014 Strategy and Diversity Questions

Question	Result (Change)
I understand ICBC's 2014 Strategy.	67% (+5)
I understand how my role and work will contribute to ICBC's 2014 strategy.	59% (+2)
I believe that the work planned and underway to support ICBC's 2014 strategy will improve our <b>customer</b> experience.	61% (-1)
I believe that the work planned and underway to support ICBC's 2014 strategy will improve our <b>employee</b> experience.	45% (-2)
I support ICBC's initiatives in pursuit of a workplace that reflects the diversity of the communities and customers we serve.	79% (new)

# Leadership Survey Results



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# Your Results at a Glance

**Executive Committee: 100% (100% in 2010)**  
**Vice Presidents: 100% (92% in 2010)**

## How Your Leadership Engagement Compares:

- ▶ 2012 Best Employers (Average): 97%
- ▶ 2012 The Rest (Average): 93%
- ▶ Moderate Engagement Zone\* (Average): 93%

**Employee  
Engagement:**

**54%**  
(55% in 2010)

## Leader Variability:

- ▶ Above average variability
- ▶ In the "moderate" range

## Leader / Employee Gap:

- ▶ Above average gap
- ▶ In the "moderate" range

\* Source: Aon Hewitt Best Employers Database (2012)

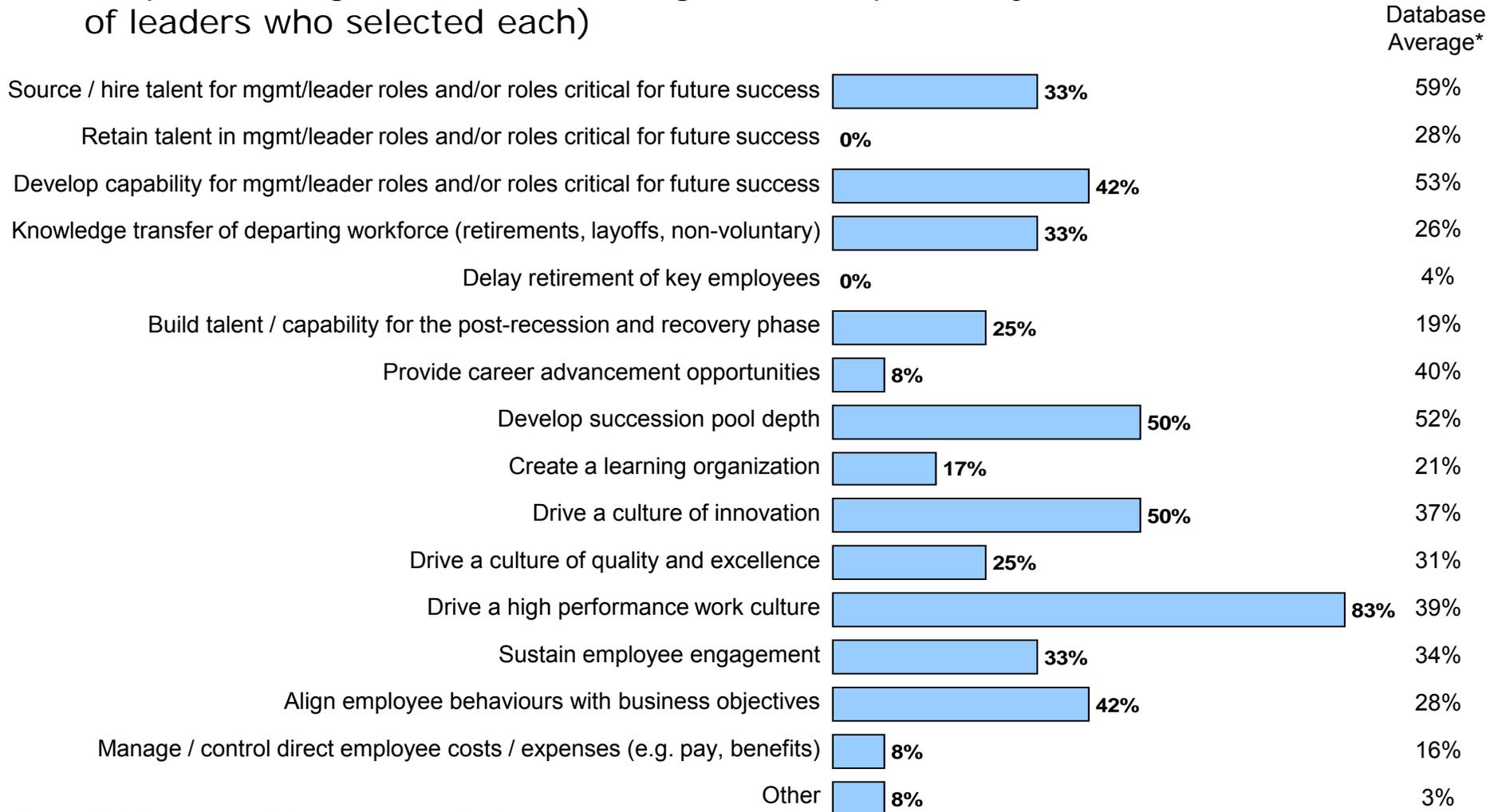
# Key People Challenges



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# Key People Challenges – Executive Committee

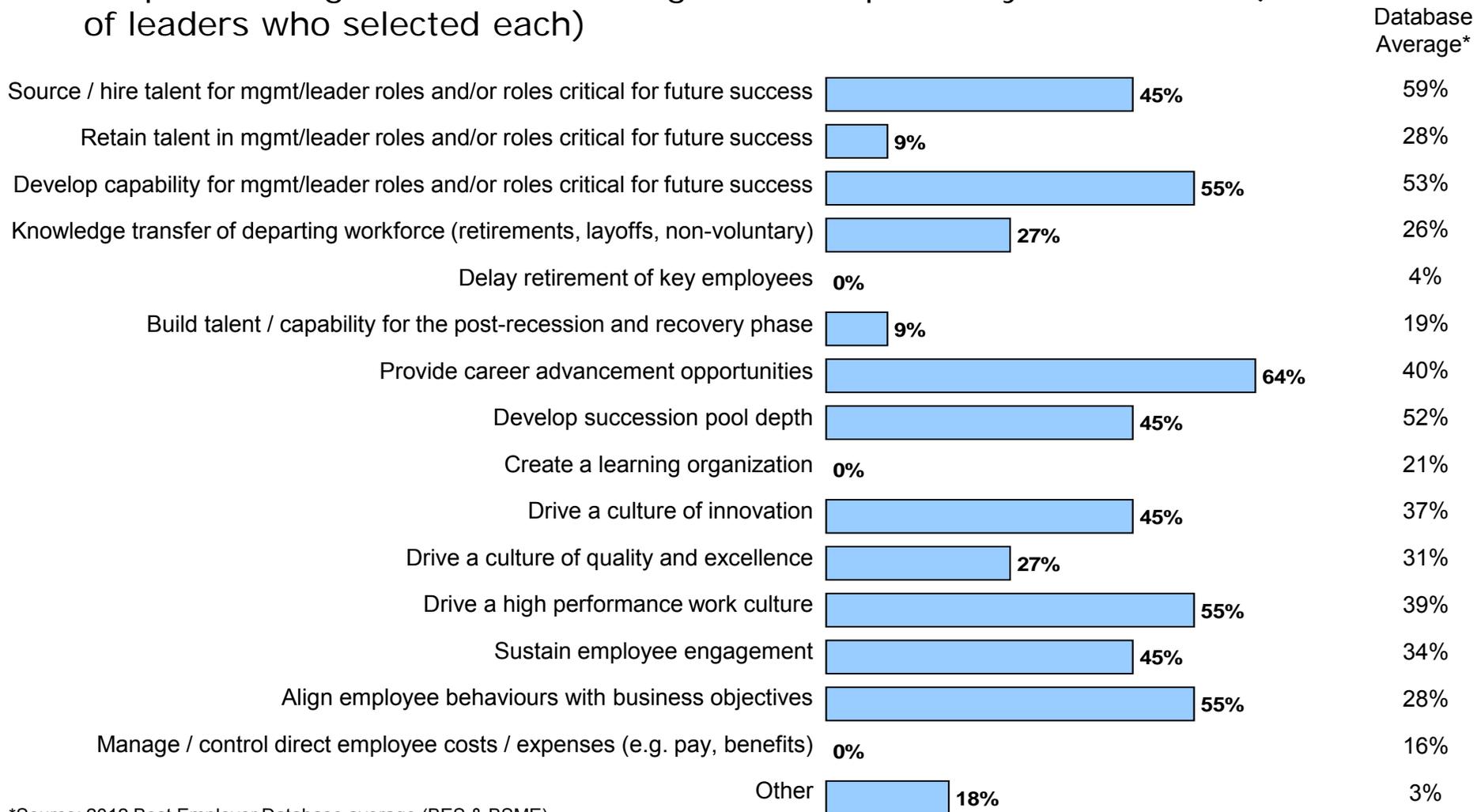
- People challenges with the most significant impact on your business (% of leaders who selected each)



\*Source: 2012 Best Employer Database average (BES & BSME)

# Key People Challenges – Vice Presidents

- People challenges with the most significant impact on your business (% of leaders who selected each)



\*Source: 2012 Best Employer Database average (BES & BSME)

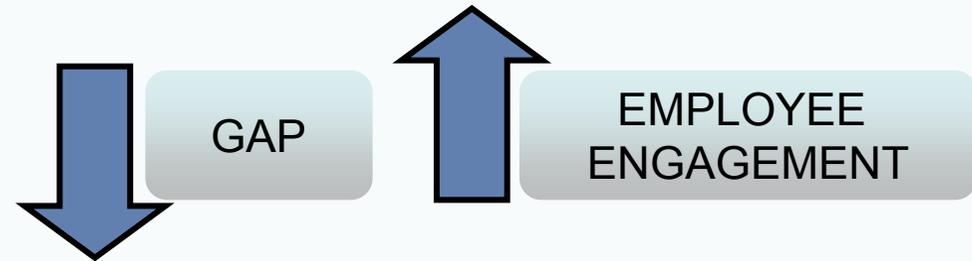
# Leader / Employee Gap



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# Leader / Employee Gap

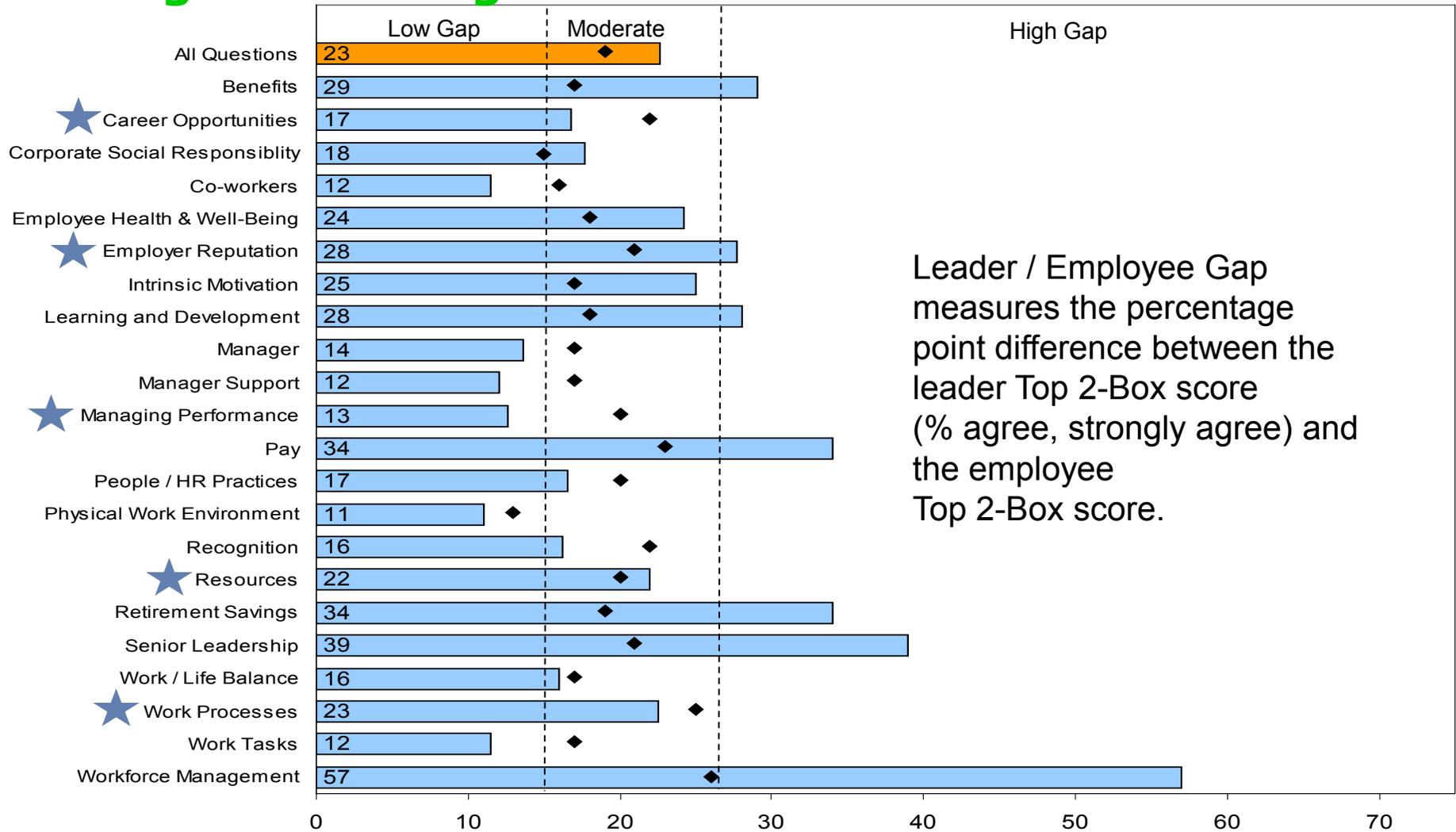
Why do we measure the gap?



- Direct link to employee engagement
  - Previous Best Employer survey results have shown that employee engagement is strongly correlated to the size of the gap between leaders' perceptions and employees' perceptions of the work environment
  - The charts on the following two slides illustrate the gap between leaders and employees at your organization (for matching survey questions)
  - The statistics displayed are the Positive Perception Scores (i.e. the percentage of respondents who Agree or Strongly Agree)

# Leader / Employee Gap (Executive Committee)

## –Average Percentage Point Difference



Leader / Employee Gap measures the percentage point difference between the leader Top 2-Box score (% agree, strongly agree) and the employee Top 2-Box score.

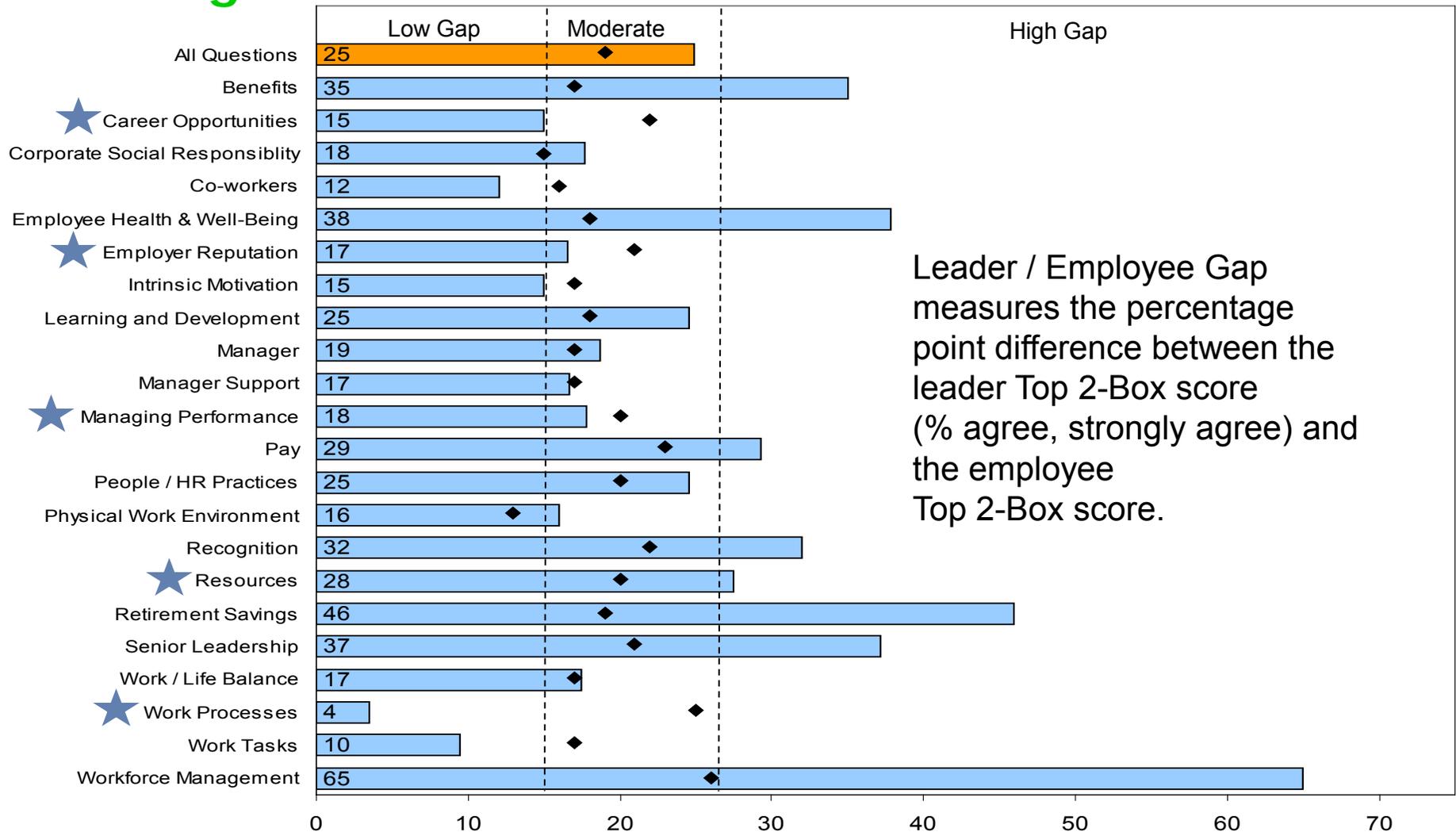
◆ 2012 Best Employer Database average (BES & BSME)

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20

★ High Opportunity Employee Engagement Drivers

# Leader / Employee Gap (Vice Presidents) – Average Percentage Point Difference



Leader / Employee Gap measures the percentage point difference between the leader Top 2-Box score (% agree, strongly agree) and the employee Top 2-Box score.

◆ 2012 Best Employer Database average (BES & BSME)

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# Appendix A



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# Taking Action on the Survey Results

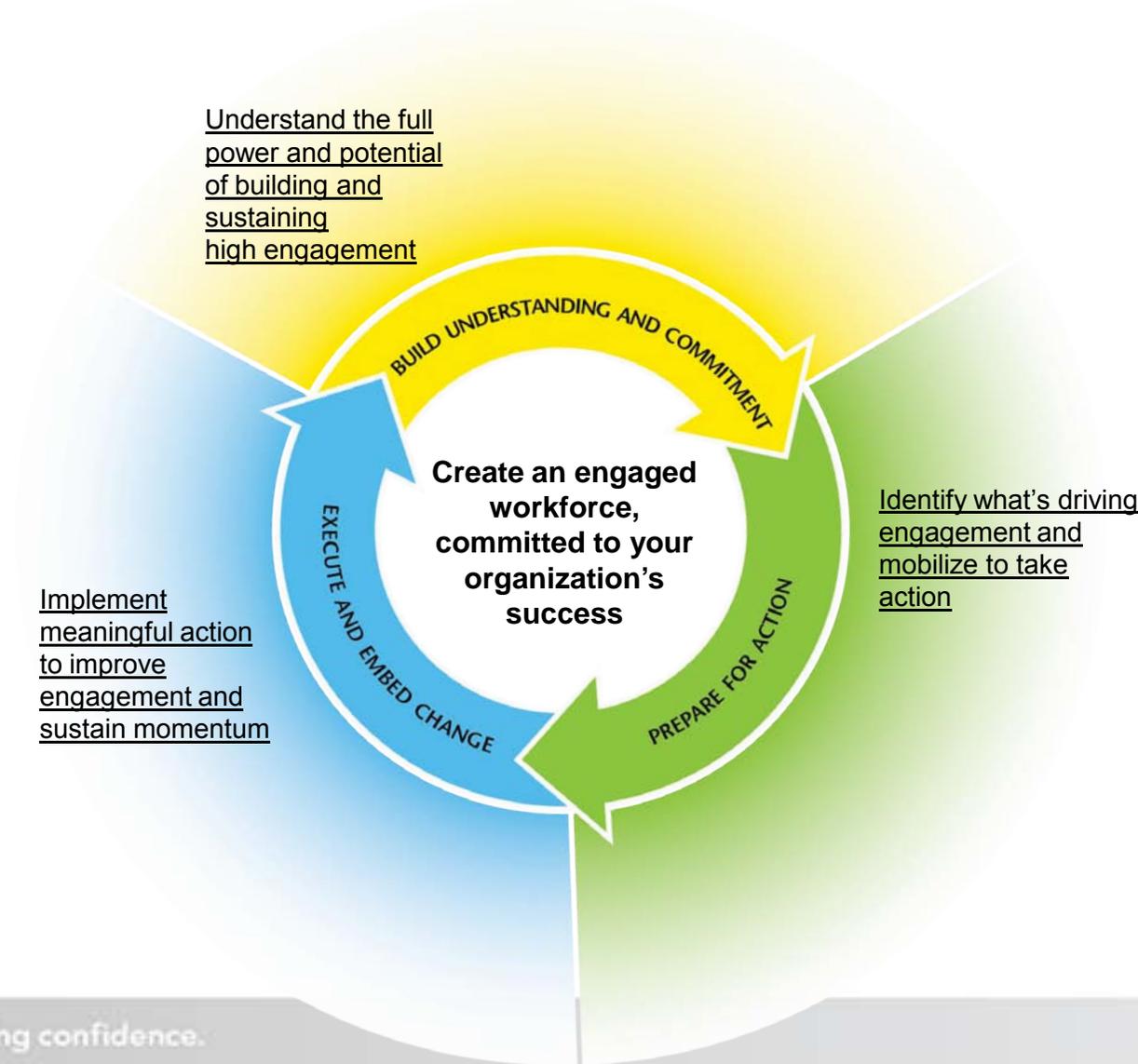


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# Aon Hewitt's Recommendations: Voice / Insight / Action

<b>Voice</b> <b>(what employees told us)</b>	<b>Insight</b> <b>(why is it important? / what does it mean?)</b>	<b>Action</b> <b>(what we recommend you do next)</b>
<ul style="list-style-type: none"> <li>▪ Strong manager-level engagement was sustained and remains above the zone average</li> <li>▪ Professional / Specialist / Technician and Team Member / Front-Line employee groups are still below the zone average</li> </ul>	<ul style="list-style-type: none"> <li>▪ A solid foundation is in place to continue to focus on manager effectiveness (continue to build on the trust and influence of managers to deliver key messages and to improve engagement at all levels)</li> <li>▪ Several high impact drivers are influenced by people managers (managing performance, career opportunities, recognition)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Continue to support managers and provide them with the tools, training and resources to be effective</li> <li>▪ Focus on delivery of performance management, career opportunities, recognition to improve overall employee engagement</li> </ul>
<ul style="list-style-type: none"> <li>▪ "Work" related engagement drivers are still important to improve engagement (work processes, resources)</li> </ul>	<ul style="list-style-type: none"> <li>▪ May be difficult to move engagement up with low perceptions of both processes and resources</li> </ul>	<ul style="list-style-type: none"> <li>▪ Continue with the strategy of listening to employees for feedback on what needs to improve</li> <li>▪ Communicate the link between changes and feedback from employees</li> </ul>
<ul style="list-style-type: none"> <li>▪ Recognition efforts are paying off (score increased 4 percentage-points this year)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Continue to build on the foundation and deliver on the desired culture of recognition and appreciation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Talk to employees about the recognition work that has been completed so far – is there anything that should be adjusted</li> </ul>
<ul style="list-style-type: none"> <li>▪ Pay score is very low and continues to be a relatively high impact driver for ICBC Overall and particularly for some groups (e.g. Business Transformation, Finance, IS)</li> </ul>	<ul style="list-style-type: none"> <li>▪ May be difficult to move engagement up without taking pay "off the table"</li> </ul>	<ul style="list-style-type: none"> <li>▪ Understand / address pay issues (e.g. is it the amount, the understanding of total compensation, the link to performance)</li> </ul>

# Moving from Results to Action



# Engagement Driver Impact Rankings

## ■ Top 5 Positive Engagement Impact Drivers

	ICBC Overall	Bus. Transf.	Claims	Comm.	Corporate Affairs	Driver Licensing	Finance	HR	IS	Insurance	Customer Strategy & Marketing
<b>Number of Respondents</b>	4034	116	1882	66	70	591	352	116	421	363	57
<b>Engagement Score</b>	<b>54%</b>	<b>58%</b>	<b>46%</b>	<b>70%</b>	<b>57%</b>	<b>74%</b>	<b>55%</b>	<b>68%</b>	<b>48%</b>	<b>58%</b>	<b>58%</b>
Managing Performance	1	4	1	4	1	1	1	2	1	1	2
Career Opportunities	2	7	2	1	3	2	5	2	3	2	3
Employer Reputation	2	1	4	2	3	3	7	1	2	7	4
Work Processes	2	1	2	8	2	4	4	4	4	2	1
Resources	5	5	4	5	6	7	6	9	7	4	14
Pay	6	3	7	17	6	7	3	10	4	7	19
People / HR Practices	6	9	7	6	6	4	7	8	8	4	6
Recognition	6	9	9	13	14	4	2	7	6	7	5
Senior Leadership	9	7	6	3	3	12	11	6	9	12	13
Work Tasks	10	5	11	9	6	14	10	14	9	4	11
Employee Health and Well-Being	11	13	10	10	12	7	14	12	16	10	12
Intrinsic Motivation	12	11	12	12	10	14	11	10	13	10	10
Middle Management	13	16	13	17	16	7	9	12	11	19	8
Retirement Savings	14	11	13	10	16	7	14	17	15	12	8
Manager	15	13	18	14	19	12	11	5	12	14	7
Learning and Development	16	16	15	17	18	14	18	14	13	15	20
Benefits	17	19	15	6	13	19	16	19	17	16	18
Work / Life Balance	17	13	15	14	11	17	16	14	18	16	14
Corporate Social Responsibility	19	18	19	14	19	19	19	18	18	16	16
Physical Work Environment	20	21	20	20	15	19	19	20	20	20	21
Co-workers	21	19	21	20	21	17	19	21	20	20	16

### Key Opportunities:

Improved satisfaction in these areas will have the greatest positive impact on engagement

Note: A minimum of 50 respondents is required for this analysis.

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■ Manager / Performance-Related    ■ Work-Related

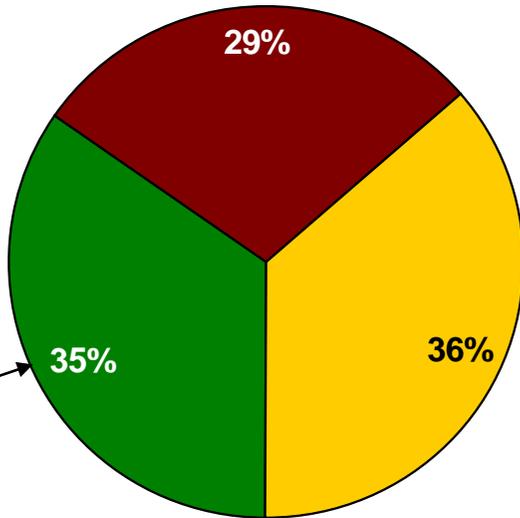
# Appropriate Action will be Taken as a Result of this Survey

■ % Strongly Agree / Agree

■ % Slightly Agree / Slightly Disagree

■ % Disagree / Strongly Disagree

## All Employees

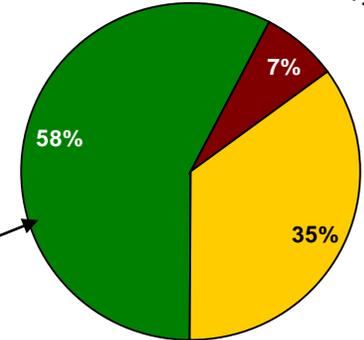


Below the norm  
(44%)

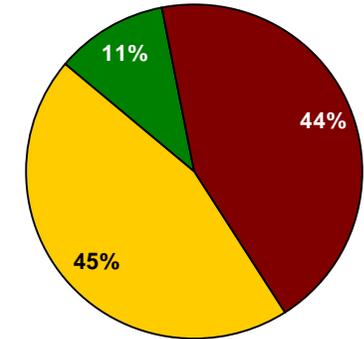
Below the norm  
(73%)

## Employee Agreement by Level of Engagement:

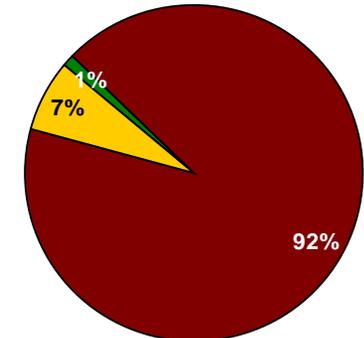
Engaged Employees  
(54%)



Somewhat Engaged Employees  
(36%)



Not Engaged Employees  
(10%)



# Aon Hewitt's Recommendations: Voice / Insight / Action

<b>Voice</b> <b>(what employees told us)</b>	<b>Insight</b> <b>(why is it important? / what does it mean?)</b>	<b>Action</b> <b>(what we recommend you do next)</b>
<ul style="list-style-type: none"> <li>Strong manager-level engagement was sustained and remains above the zone average</li> <li>Professional / Specialist / Technician and Team Member / Front-Line employee groups are still below the zone average</li> </ul>	<ul style="list-style-type: none"> <li>A solid foundation is in place to continue to focus on manager effectiveness (continue to build on the trust and influence of managers to deliver key messages and to improve engagement at all levels)</li> <li>Several high impact drivers are influenced by people managers (managing performance, career opportunities, recognition)</li> </ul>	<ul style="list-style-type: none"> <li>Continue to support managers and provide them with the tools, training and resources to be effective</li> <li>Focus on delivery of performance management, career opportunities, recognition to improve overall employee engagement</li> </ul>
<ul style="list-style-type: none"> <li>"Work" related engagement drivers are still important to improve engagement (work processes, resources)</li> </ul>	<ul style="list-style-type: none"> <li>May be difficult to move engagement up with low perceptions of both processes and resources</li> </ul>	<ul style="list-style-type: none"> <li>Continue with the strategy of listening to employees for feedback on what needs to improve</li> <li>Communicate the link between changes and feedback from employees</li> </ul>
<ul style="list-style-type: none"> <li>Recognition efforts are paying off (score increased 4 percentage-points this year)</li> </ul>	<ul style="list-style-type: none"> <li>Continue to build on the foundation and deliver on the desired culture of recognition and appreciation</li> </ul>	<ul style="list-style-type: none"> <li>Talk to employees about the recognition work that has been completed so far – is there anything that should be adjusted</li> </ul>
<ul style="list-style-type: none"> <li>Pay score is very low and continues to be a relatively high impact driver for ICBC Overall and particularly for some groups (e.g. Business Transformation, Finance, IS)</li> </ul>	<ul style="list-style-type: none"> <li>May be difficult to move engagement up without taking pay "off the table"</li> </ul>	<ul style="list-style-type: none"> <li>Understand / address pay issues (e.g. is it the amount, the understanding of total compensation, the link to performance)</li> </ul>

# Moving from Results to Action



# Appendix A: Additional Results and Demographic Data



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# Engagement Behaviours – Say, Stay, Strive

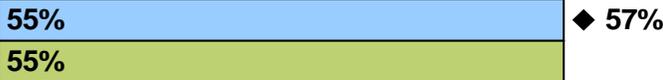
## Say (% Strongly Agree / Agree)

I would, without hesitation, recommend ICBC to a friend seeking employment.



-2

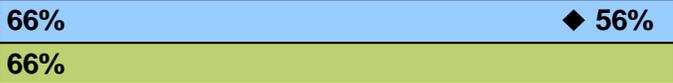
Given the opportunity, I tell others great things about working here.



0

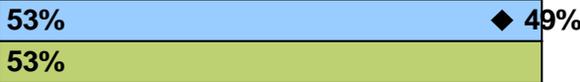
## Stay (% Strongly Agree / Agree)

It would take a lot to get me to leave ICBC.



0

I rarely think about leaving ICBC to work somewhere else.



0

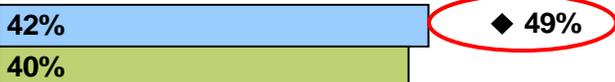
## Strive (% Strongly Agree / Agree)

ICBC inspires me to do my best work every day.



+2

ICBC motivates me to contribute more than is normally required to complete my work.



+2

■ ICBC 2011    ■ ICBC 2010    ◆ Moderate Engagement Zone

## Divisional Results

Division	2011 Score	2010 Score	Change
Business Transformation	58	52	+6
Claims	46	47	-1
Communications	70	69	+1
Corporate Affairs	57	50	+7
Customer Strategy	58	57	+1
Driver Licensing	74	72	+2
Finance	55	62	-7
Human Resources	68	69	-1
Information Services	48	47	+1
Insurance	58	69	-11

# New this year: Manager Effectiveness and Support

## Manager Effectiveness Index

- Organizations are categorized as having high, moderate or low manager effectiveness based on employee perceptions of the following 12 questions:

My manager (the person you report to):
Provides the support I need to succeed
Sets clear expectations and goals with me
Provides regular feedback that helps me to improve my performance
Works with me to find ways I can develop and grow in my job
Effectively deals with poor performance in our team
Takes action to support my health and well-being where appropriate
Displays integrity and ethical conduct at all times
Inspires me to do my best work every day
Takes the time to let me know my efforts are appreciated
Understands my job well enough to evaluate my performance
Does an excellent job of addressing employee questions or concerns
Makes sure that we take the time to celebrate our successes

## Manager Support Index

- Organizations are categorized as having high, moderate or low manager support based on people manager perceptions of the following 6 questions\*:

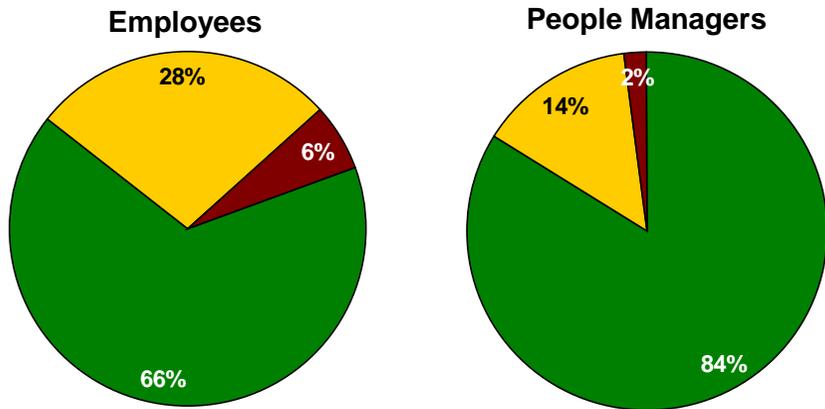
People managers:
I get the support I need to successfully manage others (e.g. training, development, coaching, tools, time, resources)
I encourage my direct reports to provide me with feedback on my performance as a manager
I have the tools and resources I need to provide valuable career advice to individuals on my team
I have the training / development / coaching I need to provide valuable career advice to individuals on my team
I receive effective feedback from my manager on how my leadership style influences my team
I get the support I need to help people on my team improve their performance (e.g. training, development, coaching, tools, resources)
Research Findings:
Engagement is highly correlated with manager effectiveness and support
Greater manager / leader alignment in highly engaged organizations
Research is based on the 2012 Best Employers Study participants consisting of over 267 organizations with feedback from over 118,000 employees and 2,500 leaders

# Manager Effectiveness and Support Indices

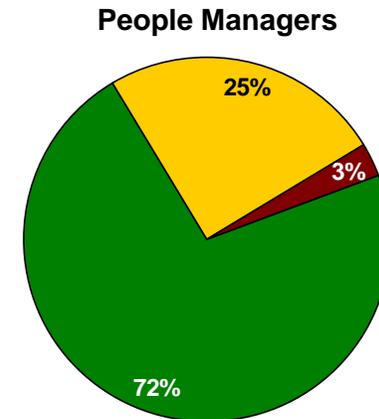
- **High Effectiveness** = % responding 'Agree' and 'Strongly Agree'
- **Moderate Effectiveness** = % responding 'Slightly Agree' and 'Slightly Disagree'
- **Low Effectiveness** = % responding 'Disagree' and 'Strongly Disagree'

- **High Support** = % responding 'Agree' and 'Strongly Agree'
- **Moderate Support** = % responding 'Slightly Agree' and 'Slightly Disagree'
- **Low Support** = % responding 'Disagree' and 'Strongly Disagree'

## Effectiveness



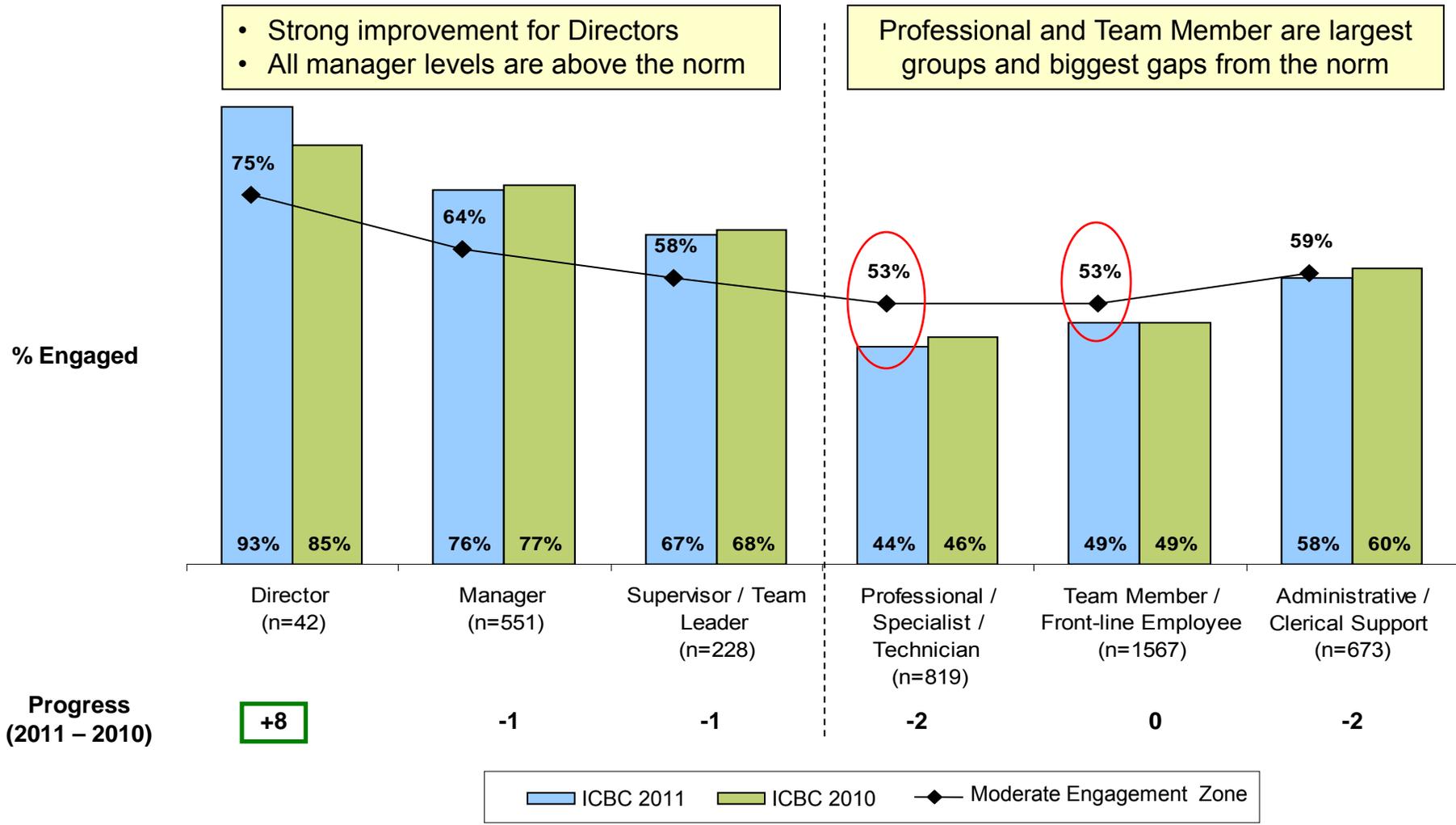
## Support



Aon Hewitt Best Employers Database Averages (2012)			
All Employees*	High	Mod	Low
High Engagement Zone	73%	23%	4%
Moderate Engagement Zone	61%	31%	8%
Low Engagement Zone	45%	42%	13%

Aon Hewitt Best Employers Database Averages (2012)*			
People Managers	High	Mod	Low
High Engagement Zone	68%	29%	3%
Moderate Engagement Zone	49%	44%	6%
Low Engagement Zone	36%	52%	12%

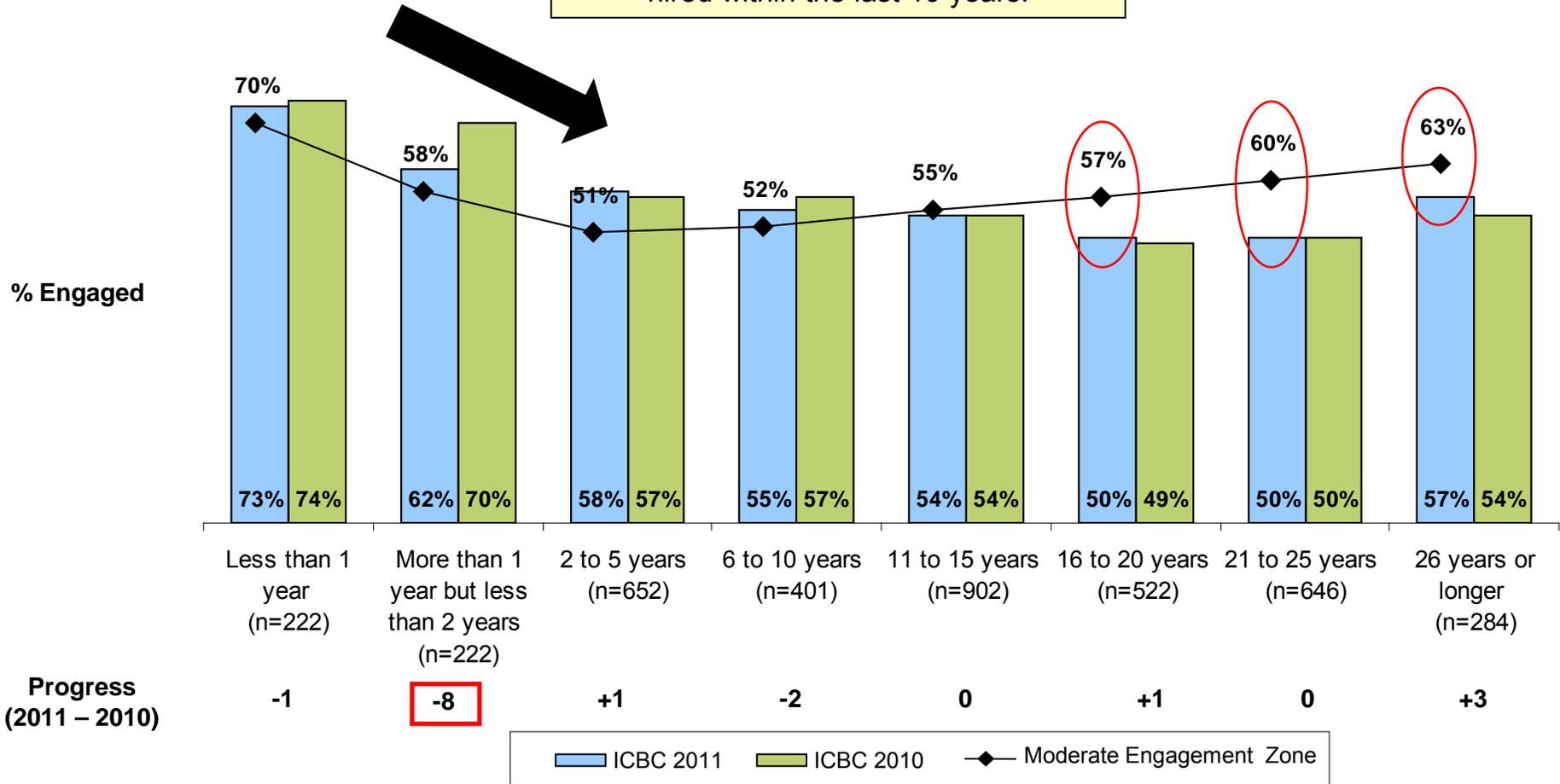
# Job Role



Moderate Zone = average score for organizations in Aon Hewitt's 2008 - 2012 database with engagement in the range of 45% - 64%

# Years of Service

Engagement is higher among employees hired within the last 10 years.



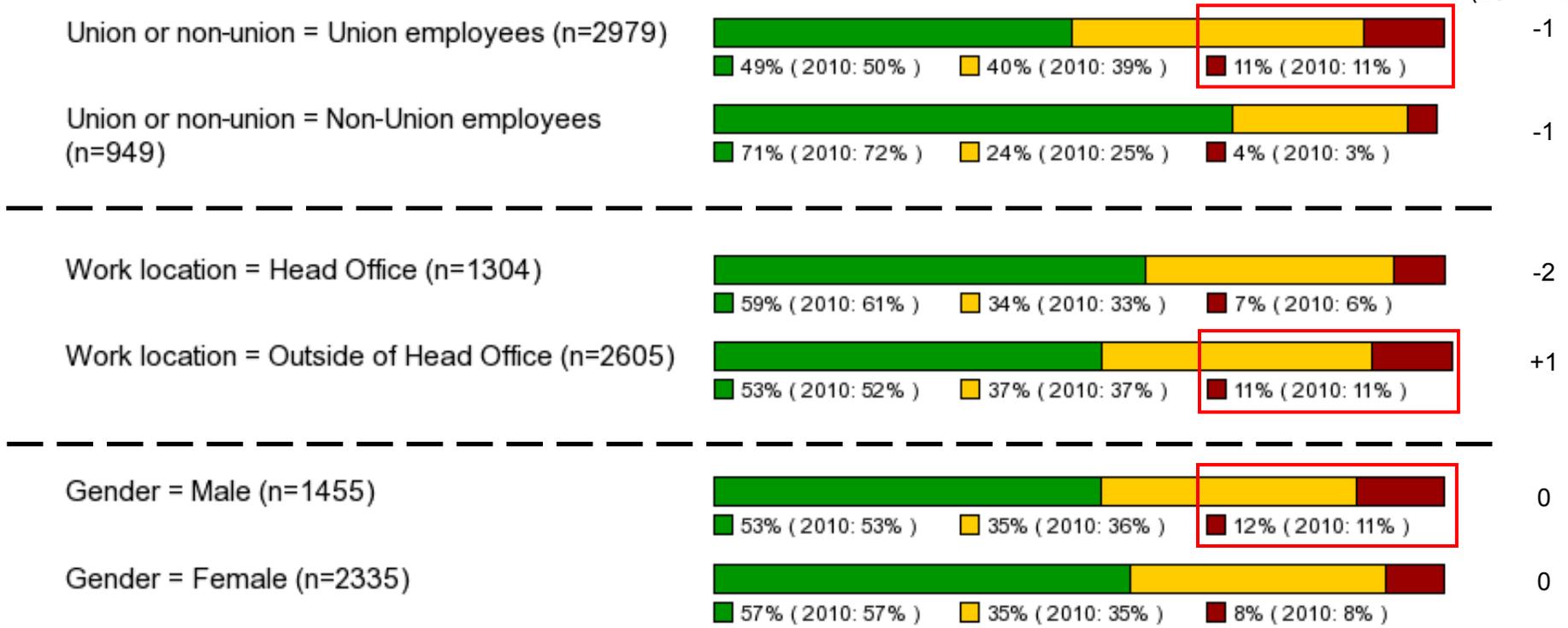
Moderate Zone = average score for organizations in Aon Hewitt's 2008 - 2012 database with engagement in the range of 45% - 64%

# Union, Work Location, Gender

■ Engaged    ■ Somewhat Engaged    ■ Not Engaged

Large gap between union and non-union  
(22-pt gap in 2011 and 2010, 11-pt gap in 2009, 5-pt gap in 2008)

Engagement Progress  
(2011 – 2010)



Note: Due to rounding, percentages may not sum to 100.

# Engagement by Promotion, New Job Role



Had a promotion in the last 12 months = Yes  
(n=422)



Had a promotion in the last 12 months = No  
(n=3485)



Moved to a new job / role in the last 12 months = Yes  
(n=925)



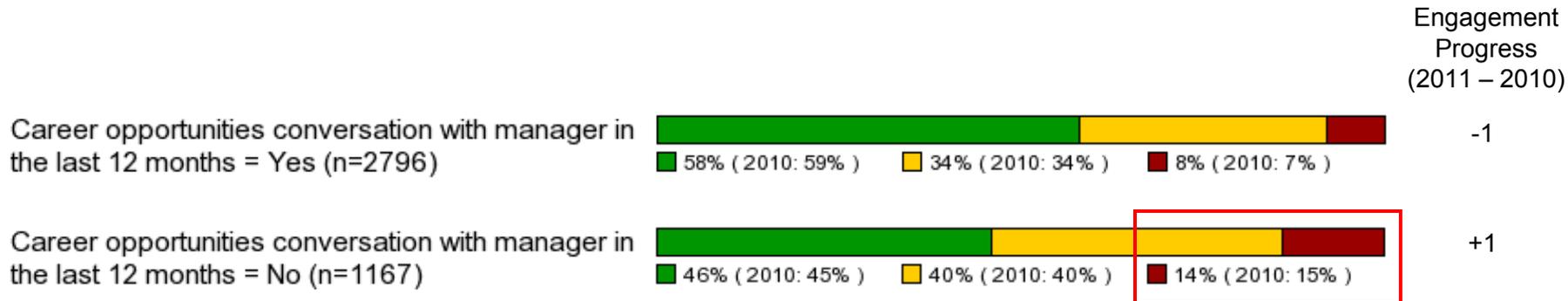
Moved to a new job / role in the last 12 months = No  
(n=2977)



- Engagement higher for those who have been promoted and/or moved to a new job / role in the past year
- Career Opportunities is a top driver for ICBC with a focus on opportunities being sufficient, easy to move to, and available

-- indicates no 2010 report for the group

# Career Opportunities Conversation



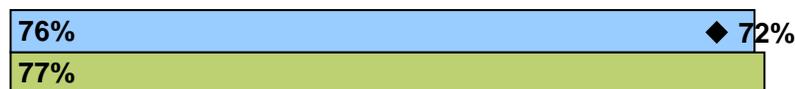
Nearly 30% of respondents have not had a conversation in the past year and engagement is significantly higher for those who have

Note: Due to rounding, percentages may not sum to 100.

# Dimensions of Corporate Social Responsibility

Progress  
(2011 – 2010)

**Overall** – ICBC is a socially and environmentally responsible organization



-1

**Community and Society** – ICBC plays an active role in the community



-2

**Corporate Governance** – ICBC considers long-term social, environmental and economic impacts when it makes decisions



+1

**Customer Relationships** – ICBC is fair, respectful and honest with customers / clients



0

**Employee Relations** – Employees are treated fairly, respectfully and honestly at ICBC



-1

**Environment** – ICBC works to minimize the impact of its operations, products / services on the environment



+3

■ ICBC 2011    ■ ICBC 2010    ◆ Moderate Engagement Zone

# Engagement Impacts

## Sample Chart – Illustrative Data Only

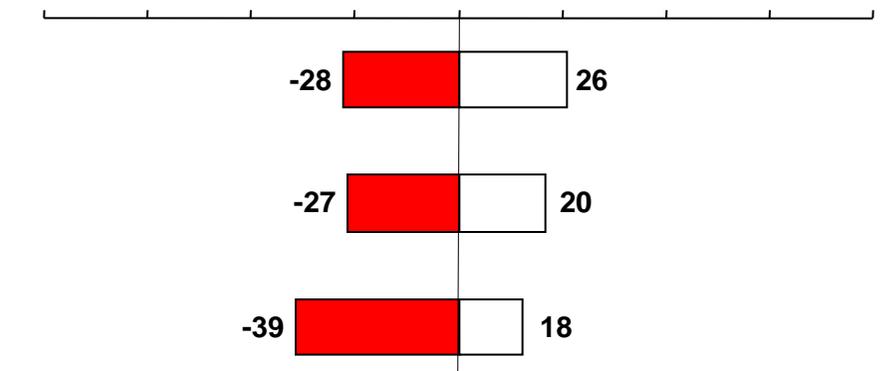
**Engagement Score: 62%**

Engagement Driver	% Strongly Agree / Agree
Career Opportunities - My future career opportunities here look good	52%
Managing Performance - The way we manage performance here keeps me focused on achieving this organization's goals	52%
Organizational Reputation - This organization is considered one of the best places to work for someone with my skills and experience	61%

### Engagement Driver Questions and Scores

Potential Negative Impact ■  Potential Positive Impact

-100   -75   -50   -25   0   25   50   75   100



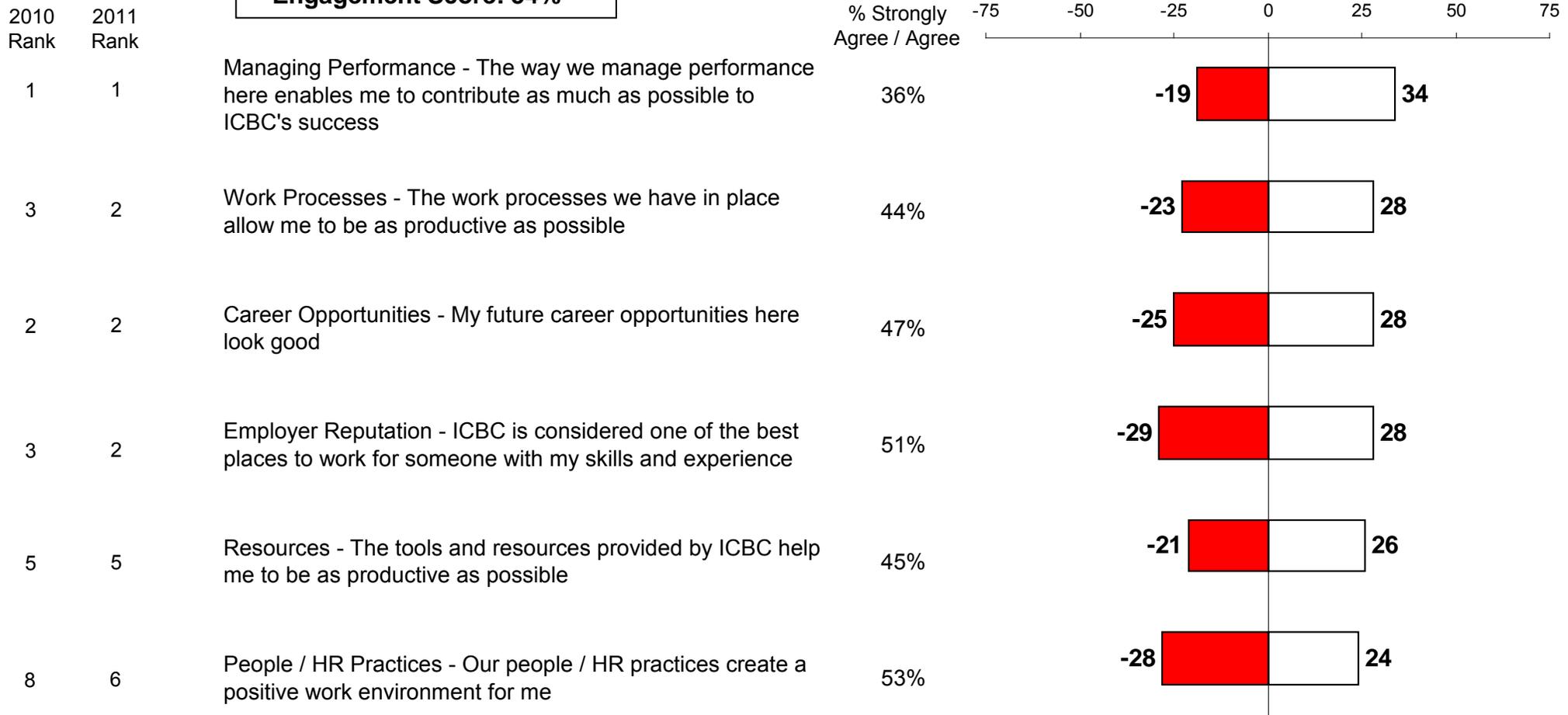
Potential maximum decline in the engagement score if the driver score drops to 0%

Potential maximum increase in the engagement score if the driver score increases to 100%

# Engagement Impacts

Potential Negative Impact ■  Potential Positive Impact

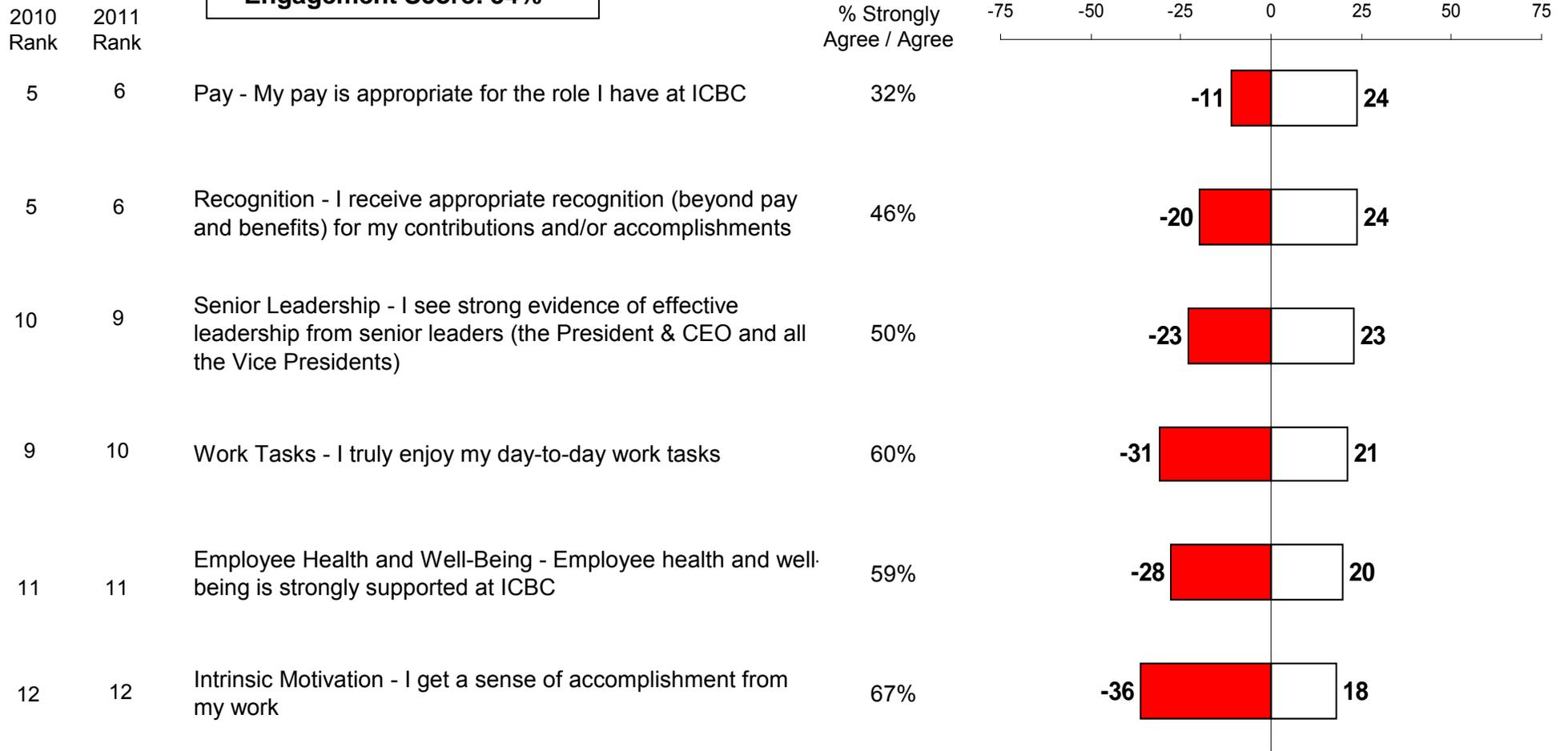
**Engagement Score: 54%**



# Engagement Impacts cont'd...

Potential Negative Impact ■  Potential Positive Impact

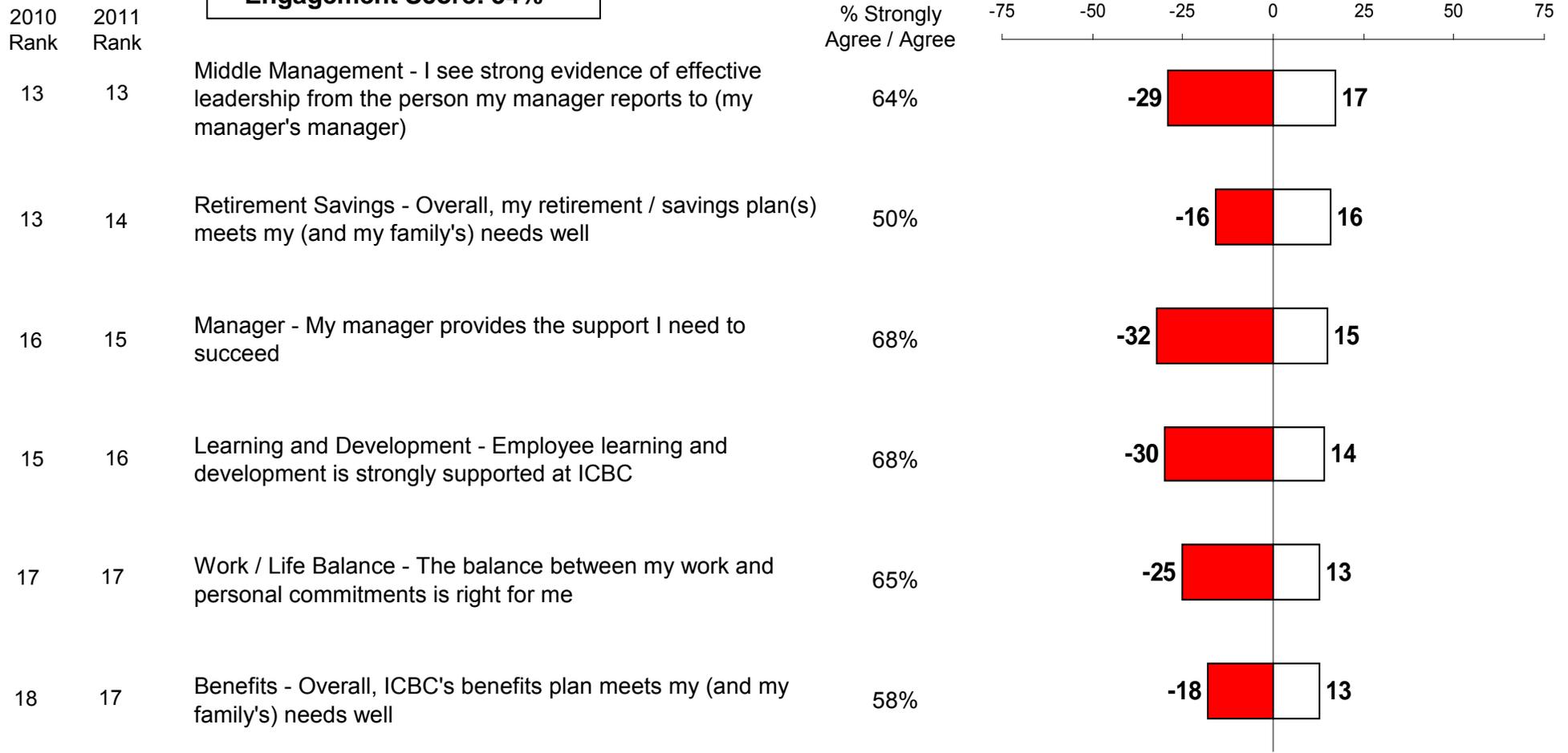
**Engagement Score: 54%**



# Engagement Impacts cont'd...

Potential Negative Impact ■  Potential Positive Impact

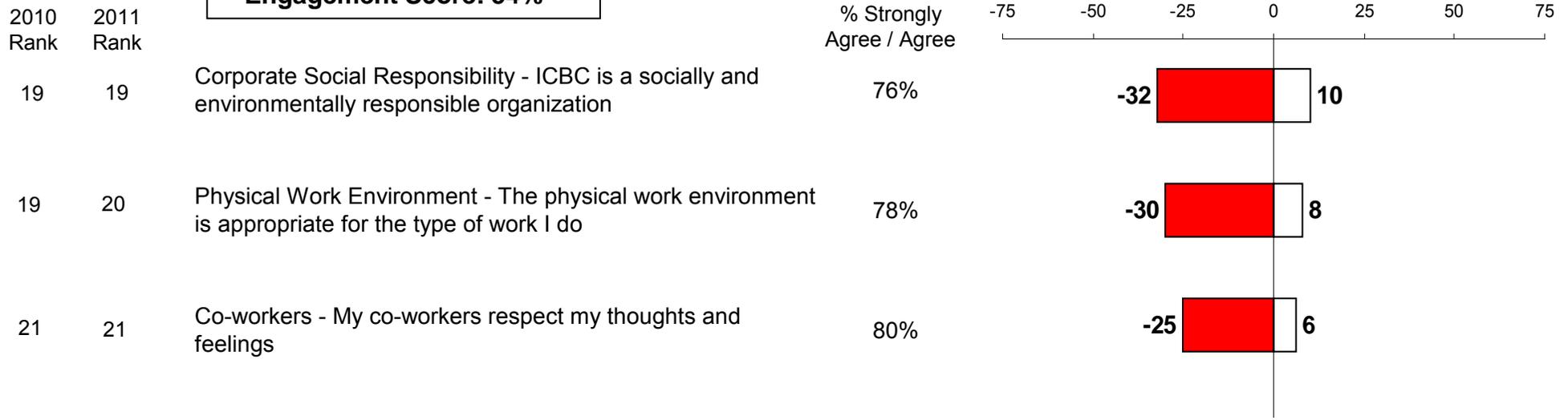
**Engagement Score: 54%**



# Engagement Impacts cont'd...

Potential Negative Impact ■  Potential Positive Impact

**Engagement Score: 54%**

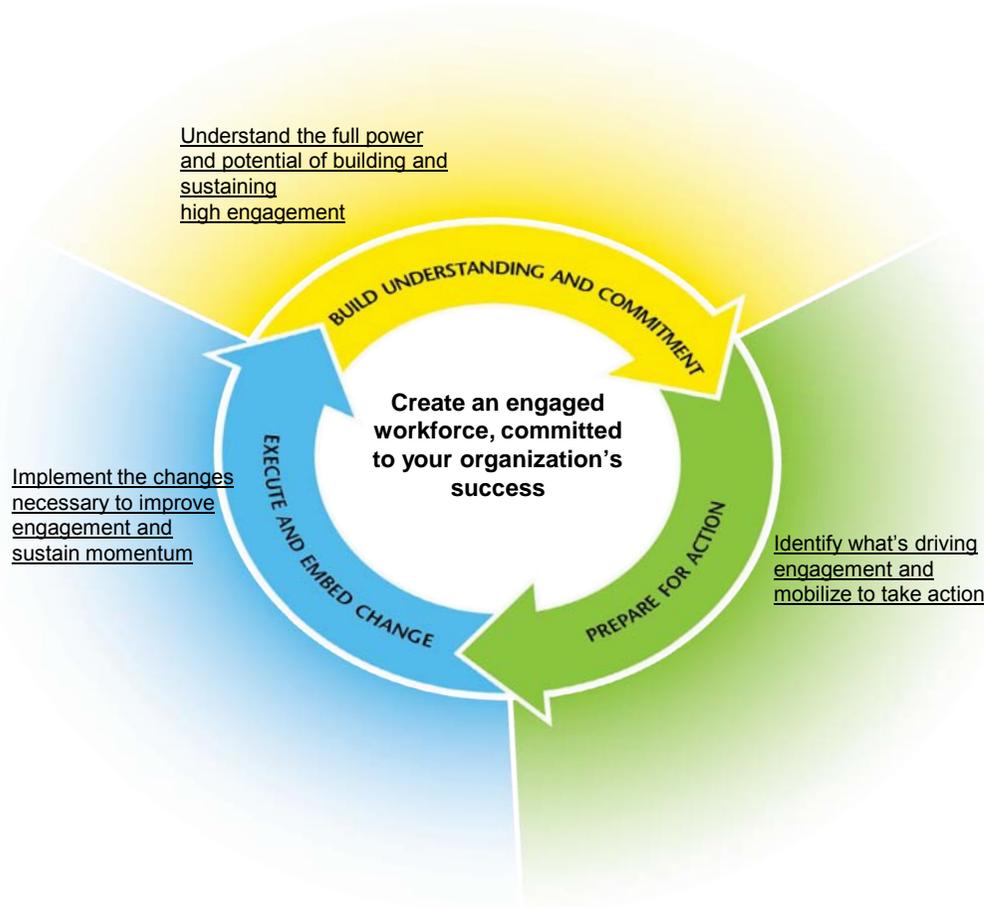


# Build Understanding and Commitment



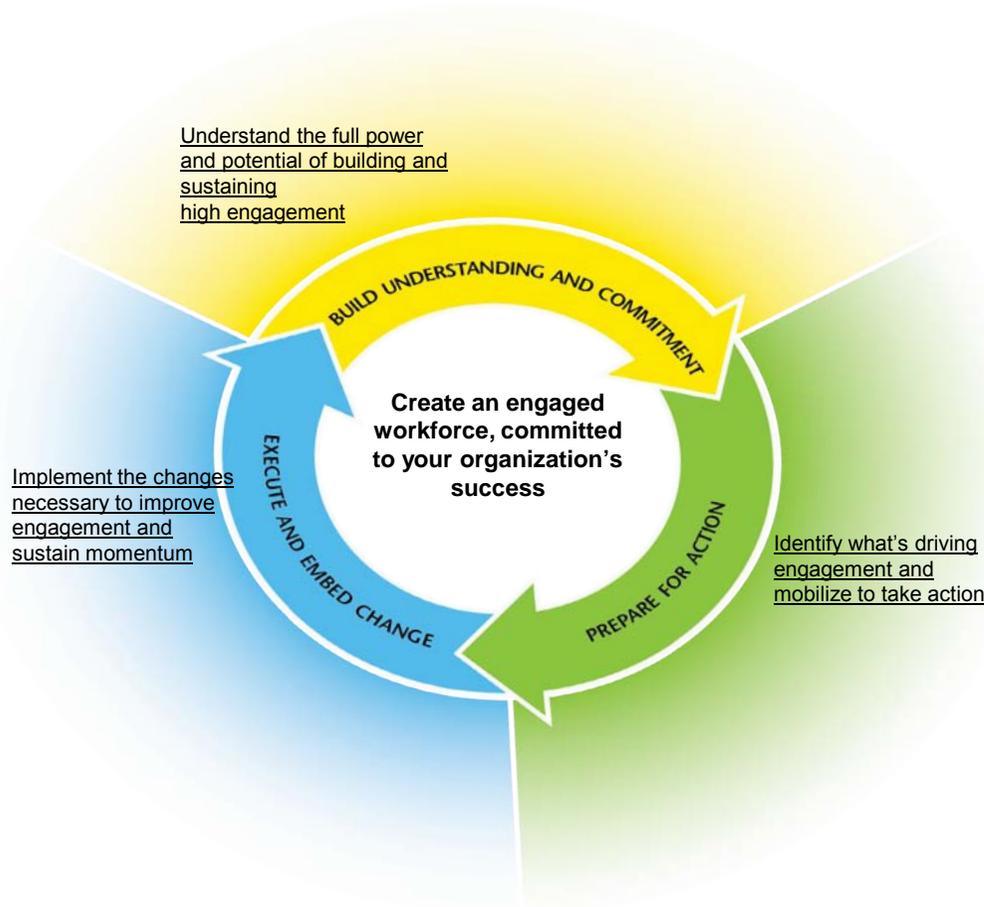
Act	Connect
<ul style="list-style-type: none"> <li>▪ Ensure key stakeholders understand how engagement is defined and measured and how the engagement model works</li> <li>▪ Build understanding of your current state through the survey results, collateral information and initial insights relating to key areas of focus to sustain and improve engagement</li> <li>▪ Define the desired future state and a realistic timeline for its achievement                             <ul style="list-style-type: none"> <li>– Build leadership commitment to creating and implementing plans to make it a reality</li> <li>– Focus on solidifying commitment before leaping to action</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Roll out high-level preliminary results as quickly as possible, followed by more detailed enterprise and business-line functional results</li> <li>▪ Communicate broad timeline for responding to survey findings</li> <li>▪ Conduct manager and HR education sessions</li> <li>▪ Conduct town-hall or departmental roll-out meetings</li> <li>▪ Conduct small group meetings (in-person, video conference, web ex, etc.)</li> </ul>

# Prepare for Action



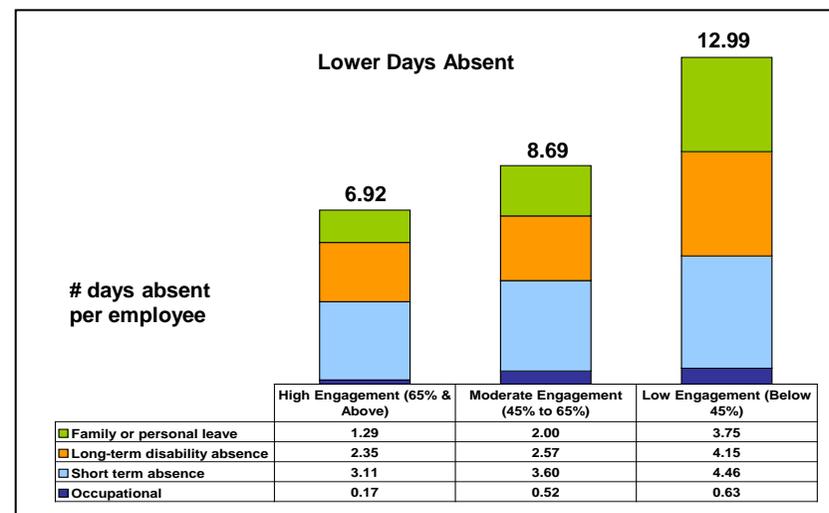
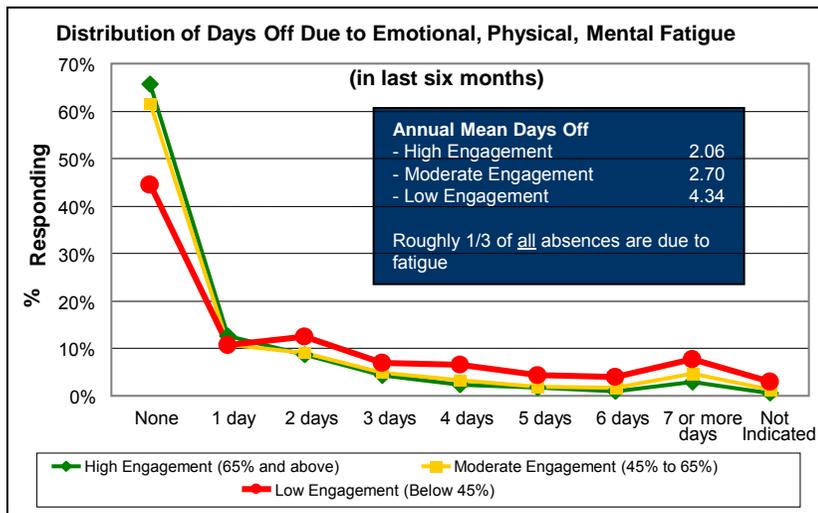
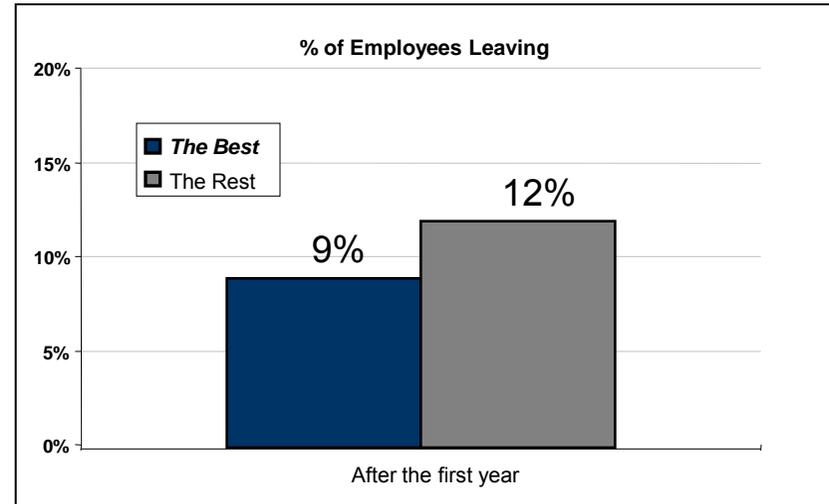
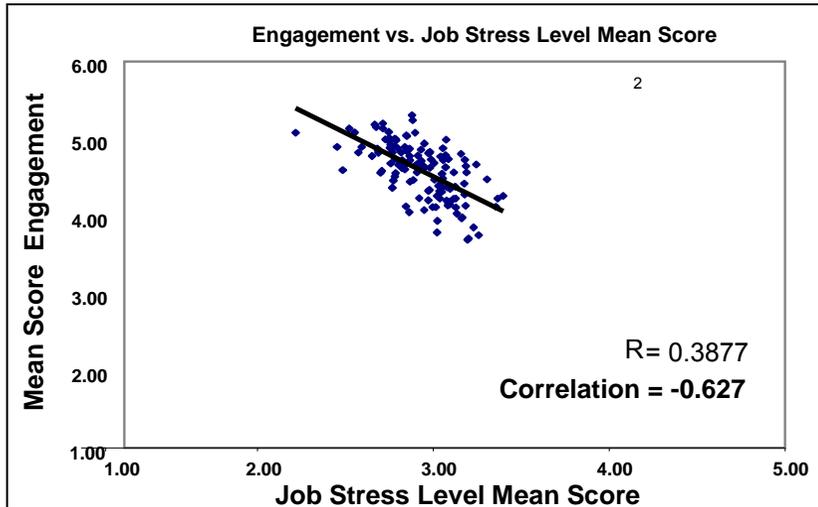
Act	Connect
<ul style="list-style-type: none"> <li>▪ <b>Secure stakeholder agreement to focus on key areas impacting engagement and to also develop a clear understanding of underlying issues affecting employee perceptions in these areas</b> <ul style="list-style-type: none"> <li>– Incorporate additional information and research if required (focus groups, interviews, workshops, etc.)</li> <li>– Follow well-defined process to identify appropriate actions to address issues and underlying root causes</li> <li>– Prioritize and build a realistic, integrated plan for action at the enterprise, business unit, and divisional level</li> <li>– Ensure plan includes well-defined success measures for each action</li> <li>– Provide adequate resources and budget to demonstrate and sustain commitment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Communicate process to build action plans</b></li> <li>▪ <b>Communicate process for gathering additional information and research:</b> <ul style="list-style-type: none"> <li>– Tell everyone how you will gather information</li> <li>– Send invites to research participants</li> <li>– Send thank you notes to research participants</li> </ul> </li> <li>▪ <b>Communicate findings of additional information gathering and research and next steps to build action plans (possible town-hall meetings)</b></li> <li>▪ <b>Communicate action planning process and selection criteria for team members</b> <ul style="list-style-type: none"> <li>– Send invites to selected team members and set context</li> <li>– Send thank you notes to participants</li> </ul> </li> <li>▪ <b>Communicate approved action plans and timelines for implementation to everyone</b></li> </ul>

# Execute and Embed Change



Act	Connect
<ul style="list-style-type: none"> <li>▪ <b>Implement plan and ensure action is sustained through assigning and allocating sufficient time and resources</b> <ul style="list-style-type: none"> <li>– Execute the plan, including embedded communication and change management elements</li> <li>– Actively monitor assigned accountabilities against plan</li> <li>– Test effectiveness of implemented actions early and make refinements to improve ultimate outcomes</li> <li>– Measure outcomes qualitatively and quantitatively</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Report on action plan implementation progress</b></li> <li>▪ <b>Document and share outcomes and progress against success measures</b></li> <li>▪ <b>Re-measure through survey</b> <ul style="list-style-type: none"> <li>– Send pre-survey notification</li> <li>– Send reminders</li> <li>– Send post-survey thank you notes</li> <li>– Communicate timetable for reporting results</li> </ul> </li> </ul>

# Engaged Employees Add More Value

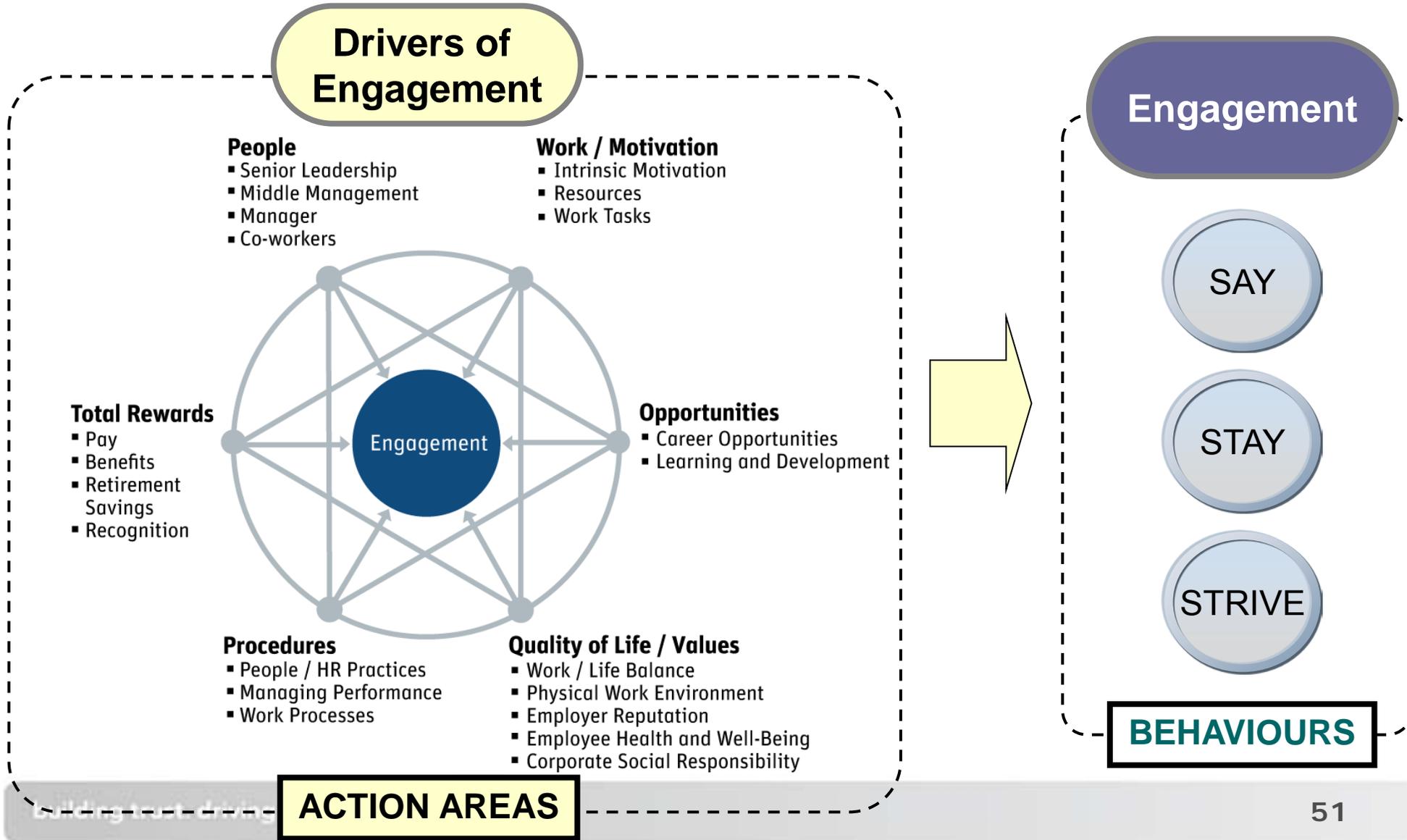


# Appendix B: Additional Engagement Scores by Work Group



building trust. driving confidence.

# The 21 Key Drivers of Engagement



# Engagement by Work Group (to Level 4)

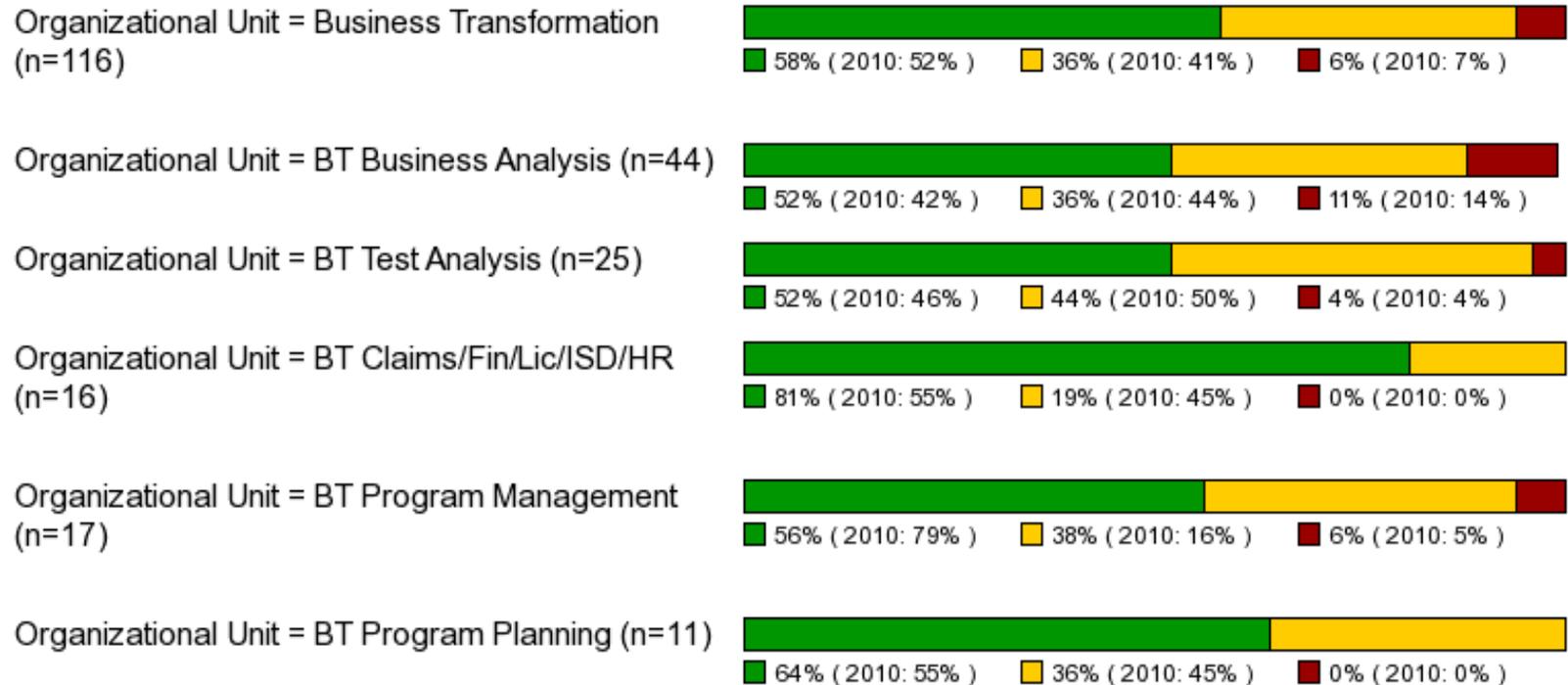
- This section provides more perspective on your engagement scores
- When comparing engagement scores for various work groups, it is important to be mindful of the relative size of the respondent groups
  - Engagement scores for smaller groups or groups with low response rates are subject to greater statistical deviations

**Examples:**

Number of Respondents (size of group)	Response Rate	Confidence Level / Margin of Error (with 95% Confidence Level) *
25	75%	10%
50	75%	7%
75	75%	6%
100	75%	5%
125	75%	4%
150	75%	4%
200	75%	4%
300	75%	3%
400	75%	3%
500	75%	2%
1000	75%	2%
2000	75%	1%
3000	75%	1%
4000	75%	1%

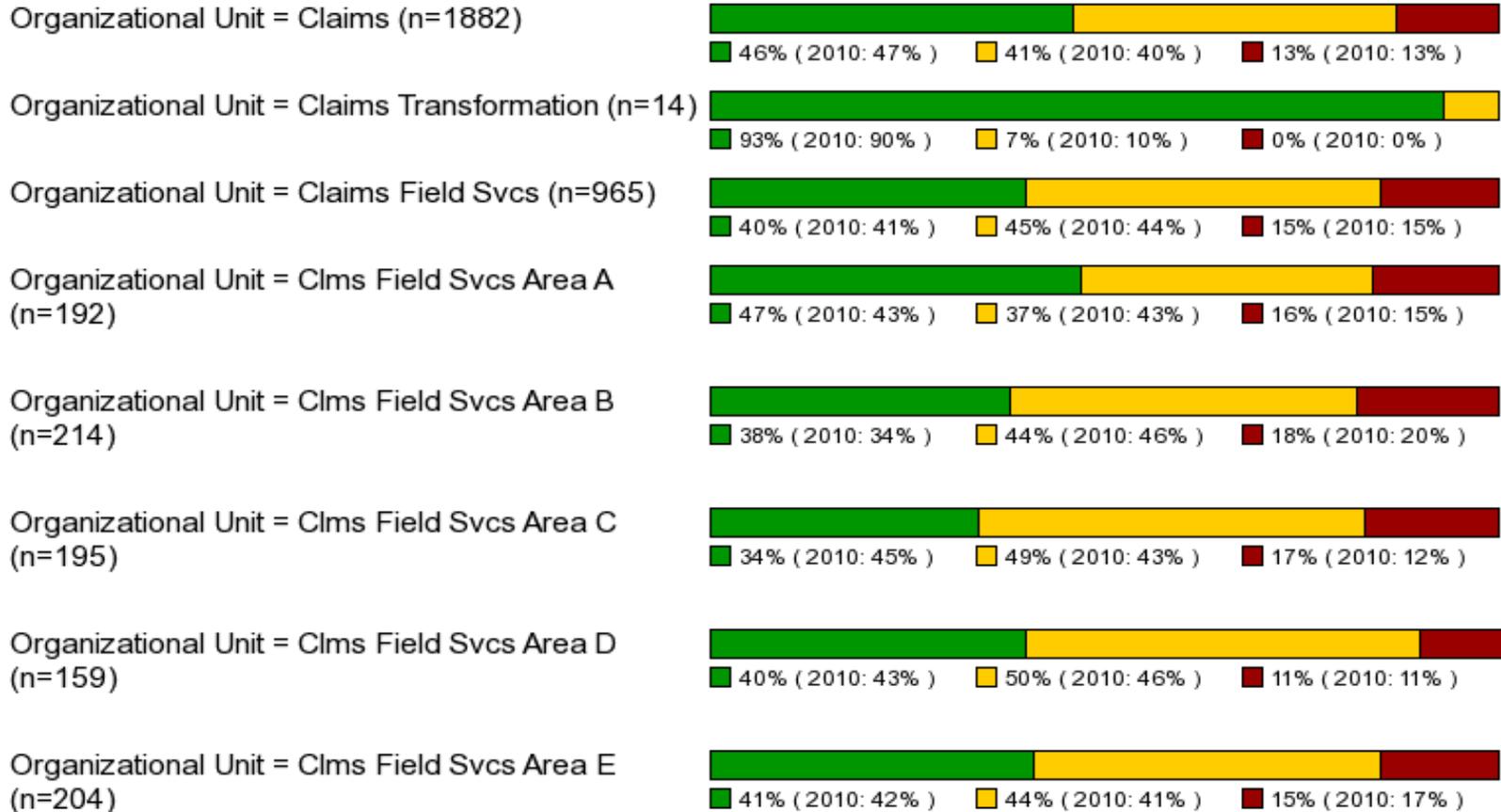
\* means that 19 times out of 20 the results obtained would be accurate within plus or minus XX%

# Business Transformation



Note: Due to rounding, percentages may not sum to 100.

# Claims



Note: Due to rounding, percentages may not sum to 100.

*continued on the next page*

# Claims (cont'd)



Organizational Unit = Claims Programs & Planning (n=146)



Organizational Unit = Claims Business Quality Services (n=32)



Organizational Unit = Claims Services (n=17)



Organizational Unit = Claims Planning & Business Services (n=16)



Organizational Unit = MD Services (n=30)



Organizational Unit = Special Investigations Unit (n=50)



Organizational Unit = Clms Centralized Svs (n=544)



Organizational Unit = Centralized Claims (n=368)

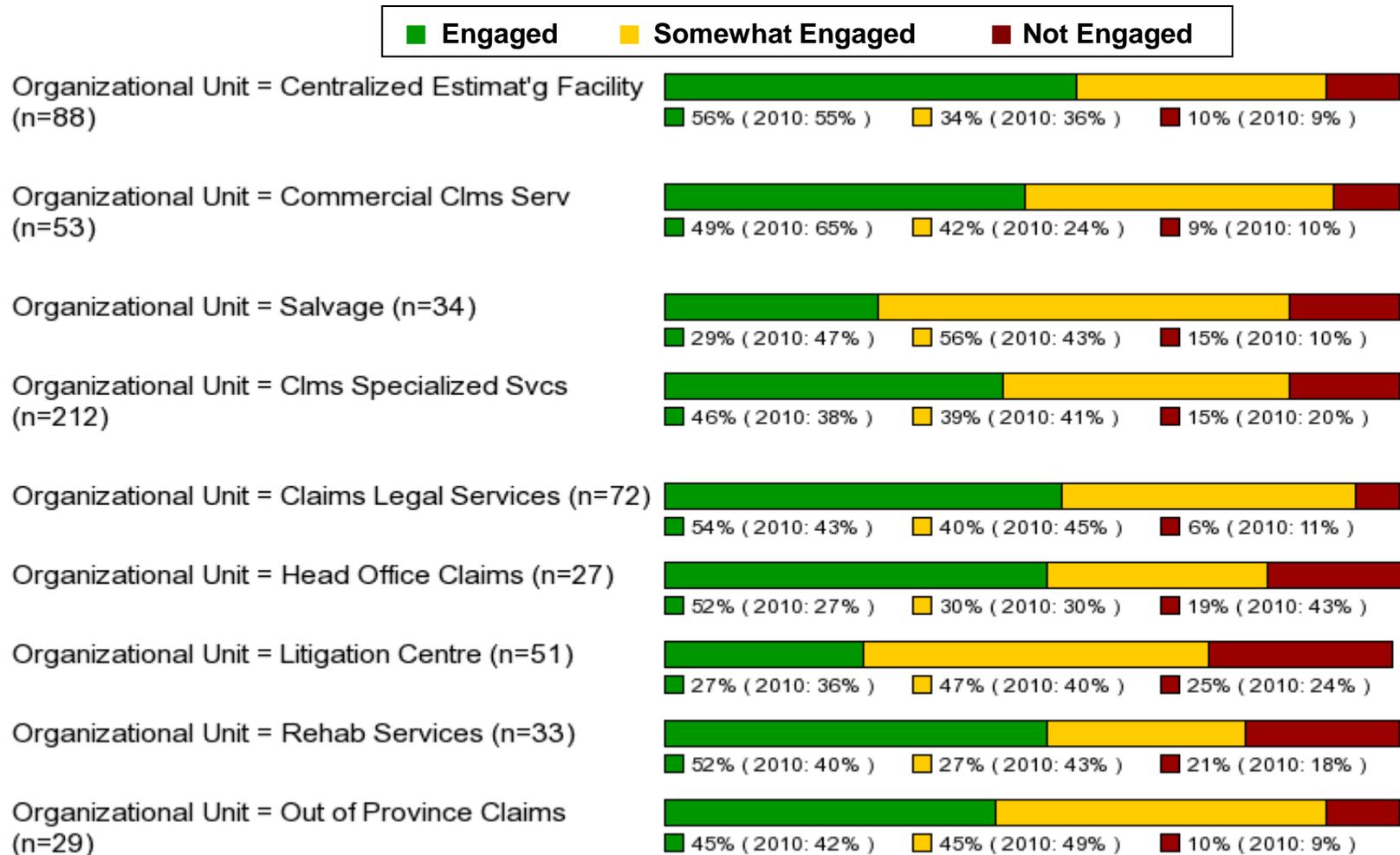


Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

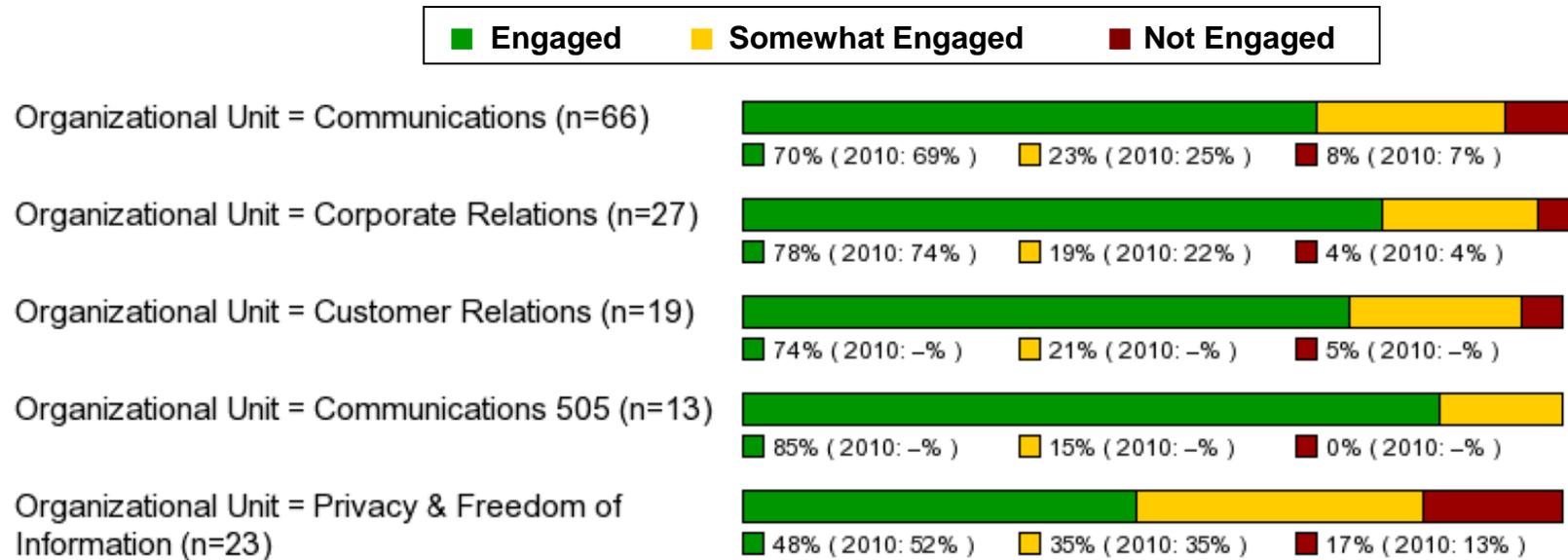
*continued on the next page*

# Claims (cont'd)



Note: Due to rounding, percentages may not sum to 100.

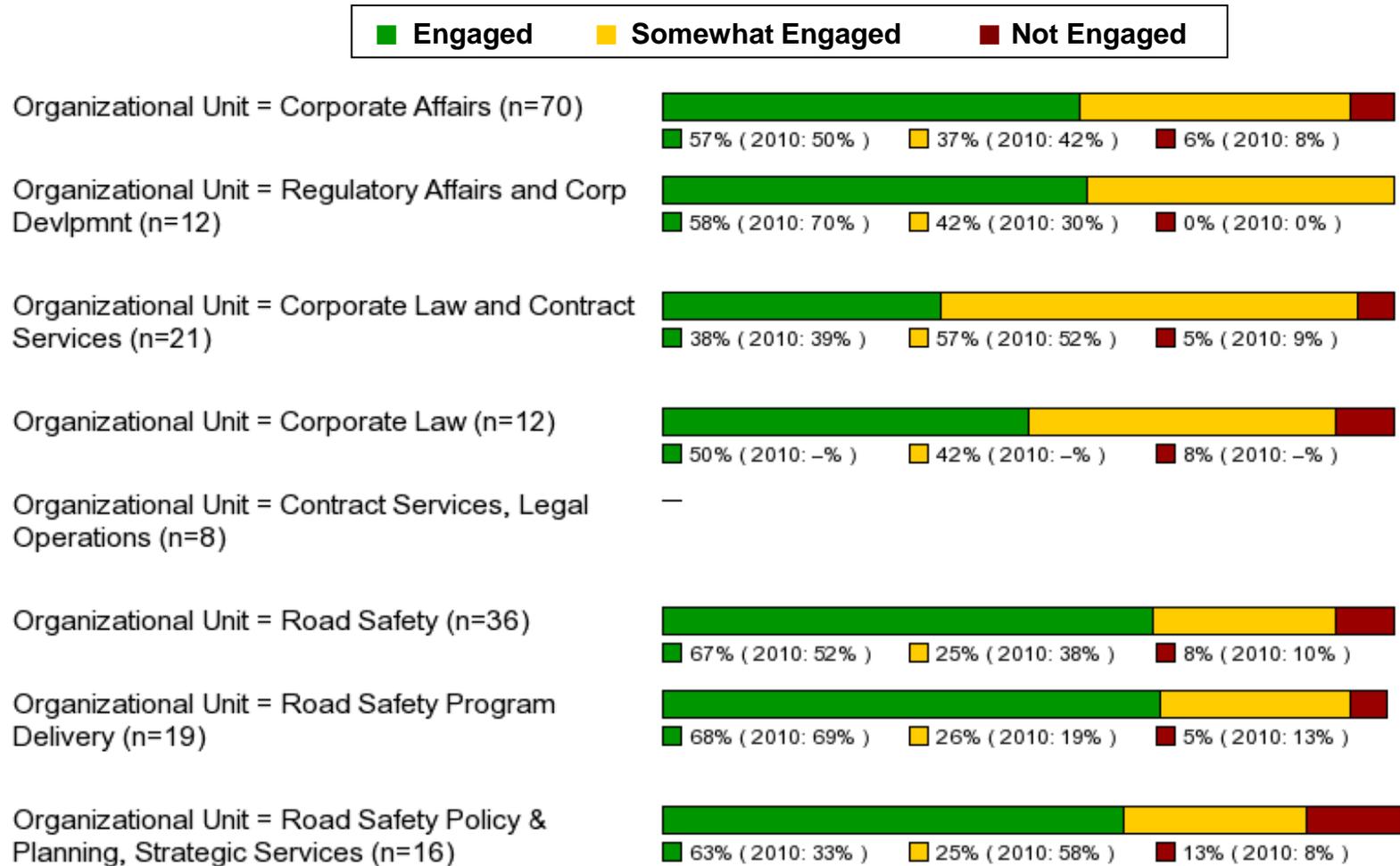
# Communications



Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

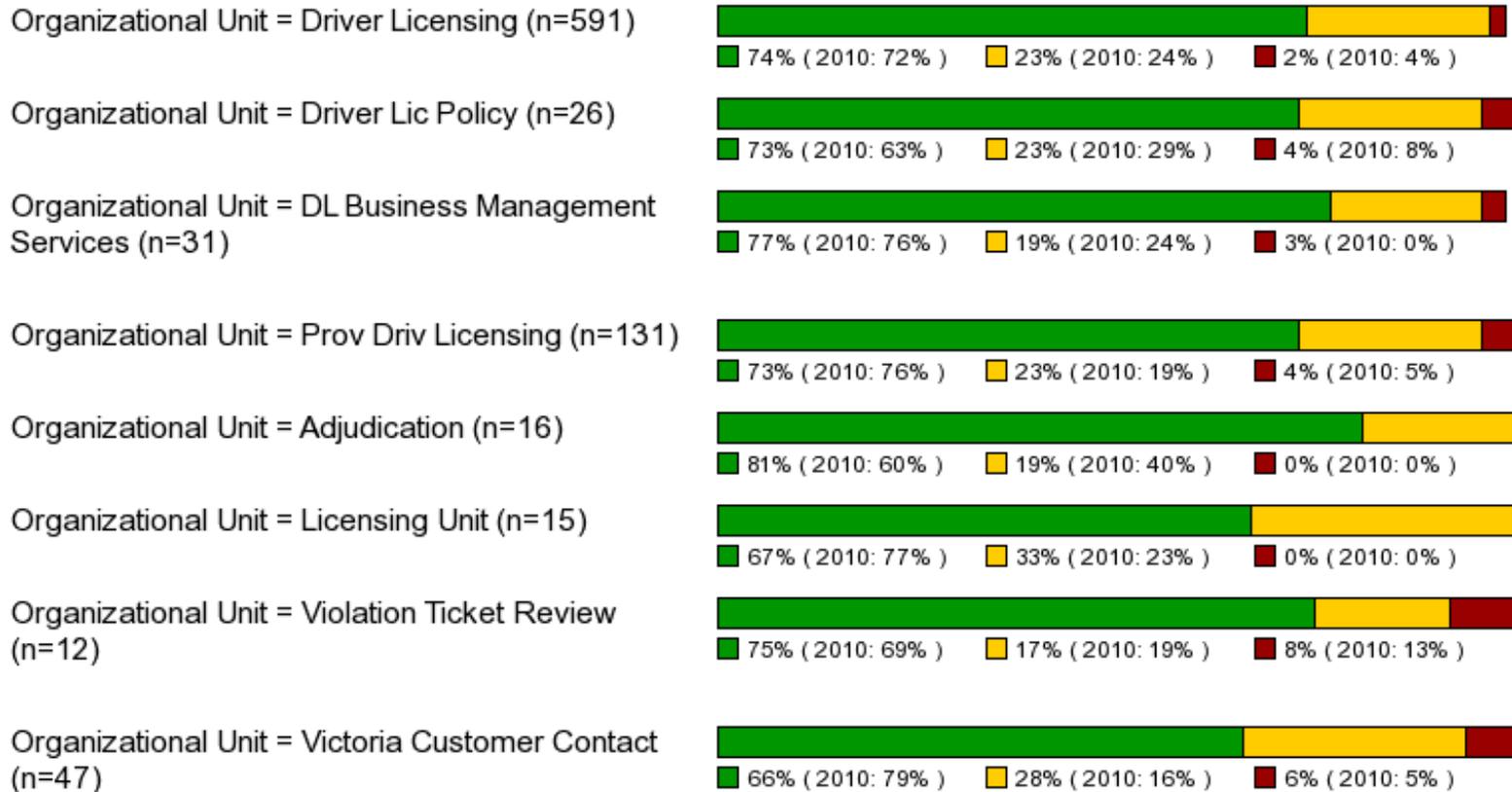
# Corporate Affairs



Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

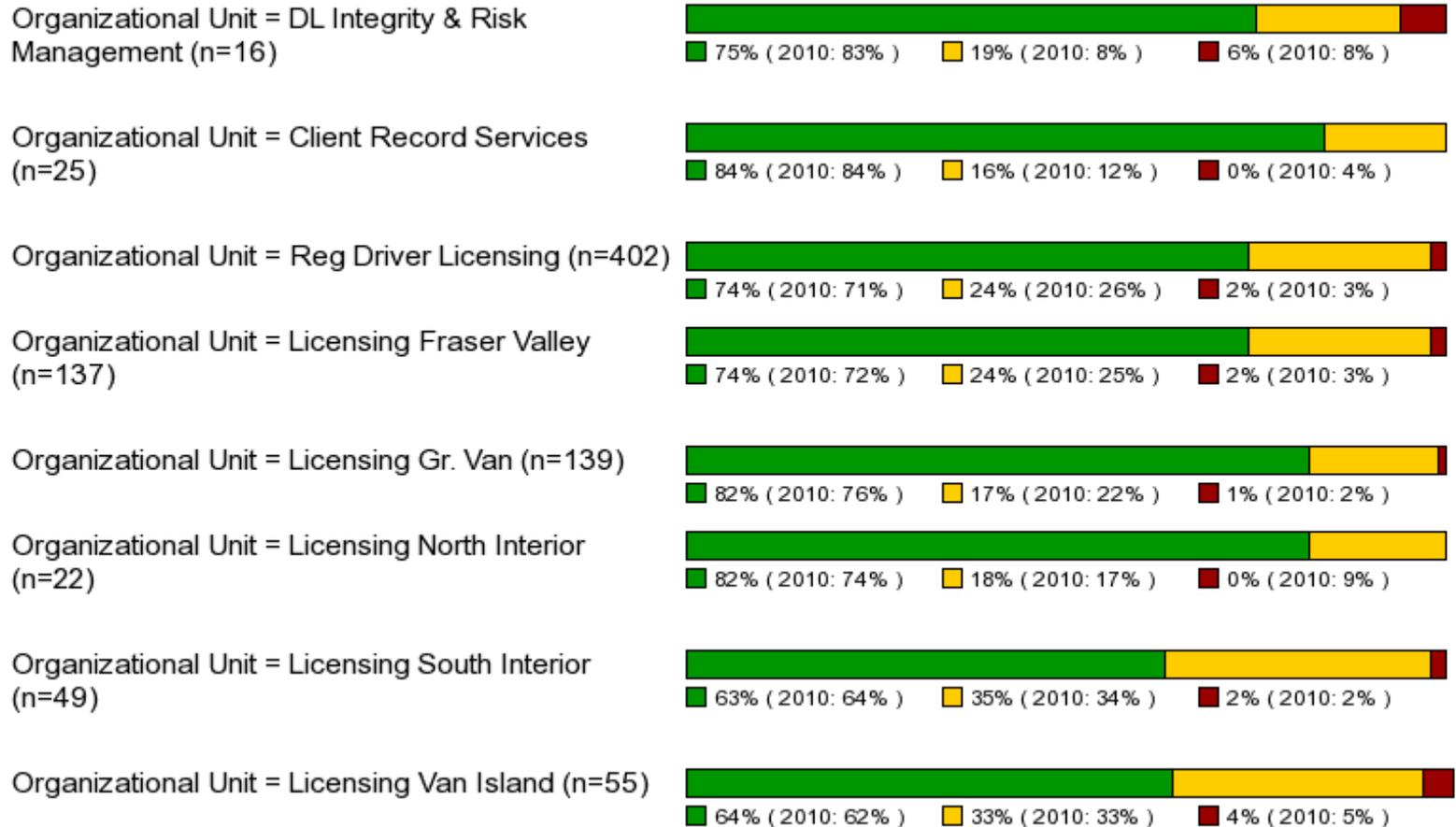
# Driver Licensing



Note: Due to rounding, percentages may not sum to 100.

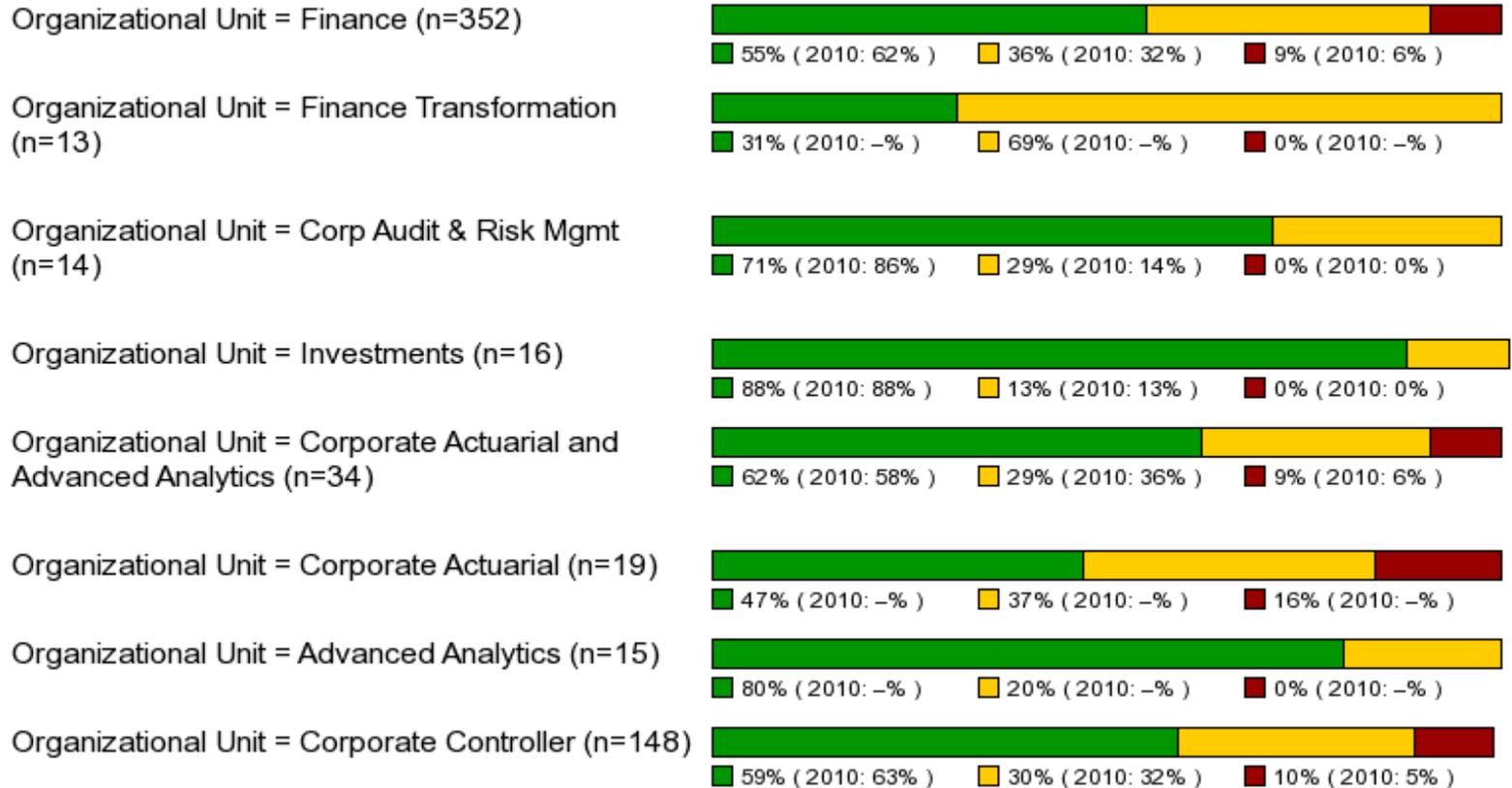
*continued on the next page*

# Driver Licensing (cont'd)



Note: Due to rounding, percentages may not sum to 100.

# Finance

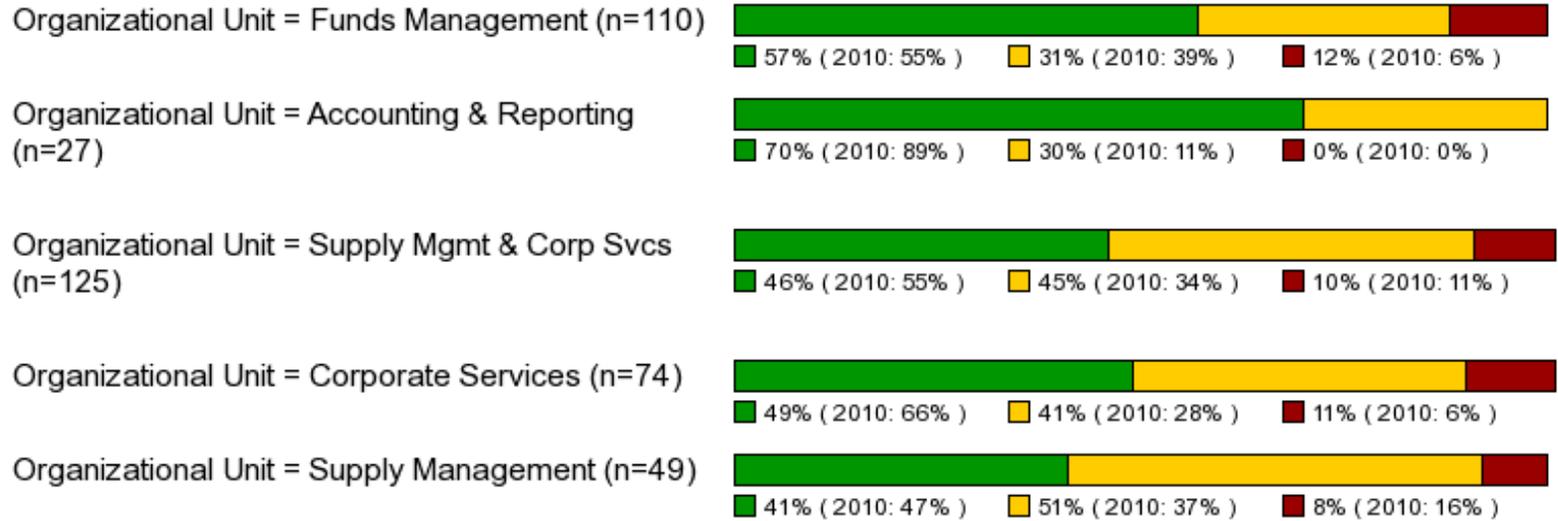


Note: Due to rounding, percentages may not sum to 100.

-- indicates no 2010 report for the group

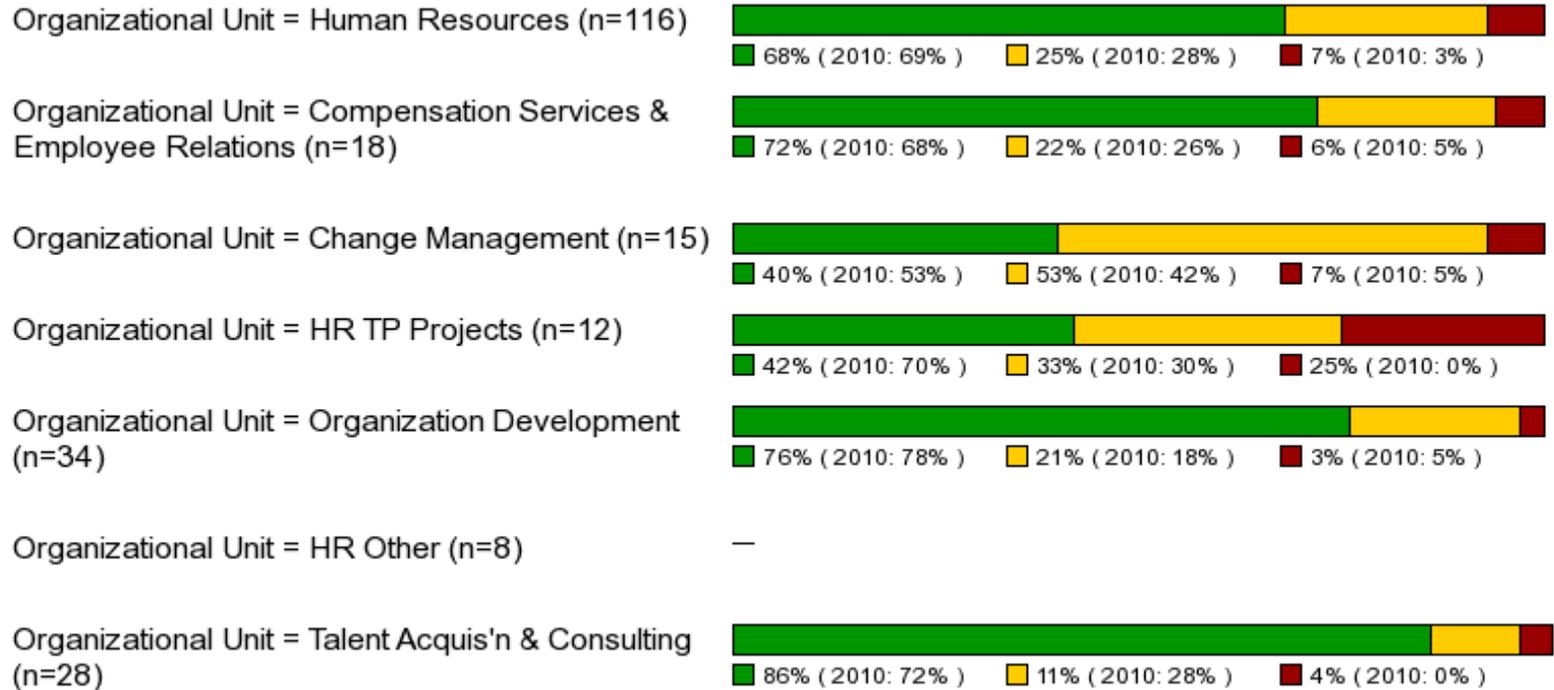
*continued on the next page*

# Finance (cont'd)



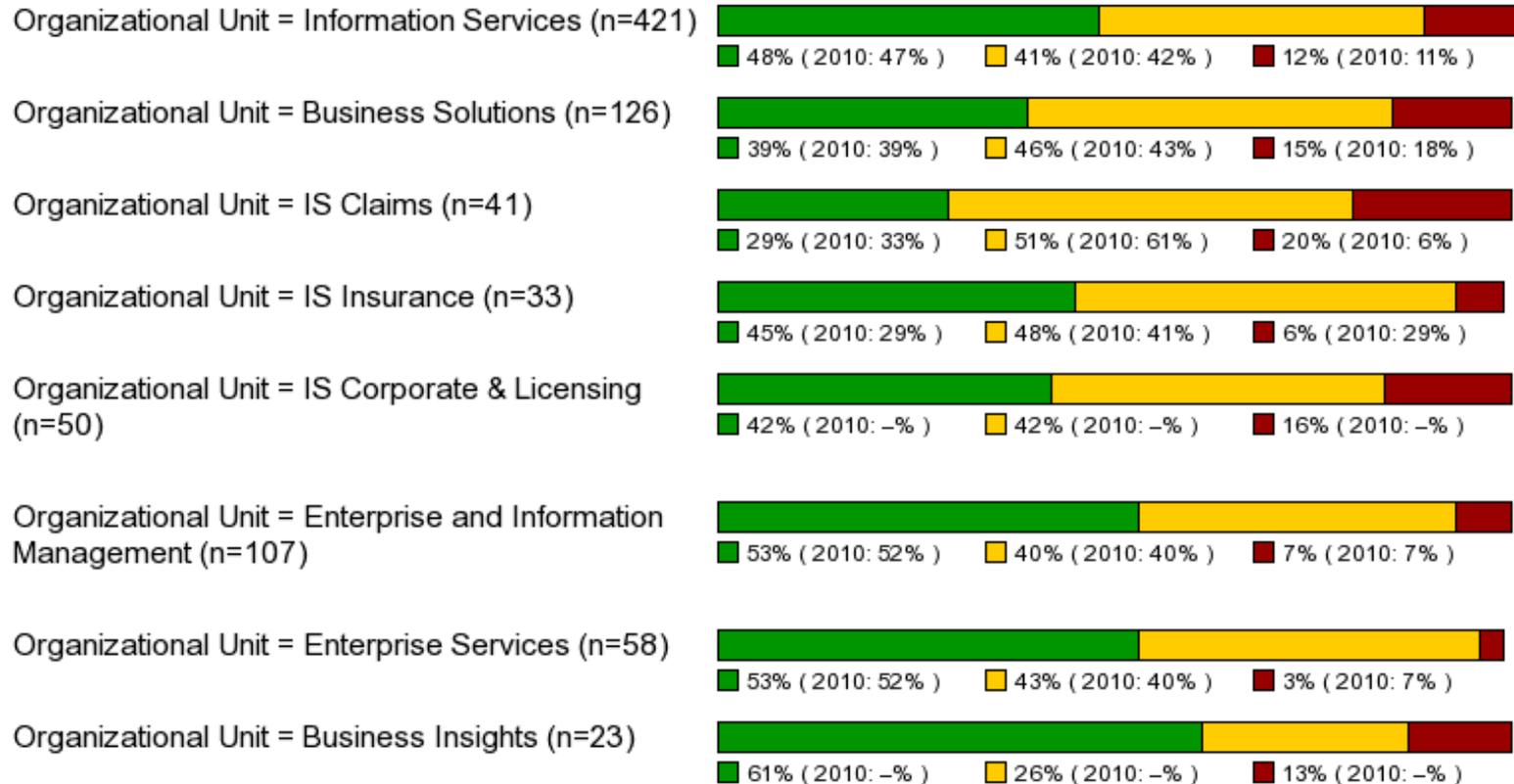
Note: Due to rounding, percentages may not sum to 100.

# Human Resources



Note: Due to rounding, percentages may not sum to 100.

# Information Services

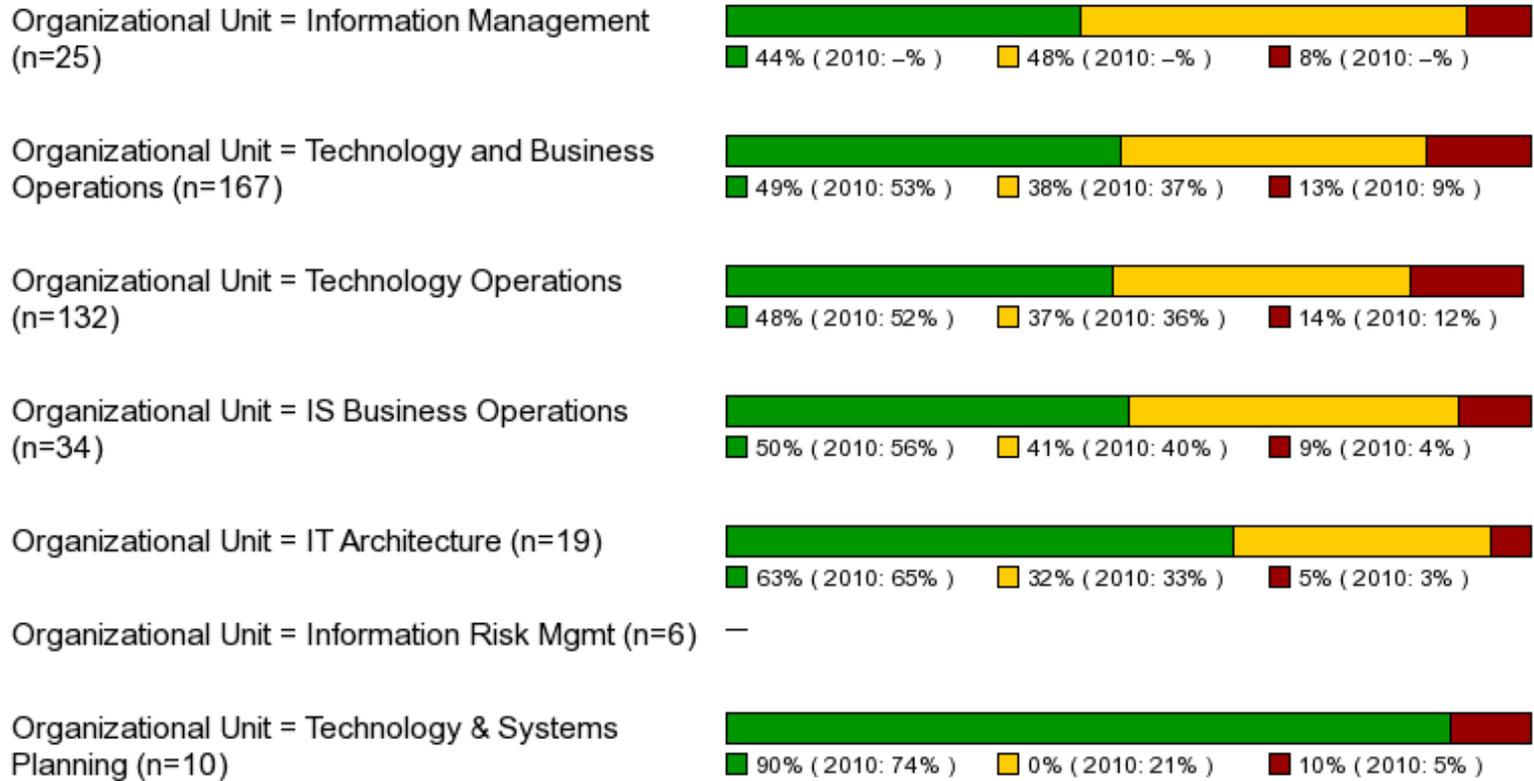


Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

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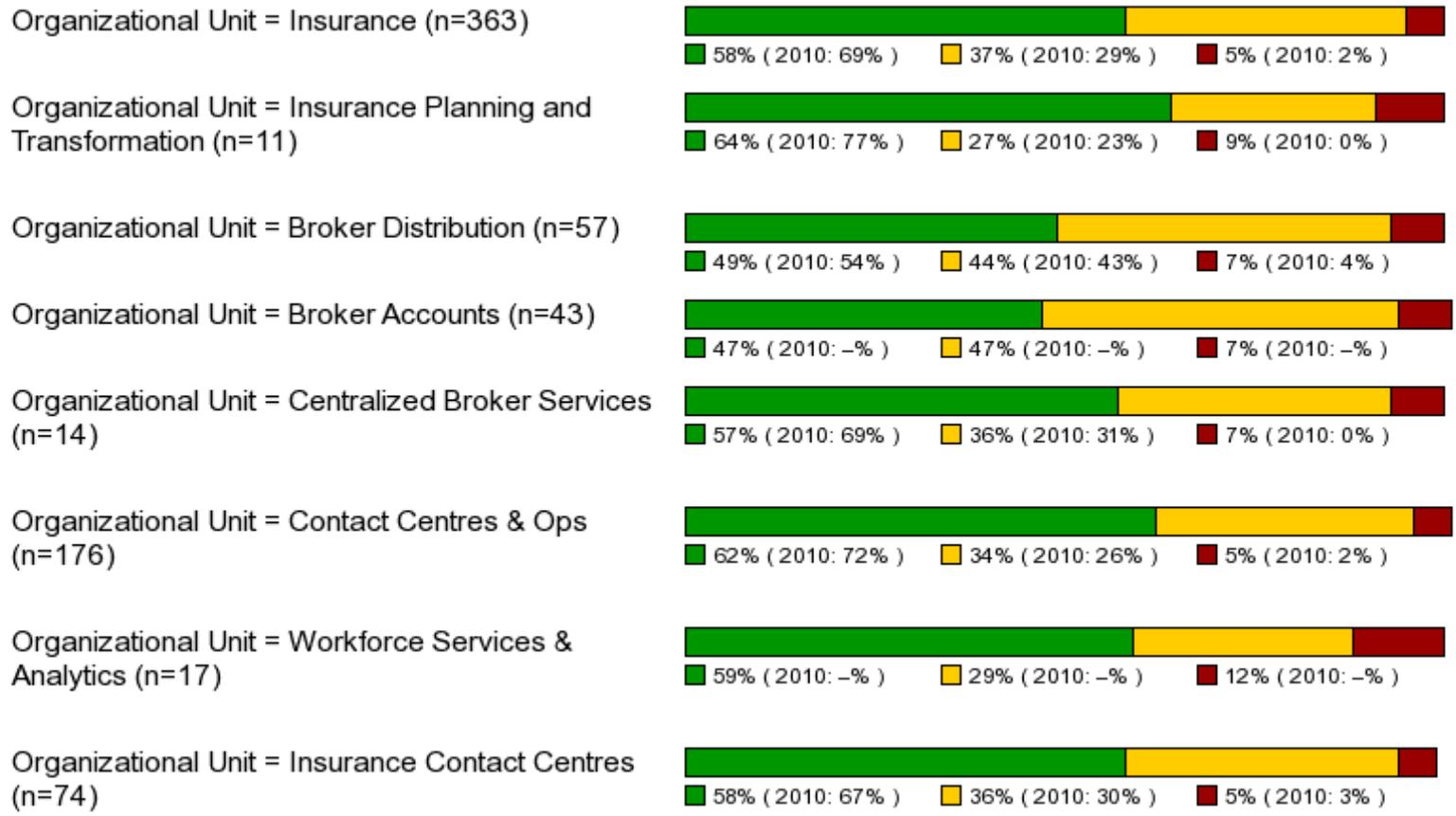
# Information Services (cont'd)



Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

# Insurance

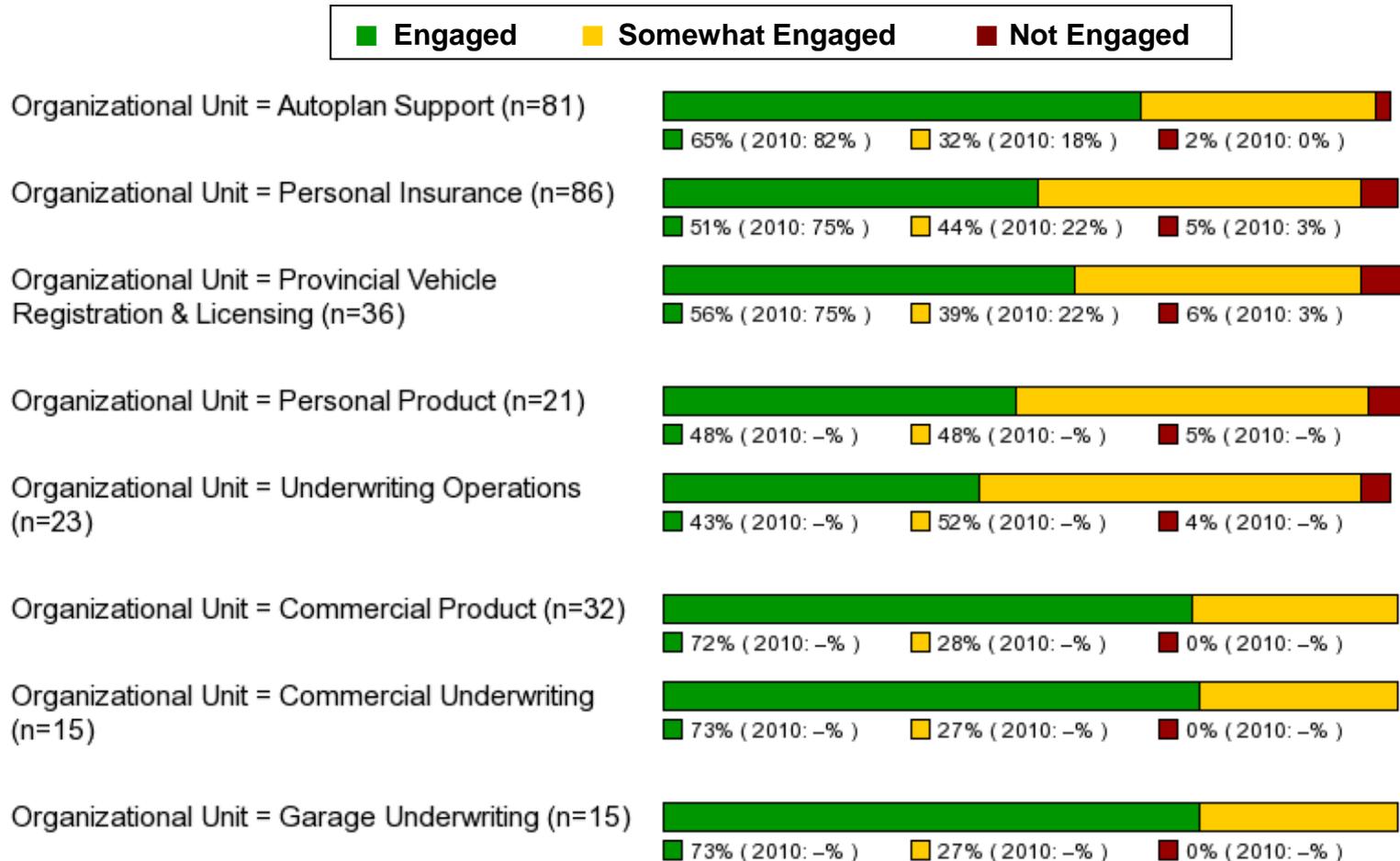


Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

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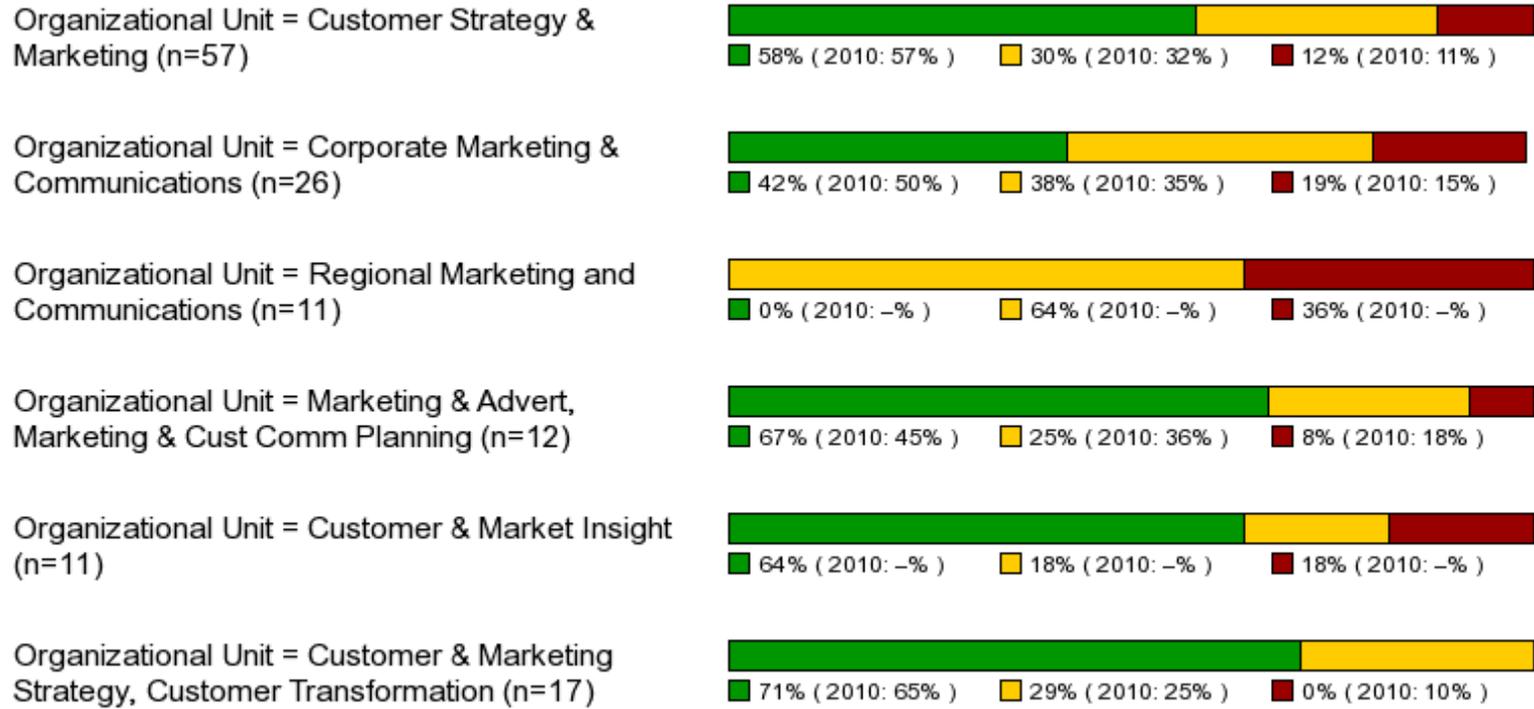
# Insurance (cont'd)



Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

# Customer Strategy & Marketing



Note: Due to rounding, percentages may not sum to 100.

-- " indicates no 2010 report for the group

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01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.122.3 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, p. 19  
Employee Engagement**

**ICBC on p. 19 states:**

**“In 2011, we have set our target at 55%, equal to the 2010 actual result. One of the key factors affecting our employee experience is our outdated work tools and processes. Our goal is to maintain a workforce of engaged and committed employees while we do the transformative work necessary to modernize our systems and processes.”**

**Please provide any Executive or Board briefings comparing, contrasting or discussing the results of the employee engagement scores with those of other similar companies to ICBC or other jurisdictions.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.122.2, in particular slides 3 and 4.

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**2012.1 RR BCUC.123.1 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, p. 23  
Strategy Summary**

**Please provide an updated Strategy Summary table with 2009, 2010, and 2011 actuals as well as the targets for 2012, 2013, and 2014.**

**Response:**

The requested information, except for actual results for 2011, is provided in Attachment A – Strategy Summary 2009 – 2014. As discussed in the response to information request 2012.1 RR BCUC.92.5, actual results for 2011 will be provided at the end of May in keeping with the existing reporting cycle and regulatory reporting requirements.



# **2012.1 RR BCUC.123.1 – Attachment A – Strategy Summary 2009 – 2014**

# Strategy Summary 2009 - 2014

Objective	Strategy	Measures	Actual <sup>(1)</sup>		Target <sup>(1)</sup>					
			2009 <sup>(2)</sup>	2010 <sup>(2)</sup>	2009 <sup>(4)</sup>	2010 <sup>(5)</sup>	2011 <sup>(6)</sup>	2012 <sup>(7)</sup>	2013 <sup>(7)</sup>	2014 <sup>(7)</sup>
Improve Customer Perception	Understand our customers and exceed their expectations	Insurance Services Satisfaction	96%	97%	93%	93%	93%	93%	93%	93%
		Driver Licensing Satisfaction	93%	94%	91%	92%	93%	93%	92%	92%
		Claims Services Satisfaction	88%	89%	83%	85%	85%	85%	85%	85%
Improve Employee Experience	Engaged, inspired, and confident leaders and employees	Employee Engagement <sup>(3)</sup>	49%	55%	48%	51%	55%	57%	N/A	N/A
Maintain Financial Stability	Streamlined, efficient, and cost-effective systems and processes	Minimum Capital Test	240%	218%	Minimum 150%	Minimum 170% <sup>(6)</sup>	Minimum 170%	Minimum 175%	Minimum 175%	Minimum 175%
		Combined Ratio								
		- Claims & Claims-related Expenses & Insurance Expenses	97.9%	102.4%	101.2%	103.8%	104.6%	104.6%	103.1%	103.6%
		- Non-insurance Expenses	<u>2.9%</u>	<u>3.0%</u>	<u>3.0%</u>	<u>2.9%</u>	<u>3.2%</u>	<u>3.2%</u>	<u>3.2%</u>	<u>3.2%</u>
		Total	100.8%	105.4%	104.2%	106.7%	107.8%	107.8%	106.3%	106.8%
		Loss Ratio	81.4%	83.8%	84.7%	85.1%	85.3%	86.4%	85.8%	85.9%
		Expense Ratio								
		- Insurance Expense Ratio	16.4%	16.9%	16.3%	18.4%	18.1%	17.7%	17.4%	17.2%
		- Transformation Program Expense Ratio	N/A	0.9%	N/A	N/A	0.9%	1.1%	1.1%	1.0%
		- Non-insurance Expense Ratio	<u>2.9%</u>	<u>3.0%</u>	<u>3.0%</u>	<u>2.9%</u>	<u>3.2%</u>	<u>3.2%</u>	<u>3.2%</u>	<u>3.2%</u>
		Total	19.3%	20.8%	19.3%	21.3%	22.2%	22.0%	21.7%	21.4%
		Investment Return	Policy Market Benchmark Return +0.55%	Policy Market Benchmark Return +0.60%	Policy Market Benchmark Return +0.269%	Policy Market Benchmark Return +0.275%	Policy Market Benchmark Return			

## Notes

- Financial information for years 2009 - 2010 was prepared based on Canadian Generally Accepted Accounting Principles (GAAP) and for years 2011 - 2014 based on International Financial Reporting Standards (IFRS).
- Source: 2010 Annual Report
- Employee engagement is an annual measure. Targets are not set beyond the current year.
- Source: ICBC Service Plan 2009-2011
- Source: ICBC Service Plan 2010-2012
- Source: ICBC Service Plan 2011-2013
- Source: ICBC Service Plan 2012-2014

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.123.2 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.123.2 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, p. 23  
Strategy Summary**

**Why in all cases is the target easier to achieve than the actual or outlook from 2009/2010? Will this make it easier for Management to achieve its variable pay targets?**

**Response:**

A service plan is the guiding document for a Crown corporation. The Board of Directors is responsible for ensuring that the plan is consistent with government's strategic priorities, incorporates the mandate and policy expectations contained in the Government's Letter of Expectations between the Minister responsible and the Crown corporation, and meets the reporting and accountability requirements of government.

The targets as established in ICBC's Service Plans through the years outline ICBC's accountability to the general public and to government for performance according to these Service Plan guidelines as established by government. Meeting this commitment is taken very seriously by ICBC's management and Board of Directors. Therefore, it is not uncommon for ICBC to meet or even exceed these targets.

It should be clarified, however, that although ICBC's Short-Term Incentive Plan (STIP) policy is aligned to the strategies described in the Service Plan, the measures and targets outlined in the Service Plan are not all selected for compensable measures for STIP. For more information on ICBC's STIP policy, please see the responses to information requests 2012.1 RR BCUC 82.1, 2012.1 RR BCUC.82.2, and 2012.1 RR BCUC.82.3.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.123.3 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.123.3 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, p. 23  
Strategy Summary**

**Does ICBC expect to incur any savings as a result of lowering Customer Perception targets?**

**Response:**

ICBC utilizes customer satisfaction targets that reflect historical service norms that customers have come to expect. These customer satisfaction targets have remained constant at this general level over the last several years and have not been lowered. ICBC continues to be committed to keeping service costs in line with inflation while still improving customer experience through cost effective service training and investing in more efficient and effective business processes and systems.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.124.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCUC.124.1 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, pp. 21 and 26  
Statements and Schedules of Financial Information for Year Ended December 31, 2010  
Information on Remuneration and Expenses Paid to Employees**

The ICBC Service Plan 2011-2013 on p. 26 notes that ICBC will continue to plan, develop, and implement the changes needed to enhance its ability to compete while continuing to manage claims costs, control staffing levels, and support government-mandated priorities. Under the Expense Ratio section on p. 21, ICBC also notes that the expense ratio is a standard industry measure for assessing the percentage of each premium dollar that goes to an insurer's expenses.

In a 2011 ICBC report titled "Statements and Schedules of Financial Information", ICBC has provided information on Remuneration and Expenses Paid to Employees for the year ended December 31, 2010, as shown starting on p. 37 of that report.

**Source:**

**[http://www.icbc.com/csDelPrd/Satellite?c=ICBC\\_Document\\_C&cid=1318422634402&page name=ICBC%2FICBC\\_Document\\_C%2Ficbc\\_DocumentLinkT](http://www.icbc.com/csDelPrd/Satellite?c=ICBC_Document_C&cid=1318422634402&page name=ICBC%2FICBC_Document_C%2Ficbc_DocumentLinkT)**

**Please confirm that this Statements and Schedules of Financial Information with data for year ended December 31, 2010 is the most recent report, otherwise please provide the most recent report available.**

**Response:**

Yes, the Statements and Schedules of Financial Information for the year ended December 31, 2010 is the most recent report available.

British Columbia Utilities Commission Information Request No. 2012.1 RR BCUC.124.1.1 Dated 08 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
01 December 2011 Insurance Corporation of British Columbia Revenue Requirements Application for the Policy Year Commencing February 1, 2012	

**2012.1 RR BCUC.124.1.1 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, pp. 21 and 26  
Statements and Schedules of Financial Information for Year Ended December 31, 2010  
Information on Remuneration and Expenses Paid to Employees**

The ICBC Service Plan 2011-2013 on p. 26 notes that ICBC will continue to plan, develop, and implement the changes needed to enhance its ability to compete while continuing to manage claims costs, control staffing levels, and support government-mandated priorities. Under the Expense Ratio section on p. 21, ICBC also notes that the expense ratio is a standard industry measure for assessing the percentage of each premium dollar that goes to an insurer's expenses.

In a 2011 ICBC report titled "Statements and Schedules of Financial Information", ICBC has provided information on Remuneration and Expenses Paid to Employees for the year ended December 31, 2010, as shown starting on p. 37 of that report.

**Source:**

**[http://www.icbc.com/csDelPrd/Satellite?c=ICBC\\_Document\\_C&cid=1318422634402&page name=ICBC%2FICBC\\_Document\\_C%2Ficbc\\_DocumentLinkT](http://www.icbc.com/csDelPrd/Satellite?c=ICBC_Document_C&cid=1318422634402&page name=ICBC%2FICBC_Document_C%2Ficbc_DocumentLinkT)**

**Please provide the details and justify any expenses, by employee that exceed \$25,000, such as the \$188,681 in expenses paid to one employee in 2010 as indicated on p. 42.**

**Response:**

There were 18 employees in 2010 with expenses greater than \$25,000. Of the total, 27% was for regular business expenses, 68% was for relocation expenses, and the remaining 5% was for training costs. Please see Attachment A – 2010 Employee Expenses over \$25,000 for further details.



## **2012.1 RR BCUC.124.1.1 – Attachment A – 2010 Employee Expenses over \$25,000**

2010 Employee Expenses over \$25,000

Line #	NAME	Position	Business Expenses	Training Expenses	Relocation Expenses	Total Expenses	Details
1	Bannister, G.	Vernon MD Unit Manager	4,017	-	64,474	68,491	ICBC management relocation - Relocation costs include legal and real estate fees associated with sale and purchase of home, household moving costs, fees to third party relocation consultant, incidental expense allowance, transportation costs and temporary accommodation.
2	Blucher, M.	Senior VP Insurance	5,307	-	68,422	73,728	Executive level new hire - Relocation from Australia to Canada. Relocation costs include legal and real estate fees associated with sale and purchase of home, household moving costs, fees to third party relocation consultant, transportation costs and temporary accommodation.
3	Greeno, C.	Manager Kelowna Claim Centre	3,552	335	22,352	26,239	Management level new hire - Relocation allowance to provide for temporary housing, transportation and movement of household goods, plus costs for third party relocation firm to administer.
4	Irwin, K.	VP Personal Insurance	26,251	1,570	-	27,821	Job position requires representation on behalf of ICBC to key stakeholders/partners and to negotiate reinsurance contracts. Business expenses include travel and accommodations to several reinsurance meetings, professional membership dues and meetings with ICBC's key stakeholders/partners.
5	Kirkner, A.	VP Claims Field Services	5,282	199	183,200	188,681	VP level new hire in 2009 - Relocation costs include legal and real estate fees associated with sale and purchase of home, transportation and household moving costs, fees to third part relocation consultant and temporary accommodation. Included in the total amount are approximately \$47,500 for costs related to selling the home and US\$88,500 for loss on sale of the home.
6	Lee, R.	Director Info Project	12,041	1,842	22,870	36,753	Director level new hire - Relocation costs include household moving costs, transportation costs and temporary accommodation.
7	Moores, D.	Mgr Victoria Claim Centre	16,880	1,171	47,913	65,964	ICBC management relocation - Relocation costs include legal and real estate fees associated with sale and purchase of home, household moving costs, fees to third party relocation consultant, incidental expense allowance, transportation costs and temporary accommodation.
8	Nicholson, W.	Manager Cranbrook Claim Centre	8,878	-	25,234	34,113	Management level new hire - Relocation allowance to provide for temporary housing, transportation and movement of household goods, plus costs for third party relocation firm to administer.
9	Phillips, M.	Director Pricing	7,567	1,191	18,110	26,868	Director level new hire - Relocation costs include legal and real estate fees associated with sale and purchase of home, household moving costs, fees to third party relocation consultant, incidental expense allowance, transportation costs and temporary accommodation.
10	Posyniak, L.	VP Human Resources	22,391	18,360	-	40,751	Job position requires representation on behalf of ICBC to key stakeholders/partners and to all ICBC employees across the province. Business expenses include travel and accommodations, professional membership dues, meetings with ICBC's key stakeholders/partners and training expenses.
11	Ribeiro, D.	Claims Mgr Victoria	5,725	-	30,051	35,776	Management level new hire - Relocation allowance to provide for temporary housing, transportation and movement of household goods, plus costs for third party relocation firm to administer.
12	Schedel, V.	Mgr Facilities Operations	31,806	6,055	-	37,860	Job position requires regular travel in order to oversee all of ICBC's facilities across the province. Business expenses include travel and accommodations and training expenses.
13	Schubert, J.	President & CEO	47,897	7,673	-	55,570	Job position requires representation on behalf of ICBC to key stakeholders/partners, to all ICBC employees, and to the public. Business expenses include travel and accommodations to several reinsurance and property & casualty insurance meetings, professional membership dues, meetings with ICBC's key stakeholders/partners, and training expenses.
14	Shauntz, A.	Mgr Claims Victoria	4,605	559	51,511	56,674	ICBC management relocation - Relocation costs include legal and real estate fees associated with sale and purchase of home, household moving costs, fees to third party relocation consultant, incidental expense allowance, transportation costs and temporary accommodation.
15	Story, R.	Manager Kamloops Claim Centre	23,171	3,563	-	26,733	Job position requires employee to temporarily backfill at another claims centre. Business expenses include travel and accommodations for the duration of the temporary assignment.
16	Sutherland, S.	Broker Relations Rep	9,061	608	33,336	43,004	Unionized employee relocation as per Collective Agreement - Relocation costs include legal and real estate fees associated with sale and purchase of home, household moving costs, temporary accommodations and incidentals.
17	Weigel, B.	Corporate Secretary	4,827	-	34,751	39,578	Director level new hire - Relocation costs include legal and real estate fees associated with sale and purchase of home, household moving costs, property transfer tax and incidentals.
18	West, L.	Mgr Claims Penticton	8,810	-	22,205	31,015	Management level new hire - Relocation allowance to provide for temporary housing, transportation and movement of household goods, plus costs for third party relocation firm to administer.
<b>TOTAL</b>			<b>248,067</b>	<b>43,124</b>	<b>624,429</b>	<b>915,619</b>	
<b>Percentage of total</b>			<b>27%</b>	<b>5%</b>	<b>68%</b>	<b>100%</b>	

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**2012.1 RR BCUC.124.2 Reference: SERVICE PLAN 2011-2013  
Exhibit B-1-1, Appendix 11 B, pp. 21 and 26  
Statements and Schedules of Financial Information for Year Ended December 31, 2010  
Information on Remuneration and Expenses Paid to Employees**

The ICBC Service Plan 2011-2013 on p. 26 notes that ICBC will continue to plan, develop, and implement the changes needed to enhance its ability to compete while continuing to manage claims costs, control staffing levels, and support government-mandated priorities. Under the Expense Ratio section on p. 21, ICBC also notes that the expense ratio is a standard industry measure for assessing the percentage of each premium dollar that goes to an insurer's expenses.

In a 2011 ICBC report titled "Statements and Schedules of Financial Information", ICBC has provided information on Remuneration and Expenses Paid to Employees for the year ended December 31, 2010, as shown starting on p. 37 of that report.

Source:

<http://www.icbc.com/csDelPrd/Satellite?c=ICBC Document C&cid=1318422634402&page name=ICBC%2FICBC Document C%2Ficbc DocumentLinkT>

124.2 On p. 49 of the Statements and Schedules of Financial Information, ICBC provided a summary table on Remuneration and Expenses Paid to Employees for the year ended December 31, 2010 for "Total for over \$75,000", "Other under \$75,000" and "Grand Total". Please complete the following table which shows historical information on remuneration and expenses paid to employees for years 2007 through 2010. The table should provide information that includes \$ dollar change, percentage change, and a ratio of Expenses to Remuneration for total over \$75,000, other under \$75,000, and for the grand total. If the following table is not appropriate to show this information, please provide an appropriate table that presents the information.

**Table - REMUNERATION AND EXPENSES PAID TO EMPLOYEES**

Line #		2007	2008	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	\$ Change since 2007	% Change since 2007
<b>REMUNERATION</b>													
1	Total for over \$75,000	\$	\$	\$	%	\$	\$	%	\$	\$	%	\$	%
2	Other under \$75,000												
3	<b>Grand Total</b>												
<b>EXPENSES</b>													
4	Total over \$75,000												
5	Other under \$75,000												
6	<b>Grand Total</b>												
<b>RATIO OF EXPENSES TO REMUNERATION</b>													
7	Total over \$75,000												
8	Other under \$75,000												
9	<b>Grand Total Ratio</b>												
Note: Ratio of Expenses to Remuneration equals expenses divided by remuneration													

**124.2.1 Please provide an explanation for any trends in expenses paid to employees.**

**Response:**

**124.2**

Please see Attachment A – Table – Remuneration and Expenses Paid to Employees for the completed table as requested. The table has been changed to include the average salary, which is calculated as the remuneration paid during the year divided by the employee count. This additional information has been added to better reflect the changes in remuneration over the years. Employees being paid over \$75,000 are individually identified in the Statements and Schedules of Financial Information.

**124.2.1**

The main increase in expenses paid to employees is training costs. Pursuant to ICBC's strategic objective to improve employee experience, ICBC has committed to developing and training its employees. Training costs have therefore increased since 2007.

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During the 2007 to 2010 period, there was also an upward trend in relocation and travel expenses. As indicated in the response to information request 2012.1 RR BCUC.124.1.1, ICBC recruited senior leadership talent both from the private sector and from outside of Canada. As a component of total compensation, relocation expenses were offered as part of the overall employment contract.

In ICBC's 2011 mid-year review, cost control measures were identified to target lower levels of spending, to reduce the impact of operating cost increases on Basic insurance rates. Discretionary expenses, where possible, were reduced. Relocation expenses for 2011, in comparison to 2007, were lower by approximately 18% while travel expenses were reduced by approximately 12%.



## **2012.1 RR BCUC.124.2 – Attachment A – Table – Remuneration and Expenses Paid to Employees**

**Table - REMUNERATION AND EXPENSES PAID TO EMPLOYEES**

Line #		2007 <sup>1</sup>	2008 <sup>1</sup>	\$ Δ	% Δ	2009	\$ Δ	% Δ	2010	\$ Δ	% Δ	\$ Change since 2007	% Change since 2007
<b>REMUNERATION</b>													
1	Total for over \$75,000	102,729,669	120,783,331	18,053,663	17.6%	142,092,795	21,309,464	17.6%	158,534,191	16,441,396	11.6%	55,804,522	54.3%
2	Employee count	861	1,005	144	16.7%	1,214	209	20.8%	1,338	124	10.2%	477	55.4%
3	Average salary	119,314	120,182	868	0.7%	117,045	(3,137)	-2.6%	118,486	1,441	1.2%	(828)	-0.7%
Note: Employee count for employees with total over \$75,000 is from the Statements and Schedules of Financial Information.													
4	Other under \$75,000	225,834,134	225,359,672	(474,462)	-0.2%	219,855,129	(5,504,543)	-2.4%	220,379,315	524,186	0.2%	(5,454,819)	-2.4%
5	Employee count	5,221	5,068	(153)	-2.9%	4,830	(238)	-4.7%	4,783	(47)	-1.0%	(438)	-8.4%
6	Average salary	43,255	44,467	1,212	2.8%	45,519	1,052	2.4%	46,076	557	1.2%	2,821	6.5%
7	<b>Grand Total</b>	<b>328,563,803</b>	<b>346,143,004</b>	<b>17,579,201</b>		<b>361,947,924</b>	<b>15,804,920</b>		<b>378,913,506</b>	<b>16,965,582</b>		<b>50,349,703</b>	
<sup>1</sup> Certain comparative figures have been restated to conform to the current year's presentation.													
<b>EXPENSES</b>													
8	Total over \$75,000	3,759,993	4,287,266	527,273	14.0%	4,993,328	706,062	16.5%	5,477,958	484,630	9.7%	1,717,965	45.7%
9	Other under \$75,000	2,993,326	2,829,617	(163,709)	-5.5%	2,697,178	(132,439)	-4.7%	3,353,840	656,662	24.3%	360,514	12.0%
10	<b>Grand Total</b>	<b>6,753,319</b>	<b>7,116,883</b>	<b>363,564</b>		<b>7,690,506</b>	<b>573,623</b>		<b>8,831,798</b>	<b>1,141,292</b>		<b>2,078,479</b>	
<b>RATIO OF EXPENSES TO REMUNERATION</b>													
11	Total over \$75,000	3.7%	3.5%			3.5%			3.5%				
12	Other under \$75,000	1.3%	1.3%			1.2%			1.5%				
13	<b>Grand Total Ratio</b>	<b>2.1%</b>	<b>2.1%</b>			<b>2.1%</b>			<b>2.3%</b>				
Note: Ratio of Expenses to Remuneration equals expenses divided by remuneration													

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**2012.1 RR AIC.1 Reference: Supplement to BCUC Question 8.0  
Actuarial Rate level Indication analysis  
Exhibit B-1, Chapter 3, Section B.1 p 3-7  
Basic Loss Cost**

**Please provide the formula for the best fit line. In addition to the  $R^2$  statistic, please provide the Adjusted  $R^2$  statistic, and the t and p statistics for the model coefficients. Over what time period is the line fitted? How many data points are included in the regression?**

**Response:**

The  $R^2$  statistic for the best fit line in the response to information request 2012.1 RR BCUC.8.1 is 95.2% (excluding 2008 and 2009 data points). The best fit line is the combination of the separate frequency and severity regression models for each Basic insurance coverage, and includes amounts for manual coverages, bulk payments, and large claims. Due to the best fit line being a combination of the frequency and severity regression models, it would only be meaningful to calculate the adjusted  $R^2$  statistic, t and p statistics of the individual models. Each frequency and severity model is discussed in detail in the response to information request 2012.1 RR BCUC.36.1. Please refer to the response to information request 2012.1 RR BCOAPO.4.1 for the  $R^2$  statistics for the two simple exponential regression lines.

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**2012.1 RR AIC.2 Reference: Supplement to BCUC Question 9.0  
Actuarial Rate level Indication analysis  
Exhibit B-1, Chapter 3, Section B.1 p 3-9  
Bodily Injury Basic Frequency**

**Please provide the formula for the best fit line. In addition to the  $R^2$  statistic, please provide the Adjusted  $R^2$  statistic, and the t and p statistics for the model coefficients. Over what time period is the line fitted? How many data points are included in the regression?**

**Response:**

The  $R^2$  statistic for the best fit line in the response to information request 2012.1 RR BCUC.9.3 is 94.8% (excluding 2008 and 2009 data points). The best fit line is the combination of separate frequency regression models for Commercial and Personal lines of business. Due to the best fit line being a combination of the separate Personal and Commercial frequency models, it would only be meaningful to calculate the adjusted  $R^2$  statistic, t and p statistics of the individual models. The frequency models are discussed in detail in Chapter 3, Exhibit D.0, paragraphs 16 and 26 of the Application. Please refer to the response to information request 2012.1 RR BCOAPO.5.1 for the  $R^2$  statistic for the simple exponential regression line.

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**2012.1 RR AIC.3 Reference: Supplement to BCUC Question 7.0  
 Actuarial Rate level Indication Analysis  
 Exhibit B-1, Chapter 3, Section A.1 p 3-5  
 Rate indication Calculation and Drivers**

**ICBC states that the proportion of seniors is increasing and that existing customers are migrating to greater levels of discount on average. Please provide data regarding the numbers of customers by age category. Please provide historical data (ten years or more) regarding the numbers of customers by age category. Please provide data regarding the numbers of customers by discount category**

**Response:**

As stated in Chapter 3 of the Application, “Average premium is trending lower ... as existing customers migrate to greater levels of discount on average.” Senior customers and the highest level on the Claim-Rated Scale (CRS) are examples of those with high levels of discount. Seniors receive a 25% premium discount in addition to their CRS discount, and the highest level of CRS discount is 43%.

The first table shows the number of senior customers by year, and the second table shows the number of customers by CRS discount level. Any further breakdown by age category is not applicable to the premium models in the Application, as ICBC cannot rate based on age.

Please note that the tables below include both Personal and Commercial exposures.

<b>Calendar Year</b>	<b>Seniors</b>	<b>Non-Seniors</b>
<b>2001</b>	276,286	2,102,596
<b>2002</b>	281,190	2,127,113
<b>2003</b>	285,958	2,163,104
<b>2004</b>	290,612	2,222,483
<b>2005</b>	297,218	2,283,496
<b>2006</b>	304,027	2,346,175
<b>2007</b>	312,483	2,412,135
<b>2008</b>	323,735	2,440,068
<b>2009</b>	336,966	2,459,575
<b>2010</b>	347,914	2,493,027

<b>Calendar Year</b>	<b>No CRS Discount/ Surcharge</b>	<b>Up to 20% CRS discount</b>	<b>25 to 40 % CRS Discount</b>	<b>43% CRS Discount</b>
<b>2001</b>	52,209	208,415	329,739	1,683,226
<b>2002</b>	55,637	185,004	281,644	1,779,935
<b>2003</b>	62,739	174,415	281,811	1,819,472
<b>2004</b>	57,006	174,501	284,763	1,880,507
<b>2005</b>	59,354	177,151	273,434	1,944,811
<b>2006</b>	60,802	183,020	258,101	2,011,850
<b>2007</b>	64,678	186,467	246,290	2,082,411
<b>2008</b>	66,006	180,596	252,570	2,115,641
<b>2009</b>	63,632	183,717	250,612	2,147,726
<b>2010</b>	61,906	188,378	251,542	2,185,093

**2012.1 RR AIC.4 Reference: Supplement to BCUC Question 10.0  
Actuarial Rate level Indication Analysis  
Exhibit B-1, Chapter 3, Section B.1 p 3-10, Figure 3.5  
Precipitation Compared to Average and Precipitation Impact on BI Frequency**

**ICBC has suggested a link between precipitation levels and claims frequency. Has ICBC analyzed the correlation between precipitation and claims frequency? If so, can ICBC report on how the correlation changes for different time periods of analysis? Has ICBC analyzed the effect of the timing of precipitation? For example, are claims increased when precipitation happens after dry periods as opposed when days of precipitation follow consecutively? As well, does the type of precipitation (e.g., rain versus snow) affect the amount of claims?**

**Response:**

Claims frequencies are influenced by weather conditions, as well as many other factors. Changes in the weather, in particular precipitation levels, have a strong relationship to changes in claims frequency. ICBC has performed a simple correlation analysis between precipitation and bodily injury (BI) claims frequencies. Based on 60 quarterly data points through 2011, there is a 72.8% correlation.

The correlation has also been analyzed for different time periods. The results (based on 20 quarterly data points) show that the correlation has been stable from 1997 to 2011.

<b>Periods</b>	<b>Correlation (based on 20 quarterly data points)</b>
1997 Q1 - 2001 Q4	75.5%
2002 Q1 - 2006 Q4	72.5%
2007 Q1 - 2011 Q4	72.0%

ICBC has not conducted any recent studies on the effect of the timing or type of precipitation.

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**2012.1 RR AIC.5 Reference: Supplement to BCUC Question 13.0  
Actuarial Rate level Indication Analysis  
Exhibit B-1, Chapter 3, p. 3-10, para. 26 and Figures 3.6/3.7  
Annual mileage compared to BI Frequency**

**ICBC has suggested a link between annual mileage and claims frequency.  
Has ICBC analyzed the correlation between annual mileage and claims frequency? If so,  
can ICBC report on how the correlation changes for different time periods of analysis?**

**Response:**

It is well known in the insurance industry that amount of travel and crash frequency exhibit a correlation. For example, see slide 25 of a recent presentation of the Insurance Information Institute, "Personal Lines P-C Insurance Markets: Trends, Challenges, and Opportunities for 2012 & Beyond": <http://www.iii.org/assets/docs/pdf/PersonalLines-013112.pdf>.

ICBC has not itself formally analyzed the correlation between annual mileage and claims frequency, so cannot report on the correlation for different time periods. ICBC estimates historical mileage for the sole purpose of validating the actuaries' assumption that driving amounts have returned to pre-recession levels.

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**2012.1 RR AIC.6 Reference: Supplement to BCUC Question 35  
Actuarial Rate level Indication Analysis  
Exhibit B-1, Chapter 3, Exhibit D.0, p 4  
Personal Bodily Injury Frequency**

**Please provide the formula for the model. In addition to the  $R^2$  statistic, please provide the Adjusted  $R^2$  statistic, and the t and p statistics for the model coefficients. Over what time period is the model fitted? How many data points are included in the regression?**

**Response:**

Please see Attachment C of the response to information request 2012.1 RR AIC.12.1.

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**2012.1 RR AIC.7 Reference: Supplement to BCUC Question 38  
Actuarial Rate level Indication Analysis  
Exhibit B-1, Chapter 3, Exhibit D.0, para. 11  
Economic Recession & Recovery**

**ICBC states that frequencies of a few coverages are distinctly lower than the long term trend line. Please provide information on how the long term trend line was determined. Over what time period is long term trend line determined? What is the formula for the long term trend line?**

**Response:**

ICBC normally determines a long-term trend line over a 15-year period. In the cases where there were unusually low frequencies in 2008 and 2009, a 12-year trend fitting to the 12 years prior to 2008 was used.

For personal and commercial bodily injury frequency, a 12-year trend line was determined using an exponential regression from the second quarter of 1996 to the first quarter of 2008. A 12-year trend line was also used for Personal medical & rehabilitation frequency. Please refer to the response to information request 2012.1 RR AIC.12.1, Attachment A – Exposure Models for the personal long-term frequency trend line equations, and the response to information request 2012.1 RR AIC.12.1, Attachment B – Average Premium Models for the commercial trend-line equations.

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**2012.1 RR AIC.8 Reference: Supplement to BCUC Question 39  
Actuarial Rate level Indication Analysis  
Exhibit B-1, Chapter 3, Exhibit D.0, Para. 16  
Personal Bodily Injury Frequency**

**Please provide the formula for the 12 year exponential model. Please provide the model fit diagnostic measures, including the Adjusted R<sup>2</sup> statistic. Please confirm how many data points are included in the modelling.**

**Response:**

Please see Attachment C of the response to information request 2012.1 RR AIC.12.1.

**2012.1 RR AIC.9 Reference: Supplement to BCUC Question 62**  
**Claims Initiatives**  
**Exhibit B-1, Chapter 6, Section B, p. 6-1**  
**Bodily Injury Cost Increases**

**Please provide information relating to the past average BI claims cost and average costs of litigation of the type requested by the BCUC for an additional four years (2002-2005).**

**Response:**

ICBC is unable to provide the data requested for 2002 and 2003. Please refer to the response to information request 2012.1 RR BCUC.62.3 for the years 2006 to 2012.

Table 1 sets out data with respect to bodily injury (BI) claims payments for BI claims that were closed in each year for 2004 to 2005. "BI claims loss" is the total of loss payments for pain and suffering, future care, past wage loss, and future wage loss. "Costs of litigation" are third party costs and disbursements (plaintiff counsel costs), external legal fees and legal disbursements incurred by ICBC in defence of the claim, and medical/dental reports.

Table 2 sets out the number of policies written in each of those same years. Because the claims closed in any given year relates both to policies sold in the same year and policies sold in previous years, it would not be appropriate to calculate a per policy amount by dividing these payments by the number of policies written.

Table 1

(in \$millions)	BI Claims Loss (Closed BI claims)			Costs of Litigation (Closed BI claims)		
	Below or Equal to \$40,000	Above \$40,000	Total	Below or Equal to \$40,000	Above \$40,000	Total
2004 Actual	\$289.4	\$515.1	\$804.5	\$47.4	\$112.9	\$160.3
2005 Actual	\$291.7	\$608.1	\$899.8	\$45.9	\$131.8	\$177.7

Table 2

<b>(in 000s)</b>	<b>Total Policies Written</b>
2004 Actual	2,513
2005 Actual	2,580

**2012.1 RR AIC.10 Reference: Supplement to BCUC Question 97  
Performance Measures  
Exhibit B-1-1, Chapter 9, Section B.2.5, p. 9-12  
Accident Benefit Paid Severity**

**Please provide information relating to the calculation of five year historical trends.**

**Response:**

Accident benefit payments include medical, dental, and rehabilitation costs. Accident benefit paid severity is the average total accident benefit payments paid on accident benefit exposures closed in the current year divided by the number of exposures closed in the current year, regardless of the year of loss. There is no calculation of five year historical trends included in the accident benefit paid severity.

Table 1 below sets out the accident benefit paid severity for the past five years, including structured settlements and net of structured settlements.

Table 1

	<b>Accident Benefit Paid Severity</b>					
	<b>2006 Actual</b>	<b>2007 Actual</b>	<b>2008 Actual</b>	<b>2009 Actual</b>	<b>2010 Actual</b>	<b>2011 Forecast</b>
<b>Including Structured Settlements</b>	\$ 1,700	\$ 1,801	\$ 1,762	\$ 1,860	\$ 2,139	\$ 2,172
<b>Net of Structured Settlements</b>	\$ 1,700	\$ 1,801	\$ 1,762	\$ 1,860	\$ 1,985	\$ 2,037

**2012.1 RR AIC.11.1-2 Reference: Personal Bodily Injury (BI) Claims**

**11.1. Please provide information regarding the number of Bodily Injury (BI) claims that proceed to trial and the total number of BI claims on an annual basis. Please provide 10 years of data.**

**11.2. Please provide information regarding the percentage of Bodily Injury (BI) claims that proceed to trial on an annual basis. Please provide 10 years of data.**

**Response:**

ICBC has not tracked trial data in a format that would provide responses for years prior to 2009.

The table below sets out the total number of bodily injury (BI) exposures closed with a payment in the year, BI trials concluded in the year, and the corresponding percentage of BI trials to BI exposures closed.

Trial results year over year can be volatile and are affected by the types of cases that go to trial annually. The number of trials is dependent on factors such as court availability, counsel calendars, and the maturity of claims.

Closed Year	Closed BI Exposure Count with payment* (includes trials)	BI Trial Count	% of BI Trials to closed BI exposures with payment
2009	42,000	216	0.51%
2010	45,000	252	0.56%
2011	44,000	166	0.38%

\* Figures above are rounded to nearest thousand.

**2012.1 RR AIC.11.3 Reference: Personal Bodily Injury (BI) Claims**

**Please provide an explanation of how claims frequency is calculated. Please provide historical data (ten years) for both the figures used in the denominator and figures used in the numerator.**

**Response:**

Claims frequency for an accident year is the number of claims that have occurred in the accident year divided by the number of policy years earned in that year. Claims frequencies for Personal Bodily Injury are shown below. They are developed to their ultimate values and are based on data as of May 31, 2011.

Accident Year	Ultimate Claim Count	Number of Policy Years Earned	Ultimate Frequency
	(1)	(2)	(3) = (1)/(2)
2001	43,504	2,162,814	2.01%
2002	42,193	2,199,128	1.92%
2003	42,075	2,239,950	1.88%
2004	40,990	2,292,222	1.79%
2005	40,432	2,349,132	1.72%
2006	40,648	2,413,844	1.68%
2007	40,179	2,479,998	1.62%
2008	37,974	2,539,288	1.50%
2009	36,555	2,563,283	1.43%
2010	37,992	2,606,600	1.46%

(1) = Exhibit C.1.1.1 column (1)

**2012.1 RR AIC.11.4 Reference: Personal Bodily Injury (BI) Claims**

**Please provide historical data (ten years) on the claims frequency by size of claim category.**

**Response:**

Ultimate claim frequency is not available by size of claim category, so reported frequency is provided below. Please note that this data is not fully developed, it is based on information reported as of May 31, 2011. It is not appropriate to use reported data for assessing trends because the most recent years are incomplete, due to a lag in the reporting of claims.

<b>Personal Bodily Injury Reported Frequency as of May 31, 2011</b>		
<b>Accident Year</b>	<b>Category</b>	
	<b>Less than \$40,000</b>	<b>\$40,000 and above</b>
2001	1.80%	0.21%
2002	1.70%	0.22%
2003	1.64%	0.23%
2004	1.54%	0.25%
2005	1.46%	0.26%
2006	1.43%	0.25%
2007	1.36%	0.26%
2008	1.26%	0.23%
2009	1.21%	0.20%
2010	1.27%	0.15%

To provide a better alternative for assessing trends, Personal bodily injury (BI) frequency at 17 months of development for each accident year is shown below. The 17 months of development is based on the convention of counting from the beginning of the accident year, so that the accident year 2001 frequencies are as of May 31, 2002, the accident year 2002 frequencies are as of May 31, 2003, and so on. Accident year 2010 frequencies are as of May 31, 2011 in both tables. Comparing the table below to the reported data above gives an indication of the amount of unreported information that develops after the first 17 months. Individual Personal BI claims less than \$40,000 can either increase due to newly reported claims or can decrease due to

movement from the less than \$40,000 category to the \$40,000 and above category as more information is known over time about the type and extent of bodily injuries of the claim.

<b>Personal Bodily Injury Reported Frequency at 17 Months of Development</b>		
<b>Accident Year</b>	<b>Category</b>	
	<b>Less than \$40,000</b>	<b>\$40,000 and above</b>
2001	1.89%	0.09%
2002	1.79%	0.09%
2003	1.74%	0.10%
2004	1.65%	0.10%
2005	1.57%	0.12%
2006	1.53%	0.12%
2007	1.46%	0.12%
2008	1.35%	0.11%
2009	1.27%	0.13%
2010	1.27%	0.15%

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**2012.1 RR AIC.11.5 Reference: Personal Bodily Injury (BI) Claims**

**ICBC states the severity or average cost of a claim has increased by about 6%. Please provide the time frame over which this is calculated.**

**Response:**

On slide 9 from the January 23, 2012 Workshop, ICBC noted that in the past, the severity of bodily injury (BI) claims has increased at a rate of about 6%. This refers to the average growth in severity of BI claims from accident year 2000 through accident year 2011, which is shown on slide 10 from the January 23, 2012 Workshop. ICBC wishes to clarify that this trend relates to all Basic BI claims, not limited to Personal BI claims as mentioned in the reference to this information request.

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**2012.1 RR AIC.11.6 Reference: Personal Bodily Injury (BI) Claims**

**ICBC states the frequency has always decreased each year by 3-4%. Please provide the time frame over which this is calculated.**

**Response:**

On slide 9 from the January 23, 2012 Workshop, ICBC noted that in the past, bodily injury (BI) claim frequency has decreased at a rate of 3 to 4%. This refers to the average rate of decrease in BI claim frequency, from accident year 1997 through accident year 2007, which is shown on slide 11 from the January 23, 2012 Workshop. ICBC wishes to clarify that this trend relates to all Basic insurance BI claims, and is not limited to Personal BI claims as mentioned in the reference to this information request.

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**2012.1 RR AIC.11.7 Reference: Personal Bodily Injury (BI) Claims**

**ICBC states that the forecast loss costs have been accurate to within 6.1% or less, as compared with the emerged loss costs based on its Application. ICBC states that when significant forecast variances occurred, it was due to factors not anticipated at the time the loss forecasts were made. Please describe what anticipated factors led to the 6.1% forecast error in PY 2007 and the 5.8% forecast error in PY 2010.**

**Response:**

The loss cost forecast variances for policy year 2007 and policy year 2010 were due to unanticipated factors. ICBC actuaries make their best estimate of future claims costs. The favourable forecast variance in the policy year 2007 loss cost was mainly due to the favourable impacts from claims initiatives, drier than average weather, and less driving associated with the economic downturn that were not anticipated at the time of the forecast. The unfavourable 5.8% forecast variance in the policy year 2010 loss cost was mainly due to the higher frequency of bodily injury claims that was not anticipated at the time of the forecast.

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**2012.1 RR AIC.12.1 Reference: Regression and Econometric Model Diagnostic Measures**

**For all regression or econometric models used or relied on in the ICBC submission please provide the formula for the model, the R<sup>2</sup> statistic, the Adjusted R<sup>2</sup> statistic, the t and p statistics for the model coefficients, the time period over which the model is fitted, and the number of data points included in the regression.**

**Response:**

**Exposure Models:**

As stated in Exhibit B.0.1, paragraph 2 of the Application, multiple regression models are used for each business segment to forecast policy year 2012 exposure from historical written exposure data. The Personal and Commercial written exposure models are each comprised of business segment component models. Depending on the explanatory variables selected, the functional form of each business segment model is either linear regression or exponential regression.

The functional form of linear regression is:

$$Y = a + b_1x_1 + b_2x_2 + \dots + b_kx_k;$$

k is the number of explanatory variables.

The functional form of exponential regression is:

$$Y = \exp[a + b_1x_1 + b_2x_2 + \dots + b_{12}x_{12}];$$

x<sub>1</sub> to x<sub>11</sub> are monthly indicators;

x<sub>12</sub> is the time variable.

Please see Attachment A – Exposure Models for the requested information regarding each exposure model used in the Application.

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**Average Premium Models:**

As stated in Exhibit B.0.2, paragraph 2 of the Application, multiple regression models are constructed to describe historical average premium by major coverage, separately for Personal and Commercial.

It is desirable to use written exposure proportions by business segment as explanatory variables because of ICBC's mix of business drive average premium. Unfortunately, multicollinearity exists in the exposure proportions because some business segments are highly correlated with others. In order to deal with the issue of multicollinearity, ICBC uses principal components analysis to create linear combinations of the exposure proportions that are uncorrelated (principal component explanatory variables).

The equation is:  $Y = a + b_1x_1 + b_2x_2 + \dots + b_kx_k$ . Y is the average premium, the  $x_i$ 's are principal component explanatory variables, and k is the number of principal components. The Personal Third Party Basic (TPB) and Underinsured Motorist Protection (UMP) model has 6 principal components; Personal Part 7 has 14 principal components. The Commercial TPB and UMP model has 13 principal components; Commercial Part 7 also has 13. The models are fit to seven years of monthly data with 84 data points included.

Please see Attachment B – Average Premium Models for the requested information regarding each average premium model.

**Loss Trend Models:**

As stated in Exhibit D.0, paragraph 2 of the Application, a short-term trend model and a long-term trend model are selected for each coverage. Accident year 2012 loss statistics are based on the short-term trend, the 2013 loss statistics are based on 50% of the short-term trend and 50% of the long-term trend, and the 2014 loss statistics are based on the long-term trend.

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The same model is usually used for both short-term and long-term trends. When the long-term trend is based on a model different from the one used for the short-term trend, description and diagnostic statistics of both models are included.

Two types of statistical models are considered to forecast future trends in loss statistics, linear regression models (referred to as econometric regression models in Exhibit D.0 of the Application) and exponential regression models.

The functional form of linear regression is:

$$Y = a + b_1x_1 + b_2x_2 + \dots + b_kx_k;$$

k is the number of explanatory variables.

The functional form of exponential regression is:

$$Y = \exp[a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4];$$

$x_1$  to  $x_3$  are quarterly indicators;

$x_4$  is the time variable.

Personal Medical Rehabilitation severity, Personal Death Benefit severity, and Commercial Death Benefit severity modeled values are an average of historical experience. Hence, these models are not included in the attachment.

Please see Attachment C – Basic Frequency and Severity Models for the requested information regarding each loss trend model.



## **2012.1 RR AIC.12.1 – Attachment A – Exposure Models**

**Personal Exposure - Pleasure Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{Pleasure Rate Class Group Exposure} = -50,568.7 - 954.4X_1 + 6,992.0X_2 + 16,589.1X_3 + 20,009.1X_4 + 19,951.8X_5 + 16,508.2X_6 + 16,418.8X_7 + 18,984.9X_8 + 16,719.1X_9 + 14,507.2X_{10} + 6,230.8X_{11} + 0.03X_{12}$$

R<sup>2</sup> of the model is 97.4%.

Adjusted R<sup>2</sup> of the model is 97.0%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	-50,568.7	4,064.6	-12.44	0.00
January Indicator	X <sub>1</sub>	-954.4	685.4	-1.39	0.16
February Indicator	X <sub>2</sub>	6,992.0	685.4	10.20	0.00
March Indicator	X <sub>3</sub>	16,589.1	685.5	24.20	0.00
April Indicator	X <sub>4</sub>	20,009.1	686.4	29.15	0.00
May Indicator	X <sub>5</sub>	19,951.8	686.2	29.08	0.00
June Indicator	X <sub>6</sub>	16,508.2	686.0	24.06	0.00
July Indicator	X <sub>7</sub>	16,418.8	685.8	23.94	0.00
August Indicator	X <sub>8</sub>	18,984.9	685.7	27.69	0.00
September Indicator	X <sub>9</sub>	16,719.1	685.5	24.39	0.00
October Indicator	X <sub>10</sub>	14,507.2	685.4	21.16	0.00
November Indicator	X <sub>11</sub>	6,230.8	685.4	9.09	0.00
Population aged 15-64	X <sub>12</sub>	0.03	0.0	23.7	0.0

**Personal Exposure - Long Commute Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{Long Commute Rate Class Group Exposure} = 32,099.5 + 3,400.3X_1 + 5,428.3X_2 + 9,782.0X_3 + 8,937.4X_4 + 9,143.6X_5 + 5,955.1X_6 + 7,273.0X_7 + 11,268.8X_8 + 10,440.5X_9 + 8,459.7X_{10} + 5,143.2X_{11} + 35.6X_{12} - 163,335.7X_{13}$$

R<sup>2</sup> of the model is 91.0%.

Adjusted R<sup>2</sup> of the model is 89.6%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	32,099.5	937.5	34.24	0.00
January Indicator	X <sub>1</sub>	3,400.3	684.2	4.97	0.00
February Indicator	X <sub>2</sub>	5,428.3	682.8	7.95	0.00
March Indicator	X <sub>3</sub>	9,782.0	679.6	14.39	0.00
April Indicator	X <sub>4</sub>	8,937.4	681.4	13.12	0.00
May Indicator	X <sub>5</sub>	9,143.6	682.0	13.41	0.00
June Indicator	X <sub>6</sub>	5,955.1	677.3	8.79	0.00
July Indicator	X <sub>7</sub>	7,273.0	682.5	10.66	0.00
August Indicator	X <sub>8</sub>	11,268.8	685.7	16.43	0.00
September Indicator	X <sub>9</sub>	10,440.5	676.7	15.43	0.00
October Indicator	X <sub>10</sub>	8,459.7	676.5	12.50	0.00
November Indicator	X <sub>11</sub>	5,143.2	676.5	7.60	0.00
HPI (1 year lag)	X <sub>12</sub>	35.6	5.1	6.94	0.00
Jobless Rate	X <sub>13</sub>	-163,335.7	9,252.7	-17.65	0.00

**Personal Exposure -Short+Long Commute Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{Short+Long Rate Class Group Exposure} = 61,371.4 + 3460.5X_1 + 11,092.5X_2 + 24,151.0X_3 + 23,663.6X_4 + 24,533.0X_5 + 18,314.5X_6 + 18,765.4X_7 + 27,965.3X_8 + 28,874.7X_9 + 26,052.5X_{10} + 15,177.7X_{11} + 107.4X_{12} - 44,839.4X_{13}$$

R<sup>2</sup> of the model is 97.5%.

Adjusted R<sup>2</sup> of the model is 97.1%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	61,371.4	1,134.8	54.08	0.00
January Indicator	X <sub>1</sub>	3,460.5	828.1	4.18	0.00
February Indicator	X <sub>2</sub>	11,092.5	826.4	13.42	0.00
March Indicator	X <sub>3</sub>	24,151.0	822.6	29.36	0.00
April Indicator	X <sub>4</sub>	23,663.6	824.7	28.69	0.00
May Indicator	X <sub>5</sub>	24,533.0	825.4	29.72	0.00
June Indicator	X <sub>6</sub>	18,314.5	819.8	22.34	0.00
July Indicator	X <sub>7</sub>	18,765.4	826.1	22.72	0.00
August Indicator	X <sub>8</sub>	27,965.3	830.0	33.69	0.00
September Indicator	X <sub>9</sub>	28,874.7	819.1	35.25	0.00
October Indicator	X <sub>10</sub>	26,052.5	818.9	31.82	0.00
November Indicator	X <sub>11</sub>	15,177.7	818.8	18.54	0.00
HPI (1 year lag)	X <sub>12</sub>	107.5	6.2	17.33	0.00
Jobless Rate	X <sub>13</sub>	-44,839.4	11,199.2	-4.00	0.00

**Personal Exposure - Business Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

Business Rate Class Group Exposure =  $3,515.3 - 28.8X_1 - 12.5X_2 + 6,099.2X_3 + 5,408.5X_4 + 5,223.7X_5 + 3,845.8X_6 + 3,204.3X_7 + 2,156.6X_8 + 3,046.1X_9 + 3,908.9X_{10} + 2,725.3X_{11} + 9.3X_{12} - 46,122.7X_{13}$

R<sup>2</sup> of the model is 96.8%.

Adjusted R<sup>2</sup> of the model is 96.3%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	3,515.3	1,119.4	3.14	0.00
January Indicator	X <sub>1</sub>	-28.8	238.2	-0.12	0.90
February Indicator	X <sub>2</sub>	-12.5	237.7	-0.05	0.96
March Indicator	X <sub>3</sub>	6,099.2	236.7	25.77	0.00
April Indicator	X <sub>4</sub>	5,408.5	237.3	22.79	0.00
May Indicator	X <sub>5</sub>	5,223.7	237.3	22.01	0.00
June Indicator	X <sub>6</sub>	3,845.8	236.0	16.30	0.00
July Indicator	X <sub>7</sub>	3,204.3	238.3	13.44	0.00
August Indicator	X <sub>8</sub>	2,156.6	239.8	8.99	0.00
September Indicator	X <sub>9</sub>	3,046.1	235.6	12.93	0.00
October Indicator	X <sub>10</sub>	3,908.9	235.6	16.59	0.00
November Indicator	X <sub>11</sub>	2,725.3	235.6	11.57	0.00
Labour Force	X <sub>12</sub>	9.3	0.5	20.07	0.00
Jobless Rate	X <sub>13</sub>	-46,122.7	3,217.3	-14.34	0.00

**Personal Exposure - Seniors Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

Seniors Rate Class Group Exposure =  $4,763.5 - 148.0X_1 + 33,524.7X_2 + 10,960.9X_3 + 11,176.2X_4 + 9,012.9X_5 + 6,702.6X_6 + 5,622.5X_7 + 8,374.0X_8 + 7,991.6X_9 + 9,268.4X_{10} + 4,919.3X_{11} + 0.04X_{12} - 1,808.0X_{13}$

R<sup>2</sup> of the model is 99.0%.

Adjusted R<sup>2</sup> of the model is 98.9%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	4,763.5	1,263.1	3.77	0.00
January Indicator	X <sub>1</sub>	-148.0	315.4	-0.47	0.64
February Indicator	X <sub>2</sub>	33,524.7	693.9	48.31	0.00
March Indicator	X <sub>3</sub>	10,960.9	315.5	34.75	0.00
April Indicator	X <sub>4</sub>	11,176.2	315.8	35.39	0.00
May Indicator	X <sub>5</sub>	9,012.9	315.7	28.55	0.00
June Indicator	X <sub>6</sub>	6,702.6	315.6	21.24	0.00
July Indicator	X <sub>7</sub>	5,622.5	315.5	17.82	0.00
August Indicator	X <sub>8</sub>	8,374.0	315.4	26.55	0.00
September Indicator	X <sub>9</sub>	7,991.6	315.4	25.34	0.00
October Indicator	X <sub>10</sub>	9,268.4	315.3	29.39	0.00
November Indicator	X <sub>11</sub>	4,919.3	315.3	15.60	0.00
Population Age 65+	X <sub>12</sub>	0.04	0.0	27.37	0.00
February Counter	X <sub>13</sub>	-1,808.0	93.2	-19.41	0.00

**Personal Exposure - Motorhome Rate Class Group**

10 Year (April 2001 to March 2011) Exponential Model. 120 monthly data points were included in the regression.

$$\text{Motorhome Rate Class Group Exposure} = 26.4 + 0.1X_1 + 0.4X_2 + 1.0X_3 + 1.6X_4 + 1.9X_5 + 1.5X_6 + 1.2X_7 + 0.8X_8 + 0.3X_9 + 0.4X_{10} + 0.2X_{11} - 0.010X_{12}$$

R<sup>2</sup> of the model is 98.6%.

Adjusted R<sup>2</sup> of the model is 98.5%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	26.4	4.9	5.39	0.00
January Indicator	X <sub>1</sub>	0.1	0.0	1.97	0.05
February Indicator	X <sub>2</sub>	0.4	0.0	12.23	0.00
March Indicator	X <sub>3</sub>	1.0	0.0	29.48	0.00
April Indicator	X <sub>4</sub>	1.6	0.0	46.04	0.00
May Indicator	X <sub>5</sub>	1.9	0.0	54.19	0.00
June Indicator	X <sub>6</sub>	1.5	0.0	42.72	0.00
July Indicator	X <sub>7</sub>	1.2	0.0	34.13	0.00
August Indicator	X <sub>8</sub>	0.8	0.0	22.75	0.00
September Indicator	X <sub>9</sub>	0.3	0.0	10.07	0.00
October Indicator	X <sub>10</sub>	0.4	0.0	10.97	0.00
November Indicator	X <sub>11</sub>	0.2	0.0	4.61	0.00
Time	X <sub>12</sub>	-0.01	0.0	-4.02	0.00

**Personal Exposure - Motorcycle Rate Class Group**

5 Year (April 2006 to March 2011) Linear Model was selected. 60 monthly data points were included in the regression.

$$\text{Motorcycle Rate Class Group Exposure} = -13,873.4 + 915.6X_1 + 3,349.4X_2 + 16,408.6X_3 + 20,263.4X_4 + 15,200.1X_5 + 5,455.5X_6 + 3,949.6X_7 + 2,454.9X_8 + 1,255.1X_9 - 106.1X_{10} - 320.9X_{11} + 0.005X_{12} - 355.3X_{13}$$

R<sup>2</sup> of the model is 98.0%.

Adjusted R<sup>2</sup> of the model is 97.5%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	-13,873.4	3,976.6	-3.49	0.00
January Indicator	X <sub>1</sub>	915.6	451.9	2.03	0.04
February Indicator	X <sub>2</sub>	3,349.4	452.0	7.41	0.00
March Indicator	X <sub>3</sub>	16,408.6	1,433.8	11.44	0.00
April Indicator	X <sub>4</sub>	20,263.4	1,159.8	17.47	0.00
May Indicator	X <sub>5</sub>	15,200.1	894.5	16.99	0.00
June Indicator	X <sub>6</sub>	5,455.5	453.0	12.04	0.00
July Indicator	X <sub>7</sub>	3,949.6	452.6	8.73	0.00
August Indicator	X <sub>8</sub>	2,454.9	452.3	5.43	0.00
September Indicator	X <sub>9</sub>	1,255.1	452.1	2.78	0.01
October Indicator	X <sub>10</sub>	-106.1	452.0	-0.23	0.81
November Indicator	X <sub>11</sub>	-320.9	451.9	-0.71	0.48
Population Age 15-64	X <sub>12</sub>	0.005	0.0	3.57	0.00
Q2 Precipitation 0.1mm	X <sub>13</sub>	-355.3	59.2	-6.00	0.00

**Personal Exposure - Collectors Rate Class Group**

5 Year (April 2006 to March 2011) Exponential Model was selected. 60 monthly data points were included in the regression.

$$\text{Collectors Rate Class Group Exposure} = -114.2 - 0.1X_1 + 0.2X_2 + 0.5X_3 + 1.0X_4 + 1.0X_5 + 0.9X_6 + 0.7X_7 + 0.6X_8 + 0.5X_9 + 0.6X_{10} + 0.4X_{11} + 0.1X_{12}$$

R<sup>2</sup> of the model is 99.3%.

Adjusted R<sup>2</sup> of the model is 99.1%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	-114.2	6.0	-19.03	0.00
January Indicator	X <sub>1</sub>	-0.1	0.0	-4.59	0.00
February Indicator	X <sub>2</sub>	0.2	0.0	7.89	0.00
March Indicator	X <sub>3</sub>	0.5	0.0	24.88	0.00
April Indicator	X <sub>4</sub>	1.0	0.0	47.81	0.00
May Indicator	X <sub>5</sub>	1.0	0.0	48.93	0.00
June Indicator	X <sub>6</sub>	0.9	0.0	42.04	0.00
July Indicator	X <sub>7</sub>	0.7	0.0	34.58	0.00
August Indicator	X <sub>8</sub>	0.6	0.0	26.69	0.00
September Indicator	X <sub>9</sub>	0.5	0.0	23.53	0.00
October Indicator	X <sub>10</sub>	0.6	0.0	29.01	0.00
November Indicator	X <sub>11</sub>	0.4	0.0	17.29	0.00
Time	X <sub>12</sub>	0.1	0.0	20.12	0.00

**Commercial Exposure - Light Commercial Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

Light Commercial Rate Class Group Exposure =  $6,979.2 + 420.9X_1 + 2.9X_2 + 3,648.1X_3 + 2,175.6X_4 + 1,475.1X_5 + 719.1X_6 + 1,278.1X_7 - 144.7X_8 + 933.9X_9 + 2,552.5X_{10} + 1,184.5X_{11} + 7.2X_{12} - 10,455.2X_{13}$

R<sup>2</sup> of the model is 97.0%.

Adjusted R<sup>2</sup> of the model is 96.5%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	6,979.2	150.0	46.54	0.00
January Indicator	X <sub>1</sub>	420.9	109.4	3.85	0.00
February Indicator	X <sub>2</sub>	2.9	109.2	0.03	0.98
March Indicator	X <sub>3</sub>	3,648.1	108.7	33.56	0.00
April Indicator	X <sub>4</sub>	2,175.6	109.0	19.96	0.00
May Indicator	X <sub>5</sub>	1,475.1	109.1	13.52	0.00
June Indicator	X <sub>6</sub>	719.1	108.3	6.64	0.00
July Indicator	X <sub>7</sub>	1,278.1	109.2	11.71	0.00
August Indicator	X <sub>8</sub>	-144.7	109.7	-1.32	0.19
September Indicator	X <sub>9</sub>	933.9	108.2	8.63	0.00
October Indicator	X <sub>10</sub>	2,552.5	108.2	23.59	0.00
November Indicator	X <sub>11</sub>	1,184.5	108.2	10.95	0.00
HPI (1 year lag)	X <sub>12</sub>	7.2	0.8	8.78	0.00
Jobless Rate	X <sub>13</sub>	-10,455.2	1,480.0	-7.06	0.00

**Commercial Exposure - Heavy Commercial Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{Heavy Commercial Rate Class Group Exposure} = -3,598.0 + 1308.8X_1 - 457.3X_2 + 2,175.1X_3 + 936.4X_4 + 517.1X_5 + 8.7X_6 + 125.0X_7 - 1,115.9X_8 - 552.3X_9 + 914.9X_{10} + 751.9X_{11} + 3.3X_{12} - 4,053.3X_{13}$$

R<sup>2</sup> of the model is 98.6%.

Adjusted R<sup>2</sup> of the model is 98.4%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	-3,598.0	275.7	-13.05	0.00
January Indicator	X <sub>1</sub>	1,308.8	58.7	22.31	0.00
February Indicator	X <sub>2</sub>	-457.3	58.6	-7.81	0.00
March Indicator	X <sub>3</sub>	2,175.1	58.3	37.32	0.00
April Indicator	X <sub>4</sub>	936.4	58.4	16.02	0.00
May Indicator	X <sub>5</sub>	517.1	58.4	8.85	0.00
June Indicator	X <sub>6</sub>	8.7	58.1	0.15	0.88
July Indicator	X <sub>7</sub>	125.0	58.7	2.13	0.03
August Indicator	X <sub>8</sub>	-1,115.9	59.1	-18.90	0.00
September Indicator	X <sub>9</sub>	-552.3	58.0	-9.52	0.00
October Indicator	X <sub>10</sub>	914.9	58.0	15.77	0.00
November Indicator	X <sub>11</sub>	751.9	58.0	12.96	0.00
Labour Force	X <sub>12</sub>	3.3	0.1	28.68	0.00
Jobless Rate	X <sub>13</sub>	-4,053.3	792.4	-5.12	0.00

**Commercial Exposure - Short Haul Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

Short Haul Rate Class Group Exposure =  $1,066.9 - 563.5X_1 - 662.1X_2 + 210.8X_3 + 311.3X_4 + 66.9X_5 - 323.0X_6 + 158.8X_7 - 219.8X_8 - 299.5X_9 + 162.1X_{10} - 201.7X_{11} + 1.0X_{12} - 5,381.3X_{13}$

R<sup>2</sup> of the model is 93.9%.

Adjusted R<sup>2</sup> of the model is 92.9%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	1,066.9	217.9	4.90	0.00
January Indicator	X <sub>1</sub>	-563.5	46.4	-12.15	0.00
February Indicator	X <sub>2</sub>	-662.1	46.3	-14.31	0.00
March Indicator	X <sub>3</sub>	210.8	46.1	4.58	0.00
April Indicator	X <sub>4</sub>	311.3	46.2	6.74	0.00
May Indicator	X <sub>5</sub>	66.9	46.2	1.45	0.15
June Indicator	X <sub>6</sub>	-323.0	45.9	-7.03	0.00
July Indicator	X <sub>7</sub>	158.8	46.4	3.42	0.00
August Indicator	X <sub>8</sub>	-219.8	46.7	-4.71	0.00
September Indicator	X <sub>9</sub>	-299.5	45.9	-6.53	0.00
October Indicator	X <sub>10</sub>	162.1	45.9	3.53	0.00
November Indicator	X <sub>11</sub>	-201.7	45.9	-4.40	0.00
Labour Force	X <sub>12</sub>	1.0	0.1	10.81	0.00
Jobless Rate	X <sub>13</sub>	-5,381.3	626.3	-8.59	0.00

**Commercial Exposure - Long Haul Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{Long Haul Rate Class Group Exposure} = 522.1 + 101.3X_1 - 16.9X_2 + 281.2X_3 + 449.8X_4 + 243.5X_5 + 159.2X_6 + 458.6X_7 + 179.2X_8 + 115.9X_9 + 391.4X_{10} + 118.1X_{11} - 1,958.3X_{12}$$

R<sup>2</sup> of the model is 87.0%.

Adjusted R<sup>2</sup> of the model is 85.1%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	522.1	33.7	15.51	0.00
January Indicator	X <sub>1</sub>	101.3	32.8	3.09	0.00
February Indicator	X <sub>2</sub>	-16.9	32.7	-0.52	0.61
March Indicator	X <sub>3</sub>	281.2	32.6	8.64	0.00
April Indicator	X <sub>4</sub>	449.8	32.6	13.80	0.00
May Indicator	X <sub>5</sub>	243.5	32.6	7.46	0.00
June Indicator	X <sub>6</sub>	159.2	32.4	4.91	0.00
July Indicator	X <sub>7</sub>	458.6	32.7	14.03	0.00
August Indicator	X <sub>8</sub>	179.2	32.9	5.45	0.00
September Indicator	X <sub>9</sub>	115.9	32.4	3.58	0.00
October Indicator	X <sub>10</sub>	391.4	32.4	12.07	0.00
November Indicator	X <sub>11</sub>	118.1	32.4	3.64	0.00
Jobless Rate	X <sub>12</sub>	-1,958.3	442.6	-4.42	0.00

**Commercial Exposure - Bus Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{Bus Rate Class Group Exposure} = -622.0 + 55.8X_1 - 12.5X_2 - 9.3X_3 + 831.9X_4 + 144.9X_5 + 107.7X_6 + 507.6X_7 + 637.0X_8 + 210.3X_9 - 71.2X_{10} + 15.7X_{11} + 0.0003X_{12} + 27.8X_{13}$$

R<sup>2</sup> of the model is 86.7%.

Adjusted R<sup>2</sup> of the model is 84.6%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	-622.0	415.9	-1.50	0.13
January Indicator	X <sub>1</sub>	55.8	59.8	0.93	0.35
February Indicator	X <sub>2</sub>	-12.5	59.8	-0.21	0.83
March Indicator	X <sub>3</sub>	-9.3	59.8	-0.16	0.88
April Indicator	X <sub>4</sub>	831.9	59.9	13.88	0.00
May Indicator	X <sub>5</sub>	144.9	59.9	2.42	0.02
June Indicator	X <sub>6</sub>	107.7	59.9	1.80	0.07
July Indicator	X <sub>7</sub>	507.6	59.9	8.48	0.00
August Indicator	X <sub>8</sub>	637.0	59.8	10.64	0.00
September Indicator	X <sub>9</sub>	210.3	59.8	3.51	0.00
October Indicator	X <sub>10</sub>	-71.2	59.8	-1.19	0.23
November Indicator	X <sub>11</sub>	15.7	59.8	0.26	0.79
Territory Z population	X <sub>12</sub>	0.0003	0.0	2.66	0.01
Olympics	X <sub>13</sub>	27.8	31.4	0.89	0.38

**Commercial Exposure - Taxi Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{Taxi Rate Class Group Exposure} = 488.8 - 466.5X_1 - 269.0X_2 - 71.4X_3 - 465.9X_4 - 423.8X_5 - 480.9X_6 - 415.7X_7 - 496.7X_8 - 318.8X_9 - 460.0X_{10} - 393.3X_{11} + 0.2X_{12}$$

R<sup>2</sup> of the model is 98.2%.

Adjusted R<sup>2</sup> of the model is 97.9%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>
<b>Intercept</b>	<b>X<sub>0</sub></b>	488.8	15.1	32.32	0.00
<b>January Indicator</b>	<b>X<sub>1</sub></b>	-466.5	11.7	-40.03	0.00
<b>February Indicator</b>	<b>X<sub>2</sub></b>	-269.0	11.7	-23.09	0.00
<b>March Indicator</b>	<b>X<sub>3</sub></b>	-71.4	11.7	-6.13	0.00
<b>April Indicator</b>	<b>X<sub>4</sub></b>	-465.9	11.7	-39.94	0.00
<b>May Indicator</b>	<b>X<sub>5</sub></b>	-423.8	11.7	-36.34	0.00
<b>June Indicator</b>	<b>X<sub>6</sub></b>	-480.9	11.7	-41.25	0.00
<b>July Indicator</b>	<b>X<sub>7</sub></b>	-415.7	11.7	-35.66	0.00
<b>August Indicator</b>	<b>X<sub>8</sub></b>	-496.7	11.7	-42.62	0.00
<b>September Indicator</b>	<b>X<sub>9</sub></b>	-318.8	11.7	-27.36	0.00
<b>October Indicator</b>	<b>X<sub>10</sub></b>	-460.0	11.7	-39.47	0.00
<b>November Indicator</b>	<b>X<sub>11</sub></b>	-393.3	11.7	-33.75	0.00
<b>Taxi Licences</b>	<b>X<sub>12</sub></b>	0.2	0.0	8.03	0.00

**Commercial Exposure - TOP Rate Class Group**

8 Year (April 2003 to March 2011) Linear Model was selected. 96 monthly data points were included in the regression.

$$\text{TOP Rate Class Group Exposure} = -152.5 - 7.6X_1 + 3.2X_2 + 27.2X_3 + 44.7X_4 + 53.3X_5 + 40.6X_6 + 49.9X_7 + 51.3X_8 + 41.5X_9 + 33.3X_{10} + 4.0X_{11} + 0.1X_{12} - 318.0X_{13}$$

R<sup>2</sup> of the model is 92.4%.

Adjusted R<sup>2</sup> of the model is 91.2%.

		Coefficient	Std. Error	t statistic	p value
Intercept	X <sub>0</sub>	-152.5	19.7	-7.72	0.00
January Indicator	X <sub>1</sub>	-7.6	4.2	-1.80	0.07
February Indicator	X <sub>2</sub>	3.2	4.2	0.75	0.45
March Indicator	X <sub>3</sub>	27.2	4.2	6.51	0.00
April Indicator	X <sub>4</sub>	44.7	4.2	10.68	0.00
May Indicator	X <sub>5</sub>	53.3	4.2	12.73	0.00
June Indicator	X <sub>6</sub>	40.6	4.2	9.76	0.00
July Indicator	X <sub>7</sub>	49.9	4.2	11.87	0.00
August Indicator	X <sub>8</sub>	51.3	4.2	12.12	0.00
September Indicator	X <sub>9</sub>	41.5	4.2	9.98	0.00
October Indicator	X <sub>10</sub>	33.3	4.2	8.02	0.00
November Indicator	X <sub>11</sub>	4.0	4.2	0.97	0.33
Labour Force	X <sub>12</sub>	0.1	0.0	16.31	0.00
Jobless Rate	X <sub>13</sub>	-318.0	56.8	-5.60	0.00

**Commercial Exposure - Trailers (Low Average Premium Trailers)**

4 Year Exponential Model was selected. 4 annual data points were included in the regression.

Low Average Premium Trailers Exposure =  $-40.8 + 0.027X_1$

R<sup>2</sup> of the model is 99.7%.

Adjusted R<sup>2</sup> of the model is 99.5%.

		Coefficient	Std. Error	t statistic	p value
Intercept		-40.8	2.199	-18.56	0.00
Calendar Year	X <sub>1</sub>	0.027	0.001	24.27	0.00

**Commercial Exposure - Trailers (High Average Premium Trailers)**

4 Year Exponential Model was selected. 4 annual data points were included in the regression.

High Average Premium Trailers Exposure =  $-42.7 + 0.027X_1$

R<sup>2</sup> of the model is 88.7%.

Adjusted R<sup>2</sup> of the model is 83.1%.

		Coefficient	Std. Error	t statistic	p value
Intercept		-42.7	13.600	-3.14	0.00
Calendar Year	X <sub>1</sub>	0.027	0.007	3.97	0.00



## **2012.1 RR AIC.12.1 – Attachment B – Average Premium Models**

**Personal Third Party Basic Average Premium**

**Personal Third Party Basic Average Premium =  $609.0750 - 2.5168X_1 + 3.0056X_2 + 0.2669X_3 - 0.1913X_4 - 0.2531X_5 - 1.3521X_6$**

**R<sup>2</sup> of the model is 99.1%.**

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>
<b>Intercept</b>		609.0750	0.0441	13,820.2428	0.00
<b>Principal Component 1</b>	<b>X<sub>1</sub></b>	-2.5168	0.0140	-179.4600	0.00
<b>Principal Component 2</b>	<b>X<sub>2</sub></b>	3.0056	0.0156	192.6284	0.00
<b>Principal Component 3</b>	<b>X<sub>3</sub></b>	0.2669	0.0235	11.3556	0.00
<b>Principal Component 4</b>	<b>X<sub>4</sub></b>	-0.1913	0.0273	-7.0124	0.00
<b>Principal Component 5</b>	<b>X<sub>5</sub></b>	-0.2531	0.0304	-8.3164	0.00
<b>Principal Component 6</b>	<b>X<sub>6</sub></b>	-1.3521	0.0379	-35.7030	0.00

**Commercial Third Party Basic Premium**

**Commercial Third Party Basic Premium = 1054.1222 - 3.7594X<sub>1</sub> - 6.6477X<sub>2</sub> + 6.9814X<sub>3</sub> + 20.0503X<sub>4</sub> + 23.1768X<sub>5</sub> - 11.8067X<sub>6</sub> + 4.6946X<sub>7</sub> + 5.8083X<sub>8</sub> + 21.0157X<sub>9</sub> - 1.6863X<sub>10</sub> + 0.6151X<sub>11</sub> + 14.0988X<sub>12</sub> + 18.1525X<sub>13</sub>**

R<sup>2</sup> of the model is 91.2%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>
<b>Intercept</b>		1,054.1222	1.9423	542.7254	0.0000
<b>Principal Component 1</b>	X <sub>1</sub>	-3.7594	0.7334	-5.1259	0.0000
<b>Principal Component 2</b>	X <sub>2</sub>	-6.6477	0.8738	-7.6076	0.0000
<b>Principal Component 3</b>	X <sub>3</sub>	6.9814	1.0541	6.6230	0.0000
<b>Principal Component 4</b>	X <sub>4</sub>	20.0503	1.0886	18.4180	0.0000
<b>Principal Component 5</b>	X <sub>5</sub>	23.1768	1.1945	19.4024	0.0000
<b>Principal Component 6</b>	X <sub>6</sub>	-11.8067	1.6048	-7.3570	0.0000
<b>Principal Component 7</b>	X <sub>7</sub>	4.6946	1.7504	2.6821	0.0095
<b>Principal Component 8</b>	X <sub>8</sub>	5.8083	1.8222	3.1875	0.0023
<b>Principal Component 9</b>	X <sub>9</sub>	21.0157	1.9840	10.5923	0.0000
<b>Principal Component 10</b>	X <sub>10</sub>	-1.6863	2.1715	-0.7765	0.4405
<b>Principal Component 11</b>	X <sub>11</sub>	0.6151	2.7575	0.2231	0.8242
<b>Principal Component 12</b>	X <sub>12</sub>	14.0988	3.0201	4.6683	0.0000
<b>Principal Component 13</b>	X <sub>13</sub>	18.1525	3.3485	5.4210	0.0000

**Personal Part 7 Premium**

**Personal Part 7 Average Premium = 55.2361 + 0.3143X<sub>1</sub> + 0.0497X<sub>2</sub> - 0.0073X<sub>3</sub> + 0.2656X<sub>4</sub> + 0.6574X<sub>5</sub> - 0.0431X<sub>6</sub> - 0.4438X<sub>7</sub> + 0.3422X<sub>8</sub> - 0.1414X<sub>9</sub> - 0.2356X<sub>10</sub> - 0.3186X<sub>11</sub> - 0.0192X<sub>12</sub> - 0.1463X<sub>13</sub> - 0.0539X<sub>14</sub>**

R<sup>2</sup> of the model is 96.1%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>
<b>Intercept</b>		55.2361	0.0069	8,004.6688	0.000
<b>Principal Component 1</b>	X <sub>1</sub>	0.3143	0.0022	143.1483	0.000
<b>Principal Component 2</b>	X <sub>2</sub>	0.0497	0.0024	20.3245	0.000
<b>Principal Component 3</b>	X <sub>3</sub>	-0.0073	0.0037	-1.9752	0.053
<b>Principal Component 4</b>	X <sub>4</sub>	0.2656	0.0043	62.1998	0.000
<b>Principal Component 5</b>	X <sub>5</sub>	0.6574	0.0048	137.9803	0.000
<b>Principal Component 6</b>	X <sub>6</sub>	-0.0431	0.0059	-7.2666	0.000
<b>Principal Component 7</b>	X <sub>7</sub>	-0.4438	0.0077	-57.9837	0.000
<b>Principal Component 8</b>	X <sub>8</sub>	0.3422	0.0083	41.1516	0.000
<b>Principal Component 9</b>	X <sub>9</sub>	-0.1414	0.0087	-16.2966	0.000
<b>Principal Component 10</b>	X <sub>10</sub>	-0.2356	0.0104	-22.6468	0.000
<b>Principal Component 11</b>	X <sub>11</sub>	-0.3186	0.0120	-26.5737	0.000
<b>Principal Component 12</b>	X <sub>12</sub>	-0.0192	0.0147	-1.3097	0.195
<b>Principal Component 13</b>	X <sub>13</sub>	-0.1463	0.0150	-9.7599	0.000
<b>Principal Component 14</b>	X <sub>14</sub>	-0.0539	0.0161	-3.3514	0.001

Commercial Part 7 Premium

Commercial Part 7 Premium =  $54.5334 - 0.1620X_1 - 0.2480X_2 + 0.5603X_3 + 0.9408X_4 + 1.0890X_5 - 0.4797X_6 + 0.0786X_7 + 0.2767X_8 + 0.9206X_9 - 0.0926X_{10} + 0.4056X_{11} + 0.7684X_{12} + 0.7267X_{13}$

R<sup>2</sup> of the model is 92.9%.

		Coefficient	Std. Error	t statistic	p value
Intercept		54.5334	0.0813	671.1217	0.0000
Principal Component 1	X <sub>1</sub>	-0.1620	0.0307	-5.2808	0.0000
Principal Component 2	X <sub>2</sub>	-0.2480	0.0366	-6.7826	0.0000
Principal Component 3	X <sub>3</sub>	0.5603	0.0441	12.7060	0.0000
Principal Component 4	X <sub>4</sub>	0.9408	0.0455	20.6574	0.0000
Principal Component 5	X <sub>5</sub>	1.0890	0.0500	21.7919	0.0000
Principal Component 6	X <sub>6</sub>	-0.4797	0.0671	-7.1445	0.0000
Principal Component 7	X <sub>7</sub>	0.0786	0.0732	1.0729	0.2877
Principal Component 8	X <sub>8</sub>	0.2767	0.0762	3.6297	0.0006
Principal Component 9	X <sub>9</sub>	0.9206	0.0830	11.0914	0.0000
Principal Component 10	X <sub>10</sub>	-0.0926	0.0908	-1.0193	0.3122
Principal Component 11	X <sub>11</sub>	0.4056	0.1154	3.5160	0.0008
Principal Component 12	X <sub>12</sub>	0.7684	0.1264	6.0812	0.0000
Principal Component 13	X <sub>13</sub>	0.7267	0.1401	5.1877	0.0000



## **2012.1 RR AIC.12.1 – Attachment C – Basic Frequency and Severity Models**

**Personal Bodily Injury Frequency**

A 12 year exponential model was selected. The line is fitted over 1996 Q2 to 2008 Q1. 48 quarterly data points are included in the regression.

$$\text{Personal Bodily Injury Frequency} = \exp[61.46345 - 0.03268X_1 - 0.01559X_2 - 0.03685X_3 + 0.13756X_4]$$

R<sup>2</sup> of the model is 94.4%.

Adjusted R<sup>2</sup> of the model is 93.9%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		61.46345		2.819	21.80	0.00
<b>Decimal Date</b>	X <sub>1</sub>	-0.03268		0.001	-23.21	0.00
<b>Q2 Indicator</b>	X <sub>2</sub>	-0.01559		0.014	-1.13	0.26
<b>Q3 Indicator</b>	X <sub>3</sub>	-0.03685		0.014	-2.68	0.01
<b>Q4 Indicator</b>	X <sub>4</sub>	0.13756		0.014	10.01	0.00

**Personal Property Damage Frequency**

A 10 year econometric model was selected. The line is fitted over 2001 Q2 to 2011 Q1. 40 quarterly data points are included in the regression.

$$\text{Personal Property Damage Frequency} = 0.13074 - 0.00028X_1 - 0.00192X_2 + 0.00406X_3 + 0.00001X_4 - 0.28866X_5 - 0.00654X_6$$

R<sup>2</sup> of the model is 85.1%.

Adjusted R<sup>2</sup> of the model is 82.4%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		0.13074	0.006	21.23	0.00	
Q2 Indicator	X <sub>1</sub>	-0.00028	0.002	-0.16	0.87	
Q3 Indicator	X <sub>2</sub>	-0.00192	0.002	-0.97	0.33	
Q4 Indicator	X <sub>3</sub>	0.00406	0.001	3.01	0.00	
Precipitation (mm)	X <sub>4</sub>	0.00001	0.000	1.97	0.05	
Proportion of the BC population aged 55 to 74	X <sub>5</sub>	-0.28866	0.030	-9.48	0.00	
2010 Olympic Indicator	X <sub>6</sub>	-0.00654	0.003	-2.35	0.02	

**Personal Medical Rehabilitation Frequency**

A 12 year exponential model was selected. The line is fitted over 1996 Q2 to 2008 Q1. 48 quarterly data points are included in the regression.

$$\text{Personal Medical Rehabilitation Frequency} = \exp[53.76120 - 0.02869X_1 - 0.01836X_2 - 0.02824X_3 + 0.13820X_4]$$

R<sup>2</sup> of the model is 94.1%.

Adjusted R<sup>2</sup> of the model is 93.5%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		53.76120		2.625	20.48	0.00
Decimal Date	X <sub>1</sub>	-0.02869		0.001	-21.89	0.00
Q2 Indicator	X <sub>2</sub>	-0.01836		0.013	-1.43	0.15
Q3 Indicator	X <sub>3</sub>	-0.02824		0.013	-2.20	0.03
Q4 Indicator	X <sub>4</sub>	0.13820		0.013	10.80	0.00

**Personal Weekly Benefits Frequency (Short-term Model)**

A 10 year econometric model was selected. The line is fitted over 2001 Q2 to 2011 Q1. 40 quarterly data points are included in the regression.

$$\text{Personal Weekly Benefits Frequency} = 0.014568 + 0.000333X_1 + 0.000545X_2 + 0.000390X_3 + 0.000001X_4 + 0.004194X_5 - 0.087026X_6$$

R<sup>2</sup> of the model is 92.4%.

Adjusted R<sup>2</sup> of the model is 91.0%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		0.014568		0.001	19.98	0.00
Q2 Indicator	X <sub>1</sub>	0.000333		0.000	2.81	0.01
Q3 Indicator	X <sub>2</sub>	0.000545		0.000	4.11	0.00
Q4 Indicator	X <sub>3</sub>	0.000390		0.000	4.42	0.00
Precipitation (mm)	X <sub>4</sub>	0.000001		0.000	2.98	0.00
GDP growth	X <sub>5</sub>	0.004194		0.001	2.82	0.00
Proportion of the BC population aged 65+	X <sub>6</sub>	-0.087026		0.005	-17.03	0.00

**Personal Weekly Benefits Frequency (Long-term Model)**

A 7 year exponential model was selected. The line is fitted over 2001 Q2 to 2008 Q1. 28 quarterly data points are included in the regression.

$$\text{Personal Weekly Benefits Frequency} = \exp[72.42906 - 0.03901X_1 + 0.03842X_2 + 0.07946X_3 + 0.17391X_4]$$

R<sup>2</sup> of the model is 0.776.

Adjusted R<sup>2</sup> of the model is 0.737.

		Coefficient	Std. Error	t statistic	p value	
Intercept		72.42906		11.477	6.31	0.00
Decimal Date	X <sub>1</sub>	-0.03901		0.006	-6.82	0.00
Q2 Indicator	X <sub>2</sub>	0.03842		0.033	1.18	0.24
Q3 Indicator	X <sub>3</sub>	0.07946		0.033	2.44	0.01
Q4 Indicator	X <sub>4</sub>	0.17391		0.032	5.37	0.00

**Personal Death Benefits Frequency**

A 10 year exponential model was selected. The line is fitted over 2001 Q2 to 2011 Q1. 40 quarterly data points are included in the regression.

$$\text{Personal Death Benefits Frequency} = \exp[92.85430 - 0.05077X_1 + 0.09420X_2 + 0.20509X_3 + 0.23999X_4]$$

R<sup>2</sup> of the model is 73.5%.

Adjusted R<sup>2</sup> of the model is 70.5%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		92.85430		12.528	7.41	0.00
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	-0.05077		0.006	-8.13	0.00
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	0.09420		0.051	1.85	0.06
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	0.20509		0.051	4.04	0.00
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	0.23999		0.051	4.73	0.00

**Personal Bodily Injury Severity (Short-term Model)**

A 6.25 year exponential model was selected. The line is fitted over 2005 Q1 to 2011 Q1. 25 quarterly data points are included in the regression.

$$\text{Personal Bodily Injury Severity} = \exp[-104.16588 + 0.05692X_1 + 0.03847X_2 + 0.09810X_3 + 0.03698X_4]$$

R<sup>2</sup> of the model is 96.2%.

Adjusted R<sup>2</sup> of the model is 95.5%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		-104.16588		5.374	-19.38	0.00
Decimal Date	X <sub>1</sub>	0.05692		0.003	21.27	0.00
Q2 Indicator	X <sub>2</sub>	0.03847		0.013	2.88	0.00
Q3 Indicator	X <sub>3</sub>	0.09810		0.013	7.34	0.00
Q4 Indicator	X <sub>4</sub>	0.03698		0.013	2.76	0.01

**Personal Bodily Injury Severity (Long-term Model)**

A 15 year exponential model was selected. The line is fitted over 1996 Q2 to 2011 Q1. 60 quarterly data points are included in the regression.

$$\text{Personal Bodily Injury Severity} = \exp[-96.10956 + 0.05290X_1 + 0.04318X_2 + 0.10328X_3 + 0.02847X_4]$$

R<sup>2</sup> of the model is 0.958.

Adjusted R<sup>2</sup> of the model is 0.955.

		Coefficient	Std. Error	t statistic	p value	
Intercept		-96.10956		3.004	-31.99	0.00
Decimal Date	X <sub>1</sub>	0.05290		0.001	35.29	0.00
Q2 Indicator	X <sub>2</sub>	0.04318		0.018	2.35	0.02
Q3 Indicator	X <sub>3</sub>	0.10328		0.018	5.63	0.00
Q4 Indicator	X <sub>4</sub>	0.02847		0.018	1.55	0.12

**Personal Property Damage Severity**

A 7 year exponential model was selected. The line is fitted over 2001 Q2 to 2008 Q1. 28 quarterly data points are included in the regression.

Personal Property Damage Severity =  $\exp[-49.98666 + 0.02855X_1 - 0.00463X_2 + 0.02469X_3 + 0.05597X_4]$

R<sup>2</sup> of the model is 92.3%.

Adjusted R<sup>2</sup> of the model is 91.0%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		-49.98666		3.800	-13.15	0.00
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	0.02855		0.002	15.06	0.00
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	-0.00463		0.011	-0.43	0.67
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	0.02469		0.011	2.29	0.02
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	0.05597		0.011	5.22	0.00

**Personal Weekly Benefits Severity**

A 10 year exponential model was selected. The line is fitted over 2001 Q2 to 2011 Q1. 40 quarterly data points are included in the regression.

Personal Weekly Benefits Severity =  $\exp[-44.26267 + 0.02621X_1 + 0.02822X_2 + 0.12578X_3 + 0.09251X_4]$

R<sup>2</sup> of the model is 63.3%.

Adjusted R<sup>2</sup> of the model is 59.1%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		-44.26267		8.048	-5.50	0.00
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	0.02621		0.004	6.53	0.00
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	0.02822		0.033	0.86	0.39
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	0.12578		0.033	3.85	0.00
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	0.09251		0.033	2.84	0.00

**Commercial Bodily Injury Frequency**

A 12 year exponential model was selected. The line is fitted over 1996 Q2 to 2008 Q1. 48 quarterly data points are included in the regression.

$$\text{Commercial Bodily Injury Frequency} = \exp[50.22291 - 0.02694X_1 - 0.00431X_2 + 0.00529X_3 + 0.10878X_4]$$

R<sup>2</sup> of the model is 90.3%.

Adjusted R<sup>2</sup> of the model is 89.4%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		50.22291		3.010	16.69	0.00
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	-0.02694		0.002	-17.92	0.00
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	-0.00431		0.015	-0.29	0.77
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	0.00529		0.015	0.36	0.72
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	0.10878		0.015	7.41	0.00

**Commercial Property Damage Frequency (Short-term Model)**

A 10 year econometric model was selected. The line is fitted over 2001 Q2 to 2011 Q1. 40 quarterly data points are included in the regression.

$$\text{Commercial Property Damage Frequency} = 12.00050 - 0.00986X_1 - 0.00969X_2 - 0.00360X_3 - 0.00602X_4 + 0.000001X_5 - 0.01018X_6$$

R<sup>2</sup> of the model is 81.3%.

Adjusted R<sup>2</sup> of the model is 77.9%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		12.00050		1.438	8.34	0.00
Q2 Indicator	X <sub>1</sub>	-0.00986		0.002	-4.22	0.00
Q3 Indicator	X <sub>2</sub>	-0.00969		0.002	-4.01	0.00
Q4 Indicator	X <sub>3</sub>	-0.00360		0.002	-1.53	0.13
Decimal Date	X <sub>4</sub>	-0.00602		0.001	-8.21	0.00
Precipitation (mm)	X <sub>5</sub>	0.000001		0.000	5.59	0.00
2010 Olympic Indicator	X <sub>6</sub>	-0.01018		0.005	-2.12	0.03

**Commercial Property Damage Frequency (Long-term Model)**

A 15 year exponential model was selected. The line is fitted over 1996 Q2 to 2011 Q1. 60 quarterly data points are included in the regression.

$$\text{Commercial Property Damage Frequency} = \exp[32.00850 - 0.01704X_1 - 0.01664X_2 - 0.00268X_3 + 0.05492X_4]$$

R<sup>2</sup> of the model is 69.3%.

Adjusted R<sup>2</sup> of the model is 67.1%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		32.00850		3.243	9.87	0.00
Decimal Date	X <sub>1</sub>	-0.01704		0.002	-10.53	0.00
Q2 Indicator	X <sub>2</sub>	-0.01664		0.020	-0.84	0.40
Q3 Indicator	X <sub>3</sub>	-0.00268		0.020	-0.14	0.89

**Commercial Medical Rehabilitation Frequency**

A 10 year exponential model was selected. The line is fitted over 2001 Q2 to 2011 Q1. 40 quarterly data points are included in the regression.

Commercial Medical Rehabilitation Frequency =  $\exp[59.52441 - 0.03174X_1 - 0.05946X_2 - 0.03324X_3 + 0.09075X_4]$

R<sup>2</sup> of the model is 86.5%.

Adjusted R<sup>2</sup> of the model is 84.9%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		59.52441		4.902	12.14	0.00
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	-0.03174		0.002	-13.00	0.00
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	-0.05946		0.020	-2.98	0.00
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	-0.03324		0.020	-1.67	0.09
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	0.09075		0.020	4.57	0.00

**Commercial Weekly Benefits Frequency**

A 15 year exponential model was selected. The line is fitted over 1996 Q2 to 2011 Q1. 60 quarterly data points are included in the regression.

Commercial Weekly Benefits Frequency =  $\exp[130.92720 - 0.06843X_1 - 0.02163X_2 + 0.02017X_3 + 0.09067X_4]$

R<sup>2</sup> of the model is 88.2%.

Adjusted R<sup>2</sup> of the model is 87.3%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		130.92720		6.840	19.14	0.00
Decimal Date	X <sub>1</sub>	-0.06843		0.003	-20.05	0.00
Q2 Indicator	X <sub>2</sub>	-0.02163		0.042	-0.52	0.60
Q3 Indicator	X <sub>3</sub>	0.02017		0.042	0.48	0.63
Q4 Indicator	X <sub>4</sub>	0.09067		0.042	2.17	0.03

**Commercial Death Benefits Frequency**

A 15 year exponential model was selected. The line is fitted over 1996 Q2 to 2011 Q1. 60 quarterly data points are included in the regression.

$$\text{Commercial Death Benefits Frequency} = \exp[72.72476 - 0.04077X_1 + 0.09368X_2 + 0.20038X_3 + 0.16106X_4]$$

R<sup>2</sup> of the model is 16.4%.

Adjusted R<sup>2</sup> of the model is 10.3%.

		Coefficient	Std. Error	t statistic	p value	
Intercept		72.72476		27.481	2.65	0.01
Decimal Date	X <sub>1</sub>	-0.04077		0.014	-2.97	0.00
Q2 Indicator	X <sub>2</sub>	0.09368		0.168	0.56	0.58
Q3 Indicator	X <sub>3</sub>	0.20038		0.168	1.19	0.23
Q4 Indicator	X <sub>4</sub>	0.16106		0.168	0.96	0.34

**Commercial Bodily Injury Severity**

A 15 year exponential model was selected. The line is fitted over 1996 Q2 to 2011 Q1. 60 quarterly data points are included in the regression.

Commercial Bodily Injury Severity =  $\exp[-94.15537 + 0.05204X_1 - 0.05492X_2 + 0.03163X_3 + 0.02273X_4]$

R<sup>2</sup> of the model is 89.8%.

Adjusted R<sup>2</sup> of the model is 89.0%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		-94.15537		4.836	-19.47	0.00
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	0.05204		0.002	21.57	0.00
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	-0.05492		0.030	-1.86	0.06
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	0.03163		0.030	1.07	0.28
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	0.02273		0.029	0.77	0.44

**Commercial Property Damage Severity**

A 10 year exponential model was selected. The line is fitted over 2001 Q2 to 2011 Q1. 40 quarterly data points are included in the regression.

Commercial Property Damage Severity =  $\exp[-45.32689 + 0.02648X_1 - 0.10430X_2 - 0.07961X_3 - 0.00481X_4]$

R<sup>2</sup> of the model is 79.4%.

Adjusted R<sup>2</sup> of the model is 77.0%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		-45.32689		5.568	-8.14	0.00
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	0.02648		0.003	9.54	0.00
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	-0.10430		0.023	-4.61	0.00
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	-0.07961		0.023	-3.53	0.00
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	-0.00481		0.023	-0.21	0.83

**Commercial Medical Rehabilitation Severity**

A 15 year exponential model was selected. The line is fitted over 1996 Q2 to 2011 Q1. 60 quarterly data points are included in the regression.

$$\text{Commercial Medical Rehabilitation Severity} = \exp[1.93943 + 0.00257X_1 - 0.06269X_2 - 0.02409X_3 + 0.05010X_4]$$

R<sup>2</sup> of the model is 4.8%.

Adjusted R<sup>2</sup> of the model is -2.1%.

	Coefficient	Std. Error	t statistic	p value
Intercept	1.93943	11.967	0.16	0.87
Decimal Date X <sub>1</sub>	0.00257	0.006	0.43	0.67
Q2 Indicator X <sub>2</sub>	-0.06269	0.073	-0.86	0.39
Q3 Indicator X <sub>3</sub>	-0.02409	0.073	-0.33	0.74
Q4 Indicator X <sub>4</sub>	0.05010	0.073	0.69	0.49

**Commercial Weekly Benefits Severity**

A 15 year exponential model was selected. The line is fitted over 1996 Q2 to 2011 Q1. 60 quarterly data points are included in the regression.

Commercial Weekly Benefits Severity =  $\exp[-41.39245 + 0.02486X_1 - 0.04013X_2 - 0.18727X_3 - 0.13827X_4]$

R<sup>2</sup> of the model is 11.4%.

Adjusted R<sup>2</sup> of the model is 4.9%.

		<b>Coefficient</b>	<b>Std. Error</b>	<b>t statistic</b>	<b>p value</b>	
<b>Intercept</b>		-41.39245		23.050	-1.80	0.07
<b>Decimal Date</b>	<b>X<sub>1</sub></b>	0.02486		0.012	2.16	0.03
<b>Q2 Indicator</b>	<b>X<sub>2</sub></b>	-0.04013		0.141	-0.28	0.78
<b>Q3 Indicator</b>	<b>X<sub>3</sub></b>	-0.18727		0.141	-1.33	0.18
<b>Q4 Indicator</b>	<b>X<sub>4</sub></b>	-0.13827		0.141	-0.98	0.33

**2012.1 RR AIC.13.1 Reference: Basic Loss Costs**

**Slides presented by ICBC show Basic Loss Cost. Basic Loss Cost includes various types of claims (e.g., BI claims, property damage, etc.). Please provide a breakdown of Basic Loss Cost by category for the past ten years.**

**Response:**

Basic insurance loss cost can be broken down into Bodily Injury, Property Damage, Accident Benefits, Death Benefits, and Manual Basic claims. The data below, as of May 31, 2011, shows this breakdown of Basic insurance loss cost for accident years 2001 through 2010.

<b>Accident Year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Bodily Injury	359	369	394	408	423	419	429	424	437	465
Property Damage	125	125	124	127	128	133	138	136	130	130
Accident Benefits	49	47	47	48	48	44	43	43	39	40
Death Benefits	2	2	2	2	2	2	1	1	1	1
Manual Basic	611	727	701	834	806	734	736	859	835	944

**2012.1 RR AIC.13.2 Reference: Basic Loss Costs**

**BI claim costs include various types of costs (e.g., defence counsel costs, court fees, expert's fees, investigators' fees, etc.). Please provide a breakdown of BI claims costs by category for the past 10 years.**

**Response:**

A breakdown of bodily injury claims related external expenses since 2003, the year in which the Commission was appointed as the independent regulator responsible for setting Basic insurance rates, is presented in Table 1.

Table 1

<b>(in \$millions)</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Legal fees	\$68.9	\$75.2	\$77.2	\$80.4	\$92.9	\$101.3	\$111.8	\$110.6	\$98.6
Legal disbursements	\$17.8	\$18.9	\$18.8	\$19.7	\$22.8	\$21.4	\$22.5	\$20.8	\$18.0
Private investigator	\$ 7.8	\$ 8.5	\$ 9.8	\$11.3	\$14.3	\$15.0	\$13.7	\$ 8.4	\$ 5.0
Independent adjuster	\$ 6.6	\$ 6.2	\$ 6.7	\$ 7.4	\$ 7.8	\$ 8.6	\$ 8.9	\$ 7.2	\$ 5.8
Medical and dental reports	\$ 9.4	\$10.5	\$10.7	\$11.8	\$13.0	\$16.6	\$19.6	\$20.9	\$21.4
Engineering or other technical reports	\$ 3.6	\$ 4.1	\$ 3.9	\$ 3.8	\$ 4.4	\$ 5.6	\$ 5.9	\$ 6.1	\$ 5.2
Alternate dispute resolution fees	\$ 2.2	\$ 2.8	\$ 3.3	\$ 3.9	\$ 3.5	\$ 2.8	\$ 2.7	\$ 3.1	\$ 3.0
Miscellaneous	\$ 1.0	\$ 1.2	\$ 1.1	\$ 2.1	\$ 1.2	\$ 1.3	\$ 1.0	\$ 0.9	\$ 0.9

CBABC Automobile Insurance Committee Information Request No. 2012.1 RR AIC.13.3 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR AIC.13.3 Reference: Basic Loss Costs**

**Please provide details on the how the costs of collecting licence fees, fines etc. on behalf of the Province have changed over the past 10 years. Please provide details on the current costs of providing these services.**

**Response:**

ICBC's Revenue Administration is fully allocated to the processing and reporting of fines and fees collected on behalf of the province. This area together with an allocation of work function in Account Services (formerly Customer Collections) represents the majority of costs for providing these services. The costs are approximately \$1.5 million.

Over the past 10 years, these costs have been reduced by approximately \$3.2 million as a result of the streamlining of processing and work effort together with the discontinuation of the provincial photo radar program and the transfer of commercial transport services back to the provincial government.

CBABC Automobile Insurance Committee Information Request No. 2012.1 RR AIC.13.4 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR AIC.13.4 Reference: Basic Loss Costs**

**Please provide interim financial statements for 2011.**

**Response:**

ICBC's December 31, 2011 audited financial statements are not yet completed and cannot be provided at this time. However, ICBC's corporate statement of operations is updated quarterly and posted on icbc.com. Occasionally, ICBC also issues quarterly news releases on financial results; these are also available on www.icbc.com (under "Newsroom").

ICBC filed a compliance report (ICBC's Reporting on Basic Insurance for the Quarter Ending September 30, 2011) with the Commission on November 29, 2011, which reported on certain financial metrics such as Basic net income and the Basic Minimum Capital Test (MCT) ratio for the third quarter ending September 30, 2011. ICBC reported to the Commission a net loss of \$151.3 million and a Minimum Capital Test ratio of 120% for Basic insurance for the nine months ended September 30, 2011. A copy of this report can be found as Attachment A – ICBC's Reporting on Basic Insurance for the Quarter Ending September 30, 2011.



# **2012.1 RR AIC.13.4 – Attachment A – ICBC's Reporting on Basic Insurance for the Quarter Ending September 30, 2011**



building trust. driving confidence.

November 29, 2011

British Columbia Utilities Commission  
Sixth Floor  
900 Howe Street  
Vancouver, BC V6Z 2N3

Attention: Ms. Alanna Gillis, Acting Commission Secretary

**Re: ICBC's Reporting on Basic Insurance for the Quarter  
Ending September 30, 2011**

Dear Ms. Gillis:

Please find enclosed ICBC's reporting on the Basic insurance line of business, for the nine months ended September 30, 2011. This Filing complies with the Commission's direction in Letter L-82-06.

ICBC's second quarterly report of August 31, 2011 explained that increasing bodily injury claims costs are putting pressure on ICBC's Outlook for net income and the Minimum Capital Test (MCT) ratio. The trend of higher claims costs has continued in the third quarter. In addition current worldwide economic and capital market conditions, characterized in part by historically low interest rates and volatile equity markets, have negatively impacted ICBC's investment income. ICBC's year-end Outlook for income has deteriorated from a net loss of \$130.2 million in Q2 to a net loss of \$239.2 million in Q3. The year-end Outlook for the MCT ratio has decreased from 129% in Q2 to 116% in Q3.

While ICBC has done a good job of managing operating expenses, current Basic insurance rates are unable to cover the shortfall caused by rising bodily injury claims costs and reduced investment income. ICBC is expecting to file for a Basic insurance rate increase with the Commission in the coming days. ICBC will provide additional and updated information to the Commission on these matters in its Revenue Requirements Application.

Yours truly,

A handwritten signature in cursive script that reads 'June Elder'.

June Elder  
Manager, Regulatory Affairs

Cc: Donnie Wing, CA, Senior Vice President, Corporate Affairs, ICBC

Enclosure



# **QUARTERLY REPORTING**

**ICBC'S**

**BASIC INSURANCE**

**LINE OF BUSINESS**

**Nine Months Ended  
September 30, 2011**



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The third quarter report for the nine months ended September 30, 2011 is as follows:

## A. BCUC Quarterly Measures

Basic Insurance	Nine Months Ended September 30				Full Year	
	2010 Actual (CGAAP)	2010 Actual (IFRS)	2011 Actual / Forecast	2011 Plan	2011 Outlook	2011 Plan
Minimum Capital Test Ratio (MCT) <sup>(1) (2)</sup>	165% <sup>(3) (6)</sup>	155% <sup>(3)</sup>	120% <sup>(4)</sup>	n/a <sup>(5)</sup>	116%	150%
Net Income / (Loss) (\$millions)	\$75.1	\$81.6	(\$151.3)	\$13.2	(\$239.2)	(\$5.9)
Loss Ratio	94.6%	94.6%	106.1%	98.6%	106.8%	99.2%
Total Expense Ratio	15.7%	15.7%	16.6%	17.1%	17.0%	17.5%

### Notes:

<sup>(1)</sup> In accordance with *Special Direction IC2 to the British Columbia Utilities Commission, BC Regulation 307/2004, as amended*, the MCT ratio is based on the Guideline for MCT for Federally Regulated Property and Casualty Insurance Companies issued by the Office of the Superintendent of Financial Institutions Canada.

<sup>(2)</sup> International Financial Reporting Standards (IFRS)

The Canadian Accounting Standards Board has confirmed that IFRS has replaced Canadian Generally Accepted Accounting Principles (CGAAP) effective for fiscal years beginning on or after January 1, 2011 for all publicly accountable enterprises. The Public Sector Accounting Board has confirmed that Government Business Enterprises are to adhere to the standards for publicly accountable enterprises. ICBC's 2011 results are reported in accordance with current IFRS, and 2010 results are reported according to CGAAP as well as restated under IFRS. The restatement of 2010 equity from CGAAP to IFRS reduces Basic insurance capital available by \$138 million with a corresponding change to capital required.

<sup>(3)</sup> The MCT ratios are the actual year-end percentage at December 31, 2010 (rounded up from 164.6% CGAAP, 154.5% IFRS).

<sup>(4)</sup> The forecasted September 30, 2011 MCT ratio for Basic insurance is an estimate only because certain figures used in the determination of capital required are updated only on an annual basis. In addition, certain allocators used to allocate balance sheet assets to the Basic insurance business are also only updated at the end of the year.

The MCT ratio can also be impacted significantly by investment market conditions during the year. Changes in investment markets will impact realized investment income and net income and also unrealized investment income and other components of equity (OCE).

<sup>(5)</sup> Plan MCT ratios are not available on a quarterly basis.

<sup>(6)</sup> The MCT figure under 2010 Actual (CGAAP) is audited. All other figures in the table are unaudited.



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## Summary of Operating Results:

### Minimum Capital Test Variance Explanations – Basic Insurance MCT Ratio

#### ***MCT Full Year Outlook vs 2010 Actual***

ICBC's Basic Insurance Capital Management Plan approved by the Commission in its January 2008 Decision on Revenue Requirements specifies a capital management target MCT ratio of 130% for the Basic insurance business. The Basic insurance MCT ratio is expected to decrease to 116% for December 31, 2011 (Year-end Outlook), which is 39 percentage points lower than the December 31, 2010 year-end actual under IFRS, of 155%.

The expected decrease in the Basic insurance MCT year-end ratio is due to a decrease in capital available of \$377 million. Capital available has decreased primarily by the forecast net loss of \$239 million and by an expected \$138 million decrease in other components of equity (OCE). The forecast net loss is primarily caused by three factors: (i) an increase in the net claims incurred costs due to an increase in the frequency of bodily injury and accident benefits claims, (ii) a lower rate used to discount claims, and (iii) reduced investment income due to an impairment recorded in the equity portfolio and lower realized gains on the sale of equities. The decrease in OCE is mainly due to reduced unrealized equity gains due to the deterioration in the value of the equity portfolio. Ongoing volatility in equity markets is expected throughout 2011 and with recent market declines, unrealized gains have decreased.

Capital required is forecast to remain unchanged from 2010, with a decreased margin required on balance sheet assets due to a lower investment asset balance, offset by an increase in the unpaid claims liabilities.

#### ***MCT Full Year Outlook vs 2011 Plan***

The 2011 Basic insurance MCT is expected to decrease to 116% for December 31, 2011, which is 34 percentage points lower than the 2011 plan of 150%. Capital available is expected to decrease by \$356 million and capital required is expected to decrease by \$14 million, as compared to plan. The decrease in the 2011 Outlook capital available is the result of the expected increase in the forecast net loss and decrease in OCE due to lower unrealized equity gains, and by the removal of an IFRS-related fair value increase to



investment properties, that was anticipated in the 2011 plan MCT.<sup>1</sup> The removal of the anticipated fair value increase for investment properties reduces capital available by \$51 million and Outlook MCT by approximately 5%, as compared to plan.

Capital required as compared to plan is expected to decrease by \$14 million, primarily due to a decreased margin required on balance sheet assets due to lower investment asset balance partially offset by an increase in the unpaid claims liabilities.

### **Net Income Variance Explanations**

#### ***2011 Actual vs Plan***

The actual Basic insurance net loss of \$151.3 million for the nine months ended September 30, 2011 is a \$164.5 million unfavourable variance from plan net income of \$13.2 million. This unfavourable variance is primarily due to higher claims incurred costs and lower investment income. Current year claims costs and prior years' claims adjustments are unfavourable to plan primarily as a result of higher frequency of bodily injury and accident benefits claims and a lower rate used to discount claims. The higher frequency of claims is partly attributed to increased precipitation levels. The 2011 plan numbers expected a slower growth in traffic with fewer claims. The decrease in the rate used to discount claims increases the discounted value of the expected settlement amount for all outstanding claims. Investment income is lower than plan primarily due to an impairment recorded in the equity portfolio and lower realized equity gains.

#### ***2011 Actual vs 2010 Actual***

The actual Basic insurance net loss of \$151.3 million for the nine months ended September 30, 2011 is \$232.9 million unfavourable as compared to net income of \$81.6 million at September 30, 2010. This is primarily due to higher, net claims costs and deferred premium acquisition costs adjustment (DPAC), and lower investment income.

Current year claims costs are \$128.1 million higher than 2010 mainly due to a higher frequency of injury claims partly resulting from increased precipitation levels in 2011 and a decrease in the rate used to discount claims.

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<sup>1</sup> ICBC's 2011 plan MCT anticipated that the Corporation would take the IFRS 1 first-time adoption exemption to fair value certain investment properties on a one-time basis. Subsequently, this position was changed.



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Prior years' claims adjustments are \$40.6 million unfavourable as compared to 2010, due to a lower discount rate to discount claims. In 2010 older claims reserves were being reduced resulting in a favourable adjustment in 2010.

DPAC are \$17.0 million unfavourable as compared to 2010 mainly due to higher claims costs resulting in lower profitability of the Basic business.

Investment income is \$22.9 million lower than prior year primarily due to an impairment recorded in the equity portfolio and a decrease in net realized bond gains as compared to 2010, when a bond rebalancing resulted in a large realized gain.

Premium revenues earned are \$9.2 million lower than 2010 primarily due the impact of the 2.4% rate reduction effective November 1, 2010, and lower than plan vehicle growth.

#### ***Full Year Outlook vs 2011 Plan***

The Full Year Outlook net loss of \$239.2 million is \$233.3 million higher than the annual plan loss of \$5.9 million primarily due to unfavourable net claims incurred costs, lower investment income, and an unfavourable DPAC adjustment due to higher claims costs, partially offset by lower operating expenditures.

Operating costs are expected to be favourable to plan due to lower compensation costs from lower staffing and lower operating expenditures for the year. Cost management opportunities have been identified in 2011 that have resulted in reductions to planned operating expenditures year to date. ICBC is continuing to monitor claims costs trends and operating costs for further cost management opportunities, in order to minimize the impact of rate increases to customers.

The Basic insurance net loss of \$151.3 million for the nine months ended September 30, 2011 is expected to increase to a loss of \$239.2 million for the year ended December 31, 2011 as net claims incurred costs and investment income are expected to continue to track unfavourably.



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## **Loss Ratio**

The loss ratio measures the profitability of the insurance product - the lower the percentage, the more profitable the product. This measure is calculated as the ratio of the total of claims and claims-related costs, including loss management costs, to total insurance premium dollars earned.

The year-to-date Basic insurance loss ratio of 106.1% is higher than the plan of 98.6%. This is primarily due to the unfavourable variance in net claims incurred costs due to the higher frequency of bodily injury and accident benefits claims and a lower discount rate used to discount claims.

The year-to-date Basic insurance loss ratio of 106.1% is higher than the 94.6% for the same period in 2010. The year-to-date loss ratio is unfavourable primarily due to higher net claims incurred, as compared to the same period in 2010. Injury claims costs at the end of September 2010 reflected fewer claims due to less traffic on the roads at that time. The injury claims costs for 2011 reflect an increase in frequency.

The year-to-date Basic insurance loss ratio of 106.1% is expected to increase to 106.8% for the year ended December 31, 2011, which is also higher than the annual plan of 99.2%. The higher loss ratio is due to higher net claims incurred costs and lower earned premiums.

## **Expense Ratio**

The expense ratio is a measure that assesses how much of each premium dollar goes to an insurer's expenses. This measure is calculated as the ratio of non-claims costs to total insurance premium dollars earned. It includes operating expenses that are not directly related to servicing claims such as general administration, commissions paid to brokers, taxes paid on premiums written, product design (underwriting), and non-insurance costs such as those associated with driver and vehicle licensing and vehicle registration.

The year-to-date expense ratio of 16.6% is better than the plan of 17.1% due mainly to lower operating expenditures. The lower operating expenses are due to lower than plan spending to September 30, 2011. The 2011 year-to-date expense ratio of 16.6% is higher



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than the 15.7% for the same period in 2010, due to higher operating expenses than 2010 reflecting inflationary expenditure growth as well as the impacts of accounting changes, increased commission expense due to the updated broker remuneration agreement, and lower premiums earned due to the 2010 basic rate reduction and lower vehicle growth.

The current Basic insurance expense ratio of 16.6% at September 30, 2011 is expected to increase to 17.0% for the year ended December 31, 2011, due to increased operating spend relative to earned revenues over the remainder of the year. The Full Year Outlook expense ratio of 17.0% is expected to be lower than the 2011 plan of 17.5% due to reduced expected operating expenditures. ICBC has identified opportunities and has reduced planned operating expenditures year to date and is continuing to monitor operating costs for further cost management opportunities over the remainder of 2011 in order to minimize rate impacts to customers.



## B. Ultimate Incurred Loss for 2011 as at August 31, 2011

### Ultimate Incurred Loss & ALAE - Outlook to Plan Comparison for Basic Line of Insurance

#### Basic Insurance Coverage

Results based on data as of August 31, 2011

Current Year (2011)	Incurred Loss & ALAE (\$ millions)			Frequency (%) <sup>G</sup>			Severity (\$) <sup>H</sup>		
	Plan	Outlook	Better (worse)	Plan	Outlook	Better (worse)	Plan	Outlook	Better (worse)
	(1)	(2)	(1) - (2)	(3)	(4)	1 - (4) ÷ (3)	(5)	(6)	1 - (6) ÷ (5)
Bodily Injury	1,294.9	1,398.5	<b>(103.6)</b>	1.39%	1.51%	<b>(8.38%)</b>	32,459	32,534	<b>(0.23%)</b>
Property Damage	396.2	388.4	<b>7.8</b>	7.55%	7.47%	<b>1.07%</b>	1,828	1,822	<b>0.32%</b>
Accident Benefits	105.4	118.4	<b>(13.0)</b>	1.90%	2.04%	<b>(7.13%)</b>	1,931	2,036	<b>(5.45%)</b>
Death Benefits	3.6	3.2	<b>0.4</b>	0.011%	0.010%	<b>8.43%</b>	11,104	11,148	<b>(0.40%)</b>
Manual Basic <sup>A</sup>	35.7	38.4	<b>(2.7)</b>	n/a	n/a	<b>n/a</b>	4,746	5,711	<b>(20.33%)</b>
<b>Total</b>	<b>1,835.8</b>	<b>1,946.9</b>	<b>(111.1)</b>						

Prior Years (1994-2010)	Incurred Loss & ALAE (\$ millions)		
	Plan	Outlook	Adjustment
	(7)	(8)	(7) - (8)
Bodily Injury	16,427.3	16,421.7	<b>5.6</b>
Property Damage	5,098.4	5,087.9	<b>10.5</b>
Accident Benefits	1,992.2	2,005.0	<b>(12.8)</b>
Death Benefits	73.5	73.4	<b>0.1</b>
Manual Basic	593.9	600.1	<b>(6.2)</b>
<b>Total</b>	<b>24,185.3</b>	<b>24,188.1</b>	<b>(2.8)</b>

Calendar Year (2011) Loss Ratio	(\$ millions)		
	Plan	Outlook	Better (worse)
<b>Total Incurred Loss and ALAE</b>	<b>1,835.8</b>	<b>1,949.7</b>	<b>(113.9)</b>
<b>Impact of Discount &amp; PfAD<sup>B</sup></b>	<b>1.3</b>	<b>39.0</b>	<b>(37.7)</b>
<b>Bulk<sup>C</sup> &amp; KOL-37<sup>D</sup></b>	<b>5.2</b>	<b>2.9</b>	<b>2.3</b>
<b>Claims Services Expenses<sup>E</sup></b>	<b>215.0</b>	<b>212.8</b>	<b>2.2</b>
<b>Change in ULAE Provision<sup>F</sup></b>	<b>3.9</b>	<b>4.4</b>	<b>(0.5)</b>
<b>2011 Claims and Related Costs</b>	<b>2,061.2</b>	<b>2,208.8</b>	<b>(147.6)</b>
<b>Full Year 2011 Basic Premium</b>	<b>2,076.8</b>	<b>2,068.1</b>	<b>(8.7)</b>
<b>Full Year 2011 Basic Loss Ratio</b>	<b>99.2%</b>	<b>106.8%</b>	<b>(7.6%)</b>

<sup>A</sup> Manual Basic frequency is not available because it includes a combination of coverages that use different exposure bases.

<sup>B</sup> PfAD is an acronym for "Provision for Adverse Deviation". It includes a provision for adverse claims development, a provision for interest rate risk, and a provision for reinsurance risk. These three provisions could vary from year to year.

<sup>C</sup> Bulk claims consist of certain claims related expenses (e.g., ambulance services) not already included in the claims database. Amounts anticipated to be recovered from reinsurance are also included as a negative amount.

<sup>D</sup> KOL 37 costs consist of towing charges and miscellaneous charges on partially-liable claims with no optional coverage present.

<sup>E</sup> Claims services expenses are claims related expenses that are not directly assigned to individual claims. The main elements of the expenses are salary for claims staff and internal legal staff, information system services related to claims, and claim office overhead. Road safety and loss management costs are also included in this category.

<sup>F</sup> The Unallocated Loss Adjustment Expenses (ULAE) provision is the total estimated amount of future claims services expenses related to claims incurred in 2011 and prior years.

<sup>G</sup> Current year frequency is the ratio of the number of claims related to losses occurring in the current year to the average number of policies in force during the current year.

<sup>H</sup> Current year severity is the average ultimate cost of claims related to a loss occurring in the current year.

### Discussion

Claims costs in 2011 for Bodily Injury and Accident Benefits are higher than plan as a result of higher than expected claims frequency. This is attributed partly to the increase in precipitation for the first nine months of 2011 compared to the 30 year average. The 2011 plan reflected a slower return to the long term trend, however this has occurred faster than expected (the long term trend excludes the last three years due to the recession).

Claims costs in 2011 for Accident Benefits are also higher than plan as a result of higher than expected claims severity.

Recorded losses from prior years are close to plan.

The discount rate has decreased by 40 basis points (plan 4.46%, outlook 4.06%), resulting in an unfavourable discounting adjustment.

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**2012.1 RR AIC.13.5 Reference: Basic Loss Costs**

**Please provide financial statements that relate to the Basic Insurance coverage for 2009, 2010 and (interim) for 2011.**

**Response:**

Financial statement information for Basic insurance coverage for 2010 and 2009 are available in the 2010 ICBC Annual Report under Note 16 Rate Regulation (pages 65 to 66) in the Notes to the Consolidated Financial Statements (see Appendix 11 C – 2010 ICBC Annual Report, of the Application).

The same information for 2011 will be available after the 2011 ICBC Annual Report is tabled in the Legislature at the end of May 2012.

Regarding 2011 interim financial information for Basic insurance, please see the response to information request 2012.1 RR AIC.13.4.

BC Old Age Pensioners Organization Information Request No. 2012.1 RR BCOAPO.1.1 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCOAPO.1.1 Reference: Exhibit B-1, Chapter 1, page iv  
Basic Insurance MCT Ratio**

**Pursuant to the 2011 Government Directive, on page iv the ICBC states that “When ICBC determined its revenue requirements, the most recent quarter Basic Insurance MCT ratio is as of the third quarter of 2011 and has a value of 120%.”**

**Please explain whether it is ICBC’s experience that there is a ‘seasonality’ e.g., due to weather patterns, kilometres driven, and car sales patterns built in to the MCT ratio depending on which quarter of a particular rate year is chosen to upon which to base an application?**

**Response:**

There is no seasonality built into the MCT ratio depending on which quarter of a particular year is chosen upon which to base an application. Claims costs are forecast for the year by the actuaries and recognized over the entire year. Therefore, any seasonality over the year is smoothed over the fiscal year by the way claims incurred costs are recognized during the year.

As the year progresses and claims incurred costs are updated to take into consideration recent trends, the changes are reflected as per the application of the accounting policy to recognize the changes to claims incurred costs evenly over the rest of the year.

Therefore, there is no seasonality that impacts the MCT ratio of any quarter that is chosen to base an application of a particular rate year.

Also note that there are many other factors that impact the MCT calculation. Items that impact capital available include other business factors like investment income that may impact net income and therefore retained earnings, and any changes to other components of equity. Capital required could also change as it is dependent on the balances and types of assets held, the amount of unpaid claims, and unearned premiums.

BC Old Age Pensioners Organization Information Request No. 2012.1 RR BCOAPO.1.2 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCOAPO.1.2 Reference: Exhibit B-1, Chapter 1, page iv  
Basic Insurance MCT Ratio**

**Pursuant to the 2011 Government Directive, on page iv the ICBC states that “When ICBC determined its revenue requirements, the most recent quarter Basic Insurance MCT ratio is as of the third quarter of 2011 and has a value of 120%.”**

**Please indicate how the choice of the base period or data revision date affects the application.**

**Response:**

The base period or data revision date for the analysis affects the Application to the degree that new information is reflected in the ICBC actuaries’ estimates. ICBC’s revenue requirements analysis process normally strikes assumptions at a point in time. Seasonality in the claims data is accounted for in the actuaries’ trend models, so that the point in time during the year that assumptions are struck has no bearing on the actuaries’ estimates of future claims costs.

In the case of the Application, ICBC started the analysis with the most current assumptions as of May. ICBC updated its estimate of New Money Rate in September, because without the update, the proposed rate level would fall short of covering costs at a time when capital levels are low. Also, updating the New Money Rate is a relatively simple calculation, and does not cause any protraction of the analysis process. ICBC actuaries determined that all other assumptions as of May were still reasonable in context with the information available in September, both individually and in aggregate, consistent with accepted actuarial practice.

In the case of the capital provision, the choice of data revision date is significant. Without the updated 2011 Government Directive regarding Basic Rate Stability and Capitalization that directs ICBC to base its capital provision on the most recent quarter, ICBC would have been in a position of releasing capital when its capital had sharply declined. Please see the response to information request 2012.1 RR DUCK.11.e.

BC Old Age Pensioners Organization Information Request No. 2012.1 RR BCOAPO.2.1 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCOAPO.2.1 Reference: Exhibit B-1, page vii  
Future Policy Year Rate Changes**

**ICBC states that “*Based on the actuarial analysis in this Application, if the requested interim and permanent rate increases are not approved, Basic insurance will be further rate inadequate and ICBC’s capital position will continue to erode, necessitating an even more dramatic rate increase in the next policy year.*”**

**Please provide ICBC’s current best estimate of the rate increase that will be required in the next (post 2012) policy year assuming ICBC’s proposal for an 11.2% rate increase is approved for the 2012 policy year. Please provide all assumptions made in arriving at this estimate.**

**Response:**

Please refer to the response to information request 2012.1 RR BCUC.2.4 for the estimated actuarial rate indications for policy year 2013 (effective February 1, 2013 through January 31, 2014). The estimates are based on a simplified model, rather than a full actuarial analysis. The actual indicated rate will depend on the future emergence of a number of key assumptions, including the level of loss costs, interest rates, ICBC’s Basic insurance MCT level, the approved rate change for policy year 2012, as well as any other factors that impact ICBC’s revenue requirement. The actual policy year 2013 actuarial rate indication will be based on information as known to ICBC at the time that ICBC files the revenue requirements application for the 2013 policy year, and may be significantly different than the assumptions underlying the estimates.

BC Old Age Pensioners Organization Information Request No. 2012.1 RR BCOAPO.2.2 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 2
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**2012.1 RR BCOAPO.2.2 Reference: Exhibit B-1, page vii  
Future Policy Year Rate Changes**

**ICBC states that “Based on the actuarial analysis in this Application, if the requested interim and permanent rate increases are not approved, Basic insurance will be further rate inadequate and ICBC’s capital position will continue to erode, necessitating an even more dramatic rate increase in the next policy year.”**

**Please provide ICBC’s current best estimate of the rate increase that will be required in the next policy year assuming a 9.2% rate increase is approved. Please provide all assumptions made in arriving at this estimate.**

**Response:**

As discussed in the response to information request 2012.1 RR BCUC.2.4, the estimates of future actuarial rate indications are based on a simplified model, rather than a full actuarial analysis. The policy year 2013 actuarial rate indication will depend on the future emergence of a number of key assumptions, including the level of loss costs, interest rates, ICBC’s Basic MCT level, and the approved rate change for policy year 2012. There are four scenarios considered in the response to information request 2012.1 RR BCUC.2.4:

1. Scenario A assumes the key factors emerge according to the current forecasts, including an increase in interest rates in 2013 and the resumption of a downward trend for bodily injury (BI) claims frequency.
2. Scenario B differs from Scenario A by assuming interest rates remain low in 2013.
3. Scenario C differs from Scenario A by assuming BI claims frequency continues to remain flat.
4. Scenario D assumes Scenario B and C will both occur in 2013.

If the approved rate change for policy year 2012 is 9.2%, there will be a +2.0 percentage points rate deficiency carried into the policy year 2013 actuarially indicated rate. In this case, the estimated policy year 2013 actuarial rate indication for each scenario is:

<b>Estimated PY 2013 Actuarial Rate Indication</b>	
Scenario A	4.2%
Scenario B	5.2%
Scenario C	11.4%
Scenario D	12.4%

Components of the indicated rates are shown in Attachment A – Components of Estimated Policy Year 2013 Actuarial Rate Indications, and the assumptions are discussed in more detail in Attachment B – Assumptions for Components of Estimated Policy Year 2013 Actuarial Rate Indications.

The policy year 2013 actuarial rate indication will be based on information as known to ICBC at the time that ICBC files the revenue requirements application for the 2013 policy year and may be significantly different than the assumptions used in this response.



# **2012.1 RR BCOAPO.2.2 – Attachment A – Components of Estimated Policy Year 2013 Actuarial Rate Indications**



## Attachment A - Components of Estimated PY 2013 Actuarial Rate Indications

Line No.	Components	Rate Impact (percentage points of PY 2013 indicated rate change)			
		Scenario A	Scenario B	Scenario C	Scenario D
1	PY 2012 Loss Cost Forecast Variance	0.9%	0.9%	5.5%	5.5%
2	Loss Trend to PY 2013	1.7%	1.7%	4.3%	4.3%
3	Investment Income	-0.8%	0.2%	-0.8%	0.2%
4	Impact of IFRS Changes	0.0%	0.0%	0.0%	0.0%
5	Operating Expense (excluding IFRS Changes)	0.0%	0.0%	0.0%	0.0%
6	Capital Provision	0.1%	0.1%	0.1%	0.1%
7	Trend in Average Premium	0.2%	0.2%	0.2%	0.2%
8	Rate Deficiency from Prior Year	2.0%	2.0%	2.0%	2.0%
9	Other	0.1%	0.1%	0.1%	0.1%
<b>10</b>	<b>PY 2013 Indicated Rate Level Change</b>	<b>4.2%</b>	<b>5.2%</b>	<b>11.4%</b>	<b>12.4%</b>

The major differences between the four scenarios are:

Scenario A assumes an increase in interest rates in 2013, and the resumption of a downward trend for bodily injury claims frequency.

Scenario B assumes interest rates remain low in 2013, and the resumption of a downward trend for bodily injury claims frequency.

Scenario C assumes an increase in interest rates in 2013, and bodily injury claims frequency continues to be flat.

Scenario D assumes interest rates remain low in 2013, and bodily injury claims frequency continues to be flat.



# **2012.1 RR BCOAPO.2.2 – Attachment B – Assumptions for Components of Estimated Policy Year 2013 Actuarial Rate Indications**



**1. PY 2012 Loss Cost Forecast Variance**

If the loss trends continue as is currently forecast in the year-end 2011 rate indication update (as discussed in the response to information request 2012.1 RR BCUC.5.1), the PY 2012 loss cost forecast variance would be +0.9 percentage points. If bodily injury claims frequency continues to be flat (scenarios C and D), the forecast variance would instead be +5.5 percentage points. The actual forecast variance may differ from the above two scenarios, depending on the influence of actual emergence of loss costs in the coming year on next year's forecast.

**2. Loss Trend to PY 2013**

If the annual long-term loss cost trend continues as is currently forecast with year-end 2011 rate indication update, the impact of one year of loss trend to PY 2013 would be +1.7 percentage points. If bodily injury claims frequency continues to be flat (scenario C and D), the impact would be +4.3 percentage points. The actual impact may differ from the above two scenarios, depending on the influence of actual emergence of loss costs in the coming year on next year's forecast.

**3. Investment Income**

The new money rate is expected to increase to 4.15% for PY 2013 from 3.76% for PY 2012 and the forecast amount of Basic equity is lower; under this scenario, the impact of investment income on the PY 2013 indicated rate change would be -0.8 percentage points, made up of an expected -1.0 percentage points impact from higher new money rate that is offset by an expected +0.2 percentage points impact from investment income on Basic equity. If the new money rate remains low (scenario B), the impact of investment income would be +0.2 percentage points. The actual impact may be different, depending on next year's forecast of 2013 interest rates and the actual amount of ICBC's Basic equity.



#### **4. Impact of IFRS Changes**

There will be no impact of IFRS changes in PY 2013 indicated rate change, because IFRS has been fully implemented as of January 1, 2012.

#### **5. Operating Expense (excluding IFRS Changes)**

The impact of operating expense (excluding IFRS changes) on the PY 2013 indicated rate change is expected to be 0.0 percentage points. ICBC intends to continue maintaining operating expense below the level of inflation.

#### **6. Capital Provision**

The impact of the capital provision on the PY 2013 indicated rate change is expected to be 0.0 percentage points. No capital build provision is expected as directed by the Government directive of November 25, 2011 with respect to Basic Rate Stability and Capitalization approved by Order in Council 560/11, November 30, 2011 (2011 Government Directive regarding Basic Rate Stability and Capitalization). The actual impact may be different, if the actual Basic MCT level falls below 100%.

#### **7. Trend in Average Premium**

The impact of average premium trend on the PY 2013 indicated rate change is expected to be +0.2 percentage points, based on the long-term annual average premium trend, due to a combination of shifts in rate classes as the proportion of seniors increases and shifts in discount levels as existing customers migrate to greater levels of discount on average. The actual impact may be different, if actual experience emerges differently than forecast.



**8. Rate Deficiency from Prior Year**

Rate deficiency exists if only a portion of the actuarial rate indication is taken. When estimating future indicated rate changes, ICBC must include any rate deficiency from the prior year. The impact of rate deficiency from the prior year on the PY 2013 indicated rate change is expected to be +2.0 percentage points, assuming only 9.2% PY 2012 indicated rate change will be approved by the Commission. The actual impact will be different, if the approved rate change is different than 9.2%.

**9. Other**

This line item includes miscellaneous revenue, broker fees, unallocated loss adjustment expenses, and rounding difference. All components combined are expected to contribute to a +0.1 percentage points impact on the PY 2013 indicated rate change.

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**2012.1 RR BCOAPO.3.1 Reference: Exhibit B-1, Chapter 2, page 2-5, paragraph 21  
Exhibit B-1, Chapter 3, page 3-2, paragraph 6  
Changes in Capital Provisions**

The Application for the policy year commencing February 1, 2012 was submitted on December 1, 2011.

In paragraph 21 of Chapter 2, ICBC states that the 2011 Directive required ICBC to use ***“updated information on the capital level as of the most recent quarter to determine Basic insurance revenue requirements ...”*** (Emphasis added.)

In paragraph 6 of Chapter 3, ICBC states, ***“[t]he actuarial analysis contained in this Chapter is primarily based on information available up to August 31, 2011. ... Since a change in the New Money Rate has a large impact on the rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the rate indication to that movement, ICBC updated this key component based on information available up to September 13, 2011. In accordance with the 2011 Government Directive regarding Base Rate Stability and Capitalization, ICBC has excluded the capital build provision.”***

Please provide ICBC’s specific views as to what constitutes use of ***“updated information on the capital level as of the most recent quarter to determine Basic insurance revenue requirements...”*** That is, is ICBC’s position that it is free to choose whatever information it wishes from any recent quarter in formulating its revenue requirements application? Or, should ICBC be basing its application based on information for the most recently completed quarter for which full information available?

**Response:**

The 2011 Government Directive regarding Basic Rate Stability and Capitalization is specific that ICBC should use the capital level as of the most recent quarter to determine Basic insurance revenue requirements. For the Application which was filed on December 1, 2011, the most recent quarter was the third quarter of 2011. The 2011 Government Directive does not specify the timing of other information used in the Basic insurance revenue requirement.

Other information used in the actuarial rate level indication analysis was based on data available at earlier dates, as described in Chapter 3, paragraph 6 of the Application. ICBC believes that it was appropriate to use this information in the actuarial rate indication. The timing of other information is discussed further in the response to information request 2012.1 RR DUCK.4.d.

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**2012.1 RR BCOAPO.3.2 Reference: Exhibit B-1, Chapter 2, page 2-5, paragraph 21  
Exhibit B-1, Chapter 3, page 3-2, paragraph 6  
Changes in Capital Provisions**

The Application for the policy year commencing February 1, 2012 was submitted on December 1, 2011.

In paragraph 21 of Chapter 2, ICBC states that the 2011 Directive required ICBC to use ***“updated information on the capital level as of the most recent quarter to determine Basic insurance revenue requirements ...”*** (Emphasis added.)

In paragraph 6 of Chapter 3, ICBC states, ***“[t]he actuarial analysis contained in this Chapter is primarily based on information available up to August 31, 2011. ... Since a change in the New Money Rate has a large impact on the rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the rate indication to that movement, ICBC updated this key component based on information available up to September 13, 2011. In accordance with the 2011 Government Directive regarding Base Rate Stability and Capitalization, ICBC has excluded the capital build provision.”***

**Can ICBC confirm that the third quarter of the 2011 policy year includes the months of August, September, and October?**

**Response:**

To clarify, capital levels are measured and forecasted on a calendar year basis, not on a policy year basis. This means that for the Application, ICBC has calculated the capital provision based on the Basic insurance Minimum Capital Test ratio as of the third quarter of calendar year 2011. This quarter includes the three months of July, August, and September 2011.

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**2012.1 RR BCOAPO.3.3 Reference: Exhibit B-1, Chapter 2, page 2-5, paragraph 21  
Exhibit B-1, Chapter 3, page 3-2, paragraph 6  
Changes in Capital Provisions**

The Application for the policy year commencing February 1, 2012 was submitted on December 1, 2011.

In paragraph 21 of Chapter 2, ICBC states that the 2011 Directive required ICBC to use ***“updated information on the capital level as of the most recent quarter to determine Basic insurance revenue requirements ...”*** (Emphasis added.)

In paragraph 6 of Chapter 3, ICBC states, ***“[t]he actuarial analysis contained in this Chapter is primarily based on information available up to August 31, 2011. ... Since a change in the New Money Rate has a large impact on the rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the rate indication to that movement, ICBC updated this key component based on information available up to September 13, 2011. In accordance with the 2011 Government Directive regarding Base Rate Stability and Capitalization, ICBC has excluded the capital build provision.”***

Please explain why the actuarial analysis presented in this Application does not reflect information available through October 31, 2011 or, at least information available at some point beyond September 13, 2011.

**Response:**

ICBC has calculated the capital provision in the actuarial rate level indication analysis contained within the Application according to the 2011 Government Directive regarding Basic Rate Stability and Capitalization. As stated on page iv of the Application, when ICBC determined its revenue requirements, the most recent quarter Basic insurance MCT ratio was as of the third quarter of 2011 and had a value of 120%. The Basic MCT ratio at September 30, 2011 is shown in line (a) of Exhibit G.2 in Chapter 3 of the Application.

Other information used in the actuarial rate level indication analysis was based on data available at earlier dates, as described in Chapter 3, paragraph 6, of the Application. The timing of other information is discussed further in the response to information request 2012.1 RR DUCK.4.d.

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**2012.1 RR BCOAPO.3.4-5 Reference: Exhibit B-1, Chapter 2, page 2-5, paragraph 21  
Exhibit B-1, Chapter 3, page 3-2, paragraph 6  
Changes in Capital Provisions**

The Application for the policy year commencing February 1, 2012 was submitted on December 1, 2011.

In paragraph 21 of Chapter 2, ICBC states that the 2011 Directive required ICBC to use ***“updated information on the capital level as of the most recent quarter to determine Basic insurance revenue requirements ...”*** (Emphasis added.)

In paragraph 6 of Chapter 3, ICBC states, ***“[t]he actuarial analysis contained in this Chapter is primarily based on information available up to August 31, 2011. ... Since a change in the New Money Rate has a large impact on the rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the rate indication to that movement, ICBC updated this key component based on information available up to September 13, 2011. In accordance with the 2011 Government Directive regarding Base Rate Stability and Capitalization, ICBC has excluded the capital build provision.”***

**3.4 Will the ICBC agree to update the actuarial analysis to reflect actual information available for the third quarter of the policy year in 2011?**

**3.5 If the response to 3.4 is “No,” please indicate whether there have been any changes in the financial information that may have a material impact on the revenue requirements. Please explain.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.5.1 for the list of changes in major components of rate and the updated rate indication based on the most current information available.

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**2012.1 RR BCOAPO.4.1 Reference: Exhibit B-1, Chapter 3, page 3-7, Figure 3.3  
Exhibit A-4, BCUC IR 1.8.1**

**Please provide the R<sup>2</sup> statistic for the fitted line requested in the Staff IR referenced above.**

**Response:**

The R<sup>2</sup> statistics for the fitted lines provided in the response to information request 2012.1 RR BCUC.8.1 are:

<b>Fitted lines</b>	<b>R<sup>2</sup> statistics (excluding 2008 and 2009 points)</b>	<b>R<sup>2</sup> statistics (including all years)</b>
The best fit line (shown as solid line in the response)	95.2%	77.8%
The simple exponential regression (shown as dashed line in the response)	90.3%	81.9%
The exponential regression omitting 2008 and 2009 points (shown as dotted line in the response)	94.2%	77.1%

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**2012.1 RR BCOAPO.5.1 Reference: Exhibit B-1, Chapter 3, page 3-9, Figure 3.4b  
Exhibit A-4, BCUC IR 1.9.3**

**Please provide the R<sup>2</sup> statistic for the fitted line requested in the Staff IR referenced above.**

**Response:**

The trend line provided in Chapter 3, Figure 3.4b of the Application is the line that is considered by the actuaries to be the best fit trend line for the purpose of forecasting, based on the data in the Application and including consideration of economic and social influences. The R<sup>2</sup> statistics for the fitted lines provided in the response to information request 2012.1 RR BCUC.9.3 are:

<b>Fitted Lines</b>	<b>R<sup>2</sup> Statistics (excluding 2008 &amp; 2009 points)</b>	<b>R<sup>2</sup> Statistics (including all years)</b>
The best fit line (shown as solid line in the response)	94.8%	94.9%
The simple exponential regression (shown as dashed line in the response)	94.3%	95.0%

Actuaries are required to consider economic and social influences when selecting trends. Please also see the response to information request 2012.1 RR BCUC.37.3. The simple exponential regression would not be selected as the best fit for the purpose of forecasting in this case due to the influence of the unusually low points observed during the recession in 2008 and 2009.

**2012.1 RR BCOAPO.6.1 Reference: Exhibit B-1, Chapter 3, pages 3-9 and 3-10 and Figure 3.5  
Precipitation Levels**

**Please provide a table showing the annual precipitation levels for each year, 1971-2010 inclusive, underpinning the graph shown in Figure 3.5. Also, please provide the source(s) for the data.**

**Response:**

The provided table shows precipitation levels from 1989 to 2010. These levels are calculated using monthly precipitation at Vancouver International Airport weather station and are obtained from Environment Canada’s website (<http://climate.weatheroffice.gc.ca>). The individual annual data values before 1989 can also be obtained from Environment Canada, but are not directly used in the analysis in the Application; the 1971 to 2000 average annual precipitation level was obtained directly from the Environment Canada website ([http://climate.weatheroffice.gc.ca/climate\\_normals](http://climate.weatheroffice.gc.ca/climate_normals)).

<b>Year</b>	<b>Annual Precipitation (mm)</b>
<b>1989</b>	1082
<b>1990</b>	1343
<b>1991</b>	1159
<b>1992</b>	1137
<b>1993</b>	884
<b>1994</b>	1117
<b>1995</b>	1273
<b>1996</b>	1463
<b>1997</b>	1522
<b>1998</b>	1161
<b>1999</b>	1394
<b>2000</b>	1011
<b>2001</b>	1179
<b>2002</b>	858
<b>2003</b>	1106
<b>2004</b>	1211
<b>2005</b>	1217
<b>2006</b>	1224
<b>2007</b>	1322
<b>2008</b>	1026
<b>2009</b>	1070
<b>2010</b>	1207
<b>1971-2000 Average (mm)</b>	<b>1199</b>

**2012.1 RR BCOAPO.7.1 Reference: Exhibit B-1, Chapter 3, pages 3-10 and 3-11, Figures 3.6 and 3.7**  
**Estimated Kilometres Travel in B.C – Gasoline and Diesel Vehicles**

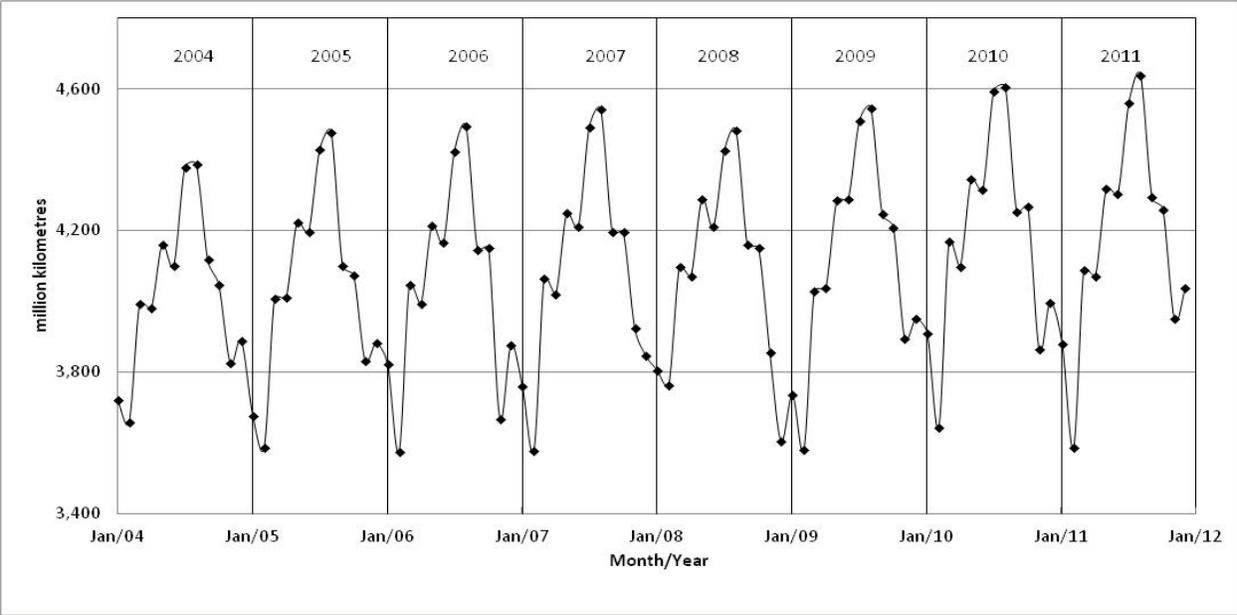
Please provide separate tables for gasoline and diesel vehicles showing the estimated kilometres travelled in BC by month for the period January 2004-January 2011 that underpin the graphs shown in Figures 3.6 and 3.7. Also, please provide the source(s) for the data.

**Response:**

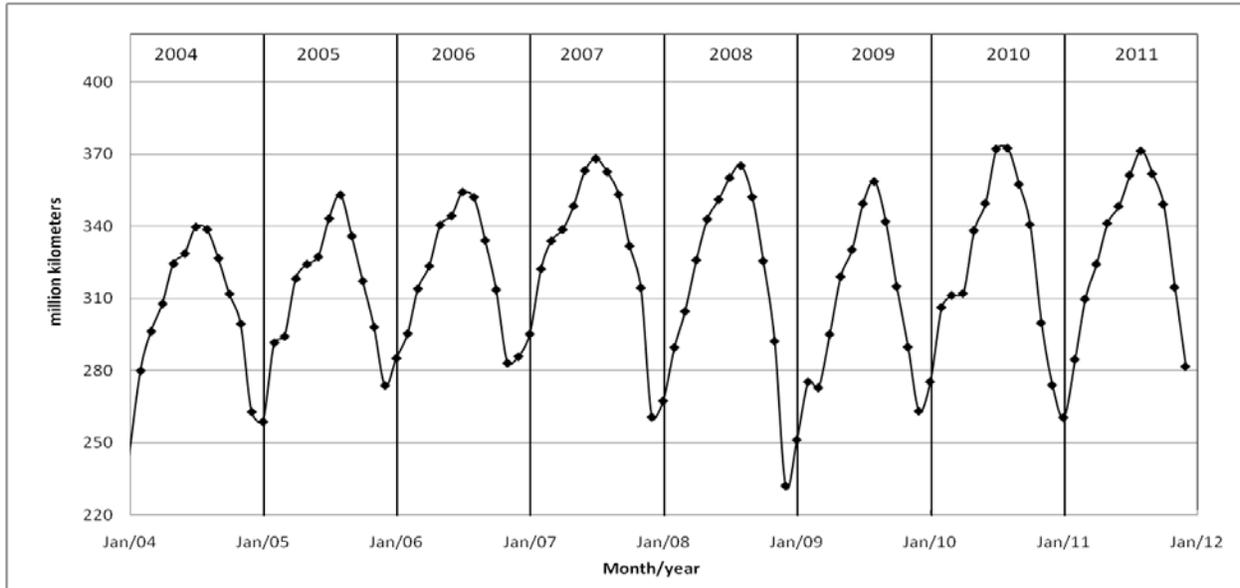
**7.1**

Figures 3.6 and 3.7 from the Application have been updated to include 2011 estimates and are shown below. Please see Attachment A – Table for Travel Kilometres for the data tables underpinning the graphs, and the associated data sources. The monthly kilometres shown below are derived using the gasoline sales, diesel sales, and traffic volume data sourced in Attachment A, and a supporting analysis that takes fuel efficiency into account.

**Figure 3.6 Estimated Travel Kilometres – Gasoline Vehicles (updated to 2011)**



**Figure 3.7 Estimated Travel Kilometres – Diesel Vehicles (updated to 2011)**





## **2012.1 RR BCOAPO.7.1 – Attachment A – Table for Travel Kilometres**

**Monthly kilometres travelled by gasoline powered vehicles  
in BC from 2004 to 2011**

<b>Date</b>	<b>Kilometres travelled Gas-powered vehicles (in millions)</b>
Jan-04	3,722.2
Feb-04	3,658.4
Mar-04	3,994.2
Apr-04	3,980.6
May-04	4,160.8
Jun-04	4,101.4
Jul-04	4,378.6
Aug-04	4,387.0
Sep-04	4,118.0
Oct-04	4,046.1
Nov-04	3,827.0
Dec-04	3,888.6
Jan-05	3,677.9
Feb-05	3,587.8
Mar-05	4,008.9
Apr-05	4,010.1
May-05	4,223.1
Jun-05	4,196.1
Jul-05	4,428.5
Aug-05	4,478.6
Sep-05	4,100.7
Oct-05	4,074.8
Nov-05	3,833.2
Dec-05	3,882.9
Jan-06	3,823.9
Feb-06	3,574.4
Mar-06	4,047.9
Apr-06	3,992.7
May-06	4,214.9
Jun-06	4,166.7
Jul-06	4,424.4
Aug-06	4,494.4
Sep-06	4,146.6
Oct-06	4,151.6
Nov-06	3,669.0
Dec-06	3,875.9
Jan-07	3,759.2
Feb-07	3,579.3
Mar-07	4,065.9
Apr-07	4,019.7
May-07	4,249.8
Jun-07	4,210.1
Jul-07	4,492.4
Aug-07	4,542.1
Sep-07	4,197.3

Oct-07	4,195.4
Nov-07	3,924.7
Dec-07	3,847.1
Jan-08	3,805.4
Feb-08	3,764.1
Mar-08	4,096.4
Apr-08	4,071.3
May-08	4,288.1
Jun-08	4,211.6
Jul-08	4,427.0
Aug-08	4,481.9
Sep-08	4,159.6
Oct-08	4,151.9
Nov-08	3,854.3
Dec-08	3,605.1
Jan-09	3,735.6
Feb-09	3,580.8
Mar-09	4,029.3
Apr-09	4,037.2
May-09	4,285.2
Jun-09	4,290.0
Jul-09	4,509.0
Aug-09	4,546.4
Sep-09	4,247.6
Oct-09	4,208.8
Nov-09	3,895.1
Dec-09	3,952.0
Jan-10	3,909.7
Feb-10	3,644.5
Mar-10	4,168.8
Apr-10	4,098.2
May-10	4,345.8
Jun-10	4,314.6
Jul-10	4,594.6
Aug-10	4,606.4
Sep-10	4,252.9
Oct-10	4,268.4
Nov-10	3,863.8
Dec-10	3,997.7
Jan-11	3,881.1
Feb-11	3,586.6
Mar-11	4,089.8
Apr-11	4,071.6
May-11	4,319.8
Jun-11	4,304.9
Jul-11	4,561.7
Aug-11	4,639.5
Sep-11	4,295.3
Oct-11	4,260.3
Nov-11	3,949.9
Dec-11	4,038.9

**Monthly kilometres travelled by diesel powered vehicles  
in BC from 2004 to 2011**

Date	Kilometres travelled Diesel-powered vehicles (in millions)
Jan-04	244.3
Feb-04	279.9
Mar-04	296.3
Apr-04	307.8
May-04	324.4
Jun-04	328.7
Jul-04	339.7
Aug-04	338.7
Sep-04	326.6
Oct-04	311.9
Nov-04	299.5
Dec-04	262.8
Jan-05	258.8
Feb-05	291.6
Mar-05	294.2
Apr-05	318.2
May-05	324.2
Jun-05	327.3
Jul-05	343.2
Aug-05	353.0
Sep-05	335.9
Oct-05	317.2
Nov-05	298.1
Dec-05	273.8
Jan-06	285.2
Feb-06	295.4
Mar-06	314.0
Apr-06	323.4
May-06	340.5
Jun-06	344.4
Jul-06	354.2
Aug-06	352.0
Sep-06	334.1
Oct-06	313.6
Nov-06	283.2
Dec-06	285.8
Jan-07	295.2
Feb-07	322.3
Mar-07	333.9
Apr-07	338.7
May-07	348.4
Jun-07	363.2
Jul-07	368.1
Aug-07	362.6
Sep-07	353.2

Oct-07	331.8
Nov-07	314.5
Dec-07	260.7
Jan-08	267.4
Feb-08	289.6
Mar-08	304.6
Apr-08	326.0
May-08	342.9
Jun-08	351.1
Jul-08	360.1
Aug-08	365.2
Sep-08	352.1
Oct-08	325.5
Nov-08	292.3
Dec-08	232.2
Jan-09	251.3
Feb-09	275.4
Mar-09	272.9
Apr-09	295.1
May-09	319.1
Jun-09	330.3
Jul-09	349.4
Aug-09	358.6
Sep-09	342.0
Oct-09	315.0
Nov-09	289.8
Dec-09	263.2
Jan-10	275.4
Feb-10	306.3
Mar-10	311.3
Apr-10	312.1
May-10	338.2
Jun-10	349.5
Jul-10	372.1
Aug-10	372.5
Sep-10	357.4
Oct-10	340.7
Nov-10	299.9
Dec-10	274.0
Jan-11	260.5
Feb-11	284.6
Mar-11	309.7
Apr-11	324.3
May-11	341.3
Jun-11	348.3
Jul-11	361.2
Aug-11	371.3
Sep-11	361.8
Oct-11	349.2
Nov-11	314.7
Dec-11	281.7

## **Data Sources:**

Calculation of kilometres travelled by gasoline powered Vehicles:

- 1) Vehicle traffic data (monthly average daily traffic-MADT) from Ministry of Transportation and Infrastructure
- 2) Monthly sales of gasoline from Statistics Canada Table 405-0003 - Road motor vehicles, fuel sales, monthly (litres)

Calculation of kilometres travelled by diesel powered Vehicles:

- 1) Heavy truck traffic data (monthly average daily traffic - MADT for heavy truck) from Ministry of Transportation and Infrastructure
- 2) Annual sales of diesel oil from Statistics Canada Table 405-0002 - Road motor vehicles, fuel sales, annual (litres)

Kilometres travelled are derived using the gasoline, diesel and traffic volume data from the above sources in combination with a supporting analysis that takes fuel efficiency into account.

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**2012.1 RR BCOAPO.8.1 Reference: Exhibit B-1, Chapter 3, page 3-13 and Figure 3.8  
BI Severity**

**Please provide a list of the factors that ICBC believes to be responsible for the upward trend in BI Severity. Please provide a measure of the extent to which each of these factors affects or is believed to affect the upward trend.**

**Response:**

ICBC's analysis of claim payment details is based on total bodily injury (BI) payments (both Basic insurance and Optional insurance) based on the year in which the payment is made.

The average amount paid for general damages has increased at an average rate of 8% per year over the last four years. General damages make up 46% of the total paid out on BI claims in 2011. Those amounts are paid to the claimant on account of "pain and suffering" or "loss of enjoyment of life". General damages are determined by reference to previous decisions of the court with respect to similar injuries, and the medical and other evidence with respect to the extent of the injury and its effect on the claimant.

ICBC is also seeing increases in the average amounts paid for future wage loss, past wage loss, future care, and third party costs and disbursements. These loss payments are not paid on all BI claims, but they are contributing to the upward pressure on BI claims costs.

Future wage loss payments make up 14% of the total amount paid on BI claims in 2011. The average amount paid for future wage loss has increased at an average rate of 11% per year over the last four years.

Past wage loss payments make up 9% of the total amount paid on BI claims in 2011. The average amount paid for past wage loss has increased at an average rate of 10% per year over the last four years.

Future care payments make up 6% of the total amount paid on BI claims in 2011. The average amount paid for future care has increased at an average rate of 9% per year over the last four years.

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Third party costs and disbursements are costs payable under the Supreme Court Civil Rules as a partial indemnity to the claimant for legal costs and disbursements incurred in the course of a represented claim. Payments on account of third party costs and disbursements make up 10% of the total amount paid on BI claims in 2011. The average amount paid for third party costs and disbursements has increased at an average rate of 10% per year over the last 4 years.

The factor ICBC believes to be primarily responsible for the upward trend in BI severity is an increase in average general damage payments.

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**2012.1 RR BCOAPO.9.1 Reference: Exhibit B-1, Chapter 3, page 3-14, Figure 3.9, and Footnote 1  
Loss Cost Variances**

**The referenced footnote states, “ICBC did not apply to change Basic rates for PY 2008, PY 2009, or PY 2011.”**

**Was the decision to not apply for Basic rate changes in these years informed – at least to some degree – by ICBC’s forecasted loss costs for these years? If not, please explain why not.**

**Response:**

The decision to not apply for Basic insurance rate changes for policy years 2008, 2009, and 2011 included consideration of the forecasted loss costs for those years.

The decision to not apply for Basic insurance rate changes for policy year 2008 and 2009 was based on the results of actuarial rate indication analyses, which were supported by the forecasted loss costs. For more information on the actuarial rate indication analyses for policy years 2008 and 2009, and the rationale for not applying for a rate change for policy year 2011, please see the response to information request 2012.1 RR BCUC.29.1.

**2012.1 RR BCOAPO.9.2 Reference: Exhibit B-1, Chapter 3, page 3-14, Figure 3.9, and Footnote 1  
Loss Cost Variances**

The referenced footnote states, *“ICBC did not apply to change Basic rates for PY 2008, PY 2009, or PY 2011.”*

Please provide the forecasted loss costs and current estimates for the years 2008, 2009, and 2011.

**Response:**

The table below shows the forecasted Basic loss costs for policy years 2008, 2009, and 2011, at the time of analysis for each year and the current estimates, based on the information relied on in the Application:

	Policy Year		
	2008	2009	2011 (preliminary)
<b>Forecasted</b>	\$ 656	\$ 634	\$ 656
<b>Current Estimate*</b>	\$ 616	\$ 647	\$ 673

\*Estimated as of Q2 2011

The Basic loss cost for policy year 2008 has emerged significantly lower due to the fact that the forecasted Basic loss cost of \$656 was based on information available at that time (2007 year end), at which point the economic recession had not yet occurred and was not anticipated. The Basic loss cost for policy year 2008 was lower than expected largely as a result of a lower than expected number of claims, relating to less driving associated with the economic downturn, and to drier than average weather.

The forecasted Basic loss cost shown for 2011 was based on a preliminary loss cost analysis. For further discussion of the 2011 rate analysis please refer to the response to information request 2012.1 RR BCUC.29.1.

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**2012.1 RR BCOAPO.10.1 Reference: Exhibit B-1, Chapter 3, page 3-32, Figure 3.13  
Sensitivity Analysis**

**Were there calculated sensitivities for any scenarios not provided in the referenced table? If so, please provide a table that shows the sensitivities for all alternative scenarios considered.**

**Response:**

Other than those shown in Chapter 3, Figure 3.13, there were not any sensitivities calculated for other scenarios in preparation for this Application. Additional sensitivities were calculated in response to various information requests. Please see the response to information request 2012.1 RR BCUC.19.1, Attachment A – Sensitivity Analysis for a list of sensitivity scenarios that were calculated.

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**2012.1 RR BCOAPO.10.2 Reference: Exhibit B-1, Chapter 3, page 3-32, Figure 3.13  
Sensitivity Analysis**

**Does ICBC’s actuarial staff have any views with respect to the probability distributions associated with each scenario considered? If so, please provide the actuary’s opinion in this respect.**

**Response:**

ICBC does not have specific views about the probability distributions associated with each scenario listed in Chapter 3, Figure 3.13. ICBC has studied the variance in loss costs, which is the product of frequency and severity, based on historical data, and for that study assumed a normal probability distribution.

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**2012.1 RR BCOAPO.11.1 Reference: Exhibit B-1, Chapter 3, Appendix 3A, page 3A-6  
Prospective Adjustments**

**Please confirm that the ICBC agrees that the impacts of the Sea-to-Sky Highway Improvement Project, the Canada Line Project, and the PED Ban are all likely to result in decreased claims costs? If unable to so confirm, please explain.**

**Response:**

ICBC is unable to confirm that the impacts of the Sea-to-Sky Highway Improvement Project, the Canada Line Project, and the personal electronic device (PED) ban are all likely to result in decreased claims costs. Although intuitively such projects might be expected to reduce claims costs, ICBC has been unable to estimate or attribute claims benefits to any of these events, whether using information from other jurisdictions or from BC. ICBC's assessment of all three projects has been included in Appendix 3 A of the Application.

In the case of the Canada Line, ICBC is not able to confirm any direct causal link between the project and a reduction in crashes. No external studies could be found that examined potential impacts on the frequency of crash claims due to the introduction of a rapid transit line such as the Canada Line. As discussed further in the response to information request 2012.1 RR BCOAPO.13.1, ICBC also has no evidence to support the hypothesis that the Canada Line has affected traffic volume. Therefore ICBC cannot confirm that the Canada Line is likely to have resulted in decreased claims costs.

With respect to the PED ban, information obtained from other jurisdictions has also not been able to establish a clear link between cell phone bans and reductions in crashes. Results may depend on the nature of the ban (for example, whether all or just hand-held bans are in place), the extent of driver compliance with the ban, the amount and intensity of law enforcement, and the extent of behavioural substitution (for example, engaging in hidden texting). For these reasons, ICBC cannot confirm that the PED ban is likely to have resulted in decreased claims costs.

In the case of the Sea-to-Sky Highway Improvement Project, the information provided in the Appendix suggests that the project may have had a small favourable impact on the frequency of

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claims, although at this point a conclusion of no effect is also likely. Nonetheless, ICBC can confirm that reductions in claims costs are a more likely outcome for this project than for the Canada Line or PED ban.

It should be noted however that, given the timing of all three of these events, any impacts they might be having on claims would have started to emerge in 2010 and 2011. ICBC actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. To the extent that there has been an impact from these events in reducing Basic insurance claims, it has affected the data on which the claims frequency trends are based. Therefore, any such effect would have been captured in the loss trends used in forecasting claims costs for the policy year 2012. It should also be noted however, that the frequency of bodily injury claims has actually risen in 2010 and 2011, which suggests that other factors have more than countered any potential favourable impact from these events. This has been discussed further in the response to information request 2012.1 RR BCUC.38.1.

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**2012.1 RR BCOAPO.12.1 Reference: Exhibit B-1, Chapter 3, Appendix 3A, pages 3A-11 and 3A-12  
Sea-to-Sky Highway Improvement Project**

**The evidence states that *“More time will make it possible to determine whether there is evidence of a sustained change in crash frequencies along the corridor. At present, it is not possible to attribute observed changes in crash frequencies specifically to the Sea-to-Sky Highway Improvement Project.”***

**Please indicate when ICBC believes it will be able to determine whether there has been a statistically significant sustained change in crash frequencies attributable to this project.**

**Response:**

As noted in Appendix 3 A of the Application, there was an estimated reduction of 5.5 casualty crashes per quarter on the Sea-to-Sky Highway after completion of the Sea-to-Sky Highway Improvement Project. The variability in crash counts was estimated to be about 8 per quarter. Assuming that the observed reduction and variability would remain constant, and that the same analysis (test of means) would be applied, it is estimated that a minimum of 12 quarters (3 years) of data would be required in order to find a sustained reduction of at least 5.5 casualty collisions statistically significant.

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**2012.1 RR BCOAPO.13.1 Reference: Exhibit B-1, Chapter 3, Appendix 3A, pages 3A-16 to 3A-22 and Figure 3A-7  
Canada Line Project**

**Does ICBC contend that in the absence of the Canada Line, the traffic volumes would have been the same as shown in the referenced figure?**

**Response:**

As noted in Appendix 3 A of the Application, ICBC has no evidence of a change in traffic volume in relation to the completion of the Canada Line. Although hypothetical traffic volumes in the absence of the Canada Line cannot be observed, the traffic volume data included in Figure 3A-7 of Appendix 3 A show no detectable change in the level or slope of the trend line coincident with its introduction. Therefore, if the trends in traffic volume prior to the introduction of the Canada Line were used to forecast the traffic volume assuming no new service, this would produce forecasts very similar to the actual observed values. This would not provide evidence to support the hypothesis that the Canada Line has affected traffic volume.

As discussed in the Appendix, the traffic volume data available for this analysis were very limited, and may not accurately reflect trends or changes in the trends observed in the Metro Vancouver region. However, based on the data shown in Figure 3A-7, it would be purely speculative to suggest that a different trend would have occurred in the absence of the Canada Line.

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**2012.1 RR BCOAPO.13.2 Reference: Exhibit B-1, Chapter 3, Appendix 3A, pages 3A-16 to 3A-22 and Figure 3A-7  
Canada Line Project**

**Does the ICBC believe that there is a link between population and traffic volume?**

**Response:**

Yes, ICBC believes there is a link between population and traffic volume. This relationship is not direct, however. It depends on a number of factors including roadway capacity, the capacity of non-vehicular transit options (for example, the Sea Bus, Sky Train, and Canada Line), the extent of car pooling options and utilization, and the extent to which bus or other vehicle capacity can increase to accommodate more passengers. As the capacity of these various transportation options is reached, traffic volume may not be able to increase any further, and will instead become more congested.

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**2012.1 RR BCOAPO.14.1 Reference: Exhibit B-1, Chapter 3, Exhibit B.0.1, pages 1 and 2  
Exhibits B.3.1 and B.3.2 and  
Exhibit D.0  
Multiple Linear Regression Models**

**Please explain the criteria used in deciding whether or not to include any particular explanatory variable in the regressions.**

**Response:**

Variable selections are based on the use of informed judgment in combining statistical and qualitative considerations. While it is desirable to have strong statistical evidence of a good fit (such as having a high  $R^2$ ), it is equally desirable to select models that provide strong intuitive appeal (e.g., explanatory variables should be logically related to the item being forecasted). In applying these criteria, ICBC actuaries generally select an explanatory variable if it has a logical relationship to the business segment being modeled. The selected explanatory variables are then evaluated under various statistical diagnostics (e.g.,  $R^2$  of the model, p-values of the included variables, correlation between the included variables, and plots of residual values) before deciding whether or not to include them in the selected regression model.

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**2012.1 RR BCOAPO.14.2 Reference: Exhibit B-1, Chapter 3, Exhibit B.0.1, pages 1 and 2 Exhibits B.3.1 and B.3.2 and Exhibit D.0  
Multiple Linear Regression Models**

**14.2 Can ICBC confirm that only explanatory variables whose associated estimated parameters were statistically tested (i.e., by a t-test) and found to be non-zero at a pre-specified level of significance were used in all of the regressions underpinning this application?**

**14.2.1 If so, please provide the level of significance used and confirm that the t-statistics associated with each regression parameter used for each of the linear regressions exceeded the critical t-value.**

**14.2.2 If not, for each of the linear regression equations, please provide a list of all explanatory variables included whose associated parameter was not significantly different from zero and provide the rationale for still including the variable.**

**Response:**

**14.2**

The pre-specified level of significance for explanatory variables used in all regressions in the Application was 5%. All but two explanatory variables were found to be statistically significant when tested at this level. Seasonal indicators are also included in the models. These indicators are used to take into account seasonal cycles in the data. Though not every seasonal indicator is significant, all are included in order to fully specify and account for seasonal variation.

**14.2.1-2**

Of the 14 explanatory variables used for the Personal loss models, all were significant at or beyond the 5% level.

Of the 12 explanatory variables used for the Commercial loss models, 11 were significant at the 5% level. The explanatory variable for time, which is called the Decimal Date variable, was not significant at the 5% level, but was included in the Commercial Medical Rehabilitation severity model to produce a more stable prediction.

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Of the 13 explanatory variables used for the Personal exposure models, all were significant at the 5% level.

Of the 12 explanatory variables used for the Commercial exposure models, 11 were significant at the 5% level. The Olympic variable was not significant at the 5% level, but was included in the exposure model for buses to take into account the increased number of buses known to be on the road during the Olympic period.

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**2012.1 RR BCOAPO.14.3 Reference: Exhibit B-1, Chapter 3, Exhibit B.0.1, pages 1 and 2 Exhibits B.3.1 and B.3.2 and Exhibit D.0  
Multiple Linear Regression Models**

**Did ICBC test for multicollinearity, autocorrelation, structural break, or heteroskedasticity in any of the regressions estimated? If so, please provide a summary of the results. If not, please explain why not.**

**Response:**

Multicollinearity refers to a high degree of correlation among explanatory variables. ICBC calculates and considers the correlation between the explanatory variables in loss and exposure models to determine if multicollinearity is an issue. Correlations between explanatory variables in all but one model of the Application are low. The lone exception is the Commercial Property Damage frequency model; but due to other considerations including the impact of known events (the recession) and the intuitive appeal of the selected variables, this model was selected. It is noteworthy here that ICBC’s average premium analysis uses principle component analysis to create linear combinations of the explanatory variables that are completely uncorrelated. This is described in more detail in the response to information request 2012.1 RR AIC.12.1.

Autocorrelation is the correlation of error terms in different time periods. ICBC considers plots of residuals versus time to determine if autocorrelation is present. Please see Attachment A – Residual vs. Time Plots for a summary of these results. The expected autocorrelation due to seasonality is handled by including seasonal indicator variables in the models.

Structural breaks are structural changes in a series of data. ICBC does not formally test for structural breaks, but considers changes in social and economic conditions as well as internal factors such as deductible changes in order to detect them. The following structural breaks were recognized in the Application: the recession, affecting multiple coverages in 2008 and 2009; the Crash Responsibility Charge, affecting Property Damage severity prior to 2001; and the introduction of claims initiatives, affecting Bodily Injury severity after 2005. Please refer to Chapter 3, Exhibit D.0 in the Application for the trend selections of the involved coverages.

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Heteroscedasticity refers to non-constant error variance. If heteroscedasticity is present, then the data points on a plot of residuals versus fitted values will not be scattered randomly. Alternative models would be considered in cases where heteroscedasticity is detected. ICBC considers the plots of residuals versus fitted values that are included in Chapter 3, Exhibits B.0.1, B.0.2, and D.0.

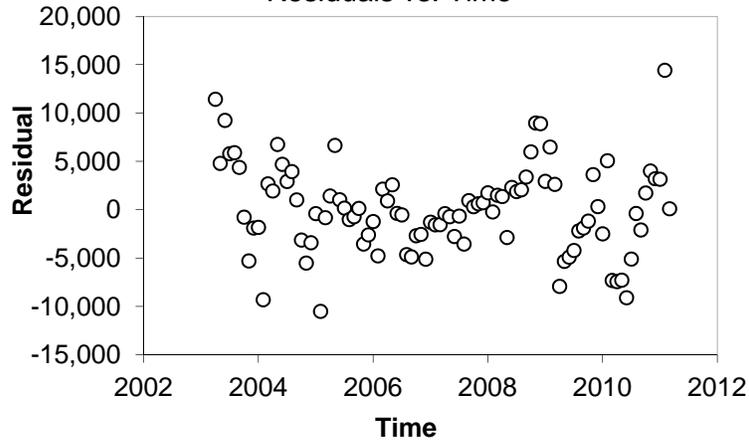


## **2012.1 RR BCOAPO.14.3 – Attachment A – Residual vs. Time Plots**

**Exposure Models**

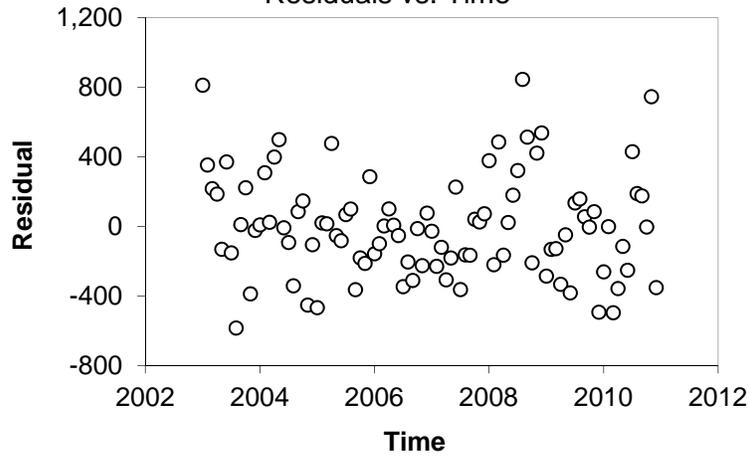
**Personal Exposure**

Residuals vs. Time

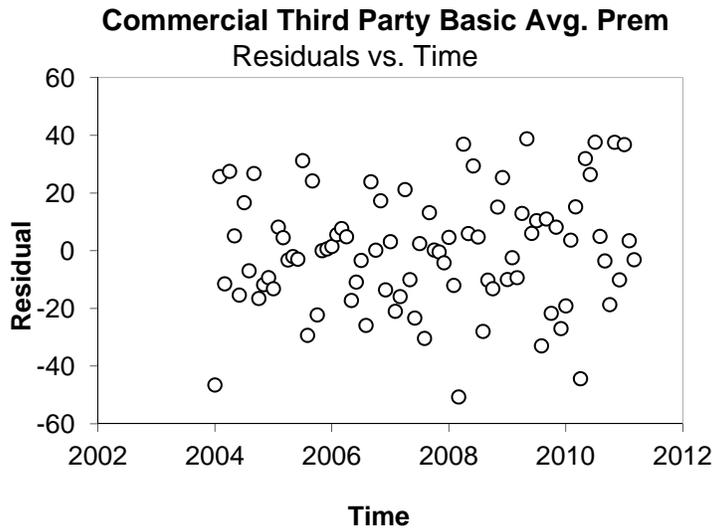
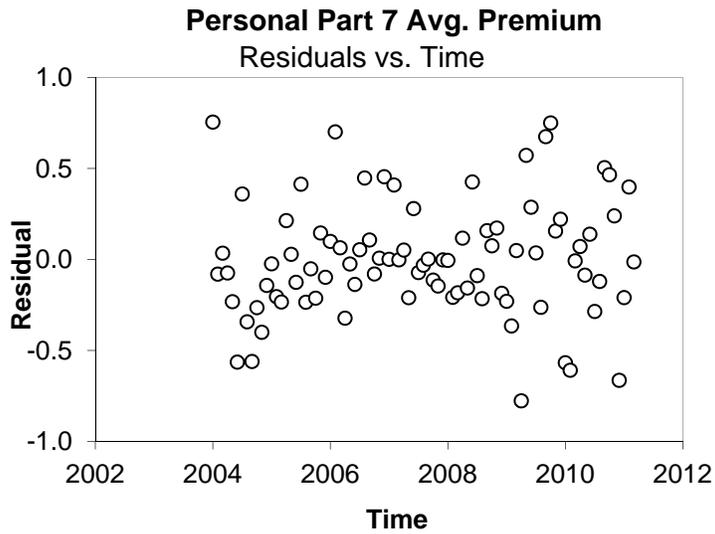
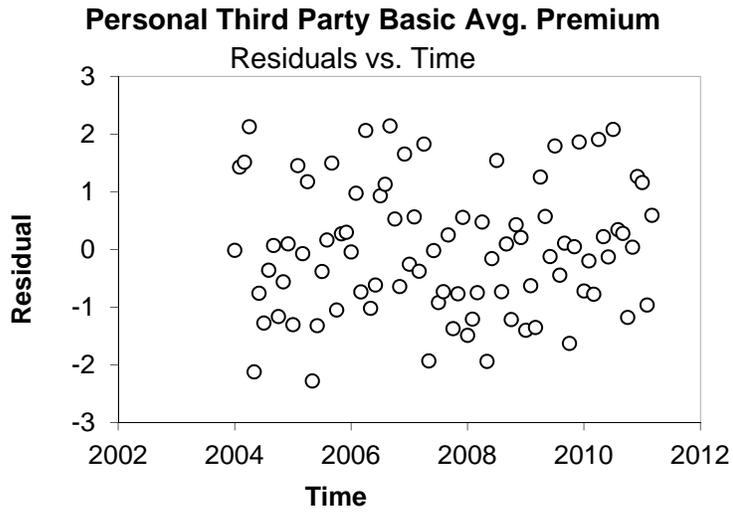


**Commercial Exposure**

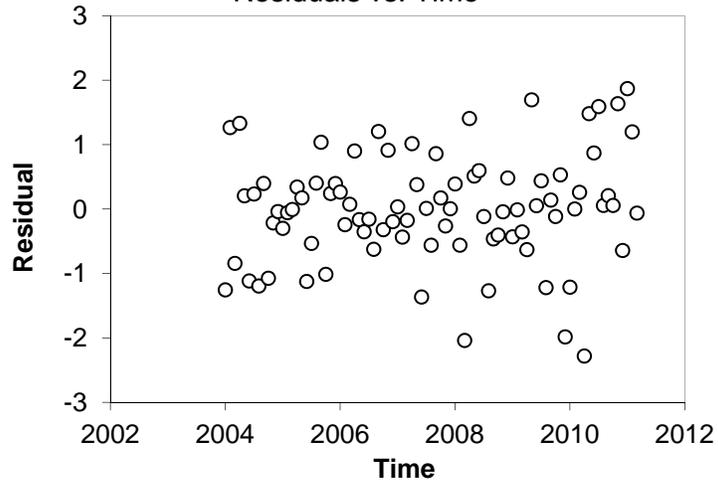
Residuals vs. Time



**Average Premium Models**

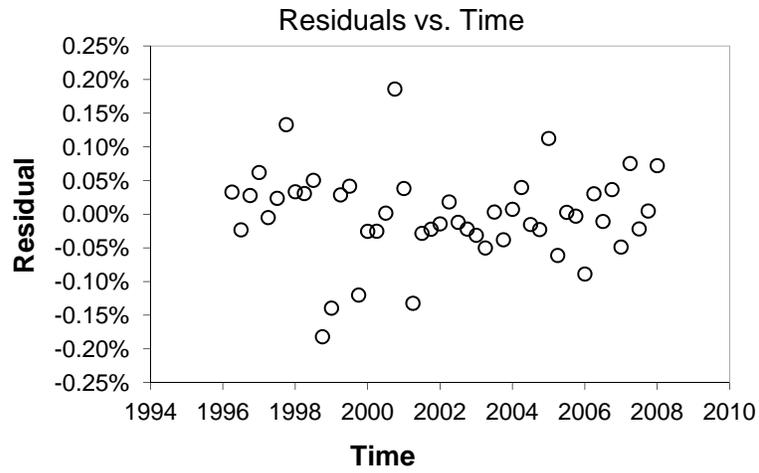


**Commercial Part 7 Avg. Premium**  
Residuals vs. Time

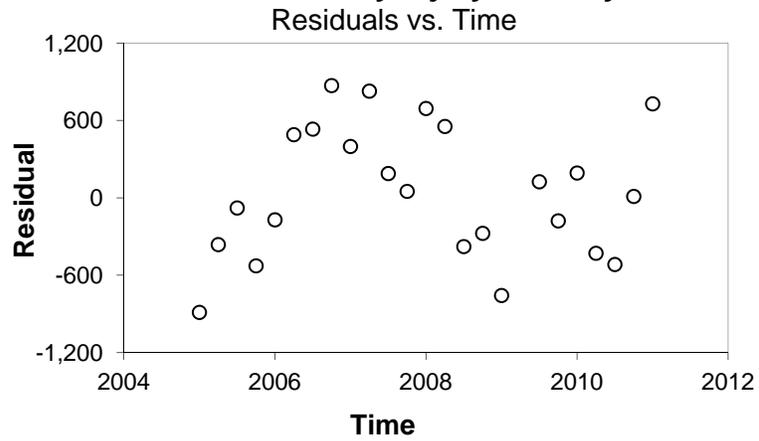


## Frequency and Severity Models

### Personal Bodily Injury Frequency

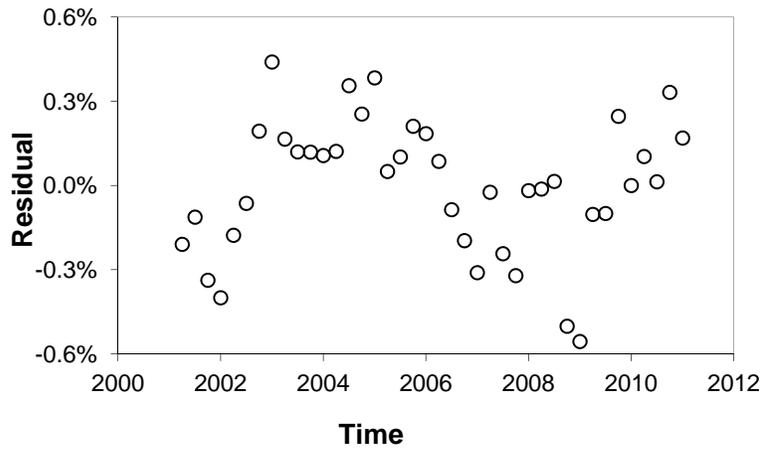


### Personal Bodily Injury Severity



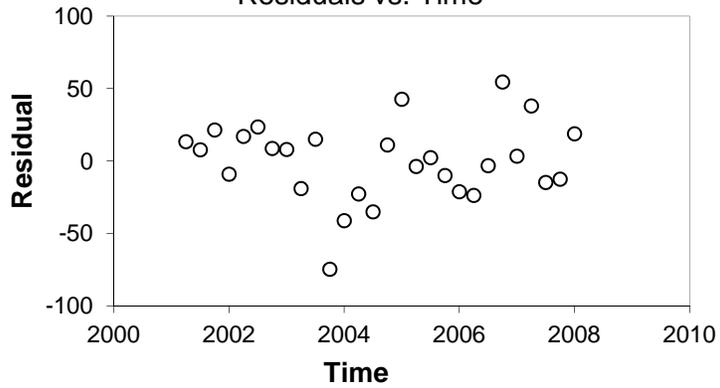
### Personal Property Damage Frequency

Residuals vs. Time



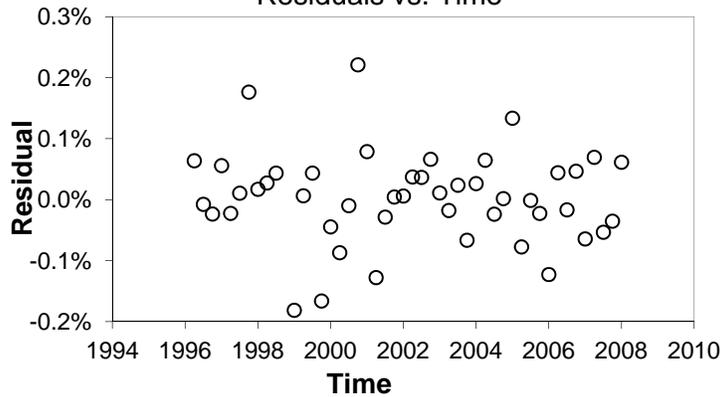
### Personal Property Damage Severity

Residuals vs. Time



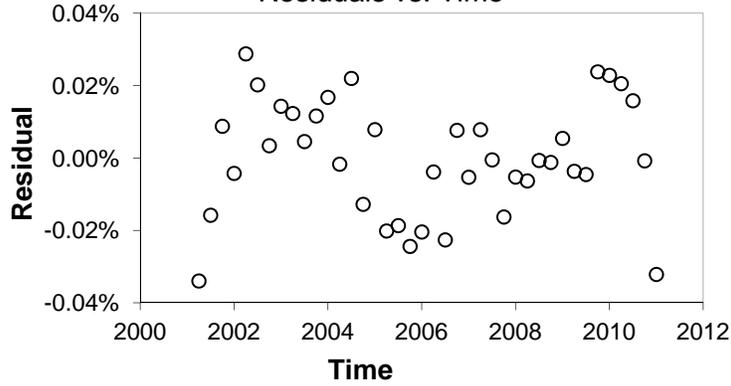
### Personal Medical Rehabilitation Frequency

Residuals vs. Time



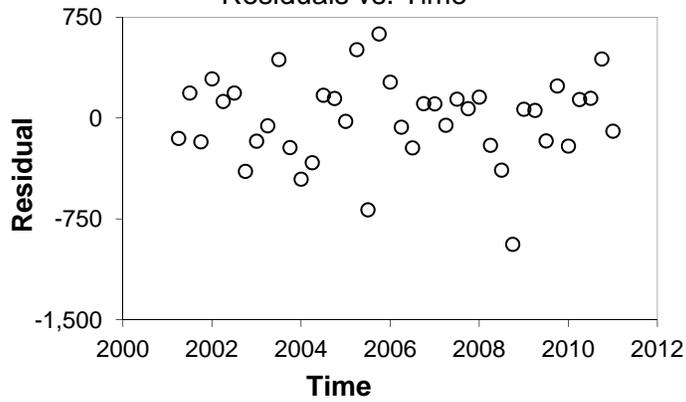
### Personal Weekly Benefits Frequency

Residuals vs. Time



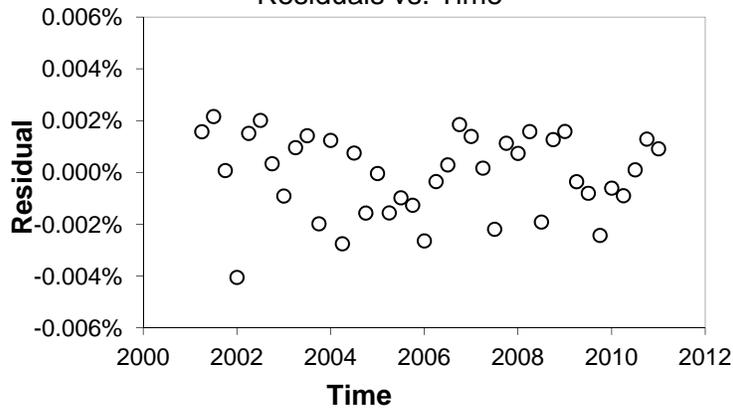
### Personal Weekly Benefits Severity

Residuals vs. Time



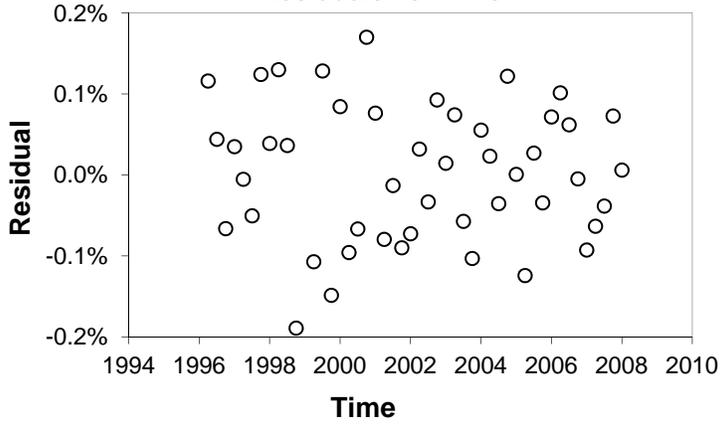
### Personal Death Benefits Frequency

Residuals vs. Time



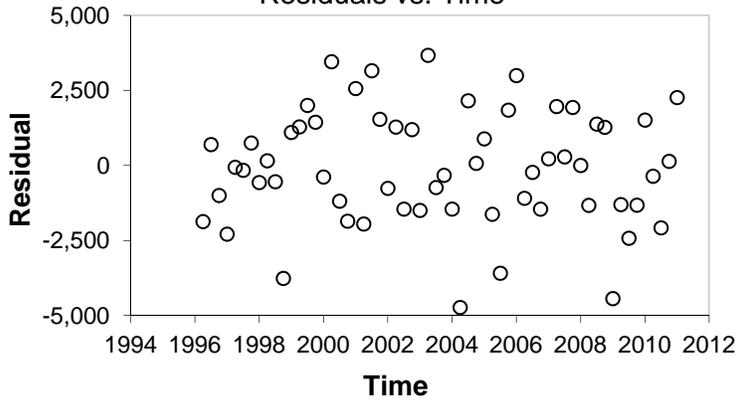
### Commercial Bodily Injury Frequency

Residuals vs. Time



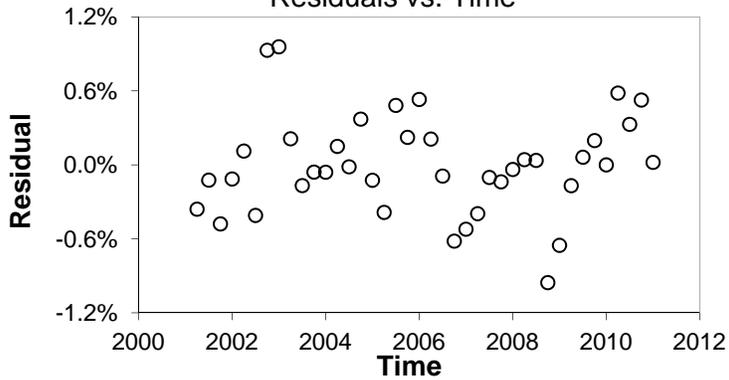
### Commercial Bodily Injury Severity

Residuals vs. Time

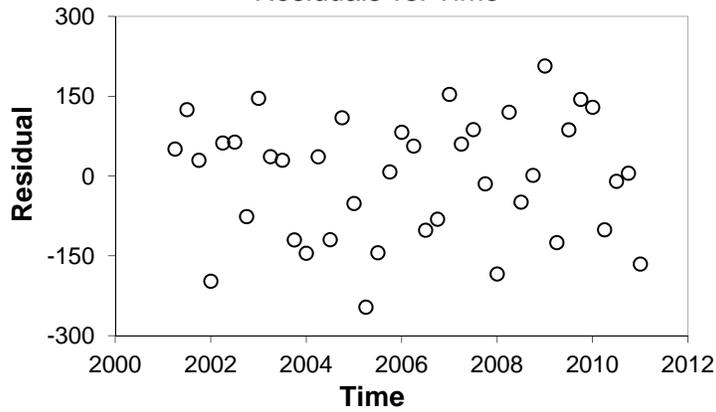


### Commercial Property Damage Frequency

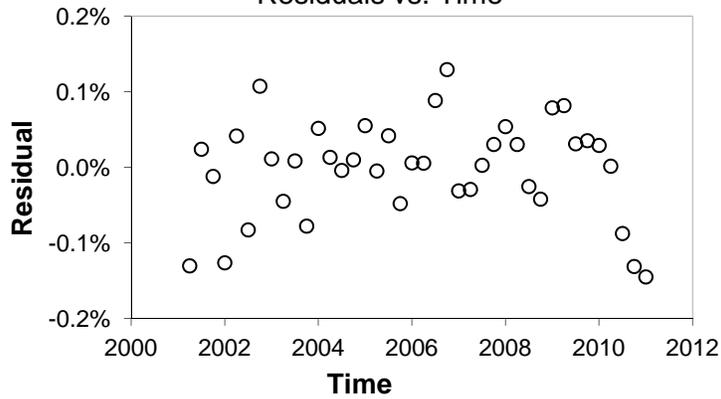
Residuals vs. Time



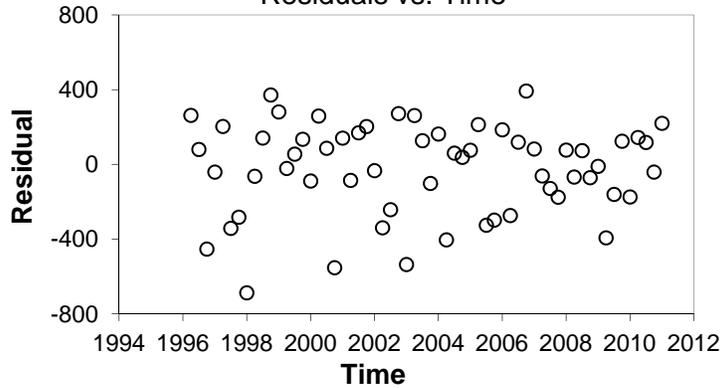
**Commercial Property Damage Severity**  
Residuals vs. Time



**Commercial Medical Rehabilitation Frequency**  
Residuals vs. Time

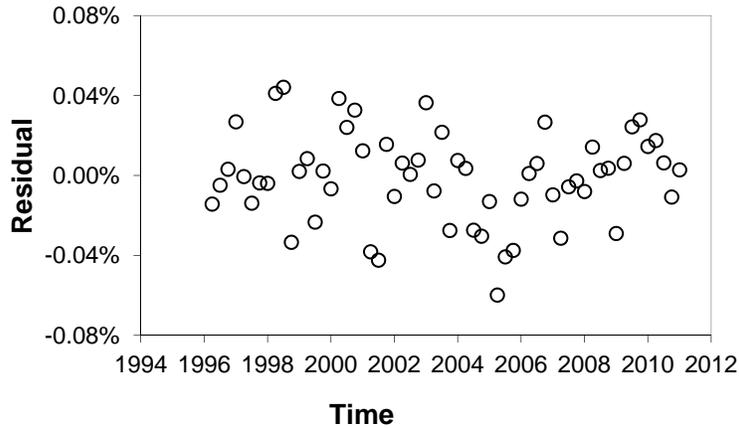


**Commercial Medical Rehabilitation Severity**  
Residuals vs. Time



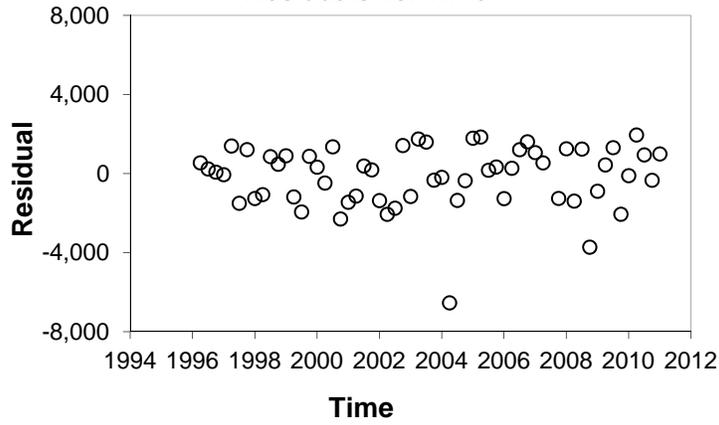
### Commercial Weekly Benefits Frequency

Residuals vs. Time



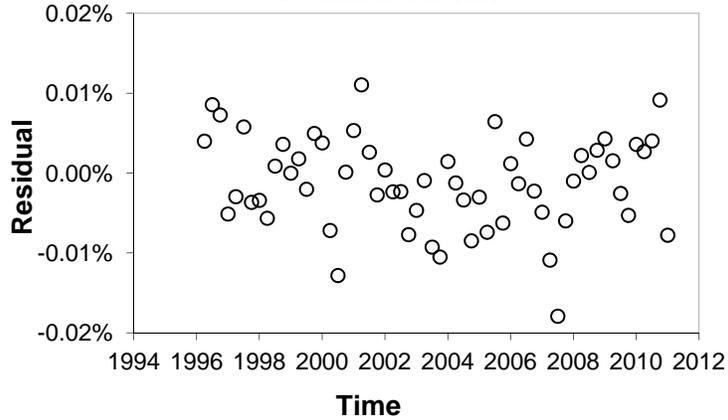
### Commercial Weekly Benefits Severity

Residuals vs. Time



### Commercial Death Benefits Frequency

Residuals vs. Time

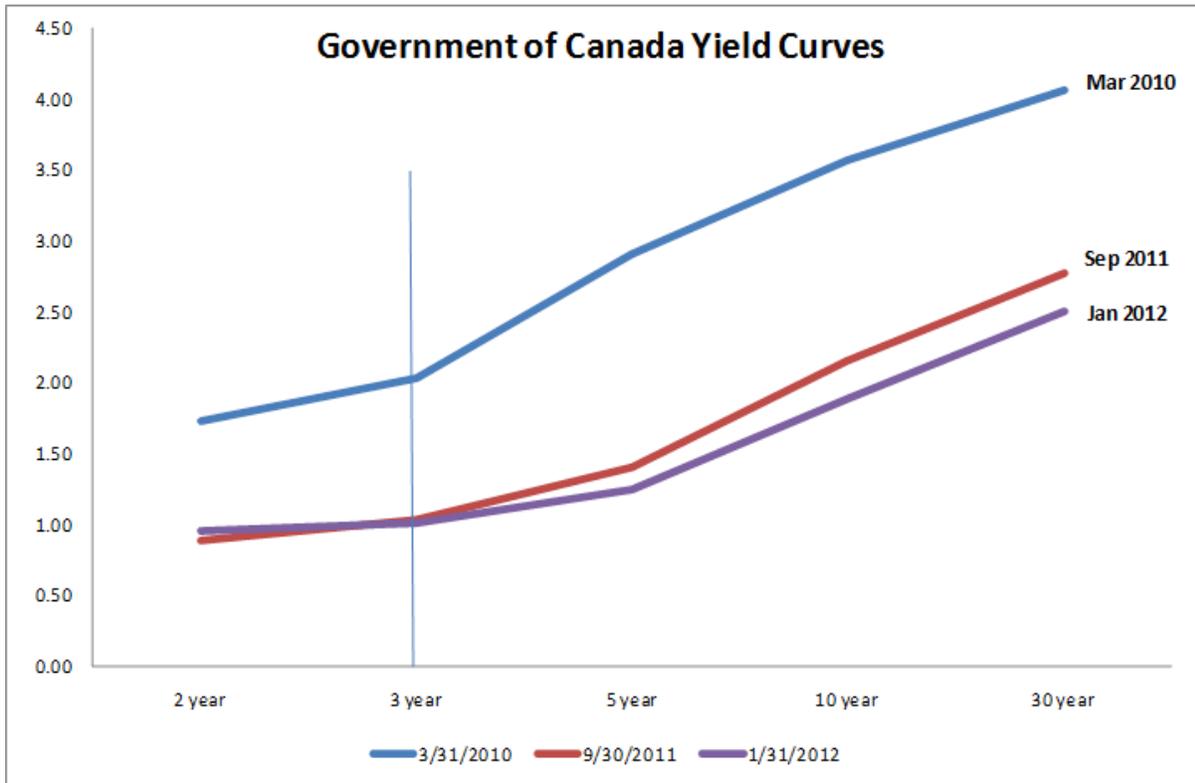


**2012.1 RR BCOAPO.15.1 Reference: Exhibit B-1, Chapter 5, page 5-3, Figure 5.1  
Government of Canada Bond Yield Curves**

**Please update the referenced figure with the most recently available yield curve.**

**Response:**

**Government of Canada Bond Yield Curves**



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**2012.1 RR BCOAPO.15.2 Reference: Exhibit B-1, Chapter 5, page 5-3, Figure 5.1  
Government of Canada Bond Yield Curves**

**Please provide the impact on this application of the update requested.**

**Response:**

Current yields do not have an impact on the Application because forecasted yields, from the referenced financial institutions, are utilised in the calculations. However, it does indicate that Government of Canada bond yields, as of the end of January 2012, were below levels forecasted for Q1 2012 as contained in the Application, Figures 5.3, 5.4, 5.5, and 5.6. This may be an indication that the New Money Rate contained in Chapter 5, Figure 5.8, is overstated.

An updated New Money Rate based on December 2011 forecasts, is detailed in the response to information request 2012.1 RR BCUC.48.1. This updated rate is lower than the New Money Rate used in Chapter 5, Figure 5.8.

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**2012.1 RR BCOAPO.16.1 Reference: Exhibit B-1, Chapter 5, page 5-10 and Appendix 5A  
page 15  
Use of Leverage for Real Estate Investments**

**Does ICBC agree that the increasing use of debt to financing real estate investments  
exposes ICBC to greater risk? If so, why has ICBC increased allowed leverage and how  
has ICBC mitigated this risk? If not, why not?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.53.2.

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**2012.1 RR BCOAPO.17.1 Reference: Exhibit B-1-1, Chapter 7, page 7-4  
Corporate Operating Expenses**

**Regarding management of staffing vacancies, the evidence states that ICBC *“ensures that new staff is only hired to fill vital positions, such as replacement of staff upon attrition or in response to business demand.”***

**Does this imply that ICBC make the assumption every time an employee quits or retires that a new employee is required?**

**Response:**

No, the wording in the quoted paragraph should be clarified. ICBC’s practice has always been that as vacancies arise, managers assess whether the vacancy needs to be filled based on an evaluation of the work requirements. This includes looking at whether the work is required, reviewing the ability to leverage existing staff, or potentially filling the role through regular or temporary staff hiring. The new initiative has been to involve the Executive in the decision as well. Prior to filling any vacancy the Executive or Vice President now needs to provide approval. Executive involvement helps to achieve ICBC’s longstanding objective.

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**2012.1 RR BCOAPO.18.1 Reference: Exhibit B-1-1, Chapter 7, page 7-14, Figure 7.6  
Compensation by Employee Group**

**Please confirm that over the period of 2007-2011, compensation for Bargaining Unit employees increased from \$264M to \$272M representing an average annual increase (compounded) of 0.749%. If unable to so confirm, please explain.**

**Response:**

ICBC confirms that over the period 2007 to 2011, compensation for Bargaining Unit employees increased from \$264 million to \$272 million, representing an average annual increase (compounded) of 0.749%.

BC Old Age Pensioners Organization Information Request No. 2012.1 RR BCOAPO.18.2 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCOAPO.18.2 Reference: Exhibit B-1-1, Chapter 7, page 7-14, Figure 7.6  
Compensation by Employee Group**

**Please confirm that over the period of 2007-2011, compensation for Management and Confidential employees increased from \$103M to \$144M representing an average annual increase (compounded) of 8.74%. If unable to so confirm, please explain.**

**Response:**

ICBC confirms that the average annual increase (compounded) in compensation for Management and Confidential employees from \$103 million to \$144 million over the period of 2007 to 2011 is 8.74%. The increase in Management and Confidential compensation may be attributed to the FTE increases from 855 in 2007 to 1,070 in 2011 outlook, ICBC's adoption of a labour market position for total compensation which impacted compensation rate changes, and employee staff mix.

For further details, please refer to the Application, Chapter 7, page 7-13.

BC Old Age Pensioners Organization Information Request No. 2012.1 RR BCOAPO.19.1 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR BCOAPO.19.1 Reference: Exhibit B-1-1, Chapter 7, page 7-15, Figure 7.7**

**Please confirm that the ratio of BU employees to M&C employees decreased from 4.786 in 2007 to 3.680 in 2011.**

**Response:**

ICBC confirms that the ratio of Bargaining Unit employees to Management and Confidential employees decreased from 4.786 in 2007 to 3.680 in 2011.

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**2012.1 RR CDI.1.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section B.1, para. 22 at p. 3-6  
and para. 28 at p. 3-28  
PY 2010 Loss Cost Forecast Variance**

**In paragraph 22 on p. 3-6, ICBC attributes the Forecast Variance in Basic Loss Cost shown in Figure 3.3 as being mainly due to Basic Bodily Injury claims frequency. It notes that while severity of Bodily Injury claims increased slightly compared to the 2010 forecast, the impact of severities on rate indication was relatively small.**

**Please advise what both the Forecast Frequency Rate was in the 2010 filing and the actual Frequency Rate was for 2010.**

**Response:**

Please note that the policy year 2010 actual bodily injury (BI) frequency is not available, as not all claims from policy year 2010 have yet been reported. Based on the analysis underlying this Application, the current estimate of the BI claims frequency for policy year 2010 is 1.46%. In the 2010 Streamlined Revenue Requirements Application, the forecast for policy year 2010 was 1.37%.

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**2012.1 RR CDI.1.2 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section B.1, para. 22 at p. 3-6  
and para. 28 at p. 3-28  
PY 2010 Loss Cost Forecast Variance**

**In paragraph 22 on p. 3-6, ICBC attributes the Forecast Variance in Basic Loss Cost shown in Figure 3.3 as being mainly due to Basic Bodily Injury claims frequency. It notes that while severity of Bodily Injury claims increased slightly compared to the 2010 forecast, the impact of severities on rate indication was relatively small.**

**Please advise what the Forecast Bodily Injury Basic severity rate was in the 2010 filing and the actual severity rate was for 2010.**

**Response:**

Please note that the policy year 2010 actual bodily injury (BI) claims severity is not available, as not all claims from policy year 2010 have yet been paid. Based on the analysis underlying this Application, the current estimate of BI claims severity for policy year 2010 is \$33,197. In the 2010 Streamlined Revenue Requirements Application, the forecast for policy year 2010 was \$32,908.

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**2012.1 RR CDI.1.3 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section B.1, para. 22 at p. 3-6  
and para. 28 at p. 3-28  
PY 2010 Loss Cost Forecast Variance**

**In paragraph 22 on p. 3-6, ICBC attributes the Forecast Variance in Basic Loss Cost shown in Figure 3.3 as being mainly due to Basic Bodily Injury claims frequency. It notes that while severity of Bodily Injury claims increased slightly compared to the 2010 forecast, the impact of severities on rate indication was relatively small.**

**Given Figures 3.4(a) and 3.4(b) showing, in general, a declining trend in frequency, and Figure 3.8 showing an increase in Bodily Injury Basic severity, please explain how ICBC comes to the conclusion that claims frequency is the driver of Basic Loss Cost and not Bodily Injury severity?**

**Response:**

In response to this request for an explanation of how ICBC comes to the conclusion that claims frequency is the driver of Basic insurance loss cost and not bodily injury (BI) severity, it is important to first understand that the forecast variance in Basic insurance loss cost and the drivers of the Basic insurance loss cost trend are not the same thing.

The forecast variance in Basic insurance loss cost is the difference between the current forecast of Basic insurance loss costs and the forecast underlying the 2010 Streamlined Revenue Requirements Application, for the same point in time. This difference is mainly due to the frequency of BI claims, as described in Chapter 3, Section B.1 in the Application. The actual frequency observed for BI claims is higher than the forecast that was used for the 2010 Streamlined Revenue Requirements Application.

The drivers of Basic insurance loss costs from year to year are distinct from the forecast variance, and relate to the trends in frequency and severity for Basic insurance coverages. ICBC agrees with the observation that in general, BI Basic insurance claims frequency shows a declining trend while BI Basic insurance severity shows an increasing trend. It is important to note that these long-term trends do not mean that future results will always be in the same direction, and there can be significant volatility in future observations compared to the long-term trends. As discussed in Chapter 3, Section B.2, the main driver of the increasing trend in Basic insurance loss costs is the ongoing upward trend in the severity of BI claims.

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As shown in Figure 3.3 and discussed in Chapter 3 in the Application, the forecast variance in Basic insurance loss cost and the trend in Basic insurance loss costs are separate factors influencing the required Basic insurance rate change. The forecast variance is mainly due to the frequency of BI claims, which has emerged higher than was expected. The loss cost trend is mainly driven by the upward trend in the severity of BI claims.

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**2012.1 RR CDI.2.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section D.3, para. 35 iii, p. 3-16  
Investment Income and Premium Financing Plan Revenue**

**Paragraph 35 iii refers to Premium Financing Plan Revenue. ICBC indicates that updated estimates for Premium Financing Plan Revenue show an impact of +0.3 percentage points of the PY 2012 rate indication.**

**Please advise why all policyholders are required to bear this shortfall instead of imposing a fee increase on those taking advantage of ICBC's Premium Financing Plan.**

**Response:**

ICBC charges a fee to policyholders who choose to take advantage of ICBC's premium financing plan. The net revenue from the premium financing plan is included in the actuarial rate level analysis in order to offset the required premium and lower the rates for all policyholders.

Please see the response to information request 2012.1 RR BCUC.16.1 for further details on the amount of this offset included in the actuarial rate level indication analysis.

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**2012.1 RR CDI.3.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section C.3, para. 48, Figure 3.11, p. 3-20  
Impacts on Claims That Have Yet to Occur**

Figure 3.11 shows prospective adjustments made in the 2007 and 2010 applications, all of which met the listed criteria under the Rationale column. Yet at Appendix 3A, Prospective Adjustments, Exhibit C.0.5, p. 4, para. 13, ICBC indicates it cannot quantify the impact of the claims initiatives.

**ICBC was able to quantify Prospective Adjustments in 2007 for the Customer Service Centre. Please advise why it is unable to do so for the Customer Service Centre (now Centralized Claims Injury Centre) for this application?**

**Response:**

ICBC is able to estimate savings associated with the expansion of the Centralized Claims Injury Centre (CCIC). However, such an estimate would not be appropriate to use as a prospective adjustment in the policy year 2012 rate indication analysis.

At the time of the 2007 Revenue Requirements Application, CCIC (then known as the Customer Service Centre) had only recently begun to operate. As a result, its impact on claims costs was not captured in the loss trends, and so a prospective adjustment was needed to reflect its expected incremental impact on claims costs for the forecasted policy year. As discussed in the response to information request 2012.1 RR BCUC.64.1, this is no longer the case. Since the impact of continued CCIC expansion is no longer an incremental savings beyond what is included in the trend, no prospective adjustment for CCIC expansion is required, or appropriate. Inclusion of additional savings for the continued expansion of CCIC would result in double counting of the savings.

**2012.1 RR CDI.4.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.2.2, para. 63- 66, p. 3-24  
Required Premium Calculation**

**Exhibit A.0.0 provides the Indicated Rate Level Change – Basic.**

Insurance Corporation of British Columbia						Exhibit A.0.C
Indicated Rate Level Change - Basic						
For policies becoming effective February 1, 2012						
	(a)		(b)		(c)	
	Projected PY 2012 Premium at Current Rate Level (\$ 000's)	Exhibit Reference	Required PY 2012 Premium (\$ 000's)	Exhibit Reference	Indicated Rate Level Change	
<b>Plate Owner Basic</b>						
Third Party Liability	1,871,854	B.1.1	2,123,199	A.1.1	13.4%	
<b>Part 7</b>	<u>162,907</u>	B.1.1	<u>140,331</u>	A.1.2	<u>-13.9%</u>	
Plate Owner Basic Total	2,034,761		2,263,530		11.2%	
<b>Manual Basic</b>						
Third Party Liability / Part 7	50,950	B.4.1	55,923	A.1.3	9.8%	
<u>Collision / Specified Perils</u>	<u>2,580</u>	B.4.1	<u>2,426</u>	A.1.4	<u>-6.0%</u>	
Manual Total	53,530		58,349		9.0%	
<b>TOTAL BASIC</b>	<b>2,088,291</b>		<b>2,321,879</b>		<b>11.2%</b>	

For Part 7 benefits on this chart, column (a) shows projected PY 2012 Premium at the current rate level producing \$162,907,000 whereas the required PY 2012 Premium is shown in column (b) as producing only \$140,331,000.

Please explain why there is a decrease in Part 7. Would ICBC not expect Part 7 incurred to be increasing at a similar rate to bodily injury and therefore the rate indication increasing accordingly due to the increase in severities?

**Response:**

ICBC would not necessarily expect bodily injury (BI) incurred to be increasing at a similar rate as Part 7 because they have distinctly different cost drivers. For example, BI cost drivers in the

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tort environment within which ICBC operates include general damage and future wage loss payments that the Part 7 coverages do not cover.

By contrast, Part 7 coverage provides defined benefits that do not include general damages, and are administered by application of the provisions of Part 7, rather than through the application of tort law. The defined benefits under Part 7 coverage are also subject to certain limits which act to reduce the influence of inflationary cost pressures on Part 7 coverage, while increasing the inflationary pressure for some BI claims. As a result, the long-term trend for the Part 7 loss cost is driven mainly by the long-term downward frequency trend, which is expected to continue in the future.

The long-term trends for BI and Part 7 loss costs are shown in Figure 3.10 of the Application. This Figure demonstrates that the long-term downward frequency trend is observed in both coverages. For BI claims, this downward frequency trend has acted to partially offset the impact of the unfavourable severity trend, resulting in a moderate upward trend in loss costs. For Part 7, in contrast, the severity trend is relatively flat, so that the downward frequency trend is the main driver of the loss cost trend over time.

**2012.1 RR CDI.5.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.2.2, para. 64, p. 3-24  
Required Premium Calculation**

**In paragraph 64, reference is made to Exhibit A.0.1 which provides a summary of components that make up the Required Premium in a format similar to an income statement. (See below.)**

Insurance Corporation of British Columbia

Exhibit A.0.1

**Summary of the Components of Required Premium  
Policy Year 2012**

(\$ 000's)

<u>Description</u>	<u>Amount</u>	<u>Exhibit Reference / Formula</u>
A. Claims and Related Costs		
(a) Loss and ALAE Payments	2,022,973	A.0.2: Row (e) Col (4)
(b) Claims Expenses (ULAE)	165,674	A.0.2: Row (e) Col (5)
(c) Total Claims and Related Costs	<u>2,188,647</u>	(a) + (b)
B. Expenses		
(d) Operating Expenses		
(e) Road Safety and Loss Management	55,387	H.2 (complete formula provided below)
(f) Operating Costs - Administration and Other	86,608	H.2
(g) Operating Costs - Insurance Services	30,793	H.2
(h) Non-Insurance Expense	90,011	H.2
(i) Total Operating Expense	<u>242,799</u>	sum (d) through (h)
(j) Miscellaneous Expense	95,995	H.4: Row (d) Col (10)
(k) Variable Broker Fee	2,465	A.0.2: Row (e) Col (7b)
(l) Premium Tax	102,163	A.0.2: Row (e) Col (8)
(m) Total Expenses	<u>443,422</u>	sum (j) through (l)
(n) Total Claims and Expenses	2,632,069	(c) + (m)
(o) Capital Provision	36,777	A.0.2: Row (e) Col (11)
(p) Total Projected Costs	2,668,846	(n) + (o)
C. Miscellaneous Revenue and Investment Income		
(q) Servicing Fees for Financing Plans	31,078	H.4: Row (d) Col (3)
(r) Driver Penalty Points & Driver Risk Penalty Premiums	23,735	H.4: Row (d) Col (5)
(s) Short Term Surcharge	13,627	H.4: Row (d) Col (4)
(t) Multiple Crash Premium	816	H.4: Row (d) Col (6)
(u) Investment Income on Basic Equity	58,869	A.0.2: Row (e) Col (3)
(v) Investment Income on Policyholder Supplied Funds	218,644	A.0.2: Row (p)
(w) Total Miscellaneous Revenue and Investment Income	<u>346,969</u>	sum (q) through (v)
(x) Rounding differences	<u>2</u>	
(y) Required Premium	2,321,879	(p) - (w) + (x)
(z) Projected Premium at Current Rate Level	2,088,291	A.0.0
(aa) 2012 Basic Insurance Revenue Surplus / (Deficiency)	(233,586)	(z) - (y)
(ab) Indicated Rate Change	11.2%	-(aa)/(z)

**Using this format, please provide separate columns for A, rows (a) through (w) for both PY 2010 actual results and PY 2011, either actual or forecast.**

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**Response:**

A comparison of the 2010 Streamlined Revenue Requirements Application (2010 SRRA) forecasted results with updated estimates is shown in Attachment A - Summary of the Components of Required Premium with Comparison to Updated Estimates Policy Year 2010. It is important to note that the actual results for policy year (PY) 2010 cannot be precisely determined due to the following reasons:

- 1) Not all claims cost for policy year 2010 have been reported or paid out yet, and
- 2) Investment income, operating expense, and other miscellaneous revenue and expense are not identifiable by policy year.

As a result, the figures presented in column (1) of the Attachment represent updated estimates based on the most recent information available.

There is a considerable difference overall between the forecasted results based on the 2010 SRRA and the updated estimates. The differences in major revenue and cost components and the resulting impact on capital are discussed below.

The actual written premium for PY 2010 is lower by \$35 million than the required premium based on the 2010 SRRA, as shown on line (z). This difference is mainly a result of less exposure growth than was expected, as well as the difference between the indicated rate change of -1.9% and the actual rate change of -2.4%.

The updated estimate of investment income and miscellaneous revenue for PY 2010 is lower by \$88 million than the forecast based on the 2010 SRRA, as shown in line (x). This difference is primarily due to lower yields on investments. As shown in the response to information request 2012.1 RR BCUC.49.1, the New Money Rate forecasted in the 2010 SRRA was 4.93%, whereas based on the actual yields for PY 2010 the New Money Rate would have been 3.67%. Similarly, the Yield on Basic Equity forecasted in the 2010 SRRA was 4.91%, whereas the actual yield for the period was 2.89%.

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The updated estimate of claims costs for PY 2010 is higher by \$114 million than the forecast based on the 2010 SRRA, as shown on line (a). The major driver of this difference is the frequency of bodily injury (BI) claims, which has emerged higher than expected. This is discussed at length in Chapter 3 of the Application. While the 2010 SRRA anticipated a slight recovery from the unusually low BI frequency levels experienced in years 2008 and 2009, the actual experience has been even less favourable. Based on the experience that has since emerged, 2010 BI frequency has risen back to the long-term trend line, and 2011 BI frequency is even above it, as shown in the response to information request 2012.1 RR BCUC.38.1.

The updated estimate of expenses associated with PY 2010 is lower by \$4 million than the forecast based on the 2010 SRRA, as shown on line (m). This is partially due to lower premium tax as a consequence of lower premium than expected as explained above, but the greater part is a result of favourable emergence of operating expenses. Operating expenses associated with PY 2010 are lower than the forecast due to lower compensation costs in 2010 and cost control measures affecting 2011 and 2012, as described further in the response to information request 2012.1 RR BCUC.87.2.

Altogether, the updated estimates show that, mainly due to the combination of higher claims cost and lower investment income, the written premium for PY 2010 is not adequate to cover the costs associated with this policy year. The result of this shortfall in the rates is a depletion of capital in the amount of \$194 million, as shown on line (o). When compared to the capital provision of \$31 million anticipated in the 2010 SRRA, this is a difference of \$224 million. This deterioration of Basic capital leads to an increased requirement for capital to be rebuilt through future Basic insurance rates.

The result for policy year 2011 is not available because the rate analysis for the policy year was not finalized. Please see the response to information request 2012.1 RR BCUC.29.1 for a comparison of the projected values for prior policy years, as well as further discussion of the policy year 2011 rate analysis.



# **2012.1 RR CDI.5.1 – Attachment A – Summary of the Components of Required Premium with Comparison to Updated Estimates Policy Year 2010**

## Summary of the Components of Required Premium with Comparison to Updated Estimates Policy Year 2010

(\$ 000's)

		(1)	(2)	(3) (2)-(1)
		Estimate Updated as of 2011 Q4	PY 2010 RRA	Difference
<u>Description</u>				
A.	Claims and Related Costs			
(a)	Loss and ALAE Payments	1,952,490	1,838,185	114,305
(b)	Claims Expenses (ULAE)	161,772	170,530	(8,758)
(c)	Total Claims and Related Costs	<u>2,114,262</u>	<u>2,008,715</u>	<u>105,547</u>
B.	Expenses			
(d)	Operating Expenses			
(e)	Road Safety and Loss Management	54,355	60,899	(6,544)
(f)	Operating Costs - Administration and Other	62,180	61,120	1,060
(g)	Operating Costs - Insurance Services	30,078	30,079	(1)
(h)	Non-Insurance Expense	86,294	83,409	2,885
(i)	Total Operating Expense	<u>232,907</u>	<u>235,507</u>	<u>(2,600)</u>
(j)	Per-Policy Broker Fee	78,156	77,451	705
(k)	Variable Broker Fee	2,004	2,345	(341)
(l)	Premium Tax	88,802	90,342	(1,540)
(m)	Total Expenses	<u>401,868</u>	<u>405,645</u>	<u>(3,777)</u>
(n)	Total Claims and Expenses	2,516,130	2,414,360	101,770
(o)	Capital Provision/Impact	(193,522)	30,759	(224,281)
(p)	Total Projected Costs	2,322,609	2,445,119	(122,510)
C.	Miscellaneous Revenue and Investment Income			
(q)	Servicing Fees for Financing Plans	27,545	35,641	(8,096)
(r)	Driver Penalty Points & Driver Risk Penalty Premiums	24,528	25,193	(665)
(s)	Short Term Surcharge	13,102	14,101	(999)
(u)	Multiple Crash Premium	709	841	(133)
(v)	Investment Income on Retained Earnings	35,280	65,013	(29,733)
(w)	Investment Income on Policyholder Supplied Funds	203,228	251,106	(47,878)
(x)	Total Miscellaneous Revenue and Investment Income	<u>304,392</u>	<u>391,895</u>	<u>(87,503)</u>
(y)	Rounding differences		1	
(z)	Written/Required Premium	2,018,217	2,053,225	(35,008)

**2012.1 RR CDI.6.1-4 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.4, p. 3-26  
Claims Costs (Ultimate Loss and ALAE) and ULAE Development  
(Exhibits C.0.0 to C.10.7)**

**Exhibit C.1.2.1 is a listing of Basic Bodily Injury Count – Personal as of May 31, 2011 for the accident years 1994 through 2010.**

Insurance Corporation of British Columbia

Exhibit C.1.2.1

Basic Bodily Injury Count - Personal  
as of May 31, 2011

Accident Year	(1) Recorded Claim Count	(2) Data Modification	(3) Data Adjustment	(4) (1) - (2) - (3) Adjusted Recorded Count	(5) Age-to-Age CDF	(6) Age-to-Ultimate CDF	(7) (4)x(6) Ultimate Count
1994	43,120	-	-	43,120	1.0000	1.0000	43,120
1995	45,187	-	-	45,187	1.0000	1.0000	45,187
1996	46,388	-	-	46,388	1.0000	1.0000	46,388
1997	44,606	-	-	44,606	1.0000	1.0000	44,606
1998	45,450	-	-	45,450	1.0000	1.0000	45,450
1999	45,058	-	-	45,058	1.0000	1.0000	45,059
2000	42,604	-	-	42,604	1.0000	1.0001	42,607
2001	43,502	-	-	43,502	1.0000	1.0000	43,504
2002	42,187	-	-	42,187	1.0001	1.0001	42,193
2003	42,067	-	-	42,067	1.0000	1.0002	42,075
2004	40,978	-	-	40,978	1.0001	1.0003	40,990
2005	40,416	-	-	40,416	1.0001	1.0004	40,432
2006	40,620	-	-	40,620	1.0003	1.0007	40,648
2007	40,120	-	-	40,120	1.0008	1.0015	40,179
2008	37,851	-	-	37,851	1.0018	1.0033	37,974
2009	36,226	-	-	36,226	1.0058	1.0091	36,555
2010	37,153	-	-	37,153	1.0134	1.0226	37,992
Total	713,533	-	-	713,533			714,958

**In column 7, the Ultimate count for the years 2008 to 2010 show as 37,974, 36,555 and 37,992 respectively.**

**6.1 Please confirm that the Ultimate count in accident year 2010 is only 18 claims higher than it was in accident year 2008.**

**6.2 Please confirm that the Ultimate count in accident year 2009 was 1,437 claims lower than the 2008 accident year count.**

**6.3 To what does ICBC attribute this reduction in Ultimate count in accident year 2009?**

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**6.4 With reference to column 7, would ICBC agree that its Ultimate counts for the accident years 2008 to 2010 are at historical lows when compared with previous accident years going back to 1994?**

**Response:**

**6.1**

ICBC confirms that the ultimate count in accident year 2010 is 18 claims higher than the ultimate count in accident year 2008.

**6.2.**

The ultimate count in accident year 2009 is 1,419 claims lower than the ultimate count in accident year 2008. The ultimate count in accident year 2009 is 1,437 claims lower than the ultimate count in accident year 2010.

**6.3**

ICBC attributes the reduction in ultimate count in accident year 2009 to unusually dry weather and a declining amount of travel.

**6.4**

ICBC agrees that ultimate count for accident years 2008 to 2010 are at historical lows when compared with previous accident years going back to 1994.

**2012.1 RR CDI.7.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.4, p. 3-26  
Claims Costs (Ultimate Loss and ALAE) and ULAE Development  
(Exhibits C.0.0 to C.10.7)**

**Exhibit C.1.3.1 is the listing for the Ultimate Loss for Basic Bodily Injury – Personal as of  
May 31, 2011 for the accident years 1994 through 2010.**

**Insurance Corporation of British Columbia**

**Exhibit C.1.3.1**

**Basic Bodily Injury - Personal  
Ultimate Loss (\$ 000's)  
as of May 31, 2011**

Accident Year	(1) Incurred Development	(2) Paid Development	(3) Incurred Bornhuetter- Ferguson	(4) Paid Bornhuetter- Ferguson	(5) Selected
1994	604,832	603,763			604,298
1995	636,739	635,577			636,158
1996	646,965	644,140			645,552
1997	617,178	617,247			617,212
1998	610,224	609,534			609,879
1999	624,760	623,200			623,980
2000	632,814	632,816	632,857	632,684	632,815
2001	643,150	644,715	643,097	644,928	643,933
2002	669,427	670,257	669,367	670,512	669,842
2003	730,592	729,236	730,603	729,186	729,914
2004	764,156	770,271	764,213	769,511	767,213
2005	804,923	816,207	805,048	814,150	810,565
2006	822,647	838,855	822,512	839,464	830,751
2007	872,797	885,735	873,099	885,672	879,266
2008	889,205	894,026	889,215	877,964	891,615
2009	935,555	930,008	930,002	899,661	932,782
2010	1,038,362	996,347	1,025,237	1,003,540	1,014,389
<b>Total</b>	<b>12,544,323</b>	<b>12,541,935</b>	<b>8,785,248</b>	<b>8,767,272</b>	<b>12,540,163</b>

**In column (5), the selected Ultimate for the years 2007 to 2010 are 879,266, 891,615, 932,782 and 1,014,389 respectively. Comparing accident year 2009 to 2010, this exhibit shows the Ultimate incurred for Basic Bodily Injury rose by 8.7%.**

**Please explain the reasons for this percentage increase when compared to the percentage increases of 1.4% between 2007 and 2008 and 4.6% between 2008 and 2009.**

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**Response:**

The 8.7% increase in bodily injury (BI) ultimate loss from 2009 to 2010 is primarily driven by BI claims frequency. BI severity is steadily rising over time, but it has emerged near to the levels forecast in the 2010 Streamlined Revenue Requirements Application. In 2008 and 2009, there was a distinct dip in BI claims frequency, as the rate of decline in frequency had accelerated. This favourable development yielded relatively smaller BI ultimate loss amounts and smaller increases between 2007 and 2008, and 2008 and 2009. In contrast, in 2010, BI claims frequency emerged higher than expected. This yielded a larger BI ultimate loss amount in 2010 and a larger increase from 2009 to 2010.

**2012.1 RR CDI.8.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.4, p. 3-26  
Claims Costs (Ultimate Loss and ALAE) and ULAE Development  
(Exhibits C.0.0 to C.10.7)**

**Exhibit C.1.4.1 is a listing of Ultimate ALAE for Bodily Injury – Personal as of May 31, 2011.**

Insurance Corporation of British Columbia

Exhibit C.1.4.1

**Basic Bodily Injury - Personal  
Ultimate ALAE (\$000's)  
as of May 31, 2011**

Accident Year	(1) Development Method	(2) Incremental Method	(3) Bornhuetter-Ferguson Method	(4) Selected =[(2)+(3)]/2
1994	80,156	80,191	80,156	80,173
1995	86,318	86,350	86,318	86,334
1996	95,672	95,671	95,672	95,671
1997	93,807	93,779	93,807	93,793
1998	100,695	100,580	100,695	100,637
1999	98,193	98,105	98,193	98,149
2000	93,962	93,942	93,884	93,913
2001	94,673	94,684	94,739	94,711
2002	97,680	97,751	97,816	97,783
2003	109,390	109,393	109,486	109,439
2004	121,021	120,675	120,847	120,761
2005	133,822	132,604	132,955	132,779
2006	135,331	133,302	134,901	134,102
2007	136,107	134,531	137,181	135,856
2008	128,578	131,598	134,933	133,266
2009	115,449	135,241	136,854	136,047
2010	88,351	146,003	150,154	148,079
<b>Total</b>	<b>1,809,203</b>	<b>1,884,401</b>	<b>1,898,588</b>	<b>1,891,494</b>

**Comparing 2009 to 2010, there is an 8.8% increase and an 11.1% increase between 2008 and 2010.**

**Please explain the reasons for this percentage increase when compared to the percentage increase of 2.08% between 2008 and 2009.**

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**Response:**

The 8.8% increase in bodily injury (BI) ultimate allocated loss adjustment expense (ALAE) from 2009 to 2010 is consistent with the change in the BI ultimate loss over the same period. Because ALAE is expended in the settlement of claims, BI ultimate ALAE generally exhibits a proportional relationship to BI ultimate loss, and this explains the increase in the BI ultimate ALAE from 2009 to 2010. Please see the response to information request 2012.1 RR CDI.7.1 for a discussion of year to year changes in BI ultimate loss.

**2012.1 RR CDI.8.2 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.4, p. 3-26  
Claims Costs (Ultimate Loss and ALAE) and ULAE Development  
(Exhibits C.0.0 to C.10.7)**

**Exhibit C.1.4.1 is a listing of Ultimate ALAE for Bodily Injury – Personal as of May 31, 2011.**

Insurance Corporation of British Columbia

Exhibit C.1.4.1

**Basic Bodily Injury - Personal  
Ultimate ALAE (\$000's)  
as of May 31, 2011**

Accident Year	(1) Development Method	(2) Incremental Method	(3) Bornhuetter-Ferguson Method	(4) =[(2)+(3)]/2 Selected
1994	80,156	80,191	80,156	80,173
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1996	95,672	95,671	95,672	95,671
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1998	100,695	100,580	100,695	100,637
1999	98,193	98,105	98,193	98,149
2000	93,962	93,942	93,884	93,913
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2009	115,449	135,241	136,854	136,047
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<b>Total</b>	<b>1,809,203</b>	<b>1,884,401</b>	<b>1,898,588</b>	<b>1,891,494</b>

**Comparing 2009 to 2010, there is an 8.8% increase and an 11.1% increase between 2008 and 2010.**

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**Please explain why the Development Method shown in column (1) of this exhibit was not used to arrive at the selected Ultimate ALAE, instead of using the formula shown in column (4).**

**Response:**

In computing the amount of ultimate allocated loss adjustment expense (ALAE), the actuaries use methods that are consistent with accepted actuarial practice. Each actuarial method has certain assumptions that are inherent to that method. Before employing a method, the actuaries examine past and present circumstances that affect the claims data to determine if the method's inherent assumptions still hold true. In this case, the ALAE development method assumes that claims settlement practices are stable. This assumption does not hold because recent changes in claims settlement practices have impacted both the timing and amounts of ALAE payments. This can be seen by examining the indicated ultimate ALAE from the ALAE development method for accident years 2008 to 2010. Accident year 2008 is partially impacted and the impact to accident years 2009 and 2010 is more pronounced. The results from the routine application of the ALAE development method are not used because the assumption of stable claims settlement practices do not hold true.

**2012.1 RR CDI.9.1 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.9, para. 103, p. 3-32, Figure 3.13  
Sensitivity Analysis**

Following paragraph 103 is Figure 3.13 – Sensitivity Analysis (below). It outlines several actuarial assumptions to evaluate the sensitivity of the Rate Indication.

**Figure 3.13 – Sensitivity Analysis**

Line No.	Scenario	Impact on Rate Indication
1	Change new money rate from 3.76% to 2.76%	+ 2.7 ppt
2	Change new money rate from 3.76% to 4.76%	- 2.6 ppt
3	Increase annual future severity trend by 1 ppt	+ 2.2 ppt
4	Decrease annual future severity trend by 1 ppt	- 2.2 ppt
5	Increase ratio of ULAE to Loss and ALAE by 1 ppt	+ 0.9 ppt
6	Decrease ratio of ULAE to Loss and ALAE by 1 ppt	- 0.9 ppt
7	Increase average premium trend by 0.1 ppt	- 0.5 ppt
8	Decrease average premium trend by 0.1 ppt	+ 0.5 ppt
9	Increase BI annual future severity trend by 1 ppt	+ 1.5 ppt
10	Increase BI annual future frequency trend by 1 ppt	+ 1.7 ppt
Here "ppt" stands for "percentage point(s)"		

Line number 4 indicates that there would be an impact of –2.2 ppt on the Rate Indication if there was a decrease in annual future severity trend by 1 ppt. What initiatives for handling severities could ICBC put in place to achieve this decrease in the annual future severity trend?

**Response:**

In order to ensure it is taking all appropriate steps to help manage claims costs, ICBC continues to refine existing initiatives, further develop its analysis of the drivers of bodily injury claims costs, and identify strategies, programs, and tactics to address new and emerging pressures. Please see the responses to information requests 2012.1 RR BCUC.62.1 for information on existing initiatives and 2012.1 RR BCUC.63.1 for information on new initiatives.

**2012.1 RR CDI.9.2 Reference: Actuarial Rate Level Indication Analysis  
Exhibit B-1, Chapter 3, Section E.9, para. 103, p. 3-32, Figure 3.13  
Sensitivity Analysis**

Following paragraph 103 is Figure 3.13 – Sensitivity Analysis (below). It outlines several actuarial assumptions to evaluate the sensitivity of the Rate Indication.

**Figure 3.13 – Sensitivity Analysis**

Line No.	Scenario	Impact on Rate Indication
1	Change new money rate from 3.76% to 2.76%	+ 2.7 ppt
2	Change new money rate from 3.76% to 4.76%	- 2.6 ppt
3	Increase annual future severity trend by 1 ppt	+ 2.2 ppt
4	Decrease annual future severity trend by 1 ppt	- 2.2 ppt
5	Increase ratio of ULAE to Loss and ALAE by 1 ppt	+ 0.9 ppt
6	Decrease ratio of ULAE to Loss and ALAE by 1 ppt	- 0.9 ppt
7	Increase average premium trend by 0.1 ppt	- 0.5 ppt
8	Decrease average premium trend by 0.1 ppt	+ 0.5 ppt
9	Increase BI annual future severity trend by 1 ppt	+ 1.5 ppt
10	Increase BI annual future frequency trend by 1 ppt	+ 1.7 ppt
Here "ppt" stands for "percentage point(s)"		

Please build in a scenario to figure 3.13 to see what impact a +1 ppt Yield on Equity would have on the Rate Indication.

**Response:**

If the Yield on Basic Equity were to increase by 1 percentage point from 4.60% to 5.60%, this would have an impact of -0.6 percentage points on the Basic insurance actuarial rate indication.

Please see the response to information request 2012.1 RR BCUC.19.1, Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application and information requests.

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**2012.1 RR CDI.10.1 Reference: Reference: Capital Provisions and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
ICBC's Basic Capital**

**MCT ratio at the end of 2007 was 136%, 141% at the end of 2008, 162.4% at the end of 2009 and 164.6%, restated to 154.5% under IFRS, at the end of 2010.**

**Given the robust MCT for four previous years, how does ICBC explain the precipitate drop to 120% MCT through the first three quarters of 2011?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.40.1.

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**2012.1 RR CDI.10.2 Reference: Reference: Capital Provisions and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
ICBC's Basic Capital**

**MCT ratio at the end of 2007 was 136%, 141% at the end of 2008, 162.4% at the end of 2009 and 164.6%, restated to 154.5% under IFRS, at the end of 2010.**

**Please explain how, even with the proposed increase, the MCT would only be 102% at the end of 2012.**

**Response:**

Even with the proposed Basic insurance rate increase, the MCT would only be 102% at the end of 2012. The proposed Basic insurance rate increase is for policies effective on or after February 1, 2012. While the proposed Basic insurance rate for these policies is adequate and will not adversely affect the MCT ratio in 2012, ICBC will also incur costs associated with the unexpired portion of policies effective prior to February 1, 2012. This will cause the MCT to fall further from the current level to 102% at the end of 2012. Also note that the 11.2% Basic insurance rate increase does not include any provision for capital build as per the 2011 Government Directive regarding Basic Rate Stability and Capitalization.

Please also see the responses to information requests 2012.1 RR BCUC.42.1 and 2012.1 RR CDI.11.1-2.

The 102% MCT at the end of 2012 is based on the 2011 MCT guidelines. Under the 2012 MCT guidelines, the MCT at the end of 2012 would be 107% as explained in the response to information request 2012.1 RR CDI.10.3.

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**2012.1 RR CDI.10.3 Reference: Reference: Capital Provisions and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
ICBC's Basic Capital**

**MCT ratio at the end of 2007 was 136%, 141% at the end of 2008, 162.4% at the end of 2009 and 164.6%, restated to 154.5% under IFRS, at the end of 2010.**

**Was the projected MCT of 102% to the end of 2012 based on Office of the Superintendent of Financial Institutions (OSFI) guidelines in effect in 2011 to determine the MCT ratio or on the 2012 OSFI MCT guidelines?**

**Response:**

The 102% MCT at the end of 2012 was based on the Office of the Superintendent of Financial Institutions (OSFI) guidelines in effect in 2011. Under the 2012 MCT guidelines, the MCT at the end of 2012 is forecast to be 107% as shown in the response to information request 2012.1 RR BCUC.20.3. Also, please note that in the response to information request 2012.1 RR BCUC.43.1, the proposed MCT change to include a foreign exchange risk factor has been delayed until 2013 and this change is estimated to reduce MCT by about 7%. If this change was in effect in 2012, MCT would be reduced from 107% to 100%.

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**2012.1 RR CDI.10.4 Reference: Reference: Capital Provisions and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
ICBC's Basic Capital**

**MCT ratio at the end of 2007 was 136%, 141% at the end of 2008, 162.4% at the end of 2009 and 164.6%, restated to 154.5% under IFRS, at the end of 2010.**

**What are the factors that would see MCT drop to under the 100% target by the end of 2012, but for the proposed rate increase?**

**Response:**

There are two main factors that could cause the MCT ratio to drop to under the 100% regulatory minimum by the end of 2012. One is if the cost to settle bodily injury claims is higher than expected. The second is if investment market volatility continues, which will cause the investment income to be lower than plan. Both factors will directly impact net income and therefore retained earnings. Volatility in investment markets may also decrease the amount of unrealized gains in the investment portfolio. Lower retained earnings and a lower amount of unrealized gains will both reduce capital available and negatively impact the MCT ratio.

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**2012.1 RR CDI.10.5 Reference: Reference: Capital Provisions and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
ICBC's Basic Capital**

**MCT ratio at the end of 2007 was 136%, 141% at the end of 2008, 162.4% at the end of 2009 and 164.6%, restated to 154.5% under IFRS, at the end of 2010.**

**Should the BCUC grant a rate increase of half the requested amount, what effect would that have on MCT?**

**Response:**

The Commission has approved an interim Basic insurance rate increase of 11.2%, which is the full Basic insurance rate increase indicated by ICBC's actuarial rate level indication analysis. Applying the 11.2% Basic insurance rate increase based on the 2011 third quarter Outlook results in a forecast Basic MCT ratio of 102% for 2012. The effect of a Basic insurance rate increase that is lower than the interim rate of 11.2% will reduce MCT ratio for 2012 and future years. Reducing the Basic insurance rate increase by one half for 2012 would result in a Basic MCT ratio of about 95% for 2012 (in comparison to the 102%) and an MCT ratio of about 80% for 2013. ICBC believes that *Special Direction IC2* would preclude the Commission fixing Basic insurance rates that contemplated the MCT ratio dropping below 100%.

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**2012.1 RR CDI.10.6 Reference: Reference: Capital Provisions and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section B, pp. 4-1 to 4-2  
ICBC's Basic Capital**

**MCT ratio at the end of 2007 was 136%, 141% at the end of 2008, 162.4% at the end of 2009 and 164.6%, restated to 154.5% under IFRS, at the end of 2010.**

**Please provide copies of OSFI P&C1 MCT worksheets 30.70, 30.71 and 30.73 or equivalent for MCT Q3 2011 and MCT Q4 2012 projected.**

**Response:**

ICBC does not prepare OSFI P&C1 MCT worksheets on an interim or prospective basis.

The equivalent information, a summary of the MCT calculation at September 30, 2011, may be found in the response to information request 2012.1 RR BCUC.20.2.

The equivalent information, a summary of the MCT calculation at December 31, 2012, may be found in the response to information request 2012.1 RR BCUC.42.1.

Please also see the response to information request 2012.1 RR BCUC.20.3 for a summary of the MCT calculation at December 31, 2012 under the 2012 MCT guidelines.

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**2012.1 RR CDI.11.1-2 Reference: ICBC states in the last paragraph on page 2 of that letter the following:**

**“Setting deficient interim rates will result in capital continuing to erode. In the context of economic claims and investment uncertainty, there is an even stronger rationale for having capital available to withstand future adverse events. Further, any rate deficiency that accumulates between February 1, 2012 and the date of the final decision in this application will have to be recovered over and above the 11.2% for the remainder of the year in order to cover the full costs of providing Basic insurance in policy year 2012.”**

**11.1 Given these comments in Exhibit B-3, is ICBC contemplating a rate deficiency between February 1, 2012 and the final decision?**

**11.2 ICBC indicates that if there is such a rate deficiency, it will have to be recovered over and above the 11.2% rate increase applied for. How does ICBC propose to deal with this possibility in order to cover the full costs of providing Basic insurance for PY 2012?**

**Response:**

**11.1**

No, ICBC is not contemplating a Basic insurance rate deficiency between February 1, 2012 and the date of the final decision, since the Commission has approved the full interim Basic insurance rate increase of 11.2%.

**11.2**

Had the Commission not approved the full interim Basic insurance rate increase of 11.2%, ICBC’s Basic insurance rates would not be adequate to cover the costs of providing Basic insurance. This would result in deterioration of Basic insurance capital in order to cover the costs not covered by the Basic insurance rates, which in turn would result in an increased requirement for capital to be rebuilt through future Basic insurance rates.

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**2012.1 RR CDI.12.1 Reference: Capital Provisions and Impacts of the Change to IFRS  
Exhibit B-1, Chapter 4, Section B, pps. 4-8 and 4-9  
MCT Ratio**

**In paragraph 28 on p. 4-9, the MCT ratio under IFRS was noted as being 154.5% at the end of 2010, declining to 120% at the end of the third quarter of 2011.**

**Has ICBC run Dynamic Capital Adequacy Testing for 2010 when it included the impact of IFRS? If so, please provide copies of the test results.**

**Response:**

ICBC has not included the impact of IFRS in Dynamic Capital Adequacy Testing for 2010.

**2012.1 RR CDI.13.1 Reference: Claims Initiative  
Exhibit B-1, Chapter 6, Section C.3, para. 19., p. 6-5  
Business Indicator Reporting and Data Analysis**

In paragraph 19, ICBC states that since 2006, it has introduced several key reports to identify trends regarding bodily injury claims to aid managers in understanding the drivers of claim costs. In particular, in the second bullet point in this paragraph, ICBC refers to reports that consolidate key measures, such as files newly opened and files newly closed, among other cost drivers.

With respect to file opening and closing from accident years 2006 through to accident year 2011, please provide the bodily injury claims statistics for those accident years by completing the chart below.

**Response:**

Bodily injury (BI) Basic claim count statistics as of May 31, 2011 are shown below:

	<b>AY 2006</b>	<b>AY 2007</b>	<b>AY 2008</b>	<b>AY 2009</b>	<b>AY 2010</b>	<b>AY 2011</b>
BI Claims Reported (including claims closed or denied without payments)	45,083	44,789	42,282	40,109	41,141	14,477
BI Claims Closed without payment	10,951	10,720	9,806	8,977	8,008	1,826
BI Claims Closed with payment	32,629	30,826	26,154	20,304	15,300	2,468
BI Claims Pending as of Q2 2011	1,503	3,243	6,322	10,828	17,833	10,183

While this table provides the information requested, an alternative table is included below that is more informative to enable comparison between accident years and pending claims over time. This table shows BI Basic claim count statistics at 12 months. Accident year 2006 is as of December 31, 2006, accident year 2007 is as of December 2007, and so on. Calendar year BI claims pending at 12 months is also shown below, which is the total number of BI claims open from all accident years as of the end of each calendar year.

	<b>YR 2006</b>	<b>YR 2007</b>	<b>YR 2008</b>	<b>YR 2009</b>	<b>YR 2010</b>	<b>YR 2011</b>
Accident Year BI Claims Reported (including claims closed or denied without payments)	40,405	40,036	37,747	36,373	38,097	39,125
Accident Year BI Claims Closed without payment	8,343	8,392	7,435	6,803	6,832	6,420
Accident Year BI Claims Closed with payment	10,131	10,147	9,427	8,370	10,120	9,622
Calendar Year BI Claims Pending at Year End	51,542	50,543	51,111	51,623	51,486	54,558

**2012.1 RR CDI.14.1 Reference: Operating Expenses and Allocation Information  
Exhibit B-1, Chapter 7, Section D.2.1.2, p. 7-16**

**Paragraph 50 of this chapter deals with ICBC's FTE mix and the forecasted growth in the Management and Confidential Employee group for the years 2007 to 2012.**

**Please outline the growth in Basic policy count and the growth in the Management and Confidential Employee group for the past 15 years by completing the chart below.**

**Response:**

	<b>1995</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>
<b>Autoplan Policies Earned (000's)</b>	2,390	2,614	2,921	3,281
<b>Total FTEs *</b>	3,923 **	6,198 ***	4,880	4,981
<b>Management and Confidential Employee Group – Details:</b>				
<b>FTE Senior Vice President and above</b>	FTE data by employee group not available *	9	5	8
<b>FTE Vice President</b>		12	13	18
<b>FTE Assistant Vice President</b>		5	-	-
<b>FTE Managers</b>		650	568	631
<b>FTE Non-Managers</b>		211	222	311

\* Prior to 2000, the FTE data by employee group is not available. ICBC has revised the chart to add in total FTEs for the 15-year period requested.

\*\* Total FTEs in 1995 did not include staff from the Motor Vehicle Branch, which was transferred to ICBC in 1998.

\*\*\* Beginning in 1998, total FTEs included the integration of Licensing and Commercial Vehicle operations (Motor Vehicle Branch employees in 1998: 791).

For information regarding the growth of FTEs and policies for the 2005 actual to 2012 forecast period, please see the response to information request 2012.1 RR BCUC.86.1.

**2012.1 RR CDI.15.1-2 Reference: Performance Measures  
Exhibit B-1, Chapter 9, Section B.1.3, p. 9.4  
Claims Services Satisfaction (BCUC)**

In paragraph 16 under this section, 2010 Actual Results with respect to the additional survey questions agreed to in the May, 2004 negotiated settlement agreement, paragraph 4.7, are shown at Figure 9.2 below.

**Figure 9.2 – Claims Services Satisfaction (BCUC)**

Survey Question	2010 Actual Results (Claims Services Satisfaction)
Time it took	75%
Helpfulness	78%
Level of knowledge & expertise	83%
Fairness – claims handling	75%
Kept informed	69%
Needs accommodated	75%
Valued and respected	79%
Informed of coverage	76%

In the 2007 filing, the Claims Services Satisfaction survey questions had Actual Results of 80% and higher except for the Kept Informed category at 75%. The 2010 Actual Results of the survey show a low of 69% in the Kept Informed category and only one result above 80%.

**15.1 Can ICBC give reasons for the decline in the results of the Claims Services Satisfaction survey?**

**15.2 What steps does ICBC have in mind to bring those results back to the 2006 Actual Results in the 2007 ICBC filing?**

**Response:**

The Claims Services Satisfaction (BCUC) measure, as agreed in the May 2004 Negotiated Settlement Agreement, surveys bodily injury (BI) claimants, accident benefit claimants, and claimants under collision, property damage, and glass coverages as to their overall satisfaction with ICBC. It is important to understand when looking at the Claims Services Satisfaction

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(BCUC) measure that BI and accident benefit claims can be adversarial and complex by nature, as they deal primarily with liability, extent of injury, and entitlement to financial compensation. In particular, many of the accident benefit claimants are the liable party in a crash. Similarly, collision claims involve those who are the liable party in a crash.

The Claims Service Satisfaction (BCUC) score in 2006 was 80% and increased to 84% in 2010, demonstrating a higher overall satisfaction with ICBC, despite lower score on the underlying eight survey questions.

The Claims Service Satisfaction (BCUC) is a measure of overall customer satisfaction of their entire experience, whereas the eight survey questions measure specific aspects of the customer's experience. While there is a correlation between the results, it is not a perfect correlation. Answers to the survey questions may be influenced by a variety of factors such as changes to product, business changes, and customers' interactions with other parties such as plaintiff counsel and external suppliers. These factors make it difficult to identify the causes for changes in the results.

ICBC is focusing on improving the customer experience through programs such as "Connecting with your Customer" as described in the response to information request 2012.1 RR BCUC.67.1.

Don Rosenbloom Information Request No. 2012.1 RR DR.1 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DR.1 Reference:**

**What were the total amounts that ICBC expended on advertising and marketing for insurance services (excluding amounts expended on advertisements regarding road safety issues) in each of the years 2010 and 2011 and how were those amounts attributed to “Basic Coverage” and to “Optional Coverage”?**

**Response:**

ICBC spent \$3.4 million in 2010 and \$3.8 million in 2011 for all advertising and marketing costs, excluding road safety campaigns.

In 2010, \$1.7 million was allocated to Basic insurance, \$0.3 million was allocated to Non-insurance, and \$1.4 million was allocated to Optional insurance. In 2011, \$1.9 million was allocated to Basic insurance, \$0.3 million was allocated to Non-insurance, and \$1.6 million was allocated to Optional insurance. These allocations were derived by using the Commission-approved financial allocation methodology. As described in Chapter 8, page 8-2 of the Application, operating expenses related to Non-insurance expenses are included in Basic insurance rates.

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**2012.1 RR DR.2 Reference:**

**2. Explain and provide a breakdown of the 2010 and 2011 expenditures on advertising and marketing mentioned above by disclosing the following:**

**(a) The nature of each advertising campaign, describing generally:**

**(i) the message delivered;**

**(ii) the method chosen to deliver each of these messages, e.g. T.V., radio, print, etc.; and**

**(iii) the exact expenditure for each of these campaigns.**

**Response:**

ICBC conducted three advertising campaigns (excluding Road Safety awareness campaigns) in 2010 and 2011: "Remember, Drive Smart", "Demystifying ICBC", and "Share a Wave and Win". The remainder of the costs in 2010 and 2011 were not related to campaigns. In 2010, ICBC spent approximately \$0.6 million on non-campaign costs including photography, brochures, regulatory process notifications, and agency administration and consultation fees. In 2011, \$0.4 million was spent on non-campaign costs including photography, brochures, regulatory process notifications, and agency administration and consultation fees.

For details about the "Remember, Drive Smart", "Demystifying ICBC", and "Share a Wave and Win" campaigns, please see the response to information request 2012.1 RR IBC 25.1.

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**2012.1 RR DR.3 Reference:**

**3. In particular, with respect to the advertising and marketing campaign featuring Ms. Vicki Gabereau, provide the following information in addition to your responses above:**

- (a) the portion of the expenditure that was attributed to “Basic Coverage”;**
- (b) the portion of the expenditure that was attributed to “Optional Coverage”;**
- (c) the number of TV spots purchased;**
- (d) the period of time over which the TV spots were broadcast;**
- (e) the number of TV spots purchased from all broadcasters during NHL hockey programming;**
- (f) the cost to ICBC per spot and per game of running these ads during the finals of the Stanley Cup playoffs;**
- (g) the production costs of these ads, including payment to Ms. Gabereau for her involvement; and**
- (h) the verbatim content of each of the ads that were part of the series featuring Ms. Gabereau.**

**Response:**

**3(a) and (b)**

In 2010, the allocation for the “Demystifying ICBC” campaign was 47.0% to Basic insurance, 14.3% to Non-insurance, and 38.7% to Optional insurance. In 2011, the campaign allocation was 45.7% to Basic insurance, 14.8% to Non-insurance, and 39.5% to Optional insurance. As described in Chapter 8, page 8-2 of the Application, operating expenses related to Non-insurance expenses are included in Basic insurance rates.

The “Demystifying ICBC” campaign falls within the expenses of the Marketing Communications Department (previously known as Marketing and Broker Services). The expenses of the department are allocated on a corporate shared services basis, with exception (being for Road Safety); the departmental expense allocator is Commission-approved. “Demystifying ICBC” is

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allocated on a corporate shared services basis because it addresses both insurance and driver licensing topics (driver licensing being Non-insurance).

**3(c) and (d)**

A total of 1,094 television spots were purchased and ran over the period November 2010 through June 2011.

**3(e)**

Only CBC hockey broadcast time was purchased. A total of 71 television spots were purchased for broadcast during hockey; 34 of which were purchased during the hockey playoffs, including the Stanley Cup finals.

**3(f)**

The average cost to air each television spot during the Stanley Cup finals was \$3,000.

**3(g)**

Television was only one component of the campaign. The cost of production for television, radio, print, and online, including payment to Ms. Gabereau, was \$398,000.

**(h)**

There were 6 television ads as follows:

**“Roundabouts”**

I’m learning a lot on this job. Like how to do-si-do a roundabout. Before you enter, yield to traffic already in the roundabout coming from your immediate left. That’s it.

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I discovered that last year ICBC contributed \$8.1 million to road improvements like roundabouts which reduce crashes and save lives.

So the premiums you and I pay are helping make the roads safer for all of us - drivers, cyclists and pedestrians.

Group hug anyone? Ok, maybe later.

Learn more about what I've learned at [icbc.com](http://icbc.com).

**“Car insurance”**

The old Vicki would buy car insurance without even knowing what she was paying for. The new Vicki is learning about things like Collision and Third Party Liability.

ICBC's Collision insurance covers my car if I hit something. Like another car or a tree.

Third Party Liability coverage protects me from having to pay for someone else's injuries or property damage if I crash into them. Not that that would ever...

Learn more about what I've learned at [icbc.com](http://icbc.com).

**“Number of crashes”**

I always thought a small number of drivers had most of the crashes.

Turns out over 1.2 million drivers have had a crash in the last five years.

That's one out of every three of us making a claim.

Now, we all want to keep our rates low, right? So let's all drive a little smarter. The roads would be safer and we wouldn't have so many of these.

Learn more about what I've learned at [icbc.com](http://icbc.com).

**“Travel U.S.”**

I thought if I got into a crash in the States during one of my shopping expeditions, ICBC couldn't help me until I got back to beautiful British Columbia.

I've learned that if you have a crash anywhere in Canada or the U.S. and you need a tow, or repairs, or a rental car to help you get home safely, all you have to do is call ICBC Dial-a-Claim, toll free 24/7.

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And, if you happen to find a pair of snappy red pumps, call me.

Learn more about what I've learned at [icbc.com](http://icbc.com).

**“Guaranteed repairs”**

Getting into a crash is stressful enough. How do I find a shop that'll do a good job fixing my baby?

I've learned that ICBC's accredited auto body shops will make sure you receive quality repairs. ICBC works with them to ensure that they meet the highest industry standards.

And, the best part, they guarantee their work for as long as you own the car.

Learn more about what I've learned at [icbc.com](http://icbc.com).

**“Buying a used Car”**

When you're buying a used car how do you know you're not getting someone else's problems?

I've learned ICBC has a free online service that can give some basic history of the vehicle. Like was it rebuilt, salvaged or altered?

On [icbc.com](http://icbc.com) you can also buy more detailed vehicle history reports that tell you if the vehicle's ever been involved in an insurance claim in BC, other provinces or the states.

Remember, when you're buying used do your research and keep your wits about you. If it looks too good to be true, yeah, it probably is.

Learn more about what I've learned at [icbc.com](http://icbc.com).

Don Rosenbloom Information Request No. 2012.1 RR DR.4 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DR.4 Reference:**

**During the years 2010 and 2011, did ICBC own or rent a box at GM Place (now Rogers Arena), and if so, what were the costs associated with ICBC's use of that facility?**

**Response:**

ICBC does not own or rent a box at GM Place (now Rogers Arena), nor did it in 2010 or 2011.

Don Rosenbloom Information Request No. 2012.1 RR DR.5 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DR.5 Reference:**

**During the years 2010 and 2011, did ICBC purchase or receive tickets at GM Place (now Rogers Arena), either for use by employees or for use as complementary gifts, and if so, what were the costs associated with the use of those tickets?**

**Response:**

ICBC has not purchased or received tickets at GM Place (now Rogers Arena) for use by employees or as complimentary gifts, in 2010 or 2011.

Frank Duck Information Request No. 2012.1 RR DUCK.1.a Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DUCK.1.a Reference: ICBC states at 5-4 of Volume 1, “Since a change in the New Money Rate has a large impact on the actuarial rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the actuarial rate indication to that movement, ICBC updated this key component to incorporate the most up to date information possible.” These questions below should be answered for both the new money rate and the basic equity rate.**

**Please update the actuarial rate indication results based on the yield forecasts not of mid-September 2011, but the most current available (i.e. early 2012).**

**Response:**

The most current New Money Rate and Yield on Basic Equity are as of December 31, 2011 and they are 3.13% and 4.00%, respectively. If these rates were incorporated in the actuarial rate indication analysis, this would have an impact of +2.1 percentage points on the Basic insurance actuarial rate indication.

Alternative assumptions have been used for sensitivity testing, and do not necessarily result in an updated rate indication that is appropriate in light of the most recent information available. ICBC has provided a rate level indication that is based on updated assumptions and considers the most recent information in the response to information request 2012.1 RR BCUC.5.1.

Please see information request 2012.1 RR BCUC.19.1, Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application and information requests.

Frank Duck Information Request No. 2012.1 RR DUCK.1.b Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DUCK.1.b Reference: ICBC states at 5-4 of Volume 1, “Since a change in the New Money Rate has a large impact on the actuarial rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the actuarial rate indication to that movement, ICBC updated this key component to incorporate the most up to date information possible.” These questions below should be answered for both the new money rate and the basic equity rate.**

**What was the actuarial rate indication had “...the most up to date information possible” not been used and what was the date of these interest rate forecasts?**

**Response:**

The New Money Rate and Yield on Basic Equity, prior to the update of rates in the current Application, are as of March 31, 2011 and they are 5.06% and 4.69%, respectively. If these rates were incorporated in the actuarial rate indication analysis, this would have an impact of -3.3 percentage points on the Basic insurance actuarial rate indication.

Alternative assumptions have been used for sensitivity testing, and do not necessarily result in an updated rate indication that is appropriate in light of more recent information.

Please see the response to information request 2012.1 RR BCUC.19.1, Attachment A – Sensitivity Analysis for a list of sensitivity scenarios discussed in the Application and information requests.

Frank Duck Information Request No. 2012.1 RR DUCK.1.c Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DUCK.1.c Reference: ICBC states at 5-4 of Volume 1, “Since a change in the New Money Rate has a large impact on the actuarial rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the actuarial rate indication to that movement, ICBC updated this key component to incorporate the most up to date information possible.” These questions below should be answered for both the new money rate and the basic equity rate.**

**What gave ICBC the incentive to NOW change its methodology for determining its new money rates?**

**Response:**

ICBC has not changed its methodology for determining the New Money Rate or Yield on Basic Equity. The New Money Rate and Yield on Basic Equity are calculated based on formulas that ICBC continues to believe are appropriate.

ICBC’s revenue requirements analysis is based on consideration of the most up-to-date information available. While the process of analysis must begin with assumptions struck at a certain point in time, ICBC also considers any assumptions that change as the analysis proceeds. If previous assumptions are no longer reasonable in light of new information, then ICBC will update these assumptions.

ICBC did not foresee the significant volatility of the investment markets and the associated reduced interest rates that occurred in the latter part of 2011 (see, for example, the response to information request 2012.1 RR DUCK.19.e). In light of the significant reduction to interest rates, the New Money Rate calculated as of March 31, 2011 was no longer a reasonable assumption for future investment returns on premium collected in policy year 2012.

Frank Duck Information Request No. 2012.1 RR DUCK.1.d Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DUCK.1.d Reference: ICBC states at 5-4 of Volume 1, “Since a change in the New Money Rate has a large impact on the actuarial rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the actuarial rate indication to that movement, ICBC updated this key component to incorporate the most up to date information possible.” These questions below should be answered for both the new money rate and the basic equity rate.**

**If ICBC believed it should adopt this change, why didn’t it recommend to the Government that this element also be adopted in the Government Directive?**

**Response:**

Please see the responses to information requests 2012.1 RR DUCK.1.c and 2012.1 RR DUCK.10.b.

**2012.1 RR DUCK.1.e Reference: ICBC states at 5-4 of Volume 1, “Since a change in the New Money Rate has a large impact on the actuarial rate indication, and given how much movement there was in the forecast yield curve and the sensitivity of the actuarial rate indication to that movement, ICBC updated this key component to incorporate the most up to date information possible.” These questions below should be answered for both the new money rate and the basic equity rate.**

**For previous fiscal years, please demonstrate with quantitative evidence that the actuarial rate indication was LESS sensitive to changes in interest rates than now.**

**Response:**

The following table shows the comparison of interest rate sensitivities of the actuarial rate indication using the New Money Rate sensitivities as stated in Figure 3.13 of the Application and in Figure 3.12 of the 2010 Streamlined Revenue Requirements Application (2010 SRRA).

		<u>Impact on Rate Indication</u>	
	<b>New Money Rate (NMR)</b>	<b>NMR -100 Basis Points</b>	<b>NMR +100 Basis Points</b>
<b>The Application</b>	3.76%	+2.7 ppt	-2.6 ppt
<b>2010 SRRA</b>	4.93%	+2.3 ppt	-2.2 ppt

The table above shows that the actuarial rate indication for policy year 2010 was less sensitive to a 100 basis point change in New Money Rate than the actuarial rate indication for policy year 2012.

There are two drivers of this difference: the change in cash flows and the lower New Money Rate applicable to policy year 2012.

Attachment A – Policy Year 2012 Investment Income Sensitivity demonstrates that a 100 basis point decrease in the New Money Rate for policy year 2012 would result in a \$54 million decrease in policy year 2012 investment income. This decrease would lead to an increase in the rate indication.

Frank Duck Information Request No. 2012.1 RR DUCK.1.e Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 2 of 2
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In comparison, Attachment B – Policy Year 2010 Investment Income Sensitivity, demonstrates through a corresponding calculation that a 100 basis point decrease in the New Money Rate for policy year 2010 would have resulted in a \$46 million decrease in policy year 2010 investment income. This is smaller than the impact of \$54 million for a 100 basis point decrease for policy year 2012, and so would have led to a smaller increase in the actuarial rate indication.



# **2012.1 RR DUCK.1.e – Attachment A – Policy Year 2012 Investment Income Sensitivity**

**Total Cash Flow from Revenue Requirements Application for the Policy Year 2012**

	(1)	(2)	(3) (1) * (2)	(4)	(5) (1) * (4)	(6)	(7) (1) * (6)	
		Discount at	3.76%	Discount at	4.76%	Discount at	2.76%	
Time	Total Cash Flow	Discount Factor	Discounted Cash Flow	Discount Factor	Discounted Cash Flow	Discount Factor	Discounted Cash Flow	
Year 1 - Q1	537,229	1.0328	554,863	1.0415	559,539	1.0241	550,181	
Year 1 - Q2	498,266	1.0233	509,894	1.0295	512,960	1.0172	506,817	
Year 1 - Q3	451,203	1.0139	457,492	1.0176	459,140	1.0103	455,833	
Year 1 - Q4	391,028	1.0046	392,836	1.0058	393,308	1.0034	392,361	
Year 2 - Q1	(212,671)	0.9954	(211,692)	0.9942	(211,439)	0.9966	(211,949)	
Year 2 - Q2	(189,336)	0.9863	(186,733)	0.9827	(186,063)	0.9898	(187,413)	
Year 2 - Q3	(145,129)	0.9772	(141,819)	0.9714	(140,971)	0.9831	(142,680)	
Year 2 - Q4	(122,922)	0.9682	(119,016)	0.9601	(118,021)	0.9765	(120,028)	
Year 3	(310,923)	0.9461	(294,177)	0.9326	(289,974)	0.9600	(298,481)	
Year 4	(333,702)	0.9119	(304,287)	0.8902	(297,077)	0.9342	(311,744)	
Year 5	(312,202)	0.8788	(274,366)	0.8498	(265,309)	0.9091	(283,825)	
Year 6	(200,269)	0.8470	(169,621)	0.8112	(162,455)	0.8847	(177,176)	
Year 7	(100,833)	0.8163	(82,308)	0.7743	(78,078)	0.8609	(86,811)	
Year 8	(52,935)	0.7867	(41,643)	0.7391	(39,127)	0.8378	(44,349)	
Year 9	(11,934)	0.7582	(9,048)	0.7056	(8,420)	0.8153	(9,730)	
Year 10	(11,786)	0.7307	(8,612)	0.6735	(7,938)	0.7934	(9,351)	
Year 11	(11,535)	0.7042	(8,123)	0.6429	(7,416)	0.7721	(8,906)	
Year 12	(11,606)	0.6787	(7,877)	0.6137	(7,123)	0.7514	(8,721)	
Year 13	(11,588)	0.6541	(7,580)	0.5858	(6,788)	0.7312	(8,473)	
Year 14	(3,331)	0.6304	(2,100)	0.5592	(1,863)	0.7115	(2,370)	
Year 15	(3,318)	0.6076	(2,016)	0.5338	(1,771)	0.6924	(2,298)	
Year 16	(3,314)	0.5856	(1,940)	0.5095	(1,688)	0.6738	(2,233)	
Year 17	(3,305)	0.5643	(1,865)	0.4864	(1,607)	0.6557	(2,167)	
Year 18	(3,300)	0.5439	(1,795)	0.4643	(1,532)	0.6381	(2,106)	
Year 19	(457)	0.5242	(239)	0.4432	(202)	0.6210	(284)	
Year 20	(457)	0.5052	(231)	0.4230	(193)	0.6043	(276)	
Year 21	(457)	0.4869	(222)	0.4038	(184)	0.5881	(269)	
Year 22	(457)	0.4692	(214)	0.3855	(176)	0.5723	(261)	
Year 23	(457)	0.4522	(207)	0.3680	(168)	0.5569	(254)	
Year 24	(457)	0.4358	(199)	0.3512	(160)	0.5419	(247)	
Year 25	(457)	0.4200	(192)	0.3353	(153)	0.5274	(241)	
Year 26	(457)	0.4048	(185)	0.3200	(146)	0.5132	(234)	
<b>Total</b>	<b>(181,867)</b>	<b>(8)</b>	<b>36,777</b>	<b>(9)</b>	<b>88,902</b>	<b>(10)</b>	<b>(17,684)</b>	<b>(11)</b>
<b>Investment Income (\$ '000s)</b>			<b>218,644</b>	<b>(12)</b>	<b>270,769</b>	<b>(13)</b>	<b>164,182</b>	<b>(14)</b>
<b>Change in Investment Income (\$ '000s)</b>					<b>52,125</b>	<b>(15)</b>	<b>(54,461)</b>	<b>(16)</b>

(1) = Sum of Column (9) of Exhibit A.1.1 to A.1.4 from Revenue Requirements Application for the Policy Year 2012  
(2) = Column (10) of Exhibit A.1.1 from Revenue Requirements Application for the Policy Year 2012  
(4), (6) = The discount factors represent the corresponding interest rates discounted to the end of the first 12 months of Policy Year 2012.  
(12) = (9) - (8)  
(13) = (10) - (8)  
(14) = (11) - (8)  
(15) = (13) - (12)  
(16) = (14) - (12)



# **2012.1 RR DUCK.1.e – Attachment B – Policy Year 2010 Investment Income Sensitivity**

**Total Cash Flow from Revenue Requirements Application for the Policy Year 2010**

	(1)	(2)	(3) (1) * (2)	(4)	(5) (1) * (4)	(6)	(7) (1) * (6)	
		Discount at	4.93%	Discount at	5.93%	Discount at	3.93%	
Time	Total Cash Flow	Discount Factor	Discounted Cash Flow	Discount Factor	Discounted Cash Flow	Discount Factor	Discounted Cash Flow	
Year 1 - Q1	485,392	1.0430	506,274	1.0517	510,493	1.0343	502,050	
Year 1 - Q2	442,167	1.0305	455,672	1.0367	458,381	1.0244	452,953	
Year 1 - Q3	396,149	1.0182	403,365	1.0218	404,803	1.0146	401,920	
Year 1 - Q4	341,018	1.0060	343,076	1.0072	343,483	1.0048	342,665	
Year 2 - Q1	(204,902)	0.9940	(203,673)	0.9928	(203,431)	0.9952	(203,917)	
Year 2 - Q2	(184,626)	0.9821	(181,323)	0.9786	(180,679)	0.9856	(181,976)	
Year 2 - Q3	(138,139)	0.9704	(134,045)	0.9646	(133,253)	0.9762	(134,850)	
Year 2 - Q4	(115,817)	0.9588	(111,040)	0.9508	(110,123)	0.9668	(111,975)	
Year 3	(289,053)	0.9303	(268,917)	0.9172	(265,118)	0.9438	(272,807)	
Year 4	(292,608)	0.8866	(259,430)	0.8658	(253,351)	0.9081	(265,716)	
Year 5	(269,242)	0.8449	(227,495)	0.8174	(220,067)	0.8737	(235,249)	
Year 6	(178,238)	0.8052	(143,524)	0.7716	(137,527)	0.8407	(149,844)	
Year 7	(90,961)	0.7674	(69,803)	0.7284	(66,255)	0.8089	(73,578)	
Year 8	(45,269)	0.7313	(33,106)	0.6876	(31,127)	0.7783	(35,232)	
Year 9	(11,535)	0.6970	(8,039)	0.6491	(7,487)	0.7488	(8,638)	
Year 10	(11,395)	0.6642	(7,569)	0.6128	(6,982)	0.7205	(8,211)	
Year 11	(11,338)	0.6330	(7,177)	0.5784	(6,558)	0.6933	(7,860)	
Year 12	(11,326)	0.6032	(6,832)	0.5461	(6,185)	0.6670	(7,555)	
Year 13	(11,283)	0.5749	(6,486)	0.5155	(5,816)	0.6418	(7,241)	
Year 14	(3,148)	0.5479	(1,725)	0.4866	(1,532)	0.6175	(1,944)	
Year 15	(3,140)	0.5221	(1,639)	0.4594	(1,442)	0.5942	(1,865)	
Year 16	(3,137)	0.4976	(1,561)	0.4336	(1,360)	0.5717	(1,793)	
Year 17	(3,127)	0.4742	(1,483)	0.4094	(1,280)	0.5501	(1,720)	
Year 18	(3,117)	0.4519	(1,409)	0.3864	(1,205)	0.5293	(1,650)	
Year 19	(459)	0.4307	(198)	0.3648	(167)	0.5092	(234)	
Year 20	(459)	0.4104	(188)	0.3444	(158)	0.4900	(225)	
Year 21	(459)	0.3911	(179)	0.3251	(149)	0.4714	(216)	
Year 22	(459)	0.3728	(171)	0.3069	(141)	0.4536	(208)	
Year 23	(459)	0.3552	(163)	0.2897	(133)	0.4364	(200)	
Year 24	(459)	0.3385	(155)	0.2735	(125)	0.4199	(193)	
Year 25	(459)	0.3226	(148)	0.2582	(118)	0.4041	(185)	
Year 26	(459)	0.3075	(141)	0.2437	(112)	0.3888	(178)	
<b>Total</b>	<b>(220,347)</b>	<b>(8)</b>	<b>30,767</b>	<b>(9)</b>	<b>75,277</b>	<b>(10)</b>	<b>(15,672)</b>	<b>(11)</b>
<b>Investment Income (\$ '000s)</b>			<b>251,114</b>	<b>(12)</b>	<b>295,624</b>	<b>(13)</b>	<b>204,675</b>	<b>(14)</b>
<b>Change in Investment Income (\$ '000s)</b>					<b>44,510</b>	<b>(15)</b>	<b>(46,439)</b>	<b>(16)</b>

(1) = Sum of Column (9) of Exhibit A.1.1 to A.1.4 from 2010 Streamlined Revenue Requirements Application

(2) = Column (10) of Exhibit A.1.1 from 2010 Streamlined Revenue Requirements Application

(4), (6) = The discount factors represent the corresponding interest rates discounted to the end of the first 12 months of Policy Year 2010.

(12) = (9) - (8)

(13) = (10) - (8)

(14) = (11) - (8)

(15) = (13) - (12)

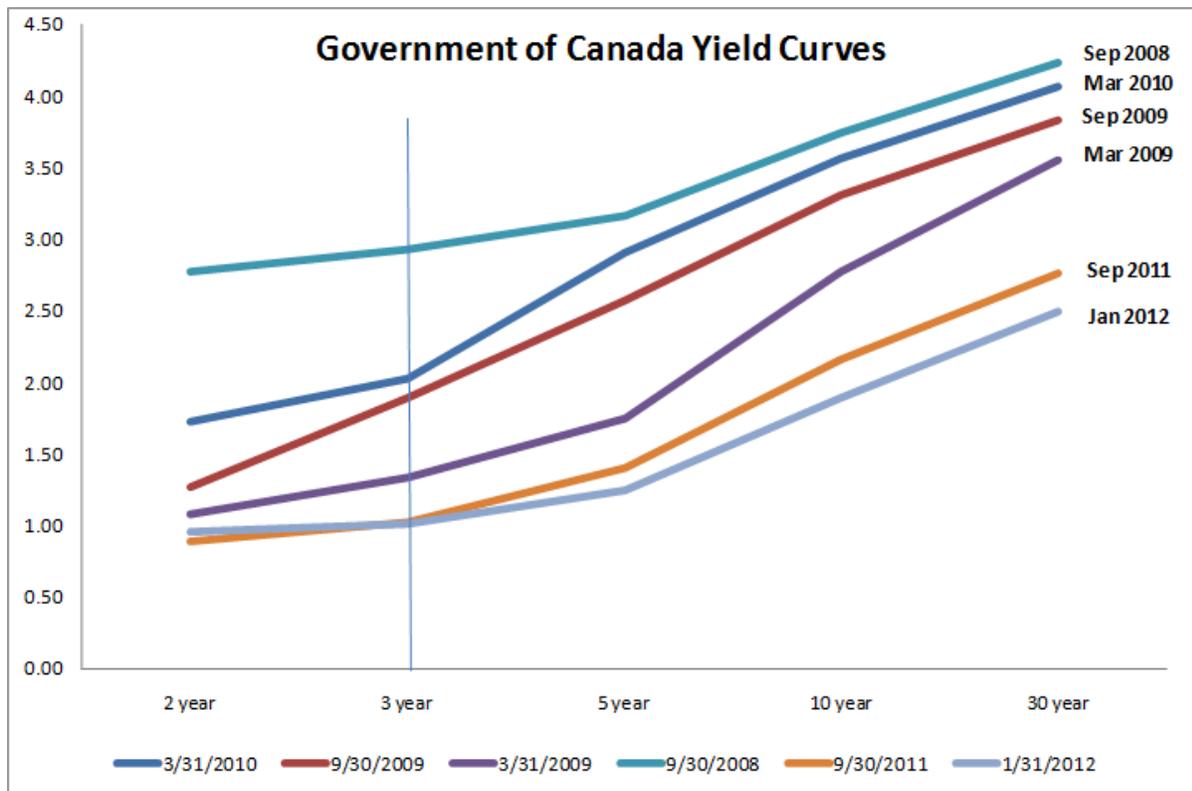
(16) = (14) - (12)

**2012.1 RR DUCK.2 Reference:**

Please add to Figure 5.1, the government yield curves for the 6, 12 and 18 months prior to Mar 2010. As well, please add the most current month of 2012 where data are available.

**Response:**

**Government of Canada Bond Yield Curves for September 2008, March 2009, September 2009, March 2010, September 2011, and January 2012**



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**2012.1 RR DUCK.3 Reference:**

**3. What evidence does ICBC have regarding the certainty of the interest forecasts? For example, the 3 year Government of Canada bond yield is estimated at 1.91% (figure 5.5, page 5-6) yet a cursory examination of the underlying data suggests a range of estimates between 1.07% and 2.62%. Using conventional statistical and actuarial techniques, please describe the precise degree of uncertainty in the point estimate of 1.91%, taking ICBC's best view on how interest rate forecasts are statistically distributed.**

**3.a Has the uncertainty of the forecasts changed as interest rates have fallen?**

**3.b Has the uncertainty of the forecasts changed over time?**

**3.c Has the uncertainty of the bond yield forecasts changed more at the long term (30-year) or the short term (3 year)?**

**3.d What is ICBC's best view on the distribution of interest rates (e.g. normal, etc.)?**

**Response:**

**3**

The forecasts used to calculate the New Money Rate contained in Chapter, Figure 5.8, are prepared by the largest financial institutions in the country. These firms are assumed to have the economic research and forecasting capabilities required to publish the forecasts. ICBC does not have insight into how the forecasters have developed their forecasts beyond what they have published in the Application, Appendix 5 B. ICBC, therefore, has not appraised the individual forecasters' methodology nor has it back-tested the degree of historical uncertainty. All estimates provided by the forecasters have been considered equal and are subject to forecast error. ICBC does not know in advance which forecasters are likely to be more or less accurate for any given forecast, and this is why the point estimate is based on a simple arithmetic average of all the forecasts.

ICBC acknowledges that capital markets have been extremely volatile since 2008 and based on the currently heightened geopolitical risks in Europe and the Middle East, expects market volatility to extend into 2012, which adds to the uncertainty of a point estimate for interest rates.

**3.a**

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ICBC does not know what factors are utilized by the forecasters in their models and therefore cannot comment as to whether changes in interest rates have changed the level of uncertainty in their forecasts.

**3.b**

ICBC does not know the degree of uncertainty contained within the forecast models and cannot comment as to whether it has changed over time. ICBC however acknowledges that markets have been extremely volatile since 2008 as markets have coped with unprecedented events and this has more than likely increased the uncertainty of forecasts since 2008.

**3.c**

ICBC does not know how the models used by the forecasters are constructed and so cannot comment on differing levels of uncertainty for different term yields.

**3.d**

The distribution of the interest rate forecasts is based on a group of six forecasts. The sample size is too small to offer a meaningful degree of insight into the distribution.

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**2012.1 RR DUCK.4.a Reference: ICBC states at 5-4, ‘In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.’**

**Please confirm ICBC’s earlier proposals, that were approved above, had no provision for a new test that for example, took into account “...given how much movement there was in the forecast yield curve and the sensitivity of the actuarial rate indication to that movement, ICBC updated this key component to incorporate the most up to date information possible.”**

**Response:**

In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC stated that the forecast data for determining the New Money Rate for a streamlined revenue requirements application would be determined from a multi-dealer survey conducted in the month of March. This statement continues to apply to all streamlined revenue requirements applications, and is appropriate due to the timing of the streamlined process, which includes a filing date for the application in the month of May.

This Application is not a streamlined revenue requirements application, and reliance on forecasts from March would not have been appropriate under the circumstances of dramatic changes in interest rates observed in the third quarter of 2011. As a result, more current forecasts were prudently collected and incorporated into the actuarial rate indication analysis.

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**2012.1 RR DUCK.4.b Reference: ICBC states at 5-4, ‘In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.’**

**In the Commission’s 2009 approval above, please confirm the Commission was silent on the exact timing of the yield curve information.**

**Response:**

In the April 2010 Decision on the Streamlined Regulatory Process, the Commission approved ICBC’s Application, inclusive of the proposed date of forecasts to be used in determining the New Money Rate, and the proposed date of determination of ICBC’s investment portfolio yield.

As discussed further in the response to information request 2012.1 RR DUCK.4.a, this Application is not a streamlined revenue requirements application, which influences the appropriate date of forecasts used in determining the New Money Rate.

**2012.1 RR DUCK.4.c Reference: ICBC states at 5-4, ‘In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.’**

**Please provide quantitative information of other periods in the last 5 years when there was similar movement in the forecast yield curve. On those occasions, did ICBC “...incorporate the most up to date information possible.” in a regulatory filing? Why?**

**Response:**

ICBC has not collected all of the economic forecasts for the last five years and, therefore, is unable to quantitatively verify if there was “similar movement in the forecast yield curve” as occurred in the third quarter of 2011.

Below is a chart of the Government of Canada 3-year benchmark bond yield. This chart can be used to illustrate what happened with interest rates over the last seven years. The chart uses a logarithmic scale in order to better depict the magnitude of the relative changes over time.



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The only time where there was a dramatic move in interest rates similar to what happened in late 2011, was in 2008. In 2008, economic forecasts generated after the dramatic downward shift in interest rates, contained lower forecast bond yields. These revised forecasts were used in developing the New Money Rate incorporated into the March 2009 internal actuarial rate indication analysis. Despite the lower forecast bond yields, the analysis generated a low actuarial rate indication and, therefore, there was no revenue requirements application filed with the Commission at that time.

Typically, ICBC collects financial forecasts ahead of the actuarial rate indication analysis so relevant information can be incorporated into the analysis. Consistent with this practice, financial forecasts were collected early in 2011. However, in the third quarter of 2011, the ICBC investment team, as part of its ongoing monitoring of financial markets, observed a sudden and dramatic shift down in interest rates. Aware that this shift would impact the team's ability to deliver a return in line with forecasts gathered earlier in the year and the shift would have a significant impact on the forecasted yields, new up-to-date forecasts as contained in the Application, Appendix 5 B, were collected and incorporated into the actuarial rate indication analysis for 2012.

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**2012.1 RR DUCK.4.d Reference: ICBC states at 5-4, ‘In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.’**

**Please discuss the proposition that the adoption of this “most recent information” element, is nothing more than a proposal that has never been advanced before and is more of a fair weather idea; meaning, it suits the circumstances of this proceeding only. To what other specific elements in the actuarial rate indication determination could ICBC have applied the use of “most recent information” but it chose not to?**

**Response:**

ICBC’s revenue requirements analysis process normally strikes assumptions at a point in time. Because the analysis is based on assumptions that are expectations about the future, it can happen that assumptions will change as the analysis proceeds. Whether ICBC decides to update these assumptions depends on the degree of rate impact relative to the amount of capital available to absorb the impact of any change, as well as the feasibility of making the update within the regulatory timeframe.

In the case of the current Application, ICBC updated its estimate of New Money Rate in September because, without the update, the proposed rate level would fall short of covering costs at a time when capital levels are low. ICBC also updated its capital provision to include consideration of the Basic MCT ratio at the end of the third quarter, as required by the 2011 Government Directive regarding Basic Rate Stability and Capitalization. Updating the New Money Rate and the capital provision are relatively simple updates, and do not significantly prolong the analysis process.

Other information used in the actuarial rate level indication analysis was based on data available at earlier dates, as described in Chapter 3, paragraph 6, of the Application. In accordance with accepted actuarial practice, ICBC actuaries determined that all other assumptions were still reasonable, both individually and in aggregate, in light of the latest information available when the revenue requirements analysis was finalized.

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Specifically, updated information on the major drivers of the Basic insurance rate increase was reviewed beyond September 13, 2011. Basic loss costs resulting from the third quarter reserve review based on claims data as of August 31, 2011 were reviewed, and had changed little from the second quarter, resulting in a determination that the forecasts based on second-quarter claims data remained reasonable. In addition, as described in Chapter 5, paragraph 23, of the Application, an updated forecast for bond yields was published by Bank of America/Merrill Lynch in the second half of September, which could have affected the New Money Rate. The recalculated New Money Rate was reviewed, resulting in a determination that the actuarial rate level analysis based on the New Money Rate updated September 13, 2011 remained appropriate.

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**2012.1 RR DUCK.4.e Reference: ICBC states at 5-4, 'In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.'**

**What difference did the use of interest rate data to 13 September 2011 compared to 31 August 2011, when other actuarial information was used up to 31 August 2011 (3-2)**

**Response:**

Please see the response to information request 2012.1 RR DUCK.1.b.

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**2012.1 RR DUCK.4.f Reference: ICBC states at 5-4, ‘In the September 2009 Amended Application for a Streamlined Regulatory Process, ICBC set out the proposed formulae for the calculation of the New Money Rate and the Yield on Basic Equity in all revenue requirements applications. The Commission accepted these formulae in its April 2010 Decision on the Streamlined Regulatory Process.’**

**Does ICBC propose that the BCUC permanently adopt this principle in future proceedings under all future economic circumstances, or is this a one- off proposal for this proceeding only?**

**Response:**

As discussed in the response to information request 2012.1 RR DUCK.4.a and the response to information request 2012.1 RR DUCK.4.d, ICBC proposes to rely for any particular revenue requirements application on forecasts and other assumptions that are appropriate according to the circumstances and timing of the application. For a streamlined revenue requirements application, the appropriate dates have been specified in the April 2010 Decision on the Streamlined Regulatory Process.

Frank Duck Information Request No. 2012.1 RR DUCK.5.a Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DUCK.5.a Reference:** In a number of occasions, ICBC states that it "...has reduced operating expenses such that they do not contribute to the rate increase requirement for the 2012 policy year." (Vol. 1, 2-7, para 32.) However ICBC also states operating expense for PY 2012 are incurred in calendar year 2012, 2013 and 2014 (Exhibit A.1.0, page 3).

**Please explain in principle how operating expenses, whose benefits typically extend to one year, can be incurred or spread over 3 years?**

**Response:**

Policy year 2012 covers policies written between February 1, 2012 and January 31, 2013. A policy effective in February 2012 will provide coverage beginning in February 2012. A policy effective in January 2013 may provide coverage that continues through January 2014. As a result, some operating expenses incurred in each calendar year 2012, 2013, and 2014 will relate to policies from the 2012 policy year.

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**2012.1 RR DUCK.5.b Reference:** In a number of occasions, ICBC states that it “...has reduced operating expenses such that they do not contribute to the rate increase requirement for the 2012 policy year.” (Vol. 1, 2-7, para 32.) However ICBC also states operating expense for PY 2012 are incurred in calendar year 2012, 2013 and 2014 (Exhibit A.1.0, page 3).

**What accounting principle permits expenses incurred over 3 years to be impounded in one policy year, rather than partially capitalized?**

**Response:**

ICBC wishes to clarify that the operating expense amount in the actuarial rate level analysis represents a best estimate of the operating expense costs that relate to policy year 2012. Premium collected for policy year 2012 must cover the costs of insurance for policies providing coverage from February 2012 through January 2014, and therefore it is appropriate to consider the operating expenses incurred in each of calendar years 2012, 2013, and 2014. This is required in order to determine rates in accordance with accepted actuarial practice, and has no impact on ICBC's financial statements, which continue to report on a calendar-year basis according to International Financial Reporting Standards.

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**2012.1 RR DUCK.5.c Reference:** In a number of occasions, ICBC states that it "...has reduced operating expenses such that they do not contribute to the rate increase requirement for the 2012 policy year." (Vol. 1, 2-7, para 32.) However ICBC also states operating expense for PY 2012 are incurred in calendar year 2012, 2013 and 2014 (Exhibit A.1.0, page 3).

**What levels of operating expenses in 2012 are due to expenses of other years?**

**Response:**

As shown in Chapter 3, Exhibit H.3 of the Application, the operating expenses associated with policy year 2012, which commences February 1, 2012, are comprised of 42.7% of the calendar year 2012 expenses, 56.3% of the calendar year 2013 expenses, and 1.0% of the calendar year 2014 expenses.

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**2012.1 RR DUCK.6.a Reference: “ICBC did not apply to change Basic rates for PY 2008, PY 2009, or PY 2011.” (3-14, footnote).**

**Please provide the actuarial rate indication for PY 2011 and all supporting calculations to justify ICBC’s decision NOT to file for a change in Basic rates for that year;**

**Response:**

The actuarial rate indication for policy year 2011 is not available because the rate analysis for policy year 2011 was not finalized. Please see the response to information request 2012.1.RR BCUC.29.1 for a discussion of the policy year 2011 rate analysis.

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**2012.1 RR DUCK.6.b Reference: "ICBC did not apply to change Basic rates for PY 2008, PY 2009, or PY 2011." (3-14, footnote).**

**Please file the evidence ICBC had intended to file had it proceeded with its original intention to file in 2011;**

**Response:**

Since the rate analysis for policy year 2011 was not finalized, this information is not available.

Please see the response to information request 2012.1.RR BCUC.29.1 for further discussion of the policy year 2011 rate analysis.

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**2012.1 RR DUCK.6.c Reference: “ICBC did not apply to change Basic rates for PY 2008, PY 2009, or PY 2011.” (3-14, footnote).**

**Figure 4.2 of ICBC’s evidence shows that effective in PY 2010, accounting policy changes resulted in an increase of capital required of some \$23.5M. What impact, if any, did this policy change have on ICBC’s decision not to file for a change in Basic rates in PY2011?**

**Response:**

Chapter 4, Figure 4.2 shows the impact on MCT of the change in accounting standards from CGAAP to IFRS. This change took place as of January 1, 2011, and ICBC has restated its CGAAP financial statements for the 2010 fiscal year to an IFRS basis. As a result of the change to IFRS, Basic capital required was reduced by \$23.6 million, and Basic capital available was reduced by \$138.5 million, resulting in a net impact of reducing the Basic MCT ratio by 10.1%.

This change had no impact on ICBC’s decision not to file for a change in Basic insurance rates for policy year 2011.

Frank Duck Information Request No. 2012.1 RR DUCK.7.a Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DUCK.7.a Reference: From ICBC’s 2010 annual report, page 19 in Volume 2, it states: “Pursuant to a legislative change effective April 2010, ICBC now transfers to the Government of BC on an annual basis Optional capital in excess of the MCT determined by ICBC’s actuaries in accordance with federal regulatory guidance, and validated by an independent actuary, less a deduction for the remaining Transformation Program reserve as approved by the Treasury Board.”**

**Please define exactly the dividend policy, or the policy to transfer capital to the Government for the Basic, not the Optional, segment of ICBC.**

**Response:**

There is no legislation or dividend policy to transfer any capital from the Basic insurance business to government. The legislative change referenced on page 19 of ICBC’s 2010 Annual Report is only for the transfer of capital from the Optional insurance business.

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**2012.1 RR DUCK.7.b Reference: From ICBC’s 2010 annual report, page 19 in Volume 2, it states: “Pursuant to a legislative change effective April 2010, ICBC now transfers to the Government of BC on an annual basis Optional capital in excess of the MCT determined by ICBC’s actuaries in accordance with federal regulatory guidance, and validated by an independent actuary, less a deduction for the remaining Transformation Program reserve as approved by the Treasury Board.”**

**What have been the annual transfers from the Basic segment of ICBC?**

**Response:**

There have been no transfers of capital to government from the Basic insurance business. As noted in the response to information request 2012.1 RR DUCK.7.a, there is no legislation or dividend policy to transfer any capital from the Basic insurance business to government.

**2012.1 RR DUCK.8.a Reference: From ICBC’s 2010 annual report, page 19 in Volume 2, ICBC says, “As a result of the legislative change, the new minimum management corporate MCT target is now set at 170%. Our 2010 MCT was 218%, higher than this revised minimum target of 170%, and was built from strong net income over the past years. Net income increases the amount of retained earnings held by us, thereby increasing available capital and payments to the Province reduce retained earnings. 2010 MCT is lower than 2009 due to the excess Optional capital paid and payable to the Government of BC.**

**Please provide a table setting out both the earlier MCT targets and the current MCT targets, both for the corporate segment and the Basic regulatory segment.**

**Response:**

**ICBC Management Targets**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Corporate</b>	150% - 165%	150%	150%	180%	170%	175%*
<b>Basic</b>	100%	100%	130%	130%	130%	130%

\* Increase in the corporate MCT target due to the change in the Optional MCT target. There is no change in the MCT target for the Basic insurance business.

Frank Duck Information Request No. 2012.1 RR DUCK.8.b Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR DUCK.8.b Reference: From ICBC’s 2010 annual report, page 19 in Volume 2, ICBC says, “As a result of the legislative change, the new minimum management corporate MCT target is now set at 170%. Our 2010 MCT was 218%, higher than this revised minimum target of 170%, and was built from strong net income over the past years. Net income increases the amount of retained earnings held by us, thereby increasing available capital and payments to the Province reduce retained earnings. 2010 MCT is lower than 2009 due to the excess Optional capital paid and payable to the Government of BC.**

**What legislative change gave rise to the corporate MCT target of 170%? Please provide a detailed explanation of how the targets for the corporate and Basic segment are established.**

**Response:**

The legislative change only impacted the Optional insurance business, not the Basic insurance business. The management target for the Basic insurance business was not changed. Only the management target for the Optional insurance business was changed. This had the impact of changing the corporate MCT target.

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**2012.1 RR DUCK.9.a-b Reference: From page 4-2, Volume 1, "...the MCT ratio at the end of 2010 was 164.6%." An earlier BCUC directive says "Within 90 days of any calendar year-end when ICBC's MCT ratio for that year exceeds 150 percent, the Commission Panel directs ICBC to file an application proposing a plan to deal with the excess." (G-65-10, page 8) However the current application makes no mention of this, and proceeds to deal with PY2011.**

**9.a. Did, or will ICBC be filing to reduce driver's rates to reflect this excess MCT for 2010?**

**9.b. If not, why? Please explain in the context of an 11%+ increase in rates for 2012, why an offsetting adjustment for this excess level of MCT was not made.**

**Response:**

ICBC will not be filing to reduce drivers' rates through the release of Basic excess capital in accordance with the 2010 Government Directive regarding Basic Excess Capital. The 2011 Government Directive regarding Basic Rate Stability and Capitalization came into effect before the filing date of the Application and modifies the 2010 Government Directive. It requires ICBC to apply the capital release provisions of the 2010 Government Directive based on the MCT ratio as of the most recent quarter to determine the rate indication, rather than the MCT ratio at the end of the previous calendar year. Since the MCT ratio as of the most recent quarter prior to the filing date was less than the 130% MCT capital management target there is no Basic excess capital and the capital release provisions of the 2010 Government Directive do not apply.

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**2012.1 RR DUCK.9.c Reference: From page 4-2, Volume 1, "...the MCT ratio at the end of 2010 was 164.6%." An earlier BCUC directive says "Within 90 days of any calendar year-end when ICBC's MCT ratio for that year exceeds 150 percent, the Commission Panel directs ICBC to file an application proposing a plan to deal with the excess." (G-65-10, page 8) However the current application makes no mention of this, and proceeds to deal with PY2011.**

**Please confirm that the 2011 Government Directive (GD) approved on 30 November 2011, included among other things a directive to "...hereafter use the most recent quarter Basic insurance MCT level..." If this clause of the GD was to be applied "hereafter" (i.e. after 30 Nov 2011), please explain why ICBC is not in breach of the BCUC directive above, where a plan to deal with excess MCT should have been filed.**

**Response:**

The Commission's direction referred to in the first paragraph of the preamble was superseded by the 2010 Government Directive regarding Basic Excess Capital. ICBC, in its 2010 Streamlined Revenue Requirements Application, altered its plan to deal with the excess capital to reflect the 2010 Government Directive. The Commission accepted that ICBC's treatment of excess capital was consistent with the 2010 Government Directive.

Specifically, the Commission stated at page 15 of the November 2010 Reasons for Decision:

The Commission Panel finds that the Commission does not have the jurisdiction to override the May 27, 2010 Government Directive and therefore accepts that a Capital Release Provision is appropriately excluded from the determination of the PY 2010 rate decrease.

The Commission Panel also finds that given the nature of the direction, it is not in the public interest to initiate a process to examine the merits of the Government's letter of direction, as proposed by Mr. Duck, and will therefore not undertake such a process.

The Commission Panel went on to determine:

ICBC's plan to address Basic Insurance excess capital greater than 150 percent of minimum capital required as filed in the Application is accepted, including continuation of the capital maintenance provision and, pursuant to the Government letter of direction of May 18, 2010, retention of the Basic Insurance capital in excess of the management MCT target.

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Therefore, ICBC had a new plan for dealing with excess capital approved by the Commission in 2010. That plan remained in place until it was modified to reflect the 2011 Government Directive regarding Basic Rate Stability and Capitalization. Hence, ICBC had already satisfied the need to have a plan in place to deal with excess capital. The plan had to reflect the 2010 Government Directive, so there was no need to apply for a new plan in the first 90 days of 2011.

Since the 2011 Government Directive preceded this Application, the plan has now been updated to reflect it.

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**2012.1 RR DUCK.10.a Reference: In 2010.1 RR BCUC.5.1 Reference: BASIC EXCESS CAPITAL, the Commission asked, among other things, "...how long would it take for the effect of not providing capital maintenance to reduce the MCT ratio back to 130%?" ICBC responded in part, that**

**"In ICBC's view, such an approach is not consistent with the concept of "relatively stable and predictable" rate setting, because the action of deliberately excluding the capital maintenance provision introduces volatility to the rates that is avoidable by simply keeping it as a permanent part of the revenue requirement, as is the practice with all other cost items that comprise the revenue requirement."**

**Please explain how the 2011 Government Directive (the "GD" Appendix 4A) is viewed by ICBC in light of its earlier comments above.**

**Response:**

As stated in the response to information request 2010.1 RR BCUC.5.1, ICBC's view is that not including a capital maintenance provision is "not consistent with the concept of 'relatively stable and predictable' rate setting, because the action of deliberately excluding the capital maintenance provision introduces volatility to the rates that is avoidable by simply keeping it as a permanent part of the revenue requirement, as is the practice with all other cost items that comprise the revenue requirement." Furthermore, inclusion of the capital maintenance provision in the rates prevents 3% to 4% per year erosion of the MCT ratio that would otherwise occur due to growth and inflation affecting the business.

ICBC views the 2011 Government Directive regarding Basic Rate Stability and Capitalization, which leaves unaltered the capital maintenance provision in the Basic insurance Capital Management Plan, as consistent with ICBC's view on the capital maintenance provision, because the aim of the 2011 Government Directive is to "bring greater stability and predictability in universal compulsory vehicle (Basic) insurance rates." Furthermore, the 2011 Government Directive is also consistent with government's earlier *Special Direction IC2* directing the Commission to set rates in a way that allows ICBC to maintain an MCT ratio of at least 100%.

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**2012.1 RR DUCK.10.b Reference: In 2010.1 RR BCUC.5.1 Reference: BASIC EXCESS CAPITAL, the Commission asked, among other things, "...how long would it take for the effect of not providing capital maintenance to reduce the MCT ratio back to 130%?" ICBC responded in part, that**

**"In ICBC's view, such an approach is not consistent with the concept of "relatively stable and predictable" rate setting, because the action of deliberately excluding the capital maintenance provision introduces volatility to the rates that is avoidable by simply keeping it as a permanent part of the revenue requirement, as is the practice with all other cost items that comprise the revenue requirement."**

**Please provide any specific concerns expressed to the Government by ICBC on this point.**

**Response:**

If materials or information prepared by ICBC for government on this matter exists, it would be in respect of a decision of the provincial Cabinet and therefore subject to Cabinet confidentiality, which requires that it cannot be disclosed as a result of that confidentiality. The principle is recognized in the provincial *Freedom of Information and Protection of Privacy Act*, which prevents the disclosure of information that would reveal the substance of deliberations of Cabinet and its committees, including any advice, recommendations, policy considerations, or draft legislation or regulations.

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**2012.1 RR DUCK.11.a Reference: The GD was approved on 30 November 2011, a day before ICBC's rate increase was filed. In that GD, the Government states "ICBC has identified that ICBC Basic Capital levels have eroded over 2011..."**

**Please provide the material filed by ICBC with the Government to allow it to come to that conclusion above;**

**Response:**

The 2011 Government Directive of November 25, 2011 with respect to Basic Rate Stability and Capitalization approved by Order in Council 560/11, November 30, 2011 represents a decision made by the provincial Cabinet. Materials and information prepared in respect of a decision of the provincial Cabinet are subject to Cabinet confidentiality, and if any document or other material of the type requested in this information request exists, it cannot be provided as a result of that confidentiality. The principle is recognized in the *Freedom of Information and Protection of Privacy Act*, which prevents the disclosure of information that would reveal the substance of deliberations of the provincial Cabinet and its committees, including any advice, recommendations, policy considerations, or draft legislation or regulations.

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**2012.1 RR DUCK.11.b Reference: The GD was approved on 30 November 2011, a day before ICBC's rate increase was filed. In that GD, the Government states "ICBC has identified that ICBC Basic Capital levels have eroded over 2011..."**

**Please indicate how frequently ICBC has provided basic capital levels and other financial indicators to the Government;**

**Response:**

ICBC does not report on Basic insurance capital levels to government on a regular basis. After the Core Review in 2001, the Commission was appointed as the regulator of Basic insurance rates in BC.

ICBC reports other financial indicators to government as follows:

- ICBC regularly reports the corporate operating results, balance sheet, statement of equity, and capital expenditures to the Office of the Controller General. In the past, this information has been provided monthly, but the present reporting frequency is quarterly.
- On a quarterly basis, ICBC prepares or updates a corporate multi-year forecast and provides this to Treasury Board. There is also a quarterly meeting with Treasury Board to review corporate operating results and the multi-year forecasts.
- There is a quarterly update of capital expenditures provided to the ministry.

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**2012.1 RR DUCK.11.c Reference: The GD was approved on 30 November 2011, a day before ICBC's rate increase was filed. In that GD, the Government states "ICBC has identified that ICBC Basic Capital levels have eroded over 2011..."**

**Please explain any role the BCUC plays in this process;**

**Response:**

The Commission's role with respect to government directives issued to ICBC is stated in section 3(1)(c.1) of *Special Direction IC2 to the BC Utilities Commission, BC Regulation 307/2004, as amended (Special Direction IC2)*. *Special Direction IC2* requires the Commission to regulate and fix Basic insurance rates in a manner that recognizes and accepts actions taken by ICBC that are necessary in order to comply with government directives.

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**2012.1 RR DUCK.11.d Reference: The GD was approved on 30 November 2011, a day before ICBC's rate increase was filed. In that GD, the Government states "ICBC has identified that ICBC Basic Capital levels have eroded over 2011..."**

**Please provide ICBC's views on making the backroom process, of interfacing back and forth with the Government before GD's are finalized, more transparent to BCUC and the public;**

**Response:**

In ICBC's view, the process to finalize government directives is at the discretion of government. ICBC provides information and support to government as government requires. Crown corporations, ministries, and affected organizations are routinely consulted on the impacts of regulatory and legislative amendments before finalization. ICBC provides as much information as possible to assist government in making informed decisions.

Similarly, ICBC takes appropriate steps to keep the Commission informed. However, at any given time, there may be legislative plans, government proposals, or directives in various stages of development that could materially impact ICBC's costs and/or revenues, which ICBC may or may not be aware of, which cannot be disclosed to the Commission or made public under the principle of Cabinet confidentiality. As noted in the responses to information requests 2012.1 RR DUCK.10.b and 2012.1 RR DUCK.11.a, any information, advice, recommendations, policy considerations, or draft legislation or regulations are subject to Cabinet confidentiality. The primary purpose of Cabinet confidentiality is to encourage free and open discussion within Cabinet and this principle is widely recognized in the parliamentary system.

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**2012.1 RR DUCK.11.e Reference: The GD was approved on 30 November 2011, a day before ICBC's rate increase was filed. In that GD, the Government states "ICBC has identified that ICBC Basic Capital levels have eroded over 2011..."**

**The 2011 GD states ICBC is to use the most recent quarter Basic MCT level to determine the Basic insurance revenue requirement. Was this a recommendation that ICBC agrees with? Why?**

**Response:**

ICBC agrees with the 2011 Government Directive regarding Basic Rate Stability and Capitalization requirement that ICBC use the most recent quarter MCT level to determine the Basic insurance revenue requirements. As was discussed in the response to information request 2012.1 RR BCUC.40.1, ICBC experienced a significant drop in its MCT level within a 9-month period. The 2011 Government Directive ensures that ICBC is not releasing capital through the rates based on outdated information, as would have been required by the Basic insurance Capital Management framework prior to the 2011 Government Directive being put into place. Please refer to the response to information request 2012.1 RR IBC.2.1 for further information.

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**2012.1 RR DUCK.12.f Reference:** In response to a BCUC IR 5.4, ICBC stated “With respect to the question of whether not providing for capital maintenance would be a “natural offset”, it would be inconsistent with accepted actuarial practice to exclude the capital maintenance provision, a known cost element, from the rate level, regardless of the capital level. Please also see the response to information request 2010.1 RR BCUC.5.2 for further discussion on the implications of the deliberate exclusion from the rates of this known cost element. Also, it would be inconsistent with the concept of relatively stable and predictable rates, which is discussed further in the response to information request 2010.1 RR DUCK.2.a. “ (emphasis added)

**Please confirm that adopting the GD of 2011 is consistent with actuarial practice, notwithstanding ICBC’s earlier remarks;**

**Response:**

ICBC confirms that its adoption of the 2011 Government Directive regarding Basic Rate Stability and Capitalization is consistent with accepted actuarial practice. Please note that the capital maintenance provision is left unaltered by the 2011 Government Directive, as is discussed in the response to information request 2012.1 RR DUCK.10.a.

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**2012.1 RR DUCK.12.g Reference:** In response to a BCUC IR 5.4, ICBC stated “With respect to the question of whether not providing for capital maintenance would be a “natural offset”, it would be inconsistent with accepted actuarial practice to exclude the capital maintenance provision, a known cost element, from the rate level, regardless of the capital level. Please also see the response to information request 2010.1 RR BCUC.5.2 for further discussion on the implications of the deliberate exclusion from the rates of this known cost element. Also, it would be inconsistent with the concept of relatively stable and predictable rates, which is discussed further in the response to information request 2010.1 RR DUCK.2.a. “ (emphasis added)

**Please confirm that the actuarial standards used are flexible enough allow either methodology;**

**Response:**

The 2010 Government Directive regarding Basic Excess Capital and the 2011 Government Directive regarding Basic Rate Stability and Capitalization are both examples of specifications to the actuary (in this case, with respect to the capital build provision to be included in the actuarial rate indication) that are consistent with accepted actuarial practice. For the Application, there is no flexibility beyond what is specified in the 2011 Government Directive that the capital build provision can be anything other than \$0.

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**2012.1 RR DUCK.12.h Reference:** In response to a BCUC IR 5.4, ICBC stated “With respect to the question of whether not providing for capital maintenance would be a “natural offset”, it would be inconsistent with accepted actuarial practice to exclude the capital maintenance provision, a known cost element, from the rate level, regardless of the capital level. Please also see the response to information request 2010.1 RR BCUC.5.2 for further discussion on the implications of the deliberate exclusion from the rates of this known cost element. Also, it would be inconsistent with the concept of relatively stable and predictable rates, which is discussed further in the response to information request 2010.1 RR DUCK.2.a. “ (emphasis added)

**Is this an example where Government Directives have conflicted with actuarial practice similar to those examples set out in 2010.1 RR DUCK.10.c?**

**Response:**

No, the 2011 Government Directive regarding Basic Rate Stability and Capitalization does not conflict with accepted actuarial practice. Please see the response to information request 2012.1 RR DUCK.12.g.

**2012.1 RR DUCK.13 Reference:**

**13. Please update, and correct if necessary, the table in 2010.1 RR DUCK.2.c (reproduced below) to include any updates and the forecast years 2012 and 2013.**

Effective Date	Actuarial Rate Indication	Implemented and Proposed Rate Changes
1/1/2004	+3.0%	+0.4%
1/1/2005	+0.5%	+0.0%
3/15/2006	+6.5%	+6.5%
5/1/2007	+3.3%	+3.3%
6/1/2008	+0.9%	+0.0%
10/1/2009	+0.3%	+0.0%
11/1/2010	-1.9%	-1.9%
2/1/2011	???	0%
2/1/2012	11.2%	11.2%
2/1/2013	???	???

**13.a. Please provide a rationale why a rate increase of 11%+ solely in PY 2013, instead of rate increases of around 5% for both PY 2012 and 2013 or for PY 2011 and 2012, better meets the objectives of basic rate stability set out in various GD's?**

**13.b. Using the data above, please set out a hypothetical rate change scenario from 2004-13 that ICBC believes does not meet the criteria of basic rate stability.**

**Response:**

The following table is an updated version of the actuarial rate indication and change table.

Effective Date	Actuarial Rate Indication	Implemented and Proposed Rate Changes
1/1/2004	+3.0%	+0.4%
1/1/2005	+0.5%	+0.0%
3/15/2006	+6.5%	+6.5%
5/1/2007	+3.3%	+3.3%
6/1/2008	+0.9%	+0.0%
10/1/2009	+0.3%	+0.0%
11/1/2010	-1.9%	-2.4%
2/1/2011	n/a	0%
2/1/2012	11.2%	11.2%
2/1/2013	*	n/a

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\* Please refer to the response to information request 2012.1 RR BCUC 2.4 for four scenarios regarding policy year 2013 actuarial rate indications.

### 13.a

Although it is clear that repeated increases of 5% for policy year 2012 and policy year 2013 would be considered stable and predictable, this is not the only criterion used in setting rates. As noted in the response to information request 2012.1 RR BCUC.2.1, the term used in *Special Direction IC2* is “relatively stable and predictable” and the reference to “relatively” is important. Rates are “relative” in the sense that they must account for the degree to which ICBC can influence the costs and other requirements, and should be considered over the long term. *Special Direction IC2* also requires that rates be set according to accepted actuarial practice, and that rates be set in a way that will allow ICBC to maintain a Basic MCT ratio of at least 100%. In a multi-year rate setting model, this means that rates for each future year must be set adequately to cover costs.

If rates were set lower than the 11.2% increase which is required according to the actuarial rate indication analysis, the result would be to deplete Basic capital levels to make up for the shortfall in rates over the period that rates remain inadequate. As stated in the response to information request 2012.1 RR BCUC.20.3, the Basic MCT at the end of 2012 is currently forecast to be 107%, which assumes that an increase of 11.2% is approved, resulting in an adequate rate level. The estimated sensitivity of a 1% change in the rate is the equivalent of 2% in MCT. Therefore if the Basic insurance rate change for policy year 2012 was only 5%, this translates to an estimated reduction of approximately 12 percentage points in the MCT ratio, and a resulting MCT ratio below 100%. ICBC would not put before the Commission an application to set the rates of any future year at a level that would have a high likelihood of resulting in ICBC’s capital levels dropping below a 100% MCT ratio, since in ICBC’s view the Commission could not approve such a rate and remain in compliance with *Special Direction IC2*.

The variability of rates, to a significant degree, is due to the product of investment markets and changes in claims frequency that are beyond the control of ICBC. ICBC has reduced operating

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expense and used capital to reduce volatility from what it would have been in the absence of the measures. Despite the variability in the single year's actuarial rate indication, the proposed 11.2% represents only a 1.8% annual rate change on average over the past 5 years.

ICBC considers that despite the unevenness of the single-year changes, these rate changes meet the criteria of "relatively stable and predictable" when viewed in context of the need to ensure adequate capitalization (i.e., at least 100% MCT) and the full set of Basic insurance rate changes experienced by customers in recent years.

### **13.b**

In order to discuss the hypothetical situation of rates which are not relatively stable and predictable, the prevailing conditions to which "relatively" refers must first be established. The discussion below refers to the situation where the following main conditions are met:

- 1) Basic loss costs increase consistently at +2.5% each year.
- 2) MCT is at the management target level of 130%.
- 3) Interest rates do not shift by more than 50 basis points annually.
- 4) No legislative or external environment changes have occurred or are expected.

Under these stable conditions, rate changes should not exhibit significant volatility from year to year. For example, a rate change of less than 0% or more than 5% in a given year might not meet the description of "relatively stable and predictable rates", given that the assumed circumstances would not necessitate such volatility. Likewise, the series of rate changes in the above table may not meet the criteria of "relatively stable and predictable" if these conditions were met.

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Ultimately, the determination of relatively stable and predictable rates is highly fact dependent, and cannot be determined simply by reference to the magnitude of rate fluctuations from year to year.

**2012.1 RR DUCK.14 Reference:**

Year End	Basic MCT	Capital cushion in \$M	% Growth over previous year
2006	121%	\$178.7M	-
2007	135.8%	\$308.7M	72%
2008	140.9%	\$352.9M	14%
2009	162.4%	\$607.0M	72%
2010	164.6%	\$658.9M	9%
2011			
2012			

Please confirm and update the data in the table below for the Basic MCT, based solely on the CGAAP method of accounting. Recall the capital cushion is simply the difference in dollars between capital available and required.

**Response:**

Year End	Basic MCT	Capital cushion in \$M	% Growth over previous year
2006	121%*	\$178.7M	-
2007	135.8%	\$308.7M	72%
2008	140.9%	\$352.9M	14%
2009	162.4%	\$607.0M	72%
2010	164.6%	\$648.9M	7%
2011			
2012			

\*Note: 2006 Basic insurance MCT ratio is calculated using the 2007 OSFI guidelines. Prior to the introduction of the 2007 OSFI guidelines, the 2006 Basic insurance MCT ratio was 107%.

The capital cushion as referenced in this information request is the difference in dollars between capital available and capital required. The information for 2006 to 2009 was included in the response to information request 2010.1 RR DUCK.6. As indicated in the response to information request 2010.1 RR DUCK.6, the calculations for 2007 to 2009 are mathematically correct. The table has been updated for 2010 information under Canadian Generally Accepted Accounting Principles (CGAAP). Note that the calculation for 2010 in the information request is not mathematically correct and corrected information is provided in the table above.

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As disclosed in Note 3 to the consolidated financial statements on page 50 of ICBC's 2010 Annual Report, ICBC has implemented the required accounting policy changes under International Financial Reporting Standards (IFRS) effective January 1, 2011 and its financial statements for the year ended December 31, 2011 and thereafter will be prepared in accordance with IFRS. After the transition to IFRS, accounting records are not maintained under CGAAP; therefore the table cannot be completed for 2011 and 2012 on this basis.

The adoption of IFRS included changes to many accounting policies. Some of the changes, mainly in the accounting for pension and post-retirement benefits, are very complicated and would require ICBC to solicit the assistance of its external actuarial consultant to calculate the amounts to be recorded under CGAAP. At this time, ICBC does not believe this additional expenditure is warranted. In addition, the existing MCT guidelines have been updated by the Office of the Superintendent of Financial Institutions (OSFI) to accommodate the IFRS standards. This would add further complexity to try to restate the existing records under IFRS to CGAAP.

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**2012.1 RR DUCK.15.a Reference: On page 4-2 of chapter 1, ICBC states the MCT ratio was at the end of 2010 164.6% under CGAAP and restated under IFRS was 154.5%.**

**What is the corresponding reduced management target of 130% under CGAAP before IFRS is introduced, under IFRS, after it is introduced? Please provide all calculations to support your answer.**

**Response:**

From time to time, ICBC reassesses its capital position and the appropriateness of its management targets (the minimum capital level at which it operates) through dynamic capital adequacy testing (DCAT). DCAT is a risk management technique to evaluate potential effects corresponding to plausible adverse scenarios. Although, as explained in the response to information request 2012.1 RR BCUC.43.2, updated DCAT modeling for the purpose of reassessing the Basic insurance capital management target under IFRS has not been conducted, ICBC believes that the management target of a 130% Basic MCT ratio continues to make an appropriate provision for the risks associated with Basic insurance. As noted in the response to information request 2012.1 RR BCUC.41.2.1-2, this target will remain in place unless there is a government directive to the contrary.

The Basic insurance MCT ratio at the end of 2010 of 164.6% under CGAAP and restated under IFRS as 154.5% is explained in Chapter 4, pages 4-8 to 4-10.

**2012.1 RR DUCK.15.b Reference: On page 4-2 of chapter 1, ICBC states the MCT ratio was at the end of 2010 164.6% under CGAAP and restated under IFRS was 154.5%**

**Using the IFRS method of calculating the MCT, please update and confirm the table below:**

Year	Basic MCT	Capital cushion in \$M	% Growth over previous year
2006			
2007			
2008			
2009			
2010	154.5%	\$533.9M	
2011*	120.0%	\$194.3M	-64%

\*30 September 2011

**Response:**

Year	Basic MCT	Capital cushion in \$M	% Growth over previous year
2006			
2007			
2008			
2009			
2010	154.5%	\$533.9M	
2011*	120.0%	\$194.6M	-64%

\*30 September 2011

Under International Financial Reporting Standards (IFRS), the table has been updated for the information at September 30, 2011. As discussed in the response to information request 2012.1 RR DUCK.14, ICBC implemented the required accounting policy changes under IFRS effective January 1, 2011. Prior to this date, the accounting records were maintained under Canadian Generally Accepted Accounting Principles. Accounting records under IFRS were not restated prior to the transition date other than for the comparative year ended December 31, 2010.

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Therefore, as accounting records under IFRS do not exist prior to January 1, 2010, the table cannot be completed under IFRS for any years prior to 2010.

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**2012.1 RR DUCK.16 Reference:**

**From Figure 4.2 page 4-8 of ICBC's evidence, it appears the Basic MCT at year end 2010 was 164.6% (under CGAAP). What would have been the approximate decrease in driver's rates, if the regulatory target (100%) and the management target (130%) were achieved in that year?**

**Response:**

ICBC believes that this information request, with reference to the year-end 2010 Basic MCT ratio, relates to the Basic insurance rate change which would have been indicated had the 2011 Government Directive regarding Basic Rate Stability and Capitalization not come into force. In this case, the 2010 Government Directive regarding Basic Excess Capital would still have been in place.

If the management target 130% Basic MCT ratio had been achieved exactly at year-end 2010, then under the 2010 Government Directive, there would have been no capital build or release provision included in the revenue requirements analysis, and so the rate indication for policy year 2012 based on the evidence in the Application would be +11.2%. This would be the same rate increase as is being applied for in the Application, because the 2011 Government Directive requires that no capital build provision be included in the rates at this time.

If only the regulatory minimum 100% Basic MCT ratio had been achieved exactly at year-end 2010, then under the 2010 Government Directive a capital build provision would have been included in the revenue requirements analysis equivalent to one-fifth of the amount by which the Basic capital level was below a 130% MCT ratio. Based on the evidence in the Application, this would have resulted in a rate indication for policy year 2012 of +14.1%. Since the 2011 Government Directive is in force, the level of capital at year-end 2010 is not considered in the actuarial rate indication analysis underlying the Application. However, if the regulatory minimum 100% Basic MCT ratio had been achieved exactly at the end of the third quarter of 2011, there would be no capital build provision and the rate indication for policy year 2012 would be the same +11.2% as is shown in the Application.

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**2012.1 RR DUCK.17.a-c Reference: On May 31, 2010 ICBC filed its 2010 Streamlined Revenue Requirements Application and on 17 August 2010 ICBC filed its Reply comments.**

**17.a. Please explain why an accounting change as important as IFRS was not brought to the Commission's attention for that proceeding, such that the impacts could be taken into account in the resultant decision.**

**17.b. The IFRS proposal replaced CGAAP as of 1 January 2011. Please confirm that ICBC was aware of the upcoming change in accounting policy when it filed its reply comments.**

**17.c. The CICA introduced its proposal in late 2006. Please explain in detail why this was not accounted for at least for the PY 2010?**

**Response:**

**17.a**

The requirement to adopt International Financial Reporting Standards (IFRS) and replace Canadian Generally Accepted Accounting Principles effective January 1, 2010 was brought to the Commission's attention in the 2010 Streamlined Revenue Requirements Application, Chapter 7, page 7-6.

ICBC also informed the Commission that effective April 1, 2010, the provincial government amended the *Budget Transparency and Accountability Act* and the *Financial Administration Act* to provide the Treasury Board with the authority to determine the accounting and reporting framework for all government entities and to provide the Comptroller General with the authority to ensure that all government entities follow the accounting policies and practices adopted by the Treasury Board. At that time, it was not determinable if the Treasury Board would permit ICBC to adopt IFRS.

On September 7, 2010, the Treasury Board directed ICBC to proceed with adopting IFRS for the fiscal year commencing after January 1, 2011. The Treasury Board also directed ICBC to consult with the Comptroller General prior to exercising any elections or choices available under IFRS with the Comptroller General being directed to provide guidance to ICBC. This consultation process was completed in January 2011. The impacts of adopting IFRS could not be determined until the completion of this consultation process with the Comptroller General.

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**17.b**

At the time of filing the August 17, 2010 Reply Submission, it was not determinable if the Treasury Board would permit ICBC to adopt IFRS.

**17.c**

ICBC assumes that the question refers to the Canadian Institute of Chartered Accountants announcement in 2006 to convert to IFRS. Please see responses to information requests 2012.1 RR DUCK.17.a. and 2012.1 RR DUCK.17.b. above.

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**2012.1 RR DUCK.18 Reference:**

**What is ICBC’s view on retroactive rate making? For example, although the PY2010 and PY2011 appear to be finished, does ICBC believe the BCUC has jurisdiction to rule that events affecting those PYs can be adjusted for, or accounted for, after the PY is complete?**

**Response:**

To be clear, ICBC’s Basic insurance rate change proposal of +11.2% does not include a retroactive adjustment to cover the shortfall in premiums related to the policy year 2010 rates. This shortfall, which is a result of claims costs being higher than contemplated in the policy year 2010 rate level, is covered by Basic capital and will continue to be covered by Basic capital until the last policy written at the policy year 2010 rate level expires. This is a contributing factor to the significant decline in the Basic MCT ratio that has occurred over 2011 and continues in 2012. Please see the responses to information requests 2012.1 RR BCUC.40.1 and 2012.1 RR CDI.10.2 for further information on the declining Basic MCT ratio.

ICBC’s Basic Insurance Capital Management Plan addresses how capital is to be rebuilt through rates should it fall below the management target level. This provision is excluded from revenue requirement until January 31, 2015, per the 2011 Government Directive regarding Basic Rate Stability and Capitalization, as a way to bring greater stability and predictability to the Basic insurance rates at this time of significant pressure on ICBC rates.

In accordance with accepted actuarial practice, ICBC makes its rates on a prospective basis, accounting for all future costs associated with the future time period for which the rates will be in effect. In proposing new Basic insurance rates, ICBC uses the current rate level (policy year 2010 rate level) as a reference point. The +11.2% Basic insurance rate change is the amount by which the estimated costs associated with policy year 2012 are higher than the current rate level.

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**2012.1 RR DUCK.19.a Reference: ICBC argues declining interest rates have reduced its investment income and thus the rate increase is required. At 2-1 of Volume 1, ICBC cites “...an extended period of low interest rates will negatively impact investment income.”**

**If the persistence of low interest rates is expected to last over a number of years, why didn't ICBC propose a multiyear set of rate increases, rather than attempting to recover the assumed lower interest rate levels in one larger rate increase?**

**Response:**

In order for the rates for a given policy year to follow accepted actuarial practice, the rates must be adequate to cover all costs associated with policies becoming effective during the year. Since the expected rate of return available to be earned on premium dollars originally invested in policy year 2012 is low, a greater amount of premium is required to make up for the lesser amount of investment income. If the expected rate of return continues to be low for premium dollars collected in future years, this would be reflected in the rates for those years.

If ICBC were to propose a multi-year set of Basic insurance rate increases that included an increase of less than 11.2% in the first year, this would mean that rates would not be adequate to cover costs in that year, contravening the intention to have rates set according to accepted actuarial practice. Furthermore, the outcome of doing so would be to deplete Basic capital levels to make up for the shortfall in the Basic insurance rates. In particular, taking equal rate increases for two years when cost increases are not equal will not result in adequate rates in both years, which can be illustrated with a simple example.

Suppose the costs associated with providing insurance were expected to be \$111 per policy for policy year (PY) 1, and \$114 per policy for PY 2, and the current rate level was set at \$100 per policy. In this case, setting rates that are adequate to cover the costs for PY 1 would require a rate increase of 11% to generate premiums of \$111, and setting rates that are adequate to cover the costs for PY 2 would require a further rate increase of 3% to generate premiums of \$114.

By contrast, if one were to apply a 7% increase in year one and a further increase of 7% in year two ( $\$107 \times (1.07) = \$114$ ), then for PY 1 the insurance company would collect only \$107 in premiums while incurring \$111 in costs, which means that the rate is not adequate. Although

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the rate in PY 2 would result in an adequate premium of \$114 being collected, over the two years the insurance company would recover only \$221, i.e., less than the \$225 required over the two year period. The insurance company's capital would be depleted by the \$4 amount of shortfall.

This example demonstrates that since the rates are deficient over the two year period, the rates would not accord with accepted actuarial practice, and would result in a depletion of Basic capital levels to make up for the shortfall in the rates. In addition, to propose rates for multiple years would involve making forecasts for the outer years, which would be subject to a greater level of uncertainty. At the present time in particular, there is recent evidence of a flattening in the downward trend of bodily injury (BI) claims frequency. As discussed in the response to information request 2012.1 RR BCUC.38.2, although a downward trend continues to be forecast, ICBC is monitoring evidence of the frequency of BI claims very closely to see if it continues to flatten out as it had in 2011. There is therefore a risk that the required Basic insurance rate increase for policy year 2013 could be significantly higher than what would be indicated by ICBC's current forecasts, as demonstrated in the response to information request 2012.1 RR BCUC.2.4. While ICBC is not opposed in principle to setting annual rates in a multi-year revenue requirements application for efficiency purposes, ICBC believes that it is not advisable to do so in a period of particular volatility.

Moreover, as is discussed further in the response to information request 2012.1 RR BCUC.2.5, the Commission cannot set rates that it knows are insufficient to maintain the MCT above 100%. If ICBC were to propose a multi-year set of rate increases, this means that rates for each future year must be set adequately in order to avoid the risk that Basic capital falls below the regulatory minimum level of a 100% MCT ratio. ICBC would not put before the Commission an application to set the Basic insurance rates of any future year at a level that would have a high likelihood of resulting in ICBC's capital levels dropping below a 100% MCT ratio.

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**2012.1 RR DUCK.19.b Reference: ICBC argues declining interest rates have reduced its investment income and thus the rate increase is required. At 2-1 of Volume 1, ICBC cites "...an extended period of low interest rates will negatively impact investment income."**

**All other things being equal, would this 11.2% rate increase proposed exactly cover the assumed lower interest rate level in perpetuity or at least as long as the actuarial study?**

**Response:**

Yes, the 11.2% proposed Basic insurance rate increase accounts fully for the lower interest rates. All other things equal, there would be no further rate impacts due to the lower interest rates assumed in the Application.

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**2012.1 RR DUCK.19.c Reference: ICBC argues declining interest rates have reduced its investment income and thus the rate increase is required. At 2-1 of Volume 1, ICBC cites "...an extended period of low interest rates will negatively impact investment income."**

**If interest rates were expected to rise, would ICBC's approach to rate setting be symmetrical to the current scenario where interest rates are expected to fall?**

**Response:**

Yes, ICBC's approach to rate setting would be symmetrical to the current scenario if interest rates were expected to rise. Specifically, ICBC would reflect the full impact of the favourable investment income associated with a rise in interest rates in the next year's revenue requirement analysis.

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**2012.1 RR DUCK.19.d Reference: ICBC argues declining interest rates have reduced its investment income and thus the rate increase is required. At 2-1 of Volume 1, ICBC cites “...an extended period of low interest rates will negatively impact investment income.”**

**Exactly how many years are in the “extended period” that ICBC assumes, when it says “...a prolonged period of low interest rates that is forecasted to persist for an extended period.” (3-4 para 12)?**

**Response:**

ICBC has not defined the “extended period” and has adopted the phrase that is being used by the world’s central banks. The US Federal Reserve in its monetary policy statements has been using the phrase “extended period” for much of 2011 when referring to how long policy rates will remain at their current low levels. Rates have indeed remained at very low levels since April 2009 and this is evidenced in Chapter 5, Figure 5.1 of the Application. Furthermore, there is an expectation that interest rates will remain low throughout 2012 as evidenced in the quarterly interest rate forecasts contained in Chapter 5, Figures 5.3, 5.4, 5.5, and 5.6 of the Application. Updated forecasts dated December 2011 filed in response to information request 2012.1 RR BCUC.48.1 indicate that interest rates will continue to be low in 2013, supporting the view that low interest rates will persist for an extended period.

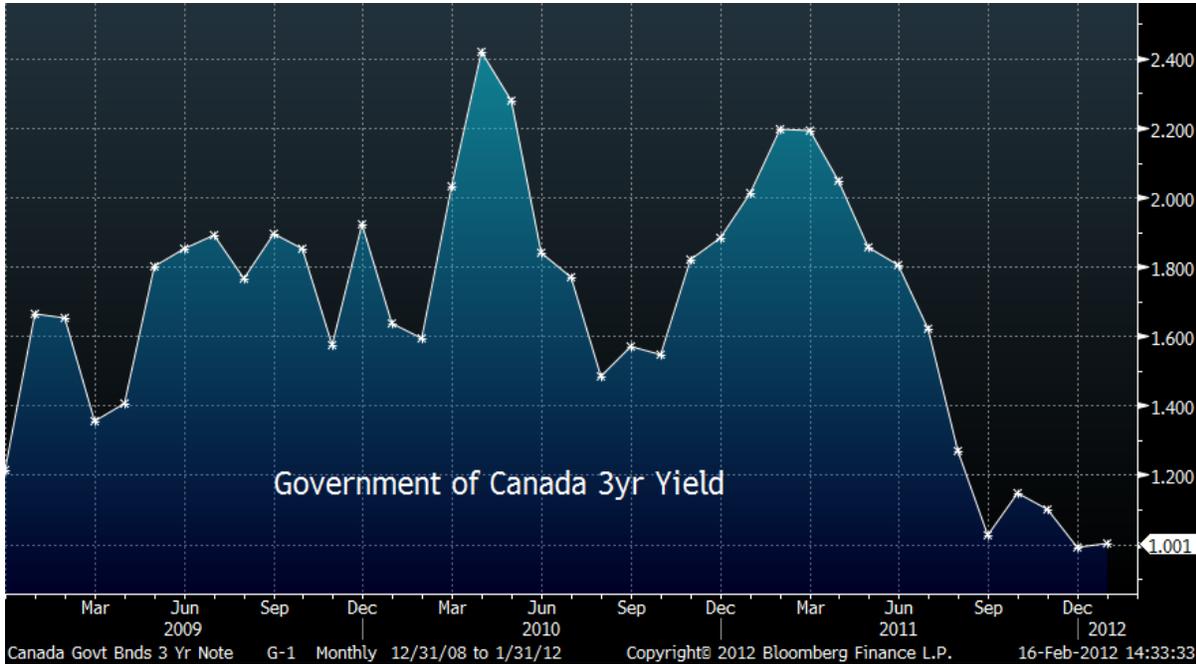
**2012.1 RR DUCK.19.e Reference: ICBC argues declining interest rates have reduced its investment income and thus the rate increase is required. At 2-1 of Volume 1, ICBC cites “...an extended period of low interest rates will negatively impact investment income.”**

**Figure 5.1 shows the apparent drop in interest rates between March 2010 and September 2011. Please confirm that these are the actual yields, not the consensus forecast of market participants used later in Figure 5.4 and 5.5. Please provide a separate chart for each of the 3, 5 and 10 year actual Government yields by month for all of 2009, 2010, 2011 and the available months of 2012.**

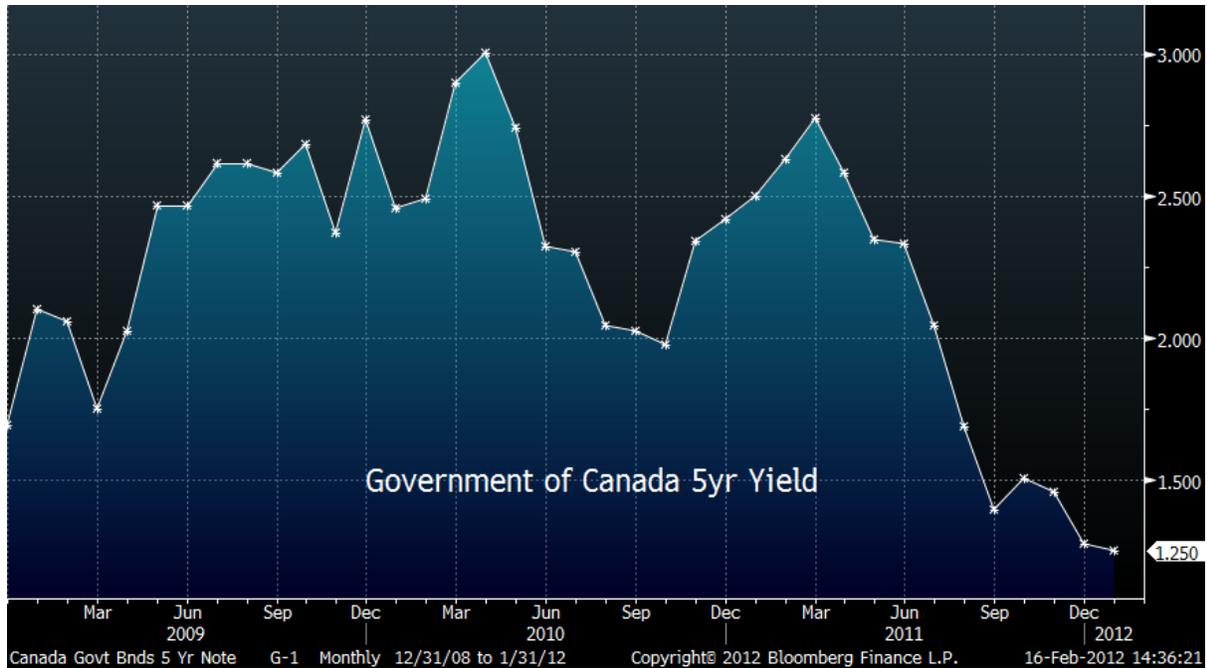
**Response:**

In the Application, Figure 5.1 depicts the actual yields and not consensus forecast yields.

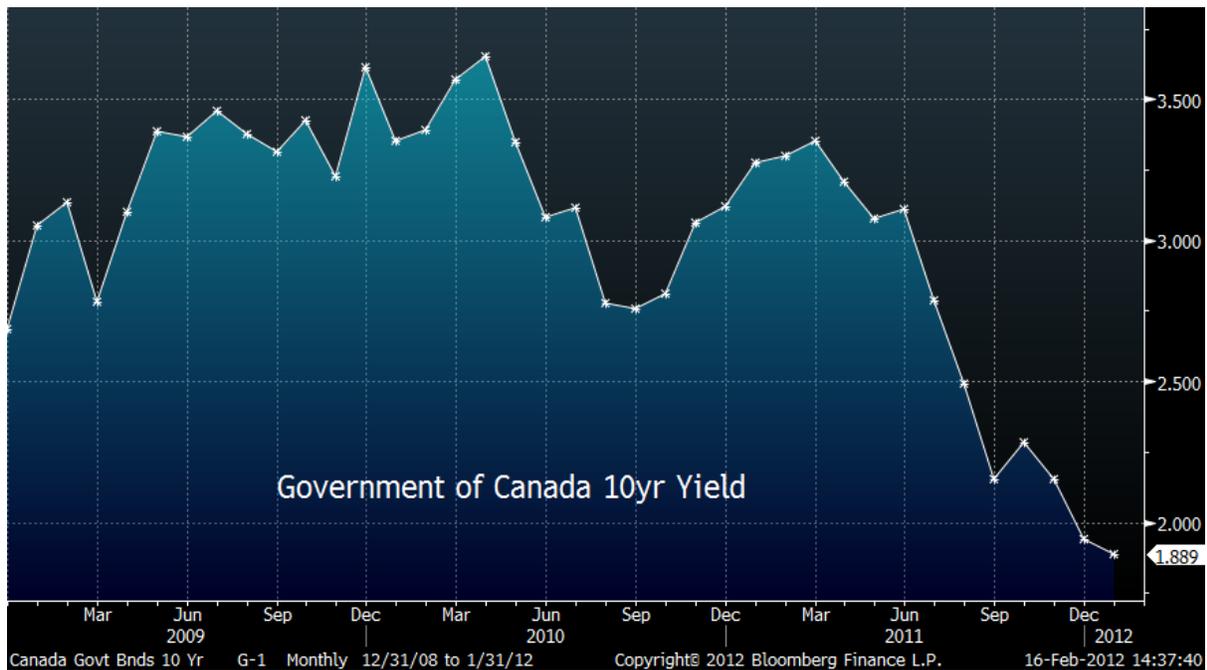
**Government of Canada 3-Year Yield**



### Government of Canada 5-Year Yield



### Government of Canada 10-Year Yield



**2012.1 RR DUCK.19.f Reference: ICBC argues declining interest rates have reduced its investment income and thus the rate increase is required. At 2-1 of Volume 1, ICBC cites “...an extended period of low interest rates will negatively impact investment income.”**

**At para 19 (5-7), ICBC states “...forecasters’ expectation that interest rates will now remain at historically low levels for an extended period.” Please provide a table similar to Figure 5.6, listing each contributor and where in the ICBC evidence of contributor forecasts, interest rates are expected to remain at historically low levels for an extended period. Please quantify any contributor’s estimate of the length of the “extended period”.**

**Response:**

**Revenue Requirements Application for the 2012 Policy Year, Chapter 5, Appendix 5 B**

<b>Forecast Contributor</b>	<b>Forecast reference to low interest rates</b>
<b>Scotiabank</b> , Chapter 5, Appendix 5 B, Attachment 1	<p><b>Page 1</b> “In this environment of slower growth and contained inflation pressures, monetary officials are expected to keep short term borrowing costs at ultra-low, pro-growth levels for the foreseeable future.”</p> <p><b>Page 4</b> “We have revised our central bank calls. We now expect the Bank of Canada to remain on hold until 2012Q3, the US Federal Reserve until 2013Q3 and both the Bank of England and the ECB until 2013Q1”</p>
<b>BMO</b> , Chapter 5, Appendix 5 B, Attachment 2	<p><b>Page 3</b> “growth will resume in H2 and push the Bank’s policy bias back to the tightening side, with rate hikes restarting in 2012 Q2.”</p> <p><b>Page 9</b> Cdn Forecast yield curve</p>
<b>National Bank</b> , Chapter 5, Appendix 5 B, Attachment 3	<p><b>Page 1</b> “In light of the deterioration in the economic outlook, coupled with the Fed’s conditional commitment to stay put on rates until 2013, we now see the Bank of Canada maintaining its current policy stance until mid 2012.”</p> <p><b>Page 3</b> “We now forecast that the Bank of Canada will stay on the sidelines until the July 2012 rate-setting meeting.”</p> <p><b>Page 7</b> “we now expect the BoC to resume its tightening no earlier than July 2012 and even then only assuming some stabilization of the global economy.”</p>

<b>Forecast Contributor</b>	<b>Forecast reference to low interest rates</b>
<p><b>TD Bank,</b> Chapter 5, Appendix 5 B, Attachment 4</p>	<p><b>Page 1</b> “One of the key implications of this considerably softer growth profile is that interest rates are likely to plumb the depths for even longer than we previously anticipated. In our revised timetable, the Bank of Canada’s overnight rate is expected to hold at 1.00% until early 2013 – some twelve months longer than projected in June.”</p> <p><b>Page 3 Box labeled – Interest Rates Lower for Longer</b> “We believe that continuing global risks and the fragility of the US economy will keep the central bank on hold until early 2013.”</p>
<p><b>Royal Bank,</b> Chapter 5, Appendix 5 B, Attachment 5</p>	<p><b>Page 1</b> Financial Market Forecasts – Canada</p>
<p><b>Bank of America Merrill Lynch,</b> Chapter 5, Appendix 5 B, Attachment 6</p>	<p><b>Page 2 Rates: Front-end</b> “Dovish central bank that is focused on global risks will wait for inflation to breach the 2% target before moving back into an aggressive hiking mode.”</p> <p><b>Page 2 Rates: Curve</b> “While the Bank of Canada remains in a holding pattern, the 2y/10y coupon curve will likely steepen to as high as 170 bps over the next 3 months. We then expect a more aggressive inflation fighting central bank to raise rates through 2012, leading the 2y/10y curve to flatten around 100 bps by the end of 2012.”</p>

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**2012.1 RR DUCK.20 Reference:**

**Please provide any quantitative evidence to support the ICBC assumption that the market equity risk premium remains constant as interest rates decline (para 20, page 5-7). Have there been any more recent regulatory conclusions in Canada on the equity market risk premium since 2009?**

**Response:**

There is no conclusive evidence to support or discredit such an assumption. There is much debate on the stability and appropriate term of the equity risk premium (ERP). In fact, the Research Foundation of the Chartered Financial Analysts Institute convened a panel of experts in 2011 and concluded that there is “a great deal of variation among the authors on the stability and term structure of the ERP as well as on whether variations in the ERP, no matter what their source, matter much.” (*Rethinking the Equity Risk Premium*, Research Foundation of the CFA Institute, 2011, page 5).

ICBC has not undertaken research to determine if there are more recent regulatory conclusions in Canada on the ERP since 2009. ICBC is satisfied with the current ERP. ICBC is aware that the Commission has recently initiated a Generic Cost of Capital regulatory proceeding.

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**2012.1 RR DUCK.21 Reference:**

In November 2010, ICBC said **“Our customers' smart driving decisions, combined with a positive claims outlook and ICBC's multi-million dollar investments in road safety are paying off in the form of reduced rates,”** said Jon Schubert, ICBC's President and CEO. **“Today's rate changes are reflective of our promise to our customers of stable insurance rates. This is the third year in a row our customers' combined insurance rates have gone down.”** (emphasis added). In light of this remark and the 11.2% proposed increase in drivers rates for PY2012, please explain why ICBC's rates are not now unstable.

**Response:**

Please see the response to information request 2012.1 RR BCUC.2.1 for an explanation of how ICBC interprets the term “relatively stable and predictable” rates.

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**2012.1 RR IBC.1.1 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**Is it ICBC's position that it need not file any application, either streamlined or regular, if it is not seeking any change in rates (neither an increase or decrease) in a particular year?**

**Response:**

ICBC's approved Basic insurance rates remain in place until the Commission approves a change to them. From that perspective, if ICBC does not require a rate change it does not need to re-apply for, or request confirmation of, the existing rates.

However, according to the April 2010 Decision on the Streamlined Regulatory Process, ICBC must file an actuarial certificate if the indicated rate is between -1% and +1%. When filing an actuarial certificate ICBC must include with the filing the actuarial rate indication analysis, summarized operating expenses, and investment performance as described in the April 2010 Decision. The additional information will be filed for information purposes only, and no further process will occur unless initiated by the Commission.

ICBC did not file a streamlined revenue requirements application in May 2011 as the preliminary actuarial rate indication at that time was in excess of the streamlined range. Instead, ICBC filed this full (non-streamlined) Application later in the year.

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.1.2 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR IBC.1.2 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**Absent a formal public filing, what steps, if any, does ICBC take to keep the BCUC informed of the possible financial developments that might affect rates?**

**Response:**

In addition to revenue requirements applications, ICBC files financial reports to the Commission at regular intervals throughout the year. Most recently, ICBC filed a compliance report (ICBC's Reporting on Basic Insurance for the Quarter Ending September 30, 2011) with the Commission on November 29, 2011, which reported on certain financial metrics such as Basic net income and the Basic Minimum Capital Test ratio. Please see the response to information request 2012.1 RR AIC.13.4 for a copy of this report.

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**2012.1 RR IBC.1.3 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**If ICBC had filed in May 2011 for a rate change, when would that rate change have taken effect?**

**Response:**

The significance of the May timeframe relates to the fact that the April 2010 Decision on the Streamlined Regulatory Process contemplates ICBC filing a streamlined revenue requirements application or actuarial certificate in late May if the actuarial rate indication falls within fixed parameters. The streamlining process also contemplates the Basic insurance rate change sought in May being effective in November. However, ICBC's actuarial review in the May 2011 timeframe suggested an indicated actuarial rate increase in excess of 2.5%, so ICBC would not have met the criterion for a streamlined revenue requirements application. For a non-streamlined revenue requirements application neither the time of the filing nor the time that the Basic insurance rate change becomes effective is predetermined. As explained in the response to information request 2012.1 RR IBC.1.4, ICBC determined to delay filing its revenue requirements application until it had the opportunity to consider whether there were any available means to reduce the actuarial rate indication. ICBC filed the Application on December 1, 2011.

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.1.4 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 2
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**2012.1 RR IBC.1.4 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**In light of the fact that ICBC was already becoming aware of a negative trend in claim costs in 2010, what prevented ICBC from submitting a revenue requirement filing for policy year 2011?**

**Response:**

Nothing prevented ICBC from submitting a revenue requirements application for policy year 2011. As of May 2011, ICBC's preliminary actuarial rate level analysis indicated a required Basic insurance rate increase of 6.3%. Since the 2010 year-end MCT ratio was in excess of 150%, the 2010 Government Directive regarding Basic Excess Capital specified that a capital release provision should be included in any rate change proposed by ICBC, reducing the rate increase by 1.5 percentage points to 4.8%.

When ICBC became aware of the required rate increase, it decided that it would be appropriate to take whatever steps it could to mitigate this increase. ICBC therefore decided to delay submitting its revenue requirements application to later in 2011 in order to examine its options for reducing the rate indication. ICBC did not foresee the significant volatility of the investment markets and the associated reduced interest rates which occurred in the latter part of 2011 (see, for example, the response to information request 2012.1 RR DUCK.19.e). As a result, the projected investment income deteriorated significantly, resulting in a significant increase in the actuarial rate indication for the Application in comparison to the preliminary rate indication as of May 2011. A further deterioration in claims costs and the removal of the capital release provision pursuant to the 2011 Government Directive regarding Basic Rate Stability and Capitalization also contributed to the increase in the actuarial rate indication.

If the 4.8% Basic insurance rate increase had been put into effect on November 1, 2011, then based on the evidence in the Application, ICBC would now be seeking a further 6.1% rate increase in order to avoid capital levels falling below the regulatory minimum MCT. The impact on the customers with policy effective dates on or after February 1 2012 would be the full

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11.2%. The additional 6.1% rate increase to achieve an overall 11.2% rate increase is based on solving for X in the equation  $(1+0.048) \times (1+X) - 1 = 11.2\%$ .

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.1.5 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR IBC.1.5 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**As of May 1, 2011, what was the anticipated increase required by ICBC?**

**Response:**

Please see the response to information request 2012.1 RR IBC.1.4.

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.1.6 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR IBC.1.6 Reference: Ch.1 Application**

**p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**If the increase referenced in response to 1.5 had been put into effect as of November 1, 2011 what effect would that have had on the rate increase ICBC is now seeking?**

**Response:**

Please see the response to information request 2012.1 RR IBC.1.4.

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**2012.1 RR IBC.1.7 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**Alternatively, if a 2.5% increase had been put into effect on November 1, 2011, what effect would that have had on the increase ICBC is now seeking?**

**Response:**

If a 2.5% Basic insurance rate increase had been put into effect on November 1, 2011, then based on the evidence in the Application, ICBC would now be seeking a further 8.5% Basic insurance rate increase effective February 1, 2012, in order to avoid capital levels falling below the minimum MCT of 100%. The impact on the customers with policy effective dates on or after February 1, 2012 would be the full 11.2%. The additional 8.5% Basic insurance rate increase to achieve an overall 11.2% Basic insurance rate increase is based on solving for X in the equation  $(1+0.025) \times (1+X) - 1 = 11.2\%$ .

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.1.8 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR IBC.1.8 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**What will ICBC file in terms of a rate application in 2013 and what is the anticipated timing for such a filing?**

**Response:**

The actuarial rate indication underlying the current Application contemplates that the required Basic insurance rate increase will be in place until the end of January 2013. With that in mind, the following factors will determine the appropriate timing and type of the next revenue requirements application:

- The level of the MCT ratio.
- The loss cost situation and associated rate indication.

Three possible scenarios are as follows.

If ICBC determines based on these considerations that an immediate rate change effective February 1, 2013 is required, ICBC will file a revenue requirements application in advance of that date and could seek interim rates effective February 1, 2013.

If, however, ICBC determines that an immediate rate change is not required effective February 1, 2013, then ICBC's course will depend largely on the magnitude of the rate indication in Spring 2013. ICBC would proceed according to the streamlined revenue requirements process (which contemplates an application in May 2013) where the actuarial rate indication falls within the parameters set by the April 2010 Decision on the Streamlined Regulatory Process. Otherwise, ICBC would expect to file a full revenue requirements application some time in 2013.

If the actuarial rate indication meets the streamlining criteria (actuarial rate indication less than 2.5%) ICBC may file a streamlined application in May 2013 with the rate change being effective November 1, 2013.

**2012.1 RR IBC.1.9 Reference: Ch.1 Application  
p. ii, para. 5**

**ICBC explains that it last filed an application in May 2010 and that application was filed as a streamlined revenue requirements application.**

**Does ICBC anticipate that a further rate increase will be required in 2013? What are ICBC's current claims processes indicating? ICBC advised during the Workshop on January 23, 2012 that in 2010 after the 2010 application was filed it was seeing some increase in BI claims. What is ICBC seeing in its claims as of February 2012?**

**Response:**

Please see the response to information request 2012.1 RR BCUC.2.4 for the discussion of policy year 2013 indicated rate change scenarios.

Reported bodily injury (BI) claims frequency at two months of development is shown below. Accident year 2009 is as of February 28, 2009, accident year 2010 is as of February 28, 2010, and so on. Reported BI claims frequency started to increase in 2010 and continues to increase in 2012.

<b>Accident Year</b>	<b>Bodily Injury Reported Frequency at 2 Months of Development</b>
2003	0.22%
2004	0.19%
2005	0.17%
2006	0.20%
2007	0.19%
2008	0.17%
2009	0.14%
2010	0.15%
2011	0.17%
2012	0.18%

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**2012.1 RR IBC.2.1 Reference: Ch. 1 Application  
p. iii, para. 9(c)**

**What is the impact on the rate indication of the government directive of November 25, 2011?**

**Response:**

Under the 2011 Government Directive regarding Basic Rate Stability and Capitalization, there are two changes to the Basic Insurance Capital Management Plan:

- 1) The most recent quarter Basic insurance MCT ratio is used instead of the previous year-end.
  
- 2) The capital build provision is not included in the rate indication if the Basic insurance MCT ratio is between 100% and 130%.

In the absence of the 2011 Government Directive, the 2010 year-end MCT ratio would be used in determining the capital provisions. Under the terms of the 2010 Government Directive regarding Basic Excess Capital, ICBC is obliged to release Basic capital sufficient to offset up to 1.5 percentage points of any indicated rate increase when the MCT ratio at the end of the previous year exceeds 150%. The MCT ratio for the 2010 year-end, restated under IFRS, was 154.5% (as mentioned in Chapter 4, page 4-2, paragraph 7 of the Application). A capital release provision would therefore have been included in the Application. This would have resulted in a rate impact of -1.5 percentage points on the Basic insurance actuarial rate indication.

The response to information request 2012.1 RR BCUC.20.3 shows that the MCT at December 31, 2012 is now expected to be much lower, at 107%. Releasing capital through a capital release provision would further erode ICBC's Basic capital position.

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**2012.1 RR IBC.3.1 Reference: Ch. 2 Introduction**

**B.2 Trends in Loss Costs**

**p. 2-4, para. 14**

**ICBC states that it "has implemented a number of claims cost management initiatives since 2006, and believes that they have contributed to the lower upward trend for bodily injury severities".**

**Please advise which specific claims costs management initiatives are believed to have had this impact.**

**Response:**

All the initiatives as described in Chapter 6 are believed to have contributed to the lower bodily injury (BI) severity trend that has emerged since 2005. As the emergence of the lower trend has coincided with the concerted efforts of the Claims Division through the initiatives to contain BI claims costs, it is reasonable to assume these initiatives have contributed to some part of the reduced BI severity trend. Please see the response to information request 2012.1 RR IBC.3.2.

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**2012.1 RR IBC.3.2 Reference: Ch. 2 Introduction**

**B.2 Trends in Loss Costs**

**p. 2-4, para. 14**

**ICBC states that it "has implemented a number of claims cost management initiatives since 2006, and believes that they have contributed to the lower upward trend for bodily injury severities".**

**What statistical or other evidence does ICBC have that supports the belief that these claims costs management initiatives contributed to a lower upward trend?**

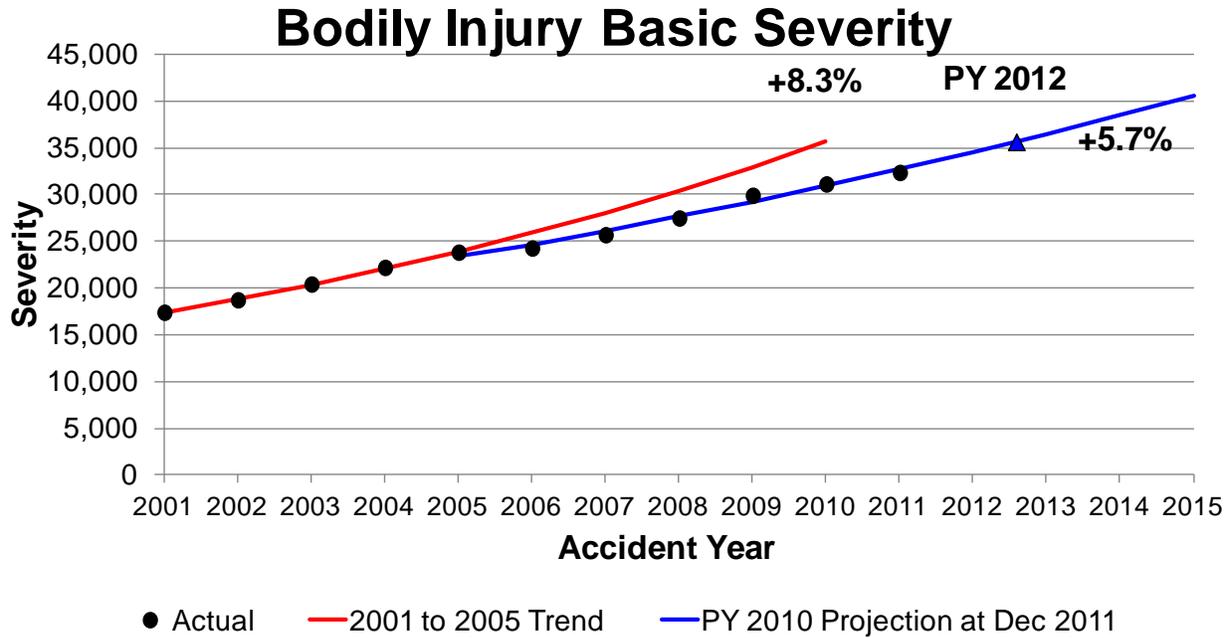
**Response:**

ICBC is not able to identify the impact of individual initiatives because bodily injury (BI) claims may have been subject in varying degrees to multiple initiatives implemented within coincidental or overlapping time periods, as well as to external influences which occurred over the same time period. The implementation of multiple initiatives within a defined timeframe has a confounding effect, which creates significant challenges if an attempt were made to separate out the impact of any individual initiative. This is a challenge faced by all insurance companies, and is not unique to ICBC.

However, ICBC has determined the costs of BI claims, particularly those incurred in 2005 to 2009, are lower than was expected at the time of the 2007 Revenue Requirements Application and the 2007 Rate Design Application.

As the favourable emergence of these costs has coincided with the concerted efforts of the Claims Division to contain BI claims costs through its several initiatives, it is reasonable to assume these initiatives have contributed to some part of the favourable emergence. Moreover, given the current focus of the Claims Division, it is reasonable to assume that the existing claims initiatives, or future enhancements, will continue to be effective.

The graph below was presented on slide 50 from the January 23, 2012 Workshop. It shows that prior to 2005, BI Basic severity was rising at about 8% a year. Since then it has moderated to about 6%.



ICBC believes that the claims initiatives undertaken since 2006 have contributed to the moderation of this trend.

**2012.1 RR IBC.4.1 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
B.1 PY 2010 Loss Cost Forecast Variance  
p. 3-7, para. 22**

**Please be more specific with regards to the statement that "the severity of bodily injury claims increased slightly compared to the 2010 forecast". To what measurable extent has the severity increased? What is the basis for this statement?**

**Response:**

The statement is made to explain that the forecast variance in the policy year 2010 Basic loss cost is mainly due to the change in bodily injury (BI) frequency. It is based on a comparison of the BI loss cost, frequency, and severity forecasts for policy year 2010.

The following table compares the policy year 2010 BI forecasts between the 2010 Streamlined Revenue Application and this Application:

<b>Policy Year 2010</b>			
	<b>2010 Streamlined Revenue Requirements Application (a)</b>	<b>Revenue Requirements Application for the Policy Year 2012 (b)</b>	<b>% Difference (b)÷(a)-1</b>
BI Frequency	1.37%	1.46%	6.6%
BI Severity	\$32,908	\$33,197	0.9%
BI Loss Cost	\$451	\$485	7.5%

The table shows that the loss cost increase is mainly a result of the BI frequency, which has emerged higher than expected.

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**2012.1 RR IBC.5.1 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
B.1 PY 2010 Loss Cost Forecast Variance  
p. 3-8, para. 23**

**What level of GDP growth was used in the 2010 Application when "a gentle recovery to the longer term trend as GDP growth resumed following the recession" was assumed?  
What level of GDP growth is used in the current Application?**

**Response:**

The GDP growth level emerged higher than expected during the recovery following the recession. BC GDP growth was forecasted at 2.2% in the 2010 Streamlined Revenue Requirements Application based on the BC Budget and Fiscal Plan released by the BC Ministry of Finance on March 2, 2010. The GDP growth for 2010 is estimated at 3.1% as in BC Budget and Fiscal Plan released on February 15, 2011.

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**2012.1 RR IBC.5.2 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
B.1 PY 2010 Loss Cost Forecast Variance  
p. 3-8, para. 23**

**What is the forecast of claims frequency in the Application? What was the forecast of claims frequency in the 2010 Application?**

**Response:**

As stated in the Application, “The forecast variance [for the policy year 2010 Basic loss cost] is mainly due to Basic Bodily Injury claims frequency, which emerged higher than was forecasted in the 2010 Application.”

The forecast of bodily injury claims frequency for policy year 2010 in the Application is 1.46%. In the 2010 Streamlined Revenue Requirements Application, the forecast for policy year 2010 was 1.37%.

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**2012.1 RR IBC.6.1 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
B.1 PY 2010 Loss Cost Forecast Variance  
pp. 3-9. and 3-10, paras. 24 and 26**

**Please provide the statistics and the source of the statistics used to determine the amount of travel in each of 2010 and 2011.**

**Response:**

Please see Attachment A – Travel Estimates for 2010 to 2011.



## **2012.1 RR IBC 6.1 – Attachment A – Travel Estimates for 2010 to 2011**

**Estimated Monthly Kilometres Travelled in BC in 2010 and 2011  
Gasoline Vehicles**

<b>Date</b>	<b>Kilometres travelled (in millions)</b>	<b>Traffic Volume (madt*)</b>
Jan-10	3,910	1657456
Feb-10	3,645	1724660
Mar-10	4,169	1796376
Apr-10	4,098	1831759
May-10	4,346	1891270
Jun-10	4,315	1951687
Jul-10	4,595	2024676
Aug-10	4,606	2031032
Sep-10	4,253	1917517
Oct-10	4,268	1849784
Nov-10	3,864	1701935
Dec-10	3,998	1704631
Jan-11	3,881	1506562
Feb-11	3,587	1550323
Mar-11	4,090	1608284
Apr-11	4,072	1665504
May-11	4,320	1720308
Jun-11	4,305	1783000
Jul-11	4,562	1838225
Aug-11	4,640	1876132
Sep-11	4,295	1778135
Oct-11	4,260	1691355
Nov-11	3,950	1604252
Dec-11	4,039	1583446

\*madt=monthly average daily traffic

**Estimated Monthly Kilometres Travelled in BC in 2010 and 2011  
Diesel Vehicles**

<b>Date</b>	<b>Kilometres travelled (in millions)</b>	<b>Traffic Volume (heavy truck madt*)</b>
Jan-10	275.425	32973
Feb-10	306.306	36670
Mar-10	311.264	37264
Apr-10	312.095	37363
May-10	338.165	40484
Jun-10	349.520	41844
Jul-10	372.128	44550
Aug-10	372.500	44595
Sep-10	357.410	42788
Oct-10	340.704	40788
Nov-10	299.899	35903
Dec-10	273.971	32799
Jan-11	260.482	30521
Feb-11	284.631	33351
Mar-11	309.748	36294
Apr-11	324.288	37997
May-11	341.304	39991
Jun-11	348.339	40815
Jul-11	361.224	42325
Aug-11	371.337	43510
Sep-11	361.804	42393
Oct-11	349.165	40912
Nov-11	314.651	36868
Dec-11	281.725	33010

\*mادت = monthly average daily traffic

## **Data Sources:**

Estimation of kilometres travelled in 2010 and 2011:

- 1) Vehicle traffic data (monthly average daily traffic-MADT) from Ministry of Transportation and Infrastructure
- 2) Heavy truck traffic data (monthly average daily traffic - MADT for heavy truck) from Ministry of Transportation and Infrastructure

Kilometres travelled are derived using traffic volume data from the above sources in combination with a supporting analysis that takes the relationship between traffic volume, gas sales or diesel sales, and fuel efficiency into account.

For gasoline-powered vehicles:

Vehicle traffic counts in 2010 were based on 101 sites

Vehicle traffic counts in 2011 were based on 96 sites

(Five of the 2010 sites could not be used in the 2011 update due to missing data.)

For diesel-powered vehicles:

Heavy vehicle traffic counts in 2010 and 2011 were based on 40 sites

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**2012.1 RR IBC.7.1 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
p. 3-11, Figure 3.6**

**The chart provided shows very slight changes in distance traveled year-over-year.**

**In light of the fact ICBC uses this information to explain, in part, the deteriorating claims experience, please provide the detailed analysis used to draw this conclusion.**

**Response:**

ICBC has not conducted a detailed analysis that uses the vehicle travel estimates shown in Chapter 3, Figures 3.6 and 3.7 in the Application to explain claims trends. These estimates are used simply to provide a better understanding of the impact of events such as the 2008 and 2009 recession on a factor (vehicle travel) that influences the frequency of ICBC claims. The travel estimates obtained for 2010 and 2011 provide evidence for the hypothesis that vehicle travel has returned to levels in line with pre-recession trends, and that the 2008 and 2009 lulls in travel were temporary. This, in turn, supports the choice of the policy year 2012 claims frequency forecast based on the long-term frequency trend line. Please see the response to information request 2012.1 RR AIC.5 for a discussion of the correlation between travel amounts and crash frequency.

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**2012.1 RR IBC.8.1 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
D.2 Loss Cost Trend to PY 2012  
pp. 3-14 and 3-15, para. 32**

**Please provide specifics of the claims cost management initiatives implemented since 2006.**

**Response:**

The specific claims cost management initiatives implemented since 2006 are set out in Chapter 6 of the Application. Further information is provided in the responses to the following information requests:

- 2012.1 RR BCUC.62.1
- 2012.1 RR BCUC.65.1
- 2012.1 RR BCUC.66.1

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**2012.1 RR IBC.8.2 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
D.2 Loss Cost Trend to PY 2012  
pp. 3-14 and 3-15, para. 32**

**Please advise which claims cost management initiatives implemented since 2006 have been abandoned and which are continuing.**

**Response:**

Please see responses to information requests 2012.1 RR IBC.8.5 and 2012.1 RR IBC.10.1.

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**2012.1 RR IBC.8.3 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
D.2 Loss Cost Trend to PY 2012  
pp. 3-14 and 3-15, para. 32**

**Please explain how each of these claims cost management initiatives have had an impact on the lower trend in severity.**

**Response:**

Please see the response to information request 2012.1 RR IBC.3.2.

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**2012.1 RR IBC.8.4 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
D.2 Loss Cost Trend to PY 2012  
pp. 3-14 and 3-15, para. 32**

**Please explain how each of these claims cost management initiatives is measured and provide statistics where available.**

**Response:**

Bodily injury (BI) claims have been subject in varying degrees to multiple initiatives implemented within coincidental or overlapping time periods, as well as to external influences which occurred over the same time period. The implementation of multiple initiatives within a defined timeframe has a confounding effect, which creates significant challenges if an attempt were made to separate out the impact of any individual initiative. As a result, ICBC is not able to identify the impacts of individual initiatives.

The Centralized Claims Injury Centre (CCIC) evaluations are an exception because of the focus only on low-complexity claims and the availability of a control group. Under this methodology, the claims cost savings associated with the CCIC model are determined by comparing actual results achieved by CCIC to those of a control group of similar low-risk/low-complexity BI claims.

CCIC compares favourably to the control group on several measures. CCIC representation rates are lower by about 3%, and the proportion of claims resolved without requiring payments for BI are higher by about 13%. For claims where BI payments are required, the average cost of claims handled in CCIC is lower by about 35%.

The enhanced customer service model at CCIC also leads to a more positive relationship with the customers and contributes to the effective management of legal representation rates.

ICBC continues to focus on claims strategies and initiatives to ensure that it is taking appropriate steps to effectively manage BI claims costs.

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**2012.1 RR IBC.8.5 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
D.2 Loss Cost Trend to PY 2012  
pp. 3-14 and 3-15, para. 32**

**If any of the claims cost management initiatives have been discontinued, please advise when and why.**

**Response:**

ICBC discontinued the use of Official Disability Guidelines effective January 2012. Please see the response to information request 2012.1 RR IBC.10.1.

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**2012.1 RR IBC.9.1-3 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
Exhibit C.0.5 Summary of Analysis  
p. 4, paras. 12-13**

In paragraph 12, ICBC states:

*As a result of the improvements to business indicator reporting and data analysis, there has been an improved ability in more recent years to use analytic reports to understand the data, investigate emerging trends, and develop appropriate responses. With this improved ability, the Claims Division has been able to enhance focus on relevant issues within each operational area. For example, in the last year a greater number of claims have settled in the first few months after the claim is opened, which is attributed to an increased emphasis on making offers to claimants in a timely manner.*

**9.1 What's meant by the "first few months"? Is there a set number of months ICBC uses to support this statement? If so, what is that number?**

**9.2 Can ICBC provide the average time it has taken to settle claims for the past 5 policy years?**

**9.3 Can ICBC also indicate the percentage of claims settled within what it considers to be "the first few months" for the past 5 years?**

**Response:**

**9.1**

ICBC considers up to 90 days as the "first few months".

**9.2**

ICBC does not monitor cycle time by policy year; the claims exposure closed date is used to calculate cycle times.

**9.3**

Please see the response to information request 2012.1 RR BCUC.65.3.

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**2012.1 RR IBC.9.4 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
Exhibit C.0.5 Summary of Analysis  
p. 4, paras. 12-13**

**In paragraph 12, ICBC states:**

***As a result of the improvements to business indicator reporting and data analysis, there has been an improved ability in more recent years to use analytic reports to understand the data, investigate emerging trends, and develop appropriate responses. With this improved ability, the Claims Division has been able to enhance focus on relevant issues within each operational area. For example, in the last year a greater number of claims have settled in the first few months after the claim is opened, which is attributed to an increased emphasis on making offers to claimants in a timely manner.***

**In light of the statement about ICBC's improved ability to understand the data, please explain the statement in paragraph 13 to the effect that ICBC is not able to separately quantify the impact of claims initiatives.**

**Response:**

ICBC is not able to quantify the impact of individual claims initiatives, because bodily injury claims may have been subject in varying degrees to multiple initiatives implemented within coincidental or overlapping time periods, as well as to external influences which occurred over the same time period. The implementation of multiple initiatives within a defined timeframe has a confounding effect, which creates significant challenges if an attempt were made to separate out the impact of any individual initiative. This is a challenge faced by all insurance companies, and is not unique to ICBC.

It should be noted that the cited statement from Chapter 3, Exhibit C.0.5, paragraph 13 was made in the context of a discussion on the impact of the claims initiatives on the actuarial data. In this context, it is important for the actuaries to understand how these initiatives in combination are affecting the data so that they can select the most appropriate methods and assumptions for estimating the ultimate loss and ALAE amounts.

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**2012.1 RR IBC.9.5 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
Exhibit C.0.5 Summary of Analysis  
p. 4, paras. 12-13**

**In paragraph 12, ICBC states:**

***As a result of the improvements to business indicator reporting and data analysis, there has been an improved ability in more recent years to use analytic reports to understand the data, investigate emerging trends, and develop appropriate responses. With this improved ability, the Claims Division has been able to enhance focus on relevant issues within each operational area. For example, in the last year a greater number of claims have settled in the first few months after the claim is opened, which is attributed to an increased emphasis on making offers to claimants in a timely manner.***

**What are the "external influences" referenced in paragraph 13, that ICBC talks about?**

**Response:**

Chapter 3, Exhibit C.0.5, paragraph 13 notes that volatility in the claims data has, in some cases, caused the actuarial assumptions underlying the standard methods used for estimation of ultimate loss not to hold. Some of this volatility can be caused by external factors such as changes in the legal environment or changes in driver behaviour, including amounts and types of travel. ICBC is not able to separately quantify the impacts of claims initiatives and external influences because there have been multiple changes occurring over the same timeframe, which has a confounding effect that creates significant challenges if an attempt were made to separate out the impact of any individual initiative or external change.

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**2012.1 RR IBC.9.6 Reference: Ch. 3 Actuarial Rate Level Indication Analysis  
Exhibit C.0.5 Summary of Analysis  
p. 4, paras. 12-13**

In paragraph 12, ICBC states:

*As a result of the improvements to business indicator reporting and data analysis, there has been an improved ability in more recent years to use analytic reports to understand the data, investigate emerging trends, and develop appropriate responses. With this improved ability, the Claims Division has been able to enhance focus on relevant issues within each operational area. For example, in the last year a greater number of claims have settled in the first few months after the claim is opened, which is attributed to an increased emphasis on making offers to claimants in a timely manner.*

**Please give examples that point to the volatility observed and referenced in paragraph 13.**

**Response:**

Changes in the average size of case reserves for bodily injury (BI) and changes in the timing of claim payments for BI are two examples that point to the volatility observed in the claims data.

The average size of case reserves for BI has been declining or growing at a slower rate during the latest four calendar years. This coincides with the changes to reserve levels and timing resulting from claims initiatives. Over the past few years, data supports that case reserves have been set at a more accurate level earlier in a claim's life, relative to its ultimate cost, as compared to historical patterns. Thus, at early stages of development, average case reserves appear to be at a different level as compared to prior years. In addition, other initiatives to improve claims handling have been implemented which also contribute to changes in case reserve levels.

There have also been recent changes in the timing of BI payments. Calendar years 2008 and 2009 experienced unusually low paid amounts and calendar year 2010 experienced relatively high paid amounts.

As noted in Chapter 3, Exhibit C.0.5, paragraph 13 in the Application, these types of volatility in the claims data can cause the actuarial assumptions underlying the standard methods used for estimation of ultimate loss not to hold. The actuaries examine past and present circumstances

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that affect the claims data to determine if the method's inherent assumptions still hold true. If the method's inherent assumptions still hold true, then the actuaries apply the method and ensure that all the assumptions are appropriate. On the other hand, if such examination determines that the assumptions inherent to that method do not hold true, then the actuaries evaluate whether adjustments can be made to account for the circumstances in order to establish appropriate assumptions. If appropriate assumptions cannot be struck for a method, then the results from the routine application of the method are not used.

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**2012.1 RR IBC.10.1 Reference: Ch. 6 Claims Initiatives  
C Claims Cost Management Initiatives  
p. 6-2, para. 6**

**In 2010, in response to 2010.1 RR IBC 8.1-2 ICBC advised that it was continuing to utilize each of the claims handling initiatives referenced in the information request, namely:**

- **improved standards for initial claim handling;**
- **timely settlement offers;**
- **increasing use of the Official Disability Guidelines;**
- **improvements to the effectiveness of mediation;**
- **increasing the overall skill level of adjusters;**
- **implementing a Litigation Centre for segmentation of high-risk/high-complexity represented and litigated claims; and**
- **implementing increased segmentation for high-risk/high-complexity represented and litigated claims formerly handled by regional claims centres.**

**Are any of the above listed strategies no longer being used and, if not, why not?**

**Response:**

All of the strategies listed above are still being used, with the exception of the Official Disability Guidelines. ICBC discontinued the use of this licence effective January 2012 and is reviewing other options. The intent of the review is to find a more user friendly and cost effective tool for both ICBC and the BC Medical Association community.

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**2012.1 RR IBC.11.1 Reference: Ch. 6 Claims Initiatives**

**C.1 Claims Handling**

**p. 6-2, para. 8**

**How does ICBC define high-risk/high-complexity? Is high-risk defined as claims files over \$40,000 as it was in 2008 and 2010? Are Risk Assessment Committees still used for claims files over \$40,000?**

**Response:**

For the purpose of segmenting bodily injury (BI) claims by risk and complexity, ICBC defines high-risk/high-complexity claims files as those claims that have complex medical or legal issues the outcome of which, if not managed appropriately, can result in higher claims settlement costs.

For the purpose of reporting to the Commission on BI paid severity, high-risk/high-complexity is defined as BI paid severity over \$40,000, as it was in 2008 and 2010.

Risk Assessment Committees are still used for claims files over \$40,000.

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**2012.1 RR IBC.11.2 Reference: Ch. 6 Claims Initiatives**

**C.1 Claims Handling**

**p. 6-2, para. 8**

**At the Workshop on January 23, 2012, ICBC indicated that recently there were concerns about the increased frequency of low-cost claims. How do these differ from the high-risk/high-complexity claims? Please provide further details of the concerns ICBC has regarding these low-cost claims.**

**Response:**

ICBC has identified an increase in the number of bodily injury (BI) claims arising from low-cost property damage (PD) incidents, which began in 2010 after several years of decline. ICBC is currently undertaking further research into the potential causes for this increase, which will potentially provide insights into the risk and complexity of these claims as well.

As discussed in the response to information request 2012.1 RR BCUC.38.2, ICBC is monitoring the BI claims frequency very closely to see if it continues to flatten out as it had in 2011, or continues on a downward trend line. The response to information request 2012.1 RR IBC.1.9 shows the 2012 accident year as of the end of February emerging in line with 2011, so that a flattening could be occurring. The concern ICBC has is that a flat frequency trend, combined with existing 6% severity trend, will result in significant cost pressures on the Basic insurance.

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**2012.1 RR IBC.12.1-3 Reference: Ch. 6 Claims Initiatives**

**C.1 Claims Handling**

**p. 6-3, para. 10**

**12.1 Is the enhanced chiropractor service delivery model negotiated with the BC Chiropractor Association in June 2009 and discussed in Chapter 6, section B.1, para. 4 of the May 31, 2010 filing still in place?**

**12.2 Has ICBC conducted an analysis or study of the delivery model and, if so, please provide?**

**12.3 Have similar delivery models been entered into with other bodily injury service providers? If not, please explain why.**

**Response:**

The enhanced chiropractor service delivery model, referenced in Chapter 6 of the 2010 Streamlined Revenue Requirements Application, ended on May 31, 2011. As a result of changes to the federal *Competition Act*, ICBC was not able to renegotiate an agreement with the BC Chiropractic Association. However, ICBC did enter into fresh agreements with individual chiropractors in order to renew the agreement while it conducts a review and analysis of the chiropractor service delivery model. Similar service delivery models have not been entered into with other bodily injury (BI) service providers. The possibility of utilizing the same or a similar model with other BI service providers will be assessed following the review of the chiropractor service delivery model.

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**2012.1 RR IBC.13.1 Reference: Ch. 6 Claims Initiatives  
C.2 Management Accountability  
p. 6-4, para. 16**

**Please provide details regarding the new structure of the Claims Division, including a chart setting out the structure.**

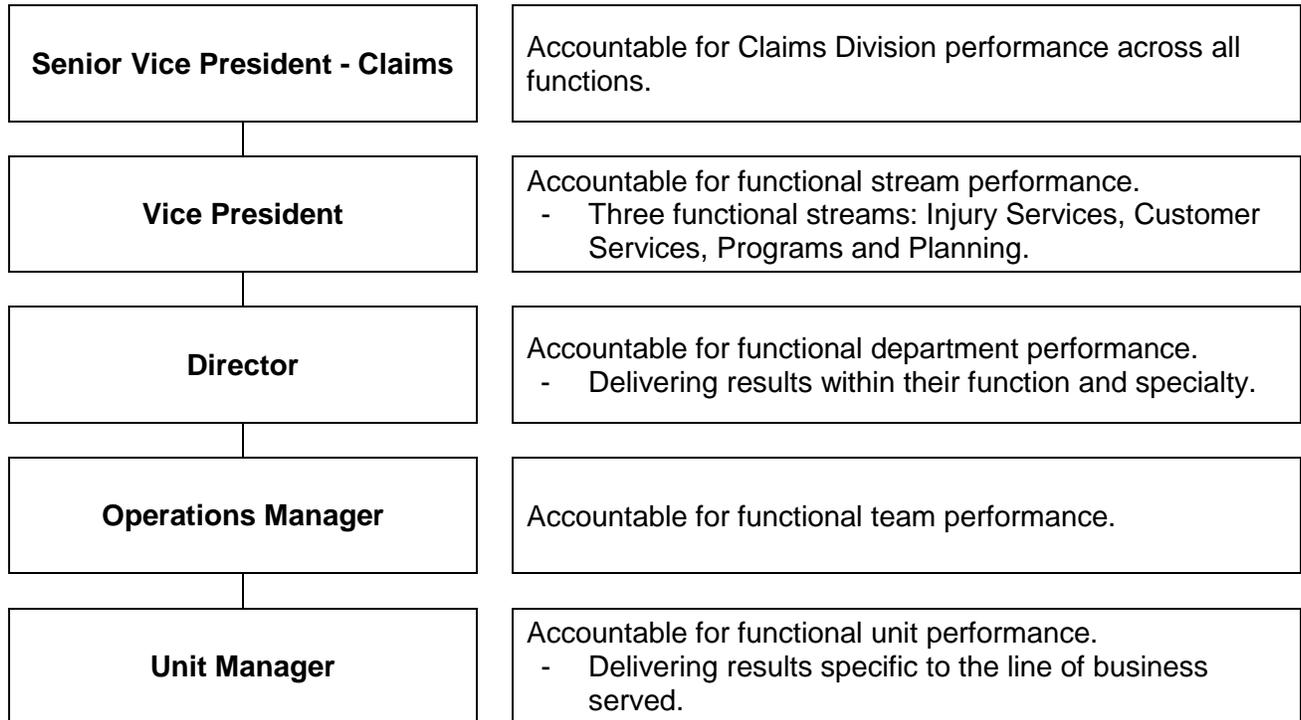
**Response:**

ICBC's Claims Division new functional organizational structure aligns claims employees along three main functional streams – Injury Services, Customer Services, and Programs and Planning. Claims employees are aligned within a functional department and report up to a Vice President specifically accountable for that functional stream.

**Injury Services** is responsible for end-to-end injury file handling for all levels of risk, as well as delivery of rehabilitation program services.

**Customer Services** is responsible for all aspects of claims-handling which do not directly service injured customers. Customer Services also includes administrative services and salvage operations.

**Programs and Planning** is responsible for all business services for the Claims Division. These services include budgeting, claims cost analysis and reporting, the development and implementation of supplier and stakeholder programs, the development and delivery of programs to mitigate claims costs, and the delivery of work tools and skills development programs to Claims employees. In addition, Programs and Planning is accountable for the Special Investigation Unit and Claims Legal Services (in-house claims counsel).



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**2012.1 RR IBC.14.1 Reference: Ch.6 Claims Initiatives  
C.3 Business Indicator Reporting and Analysis Data  
p. 6-5, para. 19**

**The reports listed are the same reports discussed in Chapter 6, section B.3 of the May 31, 2010 filing. Have any new reports been introduced since May 31, 2010?**

**Response:**

The following are Claims reports introduced since May 2010:

**Claims Key Metrics Report** - The Claims Key Metrics report was created to provide monthly claims measures at an office and area level available in a single report, rather than requiring managers to look at multiple reports. Measures include claims productivity (opened, re-opened, closed with payment, negated, transfers in and out), financial (total bodily injury (BI) claims payments by loss and expense), and number of files closed represented and unrepresented. All figures are shown in a monthly and year to date view, with a comparison to the same period in the prior year. This report allows Operations Managers and Directors to compare performance against prior year in key reporting areas.

**BI Weekly Pending** – BI pending exposure reporting is now produced weekly in three separate reports: centre view, full view, and customizable view. The centre view offers a 10 week pending view, at the individual adjuster level for each Operations Manager, segmented by cycle time ranges. This report is designed for Claims Unit Managers and Claims Operations Managers and shows a more precise view of pending. The full view and customizable view reports capture the weekly count of open claims for a 53 week period, at the Director and Operations Manager level. In addition to cycle time ranges, these reports segment by representation status, infant status, and pending reserve. The reports are updated weekly rather than monthly, to provide an ability to respond quickly at the area, office, and individual BI adjuster levels.

**Health Check Report** – This report provides a detailed view of claims handling performance at the adjuster level by providing individual adjuster results with respect to productivity, representation rate, average paid severity, average paid by head of damage, proportion of costs

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and disbursements, average pending reserve, and use of mediation. Please see the response to information request 2012.1 RR BCUC.69.3.

**Trials and Appeals** – Tracks the details of trials and appeals, including judgments rendered. A summary report provides a comparison against prior year.

**Exposure Transfer Report** – Counts of BI exposures transferred from one claim location to another by month and year.

**2012.1 RR IBC.15.1 Reference: Ch. 6 Claims Initiatives  
C.3 Business Indicator Reporting and Analysis Data  
p. 6-5, para. 19**

Please indicate the average length of claim settlement for each of the following range of claims:

- \$0 - \$6,500**
- \$6,500 - \$10,000**
- \$10,000 - \$15,000**
- \$15,000 - \$20,000**
- \$20,000 - \$40,000**
- \$40,000 - \$100,000**
- \$100,000 - \$200,000**

**Response:**

Table 1 provides the average days to settle bodily injury claims based on the requested loss paid ranges.

Table 1

**Average Days to Settle a BI Claim by Loss Paid Ranges**

<b>Closed Year</b>	<b>\$0 to \$6,500</b>	<b>\$6,501 to \$10,000</b>	<b>\$10,001 to \$15,000</b>	<b>\$15,001 to \$20,000</b>	<b>\$20,001 to \$40,000</b>	<b>\$40,001 to \$100,000</b>	<b>\$100,001 to \$200,000</b>
2006	206	436	585	694	901	1,172	1,358
2007	198	410	556	688	861	1,159	1,366
2008	192	398	537	665	869	1,171	1,376
2009	207	431	561	681	869	1,173	1,437
2010	198	377	511	638	839	1,178	1,439
2011	188	368	497	599	796	1,137	1,395

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**2012.1 RR IBC.16.1 Reference: Ch.7 Operating Expenses and Allocation Information  
A Overview  
p.7-1, para. 1**

**ICBC states that "in the first part of 2011" it identified that "the number of bodily injury claims was higher than forecast".**

**What does ICBC mean by "the first part of 2011"? Please provide specific details.**

**Response:**

By "the first part of 2011", ICBC meant the period from January 1, 2011 to May 31, 2011. During this time, ICBC experienced a higher number of bodily injury (BI) claims than it had expected when it set its policy year 2010 rate level in the 2010 Streamlined Revenue Requirements Application. This higher than expected number of claims actually began to emerge in the second half of 2010. The continuation of this trend into 2011 was confirming to ICBC that this may be a new trend, as opposed to a short-term variation in claims reporting. At this time ICBC commenced an investigative analysis to understand the higher-than-expected levels of BI claims. Please see the response to information request 2012.1 RR BCUC.38.1 for further information on the investigative analysis that ICBC has undertaken.

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**2012.1 RR IBC.16.2 Reference: Ch.7 Operating Expenses and Allocation Information  
A Overview  
p.7-1, para. 1**

**ICBC states that "in the first part of 2011" it identified that "the number of bodily injury claims was higher than forecast".**

**Please explain how often the claims data is reviewed and analyzed at ICBC?**

**Response:**

The Claims Division has a Claims Analysis and Reporting Unit that is accountable for reviewing claims data on an ongoing basis and identifying issues and trends to the business. In addition, management in the operational areas reviews operational view data as necessary to meet business requirements. Please see the responses to information requests 2012.1 RR BCUC.69.2 and 2012.1 RR BCUC.69.3.

The Finance Division reviews claims data on a monthly basis and the Corporate Actuarial Department performs reserve reviews five times a year: in January, March, June, September, and December.

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**2012.1 RR IBC.17.1 Reference: Ch. 7 Operating Expenses and Allocation Information  
A Overview  
p. 7-1, para. 1**

" ...ICBC identified in the first part of 2011 that the number of bodily injury claims was higher than forecast in 2010... "

One could conclude from this that at the time of the 2010 streamlined revenue requirement and up to the "first part of 2011", ICBC was not aware that the number of bodily injury claims was higher. In light of this, please explain why it is that the Service Plan 2010-2012 published in February 2010 shows a forecast claims incurred for 2010 of \$2.7 billion, which was also the outlook for 2010 in the 2011-2013 Service Plan published in February 2011 and which actually ended up being the actual net claims as reported in the 2010 Annual Report.

**Response:**

It should be clarified that the 2010 forecast claims incurred figures appearing in the service plans and the annual report are on a calendar year basis. This means that not only does this figure include an estimate of the claims incurred for the 2010 accident year, but there is also an adjustment to reflect the updated estimate of claims incurred for prior years, as well as a provision for the time value of money.

It was only by coincidence that the 2010 forecast claims incurred figures in total did not significantly change between the 2010-2012 Service Plan and the 2011-2013 Service Plan. Changes in the component parts, however, reflect worsening accident year 2010 bodily injury claims experience. The numbers shown below include claims from both Basic insurance and Optional insurance coverages.

<b>(\$ Millions)</b>	<b>2010-2012 Service Plan (Feb 2010)</b>	<b>2011-2013 Service Plan (Feb 2011)</b>
<b>Total Claims Incurred in 2010 (as shown in the Service Plan)</b>	<b>2,758</b>	<b>2,752</b>
<b>Component Parts</b>		
<b>Undiscounted Claims Incurred for Accident Year 2010</b>	<b>2,754</b>	<b>2,767</b>
Bodily Injury	1,491	1,611
Other Coverages	1,263	1,157
<b>Prior Years' Adjustments</b>	<b>-</b>	<b>(63)</b>
<b>Discounting Provision</b>	<b>4</b>	<b>48</b>

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**2012.1 RR IBC.18.1-2 Reference: Ch. 7 Operating Expenses and Allocation Information  
A Overview  
p. 7-1, para. 4**

**In paragraph 4, ICBC describes the contents of Chapter 7 of this application.**

**18.1 Please explain why ICBC has only filed streamlined content on operating expenses for this non-streamlined application.**

**18.2 Why has ICBC not filed content similar to that of a full Revenue Requirements Application such as 2007 (e.g., divisional information)?**

**Response:**

ICBC recognizes the interest of the Commission, intervenors, and the public in ensuring that operating expenses are appropriately managed. ICBC has filed significant volumes of information on its operating expenses in past proceedings, which has allowed all parties in the regulatory process to gain familiarity with ICBC's costs and the Basic insurance business. Given the stability of ICBC's operating expenses, the Commission's extensive review of operating expenses in the past, as well as the fact that operating expenses do not contribute to the rate indication for the 2012 policy year, ICBC has provided a level of detail in the current Application which it believes is sufficient to demonstrate ICBC's appropriate management of operating expenses.

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**2012.1 RR IBC.19.1 Reference: Ch.7 Operating Expenses and Allocation Information  
B ICBC's Corporate Operating Expenses  
p.7-3, Figure 7.1 Components of Corporate Operating Expenses (excluding TP) per  
Original 2011 Plan**

**Figure 7.1 indicates non-insurance operations expenses of \$80 million for 2009 actual. The Service Plan 2011-2013 tabled in February 2011 has an amount of \$104 million for what appears to be the same expense item.**

**Please explain the difference.**

**Response:**

Chapter 7, Figure 7.1 shows 2009 actual Non-insurance expenses of \$80 million. In the 2011-2013 Service Plan, the Summary Financial Outlook on page 26 shows Non-insurance expenses of \$104 million. The difference of \$24 million is commissions allocated to the Non-insurance line of business.

Chapter 7 only includes the operating expense portion of the total Non-insurance expenses and excludes commissions. These are shown on page 43 of ICBC's 2010 Annual Report under 2009, showing Non-insurance operations to include operating costs of \$80 million for Non-insurance and commissions of \$24 million. These two items total the \$104 million shown for 2009 Non-insurance costs in the 2011-2013 Service Plan.

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**2012.1 RR IBC.20.1 Reference: Ch.7 Operating Expenses and Allocation Information  
E.3 Year to Year Basic Insurance Allocation Percentages  
p. 7-31, para. 103**

**ICBC states that "the interim changes will not materially affect the Basic/Optional allocation" .**

**Please provide the documentation and calculations demonstrating how these interim changes impact the Basic/Optional allocation.**

**Response:**

The Claims Division is currently undergoing reorganization, moving from a geographic-centric claims delivery service to a functional-centric service based on claim type, risk, and complexity. The first step of the reorganization, referred to as interim changes, involves aligning the Claims organization structure within the new functional model. The allocation to Basic insurance lines of business continues to use the Commission-approved financial allocation methodology and resulting allocation percentages.

The changes in allocation to Basic insurance from the reorganization are small. This is evidenced by explaining the change in allocation to Basic insurance of Claims Services from before (2010) and after the reorganization (2011). As discussed below, whereas the total costs of Claims Services from before and after the reorganization are approximately equal, the allocation to Basic insurance is lower and the lower allocation is explained by factors other than the reorganization.

Please see Attachment A – 2011 Cost Detail – Claims Services. The Attachment illustrates the allocation to Basic insurance, Non-insurance, and Optional insurance of Claims Services for 2011 and reflects the interim changes as well as an updated Regional Claim Centres Allocation (RCCA). On November 17, 2011, the Commission issued Letter L-87-11 indicating its acceptance of ICBC’s filing of the 2011 Regional Claim Centres Detailed Work Effort Study, which includes an updated RCCA.

The costs for Claims Services in 2011 are approximately equal to the costs in 2010. As shown in the following table, Total Claims Services Excluding TP, costs for 2010 (prior to the

reorganization) are \$262.3 million and Total Claims Services Excluding TP, costs for 2011 (after the reorganization) are \$262.2 million, approximately equal.

Whereas the total Claims Services costs year over year are approximately equal, the allocation to Basic insurance, as shown in the following table, is lower in 2011.

**Total Claims Services Excluding TP (\$ millions)**

<b>Year</b>	<b>Total</b>	<b>Basic insurance</b>
2010 (as shown in Figure 7A.2 – 2010 Approved Allocators Using 2010 Actual Cost Detail, page 7A-3 of the Application)	\$262.3	\$158.8
2011 (as shown in Attachment A – <u>2011 Cost Detail – Claims Services</u> )	\$262.2	\$156.5
Difference	\$0.1	\$2.3

Year over year, the allocation of Total Claims Services Excluding TP to Basic insurance is lower by approximately \$2.3 million. The lower Basic insurance is attributed primarily to the updated RCCA, which lowers Basic insurance by approximately \$3 million. This is partially offset by \$0.7 million due to increased costs to meet customer service levels. The impact to Basic insurance due to the reorganization from a geographically-based model to a functional model is small and not material.

Through the new functional organizational structure, ICBC will drive best practices. Longer term changes stemming from the new functional organization structure are addressed in the response to information request 2012.1 RR IBC.20.2.



## **2012.1 RR IBC.20.1 – Attachment A – 2011 Cost Details – Claims Services**

**Attachment A - 2011 Cost Details - Claims Services**

**2011 Approved Allocators Using 2011 Actual Cost Detail  
Claims Services**

Operating Costs - Claims Services	Allocator	\$ in thousands <sup>2</sup>				Allocation % <sup>2</sup>			
		Basic insurance	Non-insurance	Optional insurance	Total	Basic insurance	Non-insurance	Optional insurance	Total
Customer and Injury Services Operations <sup>1</sup>	Work Effort	82,712	-	55,583	138,296	59.8%	0.0%	40.2%	100.0%
Call Centre Department	Newly Opened Exposures - TCD	9,829	-	13,573	23,403	42.0%	0.0%	58.0%	100.0%
Claims General Support	Claims Division Average	12,892	-	8,780	21,672	59.5%	0.0%	40.5%	100.0%
Claims System Support	Claims Division Average	10,984	-	7,480	18,464	59.5%	0.0%	40.5%	100.0%
In-House Counsel (Provincial Litigation Services)	Work Effort - Provincial Litigation	10,786	-	568	11,354	95.0%	0.0%	5.0%	100.0%
Centralized Estimating Facilities	Net Claims Cost - MD	3,181	-	3,888	7,069	45.0%	0.0%	55.0%	100.0%
Claims Building Support	Square Footage	3,176	-	3,374	6,549	48.5%	0.0%	51.5%	100.0%
Material Damage Support	Net Claims Cost - MD	2,503	-	3,059	5,562	45.0%	0.0%	55.0%	100.0%
Centralized Claims Injury Centre	Directly attributable to Basic	4,965	-	-	4,965	100.0%	0.0%	0.0%	100.0%
Heavy Equipment	Net Claims Cost - HE	1,952	-	2,695	4,647	42.0%	0.0%	58.0%	100.0%
Claims Administrative Support	Weighted Average - Cost Centres	2,049	-	1,946	3,996	51.3%	0.0%	48.7%	100.0%
Salvage	Net Claims Cost - MD	1,740	-	2,127	3,868	45.0%	0.0%	55.0%	100.0%
Rehabilitation	Directly attributable to Basic	3,739	-	-	3,739	100.0%	0.0%	0.0%	100.0%
Claims Litigation Support	Work Effort - Provincial Litigation	1,979	-	104	2,083	95.0%	0.0%	5.0%	100.0%
BI Support	Work Effort	1,765	-	93	1,858	95.0%	0.0%	5.0%	100.0%
Call Centre Support	Weighted Average - Cost Centres	832	-	805	1,637	50.8%	0.0%	49.2%	100.0%
Optional Coverage (Claims)	Directly attributable to Optional	-	-	791	791	0.0%	0.0%	100.0%	100.0%
Out of Province Aligned Claims	Net Claims Cost - OOP AC	155	-	358	512	30.2%	0.0%	69.8%	100.0%
Claims Dispute Resolution - MD	Collision / Property Damage Split	157	-	321	478	32.9%	0.0%	67.1%	100.0%
Claims Basic Projects	Directly attributable to Basic	413	-	-	413	100.0%	0.0%	0.0%	100.0%
Customer Advocacy	Claims Division Average	236	-	161	397	59.5%	0.0%	40.5%	100.0%
Claims Dispute Resolution - BI	Work Effort	276	-	45	321	86.0%	0.0%	14.0%	100.0%
Rehabilitation and Out of Province Claims	Weighted Average - Cost Centres	143	-	32	175	81.5%	0.0%	18.5%	100.0%
<b>Total Claims Services Excluding TP</b>		<b>156,463</b>		<b>105,784</b>	<b>262,247</b>	<b>59.7%</b>	<b>0.0%</b>	<b>40.3%</b>	<b>100.0%</b>

<sup>1</sup> During 2011, in a reorganization, Regional Claims merged with Head Office Claims, Ongoing Claims Services, and Out of Province BI, and Claims Building Support was centralized.

<sup>2</sup> Rounding may affect totals and allocation percentages.

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**2012.1 RR IBC.20.2 Reference: Ch.7 Operating Expenses and Allocation Information  
E.3 Year to Year Basic Insurance Allocation Percentages  
p. 7-31, para. 103**

**ICBC states that "the interim changes will not materially affect the Basic/Optional allocation" .**

**Are there long term changes, other than interim, that will affect the Basic/Optional allocation? Please provide the documentation and calculations regarding these long term changes.**

**Response:**

A key focus for ICBC is driving best practices through a new functional organizational structure. As discussed in Chapter 6 of the Application, the Claims area is moving from a geographic-centric model to a functional-centric model. With the new functional model, which is based on claim type, risk, and complexity, employees doing the same type of work are organized within a single reporting stream. The allocation to Basic insurance lines of business continues to use the Commission-approved financial allocation methodology and resulting allocation percentages. As shown in the response to information request 2012.1 RR IBC.20.1, there is minimal impact to Basic insurance resulting from the change in organizational structure.

As there is minimal impact to Basic insurance resulting from the change in organizational structure, there is little impact to Basic insurance for the 2011 outlook and 2012 forecast due to the change.

In the future, with the new functional model, business practices will evolve. If there are changes in work effort resulting from the evolving business practices, these changes will be captured in updated work effort studies.

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**2012.1 RR IBC.21.1-2 Reference: Ch.9 Performance Measures  
p. 9-2, Figure 9.1 Performance Measures Results, 2011  
Forecast and 2011 Outlook  
B.1.7 Legal Representation Rate  
p. 9-7, para. 31**

**ICBC states that "[t]he Legal Representation Rate includes both Basic insurance exposures and high complexity/high-risk exposures under Optional insurance that by their nature can be expected to be represented."**

**21.1 What are high complexity/high-risk exposures under Optional?**

**21.2 Do these include claims other than Bodily injury claims, and if so, what percentage?**

**Response:**

The reference to "high-complexity/high-risk exposures under Optional" refers to bodily injury exposures closed within Optional insurance coverage (over the \$200,000 Basic insurance third party legal liability limit). The Legal Representation Rate does not include any exposures related to any material damage coverages.

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**2012.1 RR IBC.22.1 Reference: Ch. 10 Road Safety**

**In general, is an allocation decided before the program is implemented or once it has been measured?**

**Response:**

Allocation is based on the principle of cost causality and is not based on the outcome or measurement of a program. Therefore, the allocation of a program or tactic is determined prior to the program's implementation.

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**2012.1 RR IBC.23.1-2 Reference: Ch. 10 Road Safety**

**A Introduction**

**p. 10-1, para.2**

**ICBC states" ... that programs are subject to periodic evaluation in accordance with their size and scope."**

**23.1 How was the decision to do periodic evaluation in accordance to size and scope arrived at?**

**23.2 Was this decision pursuant to a Commission direction and, if so, what direction?**

**Response:**

**23.1**

As referenced in Chapter 10, paragraph 4 of the Application, in the January 2008 Decision on Revenue Requirements, the Commission indicated that:

The Commission Panel looks forward to receiving ICBC's comprehensive review of its investment in education and awareness road safety programs. The Commission Panel expects the result of that review will set a course for "clear funding tests, targeted programs to produce measurable claims cost reduction outcomes, and periodic or post-project evaluation carried out in a manner appropriate to the program" as expressed in the 2005 Decision.

ICBC's 2008 Road Safety compliance filing to the Commission provided a comprehensive review of its education and awareness road safety programs. Chapter 10, paragraph 12 of the Application describes the changes that ICBC made in response to this review, including "conducting periodic comprehensive evaluations when sufficient data is available."

In a letter dated September 15, 2010 from the Commission to the Insurance Bureau of Canada (please see Appendix 10 A in the Application), the Commission indicated that ICBC's 2008 Road Safety compliance filing met the requirements as set out in the January 2008 Decision on Revenue Requirements.

**23.2**

Yes, this decision was pursuant to the Commission's direction, as noted in the response to information request 2012.1 RR IBC.23.1.

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**2012.1 RR IBC.23.3 Reference: Ch. 10 Road Safety**

**A Introduction**

**p. 10-1, para.2**

**ICBC states" ...that programs are subject to periodic evaluation in accordance with their size and scope."**

**Can ICBC provide more information with regard to the size and scope a program has to be to be subject to a "periodic evaluation"?**

**Response:**

ICBC undertakes periodic comprehensive evaluations when sufficient data are available to analyze the specific impact of a program or tactic, in terms of claims cost benefits. There are currently two Road Safety programs that undergo periodic evaluations: the Intersection Safety Camera Program and the Road Improvement Program. The Intersection Safety Camera program was first evaluated in 2003 and again in 2008. The Road Improvement Program was evaluated yearly from 1997 to 2001, and then again in 2006 and 2009.

When considering the frequency of these periodic evaluations, ICBC may look at previous results and the cost of conducting the evaluation. For example, previous Road Improvement Program evaluations showed positive results, with the 2009 evaluation showing that road improvements completed in 2004, 2005, and 2006 produced a 5.6:1 return on investment (ROI) during the two years post-implementation (compared to a target ROI of 3:1 during those years). Since results have been consistently positive and the approach to this program is mature, the next ICBC evaluation of the program will be in 2014, which will evaluate projects implemented between 2007 and 2011. Reducing the frequency of evaluations provides cost savings of approximately \$150,000 per evaluation and releases engineering time for other priorities.

For all other programs and tactics, there is currently no periodic evaluation schedule. ICBC uses high-level indicators (such as crash and casualty crash rate and self-reported behaviour) to monitor trends and completes tactic post-implementation reviews to monitor results and implement operational improvements. As well, all Road Safety programs and tactics were reviewed during the 2007/2008 Road Safety Strategic Review and individual tactic evaluations are conducted on an as-needed basis. ICBC is developing a Road Safety Monitoring and

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Evaluation framework which will review evaluation criteria for programs and tactics. Please see the response to information request 2012.1 RR BCUC.107.1.3 for more detail on this framework.

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**2012.1 RR IBC.23.4 Reference: Ch. 10 Road Safety**

**A Introduction**

**p. 10-1, para.2**

**ICBC states" ...that programs are subject to periodic evaluation in accordance with their size and scope."**

**Please provide a list of the programs that have been the subject of periodic evaluations.**

**Response:**

The following ICBC Road Safety programs have undergone periodic evaluations:

- Road Improvement Program (evaluated yearly from 1997 to 2001, and then again in 2006 and 2009). The next evaluation is scheduled for 2014.
- Intersection Safety Camera Program (evaluated in 2003, updated in 2008). The next evaluation is scheduled for 2013.

Evaluations are filed with the Commission as part of ICBC's Annual Road Safety Reporting filing.

As discussed in the response to information request 2012.1 RR IBC.23.3, ICBC also conducts non-periodic program and tactic evaluations as needed and as data are available. These are filed with the Commission as part of ICBC's Annual Road Safety Reporting filing. Examples of these evaluations include:

- Measuring and Monitoring Changes in Driver Attitudes and Behaviours (completed 2008 and 2009).
- ICBC BCAA-TSF Child Passenger Safety Program Partnership Assessment (completed 2010).
- A Community Partnership to Increase Use of Seat Belts in Northern British Columbia: An Impact Analysis (completed 2008).

The above evaluations can be found as attachments in the response to information request 2012.1 RR IBC.33.1.

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**2012.1 RR IBC.24.1 Reference: Ch. 10 Road Safety**

**B Background**

**p.10-2 and 10-3, para.7**

**ICBC states that it was necessary "to address the specific questions asked by the Commission".**

**To which "questions" is ICBC referring?**

**Response:**

In the January 2008 Decision on Revenue Requirements, page 50, the Commission confirmed that it was seeking the following information about education and awareness programs:

1. How targets for individuals programs are determined and why the target is appropriate.
2. How the appropriate level of expenditure on individual programs is determined.
3. Interim program evaluations.
4. Final program evaluations.

These are the specific questions to which ICBC is referring.

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**2012.1 RR IBC.25.1 Reference: Ch. 10 Road Safety  
C Comprehensive Review of Education and Awareness Programs  
p. 10-5, footnote 4**

**ICBC refers to "certain corporate initiatives ... that do not meet ICBC's and the Commission's definition of Road Safety".**

**Please list all of these corporate initiatives and include a description, as well as the allocation between Basic and Optional.**

**Response:**

The corporate initiatives that ICBC is referring to are corporate advertising campaigns that are not part of Road Safety education and awareness programs. There were three of these campaigns in 2010 and 2011: "Remember, Drive Smart", "Demystifying ICBC", and "Share a Wave and Win".

"Remember, Drive Smart" ran during the summer of 2010 on television, radio, billboards, and online. The campaign's message focused on encouraging drivers to make good driving choices, such as being courteous to others and following the rules of the road, to help make their overall driving experience better and safer. The cost of this campaign was \$1.8 million, of which 54.6% was allocated to Basic insurance and 45.4% allocated to Optional insurance.

"Demystifying ICBC" ran from the fall of 2010 through to the end of 2011. The messages were delivered via television, radio, newspapers, posters, online, and a blog. The campaign covered a variety of topics to help customers better understand insurance, driver licensing, and claims. The majority of this campaign was delivered in English, however, there were also newspaper and radio components delivered in Punjabi and Chinese. In 2010, \$1 million was spent, of which 47.0% was allocated to Basic insurance, 14.3% to Non-insurance, and 38.7% to Optional insurance. In 2011, \$1.7 million was spent, of which 45.7% was allocated to Basic insurance, 14.8% to Non-insurance, and 39.5% to Optional insurance.

"Share a Wave and Win" ran from the summer through the fall of 2011 on television, radio, and online. The campaign message encouraged drivers to be courteous on the road, with one simple way to demonstrate courtesy being a wave of thanks and acknowledgement. The cost of

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this campaign was \$1.7 million, of which 53.8% was allocated to Basic insurance and 46.2% to Optional insurance.

“Remember, Drive Smart” and “Share a Wave and Win” are allocated on a premiums written basis. Both these campaigns are designed to encourage drivers to make smart driving choices, including courtesy. By making smart choices, drivers positively impact their own safety and well-being as well as the well-being of others on the road; customer research shows that drivers easily make the connection between smart driving decisions and the impact on rates and crashes. ICBC uses the premiums written allocator for these two campaigns because it is a proxy for the premium distribution of ICBC’s customer base between Basic insurance and Optional insurance.

The “Demystifying ICBC” campaign falls within the expenses of the Marketing Communications department (previously known as Marketing & Broker Services). The expenses of the department are allocated on a corporate shared services basis, with exception (being for Road Safety); the departmental expense allocator is Commission-approved. “Demystifying ICBC” is allocated on a corporate shared services basis because it addresses both insurance and driver licensing topics (driver licensing being non-insurance).

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**2012.1 RR IBC.26.1 Reference: Ch. 10 Road Safety  
D Annual Planning Process  
p. 10-9, Fig. 10.3 2011 Key Assumptions and Principles**

**One of ICBC's 2011 Road Safety Principles is "Focus programs on delivering claims savings benefits".**

**What types of information will ICBC require in order to be able to calculate claims savings benefits for road safety programs?**

**Response:**

To estimate claims savings benefits for road safety programs, many different types of information are required, depending on the nature and objectives of each particular program. However, there are two main requirements that must be met in all cases: the size of the effect of the program on claims outcomes targeted by the program (for example, crash incidents involving an impaired driver) must be estimable, and the effect must be attributable to the program and not to other factors. To be estimable means that it is possible to estimate the difference in the specific outcomes of interest before and after the introduction of the program with reasonable precision. To be attributable means that the estimated difference (the effect) can be attributed specifically to the program and is not confounded by other factors. To meet this latter requirement, there must be appropriate baseline data, control groups, or statistical adjustment methods that can be used to measure and control for factors, other than the program itself, that could be influencing claims outcomes. These factors typically include things such as the amount of police enforcement before and after the implementation of the program, weather, economic conditions, vehicle safety improvements, and other road safety strategies implemented in the same time period.

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**2012.1 RR IBC.27.1 Reference: Ch. 10 Road Safety  
D Annual Planning Process  
D.2 Key Assumptions and Principles  
p. 10-9, Fig. 10.3 2011 Key Assumptions and Principles  
p. 10-9, para. 26**

**The second key assumption states that "Road Safety investments are designed to protect customers from risk by preventing and minimizing the impact of crashes and crime".**

**What "crime" is ICBC referring to? Please explain how that crime affects road safety, referencing the definition of Road Safety in para. 59 of Chapter 10.**

**Response:**

ICBC is referring to auto crime. Based on the definition of "road safety" provided in the Application, Chapter 10, paragraph 59, auto crime does not affect road safety programs.

The Road Safety Department oversees both road safety programs and auto crime programs. "Road Safety Investments" refers to investments made by the Road Safety Department, which is distinct from the definitions of road safety and auto crime prevention that were accepted by the Commission in the July 2006 Decision.

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**2012.1 RR IBC.27.2 Reference: Ch. 10 Road Safety  
D Annual Planning Process  
D.2 Key Assumptions and Principles  
p. 10-9, Fig. 10.3 2011 Key Assumptions and Principles  
p. 10-9, para. 26**

**The second key assumption states that "Road Safety investments are designed to protect customers from risk by preventing and minimizing the impact of crashes and crime".**

**Is the "crime" referenced in the second key assumption the same as is discussed at p. 7 of Appendix 10B, the 2011 Road Safety Business Plan, namely theft of vehicles, theft of items from within vehicles and vehicle-related vandalism? If so, please explain how the reduction of such crime promotes safety.**

**Response:**

Yes, crime as referenced in the second key assumption refers to auto crime prevention as discussed in the Application at Chapter 10, Appendix 10 B, page 7. The reduction of auto crime does not promote road safety programs. Please see the response to information request 2012.1 RR IBC.27.1.

As approved by the Commission in the July 2006 Decision, costs for auto crime prevention tactics are allocated on the basis of ICBC's comprehensive insurance market share. In 2010, the allocation of these costs to Basic insurance was 26.9%.

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**2012.1 RR IBC.28.1 Reference: Ch. 10 Road Safety  
D Annual Planning Process  
D.5 2011 Road Safety Programs  
p. 10-14, para. 36**

**ICBC states that "the Road Improvement Program has generated claim saving benefits with a return of 5 to 12 times the investment by funding improvements such as traffic signals... ."**

**Please advise how the 5 to 12 return is calculated. What data is used to make the calculation? Please provide specifics regarding the data used.**

**Response:**

The return on investment was calculated by conducting a time-series (before to after) evaluation of the safety performance of a sample of locations that had been improved under ICBC's Road Improvement Program. The overall effectiveness was determined by:

- 1) Determining if the frequency and/or severity of collisions at the improvement sites has reduced after the implementation of the improvement.
  
- 2) Quantifying the program costs versus the economic safety benefits to determine the return on ICBC's road safety investment.

Collision and traffic volume data was used for each site within three distinct groups of sites:

- 1) Treatment Group Sites:
  - These were sites to be evaluated, where treatments (road improvements) were completed in 2004, 2005, or 2006, as part of the Road Improvement Program.
  - A total of 102 treatment sites were selected for the evaluation.
  - Specific criteria were established to select projects to ensure that the site selection was not biased and to respond to the resources that were available to complete the evaluation.
  - A total of 42 treatment sites were urban intersections, with an ICBC contribution of \$1,653,700, and 60 treatment sites were rural highway segments, with a total ICBC contribution of \$2,935,600.

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- The treatment sites that were selected characterize the types of projects that are completed as part of the Road Improvement Program.

2) Comparison Group Sites:

- These were sites that had not been improved, but were subjected to similar traffic and environmental conditions as the treatment group sites.
- A total of 560 comparison sites were selected and were used to generate 60 different comparison groups, which were used in the evaluation process to correct for the confounding factors of history and maturation.

3) Reference Group Sites:

- These were sites that are considered to be similar in design and operation to the treatment group sites.
- There were a total of 952 sites selected to generate 3 reference groups, which were used to develop collision prediction models that are combined with empirical Bayes procedures to address the regression artifacts.

It is also noted that for all three groups, claim-based collision data was used for the evaluation of urban sites and police-reported collision data was used for the rural sites.

To determine the claims savings benefit of 5 to 12 times the investment, two economic indicators were used, including the net present value (NPV) and the benefit cost (B/C) ratio. The NPV is a measure to describe the equivalent present worth of a series of future economic safety benefits, which are discounted to a current value. The B/C ratio is a measure to express the economic benefits versus the costs for a project, and thus, when the B/C ratio is greater than 1.0, it means that the benefits are greater than the costs.

As can be seen in the 2009 Road Improvement Program Evaluation, the investment achieved an overall B/C ratio of 5.6 over 2 years. As many of the road improvement projects have safety benefits extending well beyond the 2-year service life, the NPV and the B/C ratio for the treatments sites was also calculated over a 5-year time period, which is more representative of

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the true economic effectiveness of the safety improvements. The investment achieved an overall B/C ratio of greater than 12 over 5 years.

For further details on the evaluation methodology, please see the response to information request 2012.1 RR BCUC 115.1, Attachment A – 2009 Program Evaluation Report Road Improvement Program.

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**2012.1 RR IBC.29.1 Reference: Ch. 10 Road Safety  
D Annual Planning Process  
D.6 Objectives and Measurement Plans  
p. 10-15, para. 38-41**

**ICBC explains that the development of targets for its driver programs was previously based on police-reported crashes in the Traffic Accident System (TAS).**

**Please provide details regarding what crash rate and casualty crash rate data is available based on ICBC data.**

**Response:**

ICBC collects the following data for incidents reported to ICBC:

- Crash type - casualty (crashes resulting in injured or fatal victims), property-damage-only (crashes resulting in material damage only).
- Crash details – date, time, location, configuration.
- Parties involved – single-vehicle, multi-vehicle, pedestrian, cyclist, motorcycle, heavy vehicle, animal, hit-and-run.
- Driver demographics – age, gender, claim history.
- Injured victim demographics – role, age, gender, injury.
- Vehicle characteristics – make, model, year, claims history.

Road Safety tracks the crash rate (number of crashes per 10,000 policy years earned) and casualty crash rate (number of crashes resulting in injured or fatal victims per 10,000 policy years earned) as overall indicators of the safety of roadways throughout British Columbia.

Policy years earned are calculated on a per diem basis from the policy effective date up to and including the earlier of the policy expiry date and cancellation date (if any). The policy years earned for a policy effective from January 1 to December 31 is one; the policy years earned for a policy effective April 1 to September 30 is 0.5; and the policy years earned for a policy effective October 1 to September 30 of the following year is 0.25 for the first year and 0.75 for the second year.

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**2012.1 RR IBC.29.2 Reference: Ch. 10 Road Safety  
D Annual Planning Process  
D.6 Objectives and Measurement Plans  
p. 10-15, para. 38-41**

**ICBC explains that the development of targets for its driver programs was previously based on police-reported crashes in the Traffic Accident System (TAS).**

**Will ICBC's casualty crash rate not reflect the vast majority of crashes in BC that involve bodily injury? If not, why not?**

**Response:**

Yes, ICBC's casualty crash rate will reflect the vast majority of crashes in BC that involved bodily injury. However, the Traffic Accident System (TAS) data is currently the only source of observation information in BC about the human factors that contributed to any specific crash.

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**2012.1 RR IBC.30.1 Reference: Ch. 10 Road Safety  
D Annual Planning Process  
D.6 Objectives and Measurement Plans  
p. 10-15, para. 41**

**Paragraph 41 states: "...ICBC will therefore during 2011 and 2012 explore the feasibility of using other performance measures to design, measure, and monitor driver-based programs. In the interim, driver-based program performance will be measured through the use of driver attitudes, perceptions, and self-reported behavioural indicators."**

**Once these performance measures have been determined, please provide an update.**

**Response:**

Please see the response to information request 2012.1 RR BCUC.107.1.2.

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**2012.1 RR IBC.31.1-2 Reference: Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.1 Road Safety Investment  
p. 10-18, Figure 10.7**

**Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.1 Road Safety Investment  
p. 10-20, Figure 10.8**

**Figure 10.8 includes the allocation on an amount of \$40,068 million while Figure 10.7 shows a total for road safety expenses of \$45,756 million.**

**31.1 How is the remaining \$5,688 million allocated?**

**31.2 Please explain the rationale for the response provided to the previous question.**

**Response:**

**31.1**

The remaining \$5.688 million is comprised of compensation in the amount of \$4.265 million, general expenses in the amount of \$1.227 million, and research and measurement direct expenses in the amount of \$0.196 million. The amounts for compensation and general expenses are set out in the tables below and provide details of the allocators that are used. The amount of \$0.196 million for research and measurement direct expenses is the cost for Road Safety Department surveys undertaken for education and awareness programs and is allocated 100% to Basic insurance.

The amounts are allocated in accordance with the Commission-approved financial allocation methodology and resulting allocation percentages.

### Allocation of 2010 Compensation Costs (\$000's)

Cost Item	Allocator	Allocated to Basic	Allocated to Optional	Cost	Allocated to Basic	Allocated to Optional
<i>Aligned with road safety programs</i>						
Road Improvements	Directly attributable to Basic	100%	0%	979	979	0
Research & Strategy	Directly attributable to Basic	100%	0%	569	569	0
Drivers	Directly attributable to Basic	100%	0%	564	564	0
Safer Vehicles	Directly attributable to Basic	100%	0%	277	277	0
Road Safety MOU - Enhanced Enforcement	Directly attributable to Basic	100%	0%	13	13	0
<i>Aligned with both road safety and Auto crime programs</i>						
Drivers - Delivery	100% Basic with exceptions	84%	16%	1,505	1,258	247
<i>Aligned with Auto crime programs</i>						
Auto crime	Comprehensive Coverage - Market Share	27%	73%	92	25	67
<i>Administrative Costs</i>						
Director's Office	Road safety Division Average	98%	2%	266	260	6
<b>Total Compensation</b>		<b>92%</b>	<b>8%</b>	<b>4,265</b>	<b>3,945</b>	<b>320</b>

\*The compensation costs for the Road Safety MOU – Enhanced Enforcement are costs to support the relocation of the Integrated Traffic Camera Unit (ITCU) as the facility costs for the ITCU are funded through the MOU.

\*\*Rounding may affect totals and allocation percentages.

### Allocation of 2010 General Expenses (\$000's)

Cost Item	Allocator	Allocated to Basic	Allocated to Optional	Cost	Allocated to Basic	Allocated to Optional
<i>Aligned with road safety programs</i>						
Road Improvements	Directly attributable to Basic	100%	0%	18	18	0
Research & Strategy	Directly attributable to Basic	100%	0%	148	148	0
Drivers	Directly attributable to Basic	100%	0%	33	33	0
Safer Vehicles	Directly attributable to Basic	100%	0%	18	18	0
Road Safety MOU - Enhanced Enforcement	Directly attributable to Basic	100%	0%	-14	-14	0
Corporate Allocated Expenses	Directly attributable to Basic	100%	0%	727	727	0
<i>Aligned with both road safety and Auto crime programs</i>						
Drivers - Delivery	100% Basic with exceptions	84%	16%	253	212	41
<i>Aligned with Auto crime programs</i>						
Auto crime	Comprehensive Coverage - Market Share	27%	73%	10	3	7
<i>Administrative Costs</i>						
Director's Office	Road Safety Division Average	98%	2%	34	33	1
<b>Total</b>		<b>96%</b>	<b>4%</b>	<b>1,227</b>	<b>1,178</b>	<b>49</b>

\*This credit for the Road Safety MOU – Enhanced Enforcement is due to timing.

\*\*Rounding may affect totals and allocation percentages.

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**31.2**

The costs for compensation and general expenses are aligned with the road safety programs and auto crime programs that are managed by the Road Safety Department. Compensation and general expenses associated with road safety programs are allocated 100% to Basic insurance with the exception of a small percentage allocated to auto crime in recognition that there is some work effort by the Road Safety coordinators (Delivery) to support the delivery of auto crime programs. Compensation and general expenses associated with auto crime programs are allocated on the basis of ICBC's comprehensive coverage market share.

The allocation of the Director's office in both compensation costs and general expenses recognizes the oversight of both road safety and auto crime programs.

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.31.3 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 2
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**2012.1 RR IBC.31.3 Reference: Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.1 Road Safety Investment  
p. 10-18, Figure 10.7**

**Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.1 Road Safety Investment  
p. 10-20, Figure 10.8**

**Figure 10.8 includes the allocation on an amount of \$40,068 million while Figure 10.7 shows a total for road safety expenses of \$45,756 million.**

**The item "compensation" represents more than 10% of the costs of the road safety investments. Could you please provide a breakdown of what is included in line item "compensation" (number of staff, job titles, responsibilities, etc.)?**

**Response:**

Compensation includes the salaries and benefits which are paid to employees in the Road Safety Department. Key benefits include employer contributions of pensions, medical and dental benefits, and WorkSafe BC, Employment Insurance, and Canada Pension Plan costs.

The table below identifies the planned positions in the Road Safety Department in 2010 and 2011.

<b>Title</b>	<b># of Positions</b>	<b>Responsibilities</b>
Director Road Safety	1	Provides strategic leadership, direction, and promotion of Road Safety issues.
Manager Road Safety Program Delivery	1	Manages the implementation of province-wide Road Safety initiatives designed to prevent crashes and auto crime.
Manager Road Safety Strategic Planning Services	1	Provides leadership in planning, research, budgeting, and performance analytics for the Road Safety Department.
Manager Road Safety Strategic Policy & Programs	2	Oversees the development of Road Safety policy and programs.
Road Safety Program Manager	7	Develops, implements, and manages a large and/or high profile portfolio of provincial Road Safety programs designed to prevent crashes and auto crime.
Road Safety Engineer	6	Develops, implements, and manages road improvement projects and other Road Safety initiatives.
Road Safety Planning & Research Manager	1	Leads the development of strategic, tactical, and operational plans for the Road Safety Department. Develops and manages Road Safety research, evaluation, measurement, and reporting processes.
Manager Road Safety Budgeting	1	Oversees the budget planning and reporting of Road Safety Department operational and program expenses.
Research Project Advisor	2	Provides advisory services related to the research, measurement, and reporting of Road Safety programs.
Road Safety Coordinator	17.5	Develops, initiates, implements, and evaluates regional and community Road Safety programs and tactics designed to prevent crashes and auto crime.
Administrative Assistant	5	Provides administrative support to Road Safety management and staff.

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**2012.1 RR IBC.31.4 Reference: Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.1 Road Safety Investment  
p. 10-18, Figure 10.7**

**Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.1 Road Safety Investment  
p. 10-20, Figure 10.8**

**Figure 10.8 includes the allocation on an amount of \$40,068 million while Figure 10.7 shows a total for road safety expenses of \$45,756 million.**

**Please provide the allocation between Basic and Optional for compensation.**

**Response:**

Please see the response to information request 2012.1 RR IBC.31.1-2.

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.32.1 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR IBC.32.1 Reference: Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.2 Allocation of Road Safety Expenditures  
p. 10-21, para. 59 & 60**

**ICBC states that the programs that it funds conform to the definition included at paragraph 59. Can ICBC indicate if the allocation of costs between Basic and Optional for the programs, initiatives and tactics contained in this chapter is done before they are implemented or after their results are known?**

**Response:**

Please see the response to information request 2012.1 RR IBC.22.1.

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.32.2-4 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR IBC.32.2-4 Reference: Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.2 Allocation of Road Safety Expenditures  
p. 10-21, para. 59 & 60**

**32.2 Who determines that a program meets the definition of road safety?**

**32.3 Is this done in consultation with the Commission?**

**32.4 If so, what is the format of that consultation?**

**Response:**

**32.2**

The Director and senior managers of the Road Safety Department would determine during the annual planning cycle if a new program or tactic meets the definition of road safety.

**32.3**

The determination whether a new program or tactic meets the definition of road safety is not done in consultation with the Commission. The Commission accepted ICBC's definition of Road Safety in the July 2006 Decision.

**32.4**

Please see the response to information request 2012.2 RR IBC.32.3.

Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.32.5 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR IBC.32.5 Reference: Ch. 10 Road Safety  
E Road Safety Investment and Allocation of Costs  
E.2 Allocation of Road Safety Expenditures  
p. 10-21, para. 59 & 60**

**If after having been measured a program is deemed to not have met the measurable goals to conform to the definition of road safety, what steps are taken to adjust the allocation?**

**Response:**

As allocation is not based on the outcomes of the program, no steps are taken to adjust the allocation. Please see the response to information request 2012.1 RR IBC.22.1.

The definition of a program as road safety is determined by the road safety issue the program is designed to address, not by the goals, objectives, or targets that ICBC sets for that program. The purpose of setting measurable objectives and targets is to determine whether or not the road safety program is effective. If a program did not meet its objective or target, ICBC would review to determine whether or not it should be discontinued or continued, and if so, whether operational improvements could be implemented.

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**2012.1 RR IBC.33.1 Reference: Ch. 10 Road Safety  
F Road Safety Reporting  
p. 10-22, para. 65**

**Please provide the 2009, 2010, 2011 Road Safety filings in their entirety. Thus, please provide the Road Safety Business Plans as well as:**

- **any updates to the strategic framework;**
- **for every program, updates to:**
  - **problem statement,**
  - **planning direction and strategies,**
  - **program objectives and their rationale,**
  - **for every tactic, updated tactic descriptions and objectives;**
- **the investment summary;**
- **the annual report for the previous calendar year; and**
- **any comprehensive evaluation reports completed in the previous year.**

**Response:**

ICBC's annual Road Safety reporting filing includes the current year's business plan, an annual report for the previous calendar year, the most recent enhanced road safety enforcement annual report, and any comprehensive evaluation reports completed in the previous year. The business plan provides updates to the Road Safety strategic framework, updates to programs and tactics (including problem statements, strategies, and objectives and their rationale), and an investment summary.

Please see the following attachments for the 2009, 2010, and 2011 Road Safety filings:

**Attachment A – 2009 Road Safety Annual Reporting Documentation**

- Attachment A-1     2009 Road Safety Business Plan
- Attachment A-2     2008 Road Safety Annual Report
- Attachment A-3     Enhanced Road Safety Enforcement 2007 Annual Report

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- Attachment A-4 A Community Partnership to Increase Use of Seat Belts in Northern British Columbia: An Impact Analysis (December 2008)
- Attachment A-5 Measuring and Monitoring Changes in Driver Attitudes and Behaviours (April 2008)
- Attachment A-6 Measuring and Monitoring Changes in Driver Attitudes and Behaviours (February 2009)
- Attachment A-7 Intersection Safety Cameras - 2008 Update (June 2009)

**Attachment B – 2010 Road Safety Annual Reporting Documentation**

- Attachment B-1 2010 Road Safety Business Plan
- Attachment B-2 2009 Road Safety Annual Report
- Attachment B-3 British Columbia Enhanced Road Safety Enforcement 2008 Annual Report (Ministry of Public Safety and Solicitor General)  
2009 Program Evaluation Report Road Improvement Program  
(please see the response to information request 2012.1 RR BCUC.115.1 for a copy of this document)
- Attachment B-4 ICBC BCAA-TSF Child Passenger Safety Program Partnership Assessment
- Attachment B-5 Graduated Licensing Program (Enhanced) Estimate of Claims Savings 2004-2006 (released November 27, 2009)

**Attachment C – 2011 Road Safety Annual Reporting Documentation**

- 2011 Road Safety Business Plan (please refer to the document filed as Appendix 10B in Chapter 10 of the Application)
- Attachment C-1 2010 Road Safety Annual Report
- Attachment C-2 2009 British Columbia Road Safety Enhanced Enforcement Annual Report (Ministry of Public Safety and Solicitor General)



# **2012.1 RR IBC.33.1 – Attachment A – 2009 Road Safety Annual Reporting Documentation**



## **ATTACHMENT A-1**

# **2009 ROAD SAFETY BUSINESS PLAN**



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# **2009 Road Safety Business Plan**

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# 1 Departmental Overview

The Road Safety Department develops and manages programs that prevent traffic crashes and auto crime, thereby providing a benefit to our customers by helping to maintain low and stable insurance premiums. The department's activities support the corporate objective of achieving financial strength through reducing the growth in claims costs.

ICBC invests in programs that produce short-term claims reduction benefits and programs that are designed to produce long-term improvements in driving attitudes and behaviours.

## 2 Key Opportunities and Challenges

### 2.1 Opportunities

#### Internal

- A new road safety strategy conducted in 2007 and early 2008 has set a solid foundation for delivering targeted, measurable programs.
- A closer alignment with other ICBC departments could produce opportunities for new road safety programs.
- ICBC's move to driver-based pricing, a significant milestone for ICBC, will help reinforce associated road safety messages around driver accountability.
- ICBC is conducting innovative research on behaviour change and awareness. It is hoped that this research will generate insights that can be used by BC's road safety awareness initiatives.

#### External

- A stronger public focus on reducing carbon emissions may produce improvements in driving behaviours such as speeding.
- Transport Canada is developing a national Road Safety Vision 2020. This strategy could bring added profile nationally to road safety issues.
- Uncertainty in Canada's economic climate is temporarily changing driving patterns/conditions in BC (e.g., higher and more volatile fuel prices, fewer kilometres driven, etc.) which may lead to lower claims experience in the near term.
- Many auto manufacturers are looking at an assortment of vehicle technologies to differentiate themselves in a difficult market. Many of these enhancements target safety features and are increasingly being brought into non-luxury models, thereby extending their reach into the mainstream market.
- New planned federal regulations for electronic stability control, though not in place until 2011, could increase the visibility and profile of an important vehicle safety feature and change consumer patterns in the near term.
- New federal vehicle immobilization standards will help produce long-term reductions in vehicle thefts.

## 2.2 Challenges

### Internal

- Measuring the direct claims cost reduction benefit of some programs (given their small size and given the challenges associated with linking awareness initiatives to behaviour change) remains a significant challenge.
- ICBC does not have the direct authority to act in some key areas. For example, although ICBC can recommend road improvement projects, the road authority has accountability for deciding whether the project will be undertaken. This is also true in supporting traffic law enforcement programs as enforcement authority determines actions.

### External

- External factors, such as the economy and the weather, have a significant influence on traffic crashes.
- A stronger public focus on reducing carbon emissions may result in a move to smaller vehicles, offering less protection from injury.
- ICBC could face external pressures (from customers, stakeholders, etc.) to pursue programs that fall outside of its strategic mandate and/or will not produce strong crash prevention benefits.

### 3 Key Assumptions and Principles

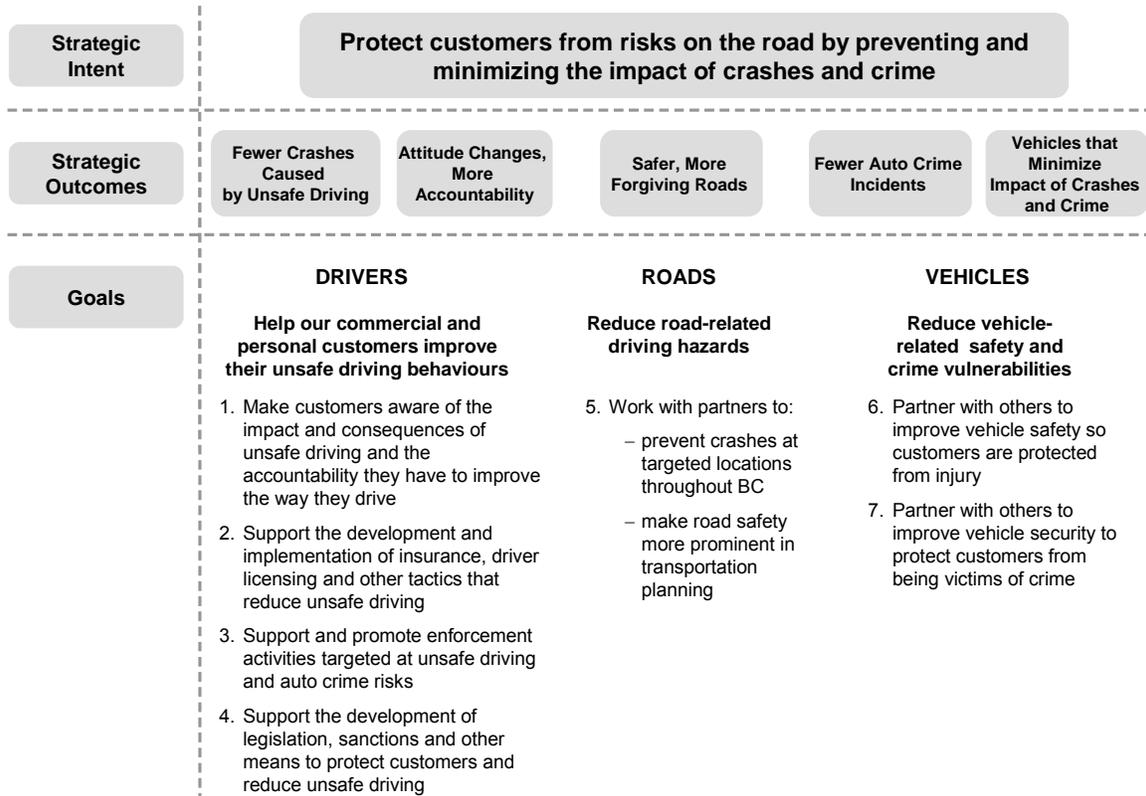
The following assumptions and principles guide development of detailed program and tactical plans.

<b>Key Assumptions</b>
<b>Road Safety and ICBC's Customers</b> <ul style="list-style-type: none"><li>■ ICBC's road safety function is focussed on protecting ICBC's insurance and driver licensing customers throughout the province.</li><li>■ Road safety investments are designed to prevent and minimize the impact of crashes and crime so that insurance premiums remain low and stable.</li></ul>

<b>Road Safety Principles</b>
Road Safety will... <ul style="list-style-type: none"><li>■ Ensure that all programs have clear measurable objectives.</li><li>■ Deliver programs that target the most serious road safety risks.</li><li>■ Focus programs on delivering claims savings benefits.</li><li>■ Proactively partner with others where appropriate on road safety programs.</li><li>■ Deliver programs consistently to customers around the province.</li></ul>

## 4 Strategic Framework

ICBC classifies Road Safety programs into three categories, which represent the major causes of crashes: Drivers, Roads, and Vehicles.



## 5 Road Safety Objectives

The main objectives of ICBC's road safety programs are crash prevention and auto crime prevention as described more fully below.

### 5.1 Crash Prevention

Historical crash rates are presented in the following tables. The crash rate is the number of crashes reported to ICBC per 10,000 vehicle policy years earned. The casualty crash rate is the number of casualty crashes reported to ICBC per 10,000 vehicle policy years earned. A **casualty** crash is a crash involving death or injury.

#### Crash Rate

2002	2003	2004	2005	2006	2007
980	930	911	904	922	935

#### Casualty Crash Rate

2002	2003	2004	2005	2006	2007
203	198	190	185	181	175

#### Crash Prevention Objectives

1. Reduce the crash rate by 1% in 2009, as compared with 2007.
2. Reduce the casualty crash rate by 5% in 2009, as compared with 2007.

#### Rationale for Objectives

The crash rate increased slightly in 2006 and 2007. It is expected that reduced exposure caused by the economic downturn, coupled with continuation of focussed road safety programs, will produce a slight decrease in the crash rate.

The average annual decrease in the casualty crash rate from 2005 through 2007 was 2.7%. It is expected that there will be a continuation of this downward trend in 2008. The economic downturn adds some uncertainty to the trends, as it is expected that there will be a decline in the number of new vehicles purchased (reducing the safety of the overall vehicle fleet), which will be offset by a reduction in exposure (fewer kilometres driven). ICBC has assumed that reduced exposure, coupled with continuation of road safety programs that are focussed on the major causes of crashes, will produce a 5% decrease in the casualty crash rate in 2009, as compared with 2007.

## 5.2 Auto Crime Prevention

ICBC's auto crime prevention programs are focussed on reducing auto theft. Historical auto theft incident rates are presented in the following table. The auto theft incident rate is the number of auto theft incidents reported to ICBC per 10,000 vehicle policy years earned.

**Auto Theft Incident Rate**

2002	2003	2004	2005	2006	2007
88	94	84	73	59	53

### **Auto Crime Prevention Objective**

Reduce the auto theft incident rate by 5% in 2009, as compared with 2007.

### **Rationale for Objective**

- The incident rate has decreased significantly in the past five years. It is unlikely that BC will continue to see decreases of this magnitude.
- The current economic downturn will likely have only a minimal impact on total theft claims. There may be an increase in the number of stolen and torched vehicles, which are often associated with incidents of fraud.

## 6 Programs and Tactics

The following sections summarize the 2009 plan for each road safety program. This includes defining the problem, identifying program objectives, and describing the tactics that will be implemented to achieve the program objectives.

## 6.1 Driver Programs

### 6.1.1 Impaired Driving

#### Problem Statement

- In 2007, police reported 126 fatalities and 2,983 injured victims in alcohol-related crashes. This was up from 113 and 2,944 respectively in 2006. There were 138 fatalities and 3,364 injured victims in alcohol-related crashes in 2005.
- As the police attend only a small proportion of all crashes that occur in BC, ICBC undertook a modelling exercise to estimate the costs of impaired driving. This model estimated that the 2005 impaired driving crashes cost ICBC's policyholders approximately \$125 million.

**Casualty Crash Rate** (number of impaired driving related casualty crashes reported by the police per 10,000 vehicle policy years earned)

2002	2003	2004	2005	2006	2007
7.73	8.14	7.87	8.08	7.17	6.99

#### 2009 Direction

- Support and promote enforcement activities targeting impaired driving.
- Raise awareness of the risks and consequences of impaired driving.
- Review awareness strategies to ensure that impaired driving campaigns are reaching the target audience.

#### Strategies

- Increase perceived risk that if you drive while impaired, you will get caught.
- Raise public awareness of the risks and consequences of impaired driving.

#### Program Objectives

- Reduce the impaired driving casualty crash rate by 4% for each year from 2009 to 2011, when compared with the average of years from 2005 to 2007.
- In 2011, 3% fewer drivers will report personal drinking/driving behaviours, as compared to 2008.

#### Rationale for Objectives

- The impaired driving casualty crash rate reduced by 11.3% from 2005 to 2006, coinciding with an increase in impaired driving enforcement. The rate reduced a further 2.5% in 2007.
- The current level of enforcement will be sustained. There will be a full complement of officers in Integrated Road Safety Units (IRSU) and impaired driving will remain a priority within enforcement.
- Public awareness of the dangers of impaired driving is expected to increase slightly with a stronger focus on consequences.
- Awareness campaign advertising is expected to remain at current levels.
- The economic downturn is expected to reduce the number of kilometres driven.
- Given these factors, it is reasonable to establish a target of a 4% decrease in the impaired driving casualty crash rate for each year from 2009 to 2011, when compared with the average of years from 2005 to 2007.

## 2009 Impaired Driving Tactics

Tactic Name and Description	Objective	Contribution to Achieving Program Objectives
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of impaired driving enforcement.</p>	<p>39% of survey respondents feel they are likely to get caught if they drink and drive, a 2% increase from 2008.</p>	<p>Enhanced enforcement removes drinking drivers from the road and deters others from drinking and driving.</p>
<p><b>Impaired Driving Awareness Campaign</b> CounterAttack radio and TV advertising is produced by ICBC; the BC Association of Broadcasters airs the advertisements free as public service announcements. The campaign includes community partnerships, including working with the police to publicize enforcement programs and providing information to large employers.</p>	<p>In 2009, 59% of survey respondents have aided recall of the impaired driving campaign slogan, a 3% increase from 2008.</p>	<p>Drivers are informed of the risks and consequences of impaired driving, including risk of getting caught.</p>
<p><b>Community Partnerships</b> The Get Home Safe tactic involves working with municipalities and facility owners to endorse the "Get Home Safe" message and require special event licensees to display impaired driving materials.</p>	<p>a) 60 sports/entertainment facilities and 40 municipalities will confirm their endorsement and active participation.</p>	<p>Motorists are reminded not to drink and drive or they will face consequences.</p>
<p><b>Operation Red Nose (ORN)</b> A Christmas volunteer driving service to get people and their vehicle home safely. BC Crime Prevention Association is the official BC sponsor of the national ORN program. ICBC supports the program by providing insurance coverage for the volunteer ride vehicles.</p>	<p>b) Maintain the number of rides in the participating ORN communities (4,907 in 2008).</p>	<p>Alternative volunteer transportation is provided.</p>
<p><b>Drug Impairment Strategy</b> Research and prepare a strategy on impairment by drugs other than alcohol.</p>	<p>Complete strategy by Q3, 2009.</p>	<p>Increased understanding of crashes caused by drugs other than alcohol.</p>

## 6.1.2 Speeding

### Problem Statement

- Speeding includes: speed over the limit, excessive speed, and driving too fast for conditions.
- In 2007, police reported 163 fatalities and 4,938 injured victims in speed-related crashes. This was up from 143 and 5,065 respectively in 2006. There were 182 fatalities and 5,447 injured victims in speed-related crashes in 2005.
- As the police attend only a small proportion of all the crashes that occur in BC, ICBC undertook a modelling exercise to estimate the costs of speed-related crashes. This model estimated that the 2005 speed-related crashes cost ICBC's policyholders approximately \$485 million.

**Casualty Crash Rate** (number of speeding related casualty crashes reported by the police per 10,000 vehicle policy years earned)

2002	2003	2004	2005	2006	2007
13.65	14.41	13.55	13.20	12.06	11.38

### 2009 Direction

- Support and promote enforcement activities targeting speeding.
- Focus awareness campaigns on consequences, to reinforce the concept of driver accountability.
- Expand use of ICBC speed related tools in local tactics.
- Review effectiveness of community involvement programs and ensure alignment of community involvement tactics to program.

### Strategies

- Increase perceived risk that if you speed, you will get caught.
- Raise public awareness of the risks and consequences of speeding.

### Program Objectives

- Reduce the speed casualty crash rate by 4% for each year from 2009 to 2011, when compared with the average for the years 2005 to 2007.
- In 2010, 5% fewer drivers will report personal speed-related driving behaviours, as compared to 2007.

### Rationale for Objectives

- The speeding casualty crash rate declined by 5.6% in 2007 relative to 2006.
- Overall enforcement levels are expected to remain the same in 2009; however, it is expected that the police will have a stronger focus on impaired driving and intersection safety. This could influence driver attitudes towards speed.
- A small increase in public awareness of speed risks is expected, caused by a strong focus on direct driver contact tactics and implementation of the Driver Risk Premium program.
- Considering these factors, a target of a 4% reduction was established.

## 2009 Speeding Tactics

Tactic Name and Description	Objective	Contribution to Achieving Program Objectives
<b>Enhanced Enforcement</b> Funding for enhanced levels of speed enforcement.	In 2009, 43% of survey respondents feel they are likely to get caught if they speed, a 4% increase from June 2008.	Speeding drivers are sanctioned and have a higher perceived risk that if motorists speed, they will get caught.
<b>Speed Awareness Campaign</b> Raises awareness of the dangers and consequences of speeding. Tactic also supports enforcement activities.	In 2009, 23% of survey respondents have aided recall of the speeding advertising campaign slogan. <i>Comment: New messaging will be introduced. It is expected that it will take some time to build awareness levels.</i>	Drivers are informed of the dangers and consequences of speeding and have a higher perceived risk that if they speed, they will get caught.
<b>Roadside Speed Reader Boards</b> SpeedWatch: Community volunteers use speed reader boards to raise awareness of speeds at targeted locations. Fixed Speed Reader Boards: Installation of pole mounted speed reader boards at high crash locations and corridors. Enforcement may be present at these sites.	a) 48% of survey respondents have seen a SpeedWatch operation in 2009, a 3% increase from June 2008 b) Speed reader boards are deployed in 75 high-crash corridors in 2009, a 25% increase from 2008.	Drivers are deterred from speeding by being made aware of the speeds at which they are traveling. As police may be present at the speed reader board locations, the tactic supports increasing the perceived risk that if motorists speed, they will get caught.
<b>Youth Outreach</b> Through RoadSense Speakers Tour, speakers use their experiences to motivate youth to make safe driving decisions, with a strong focus on the consequences of speeding.	a) 180 presentations are conducted provincially in 2009, a 7% increase from 2008.	Young drivers and people approaching driving age are informed of the risks and consequences (fines, points, premium increases, risk of injury, etc.) of speeding and other dangerous driving behaviours.
ICBC provides grades 8-10 teaching packages to meet mandatory learning outcomes.	b) Complete updates to Grades 8-10 curriculum package by August 2009.	
<b>Strategy</b> Develop strategies for people aged 19-25.	Complete 19-25 strategy by Q1, 2009.	Strategy development will inform the design of future Road Safety tactics.

### 6.1.3 Intersection Safety

#### Problem Statement

- The main contributing factors to intersection crashes are: Following Too Closely, Ignoring Traffic Control, and Failing To Yield.
- In 2007, police reported 75 fatal collisions and 7,844 injury collisions involving the main contributing factors. In 2006, there were 64 fatal collisions and 9,080 injury collisions. There were 79 fatal collisions and 9,960 injury collisions involving the main contributing factors in 2005. Please note that these collision numbers cannot be summed as police often identify more than one contributing factor to a crash.
- Although these driver behaviours occur at other locations, at intersections they are the leading causes of crashes. As such, tactics aiming at reducing the overall rate of casualty crashes involving these driver behaviours will reduce crashes at intersections.

**Casualty Crash Rate** (number of intersection safety related casualty crashes reported by the police per 10,000 vehicle policy years earned)

2002	2003	2004	2005	2006	2007
26.00	27.61	25.88	23.30	20.96	17.31

#### 2009 Direction

- Upgrade and expand the Intersection Safety Camera tactic.
- Support and promote enforcement activities targeting intersection safety, with particular focus on Intersection Safety Cameras.
- Focus awareness campaigns on consequences, to reinforce the concept of driver accountability.
- Ensure intersection safety campaigns are emphasizing high risk behaviours.

#### Strategies

- Increase perceived risk that if you drive unsafely at intersections, you will get caught.
- Raise public awareness of the risks and consequences of unsafe driving behaviours at intersections.

#### Program Objectives

- Reduce the intersection behaviour casualty crash rate by 4% each year from 2008 to 2010, when compared with the average of years from 2005 to 2007.
- In 2010, 5% fewer drivers will report personal high risk intersection behaviours as compared to 2007.

#### Rationale for Objectives

- The intersection-related casualty crash rate between 2005 and 2007 decreased by an average of 12.5% per year.
- This change in the casualty crash rate may reflect an increased focus by traffic police on intersection safety over the past three years, and the significant annual decrease is unlikely to be sustained. It is expected that historical levels of enforcement will be maintained.

## 2009 Intersection Safety Tactics

Tactic Name and Description	Objective	Contribution to Achieving Program Objectives
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of intersection safety enforcement.</p>	<p>In 2009, 36% of survey respondents will feel they are likely to get caught if they run red lights, a 5% increase from 2008. <i>Comment: Focus in 2009 will be on drivers who run red lights.</i></p>	<p>Drivers exhibiting unsafe intersection behaviours are sanctioned and have a higher perceived risk that if they drive unsafely at intersections, they will get caught.</p>
<p><b>Intersection Awareness Campaign</b> An advertising campaign linked to accompanying police enforcement, with a focus on failing to yield, ignoring traffic control devices, and following too closely.</p>	<p>In 2009, 35% of survey respondents will recall hearing about intersection safety, a 5% increase from 2008.</p>	<p>Drivers are informed of the risks and consequences of unsafe intersection behaviours and have a higher perceived risk that if they drive unsafely at intersections, they will get caught.</p>
<p><b>Intersection Safety Camera Upgrade</b> Upgrade and expand the Intersection Safety Camera tactic.</p>	<p>All 2009 deliverables in the ISC Upgrade project plan are completed on time and on budget.</p>	<p>Drivers running red lights are sanctioned.</p>

## 6.1.4 Commercial Vehicle Safety

### Problem Statement

- In 2007, crash incidents involving commercial vehicles cost ICBC's customers approximately \$323 million and involved a total of 39,236 incidents.

**Casualty Crash Rate** (number of commercial vehicle related casualty crashes reported to ICBC per 10,000 commercial vehicle policy years earned)

2002	2003	2004	2005	2006	2007
125	121	114	114	109	110

### 2009 Direction

- Develop a strategy to address drivers of commercial vehicles.

### Strategies

- To be determined once review is completed.

### Program Objectives

- Develop commercial vehicle crash prevention strategies, tactics, and objectives.

### Rationale for Objectives

- Crash prevention objectives to be determined.

### 2009 Commercial Vehicle Safety Tactics

Tactic Name and Description	Objective	Contribution to Achieving Program Objectives
<b>Strategy Development</b> Develop a Commercial Vehicle road safety strategy.	Develop a commercial vehicle road safety strategy in 2009	Strategy development will inform the design of future Road Safety tactics

## 6.1.5 Occupant Restraints

### Problem Statement

- In 2007, police attended 2,069 crashes in which an occupant restraint device was not used. These crashes resulted in 1,344 injured victims and 108 fatalities.
- In 2005, the cost of crashes reported by police involving unbelted drivers and/or passengers being injured was approximately \$133 million.

**Casualty Crash Rate** (number of occupant restraint related casualty crashes reported by the police per 10,000 vehicle policy years earned)

2002	2003	2004	2005	2006	2007
9.18	9.83	7.38	6.36	5.02	4.52

### 2009 Direction

- Provide maintenance support to promote enforcement activities targeting seatbelt use.
- Maintain ICBC's involvement in the BCAA/ICBC Child Passenger Safety tactic in 2009 and review tactic effectiveness.

### Strategies

- Maintain perceived risk that if you don't wear your seat belt, you will get caught.
- Maintain public awareness of the risks and consequences of being improperly restrained or unrestrained.

### Program Objectives

- Maintain the provincial seatbelt wearing rate at 2006 levels, for the years 2008 to 2010.
- Maintain the child passenger casualty crash rate at 2006 levels, for the years 2008 to 2010.

### Rationale for Objectives

- Police increased their enforcement of seatbelt use significantly in the years from 2004 to 2007; it is unlikely that the dramatic improvements between 2004 and 2007 will continue in future years.
- ICBC will support police enforcement campaigns with a moderate level of advertising and tactics, but will not have a year-round focus on occupant restraints.
- Research indicates that it is difficult to reach the remaining 5% of high risk occupants who do not wear seatbelts.
- Please note that Transport Canada did not conduct a seat belt wearing survey in 2008. A survey will be conducted in 2009.

## 2009 Occupant Restraint Tactics

Tactic Name and Description	Objective	Contribution to Achieving Program Objectives
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of seatbelt enforcement.</p>	<p>In 2009, 38% of survey respondents feel they are likely to get caught if they drive unrestrained, a maintenance of 2007 results.</p>	<p>Drivers not wearing seat belts are sanctioned and have a higher perceived risk that if they don't wear seat belts, they will get caught.</p>
<p><b>Occupant Restraint Awareness Campaign</b> Radio announcements during September to increase awareness of police enforcement of seatbelts and child seats.</p> <p>Provide occupant restraint information through fact sheets, posters, www.icbc.com and the Aboriginal Toolkit to educate drivers and high-risk groups.</p>	<p>In 2009, 38% of survey respondents can recall hearing seatbelt messages, maintaining the November 2007 awareness level.</p>	<p>Drivers are informed of the risks and consequences of not wearing seat belts and have a higher perceived risk that if they don't wear seat belts, they will get caught.</p>
<p><b>Child Passenger Safety</b> Partnership with BCAA's Traffic Safety Foundation to provide child passenger safety information through a toll-free information line, child seat clinics, information sessions, and child restraint training to police, health, and volunteers.</p>	<p>a) 60 child seat clinics and 14,000 calls to the information line will be completed in 2009. <i>Comment: Number of child seat clinics conducted will be reduced in 2009, as the focus is shifting from clinics to group information sessions.</i> b) Partnership review is completed by Q3, 2009.</p>	<p>Parents and caregivers have information on the correct use of child safety seats.</p>
<p>Grade K-7 road safety teaching resources support learning outcomes established by the BC Ministry of Education.</p>	<p>c) 410 Passport to Education (Kindergarten to Grade 3) material orders, and 310 Going Places (grades 4 – 7) material orders in 2009, a slight increase from the orders received in 2007.</p>	<p>Students are educated on road safety issues, including the risks and consequences of not using child safety seats and seat belts.</p>

## 6.2 Road Programs

### 6.2.1 Road Improvement Program

#### Problem Statement

- Many BC roads were designed to standards existing in the 1950's or 1960's.
- Newer standards offer an opportunity to reduce crashes significantly.
- In 2005, 16.1% of all police attending casualty crashes cited environmental factors as a contributing factor.
- Previous evaluations of the Road Improvement Program have shown a 4 to 1 return on investment and a demonstrable reduction in crashes.

#### 2009 Direction

- Work with partners to prevent crashes at targeted locations throughout BC.

#### Strategies

- Work with partners to prevent crashes at targeted locations throughout BC.

#### Program Objectives

- Achieve an average 50% internal rate of return on road improvement projects, in an evaluation to be conducted in 2009.

#### Rationale for Objectives

- The most recent program evaluation concluded that road improvement projects produced a 4 to 1 return on investment.

#### 2009 Road Improvement Tactics

Tactic Name and Description	Objective	Contribution to Achieving Program Objectives
<b>Engineering Retrofits</b> Share the costs of road improvements to reduce crashes at crash-prone locations.	50% Internal Rate of Return achieved for retrofit projects as measured in 2009.	Crashes are reduced at high-risk locations.
<b>Road Safety Audits</b> Review planned infrastructure projects to ensure safety is given priority during design/construction.	Conduct 15 safety audits in 2009.	Ensures road infrastructure projects have a focus on road safety, leading to reduced crashes.
<b>Innovation Fund</b> Facilitate the assessment of promising new road improvement technology.	Develop plan by Q1, 2009 and implement tactics in accordance with plan.	Will facilitate introduction of promising new road engineering technologies in the future.
<b>Program Evaluation</b> Evaluate the crash prevention impact of the Road Improvement Program.	Complete program evaluation by Q4, 2009.	Evaluation will inform the design of future Road Improvement projects.

## 6.3 Vehicle Programs

### 6.3.1 Safer Vehicles

#### Problem Statement

- In BC, vehicle condition factors were cited in approximately 2% of all police-attended casualty collisions in 2005.
- Research shows that by increasing the proportion of vehicles on the roads with high standard safety features the risks for all road users could be reduced by up to 22%.

#### 2009 Direction

- Develop and implement tactics to support safer vehicle strategies.

#### Strategies

- Increase awareness of vehicle safety.
- Increase the number of safer vehicles on the road.
- Promote and support vehicle safety research.

#### Program Objectives

- Develop specific targets for vehicle safety improvement in 2009.

#### Rationale for Objectives

- Baselines and specific targets to be established in 2009.

#### 2009 Safer Vehicles Tactics

<b>Tactic Name and Description</b>	<b>Objective</b>	<b>Contribution to Achieving Program Objectives</b>
<b>Targeted Awareness Campaign</b> Paid and earned media to inform customers of the benefits of vehicle safety features.	In 2009, 27% of respondents will identify 'safety' as one of their top three considerations when deciding to buy a vehicle, maintaining the 2008 results.	Increases market demand, making consumers aware of what safety features are available and the importance of those features in preventing crashes and serious injury.
<b>Safer Vehicle Information</b> Consumer information on icbc.com supporting program.	Develop information strategy by Q3, 2009.	Critical resource for consumers seeking information on vehicle safety for their purchase decisions.

<b>Tactic Name and Description</b>	<b>Objective</b>	<b>Contribution to Achieving Program Objectives</b>
<p><b>Head Restraint Awareness</b> Driver Examiners provide head restraint safety education and correct adjustment of driver and passenger head restraints during Class 5 and 7 road tests.</p>	<p>Head restraint education provided on all class 5 and 7 road tests across the province, as measured in annual completion reports.</p>	<p>Influences attitude change; has a high personal contact and reach; low cost delivery.</p>
<p><b>Develop Canadian Vehicle Safety Ratings</b> Rating methodology to help consumers obtain information on and compare the crashworthiness and crash avoidance features of vehicles available in Canada.</p>	<p>Work with partners and stakeholders to develop Canadian Vehicle Safety Ratings by Q3, 2009.</p>	<p>By comparing the crashworthiness of vehicles consumers are able to make informed decisions when buying a vehicle.</p>
<p><b>Develop tools for fleet managers</b> Develop a plan to inform fleet managers of available safety features and the importance of such features in preventing crashes and serious injury.</p>	<p>Plan developed by Q3, 2009.</p>	<p>Promoting the purchase of safer fleet vehicles ensures that more cars on the road have safety features, both now and when the fleet cars are later sold into the private market.</p>
<p><b>Maintain and Establish Partnerships to Promote and Support Vehicle Safety Research</b></p>	<p>Develop partnership strategy by Q3, 2009.</p>	<p>Necessary to maintain existing relationships and explore new relationships to support the identification and evaluation of new technologies that can support the Road Safety Plan.</p>

### 6.3.2 Auto Crime

#### Problem Statement

- In 2007, total auto crime costs to ICBC's customers were approximately \$110 million: \$68 million from theft of auto, \$20 million from 'theft from', and \$22 million from vandalism. In 2006 total auto crime costs were approximately \$114 million: \$71 million from theft of auto, \$22 million from 'theft from', and \$21 million from vandalism.
- In 2007, there were 67,689 auto crime incidents: 15,984 total theft incidents, 25,644 vehicle break-in theft incidents, and 26,061 vandalism incidents. In 2006, there were 72,751 auto crime incidents: 17,415 total theft incidents, 28,511 vehicle break-in theft incidents, and 26,825 vandalism incidents.
- The incident rate has decreased significantly in the past three years.

**Auto Theft Incident Rate** (number of auto theft incidents reported to ICBC per 10,000 vehicle policy years earned)

2002	2003	2004	2005	2006	2007
88	94	84	73	59	53

#### 2009 Direction

- Support and promote enforcement activities targeting auto theft.
- Develop strategies to target owners of at-risk vehicles.

#### Strategies

- Maintain perceived risk of enforcement apprehension.
- Raise public awareness of the risks and consequences of auto crime.

#### Program Objective

- Reduce the auto theft incident rate by 5% in 2009 relative to 2007.

#### Rationale for Objective

- The incident rate has decreased significantly in the past three years.
- It is expected that the improvement will level off, as enforcement levels will remain constant and no new major strategies are planned.

## 2009 Auto Crime Tactics

Tactic Name and Description	Objective	Contribution to Achieving Program Objectives
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of auto crime enforcement.</p>	<p>59% of survey respondents are aware of efforts to catch car thieves or prevent thefts through enforcement.</p>	<p>Car thieves are apprehended and deterred.</p>
<p><b>Auto Crime Awareness Campaign</b> A campaign to raise awareness of enforcement (including Bait cars).  Information for youth on icbc.com and in schools dissuade youth from getting involved in auto crime.</p>	<p>79% of survey respondents have aided recall of the Bait Car tag line "Steal a Bait Car, Go to Jail", a maintenance of the 2007 level.</p>	<p>Motorists are informed about the risks and consequences of auto crime.  Youth understand the risks and consequences of becoming involved in auto crime.</p>
<p><b>High Risk Vehicle Immobilization</b> Initiative that targets high-risk vehicles (target is Ford F-series vehicles) to encourage motorists to install engine immobilizers.</p>	<p>Review 2008 results by Q1, 2009 and establish targets for 2009.</p>	<p>High-risk vehicles have engine immobilizers installed, reducing the risk of auto theft.</p>
<p><b>High Risk Auto Crime Partnerships</b> Stolen Auto Recovery community volunteers check licence plates to recover stolen vehicles and stolen plates.  Private security staff patrols high crime locations where volunteer activity is not sufficient. Funding depends on cost sharing with municipalities and businesses.</p>	<p>All funding tactics meet the measurement criteria specified in the partnership funding agreements.  Maintain four targeted partnerships in 2009.</p>	<p>Stolen vehicles are recovered.  New initiatives with significant opportunity for success are encouraged.  Increased security patrols reduce incidents of both vehicle theft and break-in.</p>

## **7 2009 Investment Summary**

Overall, ICBC's 2009 investment in Road Safety will be about \$6.3 million more than the 2008 actual costs. The major factors are summarized below:

### **Drivers**

- The total investment in Driver programs in 2009 will increase by approximately \$6.2 million.
- The total investment in enhanced enforcement will be approximately \$6.3 million more in 2009. This is due to an increase in payments owing under the Traffic and Law Enforcement Funding Memorandum of Understanding (MOU). In 2009, the MOU provides funding based on 1.25% of Basic insurance earned premiums.
- This increase in enhanced enforcement investment is offset by decreases in other Driver tactics, totaling about \$100,000.

### **Roads**

- The planned 2009 investment in the Road Improvement Program will be \$684,000 less than 2008. With the increased support for enhanced traffic law enforcement, ICBC decided to absorb some of the increase by reducing investments in other program areas, including the Road Improvement Program.

### **Vehicles**

- The planned 2009 investment in Vehicle programs will increase by \$264,000, caused by expansion of Auto Crime tactics and the introduction of new tactics to encourage motorists to purchase safer vehicles.

### **Compensation and General Expenses**

- These expenses will increase by \$558,000 in 2009, caused mainly by staff salary increases and filling of staff vacancies.

## 7.1 Investment Summary

The following table summarizes the planned investment to achieve the program and tactic objectives.

<b>Road Safety Expenses (\$000's)</b>		<b>2008 Actual</b>	<b>2009 Plan</b>
<b>Drivers</b>			
Impaired Driving	Enhanced Enforcement	4,503	6,439
	Impaired Driving Awareness Campaign	1,249	1,166
	Community Partnerships	16	88
	<b>Subtotal Impaired Driving</b>	<b>5,768</b>	<b>7,693</b>
Speeding	Enhanced Enforcement	6,953	9,656
	Speed Awareness Campaign	680	631
	Roadside Speed Reader Boards	121	165
	Youth Outreach	198	280
	Research	72	35
	<b>Subtotal Speeding</b>	<b>8,024</b>	<b>10,767</b>
Intersection Safety	Enhanced Enforcement	950	1,095
	Intersection Awareness Campaign	412	335
	Intersection Safety Camera Upgrade (1)	0	0
	<b>Subtotal Intersection Safety</b>	<b>1,362</b>	<b>1,430</b>
Comm. Veh. Safety	Strategy Development	22	40
Occupant Restraints	Enhanced Enforcement	3,753	5,273
	Occupant Restraint Awareness Campaign	2	0
	Child Passenger Safety	274	198
	<b>Subtotal Occupant Restraints</b>	<b>4,029</b>	<b>5,471</b>
<b>SUBTOTAL DRIVERS</b>		<b>19,205</b>	<b>25,401</b>
<b>Roads</b>			
Road Improvements	Engineering Retrofits	9,154	8,470
	<b>Subtotal Road Improvements</b>	<b>9,154</b>	<b>8,470</b>
<b>SUBTOTAL ROADS</b>		<b>9,154</b>	<b>8,470</b>
<b>Vehicles</b>			
Safer Vehicles	Strategy Development	12	150
Auto Crime	Enhanced Enforcement	2,000	2,000
	Auto Crime Awareness Campaign	315	182
	High Risk Vehicle Immobilization	156	400
	High Risk Auto Crime Partnerships	439	454
	<b>Subtotal Auto Crime</b>	<b>2,910</b>	<b>3,036</b>
<b>SUBTOTAL VEHICLES</b>		<b>2,922</b>	<b>3,186</b>
<b>TOTAL DIRECT EXPENSES</b>		<b>31,281</b>	<b>37,057</b>
	Research and Measurement Direct Expenses	168	200
	Compensation	3,866	4,261
	General Expenses	1,374	1,505
<b>TOTAL ROAD SAFETY EXPENSES</b>		<b>36,689</b>	<b>43,023</b>
<b>TOTAL ROAD SAFETY FTE'S</b>		<b>40.8</b>	<b>44.3</b>

Note 1: The investment summary does not include the investment for the Intersection Safety Camera Upgrade tactic, which is funded from the Corporate Project Fund.



Insurance  
Corporation  
of British  
Columbia

## **ATTACHMENT A-2**

# **2008 ROAD SAFETY ANNUAL REPORT**



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# 2008 Road Safety Annual Report

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# 1. Introduction

This report summarizes the strategic approach that guides ICBC's road safety programs, and provides information on 2008 program and tactic objectives and results.

# 2. Strategic Approach

ICBC develops and manages programs that prevent traffic crashes and auto crime, thereby providing a benefit to our customers both by helping to maintain low and stable insurance premiums and by minimizing the number of people exposed to the physical, emotional, and financial hardship that result from being involved in a crash.

ICBC invests in programs that produce short-term claims reduction benefits and programs that are designed to produce long-term improvements in driving attitudes and behaviours.

The following assumptions and principles guide development of detailed program and tactical plans.

## Key Assumptions

### Road Safety and ICBC's Customers

- ICBC's road safety function is focussed on protecting ICBC's insurance and driver licensing customers throughout the province.
- Road safety investments are designed to prevent and minimize the impact of crashes and crime so that insurance premiums remain low and stable.

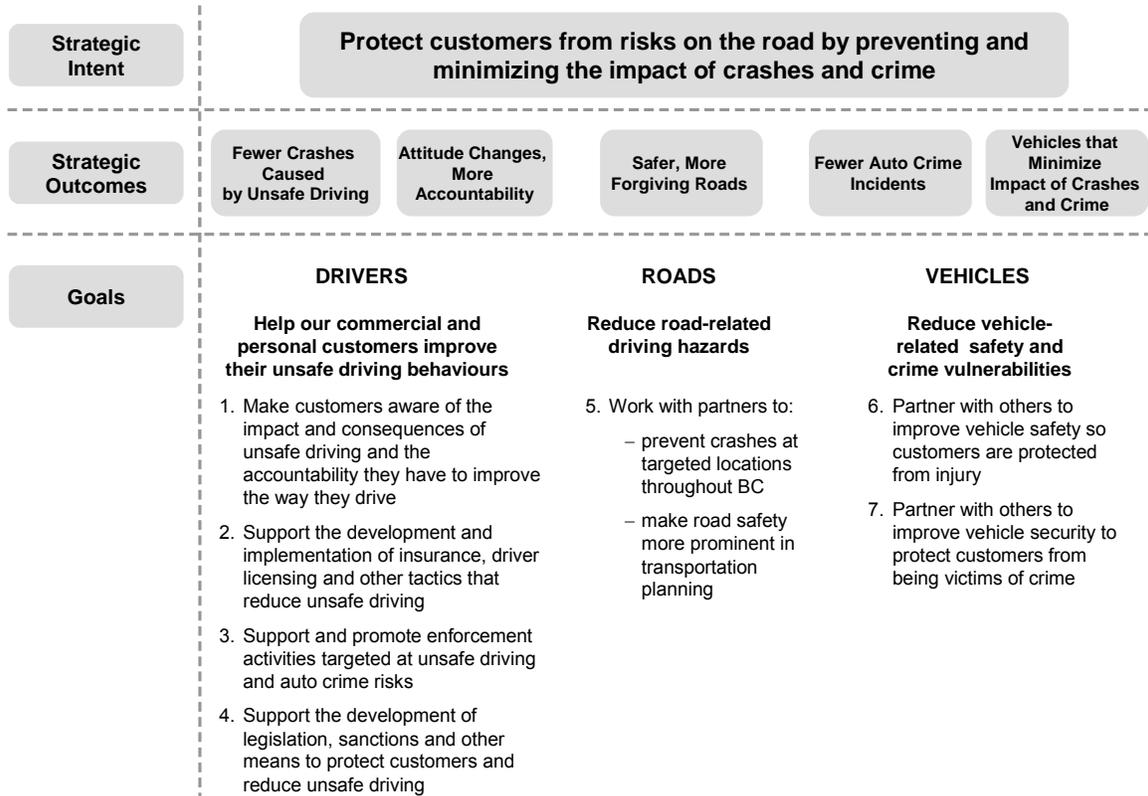
## Road Safety Principles

Road Safety will...

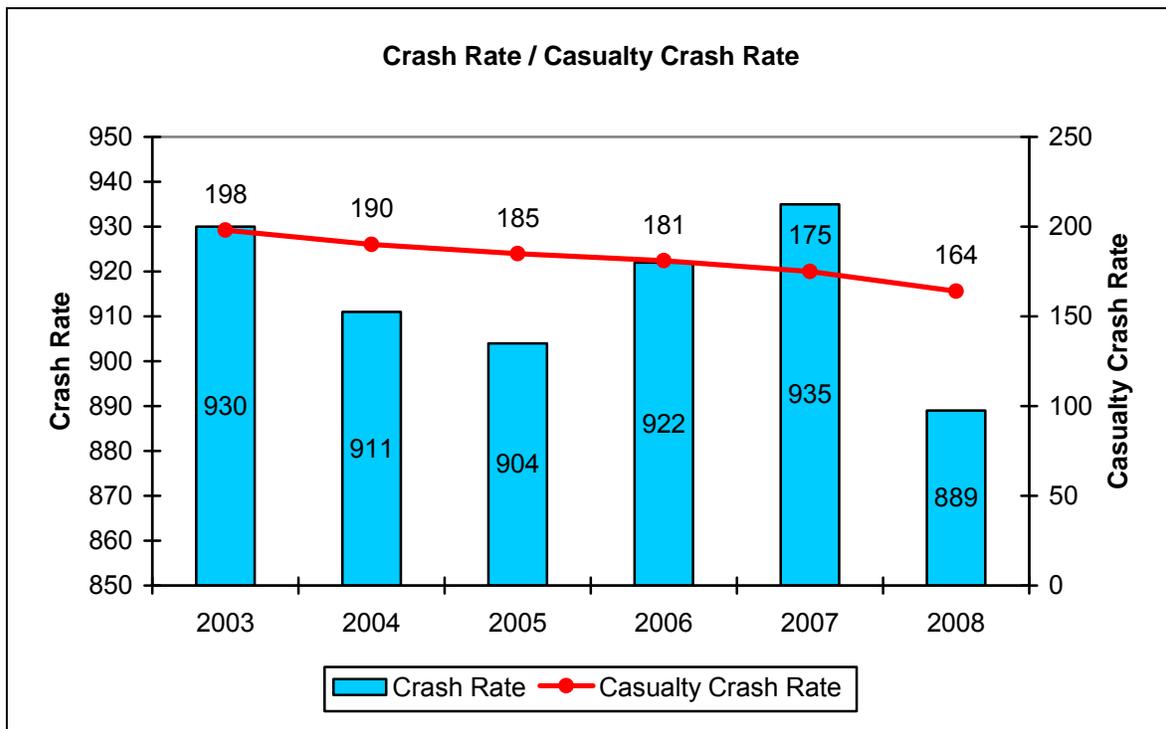
- Ensure that all programs have clear measurable objectives.
- Deliver programs that target the most serious road safety risks.
- Focus programs on delivering claims savings benefits.
- Proactively partner with others where appropriate on road safety programs.
- Deliver programs consistently to customers around the province.

# Road Safety Strategic Framework

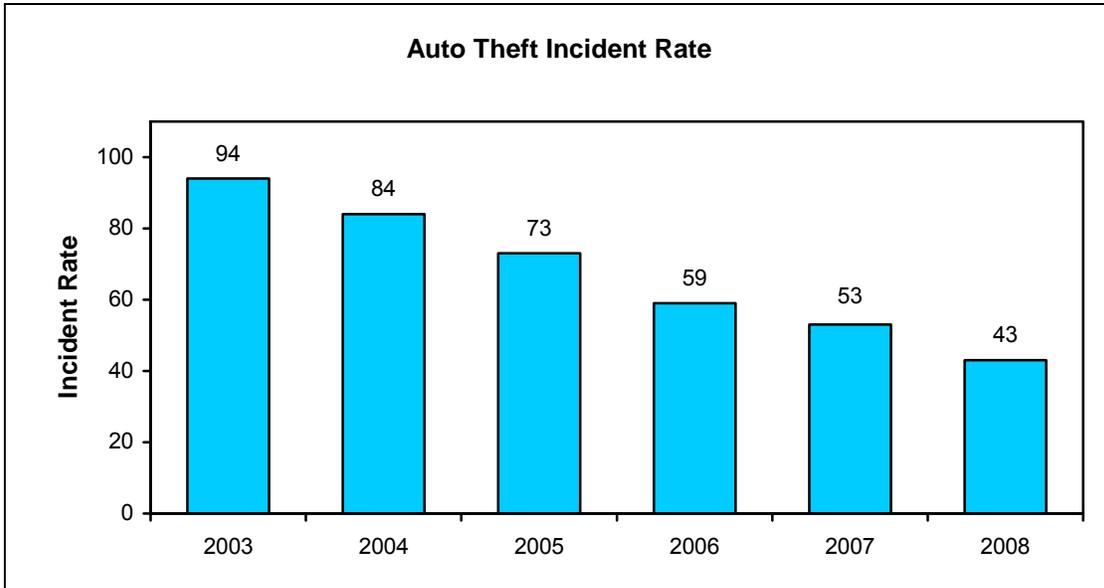
ICBC classifies Road Safety programs into three categories which represent the major causes of crashes: Drivers, Roads, and Vehicles.



### 3. Trends



The **crash rate** is the number of crashes reported to ICBC per 10,000 vehicle policy years earned. The 2008 crash rate was 4.9% lower than the 2007 crash rate. The **casualty crash rate** is the number of casualty crashes reported to ICBC per 10,000 vehicle policy years earned. A casualty crash is a crash involving death or injury. There was a 6.3% decrease in the casualty crash rate in 2008 over 2007.



The **auto theft incident rate** is the number of auto thefts reported to ICBC per 10,000 vehicle policy years earned. The 2008 rate was 19% better than that reported in 2007.

*Note: In ICBC's October 17, 2008 Filing, page 30, ICBC inadvertently labelled the table "Auto Theft Incident Rate". The label in the October 17, 2008 Filing should have read "Auto Crime Incident Rate", as the table provides rates for all types of auto crime, including theft, break-ins, and vandalism. ICBC's tactics focus on auto theft reduction; therefore, this 2008 Road Safety Annual Report includes rates only for auto theft.*

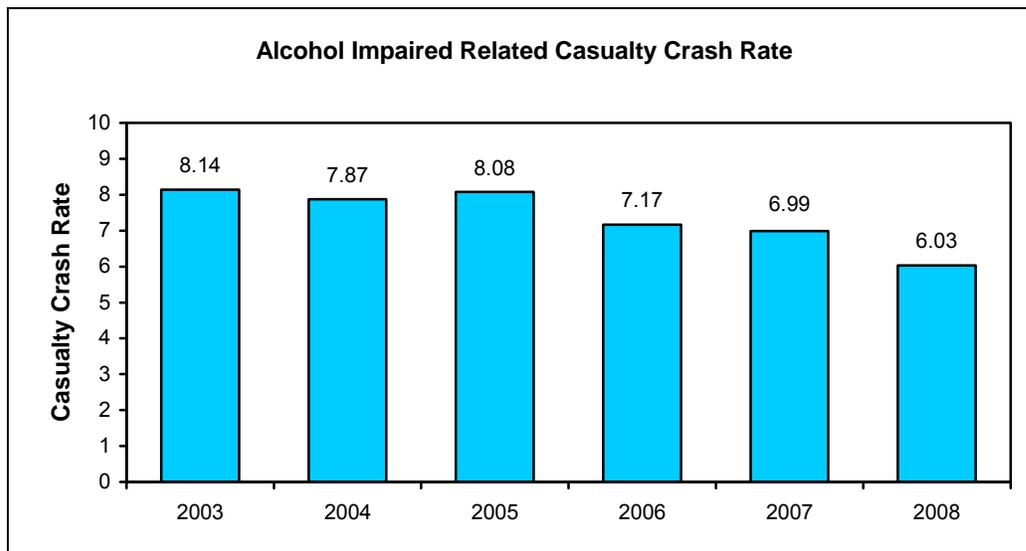
## 4. 2008 Objectives and Results

### DRIVERS

#### Impaired Driving

There are many causes of driver impairment, including fatigue, alcohol, and drugs. ICBC's focus is on impairment caused by alcohol. For the BC public, characterization of drinking and driving varies. While the majority of BC's citizens agree that drinking and driving is a serious problem, a quarter of all drivers feel they are fully in control of their driving after consuming a "small" amount of alcohol - one or two drinks. The criterion they use to determine their limit is whether they feel their physical and mental processes (psychomotor skills) are obviously impaired.

ICBC's focus on reducing the number of impaired driving crashes relies on improving drivers' sense of personal accountability, along with increasing the perception that if you drink and drive, you will get caught.



The above **casualty crash rate** is the number of impaired driving related casualty crashes reported by the police per 10,000 vehicle policy years earned.

#### Program Strategic Objectives

Objective	Result
Reduce the impaired driving casualty crash rate by 4% for each year from 2008 to 2010 when compared with the average of years from 2004 to 2006.	<span style="color: green;">✔</span> On track to achieve strategic objective. The 2008 casualty crash rate (6.03) was 21.8% lower than the average 2004-2006 crash rate of 7.71.
In 2010, 3% fewer drivers will report personal drinking/driving behaviours, as compared to 2007.	<span style="color: orange;">✘</span> Will not be measured until 2010.

## Impaired Driving Program Activities: 2008 Highlights



### Campaigns

Two Impaired Driving campaigns were held in 2008: July 1-31 and Dec 1-31. The campaign launches received significant provincial media coverage, a key indicator to gauge how many people might have been exposed to the message. The campaigns included additional police enforcement and community activities to raise awareness of this dangerous driving behaviour.

### Get Home Safe Messaging

Municipalities, sporting facilities, and entertainment venues across BC partnered with ICBC to distribute messages promoting alternatives to drinking and driving.



### Operation Red Nose

Volunteer drivers in eleven communities provided rides during the Christmas season to people who had been drinking. ICBC was the provincial sponsor for the 12th consecutive year, providing insurance for all of the ride and escort vehicles. The number of rides increased in 2008, noteworthy given the winter storms.

*Operation Red Nose Volunteers*

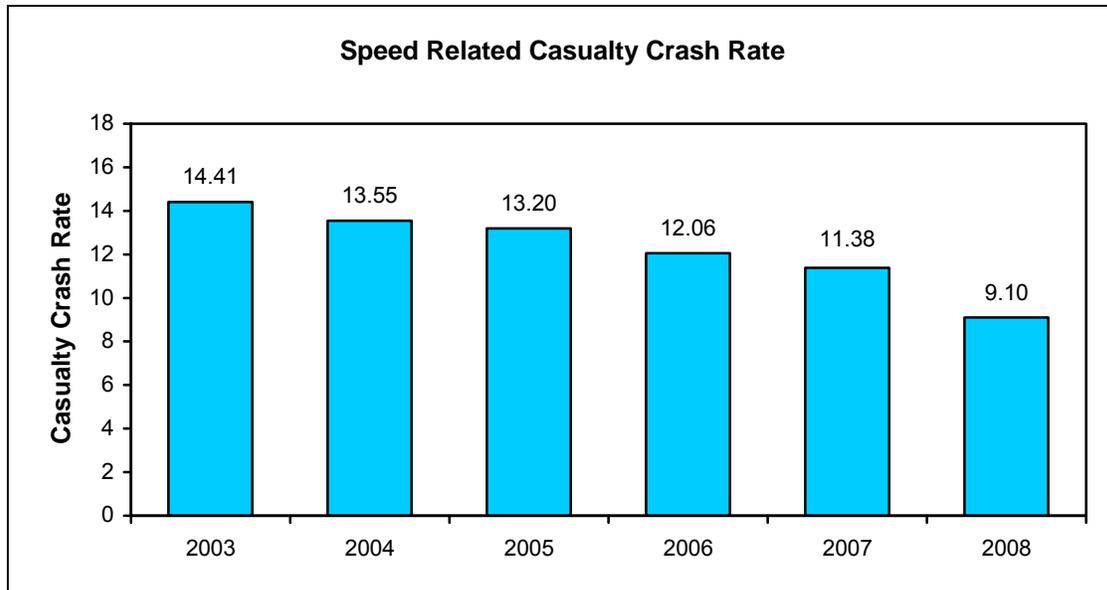
## 2008 Impaired Driving Tactics

Tactic Name and Description	Objective	Results
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of impaired driving enforcement.</p>	<p>In 2008, 62% of survey respondents feel they are likely to get caught if they drink and drive, a 3% increase from December 2007.</p>	<p>✘ 37% of survey respondents feel they are likely to get caught if they drink and drive, post July and December 2008 campaigns. <i>(Comment: It is unclear why this percentage decreased. ICBC is reviewing the survey questions to analyze the results).</i></p>
<p><b>Impaired Driving Awareness Campaign</b> CounterAttack advertising is produced by ICBC; the BC Association of Broadcasters airs the advertisements free. Tactic includes providing impaired driving information on icbc.com.</p>	<p>In 2008, 52% of survey respondents have aided recall of "Are you still making excuses for drinking and driving?", a 3% increase from July 2007.</p>	<p>✔ 56% of survey respondents post July 2008 campaign and 59% of respondents post December 2008 campaign have aided recall.</p>
<p><b>Community Partnerships</b> Get Home Safe involves municipalities and facility owners endorsing the "Get Home Safe" message, requiring special event licensees to display impaired driving materials.</p>	<p>40 municipalities and 60 sporting and entertainment facilities endorse and promote "Get Home Safe" in 2008.</p>	<p>✔ 62 municipalities and 169 sporting and entertainment facilities agreed to endorse and promote "Get Home Safe" in 2008.</p>
<p>The Operation Red Nose tactic is a Christmas volunteer driving service to get people home safely.</p>	<p>3% increase in survey respondents aware of Operation Red Nose in 2008, in the communities where the tactic operates.</p> <p><i>Comment: Objective was changed in 2008 to measure the number of rides provided, as only people in drinking establishments will be aware of the tactic.</i></p>	<p>✔ In 2008 4,907 rides were provided, a 3.5% increase from the 4,740 that were provided in 2007.</p>

## Speed

Speeding is defined as exceeding the posted speed limit, excessive speed (40km/hr or more over the speed limit), or driving too fast for conditions.

Drivers perceive speeding as justified because "...that's the way every one else drives." People do not leave enough time for their trips or leave contingency time in case of weather, traffic conditions, or other unforeseen occurrences. Surveys of the driving public indicate that drivers will admit to engaging in speeding because it is 'unavoidable', 'acceptable', or 'expedient'. The implication is that drivers exert a measure of control in deciding to speed.



The above **casualty crash rate** is the number of speed related casualty crashes reported by the police per 10,000 vehicle policy years earned.

### Program Strategic Objectives

Objective	Result
Reduce the speed casualty crash rate by 4% in 2008, 4% in 2009, and 6% in 2010, when compared with the average for the years 2004 to 2006.	<span style="color: green;">✔</span> On track to achieve strategic objective. The 2008 casualty crash rate (9.10) was 29.7% lower than the average 2004-2006 casualty crash rate of 12.94.
In 2010, 5% fewer drivers will report personal speed-related driving behaviours, as compared to 2007.	<span style="color: orange;">-</span> Will not be measured until 2010.

## Speed Program Activities: 2008 Highlights



### Campaign

The summer campaign received positive coverage, generating 33 news stories throughout BC. The campaign was supported by local police and Speedwatch volunteers targeting high crash corridors and intersections throughout the province.

*Campaign messages reinforce the idea that speeding is a dangerous driving behaviour. " 8:16 a.m. Rushing to work. When will your bad habits catch up with you? Nearly 180 people are killed each year by speeding. Slow down and allow plenty of space."*



*Kevin Brooks, a RoadSense Speaker, tells his personal story, recounting his experience of the life changing crash he was responsible for. His very real presentation takes students through all the emotions associated with what he has lost and learned as a result of that tragic night.*

### RoadSense Speakers

Through the RoadSense Speakers program, almost 64,000 students across BC heard personalized stories from vehicle crash survivors on topics such as speeding and impaired driving.



*In the Similkemeen Falls area changes were made to improve the safety of this High Risk Corridor: Brighter material on the signs, new paint on centre and shoulder of roadway, highly reflective material for delineation all help guide motorists around the corners.*

### **High Risk Corridor**

The High Risk Corridor tactic examined crash data on several rural road segments and ICBC worked with partners to plan safety improvements on a section of Highway 1 from Kamloops to Salmon Arm.

### **RoadSense Tips**

Five new online video RoadSense Tips highlighting the issues of speeding, intersection safety and impaired driving were created to complement the main campaigns. A reminder to view the tips, along with a road safety message, was sent to over 100,000 email subscribers.



***SpeedWatch Volunteers monitoring the speed of traffic at this high crash corridor.***

### **Speed Reader Boards**

ICBC partnered with Vancouver and Richmond to install fixed radar speed reader boards at locations with a history of crashes due to speed as a causal factor. In addition to displaying vehicle speed, these new boards can be programmed to flash a message such as "Slow Down".

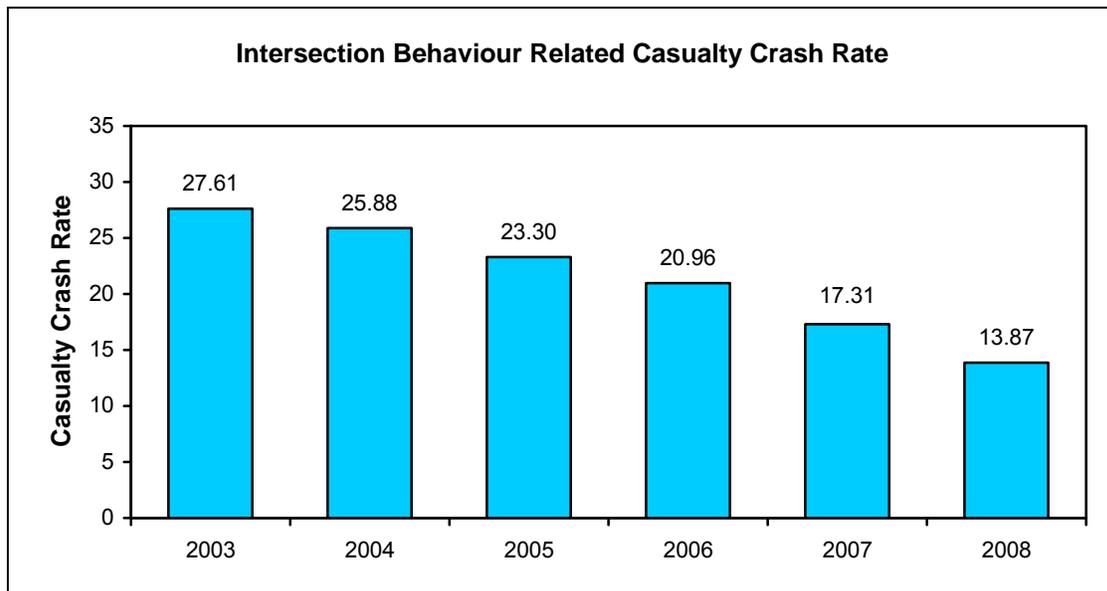
## 2008 Speed Tactics

Tactic Name and Description	Objective	Results
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of speed enforcement.</p>	<p>In 2008, 43% of survey respondents feel they are likely to get caught if they speed, a 3% increase from June 2007.</p>	<p>✘ 39% of survey respondents feel they are likely to get caught if they speed, similar to results from June 2007.</p>
<p><b>Speed Awareness Campaign</b> Raises awareness of the risks and consequences of speeding.</p>	<p>In 2008, 48% of survey respondents have aided recall of the campaign messaging, a 3% increase from 2007.</p>	<p>✔ 56% of survey respondents have aided recall of the campaign messaging, a 9% increase from 2007.</p>
<p><b>Roadside Speed Reader Boards</b> <i>Speedwatch</i> - Community volunteers use speed reader boards to raise awareness of the actual speeds drivers are traveling at targeted locations.</p>	<p>41% of survey respondents have seen a SpeedWatch operation in 2008, a 3% increase from October 2006.</p>	<p>✔ 45% of survey respondents saw a SpeedWatch operation in 2008, a 7% increase from October 2006.</p>
<p><b>Fixed Speed Reader Boards</b> Fixed speed reader boards are used in high crash corridors</p>	<p>Speed reader boards are used in 60 high crash corridors in 2008, an increase of eight high crash corridors from 2007.</p>	<p>✔ Speed reader boards were used in 60 corridors in 2008, an increase of eight from 2007.</p>
<p><b>Strategy</b></p>	<p>Complete a radar speed reader board strategy in 2008.</p>	<p>✔ Radar speed reader board strategy completed and radar units implemented.</p>
<p><b>Youth Outreach</b> RoadSense Speakers motivate youth to make safe driving decisions, with a focus on speeding</p>	<p>160 presentations are conducted in 2008.</p>	<p>✔ 231 presentations conducted in 2008 (169 in the Spring and 72 in the Fall), involving almost 64,000 students.</p>
<p>ICBC provides grades 8-10 teaching packages to meet mandatory learning outcomes established by the BC Ministry of Education.</p>	<p>Complete review of grades 8-10 curriculum in 2008 and implement recommendations in accordance with the plan.</p>	<p>✔ Completed review and recommendations will be implemented for 2009 program.</p>
<p><b>Research</b> Collect speed data for ICBC research purposes.</p>	<p>Gather and analyze speed data in 2008 to monitor provincial speed averages.</p>	<p>✔ Data was gathered and analyzed and will be used to support future research projects that require provincial mean speed information.</p>

## Intersection Safety

Intersection safety focuses on the driver behaviours that contribute to crashes at intersections. ICBC claims data indicates that more than 380 crashes occur at intersections each day in British Columbia. According to police statistics, approximately 40% of crashes occur at intersections, and 57% of those crashes result from driver actions, as opposed to driver condition, environmental conditions, or vehicle conditions.

In 2007, the top contributing factors to intersection casualty crashes were driver error, failure to yield right of way, following too closely, and ignoring a traffic control device.

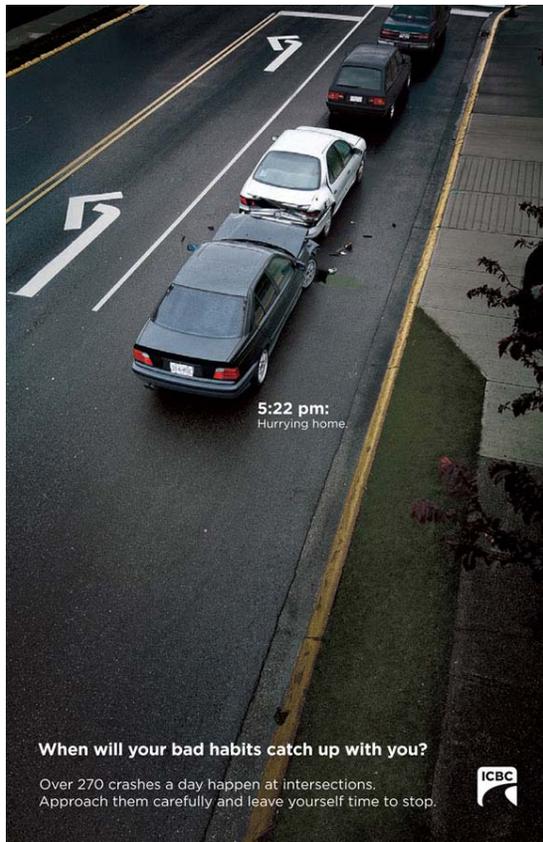


The above **casualty crash rate** is the number of intersection safety related casualty crashes per 10,000 vehicle policy years earned.

### Program Strategic Objectives

Objective	Result
Reduce the intersection behaviour casualty crash rate by 8% each year from 2008 to 2010, when compared with the average of years from 2004 to 2006.	<span style="color: green;">✔</span> On track to achieve strategic objective. The 2008 intersection behaviour related casualty crash rate (13.87) was 41% lower than the average crash rate of 23.38 in 2004-2006.
In 2010, 5% fewer drivers will report personal high risk intersection behaviours as compared to 2007.	<span style="color: orange;">-</span> Will not be measured until 2010.

## Intersection Safety Program Activities: 2008 Highlights



### Campaign

An intersection safety campaign was held in November, including a media launch, advertising, police enforcement, and asking large companies to distribute intersection safety messages to their employees.

### Intersection Safety Camera Upgrade

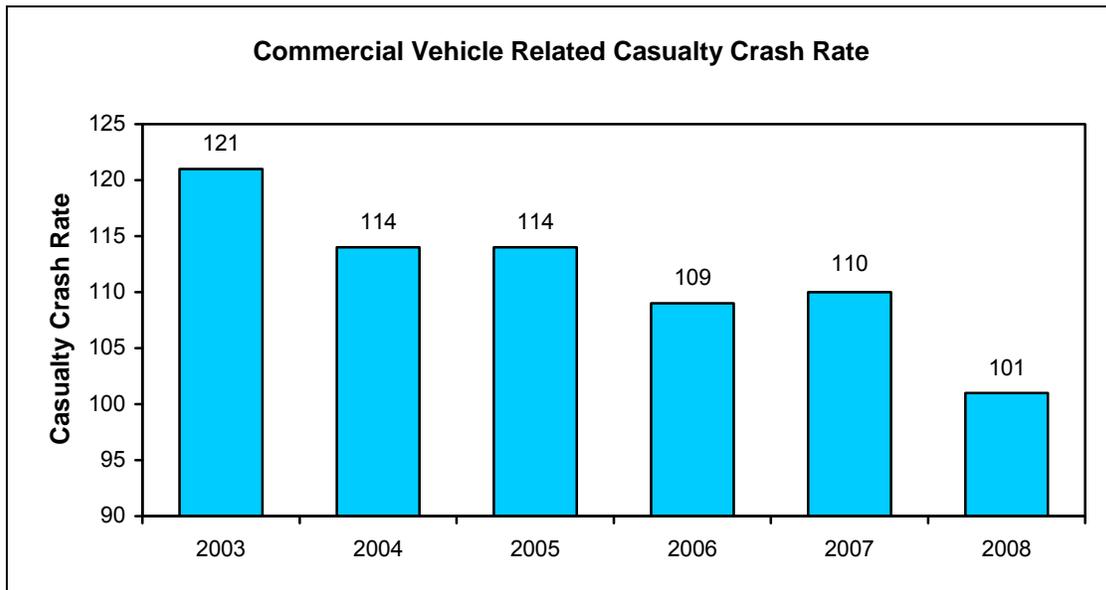
A business case was completed to upgrade the Intersection Safety Camera program. An Expression of Interest was issued to obtain more information on camera technology, and a project team developed detailed business requirements that will support implementation of new technology and business processes.

*When will your bad habits catch up with you?  
Over 270 crashes a day happen at intersections.  
Approach them carefully and leave yourself time to stop.*

## 2008 Intersection Tactics

Tactic Name and Description	Objective	Results
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of intersection safety enforcement.</p>	<p>In 2008, 30% of survey respondents feel they are likely to get caught if they run red lights.</p>	<p>✓ 31% of survey respondents stated that they are likely to get caught if they run a red light at an intersection.</p>
<p><b>Intersection Awareness Campaign</b> An advertising campaign linked to accompanying police enforcement, with a focus on failing to yield, ignoring traffic control devices, and following too closely.</p>	<p>In 2008, 49% of survey respondents can recall hearing about intersection safety.</p>	<p>✗ 30% of respondents recall hearing or seeing an advertisement pertaining to road safety at intersections. <i>Comment: This was a new tactic. The estimate of the level of awareness that could be achieved with new campaign messaging was over-estimated. Target will be revised in 2009 plan.</i></p>
<p><b>Intersection Safety Camera Upgrade</b> Explore the potential to upgrade the Intersection Safety Camera tactic.</p>	<p>Strategy and business case are developed and approved in 2008, and upgrade is implemented based on project plan.</p>	<p>✓ Business case was developed and approved. Business requirements were prepared and an Expression of Interest was issued to ISC vendors.</p>

## Commercial Vehicle Safety



The above **casualty crash rate** is the number of commercial vehicle related casualty crashes per 10,000 commercial vehicle policy years earned.

### Program Strategic Objectives

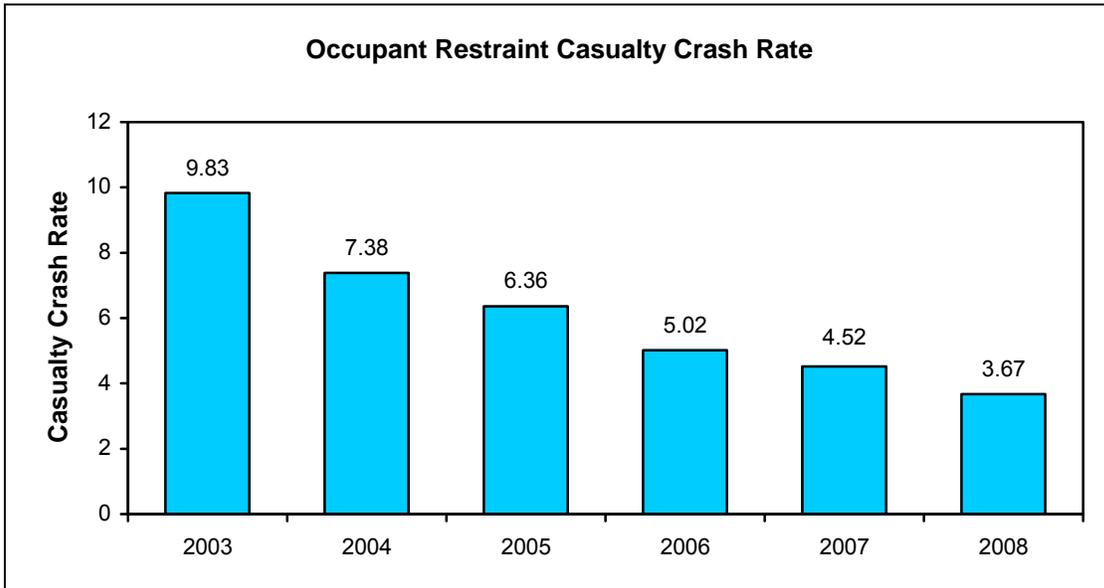
Objective	Result
Develop commercial vehicle crash prevention strategies, tactics, and objectives.	✘ Strategic development was delayed, pending completion of a detailed review of Commercial Vehicle data.

### 2008 Commercial Vehicle Safety Tactics

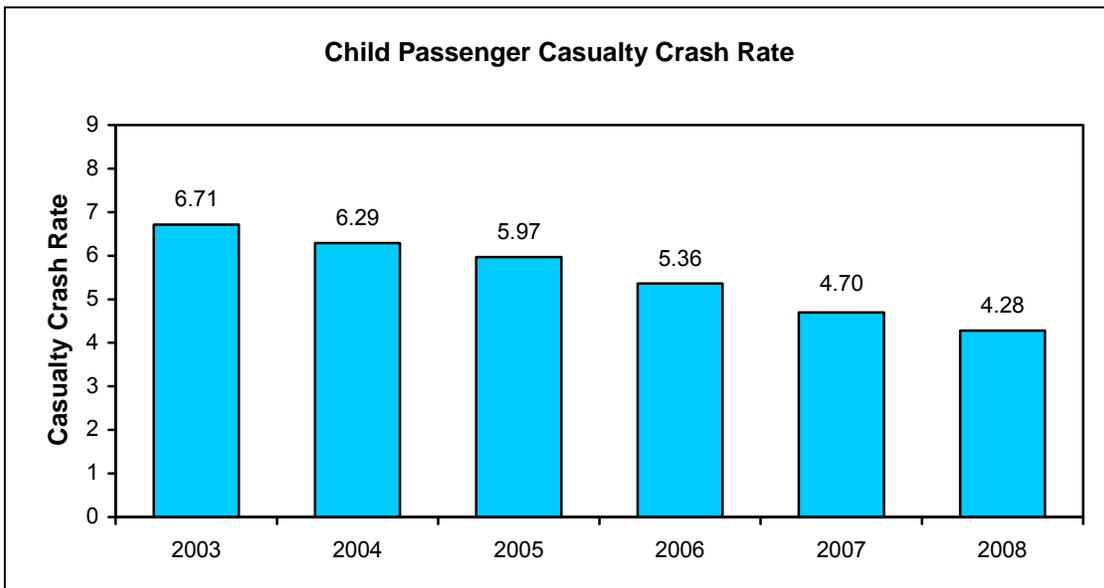
Tactic Name and Description	Objective	Results
<b>Strategy Development</b> Develop a Commercial Vehicle road safety strategy.	Develop a Commercial Vehicle road safety strategy in 2008.	<p>✘ Strategy development was delayed pending completion of a detailed review of Commercial Vehicle data.</p> <p>A separate review of the Mission Possible @ Work tactic resulted in a decision to wind down the tactic. Some of the tactic's educational information will be incorporated into existing vehicle safety manuals.</p>

## Occupant Restraints

Enforcement of seatbelt use is a priority for police, resulting in a 94.8% wearing rate in BC in 2007 (up from 92% in 2006). To assist in maintaining the wearing rate, ICBC continues to support police enforcement campaigns with moderate levels of advertising. ICBC also supports tactics to promote improved child passenger safety.



The above **casualty crash rate** is the number of occupant restraint related casualty crashes per 10,000 vehicle policy years earned.



The **child passenger casualty crash rate** is the number of child passengers (0 – 12) involved in casualty crashes per 10,000 vehicle policy years earned.

## Program Strategic Objectives

Objective	Result
Maintain the provincial seatbelt wearing rate at 2006 levels, for the years 2008 to 2010.	 Will not be measured until the end of 2009. The average seat belt wearing rate in BC was 94.8% in 2006/2007. Transport Canada did not measure the 2008 rates, but will do so again in 2009.
Maintain the child passenger casualty crash rate at 2006 levels, for the years 2008 to 2010.	 On track to achieve the strategic objective. Child passenger (0-12) casualty crash rate for 2008 was 4.28, a 20.1% reduction compared to the 2006 rate of 5.36.

## Occupant Restraint Program Activities: 2008 Highlights



**As of July 1st the law surrounding booster seats has changed.**

Your kids need a boost when you give them a lift, right up until they're 4'9" or 9 years old. It not only reduces the risk of serious injury or death by nearly 60%, but as of July 1st, 2008, it's the law. To learn more, visit [icbc.com](http://icbc.com).

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The Best Place on Earth

building trust. driving confidence.

### Booster Seat Education/Awareness

Working closely with government, ICBC helped implement revised booster seat regulations (effective July 1, 2008). Public education tactics included a campaign (June 2-July 25) and preparing materials for distribution to schools throughout BC in September. ICBC also continued its Child Passenger Safety partnership with the BCAA Traffic Safety Foundation.

### Occupant Restraint Enforcement

Police conducted enhanced enforcement of Occupant Restraints - particularly seatbelts - in September. ICBC supported their efforts with radio announcements to keep the public aware of enforcement.

## 2008 Occupant Restraint Tactics

Tactic Name and Description	Objective	Results
<b>Enhanced Enforcement</b> Funding for enhanced levels of seatbelt enforcement.	In 2008, 38% of survey respondents feel they are likely to get caught if they drive unrestrained, maintaining the 2007 results.	 <i>Comment: Due to the introduction of new booster seat legislation, the survey monitoring budget in 2008 was re-directed to booster seats, so this measure was not taken.</i>
<b>Occupant Restraint Awareness Campaign</b> Radio announcements to increase awareness of police enforcement of seatbelts and child seats.	In 2008, 38% of survey respondents can recall hearing seatbelt messages.	 <i>Comment: Due to the introduction of new booster seat legislation, the survey monitoring budget in 2008 was re-directed to booster seats, so this measure was not taken.</i>
Provide occupant restraint information through fact sheets, icbc.com, and the Aboriginal Toolkit to educate drivers and high-risk groups.		 Information was provided through fact sheets, posters, and on icbc.com, along with an Aboriginal Toolkit.
<b>Child Passenger Safety</b> Support new government booster seat regulations with print advertising in 2008 only.	In 2008, 70% of survey respondents who transport children are aware of new booster seat laws.	 89% of survey respondents who transport children are aware of the new booster seat laws. <i>Comment: Campaign achieved objectives and was intended to run one year only. As such, it will not be repeated in 2009.</i>
Partnership with BCAA's Traffic Safety Foundation to provide child safety information through a toll-free information line, child seat clinics, information sessions, and child restraint training.	148 child seat clinics and 13,250 calls to the information line will be completed in 2008, a maintenance of the 2007 results.	 185 child seat clinics (25% increase from 2007) and 16,432 calls to the information line (24% increase from 2007) were conducted in 2008.
Grade K-7 road safety teaching resources support learning outcomes established by the BC Ministry of Education.	406 <i>Passport to Education</i> (Kindergarten to grade 3) material orders, and 292 <i>Going Places</i> (grades 4 to 7) material orders in 2008, a maintenance of 2007 levels.	 410 <i>Passport to Education</i> (K – 3) material orders and 310 <i>Going Places</i> (grades 4 – 7) material orders were fulfilled in 2008.

# ROADS

## Road Improvement Program

The Road Improvement Program establishes partnerships with local road authorities to share the costs of design improvements at high crash road locations. ICBC's road authority partners can include local municipalities, the Ministry of Transportation, First Nations, BC Ferries, BC Parks, and Public Works Canada.

The common goal for ICBC and the partnering road authority is to reduce the frequency and severity of collisions, thereby reducing deaths, injuries, and insurance claims costs. ICBC and the road authority:

- Identify locations that may be suitable candidates for improvement.
- Investigate the causal factors of the safety problems at the site.
- Develop road improvement strategies.
- Calculate the level of ICBC investment toward the project.

Over the years, the Road Improvement Program has partnered with road authorities in BC on many types of safety projects. The projects range from short-term, low-cost safety improvements such as enhanced delineation and signing, to long-term, high-cost improvements such as roadway re-alignments and road widening.

### Program Strategic Objectives

Objective	Result
Achieve an average 50% internal rate of return on road improvement projects, in an evaluation to be conducted in 2009.	☐ Program will be evaluated in 2009.

### Road Improvement Program Activities: 2008 Highlights



**A Modern Roundabout in Comox.**

**Road Improvement Program Operational Review** was completed and recommendations will be implemented in 2009.

280 road improvement projects were completed province-wide.

*The Modern Roundabout eliminates the two most severe crash types: head-on and T-bone collisions. The crashes that do occur are less severe because speeds are much lower. There were six Roundabout projects completed in 2008.*

## 2008 Road Improvement Tactics

Tactic Name and Description	Objective	Results
<p><b>Engineering Retrofits</b> Share the costs of road improvements to reduce crashes at crash-prone locations.</p>	<p>50% Internal Rate of Return achieved for retrofit projects as measured in 2009.</p>	<p>– 280 improvement projects were implemented in 2008. The program will be evaluated in 2009. Previous evaluations indicated that more than a 50% internal rate of return is achieved for these retrofit projects.</p>
<p><b>Road Safety Audits</b> Review planned infrastructure projects to ensure safety is given priority during design/construction.</p>	<p>15 safety audits conducted in 2008, maintenance of 2007 audit numbers.</p>	<p>✓ 16 safety audits were conducted in 2008.</p>
<p><b>Operational Review</b> Review of the Road Improvement Program, looking at ways to strengthen program effectiveness.</p>	<p>Complete review in 2008 and implement recommendations according to plan.</p>	<p>✓ Review completed. Recommendations include the development of a new tactic to encourage innovative new road design technology, which has been added to the 2009 plan.</p>

# VEHICLES

## Safer Vehicles

Vehicle manufacturers have implemented improved vehicle safety technologies such as side and curtain airbags, electronic stability control, and head restraints. Research indicates that by increasing the proportion of vehicles on the roads with high standard safety features, the injury risks for all road users could be reduced by up to 22%.

ICBC will partner with others to improve vehicle safety and increase the number of safer vehicles on BC roads in order to prevent crashes and minimize the impact of crashes.

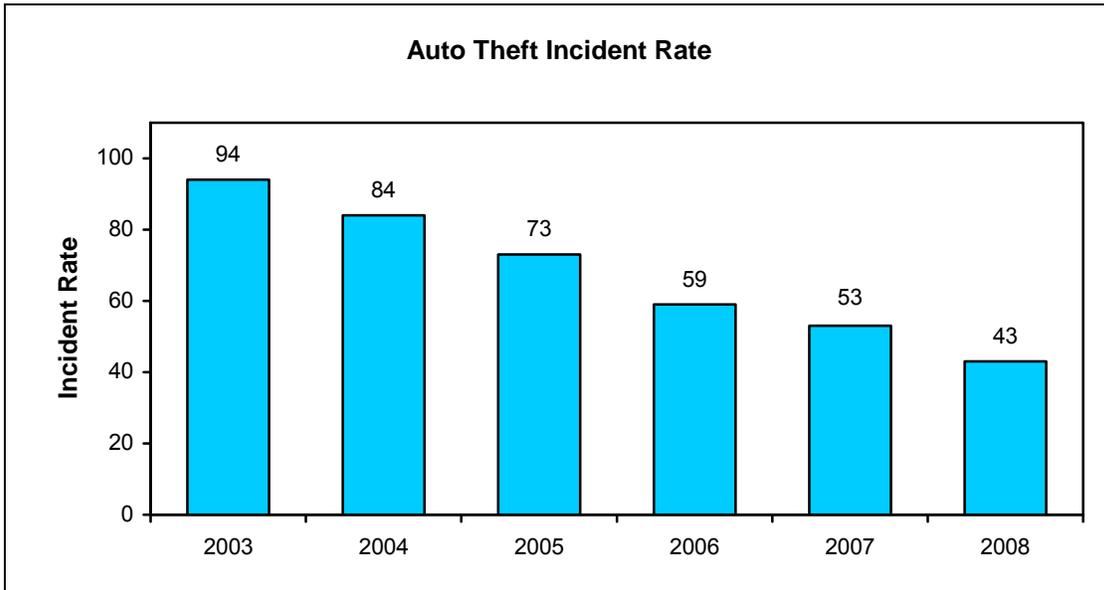
### 2008 Safer Vehicles Tactics

Tactic Name and Description	Objective	Results
<b>Strategy Development</b> Develop a Safer Vehicle strategy.	Complete a Safer Vehicle Strategy in 2008, and implement recommendations according to plan.	- Safer Vehicle research was conducted and a strategic framework established in 2008. ICBC conducted a survey to examine the factors motorists consider when deciding to purchase vehicles. In 2008, 27% of respondents identified "safety" as one of their top three considerations. Tactics will be implemented in 2009.

## Auto Crime

BC has consistently experienced one of the highest auto theft rates in Canada. In 2003 BC's auto theft rate was 958 per 100,000 population, 77% higher than the national average of 541 per 100,000. By 2008, with the implementation of more aggressive police strategies including the Bait Car program, the BC rate had declined by 46% to 521 per 100,000 but remains 39% above the national average of 376 per 100,000.

Due to ongoing enforcement strategies and increased use of vehicle immobilizers, the expectation is that auto theft will continue to decline in the coming years.



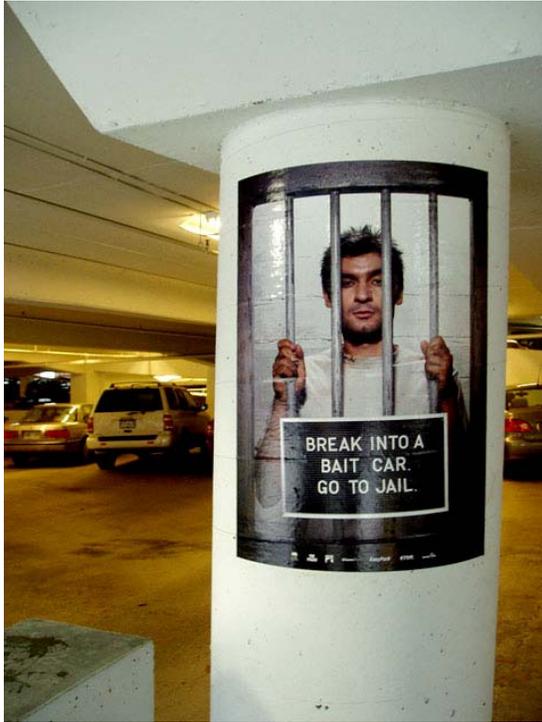
**Auto Theft Incident Rate** represents the number of auto theft incidents per 10,000 vehicle policy years earned.

**Note:** In ICBC's October 17, 2008 Filing, page 30, ICBC inadvertently labelled the table "Auto Theft Incident Rate". The label in the October 17, 2008 Filing should have read "Auto Crime Incident Rate", as the table provides rates for all types of auto crime, including theft, break-ins, and vandalism. ICBC's tactics focus on auto theft reduction; therefore, this 2008 Road Safety Annual Report includes rates only for auto theft.

### Program Strategic Objectives

Objective	Result
Reduce the auto theft incident rate by 5% each year 2008 through 2010.	✓ The auto theft incident rate is declining, with a 19% reduction in 2008, compared to 2007.
74% of private passenger vehicle fleet has vehicle immobilizers by 2010.	✗ Will be measured in 2010.

## Auto Crime Program Activities: 2008 Highlights



### Auto Crime Awareness Campaign

ICBC and the police launched a provincial auto crime campaign in April, with extensive media coverage. The campaign focused on BC's top ten car thieves. Nine of the top ten car thieves were apprehended.



### High Risk Auto Crime Partnerships

BC citizens volunteered over 90,000 hours and checked almost 3.5 million vehicles to identify stolen cars.

ICBC implemented a vehicle immobilizer pilot project, targeting owners of trucks that have a high theft risk. Through this project, 500 vehicle immobilizers were distributed in 2008.

## 2008 Auto Crime Tactics

Tactic Name and Description	Objective	Results
<p><b>Enhanced Enforcement</b> Funding for enhanced levels of auto crime enforcement.</p>	<p>79% of survey respondents have aided recall of the Bait Car tag line "Steal a Bait Car, Go to Jail", a maintenance of the 2007 level.</p>	<p>✘ 59% recalled messaging regarding efforts to catch car thieves.</p> <p><i>Comment: ICBC is unsure why awareness declined and is examining survey questions.</i></p>
<p><b>AutoCrime Awareness Campaign</b> Raises awareness of enforcement and encourages motorists to protect their vehicles.</p>	<p>58% survey respondents have seen, heard, or read about efforts to catch car thieves or prevent theft of vehicles in the past few months.</p>	<p>✔ 58% of survey respondents knew of efforts to catch car thieves or prevent theft of vehicles.</p>
<p>Information for youth on icbc.com and in schools dissuade youth from getting involved in auto crime.</p>		<p>✔ In 2008, 103 copies of the Stolen Lives DVD requested and sent to high schools in BC.</p>
<p><b>High Risk Vehicle Immobilization</b> Initiative that targets high risk vehicles to encourage motorists to install engine immobilizers.</p>	<p>500 high risk vehicles will install engine immobilizers.</p>	<p>✔ 500 immobilizers were installed.</p>
<p><b>High Risk Auto Crime Partnerships</b> Community volunteers patrol to recover stolen vehicles and stolen plates. Volunteers also perform parking lot audits to raise awareness of auto crime. Private security firm staff patrol high crime locations where volunteer activity is not sufficient. Funding is a partnership with municipalities and businesses.</p>	<p>All community funding initiatives meet the measurement criteria specified in the funding agreements.</p>	<p>✔ All funding initiatives met specified criteria, producing the following activity:</p> <ul style="list-style-type: none"> <li>• 3,430,281 vehicles checked and 804 stolen vehicles recovered.</li> <li>• 94,086 volunteer hours and 9,624 security staff patrol hours logged.</li> <li>• 266,865 vehicles were audited with a Lock Out Auto Crime Prevention Notice.</li> </ul>

## 5. 2008 Investment Summary (\$000's)

		2008 Plan	2008 Actual
<b>Drivers</b>			
Impaired Driving	Enhanced Enforcement	4,787	4,503
	Impaired Driving Awareness Campaign	1,281	1,249
	Community Partnerships	25	16
	<b>Subtotal Impaired Driving</b>	<b>6,093</b>	<b>5,768</b>
Speeding	Enhanced Enforcement	6,961	6,953
	Speed Awareness Campaign	728	680
	Roadside Speed Reader Boards	218	121
	Youth Outreach	157	198
	Research	100	72
	<b>Subtotal Speeding</b>	<b>8,164</b>	<b>8,024</b>
Intersection Safety	Enhanced Enforcement	950	950
	Intersection Awareness Campaign	465	412
	<b>Subtotal Intersection Safety</b>	<b>1,415</b>	<b>1,362</b>
Comm.Veh. Safety	Strategy Development	54	22
Occupant Restraints	Enhanced Enforcement	3,776	3,753
	Occupant Restraint Campaign	23	2
	Child Passenger Safety	271	274
	<b>Subtotal Occupant Restraints</b>	<b>4,070</b>	<b>4,029</b>
<b>SUBTOTAL DRIVERS</b>		<b>19,796</b>	<b>19,205</b>
<b>Roads</b>			
Road Improvements	Engineering Retrofits	9,055	9,154
	<b>Subtotal Road Improvements</b>	<b>9,055</b>	<b>9,154</b>
<b>SUBTOTAL ROADS</b>		<b>9,055</b>	<b>9,154</b>
<b>Vehicles</b>			
Safer Vehicles	Strategy Development	26	12
Auto Crime	Enhanced Enforcement	1,770	2,000
	Auto Crime Awareness Campaign	287	315
	High Risk Vehicle Immobilization	300	156
	High Risk Auto Crime Partnerships	414	439
	<b>Subtotal Auto Crime</b>	<b>2,771</b>	<b>2,910</b>
<b>SUBTOTAL VEHICLES</b>		<b>2,797</b>	<b>2,922</b>
<b>TOTAL DIRECT EXPENSES</b>		<b>31,648</b>	<b>31,281</b>
Research & Measurement Expenses		213	168
Compensation		4,625	3,866
General Expenses		1,481	1,374
<b>TOTAL ROAD SAFETY EXPENSES</b>		<b>37,967</b>	<b>36,689</b>

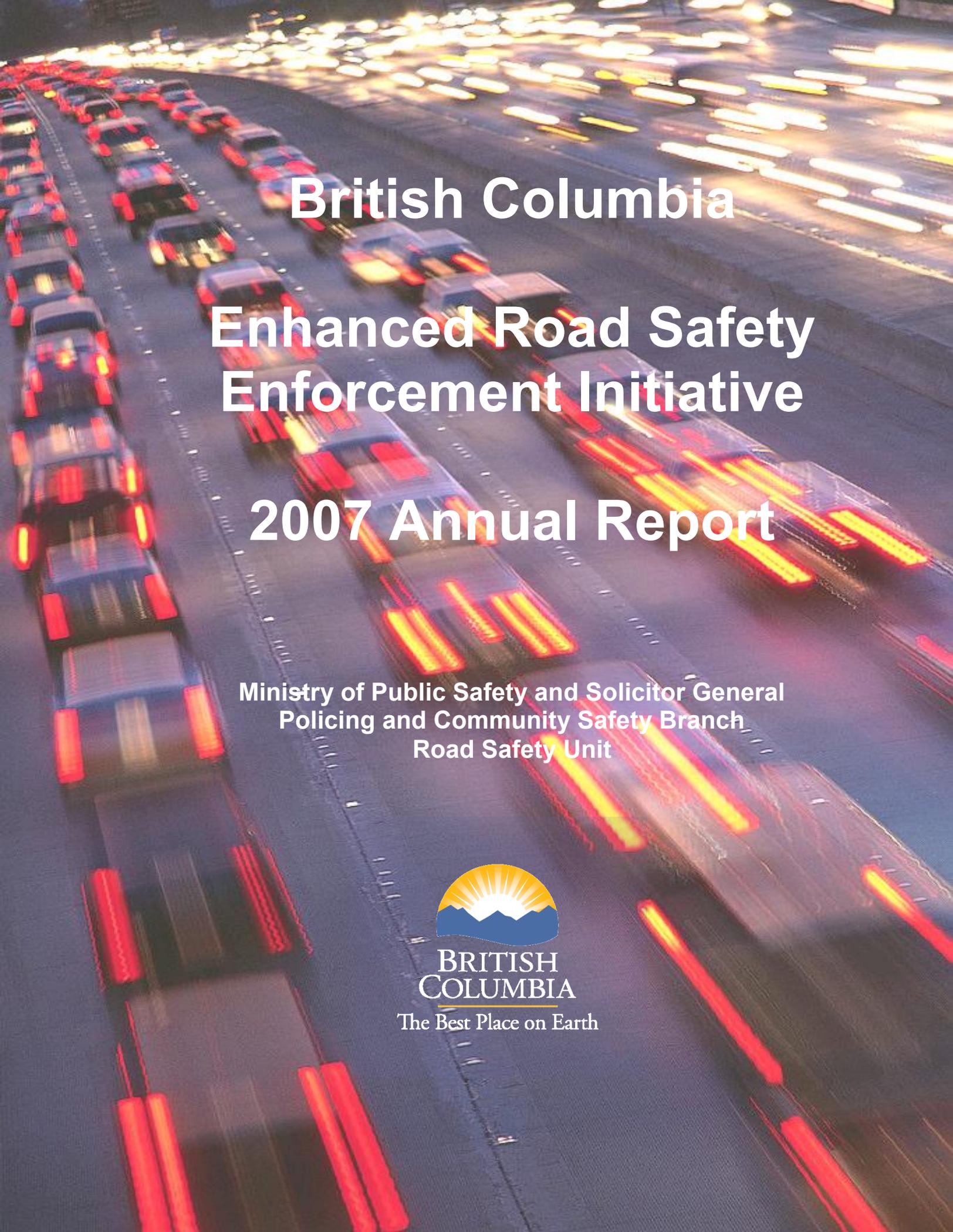
**Variance Explanation:**

- Total actual expenses were \$1,278,000 less than the 2008 budget.
- Direct program expenses were \$367,000 less than budget, due to small savings realized in many of the tactics that were conducted in 2008.
- Other expenses were \$911,000 less than the 2008 budget. Compensation expenses were \$759,000 less than planned, due to unanticipated staff vacancies and the transfer of the Business Intelligence Unit from Road Safety to Finance. Research and other expenses were \$152,000 less than planned, due to savings realized in a number of small projects.



## **ATTACHMENT A-3**

# **ENHANCED ROAD SAFETY ENFORCEMENT 2007 ANNUAL REPORT**



**British Columbia**  
**Enhanced Road Safety  
Enforcement Initiative**  
**2007 Annual Report**

**Ministry of Public Safety and Solicitor General  
Policing and Community Safety Branch  
Road Safety Unit**



**BRITISH  
COLUMBIA**

The Best Place on Earth

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## INTRODUCTION

The Enhanced Road Safety Enforcement Initiative 2007 Annual Report is prepared by Police Services Division for the Minister of Public Safety and Solicitor General as part of its reporting obligations under Section 13 of the Traffic and Road Safety Law Enforcement Funding Memorandum of Understanding. The 2007/08 fiscal year is the fourth year of enhanced enforcement delivery under this MOU.

The agreement sets out annual payments of approximately \$17 million per year (based on one percent of ICBC basic insurance premiums from two years prior) for the delivery, management and evaluation of specialized enhanced enforcement and road safety programs. As a result of the Province delivering this enhanced enforcement initiative through the Provincial Policing Contract, an additional federal contribution of 30 percent (approximately \$5 million) is available to enhanced enforcement funds.

The enhanced traffic enforcement initiative is governed by the interagency Road Safety Advisory Committee, chaired by MPSSG Assistant Deputy Minister and Director of Police Services. The committee is made up of representatives from key agencies involved in road safety and helps set direction and ensures joint accountability for the deliverables under the MOU.

2007 was the first year during which all road safety enforcement initiatives were fully deployed. It is also worth noting that the number of registered drivers increased from 2.4 million in 2002 (pre-MOU) to 2.7 million in 2007.<sup>1</sup>

This annual report presents a summary of the progress of the Enhanced Road Safety Enforcement program in 2007 with specific highlights from:

- ▶ Provincial Integrated Road Safety Units (IRSUs) and the RCMP Enhanced Road Safety Enforcement Initiative (ERSEI)
- ▶ Review of the Intersection Safety Camera (ISC) Program
- ▶ Auto-crime enforcement conducted by the Integrated Municipal Provincial Auto Crime Team (IMPACT) and,
- ▶ A look at the first full year of operations for the Traffic Safety Helicopter – also known as “Air One”.

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<sup>1</sup> BC Statistics

## **PROGRAM ACCOUNTABILITY**

Police Services Division (the Division) is responsible for managing the use of the funds under the agreement on behalf of MPSSG. Within the Division, the Road Safety Unit (RSU) carries out the day to day responsibilities of the agreement.

Under the agreement, the Road Safety Unit is primarily responsible for:

- ▶ coordinating and carrying out the direction of the Road Safety Advisory Committee and the IMPACT Policy Board
- ▶ providing financial oversight of the Traffic and Road Safety Law Enforcement Funding MOU
- ▶ managing the enforcement operations of the Intersection Safety Camera Program
- ▶ coordinating, hosting and financial management of the BC Association of Chiefs of Police Traffic Safety Committee (BCACP TSC)
- ▶ overseeing the delivery of advanced traffic training for independent municipal officers, and,
- ▶ providing input to enhanced enforcement road safety public information campaigns.

## **PROGRAM VISION**

The Enhanced Traffic Enforcement Program uses data-driven, evidence-led enforcement strategies and dedicated human and financial resources to help reduce crashes that cause serious injury and death, and to prevent auto theft.

## **PROGRAM GOALS & OUTCOMES**

The Enhanced Traffic Enforcement Program has four specific program outcomes associated with achieving success:

1. Reduce traffic fatalities.
2. Reduce serious injuries.
3. Reduce auto theft.
4. Increase public awareness of traffic enforcement.

These outcomes are regularly monitored and will be measured and evaluated at the end of the five-year MOU.

In order to achieve the desired program outcomes, specific goals have been developed, and accompanying strategies deployed.

## HIGHLIGHTS OF THE YEAR

- ▶ A total of 111 positions were dedicated to enhanced traffic enforcement in BC in 2007.
- ▶ Integrated Road Safety Units (IRSUs) were deployed throughout the province and complemented the traffic enforcement efforts of the RCMP Enhanced Road Safety Enforcement Initiative (ERSEI).
- ▶ The greater focus, increased resources and data-driven strategies of the enhanced traffic enforcement program have contributed significantly to overall harm reduction targets for motor vehicle crashes.

**Table 1: Police Reported Data<sup>2</sup> – Impact of Enhanced Enforcement**

Total Traffic Accidents (TAS)	2004-2005 Average	2007 Total	% Change
injury victims	28,974	25,899	11% reduction
fatal victims	445	415	7% reduction

### Capital Regional District (CRD) IRSU Evaluation:

This evaluation examined total traffic collisions and injury collisions at the 15 highest crash sites which were targeted for enforcement by the CRD IRSU. The results showed:

- ▶ 9.1% reduction in total police-reported collisions over the 2000 - 2004 average; and
- ▶ 8.7% reduction in police-reported traffic injury collisions over the 2000 - 2004 average.
- ▶ The CRD IRSU produced a 166% increase in traffic violations issued over the previous enhanced enforcement model (2003 Targeted Traffic Enforcement Program and CounterAttack) and generated approximately \$1.9 million in ticket fine revenue.<sup>3</sup>

### Other Activities:

- ▶ The Traffic Safety helicopter (Air One) celebrated its first full year of deployment, contributing almost 600 hours of air surveillance, monitoring and pursuit support to enforcement ground units.
- ▶ The IMPACT enforcement team, assisted by Air One, successfully concluded the surveillance of numerous stolen vehicles in the Lower Mainland resulting in 96 arrests.
- ▶ The Intersection Safety Camera program generated 23,107 red light violation tickets in 2007. This represents a 14% increase from 2006.
- ▶ The Automated Licence Plate Recognition (ALPR) pilot project used nine ALPR-equipped vehicles in BC, resulting in 919 persons being charged and identified 109 stolen vehicles/licence plates.
- ▶ About 24% of the 620,000 police issued violation tickets issued in BC in 2007 were generated by enhanced traffic enforcement.

<sup>2</sup> Police Reported Data (non-reconciled): \*2004/05 Traffic Collision Statistics, icbc.com. \*\*TAS Police Automation Monthly Report (Traffic Sections), as of June 30, 2008, provided by ICBC.

<sup>3</sup> CRD Evaluation Report 2007: For estimation purposes, revenue per violation ticket issued was based on a calculation of 2006 total revenue/number of violations issued = \$83.71.

**Table 2: Program Goals, Strategies & Outcomes**

<b>Goals</b>	<b>Strategies</b>	<b>Outcome*</b>	<b>Progress at 2007</b>
<b>Goal 1: Increase levels of traffic law enforcement</b>	<ul style="list-style-type: none"> <li>▶ Integrated Road Safety Units</li> <li>▶ RCMP Provincial Enhanced Road Safety Enforcement Initiative (ERSEI)</li> <li>▶ CounterAttack</li> <li>▶ Intersection Safety Camera Program</li> <li>▶ Traffic Safety Helicopter</li> <li>▶ Automated Licence Plate Recognition</li> </ul>	1. Reduce Traffic Fatalities  &  2. Reduce Serious Injuries	An 11% reduction in casualties (injured and fatal) when the average of 2004-2005 is compared to 2007. <sup>4</sup>
<b>Goal 2: Deter and capture auto thieves.</b>	<ul style="list-style-type: none"> <li>▶ Integrated Municipal Provincial Auto Crime Team (IMPACT)</li> <li>▶ Bait Car Program</li> <li>▶ Public Awareness</li> </ul>	3. Reduce auto theft	There were about 9,600 fewer vehicles stolen compared to 2003.  Almost 15,000 fewer vehicles were broken into compared to 2003. <sup>5</sup>
<b>Goal 3: Increase public awareness of enhanced traffic law enforcement.</b>	<ul style="list-style-type: none"> <li>▶ ICBC Public Education and Advertising Campaigns</li> <li>▶ Provincial Gov't Public Awareness Activity</li> <li>▶ Supporting enhanced enforcement earned media &amp; events</li> </ul>	4. Increase public awareness of traffic enforcement	Three annual public attitude surveys have been conducted.  Awareness of traffic enforcement appears to be constant.
<b>Goal 4: Ensure that police officers are well-trained and have a forum for discussing and promoting the improvement of traffic enforcement.</b>	<ul style="list-style-type: none"> <li>▶ Enhanced Traffic Training Program**</li> <li>▶ BC Association of Chiefs of Police Traffic Safety Committee</li> <li>▶ Partnership Development and Advocacy</li> </ul>	Contributes to Outcomes #1, #2, #3 and #4 above	Number of independent municipal police taking enhanced traffic courses increased from 79 in 2006 to 105 in 2007.  BCACP TSC membership survey conducted.
<b>Goal 5: Conduct research to improve practices in traffic law enforcement, and measure enhanced program results.</b>	<ul style="list-style-type: none"> <li>▶ Research</li> <li>▶ Program Evaluation</li> </ul>	Contributes to Outcomes #1, #2 and #3 above	Fatality reconciliation initiative undertaken. Research into emerging technologies.

\*Outcomes to be measured against specific targets at the end of the five-year MOU in 2009.

\*\*IRSU officers receive advanced traffic training courses at the Pacific Regional Training Centre.

<sup>4</sup> Police Reported Data (non-reconciled): \*2004/05 Traffic Collision Statistics, icbc.com. \*\*TAS Police Automation Monthly Report (Traffic Sections), as of June 30, 2008, provided by ICBC.

<sup>5</sup> IMPACT 2008 – 2013 Strategic Plan and ICBC Data Sept 3/08.

## Goal 1 – Increase Levels of Traffic Enforcement

### **INTEGRATED ROAD SAFETY UNITS**

The Integrated Road Safety Unit (IRSU) service delivery model for enhanced traffic law enforcement was approved by the Road Safety Advisory Committee in 2004.

The IRSU model, comprising both RCMP members and Independent Municipal Police Department officers, is designed to encompass centrally-housed, dedicated mobile enforcement units throughout BC.

IRSUs are charged with the responsibility of using data-driven enforcement strategies to address the most serious traffic issues in their areas. By engaging municipalities and media, by working more effectively with road safety partners, and by supporting more targeted, strategic deployments, it is anticipated that better outcomes will be achieved for all road users.

### **Traffic police often the first to spot drugs, guns**

Traffic police in B.C.'s Interior busted alleged criminals on the go last year to the tune of \$20 million in drugs, guns and money -- almost tripling the haul of 2006.

The 126 RCMP officers in B.C.'s southeast district seized \$3.1 million in cash, 200,000 ecstasy pills, 11,000 marijuana plants, 500 kilograms of packaged marijuana, five kg of cocaine and 37 handguns, including an Uzi sub-machine gun and assault rifles, when pulling over drivers for minor offences such as speeding or having broken tail lights.

That's up from \$7.5 million in contraband seized in 2006, says Kelowna RCMP Insp. Randy Kolibaba.

The Interior RCMP area is bordered by the Alberta boundary, the U.S. border, the Coquihalla toll booths and Blue River, near Clearwater, in the north.

Kolibaba said there's no doubt the large busts are related to organized crime. Traffic officers are exposed to more gangsters on a daily basis than any other unit, he said.

*The Province, February 08, 2008  
Susan Lazaruk*

### **Key Points:**

- ▶ An evaluation of the Capital Regional District (CRD) IRSU was completed by MPSSG. ICBC also conducted an evaluation of the CRD IRSU using different criteria and methodologies; however both evaluations noted positive road safety outcomes in the CRD. The final MPSSG CRD IRSU Evaluation report was published and posted on the government website.
- ▶ The CRD IRSU cost-per-violation was \$63.69 – 45% of the cost of the previous model per violation ticket.
- ▶ A number of recommendations for improving the IRSU model will be addressed by the Joint Management Committee in 2008.
- ▶ Discussions in 2007, led to an agreement for the Vancouver Police Department to join the enhanced enforcement program. In 2007, the Lower Mainland IRSU became the Greater Vancouver IRSU and offices in New Westminster opened in the fall.

### RCMP PROVINCIAL ENHANCED ENFORCEMENT INITIATIVE

Enhanced road safety enforcement is managed in an integrated fashion through IRSUs in major municipal regions in BC. As a companion initiative, the RCMP oversees its Enhanced Road Safety Enforcement Initiative (ERSEI) by adding members to existing RCMP detachments, as well as funding of overtime for RCMP officers.

The RCMP ERSEI goal is to prevent traffic deaths and injuries on BC roadways through enhanced traffic enforcement. The strategy adopted to achieve this goal involves:

- ▶ developing and maintaining location specific enhanced enforcement in BC's highest injury and fatality spots
- ▶ targeting the driving and passenger behaviours which are major contributors to serious injuries and fatalities throughout the province: speed-related aggressive driving, intersection enforcement in large urban centers, drinking driving, and failure to wear a seatbelt.
- ▶ Units are required to track and report on enforcement locations, targets, methods, and outputs (tickets and warnings issued) for their enhanced enforcement activity on a monthly basis.

*"Criminal interdiction means the officer looked beyond the traffic ticket and identified other criminal behaviour such as possession of drugs, money laundering, stolen property, outstanding arrest warrants, etc."*

*Insp. Norm Gaumont  
OIC, RCMP "E" Division Traffic Services*

#### Key Points:

- ▶ Seatbelts, impaired driving (alcohol & drug), aggressive driving and intersections and speeding continue to be enforcement priorities for traffic police.
- ▶ Urban seatbelt wearing rates increased from 83% in 2003 to 95% in 2007<sup>6</sup>
- ▶ Rural seatbelt wearing rates increased from 80% in 2002 to 88% in 2006<sup>7</sup>
- ▶ Intersection driving violations increased from 7,800 in 2006 to 9,600 in 2007.
- ▶ The volume of speed enforcement increased by 25% from 2006 (48,000 violations) and 2007 (60,000 violations). In general speed violations account for about 41% of annual enhanced enforcement violation ticket activity.
- ▶ Enhanced traffic enforcement appears to be having an impact on identifying and apprehending people engaged in other forms of illegal activity – criminal interdictions were 1,715 in 2007 – a 46% increase from 1,173 in 2006.



<sup>6</sup> (NORP, CCMTA Urban/Rural Seatbelt surveys)

<sup>7</sup> (NORP, CCMTA Urban/Rural Seatbelt surveys)

## **IMPAIRED DRIVING**

The 2007 the BCACP Road Safety Enforcement Campaign calendar included two enhanced enforcement campaign periods: June/July and December. Impaired driving has traditionally been associated with alcohol, but in recent years, drug-impaired driving has been identified as an emerging issue.

In November 2007, the federal government introduced a bill that would let police demand roadside sobriety tests and body fluid samples from drivers suspected of drug-impaired driving.

Enforcement efforts aimed at impaired drivers remained a focus for police in 2007. All categories of impairment related interdictions showed substantial rise in volume. However, the most dramatic increase was in the use of Administrative Driving Prohibitions - over 70% more ADPs were issued in 2007 compared to 2006.

### ***Man rolls up to police roadblock with joint hanging from mouth***

When Saanich police set up a roadblock just days before Christmas, they said they weren't surprised to see a man drive up with a joint hanging out of his mouth. He'd tried to finish it before he reached the officers, but apparently didn't make it in time.

It's not just drunk drivers that Vancouver Island police say they've been catching this holiday season — increasingly people behind the wheel are high on some sort of drug, as well.

The night the Saanich man and his unfinished marijuana cigarette rolled through the roadblock on Dec. 18, police issued the same number of 24-hour licence suspensions for drivers impaired on drugs as they did for drivers intoxicated on alcohol.

They also caught a woman who was "absolutely whacked" on drugs..., said Staff Sgt. Mike Irwin, who co-ordinates roadblocks for Saanich police. "We're probably averaging two or three or four [drug impaired suspensions] a night," he said.

Generally, police say they still see more drunk drivers than people they suspect to be high. Partly this is because officers say it's easier to spot alcohol use than it is to identify a person who is under the influence of cocaine, ecstasy or marijuana.

There isn't the same social taboo around driving high as there is around driving drunk, said Victoria police Sgt. Rob Dibden, who heads the department's Focused Enforcement Team.

He said police in Victoria have seen far fewer impaired drivers in the past couple of years, but are catching more people who are driving high, and investigate more crashes because of drug impairment.

*Rob Shaw, Times Colonist  
Thursday, December 27, 2007*

Table 2: Goal 1 & 2 – 2006 & 2007 Provincial Enhanced Enforcement Outputs

Type of Enhanced Enforcement	2006	2007	% Increase in overall activity
*Criminal Code Impaired Driving Charges (initiated by police)	840	1,025	22%
**24-hr suspensions	2460	3495	42%
Administrative Driving Prohibitions (ADPs)	300	520	71%
Violation Tickets (not including CC, 24hr, and ADPs)	111,165	145,170	30%

*\*Impaired charges include 'drug impaired.'*

*\*\*24-hr suspensions include 'drug 24-hr' and suspensions associated with CC charges.*

Note: All numbers are rounded. Violation tickets exclude Intersection Safety Camera (ISC) tickets

### CounterAttack

CounterAttack is the brand name associated with impaired driving enforcement roadblocks in BC. The CounterAttack enforcement and public awareness program is designed to reduce the incidents of driving while under the influence of alcohol or drugs. CounterAttack operations usually involve police officers implementing late night road checks to ensure drivers are not intoxicated, often supported by public awareness or media campaigns.

Traditionally, the Christmas season is the most prominent enforcement campaign month for CounterAttack. Independent municipal police departments contribute to provincial (IRSU and ERSEI) efforts targeting impaired driving. In 2007, PSSG signed additional CounterAttack contracts for road checks during the December holiday season with: Abbotsford, Delta, Nelson, Central Saanich, Saanich, Oak Bay, Vancouver, Victoria and West Vancouver.

### Key Points:

- ▶ During the 2007 CounterAttack campaigns (including Christmas CounterAttack 2007), independent municipal police issued a total of 23 impaired Criminal Code charges, 43 Administrative Driving Prohibitions, 642 24-hour roadside suspensions and impounded 102 vehicles.
- ▶ Collectively, they issued a total of 2,108 violation tickets and identified 63 people wanted on other charges.

Apart from traditional CounterAttack campaigns, targeted impaired enforcement initiatives are delivered year-round through the local IRSUs, Independent Municipal Police and the local RCMP detachments.

## **TRAFFIC SAFETY HELICOPTER – AIR ONE**

The Traffic Safety Helicopter – Air One – supports traffic units and operations targeting stolen vehicles, vehicle pursuits, organized street racing, aggressive drivers and impaired drivers. Air One also provides aerial back up and enforcement support for ground units responding to other types of public safety emergencies.

Throughout 2007, Air One tracked calls, time spent per location and incident types in detailed quarterly reports.

Draft performance indicators were developed by RSU research staff in consultation with Air One personnel so that baseline enforcement measures can be established in 2008.

### ► **Flight Facts**

Air One came into service in summer 2006.

The helicopter assists Lower Mainland police through aerial support, traffic patrol and enforcement, control of police pursuits and overall crime prevention.

Air One has been equipped with a FLIR infra-red video camera and “Night Sun” spotlight, which can be narrowed down to illuminate a single car, or expanded to light a football field.

### **Key points:**

- 4 Pilots and 3 Tactical Flight Officers trained and on staff
- Air One provided significant assistance to road safety and other ground units in the pursuit and apprehension of car thieves, impaired drivers and aggressive drivers
- Research suggested that a traffic helicopter would contribute to reductions in high speed or dangerous ground pursuits of suspect vehicles. There is significant anecdotal evidence of ground pursuits being called off while Air One engaged in aerial surveillance. A formal assessment and evaluation of crashes involving fleeing suspects and police pursuit should be conducted to assess Air One’s contribution to reductions in pursuit-related crashes.

### **From the files:**

“Air One monitored as the Vancouver Police Department was following a suspect in a hit and run from earlier in the evening. The member tried to pull the vehicle over which it did initially and then fled from the scene—slow speed. Air One overhead and took over observation and pursuit was shut down. Air One monitored as vehicle

## **One-on-one with Air One**

**October 28, 2007**

Reducing road fatalities in the Lower Mainland is job one for this \$2.2-million high-tech chopper – and from 1,500 feet in the air, drivers whipping through traffic are grossly obvious.

Air 1 ensures the speed-freaks don’t elude ground forces. In its first year of service, the chopper has never been outrun.

“One biker lost us for a while, doing about 280 kilometres per hour, but as soon as he had to take a curve we caught him,” Brassington says with a grin. “Straight lines always beat curves.”

*samcooper@northshoreoutlook.com*

made his way through residential streets in the area, driving over several curbs and sidewalks, crossing center lines etc. The vehicle eventually...was boxed in by several members who had come into the area. The male barricaded himself inside the vehicle and tried to ram his way out. Members had to break the windows of the vehicle to extricate the driver. Male was very intoxicated. Impaired investigation resulted to two blows over 200. Further charges pending." *July 19, 2007.*

**Table 3: Air One Call Type Activity, 2007**

Type of Enhanced Enforcement	Count
vehicle pursuits controlled by Air One	26
arrests from police pursuits where Air One was instrumental	31
aggressive drivers reported to ground units	92
impaired driver reports detected and/or investigated by Air One	59
stolen vehicle call types investigated by Air One	227
stolen vehicles recovered	115
motor vehicle incidents investigated by Air One that were hit and runs	34

***AUTOMATED LICENCE PLATE RECOGNITION (ALPR)***

The Automated Licence Plate Recognition (ALPR) project continued to be piloted in the Lower Mainland in 2007, helping police and the Province identify the best applications for this innovative crime fighting technology.

ALPR is a camera and computer database system. Cameras mounted in police cars capture licence plate images of vehicles on public highways. The ALPR system instantly compares plates against a database in the onboard computer containing daily information associated with stolen vehicles and uninsured, unlicensed and prohibited drivers.

As a result of initial research conducted by the University College of the Fraser Valley indicating that the greatest application of this technology was in identifying unlicensed, uninsured and prohibited drivers, in 2007 the ALPR pilot project was transferred from IMPACT to IRSU; however IMPACT retained two units for use in auto theft enforcement.

ALPR will remain a pilot project until all federal and provincial privacy assessments have been completed and technical issues associated with remote data transfer are fully addressed.

**Key Points:**

- ▶ Car thieves, prohibited, uninsured and unlicensed drivers continue to be targeted by police officers trained in this interactive technology, combined with criminal analysis.
- ▶ The IMPACT enforcement team and crime prevention volunteers recovered 103 stolen vehicles with the two covert units from late March 2007 to February 28, 2008.

### **INTERSECTION SAFETY CAMERA (ISC) PROGRAM**

The ISC is an automated enforcement program dedicated to improving intersection safety by identifying and penalizing aggressive drivers who run red lights.

The Province is responsible for managing and overseeing the operations of the Intersection Safety Camera Program (ISC) with the objective of reducing serious injury crashes and fatalities at the intersections where cameras are installed.

Intersections are extremely high-risk areas for collisions that result in casualties and serious injuries, with approximately 20 per cent of all fatal crashes and well over 40 per cent of injury crashes taking place at intersections throughout BC. Intersections can also be difficult and dangerous for police officers to enforce.

There are currently 120 ISC sites, with 30 operational cameras that are rotated among the sites throughout the Province.

The equipment currently used in the day-to-day operations of the ISC program is outdated and efforts are being made to upgrade the cameras and the processing of ISC tickets to digital technology. This would increase the clarity of red light running images captured by ISCs in BC and would help to ensure that red light running violations are enforced more swiftly and effectively.

In late 2007 a request for proposals was issued and vendor submissions reviewed. Technical and legal subcommittees have conducted evaluations and provided input into the overall review process. It is anticipated that an upgraded ISC program will be implemented in 2008.

#### **Key Point:**

- ▶ 23,107 red light violation tickets were issued in 2007 through the ISC Program. This represents a 14% increase from 2006. The increase is a result of a concerted approach to ensure cameras are properly deployed at high volume, dangerous intersections.

## Goal 2 – Deter and Capture Auto Thieves

### **INTEGRATED MUNICIPAL PROVINCIAL AUTO CRIME TEAM (IMPACT)**

IMPACT serves all RCMP and independent Municipal police jurisdictions in British Columbia. However, the majority of the team's work takes place in the Lower Mainland where 70 per cent of all auto theft in BC occurs.

IMPACT's objectives and priorities are determined by the IMPACT Policy Board, chaired by Director of Police Services and comprising senior representatives from MPSSG, RCMP, ICBC, BC Association of Chiefs of Police (BCACP) and BC Association of Municipal Chiefs of Police (BCAMCP). IMPACT is managed by the RCMP and includes nine RCMP, seven municipal members, one ICBC Special Investigations Unit officer, one RCMP civilian member and three public servants.

IMPACT's 2007 enforcement priorities included targeted enforcement of dangerous and prolific car thieves, Bait Car deployment throughout the province, use of ALPR and media relations.

#### **Key Points:**

- ▶ In 2007, IMPACT celebrated its 5<sup>th</sup> consecutive year of auto crime reductions in BC.
- ▶ As of March 2007, there are about 9,600 fewer vehicles being stolen annually as compared to auto theft rates circa 2003. This reduction represents a savings to taxpayers of \$38.7 million.<sup>8</sup>
- ▶ IMPACT works cooperatively with Air One traffic safety helicopter, assisting in the successful surveillance of numerous stolen vehicles in the Lower Mainland and resulting in 96 arrests.
- ▶ A successful Auto Crime Enforcement Month achieved 112 arrests in the Lower Mainland and saw a significant decrease in auto theft in the following months.
- ▶ IMPACT continued with the "No Free Ride" pilot project introduced in 2006. Partners in the pilot include New Westminster Police Department, Richmond RCMP and ICBC. Project No Free Ride seeks to recover costs from auto thieves through civil litigation.
- ▶ "Stolen Lives", an educational video about the impacts of auto crime on victims and offenders, was produced by Odd Squad Productions in cooperation with IMPACT and the financial assistance of the AutoPlan Brokers of BC. The production has since been added to BC's high school curriculum; approximately 4,000 copies of the video and teachers' guides have been distributed throughout the province.

### **THE BAIT CAR PROGRAM**

IMPACT is responsible for the provincial Bait Car program and the BaitCar.com website.

The site which contains Bait Car videos, IMPACT stories, FAQs and information about preventing auto theft, was refreshed and significantly enhanced in 2007.

<sup>8</sup> IMPACT 2008 – 2013 Strategic Plan.

Public awareness and support for the Bait Car program is substantial. Extensive media coverage and strong public reaction to Bait Car in-car video has helped raise public awareness of the threat that auto thieves pose.

The success of BC's Bait Car program lies in deterring entry level car thieves and in arresting repeat offenders. Research shows the BC Bait Car program is the largest and most successful program of its kind in the world.

**Key Points:**

- ▶ Bait Car program has been expanded from the Lower Mainland to Vancouver Island, the Interior and the North.
- ▶ In August, 2007 in Williams Lake, a community of about 12,000 people, 74 vehicles were stolen. This represented a 350% increase over the same month in 2006. Bait Car was deployed and within days two suspects, prolific offenders, were caught. In October 2007, total auto thefts for the month were six – the lowest number of incidents per month in Williams Lake in three years.



**Table 3: Goal 2 – 2007 Operational Tactics, Outputs, and Costs**

Tactic	Outputs	Costs (\$'000s)
<b>IMPACT – Integrated Municipal Provincial Auto Crime Team*</b>	IMPACT operations	\$2,547
	Bait Car operations	\$389
	Enforcement Results (all programs)	
	▶ 157 car thieves arrested	
	▶ 238 vehicles recovered	
	▶ 9% decrease in auto theft in 2007 (ICBC stats)	
	▶ 38% decrease in auto theft since 2003 (IMPACT stats)	
	▶ Increased public awareness through media relations/educational campaign	

\*Costs exclude 30% federal contribution.

### Goal 3 – Increase Public Awareness

To increase public awareness about road safety and traffic enforcement, the Road Safety Unit is involved in two strategic initiatives: ICBC public education/advertising campaigns and provincial government public awareness activity.

A dedicated 'E' Division police media liaison position was created and staffed in February 2007. The media liaison assists IRSUs and RCMP detachments in promoting road safety enforcement messages.

The media liaison has:

- ▶ produced more than 20 fact sheets on topics ranging from impaired driving to child booster seats
- ▶ prepared speaking points and fact sheets available to media and any member looking to speak to local media
- ▶ provided consistent messaging on road safety issues
- ▶ increased the profile of road safety issues with the media and the public.
- ▶ participated in road safety events and campaign launches, radio interviews and other opportunities to raise the profile of road safety.

This media liaison is also responsible for dealing with calls from the Lower Mainland media – anywhere from two to 10 calls per day – and responding to all traffic-related email questions.

#### From the files:

“...organized a ride along in Air 1 for a member of the Asian media (SING PAU DAILY NEWS). We received several full pages in this publication: very positive.”

*and,*

November 15<sup>th</sup>...the media event held at the Langley Township Complex to kick off this years MADD Red Ribbon Campaign “Tie 1 On” was very successful; covered by virtually every media outlet in the Lower Mainland.”

*Cst. Dave Babineau  
Strategic Communication Officer  
"E" Division Traffic Services*

Table 4: Goal 3 – 2007 Operational Tactics, Outputs, and Costs

Tactic	Outputs	Costs
<b>Promoting public awareness messages</b>	Media promotion re: 8 targeted enforcement campaigns (i.e. auto crime, aggressive driving, occupant restraint, commercial vehicles, unsafe speed, CounterAttack)	\$ 600,000
	8 government media releases re: enhanced traffic enforcement program initiatives	Nil
	Released 2006 public attitudes survey and conducted 2007 public attitudes survey	Part of core unit costs

**ICBC PUBLIC AWARENESS ADVERTISING CAMPAIGNS**

Under the MOU, ICBC holds back \$600,000 of its total annual contribution to be directed toward media initiatives that address enhanced enforcement campaigns. These annual enforcement campaigns are reinforced with specialized media strategies focussing on the identified seasonal enforcement themes.

Campaign dates are presented to the BCACP Traffic Safety Committee for general discussion and approval (see Appendix F). Support materials (letters, news release templates, fact sheets and advertisements) are provided to detachments, departments and traffic units throughout BC to support the identified campaigns.

ACTIVITY Enforcement Ads	YTD Actual	YTD Plan
Impaired	80,000	80,000
Speed	205,000	260,000
Auto Crime Advertising	120,000	120,000
Occupant Restraint	143,000	140,000
<b>Total MOU Advertising</b>	<b>548,000</b>	<b>600,000</b>

*Information provided by ICBC*

PSD Road Safety Unit works collaboratively with ICBC and the BCACP TSC to maximize paid and

unpaid media opportunities promoting safe driving messages and awareness of enhanced traffic enforcement.

**PROVINCIAL GOVERNMENT PUBLIC AWARENESS ACTIVITY**

The Road Safety Unit promotes the activities of the enhanced enforcement program through media strategies, public events and media releases.

**Public Attitude Survey**

In 2007, the Police Services Division commissioned a public opinion survey measuring public attitudes about road safety in the province of British Columbia.

The survey probed citizen opinions regarding road safety, perceptions of traffic enforcement, support for new enforcement technology, causes of collisions, factors affecting driving behaviour and self-reported behaviours.

**Key Points:**

- ▶ 96% of BC drivers believe that driving while under the influence of alcohol is an extremely serious/serious threat to road safety
- ▶ 80% of the public want more traffic enforcement and 80% strongly agree/agree that less traffic enforcement would result in more traffic fatalities and serious injuries
- ▶ 57% believe the police take traffic enforcement extremely seriously/seriously
- ▶ the public supports the use of technology in traffic enforcement, including red light cameras (82% positive response) and the traffic safety helicopter (61% positive response).

**Road Safety Media Scan 2007**

The provincial government conducts a daily media scan of major BC media to identify stories associated with government programs, activities, or issues, including policing and road safety. From these summaries, the following road safety stories were identified and tracked:

- ▶ 537 articles contained references to road safety (April 2007 to March 2008)
- ▶ Impaired driving (14%) and auto theft (9%) were the main topics of media stories
- ▶ Collisions causing injuries and fatalities were common themes in road safety-related stories
- ▶ Print coverage of road safety issues does not appear to increase during enhanced enforcement campaigns. The exceptions in 2007 were the Christmas CounterAttack campaign - stories about impaired driving increased during November and December; and the Aggressive Driving Campaigns in August and March showed a slight corresponding increase in articles about aggressive driving.
- ▶ The Road Safety Week campaign in May focused on seatbelts; this corresponded with an increase in stories about seatbelt use.
- ▶ No other road safety campaigns showed a corresponding increase in the number of articles published by the print media.

**Goal 4 – Police Officers are Well-Trained and have a Forum for Improvements in Traffic Enforcement**

Police Services Division supports three strategies to ensure that police officers are well-trained and that police have a forum for identifying improvement in traffic enforcement – Justice Institute Police Academy Advanced Training, the BC Association of Chiefs of Police Traffic Safety Committee and road safety partnerships and advocacy:

**Table 5: Goal 4 – 2007 Operational Tactics, Outputs, and Costs**

Tactic	Outputs	Costs
<b>Enhanced Traffic Training</b>	<ul style="list-style-type: none"> <li>▶ 105 independent municipal officers participated in enhanced traffic training programs in 2007</li> </ul>	\$ 90,274
<b>BCACP Traffic Safety Committee</b>	<ul style="list-style-type: none"> <li>▶ Conducted 3 Executive Committee meetings and 2 General Membership meetings in 2007</li> </ul>	\$ 78,684
<b>Partnerships, Committees and Advocacy</b>	<ul style="list-style-type: none"> <li>▶ Ongoing participation in policy and operational committees addressing: legislative changes relating to changes to the <i>Motor Vehicle Act</i> and reporting motor vehicle collisions to police; impaired driving and improvements to the justice system; injury prevention; farmworkers' transportation safety and other road safety issues relating to enhanced enforcement.</li> <li>▶ Active participation and representation at the Canadian Council of Motor Transport Administrators (CCMTA).</li> </ul>	Annual core unit costs

**ENHANCED TRAFFIC TRAINING**

Enhanced traffic training for independent municipal police falls under the responsibility of the Road Safety Unit. In 2007, the Justice Institute of BC and Police Services Division agreed to a maximum \$100,000 budget for enhanced traffic training courses. The Justice Institute delivered courses on topics covering collision investigation and analysis, impaired driving detection and drug recognition, commercial vehicle enforcement and forensic mapping.

**Key Points:**

- ▶ Municipal police and the Justice Institute of BC continue to collaborate on the type and timing of enhanced traffic training courses needed.
- ▶ Ongoing consultations with the Justice Institute of BC have identified a number of challenges and opportunities for delivering enhanced traffic training classes.
- ▶ PSD continues to work with stakeholders on RCMP/Municipal reciprocal recognition for advanced traffic training courses.
- ▶ IRSU officers also receive advanced traffic training courses at the Pacific Regional Training Centre.

## **BC ASSOCIATION OF CHIEFS OF POLICE – TRAFFIC SAFETY COMMITTEE**

The purpose of the BCACP Traffic Safety Committee is “to promote public safety by identifying, prioritizing, and addressing common road safety issues to the police community and their partners, to promote legislative reform in support of increased road safety.”<sup>9</sup>

The BCACP Traffic Safety Committee meets twice a year to discuss emerging issues, policy and legislative reforms, enhanced traffic safety enforcement technologies, review pilot projects and share information/updates from its enforcement and road safety partners.

The Executive Committee has a comprehensive road safety/enforcement membership including: the Ministry of Public Safety and Solicitor General, ICBC, the RCMP, Fraser Valley Traffic Services, Lower Mainland Traffic Services, Commercial Vehicle Safety and Enforcement Branch, Office of the Superintendent of Motor Vehicles, the Criminal Justice Branch (Attorney General), and representatives of the Abbotsford, Vancouver, and Saanich police departments.

Reports and business arising from the working groups are also tabled for discussion and approval by the membership. These working groups include: legal/procedural and technical; administration/training and recognitions; and enforcement.

### **Key Points:**

- ▶ BCACP carried three motions in 2007; they approved: the 2008 Provincial Enforcement Campaign Schedule; correspondence to Solicitor General regarding Judicial Justices of the Peace shortage and lack of hearing dates; and, correspondence to Solicitor General seeking revision of penalties for offences more directly associated with behaviour causing death and injuries in motor vehicle crashes.
- ▶ In 2007 the executive committee focused on ways to reinvigorate general membership meetings, including improving speakers and subjects, and increasing opportunities for traffic officers within the BCACP TSC.
- ▶ A survey of BCACP TSC general membership was conducted in October 2007 that showed members: felt the existing committee structure was working well; wanted to focus on achieving more action on motions, partnership, communication and best practices; and would like more opportunities for interactive sessions.
- ▶ Each year the Traffic Safety Committee reviews award submissions across three activity categories. The 2007 award recipients are:

### **BCACP Traffic Safety Committee - Traffic Safety Awards for Year 2007**

<b>Award Category</b>	<b>Successful Recipient</b>
Collision or Crash Investigation	Constable Madonna Saunderson, Prince George Detachment, RCMP
Traffic Law Enforcement	Constable Shayne Orr, Castlegar Detachment, RCMP
Traffic Safety Education	Constable Jamie Thorne, CNR Police

<sup>9</sup> Traffic Safety Committee of the British Columbia Association of Chiefs of Police, Constitution, Article II.

## Goal 5 – Conduct Research to Improve Traffic Law Enforcement Practices

Research and evaluation are central elements of the Road Safety Unit’s mandate. Research informs policy discussions and decisions concerning traffic enforcement, law reform and best practices. Baseline information being collected on a number of pilot projects will also be used in decision making and future allocating of resources.

Program evaluation is also an important component of the Unit’s mandate as evaluations are important tools in ensuring funds are being spent appropriately and effectively.

**Table 6: Goal 5 – 2007 Operational Tactics, Outputs, and Costs**

Tactic	Outputs	Costs
Research	<ul style="list-style-type: none"> <li>▶ Completed a review of BC traffic enforcement resources</li> <li>▶ Conducted a research review of BC police pursuits policies and best practices</li> <li>▶ Key participant in ISC upgrade project research</li> </ul>	Core unit admin costs
Evaluation	<ul style="list-style-type: none"> <li>▶ Conducted an evaluation of Capital Regional District IRSU</li> <li>▶ Further developed data standards and collected program evaluation measures</li> </ul>	Core unit admin costs

The following research and evaluation projects were conducted in 2007:

- ▶ Provincial Traffic Resources Review: assessed the levels of traffic enforcement compared to other areas of policing.
- ▶ Provincial Pursuits Report: reviewed the polices of all BC policing jurisdictions, identifying gaps and best practices.
- ▶ Integrated Safety Camera legal/policy: jurisdictional research regarding in the ISC upgrade business case and enforcement issues associated with proposed operational models, including policy and legal consideration, public safety benefits, mailed service of ISC tickets and site selection.

Road Safety Unit staff also participated on committees with road safety colleagues providing input on research studies and reviewing various enforcement projects, including:

- ▶ RCMP file review of traffic fatalities and the development of a standard definition of a ‘traffic fatality’,
- ▶ Automated Licence Plate Recognition pilot project, and
- ▶ CCMTA Road Safety Vision 2010 mid-term review.

Work continues on a number of research/reporting issues, including the collection and analysis of traffic safety data, and improving measures of program performance.

## FUTURE DIRECTIONS

In the year ahead, the Police Services Division Road Safety Unit will work with key agencies involved in road safety to:

- ▶ develop evaluation measures for the in-car video program
- ▶ conduct a program evaluation of the Fraser Valley IRSU
- ▶ increase and improve the sharing and analysis of traffic safety data (particularly information on traffic deaths) crucial to improving road safety throughout BC
- ▶ move forward with our road safety partners to implement the Intersection Safety Camera Program upgrade
- ▶ support communications planning and earned media and public awareness activities
- ▶ promote strategies to address impaired and aggressive drivers, intersection safety and commercial vehicles
- ▶ improve support for and delivery of advanced traffic training
- ▶ further reduce the incidents and effects of auto crime through innovative enforcement, research and public engagement strategies
- ▶ maintain staffing of the PSD Road Safety Unit, including administration, research and program manager positions, and
- ▶ undertake the necessary steps to negotiate a new ICBC/MPSSG Enhanced Road Safety Enforcement MOU.

With a better complement of professional skills within the unit, PSD will increase capacity in research, policy and analysis of key traffic safety issues and enhanced enforcement tactics.

By striving for excellence in innovative enforcement, improved engineering, legislative reforms and ongoing public awareness, we will continue to make BC's roads safer for all users.

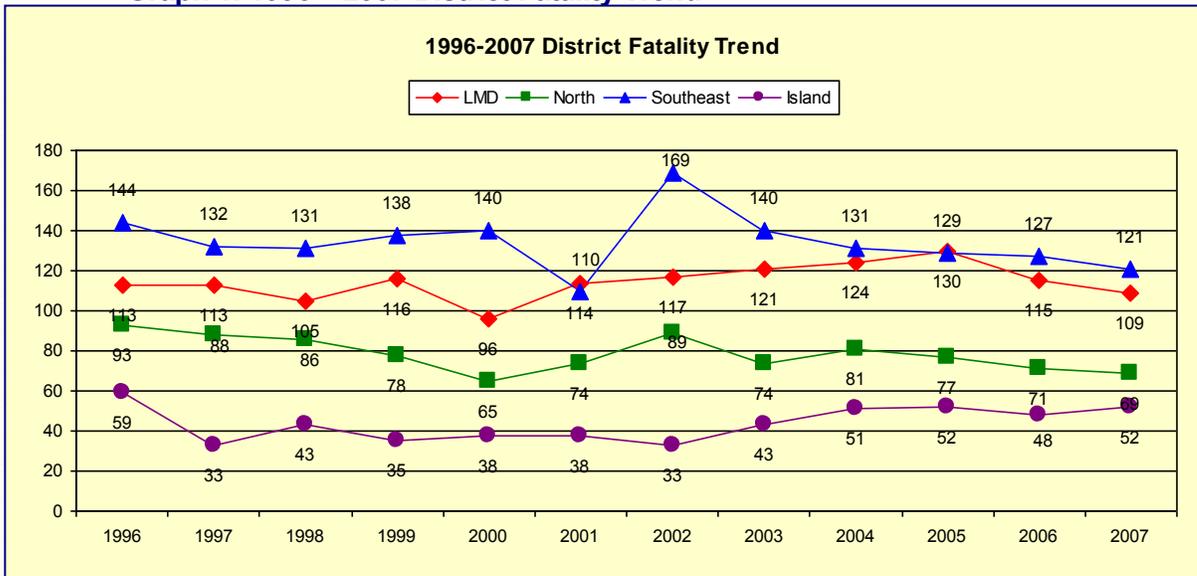
**Appendix A – 2007/08 ENHANCED ROAD SAFETY PROGRAM FINANCIAL STATEMENTS**

The following is a table of the expenditures made under the MOU during Fiscal Year 2007/2008.

<b>Road Safety Initiatives – ICBC and Federal Contributions</b>	<b>Preliminary 2007/08 Expenditures (000s) (April 1, 2007 to March 31, 2008)</b>
	<b>MOU Funds</b>
<b>PSD Road Safety Unit – Management and Administration</b>	\$525,099
<b>Police Training</b>	\$90,274
<b>BCACP Traffic Safety Committee</b>	\$78,684
<b>Intersection Safety Camera – PSD Admin &amp; Ops</b>	\$725,632
<b>Police Costs</b>	--- --- ---
RCMP Enforcement (includes overtime)	\$15,143,660
Funding to Independent Municipal Police Departments	\$759,610
<b>Total Police Costs</b>	<b>\$15,903,270</b>
<b>Total Expenditures</b>	<b>\$17,322,959</b>

Appendix B – "E" Division Statistics and Trends

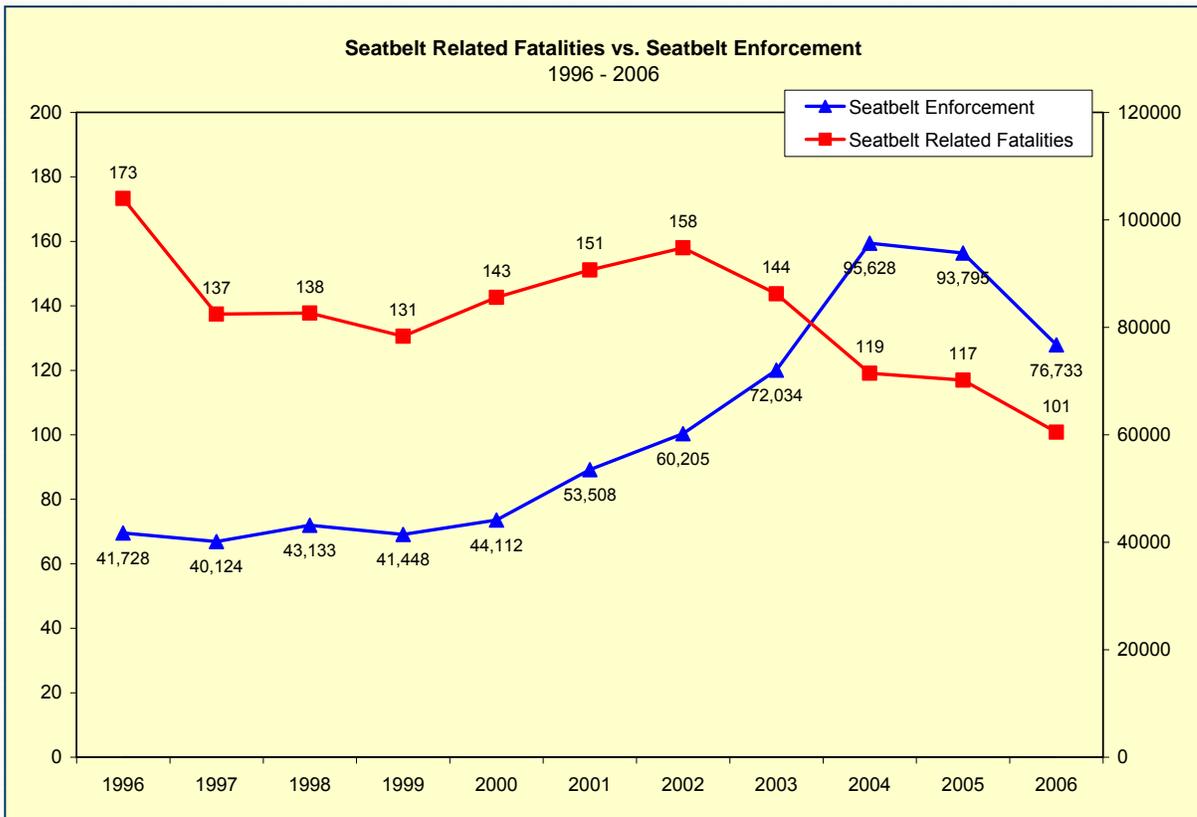
Graph 1: 1996 – 2007 District Fatality Trend\*



\* Traffic related fatality numbers continue to settle and are subject to change.  
Source: RCMP 'E' Division, Traffic Services

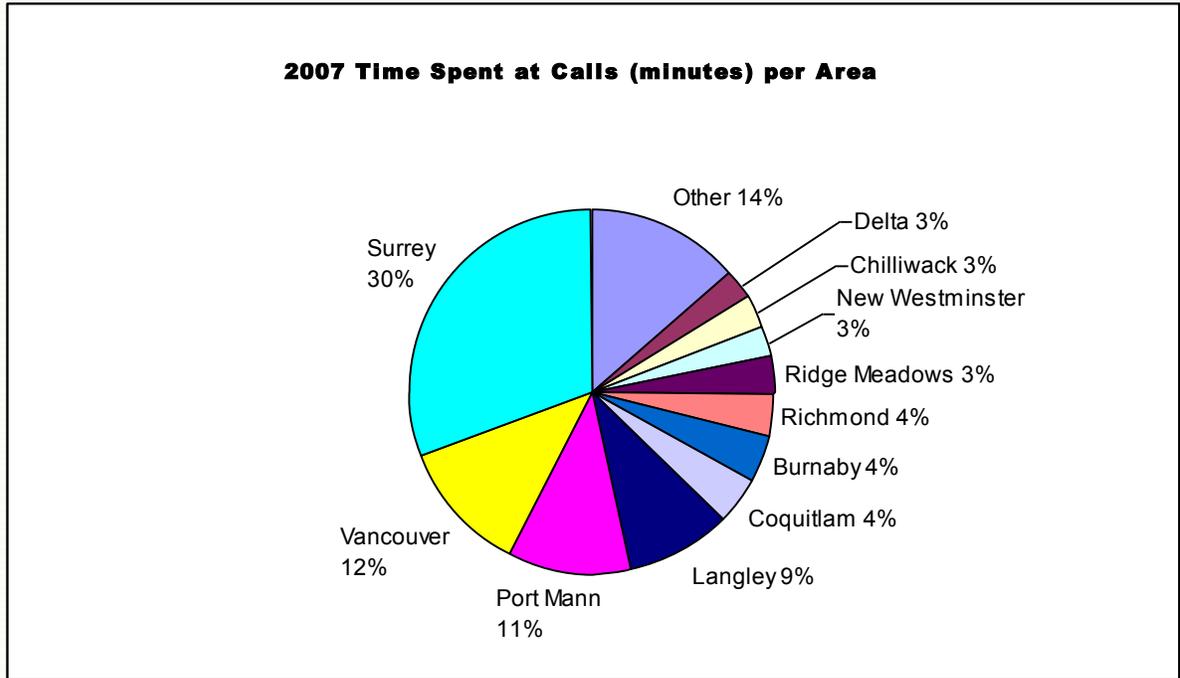
Graph 2: 1996 – 2006 Seatbelt related fatalities v. Seatbelt enforcement activity

Source: RCMP 'E' Division, Traffic Services



Appendix C: Air One Statistics

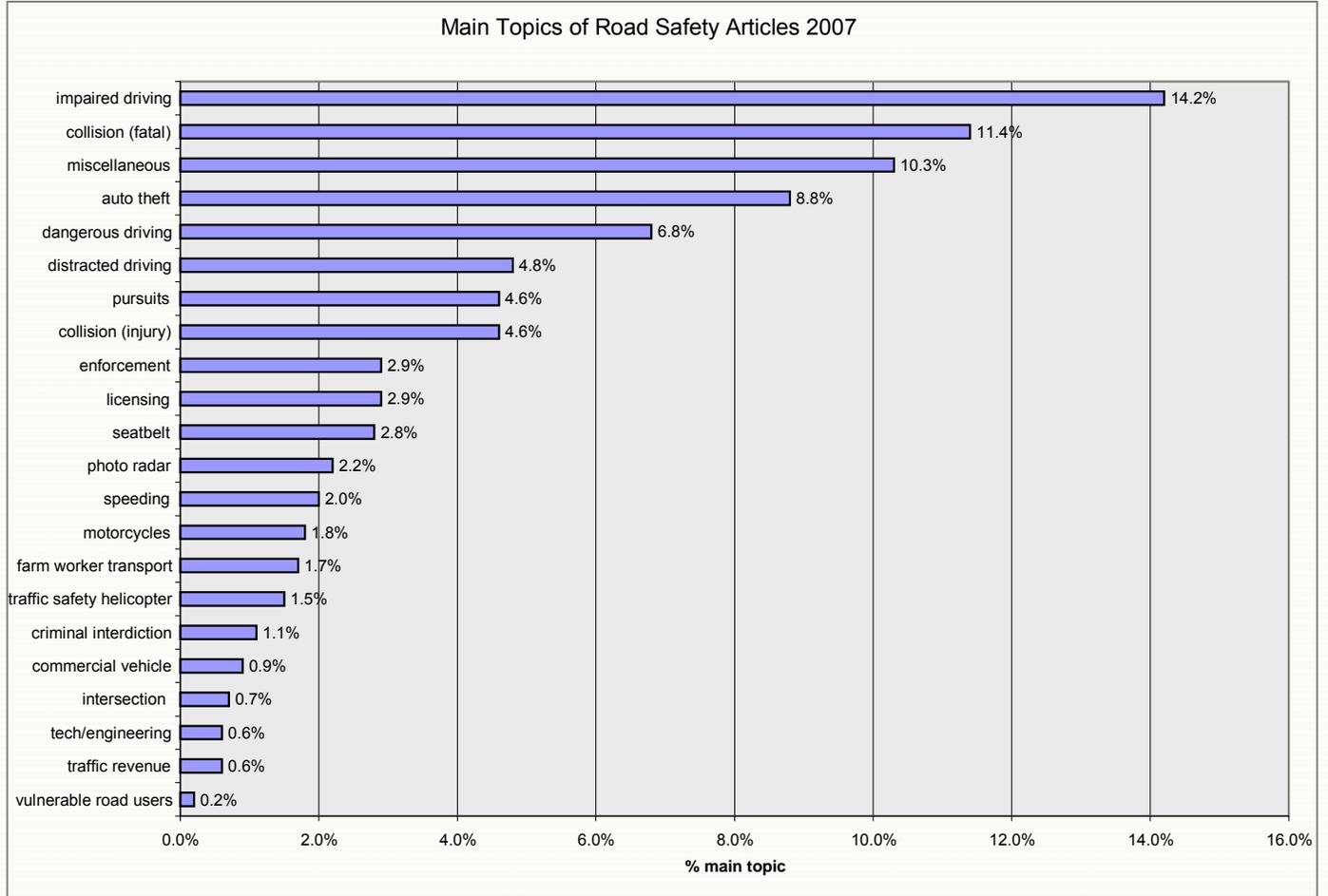
Chart 1: Air One Time Spent Geographically

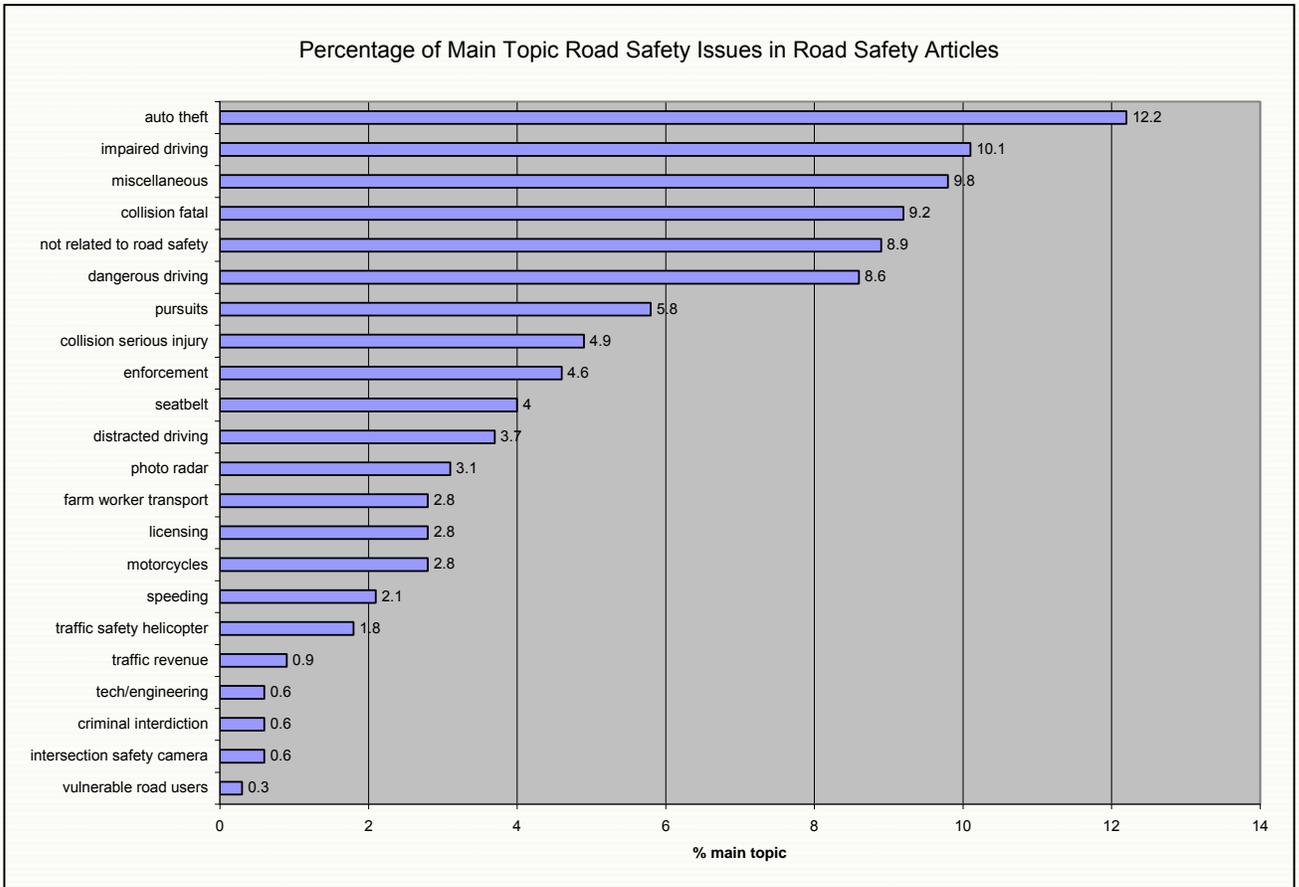


Source: RCMP, Traffic Safety Helicopter quarterly reports, 2007.

Appendix D: Media Scan Statistics

Media Scan (Q1 – Q4 2007) – Main Road Safety Issues





**Appendix E: 2007 Media/Enforcement Campaigns**

2007 Enforcement/Media Campaigns								
January	Auto Crime							
February	Auto Crime							
March		Aggressive Driving						
April		Aggressive Driving						
May		Aggressive Driving						
June			Impaired Driving					
July				Aggressive Driving				
August				Aggressive Driving				
September					Pedestrian Safety			
October						Seatbelts & Intersections		
November							Speed relative to conditions	
December								Impaired Driving

Produced by: Road Safety Unit, Police Services Division, 2008

Contact: Police Services Division, Ministry of Public Safety and Solicitor General  
604 660-2406

## **ATTACHMENT A-4**

# **A COMMUNITY PARTNERSHIP TO INCREASE USE OF SEAT BELTS IN NORTHERN BRITISH COLUMBIA: AN IMPACT ANALYSIS (DECEMBER 2008)**



Business Intelligence Competency Centre

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**A COMMUNITY PARTNERSHIP TO INCREASE USE OF SEAT BELTS  
IN NORTHERN BRITISH COLUMBIA: AN IMPACT ANALYSIS**

Prepared By:

Jean Wilson  
Sandi Wiggins  
Ming Fang

Business Intelligence Competency Centre  
Insurance Corporation of British Columbia  
December 29, 2008

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## **EXECUTIVE SUMMARY**

The seat belt initiative in the North Central Region of British Columbia was not a formalized program, but resulted from a partnership among key road safety stakeholders in the communities of that region. Leadership came from all levels of the Royal Canadian Mounted Police (RCMP) and the regional road safety office of the Insurance Corporation of British Columbia (ICBC). The North Central (NC) region covers a large, mostly rural or wilderness area of BC. Low seat belt use is a characteristic problem on rural roads and in sparsely populated areas - the NC region was no exception. Seat belt surveys conducted in 1997 and again in 2000 revealed that the NC region had the lowest seat belt wearing rate among the five ICBC operational regions. The driver seat belt wearing rate for the NC region was estimated at 78% in 1997, falling to 72% in 2000. These rates compared unfavorably to provincial weighted averages of 92% and 89% respectively for those years (Transport Canada, 1998; 2000). These large discrepancies in seat belt wearing rates prompted the development and implementation of the NC Seat Belt Initiative (NCSBI).

The present study focuses on the NC region because of its distinct rural character, low population density and inherent challenges to incrementing seat belt use, the availability of annual seat belt use survey data and because of its apparent success in forging a community partnership with a common objective of tackling the occupant restraint problem. The NCSBI is a community initiative because it got started by local enforcement officials who worked closely with regional ICBC staff and other road safety stakeholders, but it was also linked to a provincial enforcement strategy and was aligned to a national road safety strategy. It adopted the Road Safety Vision 2010 target of 95% seat belt use, a target also embraced by the RCMP both at the national and provincial levels. The main components of the NCSBI were identified as follows:

- A close partnership among key road safety stakeholders with agreement that occupant restraint was a priority and a commitment to a goal of 95% use
- Conducting annual seat belt surveys in principal population centres
- Using the seat belt survey results to generate free media coverage and to kick off annual enforcement campaigns, as well as to measure performance
- Taking advantage of community events to promote seat belt use, often with police presence
- Support from the regional commanding officer for the initiative
- Incorporating the 95% target into the performance plans of all RCMP detachments in the region and agreements assigning 25% of resources to occupant restraint enforcement

- Ongoing enhanced enforcement through both checkpoints and regular patrols

Annual seat belt surveys conducted in the NC region (not part of the present study) indicate that the initiative has been successful in achieving its goal of 95% seat belt use. One objective of the present study was to determine whether this general increase would also be evident in the seat belt use of individuals killed or injured in motor vehicle collisions. If so, then the percentage of injured victims not wearing their seat belts at the time of a collision should have also declined following the implementation of the NCSBI. The primary study objective, however, was to investigate whether the rate of casualties from vehicle collisions declined after the implementation of the NCSBI. Research from other jurisdictions suggests that a substantial increase in seat belt use should contribute to a reduction in the incidence of motor vehicle injuries and deaths. However, studies that include casualty outcome measures in evaluating seat belt enforcement campaigns are rare. Most rely solely on measures of seat belt use.

The study was conducted in three stages: **enforcement** assessment, **behavioural** assessment, and **crash** impact investigation. These correspond to program inputs, outputs and outcomes in a program evaluation framework. Violation ticket data were analyzed to investigate whether a sustained increase in police enforcement activity would be observed following implementation of the NCSBI. Seat belt use among individuals killed or injured in police-reported collisions was examined to ascertain whether the NCSBI was associated with a reduction in the percentage of unbelted occupants killed or injured in police-reported collisions. Vehicle collision casualty rates (casualties per 100 collisions) were examined to determine whether the implementation of the NCSBI was associated with reductions in crash casualties. Examining casualties as rates controls for any changes over time in overall collision frequencies. Casualties among police reported collisions as well as casualties reported to ICBC were examined. The latter were divided into those involving soft tissue injury only (STI) and those involving at least one non-soft tissue injury (non-STI). The latter sub-set are on average more severe, and, it was reasoned, would be more sensitive to changes in seat belt wearing rate than STI only injuries, which include “whiplash” injuries, most often sustained from rear impact crashes which are not generally mitigated by use of seat belts.

Descriptive analyses and Student t-tests were used to conduct preliminary assessments of the trends in annual violation, seat belt, and crash casualty data. These provided summary descriptive information and preliminary estimates of the magnitude of potential NCSBI effects. The primary method used to analyze the various outcomes in relation to the initiative was Autoregressive Integrated Moving

Average (ARIMA) intervention time series analysis. For these analyses, monthly rather than annual data were used. The intervention effect was introduced into the model as a step function and was tested for significance based on the expectation of either an abrupt or gradual permanent change in the outcome variables. It was hypothesized that the behavioural and casualty outcomes would decrease abruptly after the intervention date, while a gradual increase might best describe changes in enforcement activity. A January, 2005 intervention date was selected for the behavioural and crash outcome series because the data suggested that seat belt levels had to reach sufficiently high rates for the crash impacts to be detected. Regional seat belt use rates of 90% were not achieved until 2005.

Enforcement activity was measured by seat belt violation tickets issued per 100 population. Only two regions in the province, the NC and the SI (Southern Interior) experienced a large increase in seat belt tickets issued. For the NC region this increase started somewhat later than for the SI and was steeper in slope. The rate peaked for the SI region in mid-2004 but did not peak in the NC until July 2005. Seat belt enforcement thus increased in both regions but the magnitude of the increase in the NC region exceeded that seen in the SI.

As a behavioural measure, the study examined seat belt non-wearing rates among victims injured and killed in police attended crashes. The NC region was compared to the SI region on this measure. Although the percentage of unbelted casualties was consistently higher in the NC than in the SI region, both regions experienced significant declines in this percentage throughout the study period. The decline in the SI region occurred at a steady rate of about 1% per year, whereas in the NC region it declined at a rate of about 1% per year prior to mid-2004, and then accelerated to a rate of about 3% per year in subsequent years. The percentage of unbelted fatally injured vehicle occupants in the NC region also followed a declining trend. It fell by 12% between the period mid-2001-mid-2004 versus mid 2004-mid 2007.

The key findings of the study are the demonstration that the observed increases in seat belt use in the NC region were accompanied by reductions in the frequency of motor vehicle casualties. Changes in seat belt use would not be expected to impact the frequency of collisions – only injury severity. Police reported casualties per 100 collisions declined substantially over the study period. There appeared to be two separate downward shifts, one that occurred between 2001 and 2002 and another that took place between 2004 and 2007. It seems likely that the first shift resulted from an increase in the denominator – police started to report more non-casualty collisions after 2001 – as there was not a similar drop in the rate

of claims-reported fatal plus non-STI collisions between 2001 and 2002. A correction was made for this apparent reporting change in the time series analysis of police reported casualty data. Analysis of the time series models revealed a marginally significant reduction of about 5 casualties per 100 collisions per month in police reported casualties and a smaller though significant reduction of 1.3 casualties per 100 collisions per month for the fatal plus non-STI injury series. No significant reduction in the STI only injuries was detected. These results indicate that the more severe types of injuries decreased after the NCSBI was fully implemented, while the trend in injuries not expected to be impacted by seat belt use remained flat.

The findings strongly indicate that the initiative in the NC region was effective. The observed increase in population seat belt wearing rates was also reflected in a decline in the percentage of unbelted injured occupants in collisions. Furthermore, two independent measures of casualties declined once seat belt wearing rates had surpassed 90%. One question raised by the findings is why the decline in casualties was not evident immediately following the early 2003 increase in police enforcement even though the seat belt wearing rate had also risen in that year by almost 10 percentage points. This may seem surprising given the known effectiveness of seat belts in reducing injuries. One explanation is that the riskiest drivers may be the last ones to buckle up in response to enforcement and other actions. As the wearing rate increases, the characteristics of the population of nonusers may also change. It is also noted that the sparseness of the population in the NC region results in a fairly low and variable monthly incidence of casualty crashes. This makes small reductions in casualty rates less likely to be detected as statistically significant.

The study demonstrates that a strong community initiative backed by support at the provincial level and aligned to a national strategy can be successful in a largely rural and sparsely populated northern region despite the challenges of impacting seat belt use in such communities. The initiative included several elements, some formalized and some informal. While the essential elements cannot be isolated in this study, commitment by police at senior levels and the resulting increase in enforcement was very likely key. Incorporating targets into performance plans at all levels appears to have been a successful approach to achieving buy-in to the objectives. The regular scheduling of seat belt surveys also appears to have been an important element linked to the target setting. The survey results provided feedback on performance for police units and also identified areas requiring greater effort. They generated media coverage and engendered competition between communities. Interviews with key informants also indicated

that stakeholder partnerships, particularly that between local RCMP and ICBC helped to identify problem areas, facilitated public awareness of occupant restraints, raised the profile of the issue and generally maintained the momentum of the initiative over a number of years. These informal aspects cannot be quantified but may have contributed to the success of the initiative.

**Keywords:** Occupant restraints; Enforcement; Casualty crashes; Rural roads; Community partnerships

## **INTRODUCTION AND BACKGROUND**

The use of seat belts has been identified as the single most effective measure in reducing fatalities and injuries resulting from motor vehicle crashes (Dinh-Zarr et al., 2001; Canadian Council of Motor Transport Administrators - CCMTA, 2001). It has been estimated that vehicle occupants who use seat belts are 40-50% less likely to sustain serious or fatal injuries in the event of a crash (National Highway Traffic Safety Administration - NHTSA, 1999). A Transport Canada study found that about 1,000 front seat occupants' lives were saved by seat belts each year in Canada between 1990 and 2000 amounting to an estimated economic benefit of \$17.5 billion (Transport Canada, 2001). Despite these demonstrated benefits, on average 40% of all vehicle occupants killed and 21% of those seriously injured in Canada were unbelted at the time of the collision (CCMTA, 2001).

Serious motor vehicle crashes are more likely to occur in rural areas (OECD, 1999). While factors such as higher speed limits, inappropriate driving speeds, alcohol and fatigue as well as roadway characteristics contribute to the excess risk of fatality and serious injury in a crash, low seat belt use on rural roads is also a major factor. Seat belt use has been shown to be lower in rural than in urban communities in Canada (Transport Canada, 2008) and the United States (Glassbrenner and Ye, 2006).

Reasons for lower belt use in rural communities are not well documented and may be complex. Marchetti, Hall and Stewart (1990) compared survey responses of adults and students in a low belt-use rural area with those of respondents in a high belt-use rural county. They found that respondents from the low-use rural areas were more likely to believe myths about seat belts and to believe that belts do more harm than good. Negative attitudes toward seat belts were also more prevalent among pick-up truck drivers than car drivers, and pick-up trucks are more common in rural areas. Another factor may be related to levels of enforcement. As it is likely more difficult and less efficient to enforce seatbelt use on rural roads than in more densely populated areas, rural residents may have less experience with seat belt enforcement and therefore perceive a lower risk of being ticketed.

Enhanced seat belt enforcement has been shown repeatedly to be very effective in increasing seat belt use rates (Jonah, Dawson and Smith, 1982; Salzberg and Moffat, 2004; Solomon, Chaffe and Cosgrove, 2007; Williams et al., 1987; Williams et al., 2000). Enhanced enforcement can involve increasing tickets issued for seat belt violations during regular patrols, the use of seat belt check point operations or a combination of both. The effectiveness of the enforcement may be related to level of publicity, enforcement

visibility and experience with punishment. An early paper by Campbell (1988) found a statistical association between the number of traffic citations for seat belt law violations at the state level and the state's observed belt use. Dinh-Zarr et al. (2001) reviewed 15 studies evaluating the impact of enhanced enforcement programs targeting seat belt use and reported a median increase of 16% in belt use across the studies. These authors also report that in studies that included follow-up measurement, use rates declined after enhanced enforcement in a range of 0 to -8%.

Almost all evaluations of enhanced seat belt enforcement programs involve short duration campaigns, usually with accompanying publicity, repeated at varying intervals (usually once a year). These programs follow the Selective Traffic Enforcement Program (STEP) model first introduced in Canadian provinces in the early 1980s (Jonah, Dawson and Smith, 1982; Jonah and Grant, 1985) and now used extensively throughout the world, including the Click It or Ticket (CIOT) program, sponsored by the National Highway Traffic Safety Administration that operated in all 50 states (Solomon et al., 2007). In Canada, Operation Impact conducted annually in October follows a STEP model.

In the North Central (NC) region of British Columbia (BC) an innovative approach to the problem of low seat belt use was adopted in 2003. The NC region covers a large, mostly rural or wilderness area of BC. A province-wide regionally stratified seat belt survey conducted in 1997 and again in 2000 had revealed that the NC region had the lowest seat belt wearing rate among the five operational regions designated by the Insurance Corporation of British Columbia (ICBC) (Goldfarb Consultants, 2000). These surveys were conducted in conjunction with the Transport Canada national seat belt survey by purchasing additional observations to permit statistically reliable regional comparisons. The driver seat belt wearing rate for the NC region was estimated at 78% in 1997, falling to 72% in 2000 (Goldfarb, 2000). These rates compared unfavorably to provincial weighted averages of 92% and 89% respectively for those years (Transport Canada, 1998; 2000) and the large discrepancies between them prompted the development and implementation of the NC Seat Belt Initiative (NCSBI).

### **The North Central Seat Belt Initiative**

The NCSBI can be viewed as a community initiative that aligns with a provincial enforcement strategy and in turn to Canada's national road safety strategy. Road Safety Vision 2010 (RSV2010) identifies occupant restraint use as a priority. It has two sub-targets in this area; one aims to achieve 95% seat belt use for all occupants by 2010; the second seeks to achieve a 40% reduction in the number of

unbelted fatal and seriously injured occupants. At the national level, the Royal Canadian Mounted Police (RCMP) support RSV2010 and have incorporated the national target as well as the sub-targets into their business plans. At the divisional level, officers in charge of traffic have also been directed to incorporate RSV2010 targets into annual business plans. In BC, district and unit level officers in charge were directed to devote 25% of their traffic resources to seat belt enforcement. However, BC has several independent police agencies and only two of the five ICBC operational regions are policed exclusively or almost exclusively by the RCMP. These are the NC and the Southern Interior (SI) regions. The present study focuses on the NC region because of its distinct rural character, low population density and inherent challenges to increasing seat belt use, its low baseline level of seat belt use, the availability of annual seat belt use survey data and because of its apparent success in forging a community partnership with a common objective of tackling the occupant restraint problem. Thus the NCSBI is a regional initiative in the sense that it was embraced by local enforcement officials and other road safety stakeholders, but it was also embedded in a provincial enforcement strategy that was differentially implemented throughout the province and was aligned to a national road safety strategy. In addition to strong RCMP divisional support, ICBC ran province-wide awareness campaigns at various times throughout the study timeframe. These campaigns involved media buys on local radio stations throughout the province.

The NCSBI was not a formalized program, but rather the result of a partnership among key road safety stakeholders in the communities, with leadership from the RCMP and the regional road safety office of the Insurance Corporation of British Columbia. It deviated from a traditional STEP model in that it involved an ongoing and escalating effort, rather than short scheduled bursts of activity. Motivated by the low seat belt use revealed by prior surveys (1997 and 2000) and the high rate of unbelted occupants among motor vehicle fatalities, ICBC staff in the NC region started to conduct annual seat belt surveys in 2002 in all cities that had an ICBC Claim Centre. The survey results (discussed below) were then released to local media and the press releases were used to kick off seat belt enforcement campaigns each year. The survey results were also used by local police to target enforcement. The first year of the initiative was 2003. It got a boost in 2004 when the RCMP traffic unit received support from the commanding officer to use the seat belt wearing rate as a performance measure for each detachment. The target of 95% use rate was put into the performance agreement of every detachment in the region. To reach this goal each detachment agreed to devote 25% of traffic enforcement resources to increasing seat belt use, consistent with the

provincial directive. The RCMP also participated in the annual national STEP program, known as Operation Impact, but this week-long burst of activity was superimposed on an already increased level of enforcement. Starting in 2004, the number of communities represented in the annual seat belt survey was expanded to include each community that had an RCMP detachment. This was done in order to provide the communities with feedback on the success of the seat belt initiative. While paid advertising was not part of the initiative, both the RCMP and ICBC issued media releases announcing the survey results and the start of enforcement campaigns. Thus the NCSBI relied primarily on free publicity generated by news coverage in the media. To summarize, the main components of the NCSBI consisted of the following:

- A close partnership among key road safety stakeholders with agreement that occupant restraint was a priority and a commitment to a goal of increased use
- Adopting the national Road Safety Vision sub-target of 95% seat belt use,
- Conducting annual seat belt surveys in principal population centres
- Using the seat belt survey results to generate free media coverage and to kick off annual enforcement campaigns, as well as to measure performance
- Taking advantage of community events to promote seat belt use, often with police presence
- Support from the regional commanding officer for the initiative
- Incorporating the 95% target into the performance plans of all RCMP detachments in the region and agreements assigning 25% of resources to occupant restraint enforcement
- Ongoing enhanced enforcement through both checkpoints and regular patrols

### **Seat Belt Surveys**

As noted previously, the observational seat belt surveys conducted in 1997 and 2000 prompted the development of the NCSBI and initiation of the annual seat belt surveys in the NC region. Seat belt surveys were also conducted in the other four regions, but not annually. None of the surveys were conducted as part of the present study but are noted because of their role as both inputs and outputs of the NCSBI. As inputs, the results of the survey in one year were used to solicit free media attention that would aid in the ongoing promotion of the NCSBI in the following year (program input). As outputs, they were used to monitor changes in seat belt use over time, and particularly changes associated with the implementation of the NCSBI.

The 1997 and 2000 surveys involved over-sampling at sites that had already been selected for the Transport Canada national seat survey. The national survey is based on a probability multi-stage sampling method (Chouinard, 2004). In 1997, only two sites were selected in the North Central region with a total sample size of 1700 observations. The 2000 survey included the two Transport Canada sites plus one additional site. The surveys conducted from 2002 onward were led by ICBC. The survey method was based on the Transport Canada observer guidelines but employed a quasi-random sampling process.<sup>1</sup> The observers were ICBC regional loss prevention employees or volunteers. Surveys were conducted between April and June each year. A total of 8 communities were sampled in 2002 and while the survey was expanded in subsequent years, the same core of 8 communities and the sites within them remained constant. These surveys involved a large number of sites and observations. Transport Canada continued to conduct surveys annually, alternating between urban and rural surveys, but the number of their sites in the NC region (2-5 per year) and sample sizes are insufficient for regional estimation. Wearing rates in the NC region increased substantially from a low of 72% in 2000 to a high in the mid-90%'s by 2006 and 2007. For the SI region, surveys were conducted only in 1997, 2000 (oversampling at Transport Canada sites) and one ICBC-led survey in 2003<sup>2</sup>. It is clear that wearing rates in the earlier years were considerably higher in the SI region than in the NC. Table 1 summarizes the reported driver seat belt wearing rates in the various surveys.

**Table 1. Driver seat belt use rates in the North Central and Southern Interior Regions**

<b>Data Source</b>	<b>1997</b>	<b>2000</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>NC</b>								
Driver seat belt use rate	76%*	72%*	76%	83%	84%	87%	94%	96%
Number of communities sampled	2	3	8	9	21	20	22	24
<b>SI</b>								
Driver seat belt use rate	90%*	86%*		83%				
Number of communities sampled	6	6		4				

\* obtained from oversampling sites in Transport Canada national seat belt survey

<sup>1</sup> Observers were instructed to identify 20-30 eligible sites in their community and then to randomly select from those sites. For smaller communities the potential pool of sites was smaller.

<sup>2</sup> The SI region did sponsor surveys during 2004-2007 but these were conducted by volunteers, did not use a comparable methodology and were based on unweighted data. For these reasons, they are not reported here.

Only limited survey data are available for the other three regions of the Province. Vancouver Island was surveyed in 2002, 2003, and 2004 and was found to have fairly stable wearing rates of 84%, 83% and 85%, respectively. Surveys conducted in 2002 and 2003 estimated wearing rates of 89% and 89% for Greater Vancouver, and 86% and 89% for the Fraser Valley.

### **Study objective**

The primary goal of the NCSBI is to increase seat belt use in the NC region, and based on the information shown in Table 1, this goal has been achieved. Since the initiative was introduced, seat belt wearing rates in the NC region have reached or exceeded the 95% target. One objective of the present study was to determine whether this general increase could be substantiated by examining the seat belt use of individuals killed or injured in motor vehicle collisions. If so, then the percentage of injured victims not wearing their seat belts at the time of a collision should have also declined following the implementation of the NCSBI. The primary study objective, however, was to investigate whether the frequency of casualties from vehicle collisions declined after the implementation of the NCSBI. Research from other jurisdictions suggests that a successful program resulting in a substantial increase in seat belt use should contribute to a reduction in the incidence of motor vehicle injuries and deaths (Salzberg and Moffat, 2004; Williams, Reinfurt and Wells, 1996). Nonetheless very few studies of the effectiveness of seat belt enforcement campaigns have measured the impacts on casualties. Most have relied on measuring changes in the rates of belt use. Some authors however have noted that the decreases in fatal and nonfatal injuries associated with increased seat belt use may not be as large as expected based on the known effectiveness of seat belts in decreasing the risk of death and injury. One explanation they propose is that drivers most likely to be involved in serious crashes are the last ones to buckle up in response to increased enforcement (Dinh-Zarr et al., 2001). For this reason, the present study focuses on changes in casualty rates associated with changes in enforcement levels.

The study was conducted in three stages:

1. **Enforcement Assessment:** Violation ticket data were reviewed to investigate whether a sustained increase in police enforcement activity would be observed following implementation of the NCSBI in mid-2003.

2. **Behavioural Assessment:** Seat belt use among individuals killed or injured in police-reported collisions was reviewed to ascertain whether the NCSBI was associated with a reduction in the percentage of unbelted occupants killed or injured in police-reported collisions.
3. **Crash Impact Investigation:** Vehicle collision casualty rates (casualties per 100 collisions) were examined to determine whether the implementation of the NCSBI was associated with reductions in crash casualties.

## **METHOD**

### **Data Sources**

The primary source of data for the study was the ICBC Business Information Warehouse (BIW). This data warehouse combines several primary databases including violation ticket data (Contraventions), collision data reported by the police (TAS) and collision data reported to ICBC through the insurance claims process (Claims). Descriptive information about the initiative was obtained through interviews with key informants.

### **Design**

For the enforcement and behavioural assessment stages of the study, annual violation ticket rates (seat belt violation tickets issued per 10,000 population) and the percentages of unbelted individuals killed or injured in a collision were computed for the NC region. Annual trends were examined for both variables, for all regions. The SI region, rather than the GV, FV, and/or VI regions, was chosen for comparison with the NC due to their close proximity, less disparate population densities and urban/rural composition and more similar trends in overall seat belt ticketing rate compared to the other three regions. However the two regions cannot be equated either demographically or geographically, as is illustrated by comparison on select variables shown in Appendix 1. It should be noted that the SI region is policed for the most part by the RCMP, who also implemented and participated in seat belt initiatives and campaigns during the study timeframe. Differences between implementation in the two regions will become apparent in examining the program outputs and will be discussed at the conclusion of the paper. For all of the analyses conducted in the implementation and behavioural assessment stages of the study, annual rates were computed using mid-year data. This was done in order for the computed rates to align more closely with the late spring timing of the seat belt surveys in the NC region.

For the crash impact assessment, a different approach was used. For this part of the study an interrupted time series analysis (McDowall et al., 1980) was used to investigate associations between the NCSBI and crash casualties in the NC region only. Casualty rates (casualties per 100 collisions) rather than casualty counts were used in the analysis in order to control for the influence of changes in collision frequency over time on the estimated NCSBI effect. ARIMA methods were used to take into account serial correlation in the outcome data. Serial correlation results from dependencies between current and past values of the outcome variables. When data are collected over time such correlations must be taken into account in order to ensure that an estimated intervention effect cannot be explained by a systematic pattern or trend that had begun prior to the implementation of the intervention.

Data on three categories of crash outcomes were selected for inclusion in the study:

- Police reported casualty rates - (number of people killed or injured per 100 police-reported collisions)
- ICBC Claims-reported casualty rates (number of people who were killed or who sustained at least one non-soft tissue injury (non-STI) per 100 claims-reported collisions.
- ICBC Claims-reported soft-tissue injury rates (number of people who sustained a soft-tissue injury (STI) only per 100 claims-reported collisions).

Injuries included in police reported collisions cover all injury types and tend to be more severe and fewer in number than those reported to ICBC Claims. It was assumed that the higher severity of police-reported casualty collisions would result in the identification of victims whose injuries would be more sensitive to changes in seat belt use than the more general set of all injured victims reported in Claims. Of these, about one-third of victims sustain STI's only, while two-thirds of victims sustain either non-STI only or non-STI plus STI.<sup>3</sup> With respect to the injuries reported through Claims, STI's are principally to the neck, upper or lower back and are usually not visible, while non-STI injuries are most often to the head or face, chest, shoulders, limbs as well as lower back and are very often visible – eg., involving contusions, abrasions, lacerations and fractures. Most soft tissue injuries occur as a result of rear-end collisions (so-called whiplash) and are not prevented by the use of seat belts. To obtain a measure from the Claims data that would be sensitive to changes in the population seat belt wearing rate, only the people who were killed

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<sup>3</sup> If one were to count by type of injury, keeping in mind that one victim can have more than one type of injury, STI injuries actually outnumber non-STI injuries by 50%

or who sustained non-STI injuries (with or without an STI) were included in the casualty rate calculation. The subset of victims who sustained only STI injuries were not expected to be affected by the NCSBI and were included as a control series.

Monthly casualties in the NC region spanning the period January 1, 2000 through December 31, 2007 were extracted from the ICBC Claims and TAS data systems. January 1, 2005 was defined as the trigger date for dichotomizing the series into pre- and post-intervention periods. This date was selected based on the incremental implementation of the NCSBI through 2003 and 2004 and the observation that this was the first year in which the estimated seat belt survey data increased above 85%. Due to the small number of casualties per month in the NC region, it was assumed that the increases in seat belt wearing associated with the NCSBI would have to reach reasonably high levels before a reduction in the casualty rates would be statistically detectable.

### **Analysis**

Descriptive analyses and Student t-tests were used to conduct preliminary assessments of the relationships over time in annual violation, seat belt, and crash casualty data. These were used to obtain summary descriptive information and preliminary estimates of the magnitude of potential NCSBI effects. The primary method used to analyze the various outcomes in relation to the initiative, however was Autoregressive Integrated Moving Average (ARIMA) intervention time series analysis. For these analyses, monthly rather than annual data are appropriate because they allow for the calculation of seasonal effects and because the standard requirement for this application is a minimum of 50 data points. Models were developed using the methods detailed by McDowall, et al. (1980), Chatfield (2004), and the SAS Institute (1996; 2003). All of the analyses were conducted using SAS Version 9.1.

Diagnostic checks of the models were conducted throughout the modelling process. Model residuals were examined for autocorrelation and model adequacy was tested using the Ljung-Box form of the chi square test. Residual plots were examined to ensure that assumptions of data normality and stationarity were valid. Two dichotomous indicator variables were used to test for the effectiveness of the seat belt enforcement initiative. For the enforcement assessment, months prior to April 1, 2003 (pre-NCSBI implementation) were coded 0 with the remaining months in the series coded 1 (post-NCSBI implementation). For the behavioural and crash casualty assessments, months prior to January 1, 2005 were coded 0 (no NCSBI) with the remaining months in the series coded 1 (NCSBI). The intervention effect

was introduced into the model as a step function and was tested for significance based on the expectation of either an abrupt or gradual permanent change in the outcome variables. It was hypothesized that the behavioural and casualty outcomes would decrease abruptly after the intervention date (assuming that seat belt use had increased to a sufficiently high level to be reflected in the behaviour and injuries associated with collision victims) while a gradual increase might best describe changes in enforcement activity.

Residual outliers detected during the modeling process (using  $\alpha=.005$ ) were handled using the modeling strategy suggested by SAS (2003). When outliers were identified, a dichotomous indicator variable was added to the original dataset corresponding to the detected outlier and included in the model. The values of the indicator variable were determined by the type of outlier detected (single data point anomaly or a level shift covering several data points). For all analyses, the following criteria for determining statistical significance were used:  $P<0.10$  – marginal;  $P<0.05$  – significant;  $P<0.001$  – highly significant.

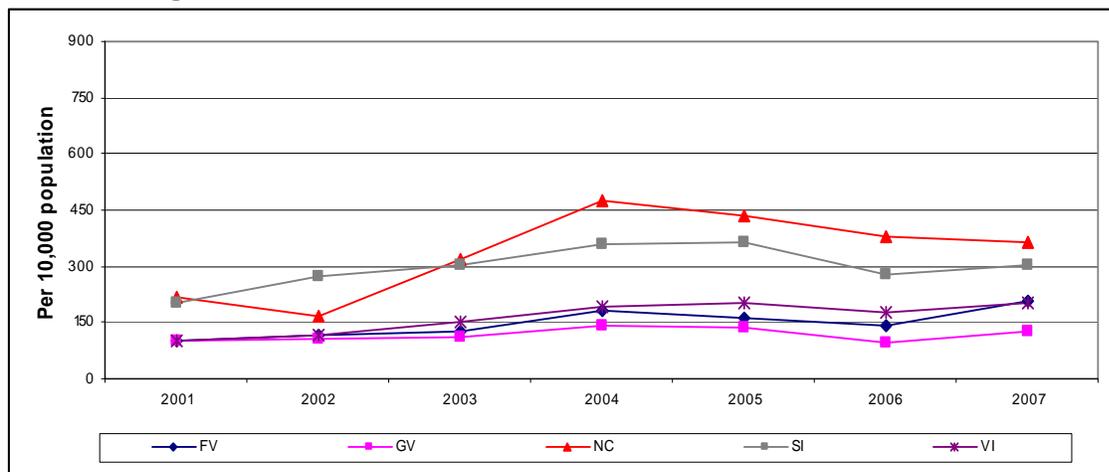
## **RESULTS**

### **Enforcement Assessment**

Figure 1 shows the annual seat belt violation ticket rates (per 100 population) from 2001 through 2007 for all five ICBC regions. The NC and SI regions clearly stand out from the other regions in having much higher population based ticketing rates, as well as a steeper curve indicative of escalating enforcement trends. The other regions are not considered for the remaining portion of the paper.

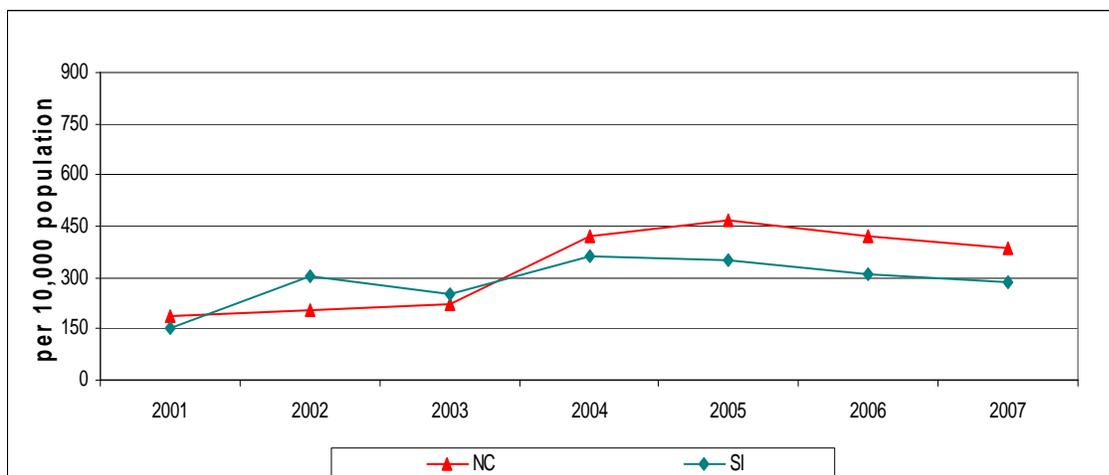
Figure 2 shows annual violation ticket rates for only the NC and the SI regions. In this figure, annual averages are shown for overlapping years (July 1-June 30) in order to correspond to the late spring timing of the annual seat belt surveys. Between mid-2003 and mid-2004, when the NCSBI was ramping up, violation ticket rates increased in both regions but the increase was steeper in the NC than in the SI. The rate peaked for the SI region in mid-2004 but did not peak in the NC until July 2005. The difference in the annual average ticketing rate for the mid-2001-2003 period (pre-NCSBI implementation) compared to the 2004-2007 (post-NCSBI implementation) period was significant for the NC region ( $P<0.0002$ ) but only marginally so for the SI ( $P<0.091$ ). Seat belt enforcement thus increased in both regions but started earlier in the SI and did not reach the same magnitude as seen in the NC region.

**Figure 1. Annual\* seat belt violation ticket rates per 10,000 population in the five ICBC operational regions**



\* accumulated at year end

**Figure 2. Annual\* seat belt violation ticket rates per 10,000 population in the North Central (NC) and Southern Interior (SI) ICBC regions**



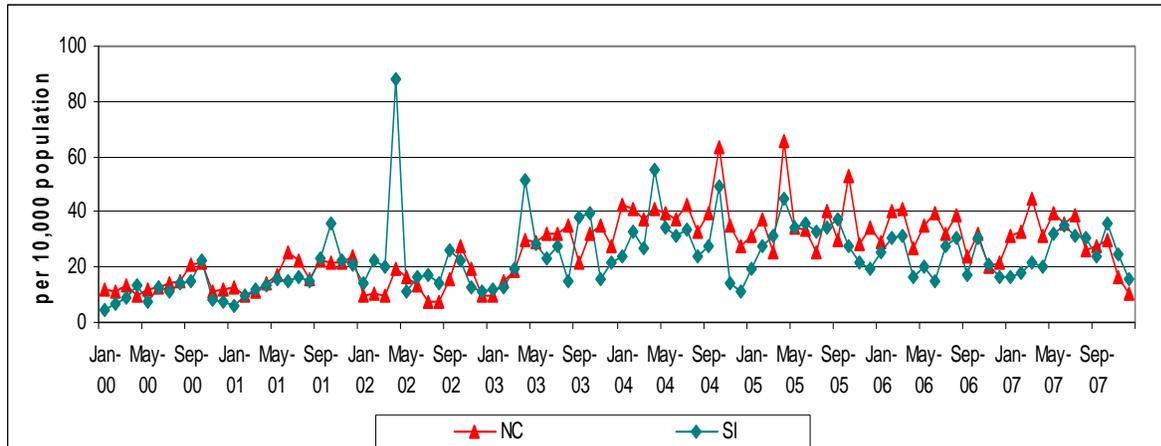
\*accumulated as of June 30<sup>th</sup> each year

To investigate patterns of enforcement in more detail, monthly<sup>4</sup> violation ticket rates were computed from January 2000 through December 2007 for both regions and these rates are shown in Figure 3. One characteristic attributed to the NCSBI was that it would result in not only a greater rate of enforcement in the region but a more consistent rate of enforcement. Figure 3 tends to support this characterization. In the SI region short bursts of high enforcement activity were observed in the spring of 2002 followed by additional bursts in the spring of 2003, and the spring and fall of 2004. There was also an increasing trend in

<sup>4</sup> Population counts were not available on a monthly basis so were estimated using interpolation from year end counts.

enforcement activity during this period of time but not to the same extent as is observed in the NC region. By early 2004 the enforcement rate in the NC region had begun to surpass the level observed in the SI and, except for a short burst of activity in the SI during the spring of 2004 remained at a higher level until the end of year 2007. Although there are also spikes of enforcement activity in the NC region after the NCSBI was introduced, there was also an increase in the overall level of activity during this period.

**Figure 3. Monthly seat belt violation ticket rates (per 10,000 population) in the North Central (NC) and Southern Interior (SI) ICBC Regions**



The ARIMA analysis of the monthly time series data revealed a significant increase in the seat belt ticketing rate in both the NC and SI regions after April 2003 (when the NCSBI was first initiated), even after taking into account serial correlations in the ticketing rate (Table 2). These findings suggest that the increased enforcement activity observed after about mid-2003 was greater than would be expected had trends seen prior to April 2003 continued. Although increases were found for both regions, the magnitude of the increase was greater for the NC than for the SI region by an average of about 5 tickets per 10,000 population (i.e., 34% higher). Tests were conducted to determine whether an abrupt or gradual permanent effect could be detected following the initial introduction of the NCSBI. For both regions, only the abrupt permanent change was statistically significant so, only these results are shown in Table 2.

**Table 2. Model statistics for seat belt violation ticketing rates (per 10,000 population) – by region**

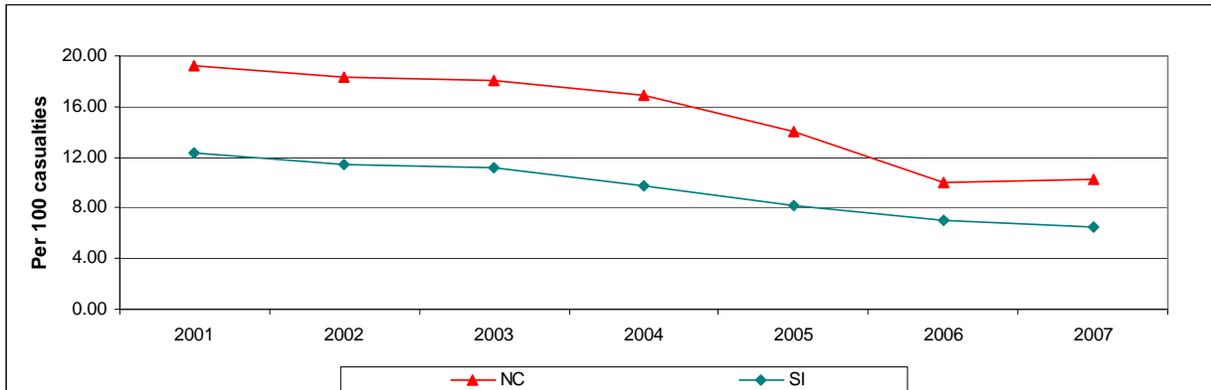
Region	Criterion	Input Parameter	Estimate	Standard Error	t Value	Approx Pr> t	Lag
NC	Ticket Rate	Mean	15.31	1.16	13.23	<.0001	0
		Autoregressive (local)	0.24	0.105	2.28	<.023	1
		Outlier (October 2004)	28.45	5.45	5.22	<.0001	0
		Outlier (April 2005)	33.88	5.48	6.18	<.0001	0
		Outlier (October 2005)	21.42	5.43	3.94	<.0001	0
		Shift (November 2007)	-19.08	4.50	-4.24	<.0001	0
		<b>NCSBI Start (April 2003)</b>	<b>17.86</b>	<b>1.52</b>	<b>11.77</b>	<b>&lt;0.0001</b>	0
Model: AR(1)							
SI	Ticket Rate	Mean	13.78	2.73	5.05	<.0001	0
		Autoregressive (local)	0.45	0.094	4.78	<.0001	1
		Autoregressive (seasonal)	0.48	0.095	5.01	<.0001	12
		Outlier (April 2002)	64.10	5.50	11.64	<.0001	
		Outlier (October 2004)	22.62	5.49	4.12	<.0001	0
		<b>NCSBI Start (April 2003)</b>	<b>13.29</b>	<b>3.06</b>	<b>4.34</b>	<b>&lt;0.0001</b>	0
		Model: AR(1)(12)					

### Behavioural Assessment

Figure 4 shows the annual percentage of unbelted individuals who were killed or injured in a police-reported crash in each of the NC and SI regions. Two observations are immediately apparent from these data: 1) the percentage of unbelted casualties is consistently lower in the SI than in the NC region and 2) most of the decline in the SI region occurred at a fairly steady rate of about 1% per year between mid-2001 and mid-2006 and showed little change in slope from mid-2003 to mid-2004. In contrast, for the NC region, the steepest rate of decline (about 3% per year compared to 1% per year prior to 2004) occurred between mid-2004 and mid-2006, or after the NCSBI had been in place for about a year. Comparisons of the mean percentages of unbelted casualties for the pre-2004 and post-2004 time periods revealed significant differences for both regions ( $P < 0.003$  and  $P < 0.004$ , NC and SI respectively). This timing coincides with the steepest increases in population seat belt wearing rates estimated from the observational surveys (Table 1) and provides supportive evidence that the increase in seat belt use in the NC associated with the introduction of the NCSBI may have contributed to the observed reduction in percentage of unbelted casualties. The percentage of seat belt use among fatally injured victims only follows a similar pattern to that of total casualties. Because fatal collisions are usually subject to more in-depth investigation the proportion of unknown belt use is smaller. These results are presented in Figure 5

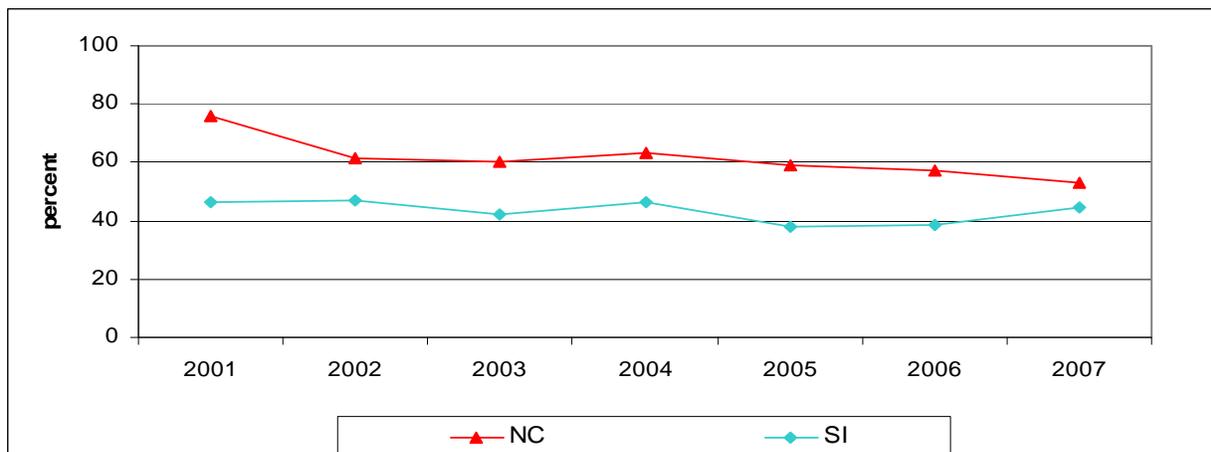
as corroborative evidence. ARIMA analyses of monthly data were not attempted due to the low monthly counts. Comparison of the mean percentages of unbelted fatalities for the period of mid-2001 to mid-2004 versus the mean for the period mid-2004 to mid-2007 revealed a marginally significant decline in the NC region ( $P < .11$ ) The lack of survey data for the SI region after 2003 precludes the drawing of any firmer conclusions about the relationships between seat belt use among collision casualties and the general population of vehicle occupants. But if the relationship is real, it suggests that population seat belt use in the SI may also have increased during the study period to something above the 82% level estimated in 2003. This does not diminish conclusions about the effectiveness of the NCSBI but suggests that the level of enforcement observed in the SI region may also have influenced seat belt wearing rates in that region.

**Figure 4. Annual\* percentages of unbelted motor vehicle occupants killed or injured in a police-reported collision**



*\*accumulated at June 30<sup>th</sup> each year*

**Figure 5. Annual\* percentages of unbelted motor vehicle occupants killed in a police-reported collision**



*\*accumulated at June 30<sup>th</sup> each year*

**Figure 6. Monthly percentages of unbelted motor vehicle occupants killed or injured in a police-reported collision**

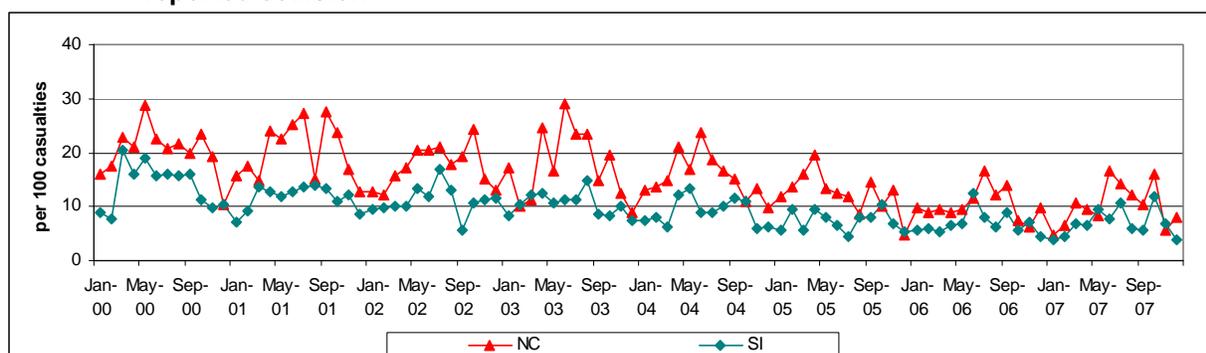


Figure 6 shows the percentage of unbelted casualties by month in each region and Table 3 shows the final models obtained from ARIMA modeling. After controlling for serial correlation in the data, significant decreases were found in both regions for the percentage of victims injured or killed in a crash who were not wearing a seat belt at the time of the collision. January 1, 2005 was used as the trigger point for testing the significance of the observed reductions as this is when casualties were expected to decline in the NC region based on the observed levels of seat belt use from survey data. The finding of a downward shift in the percentage unbelted in both the SI and NC regions corresponds with the trends observed in the annual data as well as in the results obtained in relation to enforcement activity in both regions. Once again, however, the effect in the SI region is of a somewhat smaller magnitude than the effect obtained in the NC region (3.9 percentage point reduction versus a 5.5 percentage point reduction, respectively).

**Table 3. Model statistics for percentage of casualties not wearing seat belt at time of crash) – by region**

Region	Criterion	Input Parameter	Estimate	Standard Error	t Value	Approx Pr> t	Lag
NC	% unbelted	Mean	17.63	1.13	15.60	<.0001	0
		Moving Average (local)	-0.45	0.10	-4.64	<.0001	2
		Autoregressive (seasonal)	0.50	0.09	5.34	<.0001	12
		<b>NCSBI (January 2005)</b>	-5.54	1.41	-3.93	<0.0001	0
Model: AR(1) <sub>12</sub> MA(1) <sub>2</sub>							
SI	% unbelted	Mean	10.70	0.55	19.62	<.0001	0
		Autoregressive (local)	0.45	0.09	4.72	<.0001	1
		Outlier (March 2000)	-5.82	2.09	-2.79	<.0053	0
		<b>NCSBI (January 2005)</b>	-3.89	0.86	-4.50	<b>&lt;0.0001</b>	0
Model: AR(1)							

An important final note about the analysis of unbelted crash victims is that no significant changes were observed between the pre- and post-NCSBI periods for the percentage of victims for whom seat belt

use status was unknown in the NC region ( $P < 0.034$ ) and only a marginal change was found for the SI region ( $P < 0.08$ ). This suggests that the trends observed in Figure 3 are not likely an artefact of trends in the number of people for whom police were unable to determine seat belt use.

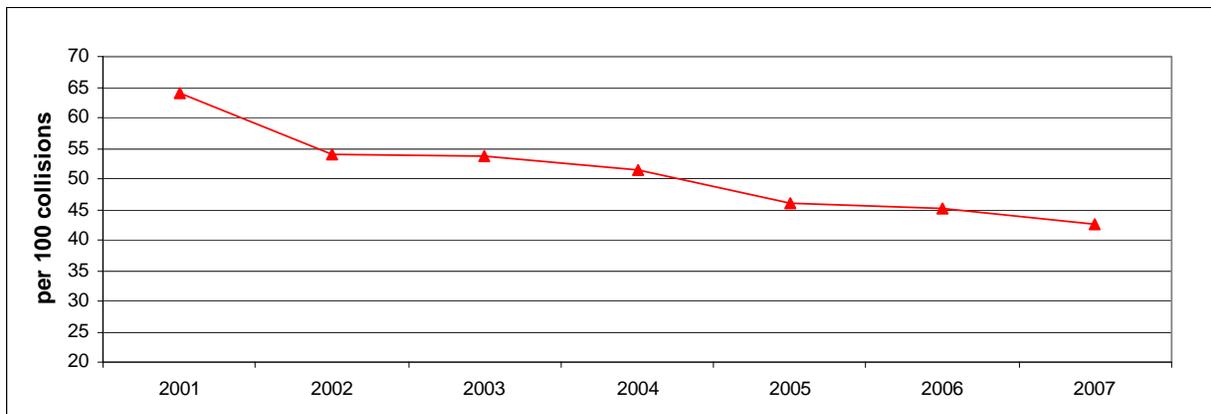
### Crash Outcomes

In this part of the study exploratory analyses were undertaken to investigate whether there was any evidence that the observed increases in seat belt use in the NC region were associated with reductions in the frequency of casualties from vehicle collisions. This analysis was conducted in two parts: 1) based on annual data and doing a comparison of average annual crash casualties before and after the NCSBI had been fully implemented (January 1, 2005); 2) based on monthly data and using intervention time series analysis to investigate whether the findings obtained using annual rates might be attributable to prior trends or serial correlations in the data.

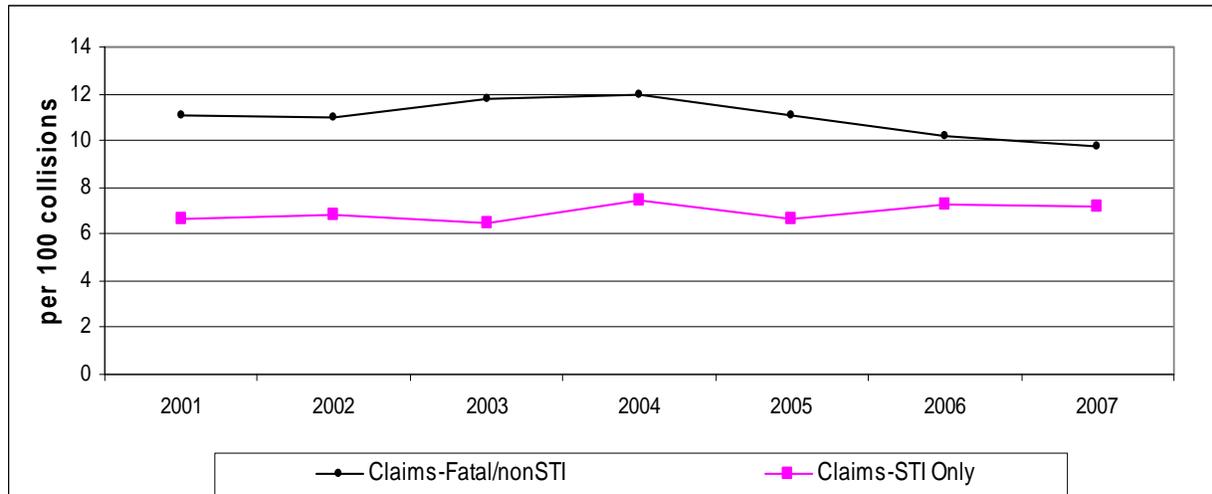
The SI region was not used as a comparison group for the assessment of crash impacts. Instead, claims-reported soft tissue only (STI) casualties were used as a comparison series. As noted previously, police-reported casualties and claims-reported fatal plus non-soft tissue injuries are expected to be more sensitive to changes in seat belt use than STI casualties.

Figure 7 shows the annual rate of casualties based on police-reported data and Figure 8 shows the annual rates for claims-reported fatal/non-STI and STI only casualties. To be consistent with the seat belt data summarized in the previous section, the rates shown in Figures 7 and 8 were computed using casualties accumulated by June 30<sup>th</sup> of each year.

**Figure 7. Annual casualty rates – Police-reported**

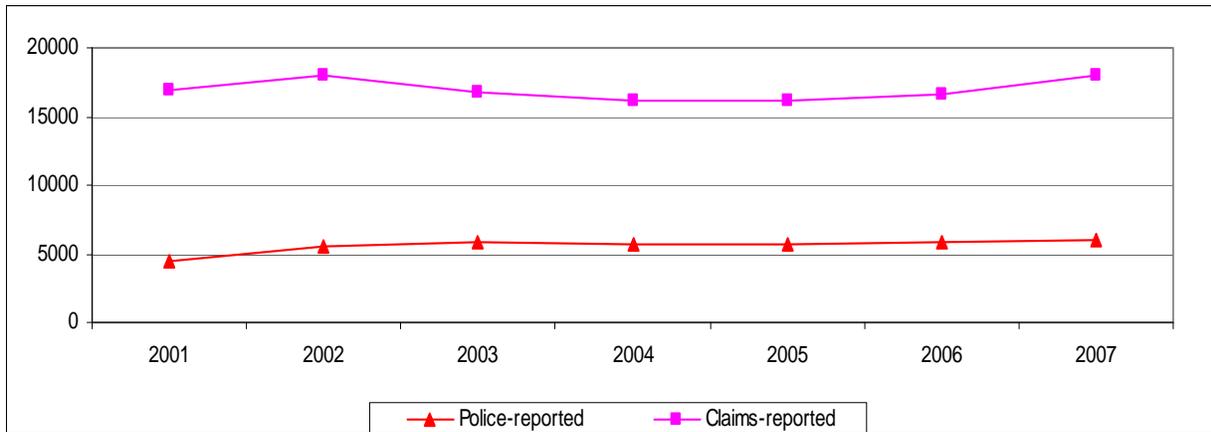


**Figure 8. Annual casualty rates by type – Claims-reported**

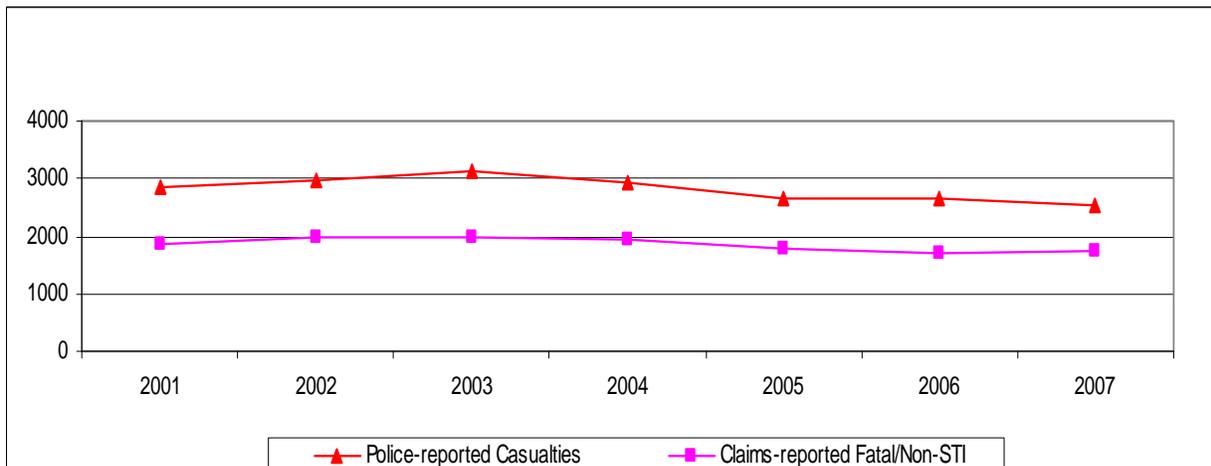


The rates shown in Figures 7 and 8 reveal declining trends for both the police-reported and claims-reported fatal plus non-STI casualties. In contrast, claims-reported STI rates are relatively flat from 2001 through 2007. In examining the rates in Figure 7, there appears to have been two downward shifts in police-reported casualties during the study period: one that began between 2001 and 2002 and another that began between 2004 and 2005. Claims-reported fatal plus non-STI casualties show a different pattern; increasing between 2001 and 2004 and then declining thereafter. There is no evidence of the substantial drop in casualties that was observed in the police-reported data between 2001 and 2002. To investigate the observed trends further, collisions counts (the rate denominators) for each type of crash were examined (Figure 9). Casualty counts (the rate numerators) are shown in Figure 10. The data in these figures suggest that what appears to have contributed to the high casualty rate in 2001, based on police data, may be the result of an under-reporting of non-casualty crashes during that period of time, rather than a higher than usual incidence of casualties. This could confound the analysis of the NCSBI intervention and, consequently, will be taken into consideration by using an indicator variable to identify what appears to have been a shift in police reporting practices. This correction will tend to minimize any crash rate reduction found for the NCSBI after 2004 and will consequently result in a more conservative estimate of the potential NCSBI effect.

**Figure 9. Annual police- and claims-reported collision counts**

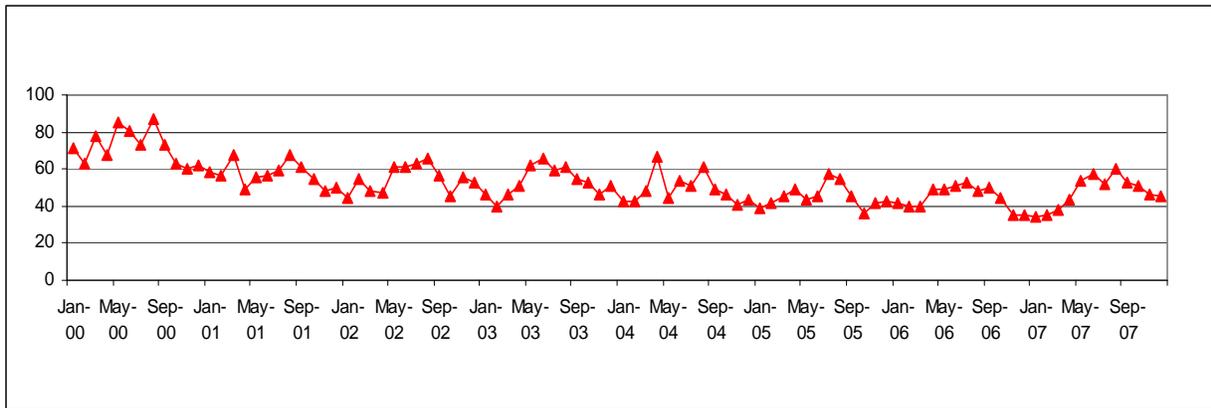


**Figure 10. Annual police-reported casualties and claims-reported fatal plus non-STI counts**

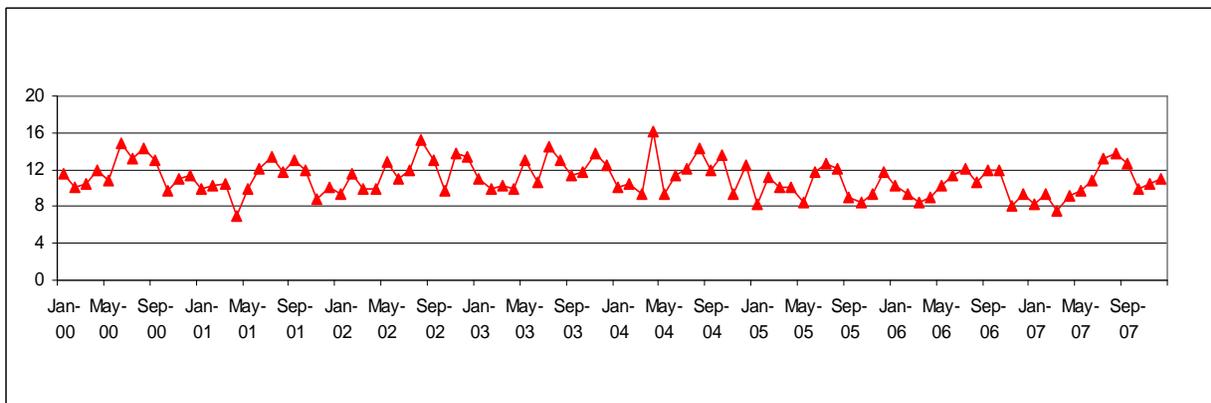


To test for the NCSBI effect monthly casualty rates (casualties per 100 collisions) were computed for the period January 1, 2000 through December 31, 2007 for each of the three categories of crash casualties and are shown in Figures 11, 12, and 13. Using ARIMA methods of time series analysis a dichotomous intervention variable was included to test for the NCSBI effect (separating the series into pre-NCSBI and post-NCSBI periods). For these analyses, as with the analysis of the unbelted casualties in the previous section, January 1, 2005 was used as the trigger point for testing the NCSBI effect. For the police-reported series, an additional indicator variable was included in each of the time series models in order to test for and, if required, take into account the apparent shift in police reporting practices that occurred between 2000 and 2002. January 1, 2001 was used to test for the significance of this factor.

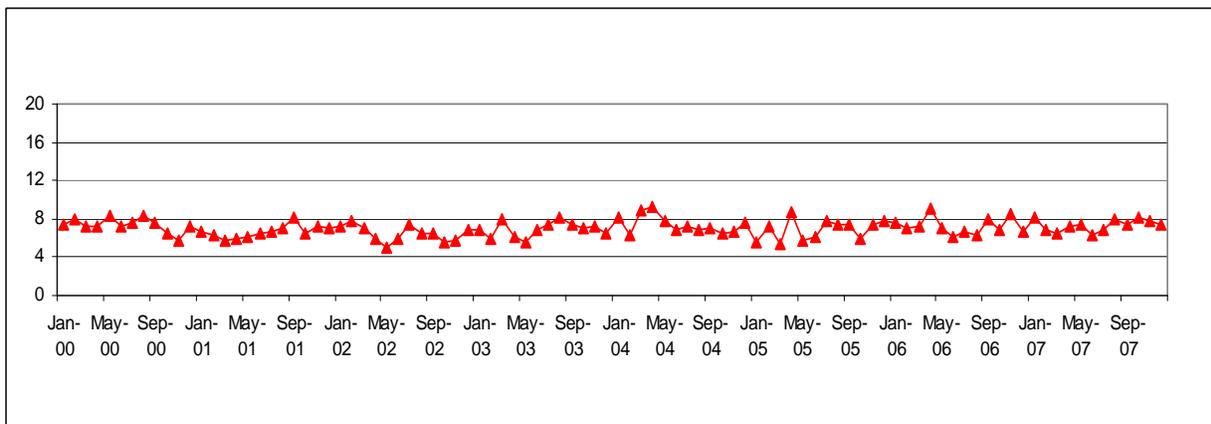
**Figure 11. Monthly casualty rates – Police-reported data**



**Figure 12. Monthly casualty rates – Claims-reported fatal and non-STI**



**Figure 13. Monthly casualty rates – Claims-reported STI only**



Inspection of Figures 11 through 13 reveals a slight downward trend from 2000 through 2007 for the police-reported casualty rates and the claims reported fatal plus non-STI casualty rates, but no such trend for the claims-reported STI only casualty rates. To take into account potential serial correlation in each of the data series, ARIMA models were developed and tested for each casualty outcome variable. The results obtained from the final models are shown in Tables 4, 5 and 6.

For the police-reported data (Table 4), the indicator variable included to account for the possibility of a change in police reporting between 2000 and 2002 was found to be statistically significant and was retained in the final model. After taking into account this factor, as well as local and seasonal autoregressive correlations in the data and an outlier that occurred in April 2004, a marginally significant downward shift was detected in association with the NCSBI; the monthly police-reported casualty rate declined by 5 casualties per 100 collisions ( $P < 0.10$ ). A significant reduction ( $P < 0.05$ ) was obtained for the claims-reported fatal plus non-STI casualty rate (Table 5) although the magnitude of the change was smaller (1.3 casualties per 100 collisions). On average, there were 437 police-reported collisions and 963 claims reported collisions in the NC region prior to the full implementation of the NCSBI. Therefore, the estimated effects suggest a reduction of about 22 police-reported casualties and 13 claims-reported STI casualties per month. No significant reductions were observed for the STI only casualties (Table 6).

**Table 4. Model statistics for police reported casualty rates (per 100 collisions)**

Criterion	Input Parameter	Estimate	Standard Error	t Value	Approx Pr> t	Lag
Casualties	Mean	68.40	2.94	23.24	<.0001	0
	Autoregressive (local)	0.43	0.096	4.44	<.0001	1
	Autoregressive (seasonal)	0.49	0.097	5.07	<.0001	12
	Reporting change (January 2001)	-15.34	2.89	-5.33	<.0001	0
	Outlier (April 2004)	18.67	4.72	3.96	<.0001	0
	<b>NCSBI (January 2005)</b>	<b>-5.04</b>	<b>2.75</b>	<b>-1.83</b>	<b>&lt;0.067</b>	<b>0</b>

Model: Seasonal AR(1)(1)<sub>12</sub>

**Table 5. Model statistics for Claims reported fatal plus non-STI casualty rates (per 100 collisions)**

Criterion	Input Parameter	Estimate	Standard Error	t Value	Approx Pr> t	Lag
Casualties	Mean	11.61	0.42	27.39	<.0001	0
	Autoregressive	0.30	0.09	3.13	<.002	1
	Autoregressive	0.31	0.10	3.02	<.003	11
	Outlier (April 2004)	5.40	1.43	3.79	<.0002	0
	<b>NCSBI (January 2005)</b>	<b>-1.30</b>	<b>0.57</b>	<b>-2.26</b>	<b>&lt;0.024</b>	<b>0</b>

Model: Additive AR(1,11)

**Table 6. Model statistics for Claims reported STI casualty rates (per 100 collisions)**

Criterion	Input Parameter	Estimate	Standard Error	t Value	Approx Pr> t	Lag
Casualties	Mean	6.95	0.11	62.41	<.0001	0
	<b>NCSBI (January 2005)</b>	<b>0.22</b>	<b>0.18</b>	<b>1.23</b>	<b>&lt;0.22</b>	<b>0</b>

Model ARIMA(0,0,0)

## DISCUSSION

This study explored relationships between the introduction of a regional initiative to increase seat belt use in the North Central region of British Columbia, seat belt wearing rates and collision casualties. The study design incorporated measures of program inputs, behavioural outputs and casualty outcomes and attempted to logically link the three levels of measurement. The findings strongly indicate that the initiative was effective: A change in police activity was evident from the substantial upward shift in the rate of ticketing for seat belt infractions starting in the early months of the initiative and continuing throughout the study period; non-use of seat belts by individuals injured or killed in crashes shifted downward after the program was fully implemented; two independent measures of casualties also declined significantly as observed seat belt wearing rates reported in surveys increased beyond 90%. As these declines were expressed as casualty rates, they cannot be explained by a general trend in collision frequencies. Furthermore, when casualties reported in the Claims system were disaggregated into those types most likely to be affected by seat belt wearing (those involving injury other than or in addition to soft tissue injury) and those less likely to be prevented by seat belt use (soft tissue injuries), only the former decreased following full implementation of the initiative.

One question raised by the findings is why a decline in casualties was not evident immediately following the initiation of increased police enforcement in 2003 despite the almost 10 percentage point increase in population wearing rate observed in that same year. One explanation, as noted in the introduction, is that the most risky drivers may be the last ones to buckle up in response to enforcement and related activities. Thus, as the seat belt use rate increases, the characteristics of the population of nonusers may also change. While this hypothesis has not been tested, it provides a plausible explanation for the lag in responsiveness to the initial increases in seat belt wearing and police enforcement observed in the data. It is also possible that in such a large and sparsely populated geographical region, where the incidence of casualty crashes each month is relatively low and variable, high levels of seat belt use have to be achieved before the effect on the casualty rate becomes large enough to be detected as statistically significant. It should also be noted that the sole output measure of the initiative is seat belt tickets issued. This measure does not adequately capture all the components of the initiative; furthermore the types of enforcement approaches may have changed over time. Interviews with a police representative suggest that

as the number of nonusers decreased, random spot checks became less productive in terms of tickets issued, so the police tried more innovative approaches, such as the use of unmarked vehicles, non-uniformed foot patrols, use of high powered binoculars on rural roads and others.

The NC region was compared to the SI region, as both experienced an increase in enforcement over the study time frame. Clearly the NC region faced greater challenges at the start of the study period with lower population seat belt wearing rates and a much higher proportion of unbelted occupants in fatal and injury collisions. These baseline differences may be at least partly explained by differences in geography and demographics between the two regions. The NC region has a much lower population density, a higher proportion of rural roads, which are mostly two-lane highways, and a younger driver population and a higher ratio of male drivers than the SI. Not surprisingly, a disproportionate share of the province's crash-related fatalities occurs in the NC region. Both regions achieved substantial reductions in the proportion of unbelted occupants killed or injured in collisions. The rate of decline was steeper in the NC region and the final rate achieved approached that found for the SI region.

The study demonstrates that a strong community initiative backed by support at the provincial level and aligned to a national strategy can be successful in a largely rural northern region despite the challenges of impacting seat belt use in such communities. The initiative included several elements, some formalized and some informal. While the essential elements cannot be isolated in this study, commitment by police at senior levels and the resulting increase in enforcement was very likely key. Incorporating targets into performance plans at all levels appears to have been a successful approach to achieving buy-in to the objectives. The regular scheduling of seat belt surveys also appears to have been an important element linked to the target setting. The survey results provided feedback on performance for police units and also identified areas requiring greater enforcement effort. They generated media coverage and engendered competition between communities. Interviews with key informants also indicated that stakeholder partnerships, particularly that between local RCMP and ICBC helped to identify problem areas, facilitated public awareness of occupant restraints and raised the profile of the issue and generally maintained the momentum of the initiative over a number of years. These informal aspects cannot be quantified but may have contributed to the success of the initiative.

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## APPENDIX 1 Select Regional Population and Driver Population Characteristics

Table A1 Regional population characteristics

	Population	Land Area km <sup>2</sup>	Population per km <sup>2</sup>	Aboriginal	%
NC	284,989	588,360.68	0.48	15.6%	
SI	655,114	211,177.33	3.10	5.8%	
BC	3,907,738	926,492.48	4.2	4.4%	

**Notes:** These two regions were approximated using BC health regions.  
Source of data is from Statistics Canada.

Table A2. Gender distribution of active licensed drivers by region in 2004

Region	Gender						Total
	Male	%	Female	%	Unknown	%	
FV	365,477	<b>51.3%</b>	346,044	<b>48.6%</b>	346	<b>0.0%</b>	711,867
GV	486,755	<b>52.2%</b>	445,125	<b>47.7%</b>	803	<b>0.1%</b>	932,683
NC	115,676	<b>53.0%</b>	102,314	<b>46.9%</b>	172	<b>0.1%</b>	218,162
SI	239,281	<b>51.0%</b>	229,551	<b>48.9%</b>	592	<b>0.1%</b>	469,424
VI	262,789	<b>50.5%</b>	256,989	<b>49.4%</b>	540	<b>0.1%</b>	520,318

**Notes:** These numbers were snapshot on Dec.31, 2004.  
Source of data: ICBC Business Information Warehouse

Table A3. Age distribution of active licensed drivers by region in 2004

Region	Number and % of active drivers by driver age group											
	16-20		21-29		30-49		50-69		70+		Unknown	Total
	count	%	count	%	count	%	count	%	70+	%	count	
FV	52,800	<b>7.4%</b>	107,717	<b>15.1%</b>	297,381	<b>41.8%</b>	196,612	<b>27.6%</b>	57,354	<b>8.1%</b>	3	711,867
GV	53,176	<b>5.7%</b>	149,492	<b>16.0%</b>	420,768	<b>45.1%</b>	245,926	<b>26.4%</b>	63,316	<b>6.8%</b>	5	932,683
NC	16,559	<b>7.6%</b>	30,100	<b>13.8%</b>	92,161	<b>42.2%</b>	65,691	<b>30.1%</b>	13,651	<b>6.3%</b>	0	218,162
SI	31,974	<b>6.8%</b>	54,530	<b>11.6%</b>	168,026	<b>35.8%</b>	156,360	<b>33.3%</b>	58,533	<b>12.5%</b>	1	469,424
VI	30,364	<b>5.8%</b>	63,341	<b>12.2%</b>	189,888	<b>36.5%</b>	173,554	<b>33.4%</b>	63,171	<b>12.1%</b>	0	520,318

**Notes:** These numbers were snapshot on Dec.31, 2004.  
Source of data: ICBC Business Information Warehouse

## **ATTACHMENT A-5**

# **MEASURING AND MONITORING CHANGES IN DRIVER ATTITUDES AND BEHAVIOURS (APRIL 2008)**



Performance Analysis Services

# Measuring and Monitoring Changes in Driver Attitudes and Behaviours:

*The Utility of the Readiness to Change Model for Evaluating ICBC  
Road Safety Public Education Campaigns*

***April 2008***

Prepared for: Laurie Baker  
Manager, Road Safety Performance Planning and Analysis

Contacts: Sandi Wiggins, Peter Cooper, John Vavrik

## **EXECUTIVE SUMMARY**

Road safety education programs are designed to increase people's awareness of risky driving behaviours, to increase drivers' recognition of their own unsafe driving habits, and to motivate drivers to change such behaviours in order to reduce their risk of crash involvement. Until recently, the primary focus of studies conducted to evaluate the effectiveness of such programs has been to track public awareness of and support for the types of issues and strategies addressed in the campaigns. But awareness of issues relating to risky driving behaviour does not necessarily translate into behaviour change. And in order to understand the effect that road safety educational campaigns have on behaviour a different method of measuring program effectiveness is required.

The Transtheoretical Model of Change (TMC) was developed to assist clinicians in designing effective interventions for motivating health behaviour change. Central to the TMC, is the idea that individuals do not suddenly adopt new habits but instead pass through five stages of change: Pre Contemplation, Contemplation, Preparation, Action and Maintenance. The stages are hierarchical and reflect an increase in readiness to change: from being unaware of any need to change, through to performing the new behaviour consistently enough for it to become habitual. Although presented in a linear fashion, transitions between stages can go both forward and backwards (eg. A smoker who quits and restarts), and may take many restarts before the desired behavioural outcome is achieved. Clinicians dealing with behaviours such as drug addiction, or smoking, use information based on the TMC not only to understand where in the change process a particular individual might be, but also to design and implement appropriate intervention strategies.

The present study was designed as a follow-up to a preliminary study undertaken in 2006 (Wiggins, Vavrik, & Cooper, 2007) to develop methods for assessing change in risky driver behaviour, at the population level, based on the concepts of the TMC. Using data collected in four waves in 2006, the results of the preliminary study suggested that two measurement tools be developed: 1) a Readiness to Change for General Driving (RTCGD) scale and 2) a Stage of Change classification process for targeted driver behaviours. The current study was undertaken to cross-validate the findings of the earlier study using new data collected in 2007.

One issue identified as a limitation of the 2006 study was the lack of repeated measurements taken from the same individuals. This made it impossible to investigate whether the RTCGD and SOC

measures would be able to detect transitional changes over time, an important aspect of the TMC and one that is not directly testable with cross-sectional data. Consequently, to address this limitation, the current study was designed to include a subset of drivers who completed the survey on two occasions: once in 2006 and once in 2007. Change over time on the RTCGD and SOC measures was explored using both the cross-sectional and the repeated measures data.

The results of the current study confirmed the findings of the preliminary study for the production of an 11-item RTCGD scale and four SOC processes (one for each of the targeted driver behaviours – seat belt use, drink driving, aggressive driving, and speeding). In general, both measures were found to have reasonable validity and reliability. However, some inconsistent results suggested that more work is needed to clarify and refine the items, criteria, and definitions used in the construction of the Pre-Contemplation and Contemplation SOCs. As well, a lack of clarity in the operational definitions of the targeted risky driving behaviours may limit the usefulness of the SOC measurement process. These definitions need to be reviewed and revised so that the items used in their translation can better differentiate between drivers who do or do not engage in a particular behaviour. Key to the assessment of behaviour change is a clear understanding of the desired behavioural outcome.

During the conduct of this study, many participants criticized the length of the survey. The RTCGD and SOC items comprise a relatively small subset of the entire questionnaire. Nonetheless, in an effort to shorten the survey and improve its acceptability to future participants, two reduced versions of the RTCGD were tested: a 6-item scale and a 4-item scale. The items from the 11-item scale that were dropped in the formation of the two shorter versions were identified through standard item analysis procedures. The results indicated that all three scales had similar psychometric properties, were highly intercorrelated, and produced very similar results when their mean scores were compared across different data sets. This suggests a considerable degree of item redundancy among the 11 items developed for the scale and, consequently, no need to use the longer versions in future studies. However, given that the original items were not developed to measure the RTCGD construct specifically (the items were extracted through factor analysis and the construct named after the fact), it would be worthwhile to review the composition of the RTCGD and determine whether any further item changes need to be made to more fully define and represent the general readiness to change concept. Currently, even after removing seven items, the RTCGD scale has characteristics that suggest there may still be item redundancy.

When RTCGD scores and SOC classifications were compared across the seven waves of data collected in 2006 and 2007, several small but statistically significant changes were detected. Differences in the characteristics (eg. age, gender, and region of residence) of the participants in the seven surveys were investigated to determine to what extent these differences might explain the changes observed in the RTCGD scores and SOC classifications. The results indicated that the observed changes in RTCGD scores and SOC assignments over the seven samples were attenuated but not eliminated after adjustment for these potential confounders.. Further research will be required to ascertain whether the remaining effects can be linked to road safety education programs, but the results of this study are certainly encouraging. The RTCGD and SOC measurement tools clearly provide a promising approach for evaluating the effectiveness of road safety education.

Although factors such as the age, gender and region of residence of the driver samples were not confounding issues for the repeated measures component of the study, interesting differences between subgroups of participants may be missed if only aggregate scores and classifications are compared across the two repetitions of the survey. In this study, for example, it was found that female drivers scored lower on the RTCGD than male drivers, and transitioned to a different SOC somewhat less than their male counterparts. It was also found, however, that females tended to start out higher in the SOC behavioural hierarchy. Their apparent lack of change or readiness to change may, therefore, simply reflect the fact that they are less likely to engage in risky behaviours and, consequently, are less in need of making changes than males. Information concerning the readiness to change or current stage of stage of specific driver subgroups may prove helpful in designing targeted road safety education campaigns.

The results of this study suggest that the TMC framework, the RTCGD scale, and the SOC classification process do provide a practical and potentially useful way to conceptualize and measure attitude and behaviour change among drivers in the BC population. Further work is required to enhance the operationalization of the behaviours and constructs that the RTCGD and SOC are designed to assess, and to investigate the sensitivity of the measures for the detection of changes related to specific road safety education campaigns. To accomplish the latter, measures of road safety educational activity will also need to be developed and implemented. Once the operational definitions and RTC items have been reviewed and revised, it may also be possible to explore the relative merits of combining the two separate measurement processes into a single but multi-dimensional measurement method.

## **INTRODUCTION AND BACKGROUND**

In 2006, the Insurance Corporation of British Columbia (ICBC) conducted four on-line surveys with participants from around the Province. One of the objectives of the survey was to conduct a preliminary assessment of the psychometric properties of a newly developed 29-item "Readiness to Change" (RTC) questionnaire. The questionnaire items had been developed in an attempt to measure the BC driver population's readiness to change their unsafe driver behaviours, both in a general sense (13 items) and in relation to four targeted behaviours: seat belt wearing (4 items), drink driving (4 items), aggressive driving (4 items) and speeding (4 items).

The Transtheoretical Model of Change (TMC; Velicer, Prochaska, Fava, Norman & Redding, 1998) provided the theoretical context for the development of the ICBC RTC questionnaire (Wiggins, Vavrik, and Cooper, 2007). The TMC is one of the most comprehensive and widely used models for understanding behaviour change in individuals. It is being investigated here for use as a potential framework for the evaluation of ICBC's road safety programs. It represents an innovative approach in road safety evaluation. Whereas previous studies have considered knowledge or attitude changes as endpoints or outcomes in themselves, which may or may not result in behaviour change, the current approach identifies certain changes as indicative of movement along a continuum towards a desired behaviour. In this way, road safety programs may be monitored for their impacts on individuals within specific stages and, ultimately, for their value in promoting change in road safety habits.

A key organizing construct of the TMC is the "Stages of Change" (SOC) in which receptiveness to change is conceptualized as a process occurring in five stages: *Precontemplation, Contemplation, Preparation, Action, and Maintenance*. Central to the TMC is the idea that individuals do not suddenly adopt new habits but instead pass through these five stages of change. The stages are hierarchical and reflect an increase in receptiveness to change. In the first, *Precontemplative* stage, individuals are not sufficiently aware of the implications of their actions, and so are not even thinking of changing their behaviour. In the second stage labeled *Contemplation*, individuals are aware that a problem exists, re-evaluate their own behaviours and feelings, and start to think seriously about changing their behaviour. The *Preparation* stage is characterized by an orientation towards the desired behaviour, forming an intention to change, and preparing their social world and self by, for example, declaring intentions or purchasing equipment. Although some behaviour change may be tried, attempts are inconsistent. When individuals successfully and consistently perform the behaviour in question, they are regarded

as being in the *Action* stage. After 6 months of consistent behaviour, the individual progresses to the *Maintenance* stage. Transitions between the stages depend on the *decisional balances* concerning the individual's assessment of pros and cons of performing the desired action, as well as the individual's feelings of confidence in their ability (*self-efficacy*) to perform the behaviour.

A psychometric assessment of the 29-item RTC questionnaire developed for the 2006 surveys was completed in 2007 (Wiggins, Vavrik, Cooper, 2007). Factor analysis and item-analysis suggested that some of the questionnaire items be used to create a "Readiness to Change for General Driving" (RTCGD) scale and the rest be used in constructing a Stage of Change (SOC) categorization algorithm for each of the targeted driver behaviours (seat belt wearing, drink driving, aggressive driving, and speeding). Two versions of the RTCGD scale were produced: an 11-item RTCGD and a shorter 6-item version. The SOC algorithms used each of the 4 behaviour-specific items from the RTC questionnaire and each respondent's self-reported level of engagement in each of the targeted behaviours to allocate them to one of four stages of change (SOC): Pre-Contemplation (SOC\_PC), Contemplation (SOC\_C), Change Engaged (SOC\_CE) or Maintenance (SOC\_M) for that behaviour. The SOC\_CE represented an aggregation of items initially designed to assess the Preparation and Action stages of change proposed within the TMC framework. The psychometric assessment of the specific behaviour items did not, however, support the separation of items into these two categories. Consequently, they were collapsed into the broader "Change Engaged" category. Both of the RTCGD subscales (long- and short-form) were found to have high internal consistency (Cronbach's alpha > 0.89 for both forms) and the categorization algorithms were shown to have some construct validity.

A comparison of mean scores obtained on the RTCGD in each of the four waves of the 2006, and the percentages of drivers allocated to each of the behaviour-specific SOC categories, indicated that both measurement processes might be useful tools for monitoring attitudinal and behavioural shifts in the BC driver population. The focus of the initial study, however, was developmental, and limited. The data were used to construct the RTCGD scale and to create the SOC allocation process. Models developed using a particular set of data will usually fit those data better than they will a new set of data. Cross-validation of the results based on new data is needed to confirm the reliability and validity of the measures. In addition, the initial study did not include respondents who completed the questionnaire more than once. As a result, it was not possible to investigate the stability of the measures or their sensitivity in detecting transitional changes over time.

The present study was undertaken as a follow-up to the initial study. It was conducted primarily to cross-validate the reliability and validity results obtained in the development of the RTCGD and SOC measurement processes, and to explore in more detail the potential effects of reducing the number of items included in the RTCGD. Over the past two years, the length of the questionnaire has received a number of negative comments from survey panellists. Consequently, reducing the number of items in the RTCGD would be one way to improve its acceptability. Finally, the study was also undertaken to begin exploring the ability of both the RTCGD and SOC measurement tools to detect changes in the attitudes and self-reported efforts at behaviour change among cross-sections of the general driver population, and to investigate transitional changes over time in the same individuals.

## **METHODS**

### **Study Design**

As described in the preliminary report (Wiggins, et al., 2007), the original study was conducted using an internet online survey panel developed and managed by Ipsos Reid Public Affairs an external firm contracted by ICBC to conduct the research on its behalf. To become a member of the online panel, individuals had to be 18 years of age or older. To include 16 and 17 year olds in the survey sample, panellists with a child in this age bracket were asked if they would permit their child to respond to the survey instead of themselves. The survey was conducted four times in 2006: in February, April, June and September, and each survey was completed by new respondents.

Similar procedures were used in the conduct of the surveys for the present study, and they were managed by the same external research firm. However, in 2007, the survey was administered three times (in July, September and November) and the samples consisted of a mixture of new respondents and repeat respondents. Repeaters in the July 2007 (wave 5) survey were recruited from the February 2006 (Wave 1) survey, those in the September 2007 (wave 6) survey were recruited from the April and June 2006 (waves 2 and 3) survey, and those in the November 2007 (wave 7) survey were recruited from the September 2006 (wave 4) survey. Unfortunately, only a small number of repeaters were included in the September 2007 (wave 6) survey, and the few that agreed to complete the survey a second time had different original survey dates (i.e., wave 2 or 3). Consequently, the second sets of data collected from these individuals were not included in the current study. Only the data collected in the July 2007 (wave 5) and November 2007 (wave 7) were used. And they were used

only to explore transitional changes in the same individuals; they were not used in the psychometric assessments of the survey nor were they included in analyses designed to explore cross-sectional trends across all seven survey waves.

## **The Survey Questionnaire**

The questionnaire consists of a large number of items including: items used to collect general demographic data and information about current driver beliefs and behaviours, items designed to measure drivers' readiness to think about or to change their general driving behaviour, and items used to assess drivers' readiness to change with respect to four targeted driving behaviours (seat belt use, drink driving, aggressive driving, and speeding). In addition, questions concerning recall and awareness of road safety education and advertising campaigns and slogans were included. Except for items relating to specific road safety slogans, the same items were included in all seven survey waves.

Whether or not respondents were engaging in each of the target behaviours at the time of each survey was assessed using the operational definitions detailed in the preliminary report and provided in Appendix A. Briefly, for seat belt wearing, respondents were classified according to whether or not they said they always (100% of the time) wore their seat belt. For drink driving and aggressive driving, drivers were categorized as "likely to be" engaging in the behaviour, or as "not likely" to be engaging in the behaviour. Several items defining drink driving and aggressive driving were used to assign the likelihood of engaging in each of the behaviours (see Appendix A for details). For speeding, drivers who typically drove less than 10 kilometres per hour below the posted speed limit and who had received no speeding tickets in the six months prior to their survey date were classified as "non-speeders". "Speeders were those who had received at least 1 speeding ticket or typically drove 10 or more kilometres per hour above the speed limit For all of the behaviours, drivers who failed to provide enough information to be categorized appropriately (because they didn't respond or else responded "I don't know" to the item(s) used in the definition) were classified as "Unknown".

## **Statistical Analysis**

To determine whether the wave 5, 6, and 7 data would produce similar driver readiness and stages of change measures to those developed previously, the full 29-item RTC questionnaire was once again assessed using Factor Analysis with principal axis factoring (PAF). Scree plots were generated to visually examine eigenvalues. Scree tests as well as with the number of items loading on each factor were used to determine the

number of factors to retain in the final solution (Kellow, 2006). Factors with fewer than three items were not retained (Costello and Osborne, 2005). To assess the inclusion of items on factors, factor loadings of greater than 0.40 were used as the criterion for retention. Cross loading of items on factors was also assessed using the 0.40 criterion (items that cross-loaded on more than one item were dropped). Both Varimax and oblique (Promax) rotations were used to evaluate cross loadings, and a final solution was determined. Factors were then content analysed for interpretability. Item scores were summed to obtain a total score across all items that loaded on the factor. Each item was then analysed for its contribution to the total score, the item-total correlations that would be obtained when selected items were deleted were examined, and for each combination of items examined, Cronbach's alpha was computed to assess the internal consistency of the resultant scale. In line with common practice in social science research, a criterion of greater than 0.70 was used to assess the acceptability of the alpha coefficient (Nunnally, 1978 in Burns, 1993).

To test for mean differences between the drivers in each of the seven independent surveys, ANOVA procedures were used. When statistically significant results were obtained, using global ANOVA, post hoc t-tests were conducted using Bonferroni-adjusted pairwise comparisons. Multifactor ANOVA was used to test for mean differences when more than one independent variable was included in the analysis. These analyses were used for testing differences between the seven study groups on the scale scores developed to assess general readiness to drive.

The scoring algorithm developed to classify drivers into a stage of change for each of the four target behaviours resulted in a hierarchical ranking of participants. Consequently, the form of the outcome variable for this part of the study was ordinal and discrete. Multidimensional categorical analyses procedures were used (Stokes, Davis, and Koch, 2000; Allison, 1999) to compare drivers across the seven survey waves and to control for the effects of potentially confounding factors. Due to the ordinal nature of the stage of change variables, cumulative logit analyses were used. These analyses take into account the increasing hierarchy of the outcome data and provide a method for assessing upward or downward shifts across the seven sample waves. If significant results were not obtained using this approach, an additional series of exploratory analyses were undertaken to investigate relationships further. For these analyses, a series of binary logit models were fitted to aggregated stage of change groups: the Maintenance group versus all others, the Maintenance and Change Engaged group versus the Contemplation and Pre-Contemplation group, and the Maintenance, Change Engaged and Contemplation group versus the Pre-Contemplation group. The cumulative logit model is designed to average

out the effects of the explanatory variables that would be obtained by using the underlying binary logit models. It assumes that the effects of the explanatory variables will be the same regardless of how the categories of the dependent variable are dichotomized. If the proportionality assumption for the cumulative logit model is not met, however, effects may be missed. The Score test which is used to determine proportionality could not be used reliably in this study due to the number of cells with small or zero counts. Such data tends to artificially inflate the Score test statistic rendering it difficult to interpret.

To test for mean differences on quantitative variables for repeat responders, paired t-tests were used and comparisons of categorical variables at each of the two completion times were evaluated using McNemar-Bowker tests. The McNemar-Bowker test is used to test for symmetry around the diagonal of a matched pairs crosstabulation table. In the present case, it tests whether there are more upward or downward transitions in SOC's from the first to second repetitions of the survey than would be expected by chance. Statistical significance was evaluated using  $P < 0.05$  as the criterion for all individual tests (eg. Chi Square, ANOVA, t-tests) and for families of pairwise comparisons. For some of the exploratory analyses, findings of interest were also noted if they were found to be marginally significant ( $0.10 < P < 0.05$ ). Analyses were conducted using SPSS 15.0 (Release 15.0.1) for Windows (2006), and SAS Version 9.1 (2002-2003).

## **RESULTS**

The results of the study are reported in three parts. Part 1 summarizes the findings from the psychometric reassessment of the RTC questionnaire. Part 2 presents the findings from cross-sectional comparisons of readiness to change and stages of change of new respondents across the seven survey waves. Part 3 describes the findings from analyses undertaken to explore transitional changes over time for drivers who completed the survey twice: those who completed the survey in wave 1 (February 2006) and wave 5 (July 2007) and those who completed the survey in wave 4 (September 2006) and wave 7 (November 2007).

### **Part 1 – Psychometric Re-assessment**

#### **Sample Characteristics**

A total of 11,551 surveys were completed during the seven waves of data collection undertaken in 2006 (four waves: 1-4) and 2007 (three waves: 5-7). Of the respondents who completed the survey in waves 5 (n=1,651), 6 (n=986) and 7 (n=1,525), 50% (n=825) in wave 5 had also completed the survey in wave 1, 28% (n=274) in wave 6 had also completed the survey in wave 2 or 3, and 25% (n=378) in wave 7 had also completed

the survey in wave 4. The second sets of surveys completed by these individuals were excluded from the psychometric analysis of waves 5, 6 and 7. This resulted in samples of 826, 712, and 1,147 for each of the waves, respectively. As in the 2006 analysis of waves 1 through 4, respondents who reported driving zero hours in a typical week were also excluded. After this exclusion, the final samples for waves 5, 6, and 7 consisted of 792, 680, and 1,104 drivers.

### **Readiness to Change Questionnaire**

The factor analysis of the 29-item RTC scale using the data collected in waves 5, 6, and 7 produced results very similar to the results obtained in the 2006 analysis of the first four waves of data. As it did then, the factor analysis of the 2007 data extracted the RTCGD as the first and only meaningful factor. For ease of comparison, the extraction results are summarized for all seven waves in Table 1. As can be seen, the same 11-items extracted in waves 1 through 4 for the RTCGD factor were extracted in waves 5 through 7, and they similarly accounted for about 30% of the factor's variability. In wave 6, however, one additional item (*"Compared to 6 months ago, I don't feel quite the same way about frequently changing lanes or driving closely behind slower drivers to make them move over"*) also loaded on the RTCGD factor. The factor loading for this item was only just above the inclusion criterion of 0.40, however, and likely reflects simple random variation in the data. Consequently, it was not added as a new item in the RTCGD scale.

Items that did not load onto the RTCGD factor were distributed between two other factors; the same two factors identified with the 2006 data. Thus, as in that earlier analysis, the second factor included behaviour-specific items that were written to capture aspects of both the Preparation and Action stages of change proposed by the TMC and was labelled the "Change Engaged" factor. The third factor contained items reflecting "Contemplation" of changes in seat belt wearing and drink driving. Moreover, and in contrast to the 2006 analysis, items that reflected "Contemplation" of changes for aggressive driving and speeding did not load together in this analysis at all, even after removal of seat belt and drink driving items. The loading of items about different driver behaviours onto the same factors, and the inconsistency in the loading of the aggressive driving and speeding items across the waves of data limited the interpretability and potential usefulness of any "Change Engaged" or "Contemplation" subscales that might be developed based on the results of the factor analysis. Instead, the results were interpreted as justification for continued use of the "Stages of Change" (SOC) classification process developed for these items in 2006. Only the 11 items that loaded onto the "RTCGD" factor were examined further for their potential usefulness as a quantitative scale.

**Table 1. Waves 1- Wave 7 – Factor 1 – Readiness to Change General Driving Behaviours**

<b>Principal Axis Factoring with Promax Rotation: Pattern Matrix:</b>							
<b>Factor 1 Items: Q11_</b>	<b>Wave 1</b>	<b>Wave 2</b>	<b>Wave 3</b>	<b>Wave 4</b>	<b>Wave 5</b>	<b>Wave 6</b>	<b>Wave 7</b>
1. There is nothing about my driving I need to change	-0.692	-0.678	-0.821	-0.744	-0.741	-0.727	-0.771
2. I don't need to change my driving habits. I am not the problem.	-0.606	-0.561	-0.623	-0.681	-0.605	-0.678	-0.650
3. The way I feel about my driving has not changed at all in the last 6 months	-0.791	-0.756	-0.881	-0.778	-0.843	-0.802	-0.838
*4. Compared to 6 months ago, I don't feel quite the same way about frequently changing lanes or driving closely behind slower drivers to make them move over.	-	-	-	-	-	0.412	-
12. I've thought about changing some of my driving habits	0.738	0.736	0.736	0.707	0.809	0.783	0.706
13. The way I currently drive is exactly the same as it was 6 months ago	-0.800	-0.808	-0.879	-0.827	-0.879	-0.832	-0.856
14. I can recall at least one occasion in the last month when I tried to change how I drive	0.776	0.757	0.740	0.742	0.773	0.814	0.790
15. I can recall at least one occasion in the last month when I tried to drive differently from the way I usually do	0.760	0.748	0.702	0.733	0.762	0.766	0.741
16. I've noticed that my attitude toward my own driving has changed over the last 6 months or so	0.713	0.743	0.635	0.733	0.734	0.715	0.686
21. During the past 6 months I have made some real changes in the way I drive	0.748	0.764	0.617	0.735	0.757	0.786	0.683
22. I noticed some change in my driving habits within the last 6 months or so	0.777	0.753	0.722	0.782	0.820	0.838	0.741
28. I've made a permanent change in some of my driving habits	0.554	0.588	0.433	0.551	0.660	0.584	0.535
Factor items % Variance (approximate)	30%	29%	32%	30%	32%	31%	30%
Cronbach's Alpha for factor	0.925	0.920	0.928	0.925	0.932	0.929*	0.921

\*Item 4 loaded on Factor 1 in Wave 6 only. Only the items that consistently loaded on Factor 1 across all 7 waves were included in the computation of Cronbach's Alpha.

**Reliability of the RTCGD.** Using only the 11 original RTCGD items, Cronbach's Alpha, which measures the reliability (internal consistency) of subscale items, was computed for the RTCGD. As shown in Table 1, Alpha coefficients were strong and consistent across all seven waves. In fact, across all waves, the RTCGD subscale was found to have very high internal consistency (Alpha >0.90) suggesting the likelihood of substantial item redundancy. This was noted in the preliminary report and item-analyses conducted at that time indicated that the 11 item scale could be reduced to 6 items (to items q11\_12, 13, 14, 16, 21, and 28 – Table 1) before there was a reduction below 0.90 in the internal consistency coefficient (from 0.92 to 0.89). Similar item-analyses conducted with the wave 5, 6, and 7 data confirmed the selection of items to retain in the 6-item scale. However, based on the use of this reduced set items, the recalculated Alpha coefficients for waves 5, 6, and 7 were 0.91, 0.89, and 0.89, respectively. Although lower than the coefficients obtained using all 11-items in the scale, results of this magnitude suggest that even further item reductions may be possible. Removal of two more items (items q11\_13 and q11\_28) dropped the Alpha coefficients to about 0.87-0.89 across all waves. Given that the magnitude of Cronbach's alpha is determined in part by the number of items in the scale (alpha increases as the number of items increases) such a small reduction in the coefficient, even after reducing the subscale by almost two thirds, suggests that many of the original items were adding little to the assessment of the RTCGD construct and could be deleted. It also suggests that operational definition of the RTCGD construct extracted in the analysis of the RTC may need to be revised. The construct now being measured is no longer quite the same as the construct that guided the original development of the questionnaire items. Consequently it may be desirable to replace at least some of the original items with new items that will help to capture more fully the levels of the RTCGD construct that has emerged from the analysis (Burns & Grove, 1993).

**Scoring of the RTCGD items.** Each respondent was given an RTCGD scores based on: 1) the full 11-item scale, 2) the reduced 6-item scale, and 3) the further reduced 4-item scale. In all three cases, individual scale scores were obtained by summing across the items and dividing by the number of items. To ensure consistency in the direction of scoring, and to have high scores reflect high engagement in the change process, items q11\_12, q11\_14, q11\_15, q11\_16, q11\_21, q11\_22, and q11\_28 (Table 1) were reverse coded prior to summation. Total scores ranged from 1 (indicating no recognition of any need to

change) to 4 (indicating high engagement in the change process). Items q11\_1, 2, 3, 15, 22 were dropped in the construction of RTCGD\_6 and two additional items (q11\_13 and q11\_28) were dropped in the construction of RTCGD\_4.

**Validity of RTCGD.** Validity refers to the accuracy with which a concept or construct has been operationalized (Trochim, 2006). In the present case, it refers to the extent to which the items in the RTCGD provide an accurate translation of the construct they purport to measure. Regardless of which version of the RTCGD is used, the included items do appear to have *face*<sup>1</sup> validity for the 'readiness to change' construct. However, as noted in the reliability section above, the items included in the 29-item RTC were not developed specifically as a translation of a general driving readiness to change construct. The construct emerged and was labelled as a result of factor analysis. Additional work may now be needed to add new items that can measure the identified construct with more depth and richness.

Although the items in the scale appear to have face validity, this is a weak indicator of construct validity. To explore the validity of the scale a little more fully, a comparison of scale scores was made to the results of an automatic sorting process that was built into the survey to identify respondents who had been thinking about or attempting to change their behaviour and those who had not. Although the sorting process did not permit an examination of whether drivers would agree with how they had been sorted if the process indicated no changes had been made, it did provide an opportunity to at least explore whether scores on the RTCGD would align as expected for drivers that, when asked, either confirmed or denied they had been engaged in thinking about or changing their driving behaviour (a form of convergent validity). Thus, if the RTCGD is truly measuring a 'readiness to change' construct, then drivers who agreed that they were making changes would be expected to score higher on the scale than drivers who denied that they had been making any changes. Drivers who were automatically sorted into the 'no changes made' group would also be expected to score lower on the RTCGD than the "confirmed change" group. However, since this group was not given an opportunity to confirm or deny that they had made no changes, their RTCGD scores could be confounded.

Of the 7,350 drivers from waves 1 through 7 who completed the RTCGD\_11, 2,779 (27.8%) were identified by the automatic sorting process as having made no changes in their thinking about their driving

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<sup>1</sup> Face validity is a type of content validity that is based on a subjective assessment that the items included in the scale appear to provide a good translation of the construct.

or in their driving behaviour. The remaining drivers (4,571 or 62.2%) were identified as having made some kind of a change in their thinking or behaviour. Of this latter group, 696 (15.2%) disagreed with the sorting process and denied having made any changes. A comparison of the RTCGD mean scores for the drivers in the 'made a change' group with those who denied their placement in the 'made a change' group and with those who were automatically sorted into the 'no change' group indicated that their scores did differ in the expected direction ( $p < 0.05$ , Bonferroni-adjusted). The mean score for the 'made a change' group was 2.65, for those who denied making a change it was 1.90, and for the group who were automatically selected into the 'no change' group it was 1.63. Moreover, the mean scores for both of the 'no change' groups fell well below the scale midpoint of 2.5, indicating low to no readiness to change. In contrast, the 'made a change' group's score was above 2.5, indicating greater readiness to change. As noted above, however, although the automatically sorted 'no change' group had lower RTCGD scores than either of the other two groups, these respondents were not given an opportunity to confirm or deny their placement into that group. Consequently, although the validity of the RTCGD may be suggestive for this group, it has not been truly tested. Very similar results were obtained whether the RTCGD\_11, RTCGD\_6, or RTCGD\_4 versions of the scale were used in the analysis.

### **Stages of Change (SOC) for Targeted Behaviours**

**Behaviour-specific SOC Categorization.** As a result of the analyses undertaken with waves 1 through 4, and again with waves 5 through 7, measurement scales were not developed to assess readiness to change for the targeted behaviours across all drivers. Instead, the scoring of the behaviour-specific SOC items was done using only those drivers who, by self-report, were at least likely to be engaging in the targeted behaviours at the time of the survey. Drivers who were classified as not engaging in, or not likely engaging in (see Appendix A for a detailed description of the classification process), the problem behaviours were classified *a priori* as being in the "Maintenance" stage of change; the remaining drivers were allocated to "Change Engaged", "Contemplation", or Pre-Contemplation" stages of change using the seat belt (SB), drink driving (DD), speeding (SP) and aggressive driving (AD) items included in the RTC questionnaire. Two items assessing contemplation of changes for each behaviour and two items assessing current engagement in changes were used to sort drivers into the "Contemplation" or "Change Engaged" SOC. The two "Contemplation" items took the form of "Compared to six months ago, I don't feel quite the same way about..." and "I'm starting to weigh some of the pros and cons of..." for each of

the four driver behaviours. The two “Change Engaged” items were of the form “In the last six months I have tried to...” and “I’m determined to always...”. A list of all 16 items is provided in Appendix B.

To be in the “Change Engaged” categories, drivers had to obtain an average score of less than 2 (indicating agreement) on both of the selected items. Drivers who were not assigned to the “Change Engaged” category and who had an average score of greater than 3 on both of the “Contemplation” items (indicating disagreement) were classified as being in the “Pre-Contemplation” stage; the rest were assigned to the “Contemplation” stage.

**Validity of the SOC Categories.** In the 2006 study of waves 1 through 4, an effort was made to explore the validity of the SOC categorization process by comparing mean scores on a series of items designed to assess attitudes and behaviours about related driver behaviours. It was expected that if the classification process was valid, then the mean scores on the selected comparison items would sort hierarchically from the Maintenance to the Pre Contemplation stage. The analysis found that, across most of the items used in the validation process, drivers’ scores did sort hierarchically in the expected direction within the SOC’s. The data collected in waves 5 through 7 were analysed in the same manner to determine whether similar results would be obtained. Initially the analyses were conducted by wave, but the results were very similar so, for simplicity, only the aggregated results are reported here.

**Seat Belt SOC.** Survey respondents were asked to what extent they agreed or disagreed with a series of seat belt-related items (Table 2). For each item a low score indicates endorsement of the item. For all but item 1, mean scores close to 4 would be expected be associated with the higher stages of change (Maintenance or Change Engaged); for item 1, mean scores close to 4 would be associated with lower stages of change (Pre Contemplation or Contemplation). Analysis of variance was conducted to investigate differences in the mean scores on each item by SOC; the results are summarized in Table 2.

In general, the mean scores for all six items sorted in accordance with the hierarchical nature of the SOCs. However, the mean values obtained on items 1, 3, and 4, for drivers assigned to the Pre-Contemplation and Contemplation SOCs, did not differ significantly. Nonetheless, the results provided general support for the validity of the SOC categorization process. Future refinements of the process could attempt to clarify the operationalization of the process used to assign drivers to the Contemplation and Pre-Contemplation stages of change for seat belt wearing. However, at least some of the difficulty in

obtaining statistically significant differences for these two stages may be attributable to the small number of drivers who were identified as being in the Pre-Contemplation (n=27) stage for this behaviour.

**Table 2. Means\*, Standard Deviations (SD) and ANOVA results for Seat Belt-related Items by Seat Belt Stages of Change**

Questionnaire Items	SOC	N	Mean**	SD	F	P-Value
1. I don't feel comfortable riding in a car without wearing a seat belt.	Maintenance	2,221	1.28 <sub>a</sub>	0.762	172.0	<b>&lt;0.001</b>
	Change Engaged	176	1.82 <sub>b</sub>	0.895		
	Contemplation	104	2.70 <sub>c</sub>	0.835		
	Pre Contemplation	27	3.07 <sub>c</sub>	1.107		
2. Wearing a seat belt is not always practical for me.	Maintenance	2,216	3.90 <sub>a</sub>	0.433	58.9	<b>&lt;0.001</b>
	Change Engaged	176	3.59 <sub>b</sub>	0.750		
	Contemplation	104	2.82 <sub>c</sub>	0.890		
	Pre Contemplation	27	2.48 <sub>d</sub>	1.189		
3. I don't always remember to put my seat belt on.	Maintenance	2,217	3.86 <sub>a</sub>	0.587	206.8	<b>&lt;0.001</b>
	Change Engaged	176	3.36 <sub>b</sub>	0.883		
	Contemplation	104	2.52 <sub>c</sub>	0.892		
	Pre Contemplation	27	2.52 <sub>c</sub>	1.156		
4. I don't always have time to adjust my seat belt properly.	Maintenance	2,214	3.84 <sub>a</sub>	0.493	158.4	<b>&lt;0.001</b>
	Change Engaged	176	3.47 <sub>b</sub>	0.755		
	Contemplation	103	2.87 <sub>c</sub>	0.813		
	Pre Contemplation	27	2.67 <sub>c</sub>	1.240		
5. I don't believe that wearing seat belts is always necessary.	Maintenance	2,216	3.87 <sub>a</sub>	0.525	221.9	<b>&lt;0.001</b>
	Change Engaged	175	3.57 <sub>b</sub>	0.791		
	Contemplation	104	2.64 <sub>c</sub>	0.944		
	Pre Contemplation	27	2.22 <sub>d</sub>	1.155		
6. In the past six months, what percentage of the time have you worn a seat belt as a driver or passenger in a vehicle?	Maintenance	2,223	100.00 <sub>a</sub>	0.000	512.5	<b>&lt;0.001</b>
	Change Engaged	176	93.44 <sub>b</sub>	14.451		
	Contemplation	104	75.83 <sub>c</sub>	29.862		
	Pre Contemplation	27	58.41 <sub>d</sub>	41.934		

\*Low scores on item 1 reflect a higher stage of change; Low scores on items 2 through 5 reflect a lower stage of change.

\*\*Means with different subscripts are differ at  $P < 0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type.

**Speeding SOC.** Eight items were used in assessing the validity of the speeding SOC categories (Table 3). For the first six items, low scores indicate agreement while high scores indicate disagreement. Drivers in the Maintenance SOC would be expected to have the highest average score on all of these items. For the last three items dealing with usual speed in posted speed zones, drivers in the Maintenance SOC would be expected to have mean speeds closest to (over or under) the posted limit.

**Table 3. Means\*, Standard Deviations (SD) and ANOVA results for Speeding-related Items by Speeding Stages of Change**

Questionnaire Item	SOC	N	Mean**	SD	F	P-Value
1. Whenever possible I drive in the fast lane	Maintenance	446	3.53 <sub>a</sub>	0.702	83.9	<b>&lt;0.001</b>
	Change Engaged	523	3.14 <sub>b</sub>	0.859		
	Contemplation	923	2.78 <sub>c</sub>	0.865		
	Pre Contemplation	271	2.86 <sub>c</sub>	1.009		
2. I usually don't have the time or patience to drive at the posted speed limit	Maintenance	449	3.77 <sub>a</sub>	0.455	112.2	<b>&lt;0.001</b>
	Change Engaged	523	3.43 <sub>b</sub>	0.755		
	Contemplation	922	3.03 <sub>c</sub>	0.833		
	Pre Contemplation	272	3.04 <sub>c</sub>	0.981		
3. I usually pass more vehicles than pass me.	Maintenance	445	3.68 <sub>a</sub>	0.544	102.7	<b>&lt;0.001</b>
	Change Engaged	518	3.41 <sub>b</sub>	0.726		
	Contemplation	918	2.96 <sub>c</sub>	0.863		
	Pre Contemplation	270	2.95 <sub>c</sub>	0.997		
4. I drive above the speed limit even when there are pedestrians	Maintenance	449	3.84 <sub>a</sub>	0.416	81.3	<b>&lt;0.001</b>
	Change Engaged	522	3.67 <sub>b</sub>	0.625		
	Contemplation	921	3.30 <sub>c</sub>	0.779		
	Pre Contemplation	271	3.37 <sub>c</sub>	0.895		
5. I am fully in control of my driving, even when I drive more than 10km over the posted speed limit	Maintenance	396	2.70 <sub>a</sub>	1.088	56.9	<b>&lt;0.001</b>
	Change Engaged	493	2.16 <sub>b</sub>	0.945		
	Contemplation	911	2.10 <sub>b</sub>	0.803		
	Pre Contemplation	262	1.87 <sub>c</sub>	0.811		
6. Usual speed in a 50 Km Zone	Maintenance	444	51.73 <sub>a</sub>	3.609	90.7	<b>&lt;0.001</b>
	Change Engaged	520	54.67 <sub>b</sub>	4.343		
	Contemplation	915	56.00 <sub>c</sub>	5.253		
	Pre Contemplation	270	56.80 <sub>c</sub>	6.009		
7. Usual speed in an 80 Km Zone	Maintenance	444	81.93 <sub>a</sub>	4.603	83.5	<b>&lt;0.001</b>
	Change Engaged	520	84.52 <sub>b</sub>	4.827		
	Contemplation	915	86.81 <sub>c</sub>	5.812		
	Pre Contemplation	270	87.05 <sub>c</sub>	6.365		
8. Usual speed in a 100 Km Zone	Maintenance	444	101.43 <sub>a</sub>	6.542	63.9	<b>&lt;0.001</b>
	Change Engaged	520	104.05 <sub>b</sub>	5.923		
	Contemplation	915	106.72 <sub>c</sub>	6.741		
	Pre Contemplation	270	107.69 <sub>c</sub>	8.960		

\*Higher scores on items 1 thru 5 reflect a higher SOC; lower scores (speeds) on items 6 thru 8 reflect a higher SOC.

\*\*Means with different subscripts are differ at  $P < 0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type.

The results shown in Table 3 generally confirmed expectations for the speed-related items. Once again, however, there appears to be some overlap between drivers in the Pre-Contemplation and Contemplation SOCs; the mean values obtained for drivers in these two categories did not always sort in the expected direction and in several cases did not differ significantly from each other.

**Aggressive driving SOC.** Five items were used to check the validity of the assignment of the aggressive driving SOCs (Table 4). As with the seat belt and speeding items, low scores indicated agreement with these items. And once again, the results generally aligned with expectations. For all but item 4, however, the ordering of the items for the Pre Contemplation and Contemplation categories were reversed, but only in the case of item 1 were the differences between these categories statistically

significant. As well, on the final item, the difference observed between the Maintenance and Change Engaged SOC, although in the expected direction, was not statistically significant.

**Table 4. Means\*, Standard Deviations (SD) and ANOVA results for Aggressive Driving Items by Aggressive Driving Stages of Change**

Questionnaire Items	SOC	N	Mean**	SD	F	P-Value
1. I usually have to come up right behind slow drivers to make them move over	Maintenance	447	3.89 <sub>a</sub>	0.338	103.7	<b>&lt;0.001</b>
	Change Engaged	521	3.70 <sub>b</sub>	0.625		
	Contemplation	921	3.24 <sub>c</sub>	0.814		
	Pre Contemplation	272	3.37 <sub>d</sub>	0.920		
2. I use whatever means I have to in order to get ahead in congested traffic	Maintenance	447	3.87 <sub>a</sub>	0.400	85.0	<b>&lt;0.001</b>
	Change Engaged	522	3.72 <sub>b</sub>	0.575		
	Contemplation	923	3.33 <sub>c</sub>	0.733		
	Pre Contemplation	272	3.42 <sub>c</sub>	0.851		
3. When I merge in congested traffic, I often squeeze in at the last moment	Maintenance	447	3.82 <sub>a</sub>	0.457	35.6	<b>&lt;0.001</b>
	Change Engaged	520	3.64 <sub>b</sub>	0.621		
	Contemplation	920	3.45 <sub>c</sub>	0.638		
	Pre Contemplation	272	3.53 <sub>b,c</sub>	0.748		
4. Sometimes I just can't avoid driving through a yellow light that's turning red	Maintenance	447	3.06 <sub>a</sub>	0.842	62.2	<b>&lt;0.001</b>
	Change Engaged	523	2.56 <sub>b</sub>	0.856		
	Contemplation	921	2.44 <sub>c</sub>	0.750		
	Pre Contemplation	272	2.42 <sub>b,c</sub>	0.961		
5. Unless I am passing other drivers, I don't feel like I'm getting anywhere	Maintenance	447	3.88 <sub>a</sub>	0.350	81.2	<b>&lt;0.001</b>
	Change Engaged	521	3.83 <sub>a</sub>	0.437		
	Contemplation	919	3.46 <sub>b</sub>	0.689		
	Pre Contemplation	271	3.58 <sub>c</sub>	1.101		

\*On all items higher scores reflect a higher SOC.

\*\*Means with different subscripts are differ at  $P < 0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type.

**Drink driving SOC.** Five items (Table 5) were used to investigate the validity of the drink driving SOC assignment process. The first four were used to identify respondents who were 'not likely' drink drivers and to assign them to the Maintenance category; the fifth item was not. The first four items, therefore, can be used only to validate the assignment of 'likely drink drivers' to their SOC; the fifth item was not used in the assignment process so is an indicator of validity for all four SOCs.

The five items shown in Table 5 showed a similar pattern. As was seen with the other behaviours, there was once again some overlap in the assignment of drivers to the Pre Contemplation and Contemplation SOCs. In this analysis, although all of the items sorted drivers in the appropriate order, only item 1 discriminated significantly between drivers in the these two categories.

**Table 5. Means\*, Standard Deviations (SD) and ANOVA results for Drink Driving Items by Drink Driving Stages of Change\*\***

	SOC	N	Mean***	SD	F	P-Value
1. What percentage of the time that you drink 2 or more alcoholic drinks do you end up driving within 2 hours?	Maintenance	848	0.00 <sub>a</sub>	0.000	175.8	<b>&lt;0.001</b>
	Change Engaged	144	8.36 <sub>b</sub>	13.551		
	Contemplation	276	19.28 <sub>c</sub>	26.455		
	Pre Contemplation	33	36.61 <sub>d</sub>	41.053		
2. I sometimes drive after having 1 or 2 drinks.	Maintenance	965	3.64 <sub>a</sub>	0.707	435.9	<b>&lt;0.001</b>
	Change Engaged	275	2.65 <sub>b</sub>	0.867		
	Contemplation	354	2.14 <sub>c</sub>	0.668		
	Pre Contemplation	45	2.09 <sub>c</sub>	0.949		
3. I sometimes drive even when I am probably over the legal blood limit.	Maintenance	965	4.00 <sub>a</sub>	0.000	179.7	<b>&lt;0.001</b>
	Change Engaged	275	3.72 <sub>b</sub>	0.655		
	Contemplation	354	3.33 <sub>c</sub>	0.791		
	Pre Contemplation	45	3.29 <sub>c</sub>	1.100		
4. I never drive if I am consuming any alcohol.	Maintenance	965	1.65 <sub>a</sub>	0.987	257.8	<b>&lt;0.001</b>
	Change Engaged	275	2.60 <sub>b</sub>	0.824		
	Contemplation	354	3.06 <sub>c</sub>	0.700		
	Pre Contemplation	45	3.13 <sub>c</sub>	0.842		
5. I am fully in control of my driving, even after consuming 1 or 2 drinks.	Maintenance	749	3.53 <sub>a</sub>	0.751	155.5	<b>&lt;0.001</b>
	Change Engaged	257	2.95 <sub>b</sub>	0.900		
	Contemplation	349	2.52 <sub>c</sub>	0.815		
	Pre Contemplation	45	2.20 <sub>c</sub>	0.944		

\* Low scores on item 1 and item 4 reflect a higher SOC; Low scores on items 2, 3 and 6 reflect a lower SOC.

\*\*Drivers who responded "I don't drink" were excluded from this analysis.

\*\*\*Means with different subscripts are differ at  $P < 0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type.

## Summary

Overall, the psychometric reassessment of the 29-item RTC confirmed the findings of the 2006 analysis and resulted in the formation of a quantitative scale (the RTCGD) for measuring readiness to change general driving attitudes and behaviours, and a classification process for measuring stages of change for specific driving behaviours (the SOC\_SB, SOC\_DD, SOC\_AD, and SOC\_SP).

With respect to the RTCGD, three internally consistent versions were developed: the full 11-item scale (the RTCGD\_11), a reduced version (the 6-item RTCGD\_6), and a short version (the 4-item RTCGD\_4). Convergent validity was demonstrated for all three versions of the scale by comparing the mean scores obtained by drivers who confirmed or denied making changes in their driving attitudes and behaviours. Drivers who confirmed that they had made changes scored significantly higher on the RTCGD than drivers who denied making changes. Moreover, the "made a change" group was found to have a mean score that was above the midpoint of the scale whereas those in the "denied a change" group scored below the midpoint. High scores on the RTCGD indicate high engagement in the change process; low scores indicate no recognition of a need for change.

Due to the change in the operationalization of the 'readiness to change' construct that resulted from the factor analysis of the 29-item RTC, and the finding that the RTCGD scale could be reduced to as few as 4 items without a substantial loss of internal consistency, more work may need to be done to ensure that the scale in its current form is fully capturing the depth and richness of the readiness to change construct.

With respect to the SOC categorization process, once again the results of the preliminary study were confirmed with the development of the four SOC measures for the targeted behaviours. Although convergent validity was generally established for the Maintenance and Change Engaged SOCs for all four behaviours, a lack of convergence was observed for the items used to define the Contemplation and Pre-Contemplation categories, particularly for the aggressive driving and speeding items. Some of the overlap seen between these two SOCs may be due to the criteria used to assign drivers to these two stages, some may be due to a lack of clear differentiation between drivers who were currently engaging in or not engaging in the targeted behaviours, and some may be due to limitations in the comparability of the constructs measured by the SOC items and the other items used in the validity check.

## **Part 2. Comparative Analysis for New Respondents**

### **Sample Characteristics**

The same inclusion and exclusion criteria used in the definition of the samples for Part 1 of this report were used for this section. Thus, respondents who drove zero hours in a typical week were excluded, as were the second sets of data collected from respondents in waves 1 through 4 who repeated the survey in waves 5, 6 or 7. For this part of the study, drivers from all seven waves were included.

**Demographic Characteristics.** The demographic characteristics of the seven samples of drivers are shown in Table 6. Statistically significant differences were observed for the mean age, gender, type of licence, and region of residence of participants across the seven waves. Respondents

**Table 6. Sample Characteristics for all New Respondents by Survey Wave**

	2006 Survey				2007 Survey			Statistical Comparison	P-Value***
	Wave 1 N=3,210	Wave 2 N=1,485	Wave 3 N=1,175	Wave 4 N=1,112	Wave 5 N=792	Wave 6 N=680	Wave 7 N=1,104		
<b>Age</b> (Mean (SD)) in years	47.7 (14.7)	44.4 (17.1)	40.4 (18.2)	49.8 (14.5)	52.8 (15.6)	49.0 (14.2)	50.7 (14.1)	F(df=6,9551)=78.9	<b>&lt;0.001</b>
<b>Hours driven in average week</b> (Median (Min, Max))	8.0 (0.5-100.0)	7.0 (1.0-100.0)	8.0 (0.5-130.0)	8.0 (1.0-100.0)	8.0 (0.5-120.0)	8.0 (0.5-100.0)	8.0 (0.5-150.0)	K-W $\chi^2$ (df=6)=0.254	0.744
<b>Gender*</b> : Male (%)	53.1	52.6	49.1	37.8	54.7	47.5	44.3	$\chi^2$ (df=6) =103.2	<b>&lt;0.001</b>
Female (%)	46.9	47.4	50.9	62.2	45.3	52.5	55.7		
<b>License</b> : Full Privilege (%)	93.5	87.3	76.8	92.9	92.3	94.6	94.4	$\chi^2$ (df=6) = 351.2	<b>&lt;0.001</b>
Learner or Novice (%)	6.5	12.7	23.2	7.1	7.7	5.4	5.6		
<b>Region**</b> :Fraser Valley (%)	25.5	26.2	19.1	23.5	23.6	26.3	25.4	$\chi^2$ (df=30) =1,002.7	<b>&lt;0.001</b>
Greater Vancouver (%)	29.4	28.0	32.5	27.3	28.7	28.4	20.8		
North Central (%)	7.8	8.7	7.5	7.6	8.5	6.3	10.0		
Southern Interior (%)	17.2	16.3	15.4	17.4	19.2	19.1	17.0		
Vancouver Island (%)	20.2	20.8	25.5	24.3	20.1	19.9	26.8		

\*98 (6.6%) of participants in Wave 2, 256 (21.8%) in Wave 3, and 10 (1.0%) in wave 4 did not provide their gender.

\*\*98 (6.6%) of participants in Wave 2 and 19 (1.7%) in Wave 7 did not provide their Region of Residence

\*\*\*Significant P-Values (P<0.05) in boldface type.

**Table 7. Relative Frequency (%) Distribution for Targeted Driver Behaviours by Survey Wave**

	2006 Survey				2007 Survey			Statistical Comparison	P-Value**
	Wave 1 N=3,210	Wave 2 N=1,485	Wave 3 N=1,175	Wave 4 N=1,112	Wave 5 N=792	Wave 6 N=680	Wave 7 N=1,104		
<b>Seat Belt Use</b> : Always (%)	82.6	80.8	79.7	85.5	85.5	85.9	87.1	$\chi^2$ (df=12) =48.3	<b>&lt;0.001</b>
Not Always (%)	17.1	19.1	19.9	14.2	14.3	13.7	12.4		
Unknown (%)	0.2	0.1	0.4	0.3	0.3	0.4	0.5		
<b>Drink Driving</b> : Not Likely (%)	61.5	62.0	66.0	63.9	62.6	64.7	65.3	$\chi^2$ (df=12) =20.5	<b>&lt;0.059**</b>
Likely (%)	38.0	37.4	32.9	35.3	36.6	35.0	33.8		
Unknown (n)	0.6	0.5	1.1	0.8	0.8	0.3	0.9		
<b>Aggressive Driving</b> : Not Likely (%)	13.5	13.5	14.6	15.9	18.8	18.8	15.6	$\chi^2$ (df=12) =29.4	<b>&lt;0.003</b>
Likely (%)	83.1	82.8	81.4	80.1	77.8	78.4	81.3		
Unknown (n)	3.4	3.7	3.9	4.0	3.4	2.8	3.1		
<b>Speeding</b> : Non-Speeder (%)	8.0	7.6	8.9	9.4	11.1	10.7	9.1	$\chi^2$ (df=12) = 28.8	<b>&lt;0.004</b>
Speeder (%)	89.8	90.4	88.8	87.0	87.2	87.4	89.4		
Unknown (n)	2.2	2.0	2.4	3.6	1.6	1.9	1.5		

\*Significant P-values (P<0.05) in boldface type.

\*\* When the unknown category was excluded the association between drink driving and wave became significant – P-value < 0.034

tended to be younger in waves 1, 2 and 3, and had a higher percentage of drivers in the “L” or “N” stage of licensure. Of the drivers who reported their gender, the percentage of males was substantially lower in waves 4 and 7 than in the other waves. Overall, about 25% of the sample were residents of the Fraser Valley, 28% were from the Greater Vancouver area, 8% were from the North Central Region, 17% were from the Southern Interior and 22% were from Vancouver Island. The proportions from each region did differ significantly from wave to wave, with a lower percentage from the Fraser Valley in wave 3, and from Greater Vancouver in wave 7. Higher percentages were observed from Vancouver Island in wave 7 and from Greater Vancouver and Vancouver Island in wave 3. Respondents’ age, gender and region of residence may be associated with driver attitudes and behaviours, or with the nature and amount of road safety educational activity to which the respondents have been exposed. Consequently, the observed differences in the characteristics of the seven samples will need to be taken into account when comparing drivers’ SOCs and RTCGD scores in each survey wave.

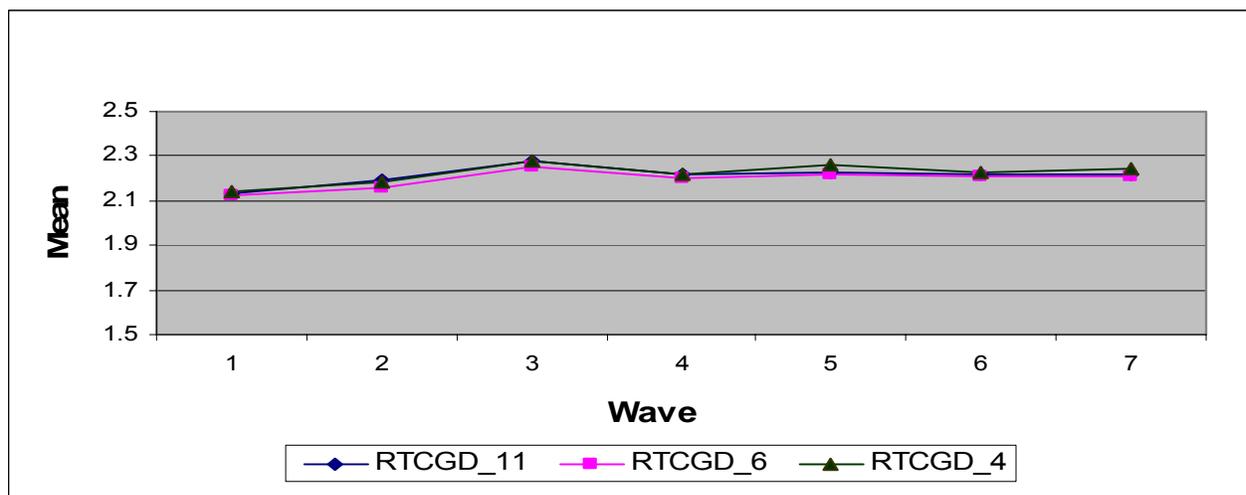
***Driver Behaviours.*** Table 7 shows the results of the categorization process used to identify which respondents in each wave were currently engaging in, or most likely engaging in, the four targeted driver behaviours (seat belt wearing, drink driving, aggressive driving, and speeding). As described in Part 1, drivers who always wear their seat belt, do not speed, or who do not likely engage in drink driving or aggressive driving were automatically assigned to the Maintenance SOC for each of those behaviours.

Across all seven waves, about 83% of respondents reported always wearing a seat belt when driving, about 63% reported being unlikely to drink and drive, about 15% reported being unlikely to drive aggressively, and only about 9% were identified as non-speeders. When the ‘unknown’ category was included in the analysis, the proportion of respondents engaging in each driver behaviour was found to differ significantly across survey waves only for seat belt wearing, aggressive driving and speeding. When the ‘unknown’ category was excluded, a significant difference was obtained for all four behaviours. In general, respondents in waves 1 and 2 (and 3 for seat belt wearing and 5 for drink driving) were less likely to report engaging in safer driver behaviours (always wearing a seat belt, not engaging in drink driving aggressive driving or speeding) than in the other waves.

***RTCGD Scores by Wave.*** Mean scores were computed for the new respondents in each survey wave using all three versions of the RTCGD. The mean scores computed using the different versions of the RTCGD are very similar both in magnitude and in the pattern of change they reflect across the seven

survey waves (Figure 1). All of the computed means (Table 8) are lower than 2.5 suggesting that, on average, the respondents in these surveys are not very receptive to the idea that they may need to make changes in their general driving behaviour. There does, however, appear to have been an upward shift in scores from waves 1 through 3, but little change is apparent after that.

**Figure 1. Mean Scores on the Long (11-item), Reduced (6-item) and Short (4-item)-Versions of the RTCGD**



**Table 8. Comparison of Mean Scores on the RTCGD\_11, RTCGD\_6, and RTCGD\_4 by Wave**

Subscale	N	Mean**	SD	F	P-Value
RTCGD_11: Wave 1	2,492	2.13 <sub>a</sub>	0.710	6.1	<b>&lt;0.001</b>
Wave 2	1,164	2.19 <sub>a,b</sub>	0.694		
Wave 3	893	2.28 <sub>b</sub>	0.749		
Wave 4	836	2.22 <sub>b</sub>	0.733		
Wave 5	608	2.23 <sub>b</sub>	0.739		
Wave 6	513	2.22 <sub>a,b</sub>	0.723		
Wave 7	858	2.22 <sub>b</sub>	0.679		
RTCGD_6: Wave 1	2,642	2.12 <sub>a</sub>	0.773	5.4	<b>&lt;0.001</b>
Wave 2	1,224	2.16 <sub>a,b</sub>	0.761		
Wave 3	953	2.25 <sub>b</sub>	0.801		
Wave 4	885	2.20 <sub>a,b</sub>	0.795		
Wave 5	651	2.22 <sub>b</sub>	0.801		
Wave 6	561	2.21 <sub>a,b</sub>	0.777		
Wave 7	899	2.21 <sub>b</sub>	0.744		
RTCGD_4: Wave 1	2,743	2.14 <sub>a</sub>	0.821	5.4	<b>&lt;0.001</b>
Wave 2	1,261	2.18 <sub>a,b</sub>	0.806		
Wave 3	989	2.28 <sub>b</sub>	0.845		
Wave 4	917	2.22 <sub>a,b</sub>	0.834		
Wave 5	666	2.20 <sub>b</sub>	0.835		
Wave 6	581	2.23 <sub>a,b</sub>	0.813		
Wave 7	923	2.24 <sub>b</sub>	0.778		

\*\*Means with different subscript are statistically significantly different at  $p < 0.05$ . Significant P-Values in boldface type.

The ANOVA results (Table 8) generally confirmed the patterns observed in Figure 1. Wave 1 mean RTCGD scores were significantly ( $P < 0.05$ , Bonferroni-adjusted) lower than wave 3, 4, 5, and 7 scores when the long-form of the RTCGD was used, and significantly lower than waves 3, 5, and 7 when

the reduced and short-forms of the RTCGD were used. It should be noted that the scale scores were computed using only respondents who answered all of the items in the scale. Consequently, only about 75-78% of the total sample in each wave received a score on the long-form, while 80-82% and 83-85% completed the 6-item and 4-item scales, respectively. The addition of more respondents as the size of the number of items in the scale declined may account for some of the differences observed for the different versions of the scale.

**Stages of Change (SOC) for Targeted Behaviours by Wave.** The relative frequency of drivers in each SOC category for each of the targeted behaviours and survey waves is shown in Table 9. Statistically significant differences in the percentages of respondents categorized into the four stages of change in each wave were found for all four driver behaviours. Seat belt use had the highest percentage of respondents (about 85%) in the Maintenance SOC and the lowest percentage of respondents classified as Pre-Contemplation (about 1-2%). A relatively high percentage of respondents (about 70%) were also in the Maintenance SOC for drink driving. In contrast, the percentages of respondents in the Maintenance SOC for aggressive driving and speeding were very low (about 20% and 10% respectively). For these two behaviours, most of the respondents were placed in either the Change Engaged SOC (about 25%) or the Contemplation SOC (about 50%). However, a substantial percentage of respondents (about 12-20%) were also placed in the Pre-Contemplation SOC.

Figures 2, 3, 4 and 5 summarize and show the percentage of respondents assigned to each SOC for each targeted behaviour and survey wave. While there are some similarities in the patterns observed across behaviors, there are some notable differences as well. As noted in the section of the report that described changes in driver behaviours by wave (p.21), the percentage of drivers assigned to the Maintenance SOC tended to be at their lowest level in the first two waves of the survey. This trend was common to all of the targeted behaviours. For seat belt wearing, the percentage of drivers in the Maintenance stage remained lower in wave 3 as well. After wave 3 the percentage of drivers in the Maintenance SOC increased somewhat and then remained at that increased level from wave 4 through 7. In contrast, for drink driving, the percentage of drivers in the Maintenance SOC hovered around 70% for all seven waves. The percentage of drivers in the Maintenance SOC for aggressive driving and speeding were very similar; the percentage increased from waves 1 through 6 before decreasing in wave 7.

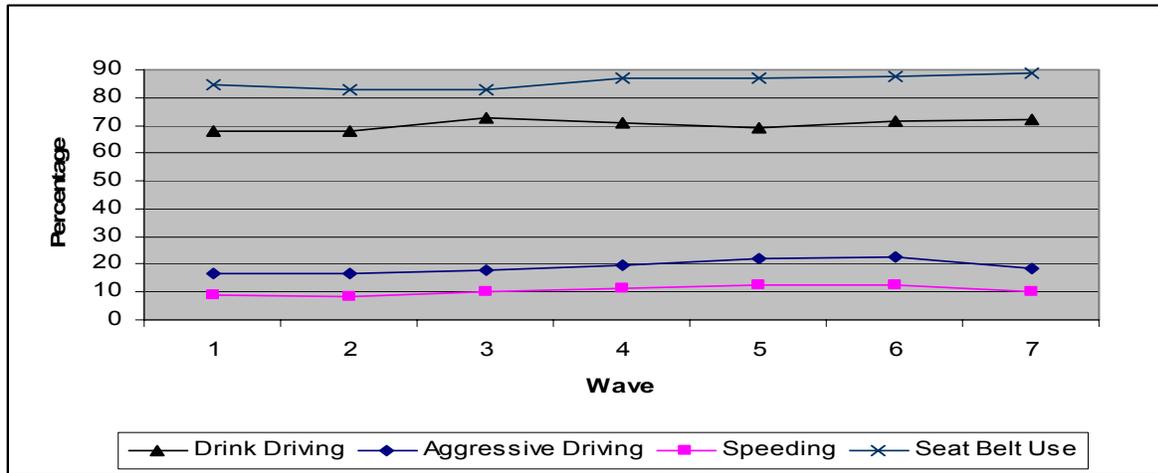
**Table 9. Percentage of Drivers\* by Wave and Stage of Change (SOC) for Seat Belt Use, Drink Driving, Aggressive Driving and Speeding**

Behaviour: SOC	Wave 1 N=3,210	Wave 2 N=1,485	Wave 3 N=1,175	Wave 4 N=1,112	Wave 5 N=792	Wave 6 N=680	Wave 7 N=1,104	Statistical Comparison*	P- Value**
<b>Seat Belt Use:</b>	(n=3,127)	(n=1,452)	(n=1,132)	(n=1,089)	(n=780)	(n=667)	(n=1,083)	X <sup>2</sup> (df=1)=20.5	<b>&lt;0.0001</b>
Maintenance	84.8	82.6	82.7	87.3	86.8	87.6	88.8		
Change Engaged	8.0	9.2	9.0	6.0	7.8	7.3	6.1		
Contemplation	5.0	5.9	6.3	5.7	4.7	4.2	3.6		
Pre Contemplation	2.2	2.2	2.0	1.0	0.6	0.9	1.5		
<b>Drink Driving:</b>	(n=2,903)	(n=1,354)	(n=1,065)	(n=1,003)	(n=715)	(n=616)	(n=1,000)	X <sup>2</sup> (df=1)=9.8	<b>0.0017</b>
Maintenance	68.0	68.0	72.8	70.9	69.4	71.4	72.1		
Change Engaged	12.4	13.0	9.7	10.4	12.3	12.5	11.0		
Contemplation	16.4	15.1	14.0	15.6	16.8	13.3	15.2		
Pre Contemplation	3.2	3.9	3.6	3.2	1.5	2.8	1.7		
<b>Aggressive Driving:</b>	(n=2,632)	(n=1,204)	(n=956)	(n=910)	(n=676)	(n=563)	(n=928)	X <sup>2</sup> (df=1)=19.9	<b>&lt;0.0001</b>
Maintenance	16.4	16.7	18.0	19.5	22.0	22.7	18.5		
Change Engaged	24.7	22.9	20.1	23.4	23.8	21.3	26.1		
Contemplation	42.3	45.0	46.7	42.3	41.1	43.2	43.3		
Pre Contemplation	16.6	15.4	15.3	14.8	13.0	12.8	12.1		
<b>Speeding:</b>	(n=2,787)	(n=1,307)	(n=1,008)	(n=947)	(n=698)	(n=593)	(n=980)	X <sup>2</sup> (df=1)=22.0	<b>&lt;0.0001</b>
Maintenance	9.2	8.6	10.3	11.1	12.6	12.3	10.2		
Change Engaged	24.2	23.6	22.2	24.0	25.6	23.8	28.0		
Contemplation	47.6	49.5	48.6	49.6	47.7	47.7	47.3		
Pre Contemplation	19.0	18.3	18.8	15.3	14.0	16.2	14.5		

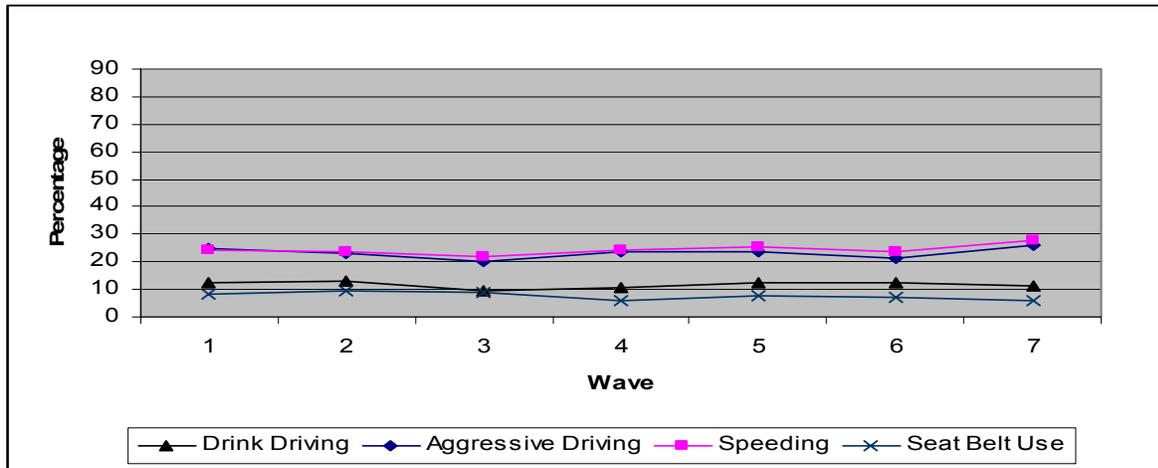
\*Drivers who could not be assigned to a Stage of Change have been excluded. The reduced sample size is indicated in parentheses.

\*\*Significant P-values (P<0.05) in boldface type. X<sup>2</sup> is computed using the Mean Score test (Stokes, et al., 2000) for an ordinal outcome variable using modified ridit scores.

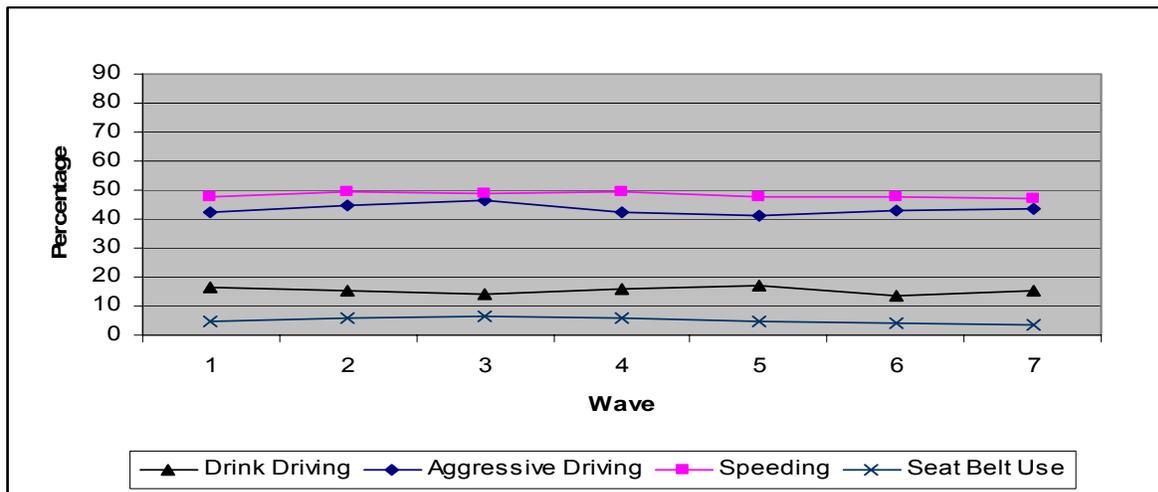
**Figure 2. Percentage of Respondents in Maintenance Stage of Change by Driver Behaviour and Survey Wave**



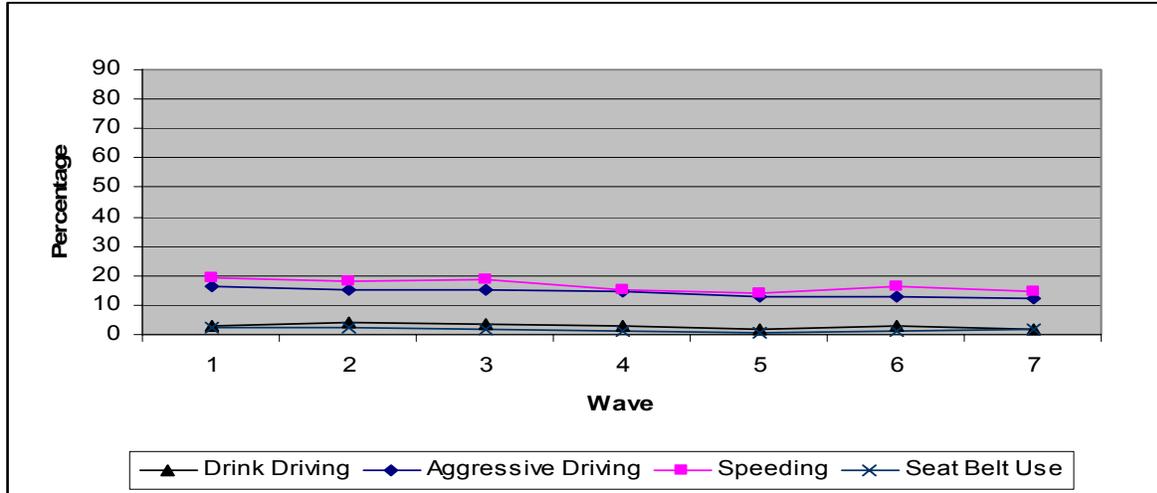
**Figure 3. Percentage of Respondents in Change Engaged Stage of Change by Driver Behaviour and Survey Wave**



**Figure 4. Percentage of Respondents in Contemplation Stage of Change for Drink Driving, Aggressive Driving and Speeding – By Wave**



**Figure 5. Percentage of Respondents in Pre-Contemplation Stage of Change by Driver Behaviour and Survey Wave**



For the respondents categorized as being in the Change Engaged SOC (Figure 3), very little change in trend was observed across the seven survey waves, except for seat belt use. For seat belt use, the percentage of drivers engaged in changing their behaviour declined over the period of the study. This, coupled with the increase over time in the percentage of drivers in the Maintenance stage may be indicative of a positive shift for this particular driving behaviour. For aggressive driving, drink driving, and speeding, additional data points will be needed in order to ascertain whether there is an upward trend in the data, or whether the percentage will continue to fluctuate around a relatively flat line. With respect to the drivers assigned to the Contemplation SOC (Figure 4), once again there appears to have been little change over the seven waves of the survey, except for aggressive driving. The percentage of drivers contemplating a change in aggressive driving behaviour increased from waves 1 through 3, but then dropped off again in wave 4.

Finally, for the Pre-Contemplation SOC (Figure 5), the already low levels of respondents in this stage for drink driving and seat belt wearing make it difficult to find a trend either upward or downward. However, for aggressive driving and speeding, the percentages do appear to be declining. If future data confirm this trend it may suggest that more drivers in BC are starting to become aware of and receptive to the idea that speed and aggressive driving are unsafe.

## **Relationships Between Sample Characteristics and scores on the RTCGD**

It was shown in an earlier section that the age, gender, and region of residence for respondents varied significantly across the survey waves<sup>2</sup>. In this section analyses are described that were undertaken to explore whether these characteristics might be associated with scores on the RTCGD.

**Age.** A significant negative correlation between age and RTCGD scores was obtained ( $r=-0.138$ ,  $-0.132$ , and  $-0.129$ , for the RTCGD\_11, RTCGD\_6, and RTCGD\_4, respectively,  $P<0.001$  for all). This indicates that as age increases readiness to change tends to decrease. The magnitudes of the correlations, however, suggest that the relationship, despite statistical significance, is not strong.

To further explore the relationship between age and RTCGD, respondents were categorized into the following age groups: 16-18 years, 19-24 years, 25-34 years, 35-54 years, and 55 years and over. Mean ( $\pm$  SD) RTCGD\_11 scores computed for each group were: 2.68 ( $\pm$  0.64), 2.44 ( $\pm$  0.68), 2.27 ( $\pm$  0.69), 2.15 ( $\pm$  0.71), and 2.13 ( $\pm$  0.72) respectively. ANOVA revealed a significant age effect and pairwise comparisons found significant differences ( $P<0.05$ , Bonferoni-adjusted) between all but the 35-54 and 55 and older groups. Very similar results were obtained for the shorter versions of the RTCGD.

**Gender.** No statistically significant differences were found in the mean scores of males and females on the RTCGD\_11 ( $P=0.327$ ) or RTCGD\_4 ( $P=0.194$ ), but the difference was marginally significant ( $P=0.049$ ) for the RTCGD\_6. In all three cases, males scored higher than females but, for both groups, the amount of variation around the mean values was about the same; the means and standard deviations for males and females respectively were  $2.19\pm 0.71$  and  $2.17\pm 0.71$  on the RTCGD\_11,  $2.18\pm 0.78$  and  $2.15\pm 0.78$  on the RTCGD\_6, and  $2.20\pm 0.82$  and  $2.18\pm 0.82$  on the RTCGD\_4.

Based on these values it is clear that the magnitudes of the differences between the gender groups was very small, ranging from only 0.02 for the RTCGD\_11, to 0.03 for the RTCGD\_6. In fact across all versions and both gender groups, the mean scores ranged from a low of 2.15 (for females on the RTCGD\_6) to a high of 2.21 (for males on the RTCGD\_4), an overall difference of only 0.05. Thus, despite the finding of statistical significance for the RTCGD\_6, the magnitude of the observed differences may be too small to be very meaningful.

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<sup>2</sup> Although type of licence held was also a factor that varied by wave, it was highly confounded with the age of the respondent in the survey. Consequently, type of licence held was not included in the analyses reported in this section.

**Region.** As with the gender and RTCGD relationship observed above, no significant differences were obtained when mean RTCGD scores were compared by region, except for the RTCGD\_6. Once again, however, the mean differences were very small in magnitude. Respondents from the Southern Interior scored highest on the RTCGD (with mean and standard deviation values of  $2.24 \pm 0.72$ ,  $2.22 \pm 0.79$ , and  $2.24 \pm 0.83$  for the long, reduced, and short versions of the scale), followed by those from the North Central region ( $2.22 \pm 0.72$ ,  $2.21 \pm 0.79$ , and  $2.23 \pm 0.85$ , respectively), Greater Vancouver ( $2.19 \pm 0.72$ ,  $2.17 \pm 0.77$ , and  $2.20 \pm 0.81$ ), the Fraser Valley ( $2.18 \pm 0.72$ ,  $2.16 \pm 0.78$ , and  $2.19 \pm 0.83$ ) and finally from Vancouver Island ( $2.17 \pm 0.71$ ,  $2.15 \pm 0.76$ , and  $2.17 \pm 0.80$ ).

**RTCGD Changes by Wave after Adjusting for Differences in Sample Characteristics.** To see whether the relationships observed between respondent characteristics and scores on the RTCGD might be confounding the changes in mean scores on the RTCGD shown in Figure 1, a multi-factor ANOVA was conducted. Given the substantial differences in the characteristics of the samples in each wave, and the associations observed between these characteristics and RTCGD scores, the possibility for confounding could not be discounted. For all versions of the RTCGD (full, reduced, and short) the data were first analysed using a full factorial model (all main effects and interactions). The results of this model were examined and interaction effects that were not statistically significant were dropped and the analysis undertaken a second time.

On the first analysis all of the main effects except region were found to be statistically significant, as was the interaction between age group and region. For the second analysis, the model was reduced and rerun retaining each of the main effects (age group, gender, region, and wave) but only one interaction effect: age and region. Although not statistically significant as a main effect, region was kept in the model because of its inclusion in the interaction effect. The ANOVA results for the final model are shown in Table 10, and the mean scores estimated from the model are shown in Figure 6.

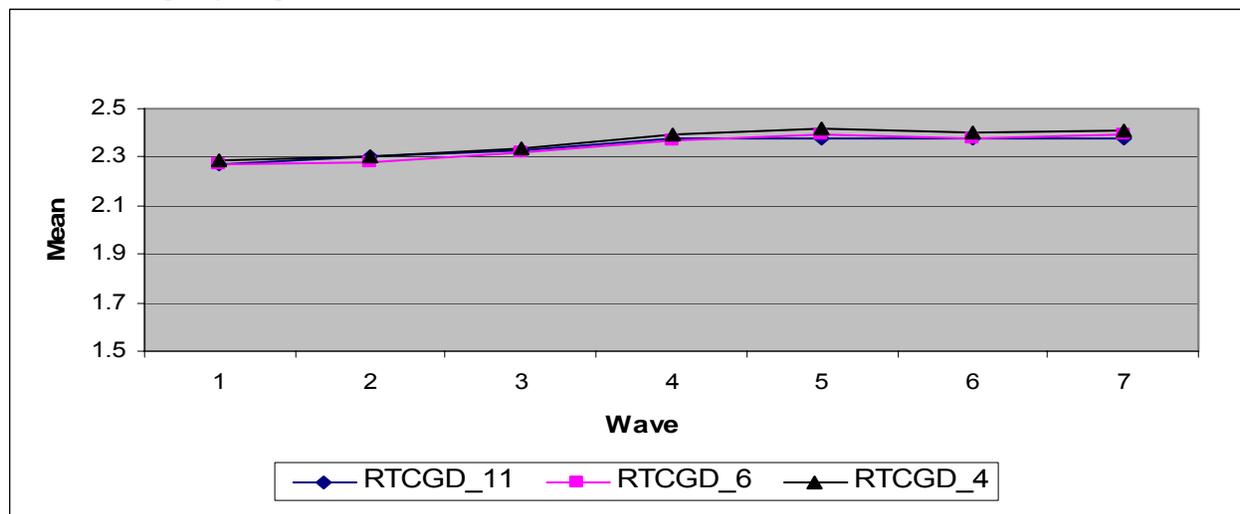
After controlling for age, gender, region and the age by region interaction effect, the differences between the estimated mean scores on the RTCGD (all three versions) were still very similar to those obtained before adjustment (Figures 1 and 6). Pairwise comparisons revealed that, for the 11-item RTCGD, the adjusted mean scores in wave 1 were significantly lower than the mean scores in waves 4, 5, and 7. The pre-adjustment difference between the wave 1 and wave 3 scores was, however, no longer significant after adjustment. Similarly, for the 6-item and 4-item RTCGDs, significant differences were

found only between the wave 1, 5, and 7 scores, and not between waves 1 and 3. Additional data will be required to determine whether the increases observed reflect a gradual shift in RTCGD over time, or simply temporary fluctuations that will not be sustained over time.

**Table 10. RTCGD Effects by Wave after Adjustment for Age, Gender, and Region – Final Model**

Scale	Source of Variation	Sum of Squares	df	Mean Square	F	P-Value*
RTCGD_11	Age group	81.768	3	27.256	54.884	<0.001
	Region	3.675	4	0.919	1.850	0.116
	Gender	3.807	1	3.807	7.665	0.006
	Age group*Region	11.691	12	0.974	1.962	0.024
	<b>Wave</b>	16.198	6	2.700	5.436	<0.001
	Model	111.013	26	4.270	8.598	<0.001
	Error	3,502.588	7,053	0.497		
RTCGD_6	Age group	101.294	3	33.765	57.645	<0.001
	Region	4.142	4	1.036	1.768	0.132
	Gender	7.967	1	7.967	13.601	<0.001
	Age group*Region	14.285	12	1.190	2.032	0.018
	<b>Wave</b>	19.625	6	3.271	5.584	<0.001
	Model	141.731	26	5.451	9.307	<0.001
	Error	4,384.861	7,486	0.586		
RTCGD_4:	Age group	101.801	3	33.934	51.809	<0.001
	Region	2.428	4	0.607	0.927	0.447
	Gender	5.677	1	5.677	8.667	0.003
	Age group*Region	15.335	12	1.278	1.951	0.25
	<b>Wave</b>	21.461	6	3.577	5.461	<0.001
	Model	140.908	26	5.420	8.274	<0.001
	Error	5064.257	7,732	0.655		

**Figure 6. Estimated RTCGD Mean Scores After Adjustment for Age, Gender, Region and Age by Region Interaction**



**Associations between Sample Characteristics and Behaviour-Specific SOC's**

**Age.** Associations between age and SOC assignments were investigated using the categorized form of the age variable. Due to the small number of respondents in the 16-18 year category, however, (n=343 across all 7 waves), this group was combined with the 19-24 year age group for these analyses. As both the age group and SOC variables are ordinal, Mantel Haenszel Chi Square tests of linear association (using modified ridit scores) were used to investigate relationships between these two variables. The results for each targeted behaviour are summarized in Table 11.

**Table 11. Percentage of Drivers by Age and Stage of Change for Seat Belt Use, Drink Driving, Aggressive Driving, and Speeding**

Behaviour: SOC	AGE GROUP				Statistical Comparison*	P-Value**
	16-24 Years	25-34 Years	35-54 Years	55 Years and over		
<b>Seat Belt Use:</b>	(n=1,058)	(n=1,041)	(n=3,606)	(n=3,625)	X <sup>2</sup> (df=1)=70.44	<b>&lt;0.0001</b>
Maintenance	81.6	80.8	84.0	89.1		
Change Engaged	10.4	10.7	8.3	5.7		
Contemplation	6.4	6.7	5.7	3.8		
Pre Contemplation	1.6	1.8	2.0	1.5		
<b>Drink Driving:</b>	(n=1,053)	(n=957)	(n=3,304)	(n=3,342)	X <sup>2</sup> (df=1)=7.9	<b>&lt;0.0052</b>
Maintenance	79.9	65.6	68.2	69.2		
Change Engaged	7.8	11.7	12.4	12.3		
Contemplation	10.6	19.0	15.4	15.5		
Pre Contemplation	1.7	3.7	3.2	3.1		
<b>Aggressive Driving:</b>	(n=846)	(n=848)	(n=3,061)	(n=3,114)	X <sup>2</sup> (df=1)=227.6	<b>&lt;0.0001</b>
Maintenance	10.9	6.3	16.8	24.8		
Change Engaged	19.6	19.0	22.3	27.1		
Contemplation	56.7	57.0	44.1	35.2		
Pre Contemplation	12.8	17.8	16.9	12.8		
<b>Speeding:</b>	(n=911)	(n=911)	(n=3,204)	(n=3,281)	X <sup>2</sup> (df=1)=117.6	<b>&lt;0.0001</b>
Maintenance	12.0	4.3	8.8	12.4		
Change Engaged	17.3	17.6	23.2	29.4		
Contemplation	54.3	57.0	48.4	44.0		
Pre Contemplation	16.3	21.2	19.7	14.2		

\*Significant (P<0.05) P-Values in boldface type. X<sup>2</sup> test based on correlation statistic computed using modified ridit scores.

Interestingly, as shown in Table 11, the percentage of drivers in the Maintenance stage for drink driving is highest for the youngest age group and, for aggressive driving, the percentage of young drivers in the Maintenance stage is second only to the percentage of the oldest drivers in this stage. Based on the analyses conducted, the relationship between age and behavioural SOC was positive (indicating a shift upward in SOC classification with increasing age), for all of the targeted behaviours except for drink driving. For drink driving, the relationship was negative; SOC classification decreased as age increased. All of the relationships were statistically significant (P<0.05).

**Gender.** Table 12 shows the percentages of males and females at each SOC for seat belt use, drink driving, aggressive driving and speeding. The relationships tested between gender and SOC classification were statistically significant for all four behaviours. In each case, a higher percentage of females than males were classified as being in the Maintenance SOC, and females were also more likely than males to be classified as Change Engaged, at least for aggressive driving and speeding. A higher percentage of males than females did not recognize that there was a need to change their behaviours (Pre-Contemplation) or were still only thinking about making changes (Contemplation).

**Table 12. Percentage of Drivers by Gender and Stage of Change for Seat Belt Use, Drink Driving, Aggressive Driving, and Speeding**

Behaviour: SOC	Gender		Statistical Comparison*	P-Value**
	Males	Females		
<b>Seat Belt Use:</b>	(n=4,435)	(n=4,551)		
Maintenance	81.6	89.2	X <sup>2</sup> (df=1)=110.5	<b>&lt;0.0001</b>
Change Engaged	9.2	6.2		
Contemplation	6.4	3.8		
Pre Contemplation	2.7	0.7		
<b>Drink Driving:</b>	(n=4,099)	(n=4,210)		
Maintenance	62.2	76.1	X <sup>2</sup> (df=1)=231.5	<b>&lt;0.0001</b>
Change Engaged	11.8	11.9		
Contemplation	21.3	10.4		
Pre Contemplation	4.6	1.6		
<b>Aggressive Driving:</b>	(n=3,895)	(n=3,695)		
Maintenance	16.0	21.2	X <sup>2</sup> (df=1)=73.6	<b>&lt;0.0001</b>
Change Engaged	21.4	26.2		
Contemplation	45.9	39.5		
Pre Contemplation	16.7	13.2		
<b>Speeding:</b>	(n=4,060)	(n=3,957)		
Maintenance	7.6	12.7	X <sup>2</sup> (df=1)=121.3	<b>&lt;0.0001</b>
Change Engaged	22.1	27.2		
Contemplation	49.9	46.0		
Pre Contemplation	20.4	14.1		

\*Significant (P<0.05) P-Values in boldface type.

**Region.** Table 13 shows the distribution of respondents by region and behaviour-specific SOC. For drink driving, a Chi square test of the general relationship between region of residence and SOC classification was not significant (P>0.05), although a comparison of mean modified ridit scores did reveal some association (P<0.02). For seat belt use, a significantly lower percentage of drivers from the North Central region reported always wearing their seat belt (Maintenance Stage). For aggressive driving and speeding, the SOC distributions were similar for the Fraser Valley (FV) and Greater Vancouver (GV) regions, and for the North Central (NC), Southern Interior (SI) and Vancouver Island (VI) regions. For aggressive driving, drivers from the FV and GV regions were more likely to be in the Contemplation or

Pre-Contemplation SOC while the other three regions were more likely to be in the Maintenance SOC.

The percentages of drivers in the Change Engaged SOC were similar across all regions. For speeding, the FV and GV regions were more likely to be in the Pre-Contemplation or Contemplation SOC while the other three regions were more likely to be in either the Maintenance or Change Engaged SOC.

**Table 13. Percentage of Drivers by Region\* and Stage of Change for Seat Belt Use, Drink Driving, Aggressive Driving, and Speeding**

Behaviour: SOC	REGION					Statistical Comparison*	P-Value**
	FV	GV	NC	SI	VI		
<b>Seat Belt Use:</b>	(n=2,254)	(n=2,608)	(n=743)	(n=1,568)	(n=2,045)	X <sup>2</sup> (df=12)=40.4	<b>&lt;0.0001</b>
Maintenance	86.2	86.6	81.0	84.3	85.3		
Change Engaged	6.8	7.8	7.9	9.0	7.7		
Contemplation	5.0	4.2	7.7	5.0	5.7		
Pre Contemplation	2.0	1.4	3.4	1.7	1.3		
<b>Drink Driving:</b>	(n=2,088)	(n=2,407)	(n=703)	(n=1,455)	(n=1,894)	X <sup>2</sup> (df=12)=11.7	<0.34
Maintenance	71.3	67.8	72.8	68.4	69.9		
Change Engaged	11.3	12.0	11.5	12.2	11.6		
Contemplation	14.4	17.0	13.4	16.2	15.4		
Pre Contemplation	3.0	3.1	2.3	3.2	3.2		
<b>Aggressive Driving:</b>	(n=1,914)	(n=2,195)	(n=621)	(n=1,310)	(n=1,742)	X <sup>2</sup> (df=12)=102.0	<b>&lt;0.0001</b>
Maintenance	15.5	13.5	23.7	21.8	22.8		
Change Engaged	23.8	23.6	25.4	23.9	22.6		
Contemplation	44.3	47.0	36.6	40.9	41.3		
Pre Contemplation	16.5	15.9	14.3	13.4	13.3		
<b>Speeding:</b>	(n=2,012)	(n=2,302)	(n=679)	(n=1,402)	(n=1,829)	X <sup>2</sup> (df=12)=94.5	<b>&lt;0.0001</b>
Maintenance	9.2	7.3	14.3	12.6	11.4		
Change Engaged	22.8	22.0	25.9	27.0	27.0		
Contemplation	48.2	52.1	44.2	46.6	45.5		
Pre Contemplation	19.8	18.6	15.6	13.8	16.2		

\* FV=Fraser Valley; GV=Greater Vancouver; NC = North Central; SI = Southern Interior; VI = Vancouver Island

\*\*Significant (P<0.05) P-Values in boldface type.

These results, like those reported for the RTCGD, suggest that the SOC changes shown in Figures 2 through 5 could be confounded by the differences in the characteristics of the samples at each wave. The effect of these potentially confounding factors are investigated in the next section.

**SOC Changes by Wave after Adjusting for Differences in Sample Characteristics.** To determine to what extent the differences in the sample characteristics might be confounding the relationships observed between SOC classification and survey wave (Table 9) a series of cumulative logit models were fitted to the data using stepwise selection methods to determine the inclusion of interaction and main effects. Models were also fitted using “wave” as the only independent variable, using drivers with no missing data on any of the potential confounders. This was done to obtain the before adjustment results and to check that none of the associations summarized in Table 9 would be lost when respondents with missing data were excluded from the analysis. For all of the analyses, wave 1 was used

as the primary reference category for assessing the significance of changes observed in waves 2 through 7. If the cumulative logit models did not fit the data well, or the results indicated that a monotonic function might not be appropriate, a series of binary logit models were tested to explore changes over time based on different aggregated sets of SOC categories. All of the results are summarized using odds ratios. An odds ratio greater than 1 indicates that the odds of being in a higher SOC in any given wave is greater than in the reference wave. Conversely, ratios less than 1 indicate that the odds of being a higher SOC in the comparison wave is less than in the reference wave. For the cumulative logit analyses the Maintenance stage was always defined as the highest SOC. For the binary logit analyses, SOCs were aggregated into dichotomous groups (the Maintenance stage versus the other three combined, the Maintenance and Change Engaged group versus the Contemplation and Pre-Contemplation group, and the Maintenance, Change Engaged, Contemplation group versus the Pre-Contemplation group). In each case the model was designed to predict the higher level group.

**Seat Belt Use.** Based on the results of the contingency table analysis shown in Table 9, a significant wave effect was expected and obtained ( $P < 0.0001$ ) when an unadjusted cumulative logit model for seat belt SOC was fitted to the data (Table 14). Before adjustment several of the odds ratios computed for each wave (relative to wave 1) were marginally or significantly different from one. In particular, drivers in waves 4, 6 and 7 were more likely to be in a higher level SOC for seat belt use than drivers in wave 1 ( $P < 0.052$ ,  $P < 0.06$ , and  $P < 0.0015$ , respectively), while drivers in wave 2 were less likely to be in a higher SOC class ( $P < 0.065$ ).

Stepwise selection methods resulted in the fitting of a main effects model; no interaction effects were found to be significant. The residual Chi Square was satisfactory ( $P > 0.15$ ) indicating a reasonable fit to the data. With the main effects of age, gender, and region included in the model, the overall effect of wave on SOC was attenuated, and only the wave 7 odds ratio remained significantly ( $P < 0.016$ ) greater than one. Nonetheless, the trend by wave remained the same as before adjustment: the odds ratios estimated for waves 2 and 3 were less than one, while the odds ratios estimated for waves 4 through 7 increased steadily from 1.07 to 1.31. The magnitudes of the estimated odds ratios for waves 4 through 7 were clearly altered after the addition of age, gender and region indicating their role as potential confounders. Before adjustment, for example, drivers in wave 7 were 42% more likely to be in a higher SOC for seat belt use than drivers in wave 1. After adjustment, the estimated effect was only 31%.

**Table 14. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Seat Belt SOC by Wave (wave 1 is the reference category) Before and After Adjustment for Age, Gender, and Region of Residence based on Cumulative Logit Analysis**

Seat Belt Use SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	0.85	0.72, 1.01	0.063*	0.87	0.73, 1.03	0.104
Wave 3	0.87	0.72, 1.07	0.181	0.87	0.71, 1.07	0.180
Wave 4	1.22	1.00, 1.50	0.052*	1.07	0.87, 1.31	0.536
Wave 5	1.19	0.95, 1.50	0.134	1.12	0.89, 1.41	0.353
Wave 6	1.27	0.99, 1.63	0.059*	1.21	0.94, 1.56	0.142
Wave 7	1.42	1.15, 1.76	<b>0.001</b>	1.31	1.05, 1.62	<b>0.016</b>
<b>Overall Wave Effect</b>	<b>&lt;0.0001</b>			<b>0.008</b>		

Significant P-values ( $P < 0.05$ ) shown in boldface type. Marginal results ( $0.10 > P > 0.05$ ) are shown with an asterisk.

**Drink Driving.** As shown in Table 15, the estimated effect of wave on drink driving SOC was only just statistically significant when the sample was restricted to drivers with complete data on all of the independent variables. Significant or marginal effects were only obtained for the later waves (wave 6 and 7). Using stepwise selection methods, all of the main effects as well as two interaction effects (age\*region and gender\*region) were included in the adjusted model and the residual Chi Square test indicated a reasonable fit ( $P > 0.15$ ) to the data. After adjustment, there was no longer a significant wave effect, and the magnitudes of the estimated odds ratios were reduced substantially in waves 3, 4, 6 and 7.

**Table 15. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Drink Driving SOC by Wave (wave 1 is the reference category) Before and After Adjustment for Age, Gender, and Region of Residence based on Cumulative Logit Analysis**

Drink Driving SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	0.96	0.84, 1.10	0.556	0.93	0.81, 1.07	0.322
Wave 3	1.09	0.92, 1.28	0.319	1.01	0.86, 1.20	0.876
Wave 4	1.11	0.96, 1.30	0.171	1.00	0.85, 1.17	0.954
Wave 5	1.09	0.91, 1.29	0.357	1.09	0.91, 1.30	0.360
Wave 6	1.19	0.99, 1.44	0.065*	1.15	0.95, 1.39	0.163
Wave 7	1.23	1.05, 1.45	<b>0.009</b>	1.14	0.97, 1.33	0.118
<b>Overall Wave Effect</b>	0.054*			0.299		

Significant P-values ( $P < 0.05$ ) shown in boldface type. Marginal results ( $0.10 > P > 0.05$ ) are shown with an asterisk.

In order to investigate potential relationships between the survey waves and the drink driving SOC categories more fully, additional exploratory analyses were undertaken by decomposing the cumulative logit model into three binary logit models predicting the probabilities of being in the Maintenance versus other SOC groups, in the Maintenance and Change Engaged versus the

Contemplation and Pre-Contemplation groups, or in the Maintenance, Change Engaged and Contemplation versus Pre-Contemplations groups. A similar stepwise approach was used to estimate the odds ratios for waves 2 through 7, relative to wave 1, for each binary model. A significant wave effect was obtained only for the analysis involving the latter dichotomisation of the SOC categories (Maintenance, Change Engaged and Contemplation versus Pre-Contemplation). Table 16 shows the results of the binary model fitted to this definition of the outcome before and after adjustment for the main effects of age, gender, and region. No interaction effects were found to be significant in the fitting of this model. The results summarised in Table 16 suggest that, both before and after adjustment, drivers in the early waves were less likely, and those in the later waves were more likely, than drivers in wave 1 to be at least contemplating a change in attitude or behaviour relative to drink driving. However, only the odds ratios estimated for waves 5 and 7 were statistically significant. For this analysis, the influence of the potentially confounding effect of the sample characteristics was noted primarily in waves 4 and 7.

**Table 16. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Drink Driving SOC by Wave (wave 1 is the reference category) Before and After Adjustment for Age, Gender, and Region of Residence based on Binary Logit Analysis of the Aggregated Maintenance, Change Engaged and Contemplation group versus the Pre-Contemplation group**

Drink Driving SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	0.78	0.55, 1.10	0.153	0.76	0.54, 1.08	0.128
Wave 3	0.78	0.52, 1.16	0.211	0.72	0.48, 1.08	0.116
Wave 4	1.01	0.67, 1.51	0.977	0.86	0.57, 1.30	0.478
Wave 5	2.14	1.14, 4.02	<b>0.018</b>	2.17	1.15, 4.09	<b>0.016</b>
Wave 6	1.18	0.70, 1.99	0.538	1.13	0.67, 1.92	0.643
Wave 7	1.91	1.13, 3.21	<b>0.015</b>	1.75	1.03, 2.95	<b>0.038</b>
<b>Overall Wave Effect</b>			<b>0.004</b>			<b>0.004</b>

Significant P-values ( $P < 0.05$ ) shown in boldface type.

**Aggressive Driving.** As with drink driving, the wave effect on aggressive driving SOC was significant before ( $P < 0.002$ ) but not after adjustment ( $P < 0.233$ ; Table 17). Before adjustment, the odds of being in a higher SOC were significantly greater for drivers in waves 5, 6 and 7 than in wave 1 ( $P < 0.001$ ,  $P < 0.007$ , and  $P < 0.004$ , respectively). Stepwise regression fitted a main effects model with no interactions. Once again, the effect of wave on SOC rating was diminished substantially once the data were adjusted for age, gender, and regional differences between the samples. The confounding influence

of these factors is noted particularly in waves 4 through 7. Each one of these ratios is substantially lower than the corresponding ratio computed before adjustment.

**Table 17. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Aggressive Driving SOC by Wave (wave 1 is the reference category) Before and After Adjustment for Age, Gender, and Region of Residence based on Cumulative Logit Analysis**

Aggressive Driving SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	1.02	0.90, 1.16	0.764	1.04	0.92, 1.19	0.508
Wave 3	1.07	0.93, 1.25	0.346	1.07	0.92, 1.24	0.380
Wave 4	1.12	0.97, 1.28	0.116	1.00	0.87, 1.15	0.961
Wave 5	1.29	1.11, 1.51	<b>0.001</b>	1.17	1.00, 1.37	<b>0.045</b>
Wave 6	1.26	1.07, 1.49	<b>0.007</b>	1.19	1.01, 1.41	<b>0.041</b>
Wave 7	1.22	1.06, 1.40	<b>0.004</b>	1.09	0.95, 1.25	0.225
<b>Overall Wave Effect</b>			<b>0.002</b>			0.233

Significant P-values ( $P < 0.05$ ) shown in boldface type.

As with the drink driving SOC, binary logit analyses were performed on the aggressive driving SOC to determine whether there were any differences between the groups that might not be detected by the cumulative logit model. Once again, the only comparison that produced significant results was that of the Maintenance, Change Engaged, and Contemplation aggregate group versus the Pre-Contemplation group. The results of these analyses are shown in Table 18 and indicate that, while drivers in waves 1 through 4 differed little in their likelihood of at least contemplating a change in their attitudes of behaviours concerning aggressive driving, the odds shifted upwards in waves 5, 6, and 7. Moreover, these effects were significant, or marginally significant, both before and after adjustment.

**Table 18. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Aggressive Driving SOC by Wave (wave 1 is the reference category) Before and After Adjustment for Age, Gender, and Region of Residence based on Binary Logit Analysis of the Aggregated Maintenance, Change Engaged and Contemplation group versus the Pre-Contemplation group**

Aggressive Driving SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	1.10	0.91, 1.34	0.319	1.09	0.90, 1.32	0.387
Wave 3	1.07	0.86, 1.34	0.544	1.02	0.82, 1.28	0.850
Wave 4	1.13	0.92, 1.39	0.255	1.06	0.86, 1.32	0.569
Wave 5	1.33	1.04, 1.70	<b>0.023</b>	1.27	0.99, 1.63	0.057*
Wave 6	1.36	1.04, 1.78	<b>0.025</b>	1.33	1.02, 1.74	<b>0.037</b>
Wave 7	1.47	1.17, 1.84	<b>0.001</b>	1.41	1.12, 1.76	<b>0.003</b>
<b>Overall Wave Effect</b>			<b>0.011</b>			<b>0.036</b>

Significant P-values ( $P < 0.05$ ) shown in boldface type. Marginal results ( $0.10 > P > 0.05$ ) are shown with an asterisk.

**Speeding.** The results obtained for Speeding SOC were similar to those obtained for the Drink driving and Aggressive driving SOCs. Before adjustment for sample characteristics, there was a shift upwards in the SOCs that started in wave 4 ( $P < 0.057$ ) and continued through waves 5 ( $P < 0.001$ ), 6 ( $P < 0.044$ ) and 7 ( $P < 0.001$ ; Table 19). Stepwise selection methods once again included all of the main effects but no interaction terms in the model used to estimate the adjusted odds ratios by wave. Before adjustment, the overall wave effect was highly significant ( $P < 0.0003$ ) but after adjustment it was only marginally significant ( $P < 0.072$ ). Before adjustment, the odds ratios computed for waves 4 through 7 were significantly, or marginally significantly, greater than 1. After adjustment, the estimated odds ratio for waves 4 through 7 were closer to one, with only those computed for waves 5 and 7 remaining at least marginally greater than one.

**Table 19. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Speeding SOC by Wave (using wave 1 as the reference category) Before and After Adjustment for Age, Gender, and Region of Residence based on Cumulative Logit Modeling**

Speeding SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	1.00	0.88, 1.13	0.944	0.99	0.87, 1.12	0.816
Wave 3	1.04	0.89, 1.20	0.639	0.99	0.86, 1.15	0.906
Wave 4	1.14	1.00, 1.31	0.057*	1.02	0.89, 1.17	0.787
Wave 5	1.32	1.13, 1.53	<b>0.001</b>	1.22	1.05, 1.43	<b>0.010</b>
Wave 6	1.18	1.01, 1.40	<b>0.044</b>	1.12	0.95, 1.33	0.170
Wave 7	1.27	1.11, 1.46	<b>0.001</b>	1.14	1.00, 1.31	0.058*
<b>Overall Wave Effect</b>	<b>0.0003</b>			<b>0.072*</b>		

Significant  $P$ -values ( $P < 0.05$ ) shown in boldface type. Marginal results ( $0.10 > P > 0.05$ ) are shown with an asterisk.

As with the Drink driving and Aggressive driving SOCs, exploratory analyses using the binary logit models for the Speeding SOCs were next conducted. And once again, only the third model (predicting the combined Maintenance, Change Engaged, and Contemplation group) was found to produce significant results. Before adjustment, the model indicated that drivers in waves 4, 5 and 7 were significantly more likely to be at least contemplating a change in attitude or behaviour than drivers in waves 1 (Table 20). When age, gender and region were included in the model, stepwise regression again resulted in the inclusion of all of the main effects but no interaction terms. Model fit was satisfactory ( $P > 0.15$ ) and revealed that, after adjustment, only drivers in waves 5 and 7 were significantly more likely than drivers in wave 1 to be at least contemplating a change. As in the previous analyses, the odds ratios

estimated for waves 4 through 7, after adjustment, were attenuated towards one, and the overall wave effect was diminished, but not eliminated.

**Table 20. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Speeding SOC by Wave (wave 1 is the reference category) Before and After Adjustment for Age, Gender, and Region of Residence based on Binary Logit Analysis of the Aggregated Maintenance, Change Engaged and Contemplation group versus the Pre-Contemplation group**

Speeding SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	1.04	0.87, 1.23	0.691	1.03	0.86, 1.22	0.770
Wave 3	1.00	0.82, 1.22	0.994	0.96	0.78, 1.17	0.669
Wave 4	1.29	1.06, 1.58	<b>0.013</b>	1.17	0.95, 1.43	0.139
Wave 5	1.43	1.14, 1.81	<b>0.003</b>	1.35	1.07, 1.71	<b>0.012</b>
Wave 6	1.21	0.96, 1.54	0.112	1.16	0.91, 1.48	0.223
Wave 7	1.39	1.14, 1.71	<b>0.001</b>	1.29	1.05, 1.59	<b>0.015</b>
<b>Overall Wave Effect</b>	<b>0.0012</b>			<b>0.035</b>		

Significant P-values ( $P < 0.05$ ) shown in boldface type.

## Summary

In this part of the study, the RTCGD and SOC instruments were used to describe and compare readiness to change and stages of change among seven samples of drivers who completed the online survey at different points in time through 2006 and 2007. As well, relationships between variables such as age, gender, and region of residences and readiness to change and stages of change were explored, as were the potentially confounding influences of such characteristics when conducting comparisons of readiness to change and stages of change across the sample groups.

The results indicated that both instruments were useful in detecting changes across the respondent groups but that variations in characteristics such as age, gender, and region of residence can confound the results obtained in such comparisons. Future studies that use cross-sectional sampling from the population, particularly those that have the aim of evaluating any intervening road safety programs or initiatives, will need to ensure that such potentially confounding effects are taken into account, or that sampling strategies include frequency matching on these important variables. Furthermore, a better understanding of how readiness to change and stages of change vary by age, gender and region of residence may prove helpful for the development of initiatives that target not only the general population but specific subgroups within the population.

Although changes across the survey waves were examined for both the RTCGD and SOC measures, this study was not designed as an evaluation of any specific road safety campaigns. Consequently, no attempt was made to attribute any of the changes observed to road safety efforts. Additional data that identify the types and amounts of road safety educational work ongoing during the periods of time covered by the surveys will be needed before such an evaluation can be initiated. Nonetheless, the results of the analyses conducted to investigate wave effects are encouraging. Although some of the observed effects can be attributed to differences between the samples, they were not totally eliminated once sample differences were taken into account. Further research will be needed to determine whether these remaining effects can be linked to road safety educational efforts, or whether they simply reflect other potential confounding factors that have not yet been taken into account.

In the next part of the study, the results obtained for the subgroup of survey respondents who completed the questionnaire twice will be described. The use of these repeat responders is helpful because it removes the potentially confounding influence of different sample characteristics on readiness to change and stages of change, and permits attention to be focused on the ability of the RTCGD and SOC measures to detect any transitions made over time by the same individuals.

### **Part 3 – Repeat Responders**

Two groups of repeaters were included in this part of the study: 1) Repeaters 1 & 5 - drivers who completed the survey in wave 1 and wave 5 (N=784), and 2) Repeaters 4 & 7 - drivers who completed the survey in waves 4 and 7 (N=345). To be included in the repeater groups, respondents had to report driving more than zero hours in a typical week on both surveys completed. The lag time between surveys for the first group was 17 months, and for the second group it was 14 months.

#### **Sample Characteristics**

Table 14 shows the sample characteristics for the two Repeater groups. Both groups have similar distributions with respect to region of residence, licence status, age, and hours driven per week. However, as was also the case with the larger groups of wave 1 and wave 4 respondents (Table 1), their gender distributions are quite different. The wave 1&5 group has a majority of males while the wave 4 & 7 group is predominantly female.

**Table 14. Sample Characteristics of Repeat Respondents at the time of their First Survey**

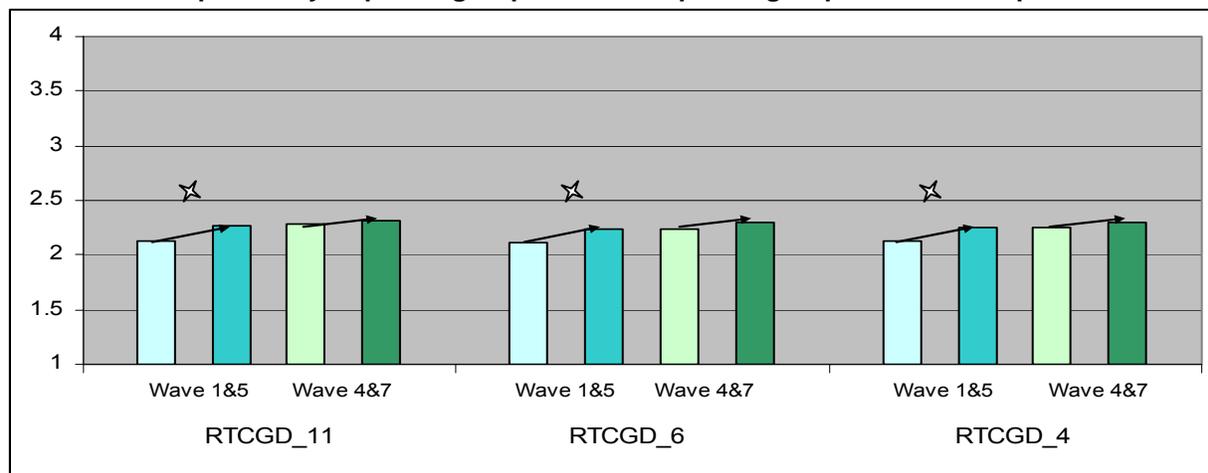
	Repeater Groups	
	Wave 1 & 5 N=784	Wave 4 & 7 N=345
<b>Age</b> (Mean (SD)) in years	53.83 (12.4)	52.9 (12.9)
<b>Hours driven in average week</b> (Median (Min, Max))	7.0 (1.0-70.0)	7.0 (1.0-70.0)
<b>Gender:</b> Male (%)	56.4	35.4
Female (%)	43.6	64.6
<b>License:</b> Full Privilege (%)	97.7	97.1
Learner or Novice (%)	2.3	2.9
<b>Region:</b> Fraser Valley (%)	25.3	22.3
Greater Vancouver (%)	26.4	26.7
North Central (%)	7.0	7.2
Southern Interior (%)	16.7	17.7
Vancouver Island (%)	24.6	26.1

Within each Repeater group, analyses were undertaken to investigate whether there might be a significant change in hours driven per week or region of residence from the first time respondents completed the survey to their second completion. For the Wave 1&5 group, median hours driven per week increased from 7.0 to 8.0 hours ( $P=0.695$ , Wilcoxon Signed Ranks test). For the Wave 4&7 group, median hours driven declined from 7.0 to 6.0 hours per week ( $P=0.321$ , Wilcoxon Signed Ranks test). Only 16 (2.0%) respondents from Wave 1 had changed their region of residence by Wave 5 ( $P=0.243$ ; McNemar-Bowker test), and 24 (7.0%) respondents from Wave 4 had changed their region of residence by Wave 5 ( $P=0.072$ , McNemar-Bowker test). Based on an alpha criterion level of  $P=0.05$ , none of these changes were statistically significant.

### Changes in Mean Scores on the RTCGD

Mean scores on all versions of the RTCGD, and for both Repeater groups, increased from the first to second repetition of the survey (Figure 7) for both repeater groups. However, the increase was statistically significant only for the Wave 1 to Wave 5 Repeater group ( $P<0.001$ ). As in the analysis of the scores for new respondents, none of the mean scores computed for either repeater group exceeded 2.5, even after the increases observed on the second repetition. Thus, despite a small upward shift in mean scores, both groups remained on the low side of the readiness to change measure.

**Figure 7. Mean scores on the RTCGD\_11, RTCGD\_6, and RTCGD\_4 at first and second completion by Repeater group 1&5 and Repeater group 4&7 – All Respondents**



✧ Statistically significant,  $P < 0.05$

**Table 15. Comparison of Mean Scores on the First and Second Repetitions of the RTCGD\_11, RTCGD\_6, and RTCGD\_4 for the Wave 1&5 and Wave 4&7 Repeater Groups – by Gender**

Scale	Group	N	Mean*	SD	Mean Difference (First-Second)	Paired T	P-Value*
<b>Male Respondents</b>							
RTCGD_11:	Wave 1	316	2.16	0.707	-0.157	-4.346	<b>&lt;0.001</b>
	Wave 5	316	2.31	0.723			
	Wave 4	89	2.34	0.674	0.02	0.321	0.749
	Wave 7	89	2.32	0.715			
RTCGD_6:	Wave 1	341	2.14	0.755	-0.130	-3.442	<b>&lt;0.0015</b>
	Wave 5	341	2.27	0.775			
	Wave 4	94	2.31	0.711	-0.03	-0.365	0.716
	Wave 7	94	2.34	0.752			
RTCGD_4:	Wave 1	356	2.14	0.783	-0.142	3.735	<b>&lt;0.001</b>
	Wave 5	356	2.28	0.801			
	Wave 4	97	2.32	0.733	-0.005	-.070	0.944
	Wave 7	97	2.33	0.807			
<b>Female Respondents</b>							
RTCGD_11:	Wave 1	193	2.10	0.692	-0.105	-2.137	<b>0.034</b>
	Wave 5	193	2.20	0.696			
	Wave 4	127	2.24	0.762	-0.077	-1.464	0.146
	Wave 7	127	2.32	0.768			
RTCGD_6:	Wave 1	222	2.08	0.773	-0.100	-1.981	<b>0.049</b>
	Wave 5	222	2.18	0.761			
	Wave 4	142	2.17	0.814	-0.097	-1.803	0.074
	Wave 7	142	2.27	0.810			
RTCGD_4:	Wave 1	233	2.10	0.821	-0.099	-1.856	0.065
	Wave 5	233	2.19	0.806			
	Wave 4	148	2.20	0.814	-0.068	-1.159	0.248
	Wave 7	148	2.27	0.798			

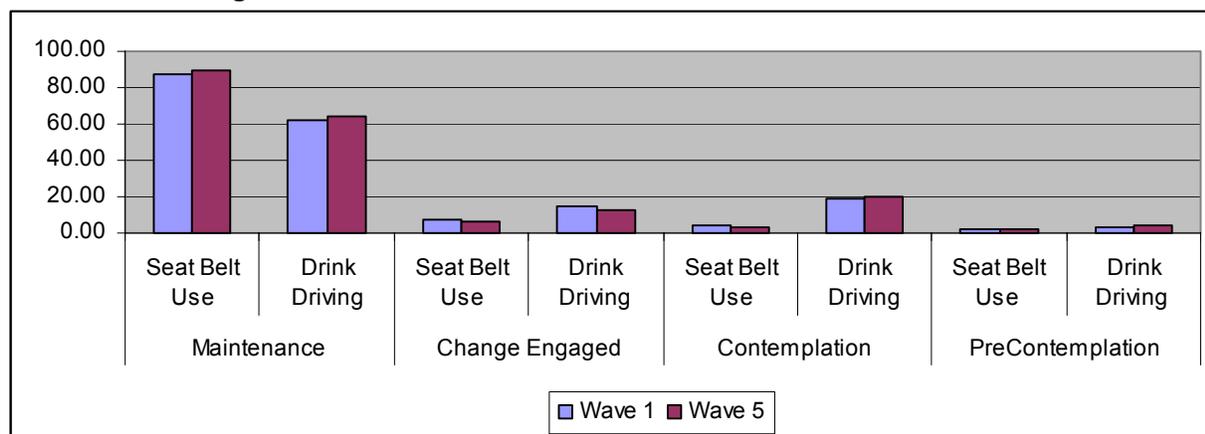
\*Significant P-Values in boldface type.

Due to the much higher percentage of females than males in the Repeater 4&7 group, relative to the Repeater 1&5 group, and the finding in study 1 that females tended to score lower than males on the RTCGD, the results shown in Figure 7 were reanalyzed for males and females separately (Table 15). In general, the results for males and females were similar to all respondents; significant increases in RTCGD scores were found for both genders but only within the Repeater 1&5 group. Interestingly, on all three versions of the RTCGD, and all four waves, females scored lower than males. However, from wave 1 to 5 males showed a greater increase in mean scores than females, while from waves 4 to 7, females showed the greater, albeit not significant, change.

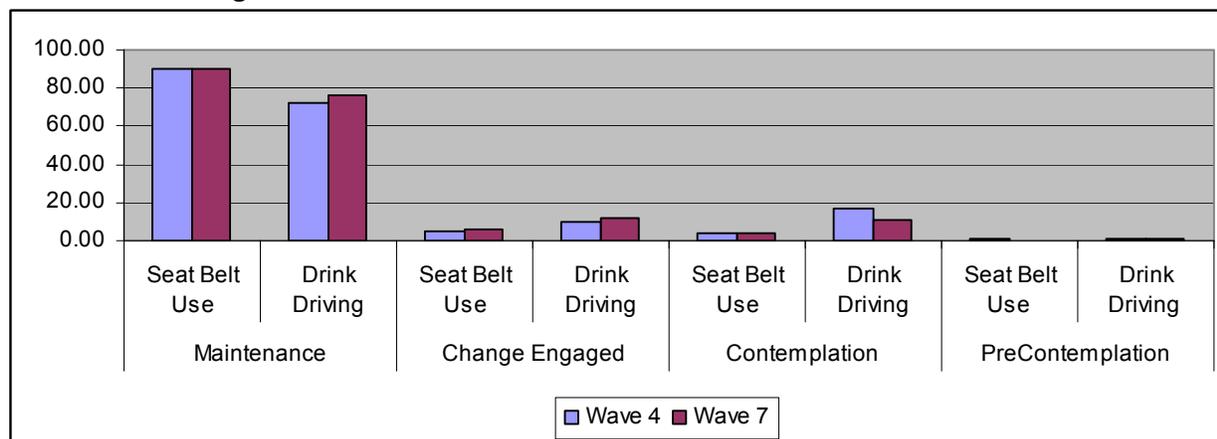
### Stages of Change Transitions for Targeted Behaviours

**Seat Belt Use.** Most of both repeater groups (87.1% of the wave1&5 group, and 90.5% of the wave4&7 group) started out in the Maintenance stage for this behaviour (Figures 8 and 9). At the second completion of the survey, the percentage of each group that was in the Maintenance stage had increased to 89.3% for the 1&5 group, and had declined slightly, to 89.9%, for the 4&7 group. For males, the initial percentages were 84.7% and 87.6% followed by an increase to 86.3% for the 1&5 group and a decrease to 86.0% for the wave 4&7 group. For females, the initial percentages for the 1&5 and 4&7 groups were 90.1% and 92.1%, respectively. This was followed by an increase to 93.1% for the first group and no change for the second group. None of the observed changes in SOC classification for seat belt use at the first and second completions were statistically significant.

**Figure 8. Percentage of Repeat Responders in each Stage of Change for Seat Belt Use and Drink Driving at Wave 1 and Wave 5**



**Figure 9. Percentage of Repeat Responders in each Stage of Change for Seat Belt Use and Drink Driving at Wave 4 and Wave 7**

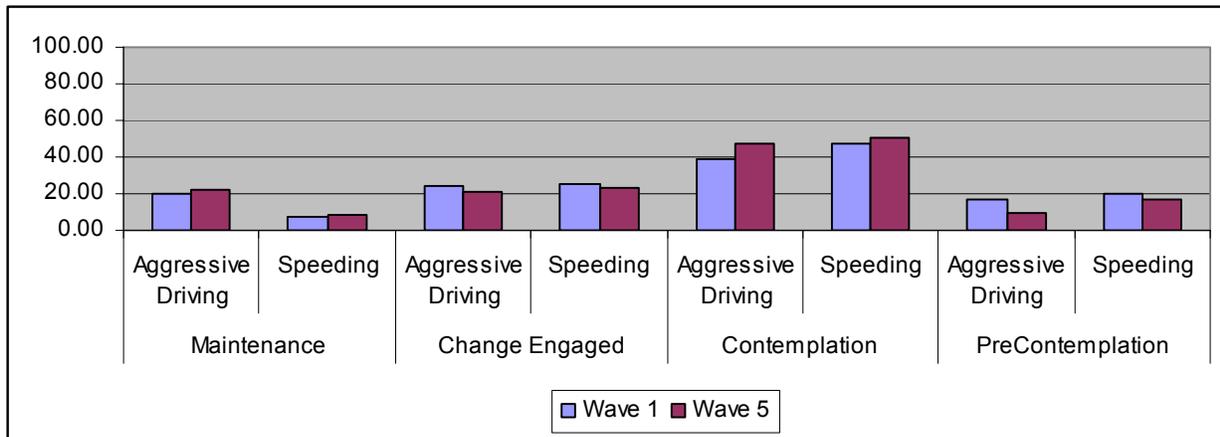


**Drink Driving.** As with seat belt use, most of the respondents in the repeater groups were classified into the Maintenance SOC for drink driving, at both assessments (Figures 8 and 9). And in both groups, the initial classification of drivers remained relatively stable from the first to second assessments. No significant changes upwards or downwards in SOC were detected when all drivers were included in the analysis. When examined by gender, females were more likely than males to start out in the Maintenance SOC (75.0% versus 53.1% in wave 1 and 79.0% versus 59.2% in wave 4), and no significant shifts were detected in either of the female repeater subgroups. For males in the 4&7 repeater group, a marginally significant shift in SOC classification was detected ( $P < 0.053$ ). For this subgroup ( $n=102$ ), 72.8% were in the same SOC in both wave 4 and wave 7, 18.4% had moved up to a higher level SOC, and 8.7% had moved to a lower level.

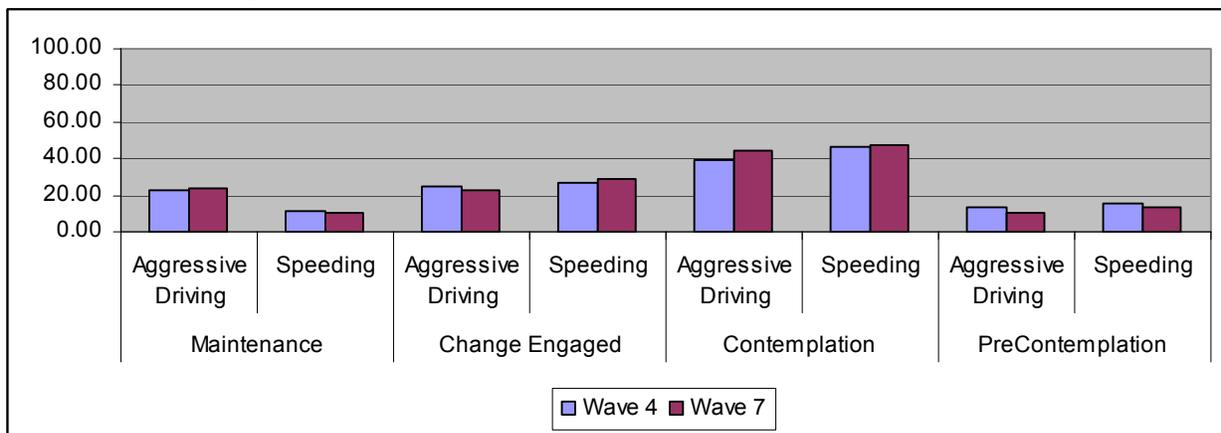
**Aggressive Driving.** Aggressive driving SOCs changed significantly from the first to second assessment ( $P < 0.001$ ) for respondents in the wave 1&5 group but not for the wave 4&7 group (Figures 10 and 11). For the 1&5 group the results were significant when all respondents were included ( $P < 0.001$ ) as well as when the groups were separated into males ( $P < 0.022$ ) and females ( $P < 0.041$ ). Overall ( $n=590$ ), 50.3% of the respondents in the 1&5 group stayed in the same SOC at both assessments, 26.6% moved into a higher SOC and 23.1% moved into a lower SOC. For males ( $n=360$ ), the percentages were 54.2%, 24.2% and 21.7%, respectively; and for females ( $n=230$ ) they were 44.3%, 30.4%, and 25.2%. Most of the male respondents (44.4%) were identified as being in the Contemplation SOC in wave 1, whereas most of the female respondents in wave 1 were distributed almost evenly between the Contemplation (30.4%) and Change Engaged (29.6%) SOCs. The percentage of males and females in the Maintenance

SOC increased slightly from waves 1 to 5 (from 16.4% and 24.3% respectively to 17.8% and 27.8%, respectively).

**Figure 10. Percentage of Repeat Responders in each Stage of Change for Aggressive Driving and Speeding at Wave 1 and Wave 5**



**Figure 11. Percentage of Repeat Responders in each Stage of Change for Aggressive Driving and Speeding at Wave 4 and Wave 7**



**Speeding.** For speeding, the only significant shift in SOCs detected was for male respondents in the wave 1&5 group ( $P < 0.048$ ). In this group ( $n = 376$ ), 60.4% remained in the same SOC in which they started, 21.5% shifted upward to a higher level SOC and 18.1% shifted downward. Only 3.7% of these respondents were placed in the Maintenance stage in wave 1 and this shifted upward to 6.6% by wave 5. For females, 12.5% were placed in the Maintenance SOC in wave 1 and 12.2% were still in that stage in wave 5. For the wave 4&7 group, 8.6% of the male respondents ( $n = 105$ ) were in the Maintenance SOC in wave 4 and 8.6% were in this same SOC in wave 7. For females, the percentage in the Maintenance SOC in wave 4 was 12.9% and in wave 7 it was 12.3%. For both repeater groups, about half of all of the respondents in each wave were classified into the Contemplation SOC (Figures 10 and 11).

## **Summary**

For both groups of drivers in the repeated measures part of the study, mean scores on the RTCGD increased from the first completion to the second completion of the survey. Although the increase was statistically significant for the wave1&5 group only this nonetheless indicates that the RTCGD scale can detect subtle improvements in driver readiness for change. Interestingly, females tended to score lower on the RTCGD than males, indicating lower receptiveness to change.

Changes in SOC classifications over the periods investigated were minimal. From the first to second repetition of the survey, most respondents remained in the category to which they were initially assigned. And, where re-classification did occur it was either evenly divided in direction, or tended slightly upward. For seat belt use and drink driving, a high percentage of drivers in the Maintenance SOC at the first completion of the survey in wave 1 remained in the Maintenance stage at the second stage (97.3% and 86.7%, respectively). However, for aggressive driving and speeding, only a little more than half of the respondents in the Maintenance stage at wave 1 were still in the Maintenance stage at wave 5 (54.8% and 54.3%, respectively). This transitional fluidity may suggest that the safety implications of engaging in these two behaviours have not yet reached the same level of acceptance by drivers as seat belt use and drink driving. Interestingly, a higher percentage of females than males were assigned to the Maintenance stage for all four behaviours, but particularly for drink driving.

These findings suggest that the RTCGD and SOC measures can be used to detect transitional changes in the same individuals over time. Interestingly, although females tended to score lower on the RTCGD than males, they tended to be classified into higher SOCs than males. While this might seem counterintuitive at first, it actually demonstrates the potential compatibility of these two ways of measuring readiness to change. The lower RTCGD scores for females may well reflect the fact that they are more likely to already engage in safer driving behaviours and, hence, may be less receptive to the need to improve their behaviour further.

Despite the finding of some transitional shifts in RTCGD scores and SOC categories, the observed changes were relatively small, particularly given the amount of time between the repetitions of the survey (more than a year for both groups). This could be indicative of the stability (a form of reliability) of the measures, if exposure to interventions designed to change behaviours between surveys was low, or it could indicate that the detection of change in driver behaviour is simply a long term process. Levels

of road safety education activity have not yet been factored into the analysis, so the effect of exposure to this type of intervention has not yet been explored. It may be that certain, and perhaps as yet undefined, subgroups within the observed samples were exposed to more or less educational activity than others; if so it may not be reasonable to expect to detect change using aggregate measures across all drivers. Additional research which includes measures of road safety educational activity will be needed in order to investigate whether any of the observed shifts in RTCGD scores or SOC assignments may be related to increases in, or the presence or absence of, road safety educational programming, or whether they simply reflect random fluctuations over time.

## **Discussion**

The present study was designed as a follow-up to a preliminary study undertaken in 2006 to develop methods for assessing change in risky driver behaviour, at the population level, based on the concepts of the TMC. The TMC provided the theoretical context for the development of 29 items included in the RTC component of an online survey questionnaire. In the preliminary study two potential measures were developed as a result of the psychometric assessment of the items: 1) the RTCGD scale – a quantitative measure designed to assess general driver readiness for change and 2) the SOC classification process for selected risky driver behaviours. The current study was designed primarily to cross-validate the RTCGD and SOC measures using newly collected data, and to begin to explore their use in tracking change over time in samples of the BC driver population.

The results of the study confirmed both the formation of the RTCGD scale to assess drivers' general readiness for change and the behaviour-specific SOC classification strategies. As in the 2006 study, the RTCGD was formed using 11 of the original 29 RTC questionnaire items and was found to have both convergent validity and very high internal consistency. In fact, the internal consistency was so high ( $\text{Alpha} > 0.90$ ) it suggested that at least some of the items might be redundant. In an effort to reduce redundancy and shorten the overall length of the questionnaire items were dropped from the scale, and two shorter versions of the scale were tested: a 6-item scale and a 4-item scale. The items dropped in forming each scale were identified through standard item analysis procedures. All three scales were found to have similar psychometric properties, to correlate very highly with each other, and to produce very similar results when their mean scores were compared across different sets of data. Internal consistency coefficients were consistently high ( $> 0.87$ ) for both of the shorter versions. In fact, the

magnitudes of coefficients suggest that, even with the 4-item scale, there could still be some item redundancy. It might be useful, therefore, to review the general 'readiness to change' construct and try to refine the scale further by revising or adding items that define the construct more fully.

The second tool, the SOC, was also found to be a valid way to measure drivers' receptiveness to change based on their self-reported thoughts, attitudes, and behaviours. And it permitted assessment that was specific to identified driver behaviours. Overall, it was found that the categories assigned to drivers were quite stable when measured using the same respondents at two time points, even after a delay of 17 months. This stability could be a sign of the reliability of the method (if the respondents had little or no exposure to road safety programming during the period between their assessments) or it could simply reflect the slow pace through which behaviour change occurs. The SOC process did, however, sort drivers into different categories of change depending upon the behaviour being assessed and, as would be predicted from the TMC, drivers assessed twice were found to move both up and down the SOC hierarchy. All of these findings suggest that the method has the potential for tracking trajectories of change over time, particularly when employed repeatedly with the same individuals. The method may also be useful for the development of education campaigns that target specific segments of drivers (eg., males and females, drivers in Greater Vancouver versus North Central BC). One of the uses of the TMC in clinical settings is the identification of the client's SOC so that an appropriate intervention can be designed to help them move from their current SOC to a higher level SOC. Such an approach may be helpful in developing education campaigns that target particular segments of the overall driver population.

However, two factors could limit the usefulness of the SOC method. Firstly, drivers are assigned to the Maintenance SOC for each behaviour based on the operational definition of the desired behaviour (eg., wearing seat belt 100% of the time or not). It is important, therefore, that a clear and consistent definition be developed for any driver behaviour that is to be assessed using this method, one that as clearly as possible identifies individuals who belong in the Maintenance stage for the behaviour. The definitions used to assign drivers to the Maintenance SOC for aggressive and drink driving, and possibly speeding, may not have achieved this requirement. Therefore, the items used to operationalize the definitions for these behaviours need to be reviewed and, if necessary, revised. Secondly, the categorization processes used to separate drivers into the Pre-Contemplation and Contemplation SOCs were found to have limited validity. Drivers in these two categories tended to have similar mean scores

on the items used to evaluate whether the SOC categories would sort in the expected hierarchical order. In fact, for some of the comparisons, particularly for speeding and aggressive driving, the expected sorting order for these two categories was reversed. This could reflect an issue with the items themselves, with the criteria used to sort drivers into these two categories, with the items that were used to assess their validity, or with the operational definitions of the targeted behaviours.

The results of this study suggest that the TMC framework, the RTCGD, and the SOC do provide a practical and potentially useful way to conceptualize and measure attitude and behaviour change among drivers in the BC population. Further work is required to enhance the operationalization of the behaviours and constructs that the RTCGD and SOC are designed to assess, and to investigate the sensitivity of the measures for the detection of changes related to specific road safety education campaigns. As well, depending upon the sampling approach used (cross-sectional or repeated measures) further research is required to better understand relationships between readiness to change and driver subgroups. For cross-sectional studies, potentially confounding factors such as age, gender and regions of residence will need to be considered when evaluating the effectiveness of road safety educational programs over time. For repeated measures studies, transitional changes may only appear for certain subgroups within the sample, depending upon the nature and level of exposure to particular road safety campaigns.

Furthermore, although the RTCGD and SOC measures as currently constructed may provide a useful starting point for the measurement of drivers' readiness to change, they are not the only way and may, in fact, not be the best way to detect the subtle changes that may be occurring in the driver population. In the 2006 study it was suggested that a more sensitive measure of change might be found through the use of a two dimensional measure focussing on the quality and stability of driver behaviour. In the next phase of the research, this approach could be more fully developed and compared with the results obtained using the RTCGD and SOC approach. Before examining such alternative approaches, however, it is important that clearer definitions of the underlying constructs and behaviours be developed to guide the comparison, and that the items currently included in the survey be reviewed and refined to more fully represent these constructs and behaviours. As well, measures of road safety education campaign activity need to be developed, and the data collected and incorporated into the analyses.

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## Appendix A. Operational Definitions of Targeted Driver Behaviours

- **Seat Belt Wearing.** Respondents who indicated that they wear their seat belts 100% of the time were classified as “Always wear Seat Belt”; those who answered from 0-99% of the time were classified as “Do Not Always Wear Seat Belt”. The rest were categorized as “Unknown”.
- **Drink Driving.** Four items were used to classify respondents as “not likely a drink driver”, or “likely a drink driver”. Drivers were assigned to the “Not likely Drink Driving” if they responded “0%” or “I don’t drink” to question 1 above, or if they did not respond “I don’t drink” to q1 but they responded “strongly agree” to question 4 and “strongly disagree” to questions 2 and 3.

1. What percentage of the time that you drink 2 or more alcoholic drinks do you end up driving within 2 hours?
2. I sometimes drive after having 1 or 2 drinks.
3. I sometimes drive even when I am probably over the legal blood limit.
4. I never drive if am consuming any alcohol.

Drivers were assigned to the “Likely Drink Driving” category, if they said from 1-100% of the time in answer to question 1, or if they responded ‘somewhat disagree’, ‘somewhat agree’, or ‘strongly agree’ to items 2 and 3, or ‘somewhat agree’, ‘somewhat disagree’, or ‘strongly disagree’ to item 4. All other respondents were categorized as “Unknown”.

- **Aggressive Driving.** Six survey items were used to identify potential “Aggressive Drivers”. Respondents were asked to indicate how often they had demonstrated each of the following behaviours during the 6 month period prior to the survey.

“Within the last six months, how often have you demonstrated the following driving behaviours?:

1. Coming up behind slow drivers to make them move over
2. Changing lanes when ever possible to keep moving
3. Not coming to a full stop at a stop sign
4. Driving slowly in the passing lane
5. Driving through a yellow light that’s turning red
6. Driving 10km or more over the posted speed limit.

When the items were first developed, a ‘Non-aggressive’, driver was conceptualized as one who would respond “Never” to all six items. Drivers who provided a valid coded response but did not respond “Never” to all seven items were categorized as “Likely Aggressive Driver”. All remaining drivers were classified as “Unknown”.

Using this definition, only about 1.5% of all survey participants were identified as “Non-aggressive”. Upon review of the distributions of responses to the six items, it appeared that at least some of the responses may have been indicative more of bad or ‘sloppy’ driving rather than aggressive driving *per se*. Consequently, a new definition was explored. For this definition, categories of “Not Likely Aggressive” and “Likely Aggressive” drivers were used. A “Not Likely Aggressive” driver was defined as someone who gave a response of “1 (Never)” to items 1 and 4, a score of 2 or less for Items 3 and 5, and a score of less than 5, 6, or 7 (“Always”) for item 6 .

Item 2 did not differentiate well between “Aggressive” and Non-aggressive” drivers and was dropped from the definition. Drivers who provided coded responses to all of the items, but who did not meet the criteria for a “Not Likely Aggressive” driver were classified as “Likely Aggressive” drivers, and drivers with incomplete information were categorized as “Unknown”.

- **Speeding.** Four survey items were used to separate “Speeder” from “Non-Speeders”. Respondents were asked to report how many speeding tickets they had received in the six month period prior to the survey. They were also asked to report their usual speed of driving in a 50km/hour zone, an 80km/hour zone, and a 100km/hour zone. Drivers who reported zero (0) speeding tickets, and who indicated that their usual rates of speed were <60km/hour, <90km/hour, and <100km/hour in each respective speed zone were classified as “Non-Speeders”. Drivers who reported 1 or more speeding tickets or who indicated that their usual rates of speed were  $\geq 60$ km/hour,  $\geq 90$ km/hour, and  $\geq 100$ km/hour in each respective speed zone were classified as “Speeders”. Any drivers with incomplete information were categorized as “Unknown”.

## **Appendix B. Listing of Behaviour-Specific Contemplation and Change Engaged Items from the Readiness to Change Questionnaire**

### **A. Contemplation Items.**

1. Compared to 6 months ago, I don't feel quite the same way about frequently changing lanes, or driving closely behind slower drivers to make them move over (aggressive driving item).
2. I'm starting to weigh the pros and cons of frequently changing lanes, or driving closely behind slower drivers to make them move over (aggressive driving item)
3. Compared to 6 months ago, I don't feel quite the same way about driving at more than 10km above the posted speed limit (speeding item).
4. I'm starting to weigh the pros and cons of driving at more than 10km above the posted speed limit (speeding item).
5. Compared to 6 months ago, I don't feel quite the same way about driving without always wearing a seat belt (seat belt item).
6. I'm starting to weigh the pros and cons of driving without always wearing a seat belt (seat belt item).
7. Compared to 6 months ago, I don't feel quite the same way about driving within two hours of consuming two or more alcoholic drinks (drink driving item).
8. I'm starting to weigh the pros and cons of driving within two hours of consuming two or more alcoholic drinks (drink driving item).

### **B. Change Engaged Items.**

1. In the last 6 months I have tried to make my way through traffic without frequently changing lanes, or driving closely behind slower drivers to make them move over (aggressive driving item).
2. I'm determined to always make my way through traffic without frequently changing lanes, or driving closely behind slower drivers to make them move over (aggressive driving item).
3. In the last 6 months I have tried to drive at less than 10km over the posted speed limit, even if the traffic conditions allow me to go faster (speeding item).
4. I'm determined to always drive at less than 10km over the posted speed limit, even if the traffic conditions allow me to go faster (speeding item).
5. In the last 6 months I have tried to wear a seat belt every time I am in an automobile (seat belt item).
6. I'm determined to always wear a seat belt in an automobile (seat belt item).
7. In the last 6 months I have tried NOT to drive within two hours of consuming two or more alcoholic drinks (drink driving item).
8. I'm determined to never drive within two hours of consuming two or more alcoholic drinks (drink driving item).

## **ATTACHMENT A-6**

# **MEASURING AND MONITORING CHANGES IN DRIVER ATTITUDES AND BEHAVIOURS (FEBRUARY 2009)**



Performance Analysis Services

# **Measuring and Monitoring Changes in Driver Attitudes and Behaviours:**

*Update of the April 2008 report on the Utility of the Readiness to  
Change Model for Evaluating ICBC Road Safety Public Education  
Campaigns*

***February 2009***

Prepared for: Laurie Baker  
Manager, Road Safety Performance Planning and Analysis

Contacts: Sandi Wiggins, Peter Cooper

## EXECUTIVE SUMMARY

Road safety education programs are designed to increase people's awareness of risky driving behaviours, to increase drivers' recognition of their own unsafe driving habits, and to motivate drivers to change such behaviours in order to reduce their risk of crash involvement. Until recently, the primary focus of studies conducted to evaluate the effectiveness of such programs has been to track public awareness of and support for the types of issues and strategies addressed in the campaigns. But awareness of issues relating to risky driving behaviour does not necessarily translate into behaviour change. And in order to understand the effect that road safety educational campaigns have on behaviour a different method of measuring program effectiveness is required.

The Transtheoretical Model of Change (TMC) was developed to assist clinicians in designing effective interventions for motivating health behaviour change. Central to the TMC, is the idea that individuals do not suddenly adopt new habits but instead pass through five stages of change: Pre Contemplation, Contemplation, Preparation, Action and Maintenance. The stages are hierarchical and reflect an increase in readiness to change: from being unaware of any need to change, through to performing the new behaviour consistently enough for it to become habitual. Although presented in a linear fashion, transitions between stages can go both forward and backwards (eg. A smoker who quits and restarts), and may take many restarts before the desired behavioural outcome is achieved. Clinicians dealing with behaviours such as drug addiction, or smoking, use information based on the TMC not only to understand where in the change process a particular individual might be, but also to design and implement appropriate intervention strategies.

The present study was designed as a follow-up to preliminary studies undertaken in 2006 (Wiggins, Vavrik, & Cooper, 2007) and 2007 (Wiggins, Cooper, & Vavrik, 2008) to develop methods for assessing change in risky driver behaviour, at the population level, based on the concepts of the TMC. Using data collected in four waves in 2006, and in three waves in 2007, the results of the preliminary studies suggested that two measurement tools be developed: 1) a Readiness to Change for General Driving (RTCGD) scale and 2) a Stage of Change (SOC) classification process for targeted driver behaviours. The results also indicated, however, that the operational definitions of two of the targeted behaviours (drink driving and aggressive driving) needed clarification and that the RTCGD scale could be reduced and possibly modified to better reflect the scope of the 'readiness to change' construct.

In early 2008, the questionnaire used to collect the RTCGD and SOC data was revised in an effort to respond to the recommendations of the earlier studies. The revised questionnaire was used in the 2008 survey, which was conducted in three waves (July, September, and December). The current study was undertaken to assess the psychometric properties of the revised RTCGD and SOC measurement tools, and to make recommendations concerning their potential usefulness for evaluating the effectiveness of road safety public awareness initiatives.

In the 2006 and 2007 studies, the RTCGD was developed as an 11-item scale. In the 2008 survey two of the original 11 items were excluded, two were revised for content, and two were revised to reflect a consistent reference timeline. As well, the questionnaire items that had been used to define aggressive and drink drivers were revised to be more specific and to align more closely with the road safety campaign targets for these two behaviours. In particular, drink drivers were defined as those who report driving within two hours of drinking two or more alcoholic beverages, and aggressive drivers were defined using a series of items that not only attempted to capture the domain of aggressive driving behaviours but to make more explicit the aggressive intent underlying the behaviours.

The results of the current study confirmed the single factor structure of the RTCGD scale and found that five of the nine RTCGD items were all that were needed to obtain a reliable and valid measure of the readiness to change construct. The results also confirmed previous findings concerning the SOC assignment process for the four targeted behaviours. For three of the four behaviours (seat belt wearing, drink driving and speeding) the classification algorithm appears to provide a valid mechanism for sorting drivers into the SOC hierarchy. Four stages were identified: Maintenance, Change Engaged, Contemplation and Pre-Contemplation. For each of these three behaviours, drivers scores on items used to cross-validate the classification system sorted into the expected order. For aggressive driving, however, the SOC process was not able to differentiate between drivers in the Contemplation and Pre-Contemplation stages. This could be due to the variety of driving behaviours included in the aggressive driver definition (red light running, failure to stop at stop lights, speeding, speeding up behind drivers to make them move over, crossing lanes frequently in order to get ahead of traffic). Aggressive drivers may be in the Pre-Contemplation stage for some of these behaviours but in the Contemplation stage for others. The lack of differentiation of these two categories could also be due to the nature of the variables used to test the classification process. Due to the inconsistencies observed, it may not be informative to

retain the four-category SOC groupings for this particular behaviour. A three-category SOC may be more informative (Maintenance, Change Engaged, Contemplation). It appears that few drivers who engage in the types of behaviours included in the aggressive driver domain are truly in denial of a need to change.

Cross-sectional comparisons of RTCGD scores across all ten waves of the survey revealed a small but statistically significant increase in driver readiness to change from 2006 through to the end of 2008. Females were found to score higher than males on the RTCGD. Older drivers were likely to score higher than younger drivers. After taking into account the differences in the age and gender distributions of the ten sample groups, the upward linear trend increased slightly in magnitude (from 0.02 units of increase on the scale per wave to 0.025 units per wave). The results also indicated, however, that BC drivers typically are not yet truly engaged in the change process. Mean and median scores on the RTCGD were found to fall at or below the mid-point for the scale (2.5) indicating that most drivers are still not ready to make real and lasting changes in their driving behaviours.

The findings associated with the RTCGD were generally confirmed with the SOC measure of specific driving behaviours – with two exceptions: seat belt wearing and drink driving. For these behaviours the vast majority of respondents were classified into the Maintenance SOC (about 85% and 80%, respectively). Due to the change in the drink driving definition and SOC algorithm the percentages obtained in the 2008 survey waves were about 10% higher for this behaviour than in previous waves. Nonetheless, across all ten waves the majority of drivers were reportedly committed to not drinking and driving and to always wearing their seat belt when in a vehicle.

Interestingly, the findings obtained from the cross-sectional comparison of the ten independent survey waves were similar to those obtained using a subset of drivers who repeated the survey in wave 1 (Feb. 2006), wave 5 (June 2007), and 8 (July 2008). Mean RTCGD scores increased steadily across the three waves for these drivers, and the results obtained from the SOC data were also similar to those obtained from the independent groups. Thus, not only do these measures appear to be able to detect change over time, the findings associated with the repeater groups suggest that the results for the independent groups may not necessarily be attributable to differences in the characteristics of the different groups, but may in fact reflect actual transitional changes that are occurring over time.

In general, the findings from this series of psychometric studies suggest that the two measures developed using the TMC theoretical framework (the RTCGD and SOC classification algorithm) provide a

reliable and valid way to track changes in driver attitudes and behaviours using survey methods. The number of questions included in the survey to assess readiness to change could be reduced to five without reducing the internal consistency or validity of the measure, and some of the questions that were included solely to cross-check the validity of the SOC classification process could also be removed.

Finally, no attempt can be made to draw any causal connections based on the results of this study. However, relationships observed between the timing of road safety public education campaigns and changes in two of the targeted behaviours (aggressive driving and speeding) do provide an impetus for continuing to work with the RTCGD and SOC measurement tools, and to develop strategies to investigate more formally relationships between the nature and intensity of road safety education campaigns, stages of change for targeted behaviours, and changes in general readiness to engage in driving behaviour change.

## INTRODUCTION AND BACKGROUND

The Transtheoretical Model of Change (TMC; Velicer, Prochaska, Fava, Norman & Redding, 1998) provided the theoretical context for the development of the ICBC “readiness to change” (RTC) questionnaire (Wiggins, et. al., 2007). The TMC is one of the most comprehensive and widely used models for understanding behaviour change in individuals. It is being investigated here for use as a potential framework for the evaluation of ICBC’s road safety programs. It represents an innovative approach in road safety evaluation. Whereas previous studies have considered knowledge or attitude changes as endpoints or outcomes in themselves, which may or may not result in behaviour change, the current approach identifies certain changes as indicative of movement along a continuum towards a desired behaviour. In this way, road safety programs may be monitored for their impacts on individuals within specific stages and, ultimately, for their value in promoting change in road safety habits.

A key organizing construct of the TMC is the “Stages of Change” (SOC) in which receptiveness to change is conceptualized as a process occurring in five stages: *Precontemplation*, *Contemplation*, *Preparation*, *Action*, and *Maintenance*. Central to the TMC is the idea that individuals do not suddenly adopt new habits but instead pass through these five stages of change. The stages are hierarchical and reflect an increase in receptiveness to change. In the first, *Precontemplative* stage, individuals are not sufficiently aware of the implications of their actions, and so are not even thinking of changing their behaviour. In the second stage labeled *Contemplation*, individuals are aware that a problem exists, re-evaluate their own behaviours and feelings, and start to think seriously about changing their behaviour. The *Preparation* stage is characterized by an orientation towards the desired behaviour, forming an intention to change, and preparing their social world and self by, for example, declaring intentions or purchasing equipment. Although some behaviour change may be tried, attempts are inconsistent. When individuals successfully and consistently perform the behaviour in question, they are regarded as being in the *Action* stage. After 6 months of consistent behaviour, the individual progresses to the *Maintenance* stage. Transitions between the stages depend on the *decisional balances* concerning the individual’s assessment of pros and cons of performing the desired action, as well as the individual’s feelings of confidence in their ability (*self-efficacy*) to perform the behaviour.

An initial psychometric assessment of a 29-item RTC questionnaire developed for use in online panel surveys in 2006 was completed in early 2007 (Wiggins, Vavrik, Cooper, 2007). Factor analysis and

item-analysis revealed that the 29-items constructed for the questionnaire did not have a unified, single-factor structure. Rather, the analyses resulted in a separation of 11 of the 29 items into a general 'readiness to change' (RTCGD) factor, and 16 items loading onto 'stage of change' factors for each of the four targeted behaviours (seat belt wearing, drink driving, aggressive driving, and speeding). This separation was largely determined by the content of the questions, whether they referred to a specific driving behaviour or were written to assess the extent to which respondents might be engaged generally in a process of change with respect to their driving (i.e., a change in thoughts, attitudes, or general driving behaviour). Based on the analyses undertaken in 2006 two different scoring processes were proposed, one to measure general readiness for change (the RTCGD\_11) and one to assess stages of change (SOC) associated with each of the targeted behaviours. The RTCGD\_11 was proposed as a summative scale while the SOC measurement process was designed using a classification algorithm that incorporated 16 behaviour-specific items from the original set of 29 RTC items along with other relevant questions in the survey. Four SOC categories were identified based on the items included in the questionnaire: Maintenance, Change Engaged (an aggregation of the TMC Preparation and Action stages), Contemplation and Pre-Contemplation.

The survey was repeated in 2007 to confirm the results of the 2006 survey and to verify the nature and composition of the RTCGD and SOC measurement tools. Three waves of data were collected in 2007. The results of this study (Wiggins, et. al, 2008) suggested that the RTCGD scale could likely be reduced in length without substantial loss of reliability or validity. As well, issues were identified with respect the operational definition of aggressive driving and drink driving that limited the validity of the SOC results obtained for these behaviours. Preliminary analyses of cross-sectional trends and transitional changes in RTCGD scores and SOC placement were encouraging, however, and suggested that these tools may well be useful in assessing changes in drivers' thoughts, attitudes and behaviours in response to road safety education initiatives. Nonetheless, the identified psychometric issues needed to be resolved. Consequently, prior to the fielding of the 2008 surveys, an effort was made to clarify the operational definitions of aggressive and drink driving, and to revise and reduce the composition of the RTCGD. The current study investigates the effect of these changes, makes recommendations concerning the future structure and content of the SOC and RTCGD measurement tools, presents a

summary of cross-sectional trends where possible, and discusses transitional changes within a sub-sample of individuals who completed the questionnaire in wave 1, wave 5, and wave 8.

## **METHODS**

### **Study Design**

The 2008 study was conducted using survey procedures similar to those used in 2006 and 2007 (Wiggins, et al., 2007, Wiggins, et al., 2008). Surveys were conducted using an internet online survey panel developed and managed by Ipsos Reid Public Affairs an external firm contracted by ICBC to conduct the research on its behalf. To become a member of the online panel, individuals had to be 18 years of age or older. To include 16 and 17 year olds in the survey sample, panellists with a child in this age bracket were asked if they would permit their child to respond to the survey instead of themselves. The survey was conducted four times in 2006 (February, April, June and September) and three times in 2007 (July, September, and November). The samples included both new and 'repeat' respondents (individuals who agreed to complete the survey more than once). In 2008, new groups of respondents were invited to participate in the survey. Data obtained from these new participants were used to conduct psychometric analyses on the revised questionnaire and to track trends in readiness to change over time using a cross-sectional, or snapshot, approach. In addition, participants who had previously completed the survey in 2006 (wave 1) and 2007 (wave 5) were asked to repeat the survey again in 2008 (wave 8). This 'repeater' group was used to investigate transitional changes over time in the same individuals. By the end of the 2008 study three waves of data had been collected: in June (wave 8), August (wave 9), and December (wave 10).

### **The Survey Questionnaire**

As in previous waves, the questionnaire used in the 2008 survey consisted of a large number of items including: items used to collect general demographic data and information about current driver beliefs and behaviours, items designed to measure drivers' readiness to think about or to change their general driving behaviour, and items used to assess their readiness to change with respect to four specific driver behaviours (seat belt use, drink driving, aggressive driving, and speeding). Questions concerning recall and awareness of road safety advertising campaigns and slogans were also included.

The 2008 questionnaire contained most of the same questions that were included in the 2006 and 2007 surveys, although the campaign and slogan awareness questions were revised to reflect the content

focus of the 2008 campaigns. This study is concerned, however, only with the parts of the questionnaire that were designed to collect demographic information, information relating to the measurement of the ‘readiness to change’ construct, and information relevant to the definition of the targeted behaviours of interest and the categorization of respondents by their placement in the ‘stages of change’ hierarchy. A few of the readiness to change and stage of change items were revised in 2008 in response to clarifications in the operational definitions of targeted driver behaviours; others were deleted or revised in an effort to clarify and enrich the “Readiness to Change General Driving” (RTCGD) scale. In the 2008 survey the RTCGD was reduced from eleven to nine items: four of the original items were dropped, two new items were added, and two items were modified to include a time frame (Table 1). These changes were made in an effort to enhance the richness of the RTCGD construct and possibly improve its face validity while at the same time retaining high internal consistency in a shortened version of the scale. No changes were made to the questions aimed at collecting demographic information.

**Table 1. Readiness to Change General Driving (RTCGD) Behaviours: 2008 Item Revisions**

Items Included in the 2006 and 2007 RTCGD:	Items Included in the 2008 RTCGD:
1. There is nothing about my driving I need to change	1. During the past 6 months, there is nothing about my driving that I have needed to change
2. I don't need to change my driving habits. I am not the problem.	2. Deleted
3. The way I feel about my driving has not changed at all in the last 6 months	3. Deleted
12 I've thought about changing some of my driving habits	12 I've thought about changing some of my driving habits
13. The way I currently drive is exactly the same as it was 6 months ago	13. The way I currently drive is exactly the same as it was 6 months ago
14. I can recall at least one occasion in the last month when I tried to change how I drive	14. I can recall at least one occasion in the last month when I tried to change how I drive
15. I can recall at least one occasion in the last month when I tried to drive differently from the way I usually do	15. Deleted
16. I've noticed that my attitude toward my own driving has changed over the last 6 months or so	16. I've noticed that my attitude toward my own driving has changed over the last 6 months or so
21. During the past 6 months I have made some real changes in the way I drive	21. During the past 6 months I have made some real changes in the way I drive
22. I noticed some change in my driving habits within the last 6 months or so	22. Deleted
28. I've made a permanent change in some of my driving habits	28. During the past six months, I've made a permanent change in some of my driving habits.
	30. During the past six months, I've noticed that I've been thinking about the way I drive more than I did before.
	31. For the past 6 months or so, I have been trying to drive more safely than I was before.
TOTAL = 11 items	TOTAL = 9 items

**Operational Definitions of Target Behaviours.** One of the recommendations of the 2007 survey assessment was that clarifications were needed in the operational definitions of two of the four targeted behaviours (drink driving and aggressive driving). For the other two behaviours, (seat belt wearing and speeding) a clear distinction had already been made between what constituted the desired behaviour and the behaviour to be eliminated, so those two definitions were not revised. Seat belt wearers were defined as individuals who reported wearing their seat belt 100% of the time, and speeders were those who typically drove 10 or more kilometres per hour above the speed limit or who, in the six months prior to the survey, received at least 1 speeding ticket.

The specific behaviours to be promoted or eliminated were not as clearly defined in the 2006 and 2007 surveys for aggressive or drink drivers. It was unclear, for example, whether a drink driver was someone who drove within two hours after drinking any drinks, one drink, or two drinks or whether the definition was based on any occurrence or reflected 'typical' behaviour. Similarly, statements such as "changing lanes whenever possible to keep moving" may not have accurately captured the specific type of behaviours associated with aggressive driving. The intent underlying the stated behaviour may have been too vague to clearly separate aggressive from non-aggressive drivers.

Due to such issues in the operationalization of these two targeted behaviours it was difficult to clearly categorize drivers' responses. Consequently, it was possible only to identify those who were "likely" or "unlikely" to meet criteria for a drink driver or aggressive driver. This lack of clarity in the definitions could result in substantial misclassification and make it more difficult to detect actual behaviour change.

In an effort to resolve some of these categorization issues, the definitions used for drink driving and aggressive driving were refined for the 2008 surveys. A drink driver was limited to "someone who drinks within two hours after consuming two or more drinks of alcohol". To categorize respondents into drink driver / non-drink driver categories drivers were asked if they agreed or disagreed with either of the following two statements: 1) "on at least one occasion in the past six months I have driven within two hours after consuming two or more drinks of alcohol, and 2) I sometimes drive when I am probably over the legal blood alcohol limit". Respondents were classified as "drink drivers" if they agreed with either (or both) of these statements. Individuals who disagreed with both statements, who reported "never drink[ing] more than 1 alcoholic drink on any given day" or who indicated that they "don't drink alcohol"

were categorized as non-drink-drivers. Similarly, an “aggressive driver” was defined as someone who agreed with six statements designed to capture intentionally aggressive driving behaviours. Thus, for example, the statement referred to previously was revised to read: “frequently changing lanes to move ahead more quickly than the general traffic stream”. A full list of the statements used in constructing the ‘aggressive driver’ versus ‘non-aggressive driver’ categories and ‘drink driver’ versus ‘non-drink driver’ categories – old and new versions – is provided in Table 2.

**Table 2. Target Behaviour Item Changes**

Items Included in the 2006 and 2007 versions:	Items Included in the 2008 version:
Within the last 6 months, how often have you demonstrated the following driving behaviours:	Within the last 6 months, how often have you demonstrated the following driving behaviours:
1. Coming up behind slow drivers to make them move over	1. Tried to make another driver move over by driving right up close behind them
2. Changing lanes whenever possible to keep moving	2. Frequently changed lanes to move ahead more quickly than the general traffic stream
3. Not coming to a full stop at a stop sign	3. Did not come to a complete stop at a stop sign
4. Driving slowly in the passing lane	4. Drove through an intersection just as, or even after, the yellow light turned red
5. Driving through a yellow light that’s turning red	5. Sped up when you saw a traffic light turn yellow because you didn’t want to have to sit through a red light
6. Driving 10km or more over the posted speed limit	6. Drove 10km or more over the posted speed limit
10. What percentage of the time that you drink 2 or more alcoholic drinks do you end up driving within 2 hours? (response options include “I don’t drink” or “I don’t typically drink more than 1 alcoholic drink”)	10. Deleted
10_1. I sometimes drive after having 1 or 2 drinks	10.1 On at least 1 occasion in the past six months I have driven within two hours after consuming two or more drinks of alcohol (response options include “I don’t drink” or “I never drink more than 1 alcoholic drink on any given day”)
10_2. I sometimes drive when I am probably over the legal blood alcohol limit	10.2 I sometimes drive when I am probably over the legal blood alcohol limit.
10_3. I never drive if I am consuming any alcohol	10.3 Deleted

Although the changes made to the drink driver and aggressive driver definitions limit our ability to examine trends back to 2006 for these two behaviours, the importance of establishing clear definitions for all of the targeted behaviours was essential for evaluating the success of road safety education and awareness programs in the future. Exaggerated misclassification errors resulting from poorly defined target behaviours would only exacerbate an already difficult objective. Nonetheless, to retain as much value as possible from the data collected in previous waves, an attempt was made to investigate historical trends by reworking the original categorization schemes so that they would align as closely as

possible to the current process, or by tracking responses to individual statements or questions that were retained across all 10 survey waves.

## **Statistical Analysis**

To investigate whether the 2008 item changes had altered the single-factor structure of the scale, the revised 9-item RTCGD used in the waves of the survey was assessed using Factor Analysis with principal axis factoring (PAF). To conduct this analysis, Factor Analysis with principal axis factoring (PAF) was used. Scree plots were generated to visually examine eigenvalues. Scree tests as well as the number of items loading on each factor were used to determine the number of factors to retain in the final solution (Kellow, 2006). Factors with more than three items were to be retained (Costello and Osborne, 2005). To assess the inclusion of items on factors, factor loadings of greater than 0.40 were established as the criterion for retention. Cross loading of items on factors was also assessed using the 0.40 criterion (items that cross-loaded on more than one item were dropped). Both Varimax and oblique (Promax) rotations were used to evaluate cross loadings, and a final solution was determined. Item scores were summed to obtain a total score across all items that loaded on the factor. Each item was then analysed for its contribution to the total score, the item-total correlations that would be obtained when selected items were deleted were examined, and for each combination of items examined, Cronbach's alpha was computed to assess the internal consistency of the resultant scale. In line with common practice in social science research, a criterion of greater than 0.70 was used to assess the acceptability of the alpha coefficient (Nunnally, 1978 in Burns, 1993).

The scoring algorithm developed to classify drivers into a stage of change for each of the four target behaviours resulted in a hierarchical ranking of participants. Consequently, the form of the outcome variable for this part of the study was ordinal and discrete. Univariate tests of association between categorical variables were tested using Chi Square procedures. When categories were ordinal in nature (rank ordered), however, modified ridit scores (also called standardized midrank scores) were used to rank the categories so that the ordinal nature of the data could be taken into account (Stokes, et. al., 2000). Multidimensional categorical analyses procedures were used (Stokes, Davis, and Koch, 2000; Allison, 1999) to compare drivers across the ten survey waves and to control for the effects of potentially confounding factors. Due to the ordinal nature of the stage of change variables, cumulative logit analyses were used. These analyses take into account the increasing hierarchy of the outcome data and provide a

method for assessing upward or downward shifts across the ten sample waves. If significant results were not obtained using this approach, an additional series of exploratory analyses were undertaken to investigate relationships further. For these analyses, a series of binary logit models were fitted to aggregated stage of change groups: the Maintenance group versus all others, the Maintenance and Change Engaged group versus the Contemplation and Pre-Contemplation group, and the Maintenance, Change Engaged and Contemplation group versus the Pre-Contemplation group. The cumulative logit model is designed to average out the effects of the explanatory variables that would be obtained by using the underlying binary logit models. It assumes that the effects of the explanatory variables will be the same regardless of how the categories of the dependent variable are dichotomized. If the proportionality assumption for the cumulative logit model is not met, however, effects may be missed. The Score test which is used to determine proportionality could not be used reliably in this study due to the number of cells with small or zero counts. Such data tends to artificially inflate the Score test statistic rendering it difficult to interpret.

To test for mean differences on the RTCGD between the drivers in each of the ten independent surveys ANOVA procedures were used. When statistically significant results were obtained, using global ANOVA, post hoc t-tests were conducted using Bonferroni-adjusted pairwise comparisons. Multifactor ANOVA was used to test for mean differences when more than one independent variable was included in the analysis. Multiple regression analysis was used to test for a linear trend in RTCGD scores by wave.

Statistical significance was evaluated using  $P < 0.05$  as the criterion for individual tests (eg. Chi Square, F-tests and t-tests) and for families of pairwise comparisons). For some of the exploratory analyses, findings of interest were also noted if they were found to be marginally significant ( $0.10 < P < 0.05$ ). Analyses were conducted using SPSS 15.0 (Release 15.0.1) for Windows (2006), and SAS Version 9.1 (2002-2003).

## **RESULTS**

The results of the study are reported in three parts. Part 1 summarizes the findings from the psychometric assessment of the revised RTCGD scale and the stages of change classification process. Part 2 presents the findings from cross-sectional comparisons of readiness to change and stages of change of new respondents across the nine survey waves, and Part 3 describes the results obtained from the sample of participants who completed survey waves 1, 5 and 8.

## **Part 1 – Psychometric Assessment**

A total of 3,753 questionnaires were completed during waves 8 (n=1,505), 9 (n=1,064) and 10 (n=1,184). Respondents in each wave who reported driving zero hours in a typical week were excluded (n=69 in wave 8, 41 in wave 9 and 48 in wave 10) as were individuals in wave 8 who were part of the repeater sample (n=538). The final sample thus consisted of 3,083 respondents: 924 from wave 8, 1,023 from wave 9 and 1,136 from wave 10.

### **Scoring of the RTCGD items**

Each respondent was given an RTCGD score that was computed by summing across the items and dividing by the number of items included in each version of the RTCGD tested. To ensure consistency in the direction of scoring, and to have high scores reflect high engagement in the change process, questions numbered 12, 14, 16, 21, 28, 30 and 31 (Table 1) were reverse coded prior to summation. Total scores ranged from 1 (indicating low readiness for change) to 4 (indicating high engagement in the change process).

### **Structure, Reliability and Validity of the RTCGD**

Factor analysis of the nine items that were included in the survey to measure the general readiness to change construct confirmed that the single factor structure obtained when the original eleven items were used was retained. All nine items loaded highly (all factor loadings  $> |0.464|$ ) on the one RTCGD factor and this factor was estimated to explain about 52% of the overall item variance in wave 8, and 55% of the variance in each of waves 9 and 10. Item means and standard deviations were computed using the aggregated data from all three waves and are shown in Table 3. A review of these descriptors revealed that one of the new items (number 31) appeared to be eliciting socially desirable responses from survey participants. The question asked whether the respondents had been trying to drive more safely during the six months prior to the survey. Mean scores were substantially higher on this item than on any of the other 8 items. Due to the possibility of a social desirability bias this item was dropped from further consideration in the psychometric assessment of the revised RTCGD.

After examining the individual item means and distributions, and excluding item 31 (“for the past 6 months or so I have been trying to drive more safely than I was before”), the remaining 8 items were analysed for internal consistency. Inter-item correlations, item-total correlations, and Cronbach’s Alpha were used to investigate the internal consistency of the full-form and short-form versions of the RTCGD

scale. Table 4 shows the results obtained when all 8 items were included in the analysis. Items with inter-item correlations greater than 0.60 were identified as potential candidates for inclusion in subsequent versions of the RTCGD scale.

**Table 3. Descriptive Statistics (Mean  $\pm$  SD) for each of the 9 Readiness to Change General Driving (RTCGD) items (all scored so that 4=high engagement in change process)**

ITEM*	N	Mean	SD	Minimum	Maximum
1	2,976	2.38	0.83	1.00	4.00
12	2,933	2.41	0.91	1.00	4.00
13	3,020	2.00	0.92	1.00	4.00
14	2,879	2.40	1.00	1.00	4.00
16	2,926	2.34	0.95	1.00	4.00
21	2,936	2.19	0.92	1.00	4.00
28	2,885	2.37	0.96	1.00	4.00
30	2,956	2.49	0.94	1.00	4.00
31**	2,944	2.74	0.92	1.00	4.00

\*Content of each item is shown in Table 1

\*\*Possible social desirability bias. Item excluded as possible candidate for RCTGD.

**Table 4. Item-analysis results for 8-item RTCGD**

ITEM*	Scale Mean* if Item Deleted	Item-Total Correlation	Alpha if Item Deleted	Inter-Item Correlations >0.60 (correlated item numbers listed)
1	2.32	0.50	0.91	none
12	2.32	0.76	0.89	14, 16, 21, 30
13	2.37	0.63	0.90	none
14	2.32	0.75	0.89	12, 16, 21, 30
16	2.33	0.77	0.89	12, 14, 21, 28, 30
21	2.35	0.78	0.89	12, 14, 16, 28, 30
28	2.32	0.72	0.90	16, 21, 30
30	2.31	0.73	0.89	12, 14, 16, 21, 28
<b>Cronbach's Alpha</b>	<b>0.91</b>			

\* all items scored so that 4=high engagement in change process

Based on the results shown in Table 4, items 1 and 13 were excluded from further consideration, as was item 28. Lower inter-item and item-total correlations were the primary reasons for their exclusion. Using the remaining items, two versions of the RTCGD were constructed: 1) the RTCGD\_5new (using items 12, 14, 16, 21, and 30), and 2) the RTCGD\_4old (using items 12, 14, 16, and 21 only). The RTCGD\_5new includes one of the items added in wave 8 and is therefore not directly comparable to the results obtained previously. This new item (“during the past six months I’ve noticed that I’ve been thinking about the way I drive more than I did before”) elicited agreement from more people than did other items and, consequently, could be an earlier indicator of change readiness. Scores on the RTCGD\_4old (which did not include the new item) were also computed but were used solely for the purpose of making

historical comparisons back to wave one. Internal consistency coefficients for the RTCGD\_5new and the RTCGD\_4old were computed using Cronbach's Alpha. Both were high at 0.90 and 0.88, respectively.

Validity refers to the accuracy with which a concept or construct has been operationalized (Trochim, 2006). In the present case, it refers to the extent to which the items in the RTCGD provide an accurate translation of the construct they purport to measure. In preparing items for inclusion in the 2008 questionnaire, items were added or retained if they appeared to have good *face*<sup>1</sup> validity for the readiness to change construct. But face validity is a relatively weak indicator of construct validity. Another, stronger indicator is convergent validity. For this assessment, respondents were separated into groups according to their responses on several indices of change and then their mean RTCGD scores were computed and compared. Three different variables were used in this process. First, respondents who strongly agreed with the statement "The way I currently drive is exactly the same as it was six months or so ago" were compared to all other respondents. Secondly, those who strongly agreed with the statement "There is nothing about my driving that I have needed to change" were compared to those who did not. And, finally, individuals who voluntarily denied changing or thinking about changing driving behaviours when given the opportunity were compared to those who did not deny making any changes. The results of these comparisons are shown in Table 5. For each variable, the scores on the RTCGD have separated in the expected direction: driver groups that would be expected to be the least engaged in the change process have the lower RTCGD scores. The difference between the two groups was statistically significant ( $P < 0.001$ ) in all three cases. Thus, the item combination used to measure the readiness to change construct appears to have both face and convergent validity. Although not shown here, the results for the RTCGD\_4old were very similar.

**Table 5. Validity Checks for the RTCGD\_5new**

Variable	Group	N	Mean / Median	SD
The way I currently drive is same as it was 6 months ago	Strongly Agree	976	1.77 / 1.60	0.73
	Other	1,753	2.70 / 2.80	0.63
There is nothing about my driving that I have needed to change	Strongly Agree	416	1.67 / 1.40	0.80
	Other	2,288r	2.50 / 2.60	0.73
Changed driving behaviour or thought about changing behaviour	Denied making change	154	1.95 / 2.00	0.68
	Other	2,575	2.39 / 2.40	0.80

<sup>1</sup> Face validity is a type of content validity that is based on a subjective assessment that the items included in the scale appear to provide a good translation of the construct.

## **Stages of Change (SOC) for Targeted Behaviours**

**Behaviour-specific SOC Categorization.** As noted earlier, the surveys conducted in 2006 and 2007 resulted in the development of SOC categorization algorithms for each of the targeted driver behaviours. Drivers who, by self-report, were engaging in these behaviours at the time of the survey were classified *a priori* as being in the “Maintenance” stage of change for the behaviour; the remaining drivers were allocated to “Change Engaged”, “Contemplation”, or Pre-Contemplation” stages of change based on their responses to the four seat belt (SB), drink driving (DD), speeding (SP) and aggressive driving (AD) questions included in the questionnaire. Two questions in each set of four were used to assess contemplation of changes and two items were used to assess current engagement in change, and respondents scores on each set of items were used to sort drivers responses into the “Contemplation”, “Change Engaged” or “Pre-Contemplation” SOC. The same process was used in the current study.

**Validity of the SOC Categories.** The validity of the SOC allocation process was investigated by comparing scores across the SOC categories on questions that were relevant to the targeted behaviours but not used in the classification algorithm. If the algorithm is valid, then scores on the comparison items would be expected to sort hierarchically from the Maintenance to the Pre Contemplation stage.

Generally speaking, the results of the validity assessment confirmed expectations (Tables 6 through 9). However, similar to findings from the 2006 and 2007 surveys, comparisons for seat belt wearing (Table 6) and aggressive driving (Table 8) revealed a lack of significant separation between the mean scores obtained for drivers in the Contemplation and Pre-Contemplation categories. For seat belt wearing, the lack of a significant difference between these two categories is most likely due to the small number of individuals identified as being in the Pre-Contemplation stage, the scores did at least sort in the right order. For aggressive driving, the scores were very similar between the two stages although in one instance the order was reversed between the two stages. It may be that the ability to differentiate between these stages is limited by the fact that the definition of aggressive driving is based on several different types of driver behaviours (eg., running red lights or stop signs, changing lanes frequently to move ahead through traffic, speeding, and driving quickly up behind another driver to get them to move over). Someone who might be classified into the Pre-Contemplation stage for some of these behaviours may fall into the Contemplation stage for others. This could result in imprecise classification. The lack of

differentiation could also be due to the single-behaviour focus of the items that were available for use in checking the validity of the aggregate aggressive driving SOC.

In summary, the psychometric reassessment of the RTCGD and the SOC allocation process confirmed the findings of previous analyses. Both measurement tools have been demonstrated to have reliability and validity in all three years of the survey. The SOC allocation process still lacks some discriminatory power for detecting differences between respondents in the Pre-Contemplation and Contemplation stages of change for seat belt wearing and aggressive driving. Given the relatively small number of respondents in the Pre-Contemplation stages for seat belt wearing (~2%) this is not likely to be a serious limitation for this behaviour. For aggressive driving, it may be useful, given the broad array of behaviours included in the aggressive driving definition to focus on specific behaviours within the aggressive driving cluster (eg. Intersection safety) or to collapse the Pre-Contemplation and Contemplation categories when the aggregate behaviour is of interest.

**Table 6. Means\*, Standard Deviations (SD) and ANOVA results for Seat Belt-related Items by Seat Belt Stages of Change**

Questionnaire Items	SOC	N	Mean**	SE	F	P-Value
1. I don't feel comfortable riding in a car without wearing a seat belt.	Maintenance	2,598	1.32 <sub>a</sub>	0.016	166.8	<b>&lt;0.001</b>
	Change Engaged	212	1.77 <sub>b</sub>	0.058		
	Contemplation	148	2.60 <sub>c</sub>	0.069		
	Pre Contemplation	51	2.80 <sub>c</sub>	0.118		
2. I don't always remember to put my seat belt on.	Maintenance	2,593	3.77 <sub>a</sub>	0.016	216.3	<b>&lt;0.001</b>
	Change Engaged	211	3.17 <sub>b</sub>	0.055		
	Contemplation	147	2.35 <sub>c</sub>	0.066		
	Pre Contemplation	51	2.41 <sub>c</sub>	0.111		
3. I don't believe that wearing seat belts is always necessary.	Maintenance	2,587	3.81 <sub>a</sub>	0.014	160.8	<b>&lt;0.001</b>
	Change Engaged	209	3.56 <sub>b</sub>	0.048		
	Contemplation	147	2.77 <sub>c</sub>	0.058		
	Pre Contemplation	51	2.51 <sub>c</sub>	0.098		
4. In the past six months, what percentage of the time have you worn a seat belt as a driver or passenger in a vehicle?	Maintenance	2,607	100.00 <sub>a</sub>	0.174	477.7	<b>&lt;0.001</b>
	Change Engaged	212	92.03 <sub>b</sub>	0.609		
	Contemplation	148	79.93 <sub>c</sub>	0.728		
	Pre Contemplation	51	67.88 <sub>c</sub>	1.241		

\*Higher scores indicate disagreement with the statement.

\*\*Means with different subscripts differ at  $P < 0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type. Results verified with non-parametric tests due to inequality of group error variances.

**Table 7. Means\*, Standard Deviations (SD) and ANOVA results for Drink Driving Items by Drink Driving Stages of Change\*\***

	SOC	N	Mean***	SD	F	P-Value
1. I am fully in control of my driving, even after consuming 1 or 2 drinks.	Maintenance	1,728	3.36 <sub>a</sub>	0.021	195.3	<b>&lt;0.001</b>
	Change Engaged	141	2.76 <sub>b</sub>	0.074		
	Contemplation	388	2.32 <sub>c</sub>	0.045		
	Pre Contemplation	44	1.73 <sub>d</sub>	0.133		

\* Higher scores indicate disagreement with the statement. \*\*Drivers who responded "I don't drink" were excluded from this analysis. \*\*\*Means with different subscripts differ at  $P<0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type. Results verified with non-parametric tests due to inequality of group error variances.

**Table 8. Means\*, Standard Deviations (SD) and ANOVA results for Aggressive Driving Items by Aggressive Driving Stages of Change**

Questionnaire Items	SOC	N	Mean**	SD	F	P-Value
1. I usually have to come up right behind slow drivers to make them move over	Maintenance	480	3.84 <sub>a</sub>	0.034	69.7	<b>&lt;0.001</b>
	Change Engaged	666	3.64 <sub>b</sub>	0.029		
	Contemplation	1,201	3.16 <sub>c</sub>	0.021		
	Pre Contemplation	302	3.35 <sub>c</sub>	0.043		
2. I use whatever means I have to in order to get ahead in congested traffic	Maintenance	481	3.85 <sub>a</sub>	0.032	71.7	<b>&lt;0.001</b>
	Change Engaged	665	3.65 <sub>b</sub>	0.027		
	Contemplation	1,199	3.36 <sub>c</sub>	0.020		
	Pre Contemplation	305	3.35 <sub>c</sub>	0.040		
3. When I merge in congested traffic, I often squeeze in at the last moment	Maintenance	483	3.82 <sub>a</sub>	0.030	34.5	<b>&lt;0.001</b>
	Change Engaged	663	3.68 <sub>b</sub>	0.025		
	Contemplation	1,198	3.50 <sub>c</sub>	0.019		
	Pre Contemplation	304	3.46 <sub>c</sub>	0.037		

\*Higher scores indicate disagreement with the statement. \*\*Means with different subscripts differ at  $P<0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type. Results verified with non-parametric tests due to inequality of group error variances.

**Table 9. Means\*, Standard Deviations (SD) and ANOVA results for Speeding-related Items by Speeding Stages of Change**

Questionnaire Item	SOC	N	Mean**	SE	F	P-Value
1. Whenever possible I drive in the fast lane	Maintenance	249	3.56 <sub>a</sub>	0.057	71.8	<b>&lt;0.001</b>
	Change Engaged	524	3.17 <sub>b</sub>	0.040		
	Contemplation	1,564	2.80 <sub>c</sub>	0.023		
	Pre Contemplation	409	2.69 <sub>c</sub>	0.045		
2. I usually don't have the time or patience to drive at the posted speed limit	Maintenance	251	3.81 <sub>a</sub>	0.051	104.7	<b>&lt;0.001</b>
	Change Engaged	527	3.60 <sub>b</sub>	0.035		
	Contemplation	1,564	3.13 <sub>c</sub>	0.020		
	Pre Contemplation	408	2.94 <sub>d</sub>	0.040		
3. I usually pass more vehicles than pass me.	Maintenance	250	3.68 <sub>a</sub>	0.053	107.2	<b>&lt;0.001</b>
	Change Engaged	525	3.46 <sub>b</sub>	0.037		
	Contemplation	1,550	2.97 <sub>c</sub>	0.021		
	Pre Contemplation	407	2.76 <sub>d</sub>	0.042		
4. I am fully in control of my driving, even when I drive more than 10km over the posted speed limit	Maintenance	194	2.95 <sub>a</sub>	0.062	117.5	<b>&lt;0.001</b>
	Change Engaged	503	2.30 <sub>b</sub>	0.039		
	Contemplation	1,538	1.94 <sub>c</sub>	0.022		
	Pre Contemplation	404	1.66 <sub>d</sub>	0.043		

\*Higher scores indicate disagreement with the statement. \*\*Means with different subscripts differ at  $P<0.05$  (Bonferroni-adjusted). Significant Global P-Values are shown in boldface type. Results verified with non-parametric tests due to inequality of group error variances.

## **Part 2. Cross-sectional Comparisons of the RTCGD and SOC Measures by Wave**

### **Sample Characteristics**

The same inclusion and exclusion criteria used in the definition of the samples for Part 1 of this report were used for this section. Thus, respondents who drove zero hours in a typical week were excluded, as were the second sets of data collected from respondents in wave 1 who repeated the survey in waves 5 and 8. For comparison purposes, new respondents in 2008 as well as those who responded previously in 2006 and 2007 are included in this section.

**Demographic Characteristics.** The demographic characteristics of the ten samples of drivers are shown in Table 10. Statistically significant differences were observed for the mean age, gender, type of licence, and region of residence of participants across the ten waves. Respondents tended to be younger in waves 2 and 3, and there was a higher percentage of drivers in the “L” or “N” stage of licensure in wave 3 than in the other waves.

Of the drivers who reported their gender, the percentage of males was lower in waves 4 and 7 than in the other waves. Overall, about 25% were residents of the Fraser Valley, 28% were from the Greater Vancouver area, 8% were from the North Central Region, 17% were from the Southern Interior and 22% were from Vancouver Island. The proportions from each region did differ significantly from wave to wave, with a lower percentage from the Fraser Valley in wave 3, and from Greater Vancouver in wave 7. Higher percentages were observed from Vancouver Island in wave 7 and from Greater Vancouver and Vancouver Island in wave 3. Respondents’ age, gender and region of residence may be associated with driver attitudes and behaviours, or with the nature and amount of road safety educational activity to which the respondents have been exposed. If so, the observed differences in these characteristics will need to be taken into account when comparing drivers’ SOCs and RTCGD scores across survey waves.

**Driver Behaviours.** Table 11 shows the results of the categorization process used to identify which respondents in each wave of the survey were likely engaging in the four targeted driver behaviours (seat belt wearing, drink driving, aggressive driving, and speeding). As described in Part 1, drivers who, by self-report, always wear their seat belt, do not speed, do not engage in aggressive or drink driving were automatically assigned to the Maintenance SOC for each of those behaviours. Although there were some significant differences across the ten survey waves, on average about 83% of respondents reported always wearing a seat belt when driving, about 15% did not meet the criteria for an aggressive driver, and

**Table 10. Sample Characteristics for all New Respondents by Survey Wave**

	2006 Survey				2007 Survey			2008 Survey			Critical Value (df)	P-Value*
	Wave 1 N=3,210	Wave 2 N=1,485	Wave 3 N=1,175	Wave 4 N=1,112	Wave 5 N=792	Wave 6 N=680	Wave 7 N=1,104	Wave 8 N=924	Wave 9 N=1,023	Wave 10 N=1,136		
<b>Age</b> (Mean (SD)) in years	47.7 (14.7)	44.4 (17.1)	40.4 (18.2)	49.8 (14.5)	52.8 (15.6)	49.0 (14.2)	50.7 (14.1)	50.9 (14.0)	49.8 (15.6)	49.1 (14.6)	F=61.5 (9,12631)	<b>&lt;0.001</b>
<b>Hours driven in average week</b> (Median (Min, Max))	8.0 (0.5-100.0)	7.0 (1.0-100.0)	8.0 (0.5-130.0)	8.0 (1.0-100.0)	8.0 (0.5-120.0)	8.0 (0.5-100.0)	8.0 (0.5-150.0)	8.0 (0.5-160.0)	7.0 (1.0-88.0)	8.0 (0.1-100.0)	K-W $\chi^2 = 9.5$ (df=9)	0.394
<b>Gender**:</b> Male (%)	53.1	52.6	49.1	37.8	54.7	47.5	44.3	48.2	48.9	48.2	$\chi^2 = 104.3$ (9)	<b>&lt;0.001</b>
Female (%)	46.9	47.4	50.9	62.2	45.3	52.5	55.7	51.8	51.1	51.8		
<b>License:</b> Full Privilege (%)	93.5	87.3	76.8	92.9	92.3	94.6	94.4	94.6	90.7	93.7	$\chi^2 = 400.4$ (9)	<b>&lt;0.001</b>
Learner or Novice (%)	6.5	12.7	23.2	7.1	7.7	5.4	5.6	5.4	6.3	6.3		
<b>Region**:</b> Fraser Valley (%)	25.5	26.2	19.1	23.5	23.6	26.3	25.4	27.5	27.6	26.1	$\chi^2 = 116.2$ (36)	<b>&lt;0.001</b>
Greater Vancouver (%)	29.4	28.0	32.5	27.3	28.7	28.4	20.8	29.3	25.8	25.9		
North Central (%)	7.8	8.7	7.5	7.6	8.5	6.3	10.0	6.8	7.5	9.6		
Southern Interior (%)	17.2	16.3	15.4	17.4	19.2	19.1	17.0	14.9	15.4	17.0		
Vancouver Island (%)	20.2	20.8	25.5	24.3	20.1	19.9	26.8	21.4	23.7	21.4		

\*98 (6.6%) of participants in Wave 2, 256 (21.8%) in Wave 3, and 10 (1.0%) in wave 4 did not provide their gender.

\*\*98 (6.6%) of participants in Wave 2 and 19 (1.7%) in Wave 7 did not provide their Region of Residence

\*\*\*Significant P-Values (P<0.05) in boldface type.

**Table 11. Relative Frequency (%) Distribution for Targeted Driver Behaviours by Survey Wave**

	2006 Survey				2007 Survey			2008 Survey			$\chi^2$ (df)	P-Value*
	Wave 1 N=3,210	Wave 2 N=1,485	Wave 3 N=1,175	Wave 4 N=1,112	Wave 5 N=792	Wave 6 N=680	Wave 7 N=1,104	Wave 8 N=924	Wave 9 N=1,023	Wave 10 N=1,136		
<b>Seat Belt Use:</b> Always (%)	82.6	80.8	79.7	85.5	85.5	85.9	87.1	84.8	87.1	82.0	71.9 (18)	<b>&lt;0.001</b>
Not Always (%)	17.1	19.1	19.9	14.2	14.3	13.7	12.4	14.8	12.7	17.1		
Unknown (%)	0.2	0.1	0.4	0.3	0.3	0.4	0.5	0.3	0.2	0.9		
<b>Drink Driving:</b> No	61.5	62.0	66.0	63.9	62.6	64.7	65.3	78.0	80.2	80.8	325.1 (18)	<b>&lt;0.001**</b>
Yes (%)	38.0	37.4	32.9	35.3	36.6	35.0	33.8	22.0	19.8	19.2		
Unknown (n)	0.6	0.5	1.1	0.8	0.8	0.3	0.9	0.0	0.0	0.0		
<b>Aggressive Driving:</b> No (%)	13.5	13.5	14.6	15.9	18.8	18.8	15.6	15.3	17.6	14.6	43.0 (18)	<b>&lt;0.001**</b>
Yes(%)	83.1	82.8	81.4	80.1	77.8	78.4	81.3	82.8	80.0	81.8		
Unknown (n)	3.4	3.7	3.9	4.0	3.4	2.8	3.1	1.9	2.4	3.6		
<b>Speeding:</b> No (%)	8.0	7.6	8.9	9.4	11.1	10.7	9.1	7.1	8.8	8.5	42.8 (18)	<b>&lt;0.001</b>
Yes(%)	89.8	90.4	88.8	87.0	87.2	87.4	89.4	90.8	88.5	87.8		
Unknown (n)	2.2	2.0	2.4	3.6	1.6	1.9	1.5	2.1	2.7	3.8		

\*Significant P-values (P<0.05) in boldface type.

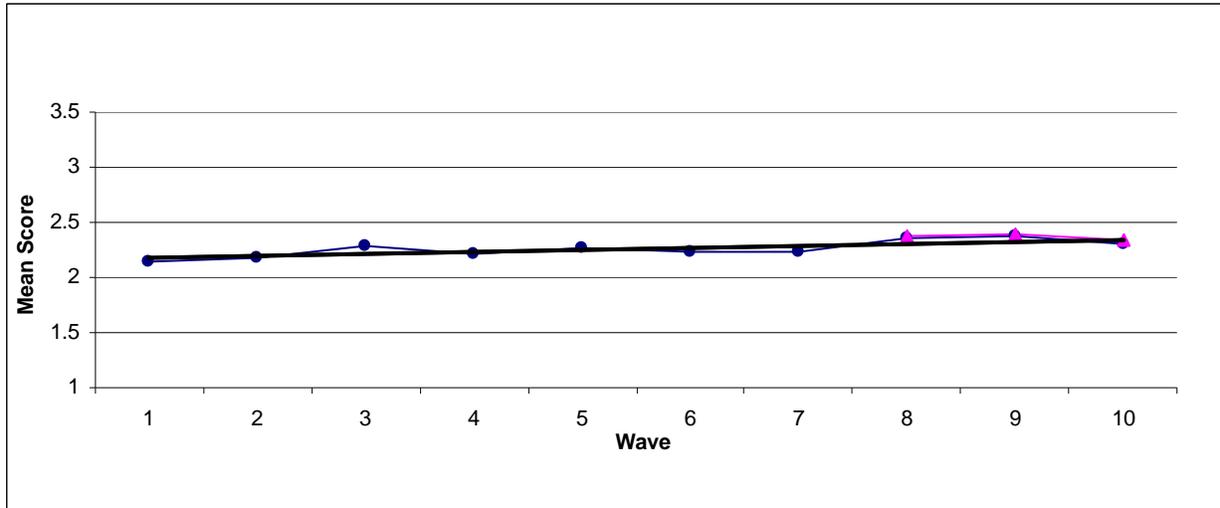
\*\*Operational definitions for drink driving and aggressive driving were revised in wave 8. Wave 8 through 10 are therefore not directly comparable to waves 1 through 7.

about 9% were classified as non-speeders. For drink driving, there was a significant increase in the percentage of non-drink drivers identified in waves 8, 9, and 10 compared to previous waves. This increase is most likely attributable to the wave 8 change in the operational definition of a drinking driver and not to changes in drink driving attitudes or behaviours. However, to investigate this further, one question that was included in all ten surveys was examined. In each survey, respondents were asked to indicate the extent of their agreement with the following statement: "I am fully in control of my driving even after consuming 1 or 2 drinks of alcohol". On average, about 73% of respondents from waves 1 through 7 disagreed (46% strongly and 27% somewhat) with this statement and, similarly, about 73% (47% strongly and 26% somewhat) of the respondents from waves 8 through 10 also disagreed with this statement. Although these data are only suggestive and limited in scope, they do reveal that there has been little change along this particular dimension of drink driving attitude. Given these findings, and the nature of the definitional change (removing drivers who may have driven after one alcoholic drink), it is likely that the reduction in drink drivers observed in the final three waves of this survey is due mainly to the definitional change and not to any actual change in driver attitudes (or behaviour).

### **RTCGD Scores by Wave**

Mean scores were computed for respondents in waves 8, 9 and 10 using the RTCGD\_5new, and in all ten waves using the RTCGD\_4old, version of the 'readiness to change' scale. Descriptive statistics are summarized in Table 12 and the means are plotted graphically in Figure 1. All of the mean scores are below 2.5 indicating that, on average, most respondents are not very engaged in the change process. However, a regression analysis suggests that there has been a significant increase in readiness over the waves of the survey. The trend line shown in Figure 1 provides a visual depiction of this increase. The estimated slope of the linear trend was 0.02 ( $\pm 0.005$ ) ( $P < 0.001$ ), indicating that over the period of the survey, 'readiness to change' has been increasing by about 0.02 units (on the 4-point scale) per wave. For comparison purposes the mean scores obtained for waves 8, 9 and ten based on the RTCGD\_5new version of the scale are also shown. However, due to the limited amount of data available for this version, no trend estimates were made at this time. An analysis of variance comparing the mean values obtained on the RTCGD\_5new in wave 8, 9 and 10 revealed no statistically significant differences between them.

**Figure 1. Mean scores on the RTCGD\_5new (waves 8-10) and RTCGD\_4old (waves 1 through 10) – with estimated trend line**



**Table 12. Mean Scores on the RTCGD\_5new and RTCGD\_4old by Wave**

Subscale	N	Mean	SE	F*	P-Value
RTCGD_5new: Wave 8	820	2.37	0.028	1.8	<0.17
Wave 9	885	2.40	0.027		
Wave 10	1,024	2.33	0.025		
RTCGD_4old: Wave 1	2,743	2.14	0.016	68.6	<0.001
Wave 2	1,261	2.18	0.023		
Wave 3	989	2.28	0.026		
Wave 4	917	2.22	0.027		
Wave 5	666	2.26	0.032		
Wave 6	581	2.23	0.034		
Wave 7	923	2.27	0.027		
Wave 8	827	2.35	0.028		
Wave 9	894	2.37	0.027		
Wave 10	1,027	2.30	0.026		

\*F-statistic estimated using ANOVA for the RTCGD\_5new and Regression Analysis for the RTCGD\_4old

### Stages of Change (SOC) for Targeted Behaviours by Wave

The relative frequency of drivers in each SOC category for each of the targeted behaviours and survey waves is shown in Table 13. Statistically significant differences in the percentages of respondents categorized into the four stages of change in each wave were found for all four of the driver behaviours. Seat belt use had the highest percentage of respondents (about 85%) in the Maintenance SOC and the lowest percentage of respondents classified as Pre-Contemplation (about 1-2%). For drink driving, few drivers were found to be in the Pre-Contemplation stage (~2%) with the majority being in the Maintenance (70-80%) stage, followed by the Contemplation (~14%) and Change Engaged (~10%). Much of the increase in the percentage of drivers who ended up in the Maintenance stage in waves 8 through 10, as a result of the drink driver definition change, was a shift from the percentage in the Change Engaged SOC.

**Table 13. Percentage of Drivers\* by Wave and Stage of Change (SOC) for Seat Belt Use, Drink Driving, Aggressive Driving and Speeding**

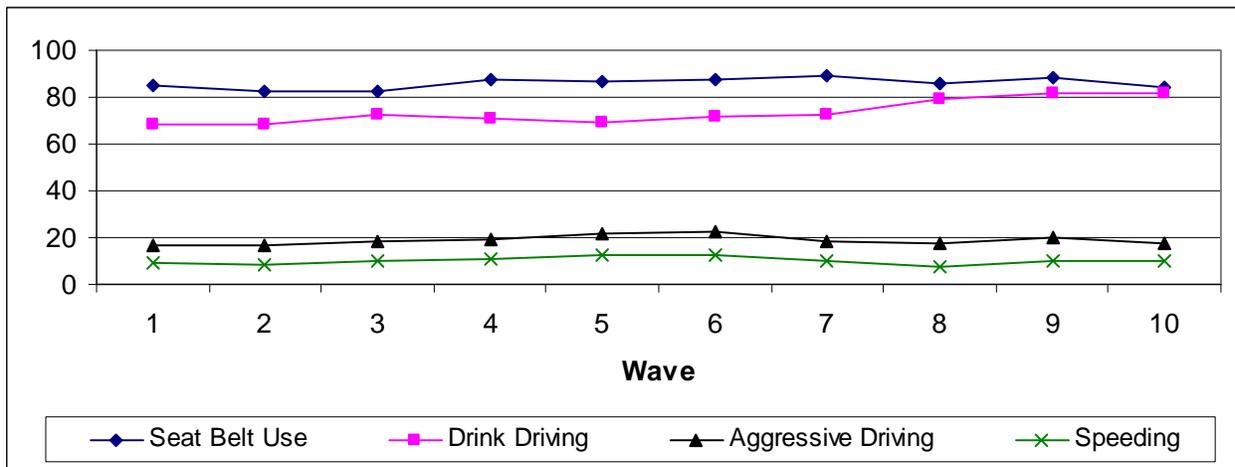
Behaviour: SOC	2006 Survey				2007 Survey			2008 Survey			X <sup>2</sup> (df)	P-Value**
	Wave 1 N=3,210	Wave 2 N=1,485	Wave 3 N=1,175	Wave 4 N=1,112	Wave 5 N=792	Wave 6 N=680	Wave 7 N=1,104	Wave 8 N=924	Wave 9 N=1,023	Wave 10 N=1,136		
<b>Seat Belt Use:</b>	(n=3,127)	(n=1,452)	(n=1,132)	(n=1,089)	(n=780)	(n=667)	(n=1,083)	(n=910)	(n=1,004)	(n=1,104)	43.8 (9)	<b>&lt;0.0001</b>
Maintenance (%)	84.8	82.6	82.7	87.3	86.8	87.6	88.8	86.2	88.7	84.4		
Change Engaged (%)	8.0	9.2	9.0	6.0	7.8	7.3	6.1	7.0	5.7	8.2		
Contemplation (%)	5.0	5.9	6.3	5.7	4.7	4.2	3.6	5.2	3.7	5.8		
Pre-Contemplation (%)	2.2	2.2	2.0	1.0	0.6	0.9	1.5	1.6	1.9	1.5		
<b>Drink Driving:</b>	(n=2,903)	(n=1,354)	(n=1,065)	(n=1,003)	(n=715)	(n=616)	(n=1,000)	(n=912)	(n=1,006)	(n=1,124)	137.5 (9)	<b>&lt;0.0001</b>
Maintenance (%)	68.0	68.0	72.8	70.9	69.4	71.4	72.1	79.1	81.5	81.7		
Change Engaged (%)	12.4	13.0	9.7	10.4	12.3	12.5	11.0	5.6	4.4	4.5		
Contemplation (%)	16.4	15.1	14.0	15.6	16.8	13.3	15.2	13.3	12.7	12.7		
Pre-Contemplation (%)	3.2	3.9	3.6	3.2	1.5	2.8	1.7	2.1	1.4	1.1		
<b>Aggressive Driving:</b>	(n=2,632)	(n=1,204)	(n=956)	(n=910)	(n=676)	(n=563)	(n=928)	(n=810)	(n=890)	(n=964)	33.7 (9)	<b>0.0001</b>
Maintenance (%)	16.4	16.7	18.0	19.5	22.0	22.7	18.5	17.4	20.2	17.2		
Change Engaged (%)	24.7	22.9	20.1	23.4	23.8	21.3	26.1	25.8	24.2	25.2		
Contemplation (%)	42.3	45.0	46.7	42.3	41.1	43.2	43.3	43.5	45.5	46.5		
Pre-Contemplation (%)	16.6	15.4	15.3	14.8	13.0	12.8	12.1	13.3	10.1	11.1		
<b>Speeding:</b>	(n=2,787)	(n=1,307)	(n=1,008)	(n=947)	(n=698)	(n=593)	(n=980)	(n=837)	(n=915)	(n=1,004)	43.3 (9)	<b>&lt;0.0001</b>
Maintenance (%)	9.2	8.6	10.3	11.1	12.6	12.3	10.2	7.9	9.8	9.6		
Change Engaged (%)	24.2	23.6	22.2	24.0	25.6	23.8	28.0	17.0	21.7	18.6		
Contemplation (%)	47.6	49.5	48.6	49.6	47.7	47.7	47.3	59.5	54.3	56.8		
Pre-Contemplation (%)	19.0	18.3	18.8	15.3	14.0	16.2	14.5	15.7	14.1	15.0		

\*Drivers who could not be assigned to a Stage of Change have been excluded. The reduced sample size is indicated in parentheses.

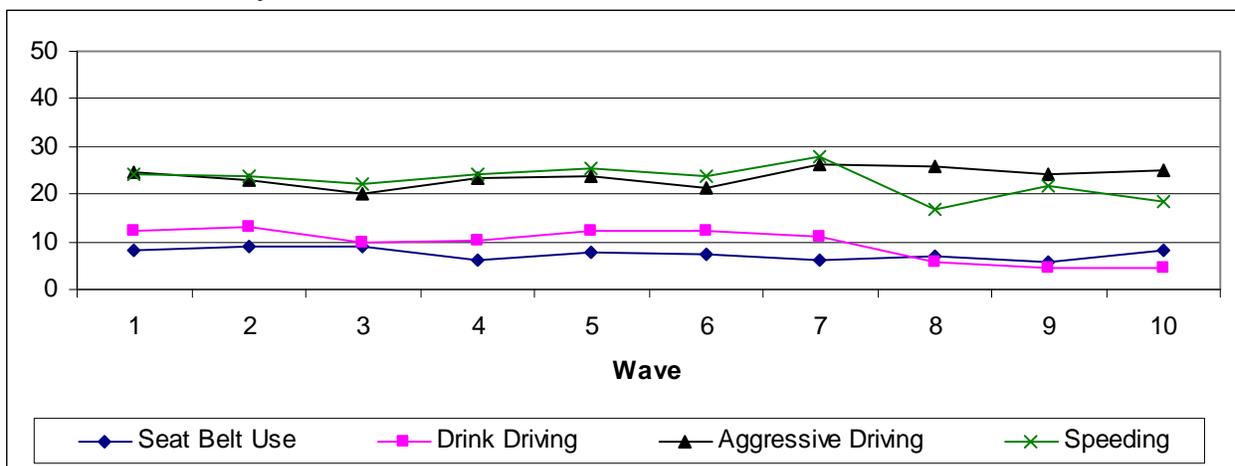
\*\*Significant P-values (P<0.05) in boldface type. X<sup>2</sup> mean score test computed using modified ridit scores (Stokes, et al., 2000). Scores compared across waves.

For aggressive driving and speeding, most of the respondents were placed in either the Change Engaged SOC (about 25%) or Contemplation SOC (about 50%). However, a substantial percentage of respondents (about 12-20%) were also placed in the Pre-Contemplation SOC. The percentage of drivers classified into the Contemplation SOC for speeding increased substantially in stages 8 through 10, and this appears to have contributed to an overall shift downward in the SOC hierarchy for this behaviour. The trends across waves for each behaviour and stage of change are shown in Figures 2 through 5.

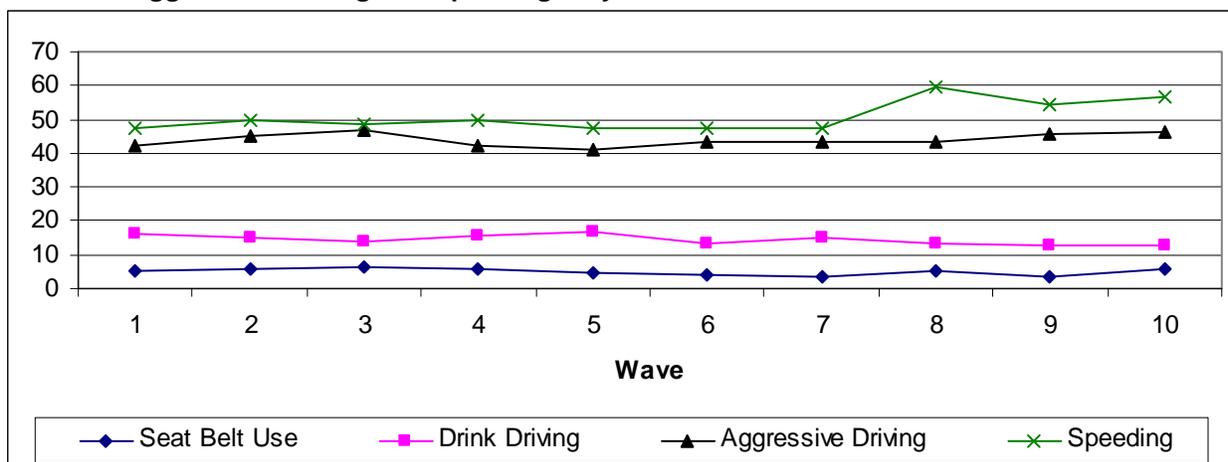
**Figure 2. Percentage of Respondents in Maintenance Stage of Change by Driver Behaviour and Survey Wave**



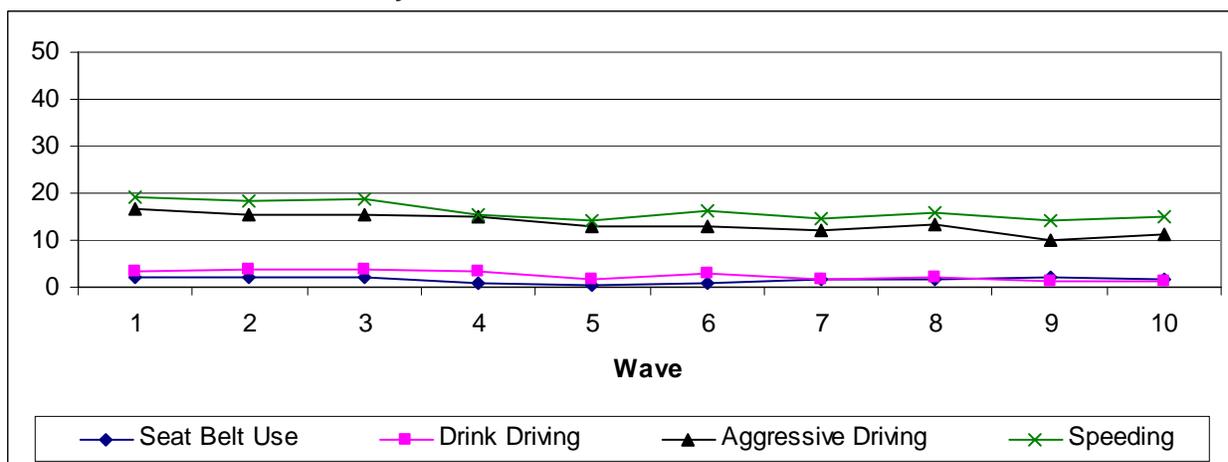
**Figure 3. Percentage of Respondents in Change Engaged Stage of Change by Driver Behaviour and Survey Wave**



**Figure 4. Percentage of Respondents in Contemplation Stage of Change for Drink Driving, Aggressive Driving and Speeding – By Wave**



**Figure 5. Percentage of Respondents in Pre-Contemplation Stage of Change by Driver Behaviour and Survey Wave**



### Relationships Among Sample Characteristics and Scores on the RTCGD

It was shown in an earlier section of this report that the age, gender, and region of residence for respondents varied significantly across the survey waves<sup>2</sup>. In this section analyses are described that were undertaken to explore whether these characteristics might be associated with scores on the RTCGD.

**Age.** Small but statistically significant negative correlations were found between age and scores on the RTCGD\_4old and RTCGD\_5new ( $r=-0.113$  and  $-0.077$ , respectively  $P<0.01$  for both). This indicates that as age increases readiness to change tends to decrease. The magnitudes of the correlations, however,

<sup>2</sup> Although type of licence held was also a factor that varied by wave, it was highly confounded with the age of the respondent in the survey. Consequently, type of licence held was not included in the analyses reported in this section.

suggest that the relationship, despite statistical significance, is not strong.

**Gender.** No statistically significant differences were found in the mean scores of males and females on either version of the RTCGD ( $P < 0.13$  and  $P < 0.45$ , respectively). In both cases, males scored higher than females but, for both groups, the amount of variation around the mean values was about the same; the means and standard deviations for males and females respectively were  $2.24 \pm 0.82$  and  $2.22 \pm 0.82$  on the RTCGD\_4old  $2.38 \pm 0.80$  and  $2.36 \pm 0.80$  on the RTCGD\_5new.

**Region.** As with the gender, no significant differences were obtained when RTCGD scores were compared by region. On the RTCGD\_4old mean scores ranged from a low of  $2.22 (\pm 0.83)$  for the Fraser Valley region to a high of  $2.26 (\pm 0.83)$  for the Southern Interior. On the RTCGD\_5new scores ranged from a low of  $2.31 (\pm 0.78)$  for the North Central region to a high of  $2.41 (\pm 0.82)$  for Vancouver island.

### **RTCGD Changes by Wave after Adjusting for Differences in Sample Characteristics**

Although relationships between scores on the RTCGD age, gender, and region were not strong, the significant differences observed in these characteristics across the waves of the survey suggested that a better estimate of trends in readiness to change might be achieved if the observed differences in sample characteristics were taken into account. For both versions of the RTCGD (4old and 5new) the data were analysed using a factorial analysis of variance model testing main effects and second-order interactions between the cofactors (age, gender, region, and wave).

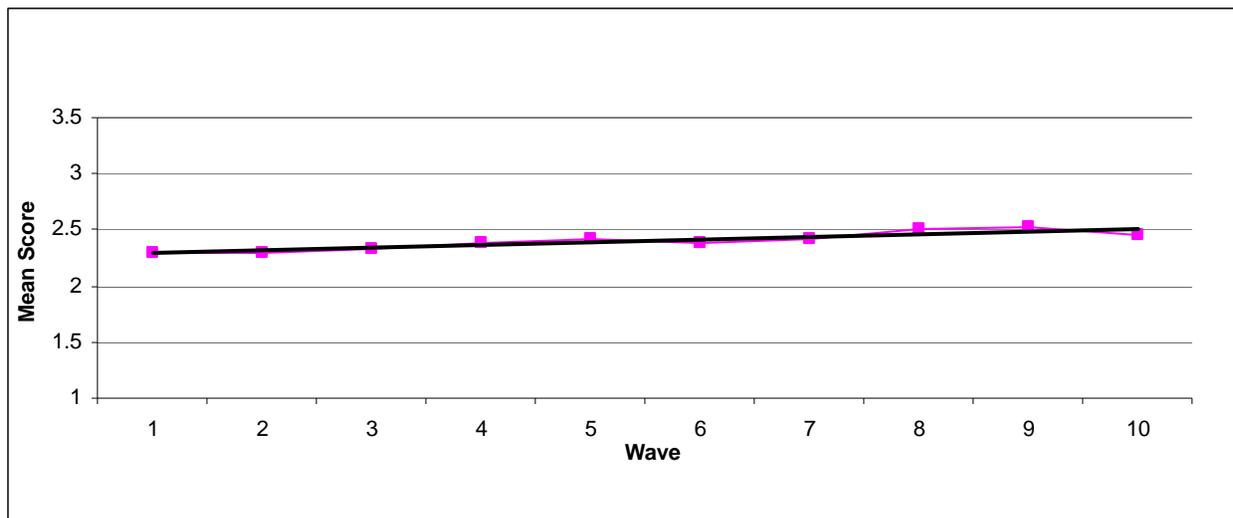
For the analysis of the RTCGD\_4old, all of the main effects except region, and none of the interaction terms, were found to be statistically significant. Consequently, the model was reduced and reanalysed with only age and gender retained. For the RTCGD\_5new, age was the only significant factor identified for retention in the final model (Table 14).

After controlling for the relevant factors, the wave effect was found to be significant for the RTCGD\_4old, but not for the RTCGD\_5new. It should be recalled, however, that the RTCGD\_4old was available for comparison across all ten waves of the survey while the RTCGD5\_new could only be compared across the final three waves (8, 9, and 10). Post-hoc pairwise comparisons revealed that, for the RTCGD\_4old, the adjusted mean scores in wave 1 were significantly lower than the mean scores obtained in waves 5, 8, 9, and 10 (Figure 6). A regression analysis fitted to the predicted mean scores revealed a significant ( $P < 0.001$ ) increasing trend (slope =  $+0.025$ ) in RTCGD\_4old by wave.

**Table 14. RTCGD Effects by Wave after Adjustment for Age and Gender– Final Model**

Scale	Source of Variation	Sum of Squares	df	Mean Square	F	P-Value*
RTCGD_4old	Age group	123.90	4	30.98	47.22	<0.001
	Gender	5.62	1	5.62	8.56	0.003
	Wave	72.57	9	8.06	12.29	<0.001
	Model	187.58	14	13.40	20.42	<0.001
	Error	6,893.20	10,507	0.66		
RTCGD_5new	Age group	16.26	4	4.07	6.38	<0.001
	Wave	2.21	2	1.10	1.73	0.177
	Model	18.55	6	3.09	4.85	<0.001
	Error	1,735.22	2,722	0.64		

**Figure 6. Estimated RTCGD Mean Scores After Adjustment for Age and Gender with Trend Line**



**Associations between Sample Characteristics and Behaviour-Specific SOC’s**

**Age.** Associations between age and SOC classifications were investigated using the categorized form of the age variable. Due to the small number of respondents in the 16-18 year category (n=441 across all 10 waves), this group was combined with the 19-24 year age group for these analyses. As both the age group and SOC variables are ordinal, Chi Square tests of linear association (using modified ridit scores) were used to investigate relationships between these two variables.

The results for each of the targeted behaviours are summarized in Table 15. Interestingly, the percentage of drivers in the Maintenance stage for drink driving was highest for the youngest age group. However, the percentage of drivers in the Maintenance stage for aggressive driving was higher for the oldest age group. As well, the percentage of drivers in the “Change Engaged” SOC for both speeding and aggressive driving was higher for older than younger drivers. Overall, and for all of the targeted behaviours except drink driving, a positive and statistically significant association (P<0.05) was observed

between age and SOC (indicating a shift upward in SOC classification with increasing age). Although a linear association was not detected between drink driving and age, a test of general association was statistically significant ( $P < 0.0001$ ). Thus, SOC placement may not increase or decrease across the age groups of respondents, but there are patterns within the data that indicate that the two variables are not totally independent.

**Table 15. Percentage of Drivers by Age and Stage of Change for Seat Belt Use, Drink Driving, Aggressive Driving, and Speeding**

Behaviour: SOC	AGE GROUP				$X^2$ (df)	P-Value*
	16-24 Years	25-34 Years	35-54 Years	55 Years and over		
<b>Seat Belt Use:</b>	(n=1,248)	(n=1,333)	(n=4,843)	(n=4,924)	94.5 (1)	<b>&lt;0.0001</b>
Maintenance	81.7	80.7	84.3	89.2		
Change Engaged	9.8	10.6	8.2	5.7		
Contemplation	6.9	6.7	5.5	3.7		
Pre Contemplation	1.6	2.0	2.0	1.4		
<b>Drink Driving:</b>	(n=1,251)	(n=1,261)	(n=4,457)	(n=4,639)	2.1 (1)	0.15
Maintenance	80.9	67.7	71.7	72.6		
Change Engaged	6.9	10.2	10.4	10.3		
Contemplation	10.6	18.9	15.1	14.5		
Pre Contemplation	1.6	3.2	2.8	2.6		
<b>Aggressive Driving:</b>	(n=1,009)	(n=1,093)	(n=4,162)	(n=4,269)	287.1 (1)	<b>&lt;0.0001</b>
Maintenance	13.5	7.0	16.1	24.2		
Change Engaged	18.9	19.1	22.5	27.8		
Contemplation	54.8	56.2	45.6	36.3		
Pre Contemplation	12.8	17.7	15.8	11.8		
<b>Speeding:</b>	(n=1,089)	(n=1,172)	(n=4,349)	(n=4,466)	140.4 (1)	<b>&lt;0.0001</b>
Maintenance	13.1	4.1	8.4	12.0		
Change Engaged	16.7	16.2	21.7	27.8		
Contemplation	54.6	58.8	50.9	46.6		
Pre Contemplation	15.5	20.9	19.0	13.7		

\*Significant ( $P < 0.05$ ) P-Values in boldface type.  $X^2$  test based on correlation statistic computed using modified ridit scores.

**Gender.** Table 16 shows the percentages of males and females at each SOC for seat belt use, drink driving, aggressive driving and speeding. The relationships tested between gender and SOC classification were statistically significant for all four behaviours. In each case, a higher percentage of females than males were classified as being in the Maintenance SOC, and females were also more likely than males to be classified as Change Engaged, at least for aggressive driving and speeding. A higher percentage of males than females did not recognize that there was a need to change their behaviours (Pre-Contemplation) or were still only thinking about making changes (Contemplation).

**Table 16. Percentage of Drivers by Gender and Stage of Change for Seat Belt Use, Drink Driving, Aggressive Driving, and Speeding**

Behaviour: SOC	Gender		X <sup>2</sup> (df)	P-Value*
	Males	Females		
<b>Seat Belt Use:</b>	(n=5,889)	(n=6,115)		
Maintenance	82.1	89.1	124.8 (1)	<b>&lt;0.0001</b>
Change Engaged	9.1	6.1		
Contemplation	6.3	3.9		
Pre Contemplation	2.5	0.9		
<b>Drink Driving:</b>	(n=5,568)	(n=5,783)		
Maintenance	65.2	79.3	333.2 (1)	<b>&lt;0.0001</b>
Change Engaged	10.2	9.8		
Contemplation	20.6	9.6		
Pre Contemplation	4.1	1.3		
<b>Aggressive Driving:</b>	(n=5,216)	(n=5,038)		
Maintenance	15.9	21.1	100.0 (1)	<b>&lt;0.0001</b>
Change Engaged	21.7	26.6		
Contemplation	46.9	39.9		
Pre Contemplation	15.6	12.5		
<b>Speeding:</b>	(n=5,403)	(n=5,370)		
Maintenance	7.6	12.2	132.9 (1)	<b>&lt;0.0001</b>
Change Engaged	20.8	25.6		
Contemplation	52.4	48.0		
Pre Contemplation	19.2	14.2		

\*Significant ( $P < 0.05$ ) P-Values in boldface type. X<sup>2</sup> mean score test based on modified ridit scores.

**Region.** Table 17 shows the distribution of respondents by region and behaviour-specific SOC. For seat belt use, fewer drivers from the North Central region reported always wearing their seat belt (Maintenance Stage) but more were classified into the Maintenance stage for drink driving. For aggressive driving, drivers from the FV and GV regions were more likely to be in the Contemplation or Pre-Contemplation SOC while the other three regions were more likely to be in the Maintenance SOC. The percentages of drivers in the Change Engaged SOC were similar across all regions. For speeding, the FV and GV regions were more likely to be in the Pre-Contemplation or Contemplation SOC while the other three regions were more likely to be in either the Maintenance or Change Engaged SOC.

The results of the analyses examining associations between sample characteristics and SOC classification, like those reported for the RTCGD, suggest that the changes in SOC shown in Figures 2 through 5 could be confounded by the differences in the characteristics of the samples at each wave. The effects of these potentially confounding factors are investigated in the next section.

**Table 17. Percentage of Drivers by Region\* and Stage of Change for Seat Belt Use, Drink Driving, Aggressive Driving, and Speeding**

Behaviour: SOC	REGION					X <sup>2</sup> (df)	P-Value*
	FV	GV	NC	SI	VI		
<b>Seat Belt Use:</b>	(n=3,067)	(n=3,422)	(n=983)	(n=2,050)	(n=2,714)	18.5 (4)	<b>0.001</b>
Maintenance	86.5	86.3	81.6	84.9	85.8		
Change Engaged	6.7	7.7	8.2	8.4	7.5		
Contemplation	4.9	4.5	7.0	5.0	5.5		
Pre Contemplation	2.0	1.5	3.2	1.7	1.3		
<b>Drink Driving:</b>	(n=2,913)	(n=3,225)	(n=950)	(n=1,936)	(n=2,565)	15.1 (4)	<b>&lt;0.005</b>
Maintenance	71.3	67.8	72.8	68.4	69.9		
Change Engaged	11.3	12.0	11.5	12.2	11.6		
Contemplation	14.4	17.0	13.4	16.2	15.4		
Pre Contemplation	3.0	3.1	2.3	3.2	3.2		
<b>Aggressive Driving:</b>	(n=2,621)	(n=2,925)	(n=832)	(n=1,722)	(n=2,346)	89.4 (4)	<b>&lt;0.0001</b>
Maintenance	15.6	13.9	23.0	21.4	22.8		
Change Engaged	24.6	23.1	24.9	24.6	23.7		
Contemplation	44.6	48.1	38.2	41.0	41.3		
Pre Contemplation	15.2	14.9	13.9	13.1	12.3		
<b>Speeding:</b>	(n=2,762)	(n=3,035)	(n=900)	(n=1,835)	(n=2,448)	93.1 (4)	<b>&lt;0.0001</b>
Maintenance	8.7	7.5	12.9	12.3	11.3		
Change Engaged	21.2	21.0	24.8	25.2	25.9		
Contemplation	51.2	53.6	47.3	48.9	47.2		
Pre Contemplation	18.8	18.0	15.0	13.6	15.6		

\* FV=Fraser Valley; GV=Greater Vancouver; NC = North Central; SI = Southern Interior; VI = Vancouver Island

\*\*Significant (P<0.05) P-Values in boldface type. X<sup>2</sup>mean score test based on modified ridit scores.

### **SOC Changes by Wave after Adjusting for Differences in Sample Characteristic**

To estimate to what extent differences in sample characteristics might be accounting for or confounding previously observed relationships between SOC classification and survey wave (Table 13) a series of cumulative logit models were fitted to the data using stepwise selection methods to determine the inclusion of interaction and main effects (age, gender, region, wave). Models were also fitted using “wave” as the only independent variable, using drivers with no missing data on any of the potential confounders. This was done to obtain the before adjustment results and to check that the associations summarized in Table 13 would remain stable when respondents with missing data on one or more of the independent variables were excluded from the analysis. It should be noted that interactions among demographic covariates (age, gender and region) were the only effects, other than main effects, included in these models. Future studies should also examine ‘wave’ interactions with each of these factors because this could reveal interesting differences in stage of change transitions over time according to drivers’ age, gender, or region of residence. Such information will be important when the focus of the research turns to the evaluation of specific road safety education campaigns. For the current study, the aim is simply to examine overall rather than specific trends by wave – with the effects of age, gender and region removed.

For all of the analyses, wave 1 was used as the primary reference category for assessing the significance of changes observed in waves 2 through 10. If the cumulative logit models did not fit the data well, or the results indicated that a monotonic function might not be appropriate, a series of binary logit models were tested to explore changes over time based on different aggregated sets of SOC categories. All of the results are summarized using odds ratios. An odds ratio greater than 1 indicates that the odds of being in a higher SOC in any given wave is greater than in the reference wave. Conversely, ratios less than 1 indicate that the odds of being in a higher SOC in the comparison wave is less than in the reference wave. For the cumulative logit analyses the Maintenance stage was always defined as the highest SOC. For the binary logit analyses, SOCs were aggregated into dichotomous groups (the Maintenance stage versus the other three combined, the Maintenance and Change Engaged group versus the Contemplation and Pre-Contemplation group, and the Maintenance, Change Engaged, Contemplation group versus the Pre-Contemplation group). In each case the model was designed to predict the higher level group.

**Seat Belt Use.** Based on the results of the contingency table analysis shown in Table 13, a significant wave effect was expected and obtained ( $P < 0.0001$ ) when an unadjusted cumulative logit model for seat belt SOC was fitted to the data (Table 18). Before adjustment several of the odds ratios computed for each wave (relative to wave 1) were marginally or significantly different from one. In particular, drivers in waves 2, 4, 6, 7 and 9 were more likely to be in a higher level SOC for seat belt use than drivers in wave 1, while drivers in wave 2 were less likely to be in a higher SOC class.

**Table 18. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Seat Belt SOC by Wave Before and After Adjustment for Variations in Sample Characteristics based on Cumulative Logit Analysis (wave 1 = reference category)**

Seat Belt Use SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	0.85	0.72, 1.01	0.063*	0.87	0.73, 1.03	0.104
Wave 3	0.87	0.72, 1.07	0.181	0.87	0.71, 1.07	0.180
Wave 4	1.22	1.00, 1.50	0.052*	1.07	0.87, 1.31	0.536
Wave 5	1.19	0.95, 1.50	0.134	1.12	0.89, 1.41	0.353
Wave 6	1.27	0.99, 1.63	0.059*	1.21	0.94, 1.56	0.142
Wave 7	1.42	1.15, 1.76	<b>0.001</b>	1.31	1.05, 1.62	<b>0.016</b>
Wave 8	1.11	0.90, 1.37	0.332	1.02	0.82, 1.26	0.870
Wave 9	1.40	1.13, 1.74	<b>0.002</b>	1.33	1.06, 1.65	<b>0.012</b>
Wave 10	0.97	0.81, 1.18	0.771	0.94	0.78, 1.14	0.520
<b>Overall Wave Effect</b>	<b>&lt;0.0001</b>			<b>&lt;0.003</b>		

Significant P-values ( $P < 0.05$ ) shown in boldface type. Marginal results ( $0.10 > P > 0.05$ ) are shown with an asterisk.

Stepwise selection methods resulted in the fitting of a main effects model; no interaction effects were found to be significant. The residual Chi Square was satisfactory ( $P>0.70$ ) indicating a reasonable fit of the model to the data. With all of the main effects included in the model, the effect of wave on SOC was attenuated, with only the wave 7 and 9 odds ratios remaining significantly greater than one. Thus, age, region and gender appear to be important confounders that need to be considered when evaluating SOC's associated with seat belt wearing.

**Drink Driving.** As shown in Table 19, the estimated effect of wave on drink driving SOC changed dramatically after the revision of the drink driving operational definition in wave 8. The results obtained cannot, therefore, be compared for this behaviour over the full study period. The odds of being in a higher SOC is clearly much greater for those who were categorized using the new definition. The results shown in Table 19 are thus provided for completeness only. Results for waves 1 through 7 were reported in the 2008 survey report and revealed no significant differences by wave after adjustment for the main effects of age, gender and region.

Similarly, when the results for waves 8 through 10 were compared (using wave 8 as the reference category), no significant effects were found during this period of time for the drink driving SOC measure, either before or after adjustment. Interestingly, the odds ratios estimated for the drink driving SOC did increase slightly from wave 8 through wave 10, indicating some upward movement in SOC categorization by wave 10. As more data become available this relationship can be investigated further.

**Table 19. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Drink Driving SOC by Wave Before and After Adjustment for Variations in Sample Characteristics based on Cumulative Logit Analysis (wave 1 = reference category)**

Drink Driving SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	0.96	0.84, 1.10	0.558	0.93	0.81, 1.07	0.330
Wave 3	1.09	0.92, 1.28	0.329	1.01	0.85, 1.20	0.894
Wave 4	1.11	0.95, 1.30	0.177	0.99	0.84, 1.15	0.848
Wave 5	1.09	0.91, 1.29	0.359	1.09	0.91, 1.30	0.354
Wave 6	1.19	0.99, 1.44	0.069*	1.15	0.95, 1.39	0.166
Wave 7	1.23	1.05, 1.44	<b>0.010</b>	1.13	0.96, 1.32	0.146
Wave 8	1.70	1.43, 2.03	<b>&lt;0.0001</b>	1.66	1.39, 1.97	<b>&lt;0.0001</b>
Wave 9	1.99	1.67, 2.36	<b>&lt;0.0001</b>	1.90	1.59, 2.27	<b>&lt;0.0001</b>
Wave 10	2.02	1.71, 2.38	<b>&lt;0.0001</b>	1.97	1.66, 2.33	<b>&lt;0.0001</b>
<b>Overall Wave Effect</b>	<b>&lt;0.0001</b>			<b>&lt;0.0001</b>		

Significant P-values ( $P<0.05$ ) shown in boldface type. Marginal results ( $0.10>P>0.05$ ) are shown with an asterisk.

**Aggressive Driving.** The overall wave effect observed for the aggressive driving SOC was significant before ( $P<0.001$ ) but not after adjustment ( $P<0.186$ ). However, none of the tested main effect or main effect plus interaction effect cumulative logit models fit the data well. Because earlier results suggested that there might be overlap between the Contemplation and Pre-Contemplation SOCs for this behaviour, these two categories were combined and the cumulative logit analyses rerun. Once again model fit was poor, so the data were tested using binary logit models. Using this method, the Maintenance stage was compared to all other SOCs combined, and then the Maintenance and Change Engaged stages were compared to the aggregated Contemplation and Pre-Contemplation stages.

For the comparison of the Maintenance plus Change Engaged stage versus the Contemplation plus Pre-Contemplation stage no significant wave effect was obtained before or after controlling for significant age, gender and regional effects. A significant wave effect was found, however, for the Maintenance stage versus all other stages comparison ( $P<0.01$ ) both before and after adjustment. The estimated odds ratios by wave are summarized in Table 20. Model fit increased to a satisfactory level with the inclusion of age, gender, region and an age by gender interaction (Residual Chi Square  $P>0.54$ ).

**Table 20. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Aggressive Driving SOC by Wave Before and After Adjustment for Variations in Sample Characteristics based on Binary Logit Analysis of the Maintenance versus All Other SOCs (wave 1=reference category)**

Aggressive Driving SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	1.06	0.88, 1.30	0.532	1.10	0.91, 1.33	0.317
Wave 3	1.31	1.07, 1.60	<b>0.010</b>	1.29	1.05, 1.60	<b>0.016</b>
Wave 4	1.22	1.00, 1.48	<b>0.047</b>	1.09	0.90, 1.34	0.376
Wave 5	1.44	1.17, 1.78	<b>&lt;0.001</b>	1.32	1.06, 1.63	<b>0.012</b>
Wave 6	1.50	1.20, 1.87	<b>&lt;0.001</b>	1.45	1.16, 1.82	<b>0.001</b>
Wave 7	1.16	0.95, 1.41	0.150	1.03	0.84, 1.25	0.798
Wave 8	1.07	0.87, 1.32	0.507	1.01	0.82, 1.25	0.917
Wave 9	1.29	1.06, 1.57	<b>&lt;0.010</b>	1.21	0.99, 1.47	0.063*
Wave 10	1.06	0.87, 1.29	0.565	0.97	0.80, 1.19	0.779
<b>Overall Wave Effect</b>			<b>&lt;0.002</b>			<b>0.010</b>

Significant P-values ( $P<0.05$ ) shown in boldface type. Marginal results ( $0.10>P>0.05$ ) are shown with an asterisk.

The results indicate that at least some of the observed wave effects for Aggressive driving are attributable to differences between the characteristics of the samples who participated in each survey. Nonetheless, after taking these differences into account, significant increases in the likelihood of being in

the Maintenance category for this behaviour were still observed in Waves 3, 5, 6, and to some extent in wave 9.

**Speeding.** The results obtained for speeding were similar to those obtained for Aggressive driving in that the cumulative logit SOC models did not fit the data well. For each of the models tested, the proportional odds assumption was not met, and the residual chi square results were statistically significant (indicating lack of fit). Consequently, the categories were once again aggregated and tested using the following binary logit models: Maintenance stage versus all others, Maintenance plus Change Engaged versus Contemplation and Pre-Contemplation stages, and Maintenance, Change Engaged plus Contemplation versus the Pre-Contemplation stage.

In each of the comparisons made, a significant wave effect was found before adjustment for differences in the sample characteristics. After adjustment, however, the wave effect remained statistically significant only for the latter two comparisons (Maintenance plus Change Engaged versus Contemplation plus Pre-Contemplation, and Maintenance, Change Engaged and Contemplation versus Pre-Contemplation). The results of these two analyses are summarized in Tables 21 and 22 respectively and confirm that there has been a substantial shift downward in the speeding SOC hierarchy for drivers in the latter waves of the survey; a shift that is not be explained by differences in the tested characteristics of the sample groups, and that appears to be associated primarily with a shift from the Change Engaged into the Contemplation stage (Table 13, Figures 2 through 5).

**Table 21. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Speeding SOC by Wave Before and After Adjustment for Variations in Sample Characteristics based on Binary Logit Analysis of the Maintenance plus Change Engaged versus Contemplation plus Pre-Contemplation stages (wave 1 = reference category)**

Speeding SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	0.98	0.85, 1.13	0.754	0.98	0.85, 1.14	0.808
Wave 3	1.02	0.87, 1.21	0.786	0.99	0.83, 1.17	0.897
Wave 4	1.06	0.91, 1.24	0.450	0.94	0.80, 1.10	0.456
Wave 5	1.24	1.04, 1.47	<b>0.016</b>	1.15	0.96, 1.37	0.123
Wave 6	1.13	0.94, 1.36	0.210	1.07	0.89, 1.30	0.472
Wave 7	1.24	1.07, 1.45	<b>0.005</b>	1.12	0.96, 1.31	0.159
Wave 8	0.66	0.55, 0.79	<b>&lt;0.0001</b>	0.61	0.51, 0.73	<b>&lt;0.0001</b>
Wave 9	0.92	0.78, 1.08	0.310	0.86	0.73, 1.01	0.068*
Wave 10	0.78	0.67, 0.92	<b>0.002</b>	0.71	0.61, 0.84	<b>&lt;0.0001</b>
<b>Overall Wave Effect</b>			<b>&lt;0.0001</b>			<b>&lt;0.0001</b>

Significant P-values ( $P < 0.05$ ) shown in boldface type. Marginal results ( $0.10 > P > 0.05$ ) are shown with an asterisk.

**Table 22. Estimated Odds Ratios ( $\pm$  95% Confidence Intervals) for Speeding SOC by Wave Before and After Adjustment for Variations in Sample Characteristics based on Binary Logit Analysis of the Maintenance, Change Engaged plus Contemplation versus Pre-Contemplation stages (wave 1 = reference category)**

Speeding SOC:	Before Adjustment			After Adjustment		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Wave 1 (reference)	1.00	-	-	1.00	-	-
Wave 2	1.04	0.87, 1.23	0.691	1.02	0.86, 1.22	0.798
Wave 3	1.00	0.82, 1.22	0.994	0.96	0.78, 1.17	0.667
Wave 4	1.29	1.06, 1.58	<b>0.013</b>	1.18	0.97, 1.45	0.103
Wave 5	1.43	1.14, 1.81	<b>0.003</b>	1.35	1.07, 1.71	<b>0.013</b>
Wave 6	1.21	0.96, 1.54	0.112	1.17	0.92, 1.49	0.200
Wave 7	1.39	1.14, 1.71	<b>0.001</b>	1.30	1.06, 1.60	<b>0.011</b>
Wave 8	1.26	1.02, 1.56	<b>0.029</b>	1.22	0.99, 0.51	0.063*
Wave 9	1.43	1.16, 1.76	<b>0.001</b>	1.37	1.11, 1.69	<b>0.004</b>
Wave 10	1.32	1.09, 1.61	<b>0.005</b>	1.28	1.05, 1.56	<b>0.015</b>
<b>Overall Wave Effect</b>			<b>0.0002</b>			<b>0.006</b>

*Significant P-values ( $P < 0.05$ ) shown in boldface type. Marginal results ( $0.10 > P > 0.05$ ) are shown with an asterisk.*

In summary, in this part of the study the RTCGD and SOC instruments were used to describe and compare readiness to change and stages of change among ten samples of drivers who completed the online survey at different points in time through 2006, 2007 and 2008. As well, relationships between variables such as age, gender, and region of residences and readiness to change and stages of change were explored, as were the potentially confounding influences of such characteristics when conducting comparisons of readiness to change and stages of change across survey waves.

The results indicated that both instruments were useful in detecting changes across the respondent groups but that variations in characteristics such as age, gender, and region of residence may be potential confounders in the results obtained for such comparisons. Future studies that use cross-sectional sampling from the population, particularly those that have the aim of evaluating any intervening road safety programs or initiatives, will need to ensure that confounding effects are taken into account, or that sampling strategies include frequency matching on these important variables. An understanding of how readiness to change and stages of change vary by age, gender and region of residence may also prove helpful for the development of initiatives that target not only the general population but specific subgroups within the population.

Although changes across the survey waves were examined for both the RTCGD and SOC measures, this study was not intended to evaluate the effects of any specific road safety campaigns. However, it should be noted that such campaigns were ongoing throughout the periods during which this study was conducted. High level information on program activity in each survey year was obtained and is summarized in Table 23. Activity is indicated as “yes” if it occurred in the month prior to and/or during the conduct of the survey; it is indicated as “no” if there was no activity in the month before or during the survey.

**Table 23. Road Safety Program Activity by Survey Wave and Targeted Behaviour: 2006 - 2008**

	<b>Seat Belt Use</b>	<b>Drink Driving</b>	<b>Aggressive Driving</b>	<b>Speeding</b>
Wave 1	No	No	No	No
Wave 2	Yes	Yes	Yes	Yes
Wave 3	Yes	Yes	Yes	Yes
Wave 4	No	No	Yes	Yes
Wave 5	No	Yes	Yes	Yes
Wave 6	No	Yes	No	No
Wave 7	No	No	No	No
Wave 8	No	Yes	No	No
Wave 9	Yes	No	No	No
Wave 10	No	Yes	Yes	Yes

Although it is not possible to link the occurrence of the campaigns to the results observed in this study, it is interesting to note that the large downward shift from the Change Engaged to Contemplation SOC for speeding that was observed for respondents in waves 8, 9, and 10 came during a period of time when very little public education campaign activity had been underway to target that specific behaviour. Similar comparisons could not be made with drink driving and aggressive driving because changes in the operational definitions of those two behaviours may be confounding the results, particularly those for drink driving. Analyses of the aggressive driving SOCs do indicate, however, that after adjusting for sample differences in age, gender, and region there was little apparent movement across stages from waves 7 through 10. As with speeding, this lack of change in aggressive driving behaviour does occur during a general period of time when ICBC education campaigns were not as focussed on this particular behaviour. While certainly not definitive, these results are encouraging and indicate that further research involving the use of the RTCGD and SOC measures to evaluate relationships between road safety program activity and

driver attitude and behaviour change is warranted. In the following section of this study, confirmation of the trends observed in the cross-sectional survey results will be sought using a new sample of drivers who completed the survey three times: in wave 1, wave 5, and wave 8. Using repeat responders can reduce the amount of variability that unique respondents bring to each survey and, consequently, can help to clarify effects that are attributable to factors other than differences in the characteristics of the samples.

### Part 3 – Repeat Responders

In the 2007 survey study, respondents to the wave 1 survey (n=3,210) were invited to complete the wave 5 survey as well: 784 (24%) of the participants agreed to do so. In wave 8, individuals from this repeater sample were asked to participate again: 454 (58%) complied. This section of the current study will examine the data collected from these individuals and, in particular, will explore the extent to which transitional changes may have occurred from wave 1 to 5 to 8.

#### Sample Characteristics

Table 24 shows the sample characteristics for the original wave 1 and 5 repeater group (N=784), and for the wave 8 (N=454) subset of that group. Overall, the characteristics of the original and subset groups of responders are similar, although the wave 1\_5\_8 group were slightly older on average and reported driving somewhat more in an average week than the larger repeater group of wave 1 and 5 repeaters. For the remainder of this report, comparisons will not be made back to the wave 1 to 5 findings of the original repeater group unless the results obtained from the current group differ in a substantial way from those reported previously (Wiggins, et. al., 2007).

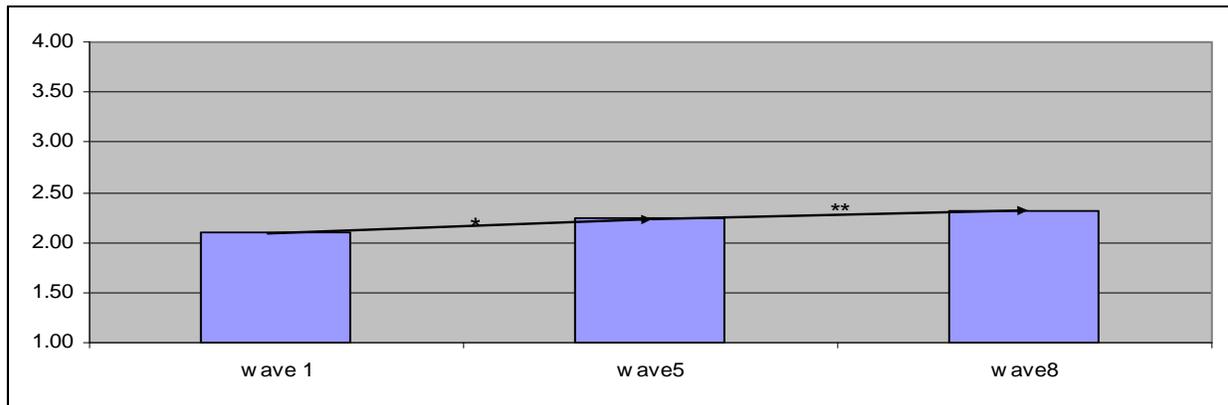
**Table 24. Sample Characteristics of Repeat Respondents at the time of their First Survey**

	Repeater Groups	
	Wave 1 & 5 N=784	Wave 1 & 5 & 8 N=454
<b>Age</b> (Mean (SD)) in years	53.83 (12.4)	55.61 (11.48)
<b>Hours driven in average week</b> (Median (Min, Max))	7.0 (1.0-70.0)	10.5 (1.0-70.0)
<b>Gender:</b> Male (%)	56.4	59.7
Female (%)	43.6	40.3
<b>License:</b> Full Privilege (%)	97.7	97.8
Learner or Novice (%)	2.3	2.2
<b>Region:</b> Fraser Valley (%)	25.3	26.9
Greater Vancouver (%)	26.4	27.1
North Central (%)	7.0	4.8
Southern Interior (%)	16.7	16.1
Vancouver Island (%)	24.6	25.1

## Changes in Mean Scores on the RTCGD

Mean scores on the RTCGD\_4old increased steadily from wave 1 to wave 8. The increases were statistically significant from wave 1 to waves 5 and 8 ( $P < 0.05$ ), and marginally significant from wave 5 to 8 ( $P < 0.10$ ). As in the analysis of the scores for all respondents, none of the mean scores computed for the repeater group exceeded 2.5 (scale midpoint). Thus, despite the small upward shift in mean scores, these respondents remained on the low side of the readiness to change measure. A comparison of the mean scores on the RTCGD\_4old and RTCGD\_5new in wave 8 were very similar (2.32 versus 2.35).

**Figure 7. Mean scores on the RTCGD\_4old for Survey Repeater Group**

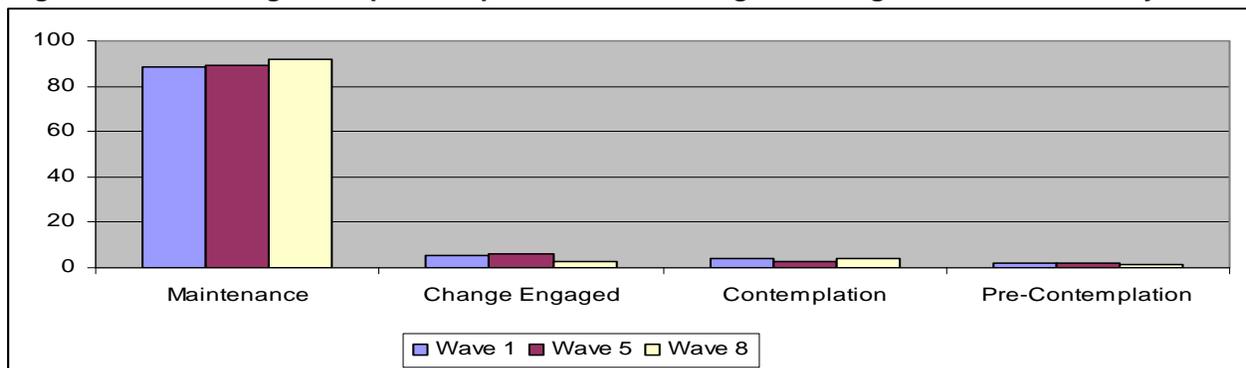


\* $P=0.003$ ; \*\* $P=0.105$

## Stages of Change Transitions for Targeted Behaviours

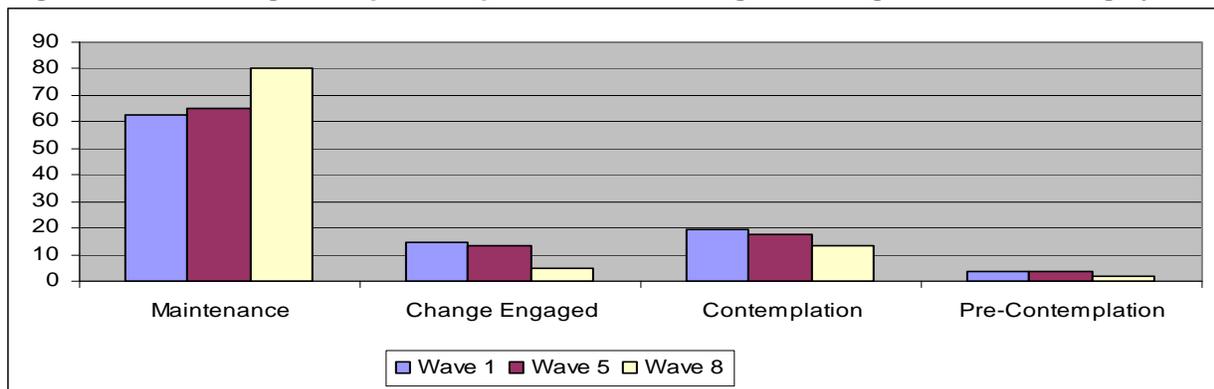
**Seat Belt Use.** Most of the repeat responders (89%) started out in the Maintenance stage for seat belt wearing in wave 1 (Figure 8). The percentage of respondents in the Maintenance stage did not change in wave 5 (89%) but increased slightly in wave 8 (to 92%). Overall, 5% of the respondents shifted up the SOC hierarchy from wave 1 to wave 5, but 3% shifted down. Similarly 6% shifted upwards and 4% shifted downwards from wave 5 to wave 8. None of the shifts were statistically significant.

**Figure 8. Percentage of Repeat Responders in each Stage of Change for Seat Belt Use by Wave**



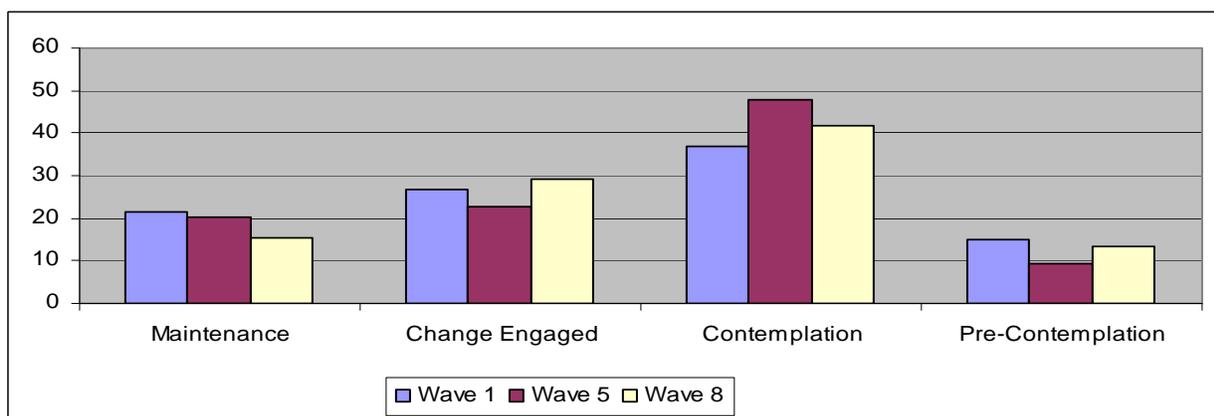
**Drink Driving.** As might be expected based on the results obtained with the non-repeater groups, a significant increase was observed in the percentage of repeaters who were classified into the Maintenance stage for drink driving in wave 8 (Figure 9), and a significant decrease was observed in the Change Engaged category. As was discussed previously, the change in the operational definition of a drink driver was likely the primary factor contributing to this change. In future studies, this percentage should stabilize and it will be possible to start to investigate changes that may be associated with other factors such as road safety public education campaigns.

**Figure 9. Percentage of Repeat Responders in each Stage of Change for Drink Driving by Wave**



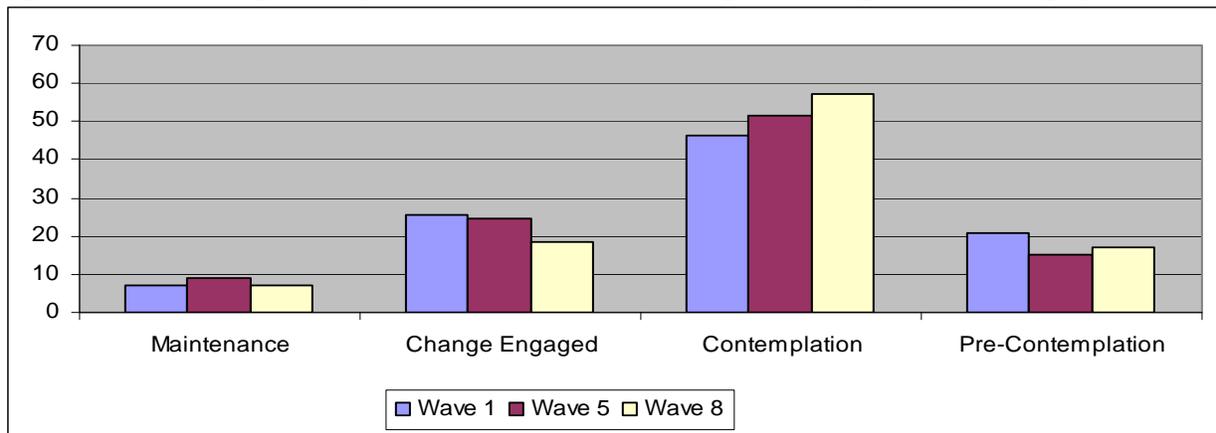
**Aggressive Driving.** With aggressive driving, the majority of repeat responders were classified into the Contemplation stage in all three surveys. From wave 1 to 5, 27% of the respondents shifted down one or more levels of the SOC hierarchy, while 24% shifted upwards; 49% did not change from one wave to the next ( $P < 0.02$ ; Bonferroni-adjusted). From wave 5 to 8, 52% did not change levels, while 26% shifted downwards and 23% shifted up one or more levels ( $P < 0.06$ ; Bonferroni-adjusted). In general, no specific trend for this behaviour was detected.

**Figure 10. Percentage of Repeat Responders in each Stage of Change for Aggressive Driving by Wave**



**Speeding.** For speeding, a significant shift in behavioural SOC was not detected between wave 1 and 5 ( $P < 0.18$ ; Bonferroni-adjusted) but a marginally significant shift was observed from wave 5 to 8 ( $P < 0.10$ ; Bonferroni-adjusted). Similar to the results obtained in part two of this study, most of the shift from wave 5 to 8 was due to a downward shift from the Maintenance and Change Engaged SOC to the Contemplation stage. Overall, 59% of the respondents in wave 1 remained in the same category in wave 5, 23.5% moved up one or more categories, and 18% moved downwards. In contrast, from wave 5 to 8, 57% remained in the same SOC, while 17% moved upwards and 26% moved down one or more levels.

**Figure 11. Percentage of Repeat Responders in each Stage of Change for Speeding by Wave**



In summary, the results obtained from the analysis of the repeat responders both confirmed and validated the results obtained (after adjustment) from the independent sample groups. Mean scores on the RTCGD scale increased across the three waves included in this part of the study, and the changes in SOC categories mirrored those obtained previously as well. Because repeat responders are difficult and expensive to maintain in an online survey panel, these results provide some assurance that the RTCGD and SOC measurement tools can be used in future tracking of independent groups over time if the samples are properly constructed before the survey is implemented or that sufficient information is collected in the survey to permit appropriate statistical adjustment after the fact. The results of the repeat responder study, however, also point to some of the difficulties associated with evaluating attitude and behavioural change over time given the propensity for individuals to shift forwards and backwards along the change trajectory. It is not a smooth path. Nonetheless, in time and with effort, if public education road safety campaigns are having an effect, RTCGD scores should continue to increase gradually as should the percentage of individuals identified in the higher levels of the SOC hierarchy.

## Discussion

The present study is the third in a series of studies designed to develop performance indicators for ICBC road safety education campaigns. Two types of measures were developed based on the Transtheoretical Model of Change (TMC): a “Readiness for Change in General Driving” (RTCGD) scale and a Stages of Change (SOC) classification process. Both measures were developed for use in online panel surveys and are intended to be used to estimate trends in the BC driving population, specifically as they relate to ICBC road safety public education and awareness campaigns. The RTCGD focuses on general driving behaviours rather than any specific behaviour that may be the target of a particular road campaign. In contrast, the SOC focuses on targeted behaviours and is designed to categorize drivers according to where they fit in a hierarchy of change from the lowest level (Pre-Contemplation) to the highest level (Maintenance) with respect to that behaviour. Four behaviours have been targeted to date: seat belt wearing, drink driving, aggressive driving, and speeding.

Previous psychometric assessment of the RTCGD and SOC categorization processes revealed that some question revisions were required in order to improve the reliability and validity of the RTCGD and SOC measures. In particular, the operational definitions used to identify aggressive and drink drivers required clearer specification. As well, two of the original RTCGD were deleted and two items were revised for content, and two were modified to include a time reference. The questionnaire changes were implemented prior to the conduct of the last three survey waves. A total of 10 surveys have been conducted to date.

Based on the analyses conducted in the current study, the RTCGD was reduced to a five-item scale that was found to have adequate reliability and validity. The new operational definitions used for drink driving and aggressive driving helped to clarify these behaviours and, in so doing, contributed to improving the validity of the SOC classification process. For aggressive driving, however, it was found that the array of behaviours included in the aggressive driving domain made it difficult to sort respondents into the two lower stages of change (Pre-Contemplation and Contemplation). Most respondents might be in one stage or the other depending which of the aggressive behaviours was being considered. Aggressive driving is not a single behaviour but a complex of behaviours. Consequently, for future research in which the aggregate domain of aggressive driving is of interest it is recommended that these two categories be aggregated into one Contemplation SOC. Further psychometric work could also be undertaken to assess

whether it would be more informative to disaggregate the aggressive driving group of behaviours and focus more on each of the individual behaviours in the aggressive driving domain.

The results comparing scores on the RTCGD by survey wave are encouraging, indicating that general readiness to change has been increasing steadily since the introduction of the survey in February 2006. The increase was apparent before and after controlling for variations in sample characteristics, and also for respondents who repeated the survey in waves 1, 5, and 8. Categorical indicators of road safety education program activity show that public awareness and education campaigns were underway across the Province throughout this period. Although no causal connections can be made, the similarities between the results obtained for the independent samples across the ten waves and the repeater samples in waves 1, 5, and 8, suggest that factors other than sample characteristics are likely contributing to the observed changes. Road safety campaigns may be one of the factors contributing to these results. It should also be noted however, that in all waves, respondents typically scored low on the RTCGD scale. This suggests that additional work is required to find ways to maximize the effectiveness of road safety messaging in moving people forward along the readiness to change trajectory.

Encouraging results were also obtained for the SOC classification process. Significant shifts in the SOC hierarchy (upwards and downwards) were detected in the comparisons of the samples across the ten survey waves as well as for the repeat responders. Although, differences in sample characteristics were found to account for some of the changes observed across the ten independent samples, they were not the only factors, nor did the effects disappear completely when repeat responders were used in the analysis. One exception was seat belt wearing. For the repeat responders, the vast majority of drivers started the survey in the Maintenance stage and remained in the Maintenance stage through waves 5 and 8. Given the high percentage of drivers in BC who report being in the Maintenance stage for this behaviour (~86%) it may be more informative in future surveys to track shifts into or out of the Maintenance stage only. The percentages of drivers allocated to the other three stages are so small that comparisons among them may not be particularly meaningful. However, if the percentage of drivers in the Maintenance stage begins to decline this could be an indicator of a need to increase the amount of advertising or public education focusing on this particular behaviour.

Due to a change in the operational definition of drink driving in wave 8, changes in SOCs for this behaviour could not be assessed. However, changes were detected for both aggressive driving and

speeding. In both cases, downward shifts in the SOC hierarchy were observed in the latter waves of the survey, and, interestingly, these shifts corresponded to a period of time in which the road safety education and advertising programs were not focussing on these behaviours. No attempt is made to draw any causal connections as a result of this observation here, but the results do provide an impetus for continuing to work with these measurement tools and to investigate more formally relationships between the nature and intensity of road safety education campaigns, stages of change for targeted behaviours, and changes in general readiness to engage in driving behaviour change.

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Insurance  
Corporation  
of British  
Columbia

## **ATTACHMENT A-7**

# **INTERSECTION SAFETY CAMERAS – 2008 UPDATE (JUNE 2009)**

# INTERSECTION SAFETY CAMERAS – 2008 UPDATE

Yvonne Zheng & Peter Cooper  
BICC – Research & Evaluation  
and BI Consulting Services  
Jun 1, 2009

## 1. Review of Methodology

There were 70 reference and an equal number of treatment sites. For each site the applicable annual traffic volumes and crash counts were obtained. Traffic volumes were measured in both the major and minor intersection approaches to compare with previously-obtained data from before and after the camera implementation dates. Other traffic-related factors such as posted speed limits and land use changes were also noted.

Traffic volumes were counted during peak hours, then average annual daily traffic volumes (AADTs) were estimated by applying factors to account for day of week and month of year. New, 6-hour counts of volume were collected by an ICBC contractor between January and October of 2006 for reference and treatment sites where no recent municipally-collected data were available. Most of the sites were included in the contract since little usable municipal data could be found. These new volume data were added to the previously-obtained AADTs from pre-implementation (prior to mid-1999 for 8 sites and 2000 for the rest) and post-implementation (after January 2001). Crash-claim incident counts were re-extracted to cover the period from Jan. 1, 1996 to December 31, 2005.

For this third evaluation, the ‘before’ period was set at 3 years, and the ‘after’ period was set at 5 years for a total study extent of 8 years. This was considered a reasonable time in which the need for a relatively large crash data pool was balanced against the increased probability of uncontrolled changes in land use, traffic and infrastructure over time. Also, because the possibility existed that the safety impact would change over time, an overly-long period might dilute the estimate of effect.

First, the crash prediction model based on AADT (as described in the 2003 report titled “Intersection Safety Camera Final Evaluation”) was the same one as used for the 2006 update because there were no changes in information pertaining to the time before 2001. From this, the expected number of crash incidents was generated at each specific treatment site (and overall) during the “after” period for the condition of “no treatment” – i.e. the expected crash rate if no cameras had been installed. Then, the effect of the cameras on

safety was judged by comparing the estimated expected number to the observed number of crash-claim incidents at the treatment sites during the 'after' period.

## 2. Odds Ratio Procedure with Empirical Bayes Refinement

This procedure was described in the 2003 ISC report referred to above and is also used in the evaluation of ICBC's Road Improvement Program conducted by Dr. Tarek Sayed at UBC. This process uses crash experience at a set of comparison sites to control for changes in crash trends over time which occur in the larger population due to traffic growth, weather, economic or other factors independent of the ISC program. The reduction in the number of claims at the treatment sites can be calculated using the Odds Ratio (O.R.) according to equation (1.1) as follows:

$$O.R. = \frac{A/C}{B/D} \tag{1.1}$$
$$TreatmentEffect = O.R. - 1$$

where:

*A* = the number of claims in the comparison group that occurred during the pre-improvement period.

*B* = the Empirical Bayes' estimate of the number of claims in the treatment site(s) had no treatment taken place.

*C* = the number of claims in the comparison group that occurred during the post-improvement period.

*D* = the number of claims in the treatment group that occurred during the post-improvement period.

And where  $O.R.-1 < 0$ , the effectiveness of treatment is in reducing the crashes.

All quantities in the Odds Ratio represent observed values (with assumed Poisson distribution), with the exception of quantity *B* which is calculated. Thus the main work involved in evaluating the benefits of treatment consists of determining the quantity *B*. This quantity is estimated by utilizing the crash-claim prediction models referred to in Section 1. These models, developed from the reference site data, are used to "predict" expected crash rates based on major and minor leg AADTs at the treatment sites for a situation where no ISCs are present. This is the Empirical Bayes (EB) technique. The theoretical background associated with the EB technique is provided in Sayed, 2006.

The value *B* in the Odds Ratio (equation (1.1)) is calculated by using equation (1.2) as follows.

$$B = \sum_{i=1}^n (EB_i)_a = \sum_{i=1}^n (EB_i)_b \times \frac{E(\Lambda_i)_a}{E(\Lambda_i)_b} \quad (1.2)$$

where:

$(EB_i)_a$  = the Empirical Bayes safety estimate of treated site  $i$  in the “after” period had no treatment taken place.

$(EB_i)_b$  = the Empirical Bayes safety estimate of treated site  $i$  that occurred in the “before” period.

$E(\Lambda_i)_a$  = the claim frequency given by the claim prediction model for treated site  $i$  using its traffic flows in the “after” period.

$E(\Lambda_i)_b$  = the claim frequency given by the claim prediction model for treated site  $i$  using its traffic flows in the “before” period.

If we use our reference group to also represent the comparison group in the Sayed (2006) methodology, the value  $A$  can be corrected for regression-to-mean bias by using the following definition:

$A$  = the Empirical Bayes’ estimate of collisions (claims) in the reference group that occurred during the ‘before’ period.

The Empirical Bayes safety estimate and its variance are calculated using equations (1.3) and (1.4) below as described further in Sayed (2006).

$$EB_i = \left( \frac{E(\Lambda_i)}{\kappa + E(\Lambda_i)} \right) \times (\kappa + count_i) \quad (1.3)$$

$$Var(EB_i) = \left( \frac{E(\Lambda_i)}{\kappa + E(\Lambda_i)} \right)^2 \times (\kappa + count_i) \quad (1.4)$$

where:

$\kappa$  = the negative binomial parameter of the claim prediction model;  
 $count_i$  = the observed claim frequency in the before period.

To get the expected value and variance of the Odds Ratio, the method of statistical differentials is used as shown in equation (1.5) and (1.6) below:

$$E\{Y\} = Y + \left[ \sum_1^n (\partial^2 Y / \partial X_i^2) \text{VAR}\{X_i\} \right] / 2 \quad (1.5)$$

$$\text{VAR}\{Y\} = \left[ \sum_1^n (\partial Y / \partial X_i)^2 \text{VAR}\{X_i\} \right] \quad (1.6)$$

By applying equation (1.5) and equation (1.6) to the Odds Ratio as defined in equation (1.1), the following two equations ((1.7) and (1.8)) for the Odds Ratio result:

$$E(O.R.) = \left( \frac{A/C}{B/D} \right) \times \left( 1 + \frac{\text{Var}B}{B^2} + \frac{\text{Var}C}{C^2} \right) \quad (1.7)$$

$$\text{Var}(O.R.) = \left( \frac{A/C}{B/D} \right)^2 \times \left( \frac{\text{Var}A}{A^2} + \frac{\text{Var}B}{B^2} + \frac{\text{Var}C}{C^2} + \frac{\text{Var}D}{D^2} \right) \quad (1.8)$$

The Odds Ratio and its variance should be calculated separately for property damage only (PDO) and injury crash-claims.

### 3. Crash Prediction Models

The crashes prediction models were previously developed with Negative Binomial regression using the SAS generalized linear model procedure (PROC GENMOD). These model were then used to predict the frequency of crashes. Data on traffic volumes and crash frequency from 1996 to 1998 inclusive was collected for 70 reference sites and used to develop the models. The prediction models and the parameters are shown in Table 1.

**Table 1: Total Crash Prediction Model**

Model Formulation		$\chi^2$	$\kappa$
Crash Model:	$a_0$	17.60(p<0.001)	
$Crashes / 3yrs = 5.24 * 10^{-4} \times (AADT_{mj rd})^{0.5390} \times (AADT_{mn rd})^{0.7191}$	$a_1$	7.30(p=0.007)	1.8
	$a_2$	18.44(p<0.001)	2

The entries in the  $\chi^2$  column show that variables “major AADT” and “minor AADT” were both significant predictors of the crashes counts. Deviance of the goodness of fit statistics was 77.8751 with degree of freedom of 67.

Comparing this deviance with its asymptotic  $\chi^2$  distribution with 67 degree of freedom, a p-value of 0.17 is obtained. This indicates that the specified model fits the data reasonably well.

The AADT for each year was estimated based on 3 values: 1-hour counts taken immediately before and after ISC implementation and 6-hour counts in 2006. In the following equations AADT by time period is referred to as follows:

Year1:	Year2:	Year3:
AADT1	AADT2	AADT3

Then we can define the following terms:

$$\text{year}_m = (\text{year}_1 + \text{year}_2 + \text{year}_3) / 3$$

$$\text{AADT}_M = (\text{AADT}_1 + \text{AADT}_2 + \text{AADT}_3) / 3$$

And average change in slope can be estimated as:

$$\text{ACS} = ((\text{AADT}_2 - \text{AADT}_1) / (\text{year}_2 - \text{year}_1) + (\text{AADT}_3 - \text{AADT}_2) / (\text{year}_3 - \text{year}_2)) / 2$$

And AADT for a given year will be:

$$\text{AADT} = \text{AADT}_M + \text{ACS} * (\text{year} - \text{year}_m)$$

Using the above formulae the total AADT (major AADT + Minor AADT) for each year can be estimated.

With the above procedure, however, there were some cases (sites) where differences between successive AADT counts appeared quite dramatic resulting in annual average changes of > 10% and/or back-estimates applicable to the commencement of the pre-implementation period (implementation year minus 2) at low volume sites that produced AADTs of  $\leq 0$ . This likely resulted from inaccurate short-count expansion factors. For such sites a different formula was utilized. On the assumption that the largest of the two slope changes between the three time-points was the one most likely in error, the two points bracketing this change were replaced by a single point at the middle of the line joining them. This midpoint and the remaining point were then joined in a straight line from which the AADT for any intervening year and also for the beginning of the pre-implementation period was estimated. Only 14 out of the 140 reference and treatment sites had to be handled in this manner.

In addition, there were 9 sites where a 2006 AADT record was not available and where the latest estimate from the municipality involved was no more recent than the 2002 post-implementation survey. For the relevant treatment sites, the camera records covering the complete period from Jan.1, 2003 to Dec.31, 2007 were obtained. While individual daily count totals displayed substantial variance possibly due to the detection algorithm and related efficiency, it was felt that the long-term trends (slopes) of daily total should be representative of relative traffic volume changes at each site. Accordingly, trend equations were derived for each site to predict relative volume increase over time from January, 2003 and these were applied to the post-implementation survey AADT values to estimate 2003 AADTs. Then, using pre- and post-implementation values together with the estimated 2003 AADT, all other-year AADTs were calculated using the formulae on p. 5. For the related reference sites, the equation for the geographically closest treatment site in each case was utilized.

#### 4. Estimation of Total Crash Reduction

As mentioned earlier, there were initially 70 treatment sites and 70 matched reference sites selected for the original study reported in 2003. Two of the 70 treatment sites had to be removed from the analysis since crashes counts might have been affected by land-use-related activity adjacent to the intersection. As a consequence, the corresponding two reference sites were also removed. In the 2006 and 2008 update study the two site pairs were again excluded.

In the current analysis the 'before' period is defined as three years before the treatment date and the 'after' period as five years after the treatment date. The summary of total crashes in 'before' and 'after' periods for both reference and treatment sites are in Table 2.

**Table 2: Summary of Total Crashes**

	Total Crashes	
	Reference Sites	Treatment Sites
Before	6214	9121
After	11515	16800

In terms of the "Naïve" before-and-after analysis, the index of effectiveness is given by:

$$\theta = \frac{\lambda}{\pi} = \frac{\sum L(j)}{\sum r_d(j)K(j)} = \frac{16800}{(5 * 365 / (3 * 365) * 9121)} = 1.105 \quad (2.1)$$

where  $r_d(j) = \frac{\text{Duration.of.after.period.for.entity.j}}{\text{Duration.of.before.period.for.entity.j}}$ .

The percent reduction is  $100.(1-\theta) = -10.5$ . Thus there would be an apparent 10.5% *increase* in total crashes according to a simple before-and-after comparison.

However, using the prediction models described previously for the modified Empirical Bayes process, the Odds Ratios (O.R.), treatment effects and their standard deviation (SD) could be calculated for crash counts in such a way that the result was a more realistic reflection of camera impact. After applying the prediction model to correct the regression to mean bias, for the 68 sites A=6219 and B=9542 for the 3-year 'before' period. For the 5-year 'after' period, C=11515 and D=16800.

For testing the significance of the odds ratio change, the following statistic is applicable:

$$Z_{\alpha} = \ln(\text{O.R.}) / \text{SD}(\ln \text{O.R.}) \quad (2.4)$$

$$\text{where } \text{SD}(\ln \text{O.R.}) = \sqrt{\frac{1}{A} + \frac{1}{B} + \frac{1}{C} + \frac{1}{D}} \quad (2.5)$$

for a two-tailed test, given the significance level ' $\alpha$ '.

The odds ratio based on the 68 treatment and reference sites was 0.951. Therefore the treatment effect was  $-0.049$  or, in other words, there was a 4.9% reduction in total crashes. The standard deviation (SD) of the treatment effect was 0.023 – or 2.3%. This size of reduction is statistically significant at the 5% level.

The single site treatment effect on total incident crashes was also evaluated. For each treatment site, all 68 reference sites were used for base line calculation of odds ratios. Again, the three-year 'before' and five-year 'after' periods were used for the estimation. The results are shown in Appendix I.

## 5. Estimation of Casualty Crash Reduction

The casualty crash prediction models were developed with Negative Binomial regression using the SAS generalized linear model procedure (PROC

GENMOD). The models were used to predict the frequency of casualty crashes. Data on traffic volumes and casualty crash frequency from 1996 to 1998 inclusive were collected for the same reference sites described earlier and used to develop the models. The prediction models and the parameters are shown in Table 3.

**Table 3: Casualty Crash Prediction Model**

Model Formulation		$\chi^2$	$\kappa$
Crash Model:	$a_0$	20.96(p<0.001)	
$Crashes / 3yrs = 2.07 * 10^{-4} \times (AADT_{mjrd})^{0.5407} \times (AADT_{mnrd})^{0.735}$	$a_1$	6.95(p<0.0084)	1.80
	$a_2$	18.04(p<0.001)	

Entries in the  $\chi^2$  column show that the variables ‘major AADT’ and ‘minor AADT’ were significant predictors of casualty crashes. Deviance of the goodness of fit statistics was 77.089 with degrees of freedom equal to 67. When this deviance is compared with its asymptotic  $\chi^2$  distribution with 67 degree of freedom, the p-value is 0.187. This indicates that the specified model fits the data reasonably well.

As previously, the ‘before’ period was defined as three years before the treatment date and the ‘after’ period as five years after the treatment date. The summary of casualty crashes in ‘before’ and ‘after’ periods for both reference and treatment sites are shown below in Table 4.

**Table 4: Summary of casualty crashes**

	Casualty Crashes	
	Reference Sites	Treatment Sites
Before	2935	4232
After	5112	7379

Using the Naïve before and after analysis, the index of effectiveness equals:

$$\theta = \frac{\lambda}{\pi} = \frac{\sum L(j)}{\sum r_d(j)K(j)} = \frac{7379}{(5 * 365 / (3 * 365) * 4232)} = 1.046$$

And the percent reduction is  $100*(1-\theta) = -4.6$ . Thus there would be a 4.6% increase in casualty crashes according to a simple before-and-after analysis. However, using the prediction models described previously for the modified

Empirical Bayes process, the Odds Ratios (O.R.), treatment effects and their standard deviation (SD) could be calculated for casualty crash counts in such a way that the result was a more realistic reflection of camera impact. The odds ratio based on the 68 treatment and reference sites was 0.956. Therefore the treatment effect was  $-0.043$  or, in other words, there was a 4.3% reduction in casualty crashes. The standard deviation (SD) of the treatment effect was 0.022, or 2.2%. This size of reduction is statistically significant at the 10% level.

## 6. Summary

The estimated effect of the intersection safety cameras at the treatment sites over a five-year post-implementation period was a 4.9% reduction in total crashes and a 4.3% reduction in casualty-producing crashes. Both of these effects were statistically significant at 5% and 10% level respectively.

## 7. References

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Appendix I – Individual Site Effects  
(total crash counts)

Note: A negative value indicates reduction

Treatment site number	3-year before crash counts	3-year after change%	5-year after change%
1000	281	5.24	-2.96
1001	226	-1.03	-9.43
1003	451	8.81	1.51
1100	188	3.65	1.93
1101	349	-21.55	-29.88
1106	334	8.97	-7.31
1130	220	6.58	14.36
1131	201	-30.78	-35.08
1200	196	28.01	46.09
1220	196	-3.34	1.64
1230/1201	563	5.95	1.15
1231/1202	34	225.65	278.34
1301	106	-3.32	-3.36
1303	72	24.14	7.71
1304	172	48.56	47.70
1305	137	-39.44	-27.57
1306	209	-24.92	-19.09
1309	211	-37.58	-42.35
1311	273	-17.60	-20.45
1350	190	-16.92	-9.59
1352	94	20.13	21.00
1353	191	11.51	10.23
1354	127	20.03	13.92
1400	143	-9.17	-9.44
1401	60	-26.62	-16.58
1402	132	-11.40	-12.05
1403	154	8.69	-6.65
1404	70	-47.04	-46.49
1500	93	-7.43	-8.03
1501	32	-28.44	-12.85
1504	71	41.53	60.37
1506	191	29.38	18.95
1700	47	-25.86	-24.36
1702	71	-4.64	0.11
1703	44	26.61	16.72
1704	68	-61.62	-8.35
1705	96	-0.93	-12.54
1721	62	16.55	13.29
1723	62	-1.37	7.35
1730	91	39.64	40.51

1740	304	-9.64	-8.19
1800	170	63.16	66.40
1801	91	35.67	29.50
1900/1701	88	12.90	17.52
1901	14	7.04	20.45
1903	70	-14.46	-11.47
1906	190	-19.50	-14.62
2000	24	-37.83	-28.47
2001	23	24.55	8.31
2002	72	13.85	20.12
2003	142	-2.44	2.95
2100	96	-13.94	-17.66
2101	98	-33.98	-23.06
2200	190	-18.17	-17.65
2201	153	6.35	9.45
2202	168	25.09	21.64
2203	70	0.46	4.02
3000	17	17.42	29.54
3001	25	-20.10	-20.13
3002	89	4.48	24.43
3003	9	1.28	28.50
3100	183	-29.73	-31.02
3101	108	5.12	5.62
3102	140	-17.75	-5.66
3103	85	2.22	6.27
3104	48	-28.38	-26.75
4000	72	-14.71	-16.12
4001	38	-40.54	-25.83
4002	142	-28.58	-24.74
4003	62	-39.57	-36.87



# **2012.1 RR IBC.33.1 – Attachment B – 2010 Road Safety Annual Reporting Documentation**



## **ATTACHMENT B-1**

# **2010 ROAD SAFETY BUSINESS PLAN**

# 2010 road safety business plan



building trust. driving confidence.

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## Departmental overview

The Road Safety Department develops and manages programs that help prevent traffic crashes and auto crime. This provides a benefit to ICBC customers by protecting them from risks on the road, helping to reduce injuries and fatalities caused by crashes, and helping to maintain low and stable insurance premiums. The department's activities support the corporate objective of achieving financial stability by reducing the growth in claims costs.

Road safety programs are focused on the key factors impacting crashes, namely drivers, roads and vehicles. Programs have both short-term and long-term objectives, reflecting the fact that some risks and challenges have different timeframes involved in effecting a positive change (e.g., roads can be fixed more quickly than changing an entrenched attitude or behaviour).

### Road Safety goal

Protect customers from risks on the road by preventing and minimizing the impact of crashes and crime.

## Key opportunities and challenges

### Opportunities

#### Internal

- ICBC's 2014 strategy<sup>1</sup> identifies financial stability as a priority, which reinforces the company's commitment to evidence-based and targeted programs focused on crash prevention and claims savings.
- Road Safety's continued focus on measurement and data will help direct the program's investment to initiatives that drive its strategy and reinforce the change it is trying to bring about on B.C.'s roads.

#### External

- The Canadian Council of Motor Transport Administrator's Road Safety Vision 2010<sup>2</sup>, and its successor plan, could raise national awareness of road safety issues, improve collaboration among road safety agencies, improve national road safety data quality, and support the development of provincial road safety targets.
- New federal regulations for electronic stability control (ESC) will be in place September 1, 2011. In anticipation of the new regulations, auto manufacturers are already producing vehicles with this safety feature. Transport Canada reports that 74% of 2010 vehicle models have ESC as standard equipment and an additional 12% offer it as an option. Manufacturers' advertising could increase the visibility and profile of an important vehicle safety feature and change consumer patterns and driving behaviours in the near term.
- The provincial government has taken steps to strengthen legislation and regulations dealing with certain road safety issues. Initiatives in recent years include new distractions legislation, stronger occupant restraint regulations, new legislation dealing with emergency vehicles, and ignition interlock enhancements. In 2010, government introduced stronger administrative sanctions for impaired driving and improved standards for motorcycle helmets.
- In recent years, there has been more visible and active involvement of stakeholders in championing road safety issues and programs. This provides an opportunity to partner with others in communicating messages that help improve safety on B.C.'s roads and align with ICBC's Road Safety program.

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<sup>1</sup> Vision 2014 defines ICBC's strategic themes to improve customer experience, improve employee experience, and maintain financial stability.

<sup>2</sup> CCMTA's Road Safety Vision 2010, a national effort at making Canada's roads the safest in the world and its road safety targets were officially endorsed by all Ministers Responsible for Transportation and Highway Safety in the fall of 2000. The Vision provides Canada's road safety community with benchmarks against which to develop new strategies and measure intervention efforts.

## Challenges

### Internal

- While research of multi-component programs that include education tactics clearly shows that such programs reduce crashes and injuries, measuring the direct claims cost reduction benefit of some programs remains a challenge. For example, initiatives aimed at increasing awareness may take several years to influence a measurable behaviour change, yet that behaviour may also be influenced by other factors such as economic conditions, weather, vehicle design, and fuel prices.
- Some programs (e.g., road improvements and traffic law enforcement) depend on partnerships with other organizations or entities.

### External

- External factors such as the economy and weather have a significant influence on crashes. For example, improving economic conditions in 2010 could gradually reverse the trend of fewer kilometres driven that was, in part, influenced by higher gas prices and the recession of 2008 to 2009. More drivers travelling more often increase the exposure on B.C.'s roads and hence could impact crash rates.
- ICBC continues to face external pressures (from customers, stakeholders, etc.) to fund programs that fall outside its strategic mandate and/or do not produce strong crash prevention benefits.
- Partnering with external stakeholders will improve program quality, but may require more time for the program development process to ensure there is meaningful engagement.
- Changes enacted in 2009 that impacted the requirements for police to attend collisions will result in less reported data, challenging the design and evaluation of programs.

## Key assumptions and principles

The following assumptions and principles guide development of detailed program and tactical plans.

### Key assumptions

- Road Safety is focused on protecting ICBC's insurance and driver licensing customers throughout the province.
- Road safety investments are designed to protect customers from risk by preventing and minimizing the impact of crashes and crime. In so doing, insurance premiums remain low and stable, and customers are provided with protection and peace of mind.
- Road safety programs are data driven and evidence based.
- Road Safety will support corporate goals and measures.

### Road safety principles

Road Safety will:

- Be guided by a clear plan that considers both provincial and local needs.
- Deliver programs that target the most serious road safety risks and minimize the harm (injury, death, and property damage) to customers.
- Focus programs on delivering claims savings benefits.
- Proactively partner with stakeholders and individuals.
- Ensure that all programs and tactics have measurable objectives and appropriate evaluation plans.

## Strategic framework

ICBC classifies all Road Safety programs into three categories which represent the major causes of crashes: Drivers, Roads, and Vehicles.

Strategic Intent	Protect customers from risks on the road by preventing and minimizing the impact of crashes and crime				
Strategic Outcomes	Fewer Crashes Caused by Unsafe Driving	Attitude Changes, More Accountability	Safer, More Forgiving Roads	Fewer Auto Crime Incidents	Vehicles that Minimize Impact of Crashes and Crime
Goals	<p style="text-align: center;"><b>Drivers</b></p> <p>Help our customers improve their unsafe driving behaviours</p> <ol style="list-style-type: none"> <li>1. Lead the development of programs that help customers understand the impact and consequences of their driving choices, and the accountability they have to improve the way they drive.</li> <li>2. Support the development and implementation of insurance, driver licensing and other interventions to increase safe driving.</li> <li>3. Support and promote enforcement strategies targeted to Road Safety issues.</li> <li>4. Support the development and implementation of legislation, sanctions and other means to protect customers and increase safe driving.</li> </ol>		<p style="text-align: center;"><b>Roads</b></p> <p>Reduce road-related driving hazards</p> <ol style="list-style-type: none"> <li>5. Work with partners to:                             <ul style="list-style-type: none"> <li>- prevent crashes at targeted locations throughout B.C.</li> <li>- maintain the priority of road safety infrastructure during roadway planning.</li> </ul> </li> </ol>	<p style="text-align: center;"><b>Vehicles</b></p> <p>Reduce vehicle-related safety and crime vulnerabilities</p> <ol style="list-style-type: none"> <li>6. Partner with others to improve vehicle safety so customers are protected from injury.</li> <li>7. Partner with others to improve vehicle security to protect customers from being victims of crime.</li> </ol>	

## Road Safety objectives

Helping prevent crashes and auto crime are the two main pillars of ICBC's Road Safety program, as presented in the following sections.

For crashes, this includes programs directed towards supporting enforcement, improving roadway engineering, influencing driver attitudes and behaviours, and supporting policy and legislation.

For auto crime, this includes programs aimed at supporting enforcement, deterring criminals, and influencing customers to take preventive action.

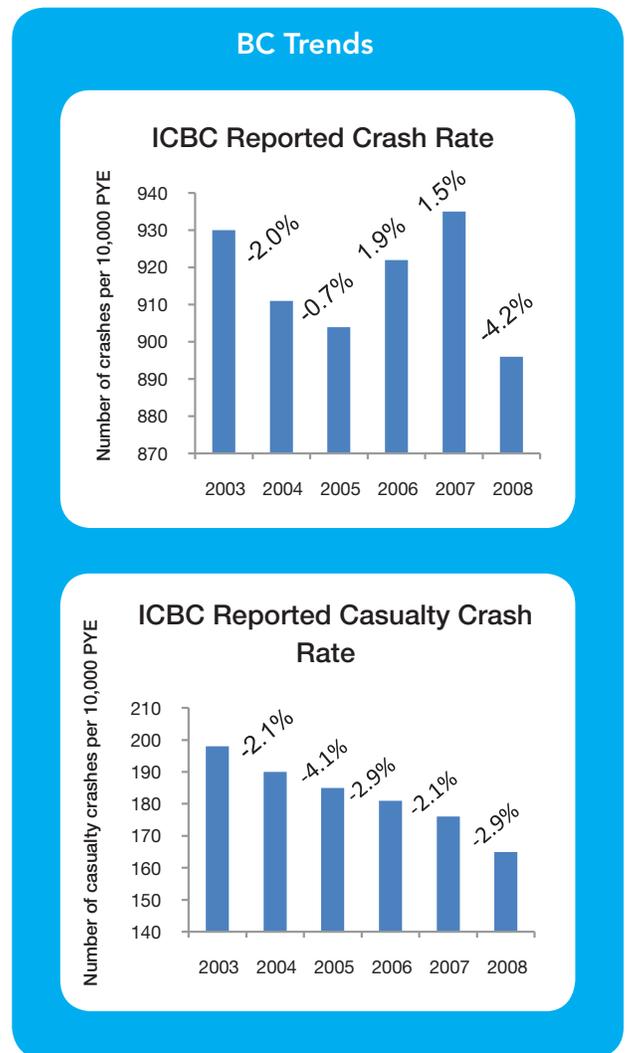
### crash prevention

ICBC tracks crash and casualty crash rates over time as indicators of the safety of roadways throughout the province. The crash rate (number of crashes reported to ICBC per 10,000 policy years earned) has fluctuated over time, whereas the casualty crash rate (number of crashes involving injuries or fatalities, per 10,000 policy years earned) shows a slight but steady decline since 2003.

#### Crash projections for 2010

Many factors affect the safety of road travel and therefore influence trends in crashes, injuries, and fatalities. It is recognized that Road Safety cannot directly influence all aspects of crash rates (like weather, the economy, the cost of fuel and kilometres driven). Nevertheless, Road Safety programs can help mitigate some risks and influence driver attitudes. Therefore, with that in mind, Road Safety is making the following projections for 2010:

- The 2010 crash rate will be the same as it was in 2008.
- The 2010 casualty crash rate will be lower than the pre-recession rate of 2007.



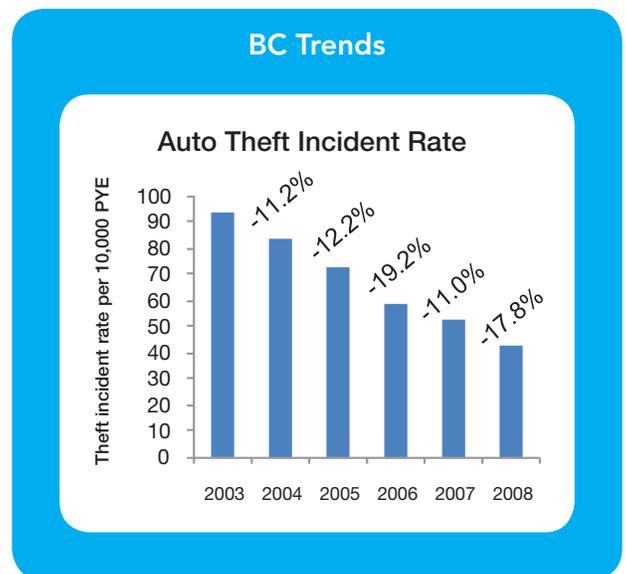
## Rationale

- Consistent investment in education, awareness, and support of enforcement by Road Safety helps promote positive attitudes towards safe driving.
- Markedly increased gas prices in 2008 and the economic downturn in late 2008 and 2009 are believed to have contributed to a decrease in drivers' average speed and total kilometres driven,<sup>3</sup> contributing to a larger than average reduction in crash rate during these years.<sup>4</sup>
- With economic conditions expected to improve somewhat in 2010, a trend towards pre-recession driving behaviour and crash rates is possible.<sup>5</sup> Road Safety programs may help mitigate to some extent this expected upward shift.
- The average annual decrease in the casualty crash rate from 2005 to 2007 was 2.5%. The larger decline in 2008 (6.3%) was believed to be influenced in part by the economic downturn, weather, and higher fuel prices.
- However, this downward trend in casualty crashes may be offset in 2010 by the decline in the number of new vehicles purchased (reducing the safety of the overall vehicle fleet), and by the expected economic recovery and a return to pre-recession driving behaviours.
- Assuming that economic recovery and subsequent driving behaviour changes will be slow to take hold, and continued investment in Road Safety programs in 2010, it is expected that the casualty crash rate in 2010 will decline compared to the pre-recession year of 2007.

## Auto crime prevention

Auto crime includes theft of vehicles, theft of items from within vehicles, and vehicle-related vandalism. Road Safety focuses on reducing the theft of vehicles since it has the greatest impact on claims costs.

Since 2003, the auto theft incident rate (number of auto theft incidents reported to ICBC per 10,000 policy years earned) has been decreasing steadily.



<sup>3</sup> Statistics Canada. (2008). Canadian vehicle survey. [www.statcan.gc.ca/daily-quotidien/090714/dq090714c-eng.htm](http://www.statcan.gc.ca/daily-quotidien/090714/dq090714c-eng.htm)

<sup>4</sup> Austin, D. (2008). Effects of gasoline prices on driving behaviour and vehicle markets. Washington, DC: Congress of the United States Congressional Budget Office.

<sup>5</sup> Hays, D. (2009). Insurers, regulators find auto claims spike as gas prices fall. National Underwriter Property & Casualty. [www.property-casualty.com/News/2009/11/Pages/Insurers-Regulator-Find-Auto-Claims-Spike-As-Gas-Prices-Fall-.aspx](http://www.property-casualty.com/News/2009/11/Pages/Insurers-Regulator-Find-Auto-Claims-Spike-As-Gas-Prices-Fall-.aspx)

### Auto crime projections for 2010

In B.C., vehicle theft tends to be opportunistic and is often linked to drugs. The character of crime here differs from other provinces where there is often a stronger link to organized crime. Federal legislation requires Canadian automobile manufacturers to equip all new cars, vans, light trucks, and SUVs with an electronic immobilizer, with the result that approximately 55% of passenger vehicles in B.C. are currently equipped with immobilizers.

With that in mind, Road Safety is making the following projection for 2010:

- The 2010 auto theft incident rate will fall by 10% (from its 2009 level).

#### Rationale

- The incident rate per 10,000 policy years earned has decreased more than 10% per year in each of the past five years.
- According to Statistics Canada, B.C.'s auto theft rate per 100,000 people was 521 in 2008, which remains above the national rate of 376.<sup>6</sup>
- As of December 31, 2008, the vehicle immobilization rate in B.C. stood at 55%. New federal regulations will require all new vehicles to be equipped with immobilizers. In 2010, new car sales in B.C. are expected to increase by 5% compared to 2009,<sup>7</sup> resulting in more immobilizer-equipped vehicles.
- Police continue to make auto theft a priority. The Bait Car program has been expanded to the whole province and is deployed in response to the movement of car thieves.

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<sup>6</sup> Statistics Canada. (2009). Juristat Article: Police-reported crime statistics in Canada, 2008. <http://www.statcan.gc.ca/pub/85-002-x/2009003/article/10902-eng.pdf>

<sup>7</sup> Gomes, C. (2010). Demographic boom turning to bust for North American auto sales — growth in potential new vehicle buyers to slump to fifty-year low. Global Auto Report. Toronto, ON: Scotia Economics.

## Programs and tactics

The following sections summarize the 2010 plan for each Road Safety program. In each section, program details are presented including a brief overview of the problem, program objectives, changes for 2010, and a description of the tactics that will be implemented to achieve the program objectives.

The following sections are organized according to the Road Safety Strategic Framework and reflect programs targeting drivers, roadways, and vehicles.

Driver programs	Road programs	Vehicle programs
Impaired driving Speeding Intersection safety Occupant restraints Driver distractions*	Road improvement	Safer vehicles Auto crime

\* ICBC will be reviewing whether driver distraction is added to its Road Safety program in 2010. This follows a request from government in 2009 to implement an awareness campaign in 2010 to support new distractions legislation that took effect January 1, 2010.

## Driver programs

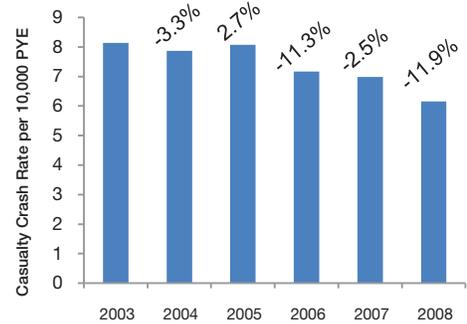
### Impaired driving

In B.C. in 2008, police cited alcohol as a contributing factor in 4,724 crashes. Annual claims costs for alcohol-related crashes for the years 2004 to 2008 averaged \$140 million per year. In B.C., between 2004 and 2008, three-quarters of alcohol-related crashes involved male drivers. Drivers (male and female) aged 16 to 25 account for the largest proportion at 34% of all impaired drivers involved in a crash.

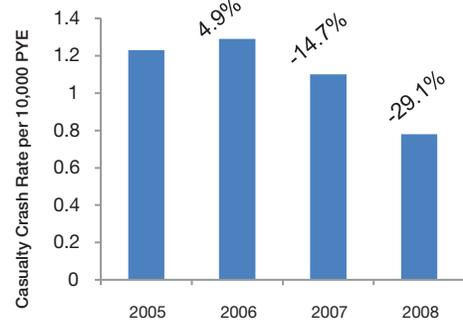
In 2010, Road Safety will continue to examine expanding the scope of impaired driving to include impairment by drugs as well as alcohol. Police data show that there is an apparent decline in drug-related injury crashes, but this is likely due to under-reporting of the contribution of drugs alone, and in combination with alcohol.

#### BC Trends

Alcohol Related Casualty Crash Rate



Drug Related Casualty Crash Rate



Program objectives, targets, and rationale

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>The alcohol impaired driving casualty crash rate will decrease by 3% in 2010, when compared with the average rate of years 2004, 2005, and 2007.</li> </ul>	<ul style="list-style-type: none"> <li>The average rate of decline for alcohol-related casualty crashes for the years 2004, 2005, and 2007 was 1.1%. In 2006, an 11.3% decline coincided with an increase in impaired driving enforcement. In 2008, an 11.9% decline was likely to have been influenced by the economic downturn which resulted in more at-home entertaining and alcohol consumption,<sup>8</sup> reduced driving, and thus overall reduction in crashes.</li> <li>The current level of awareness and enforcement will be sustained. The Integrated Road Safety Units (IRSU) are fully operational, and impaired driving remains a priority for police.</li> <li>The economic recovery is expected to result in drivers gradually increasing the number of kilometres driven, likely resulting in an increase in crashes.</li> <li>Government’s changes to strengthen B.C.’s impaired driving policy framework take effect in Fall 2010, meaning there are only 2 to 3 months during which it can impact 2010 numbers overall.</li> </ul>
<ul style="list-style-type: none"> <li>In 2010, 75% of drivers will report they do not drive within two hours of consuming two or more drinks, a 1% increase compared to 2009.</li> </ul>	<ul style="list-style-type: none"> <li>A 3-year target was established in 2009 to change personal drinking and driving behaviours by 3% by the year 2011.</li> <li>At baseline in December 2009, 26% of survey respondents said that on at least one occasion in the past six months, they have driven within two hours after consuming two or more drinks of alcohol.</li> <li>2010 will be the second year of the message, so there is an expectation that there will be the beginning of a change of attitudes.</li> <li>Public messaging that impairment “begins with the first drink” will impact current attitudes that it is OK to drive after consuming 1 to 2 drinks.</li> <li>Awareness campaign advertising is expected to remain at current levels.</li> </ul> <p><i>Comment*: In 2010, B.C. implemented more administrative enforcement tools for police to use against drinking drivers. This is expected to have significant impacts on the proportion of people who drive after consuming even small amounts of alcohol. Therefore, the 3-year target established in 2009 may be revised.</i></p>

\* This plan was prepared in the first quarter of 2010. This update has been added for the BCUC filing of this document.

<sup>8</sup> Berry, B. (2009). Before, during and after the recession: Changes to American consumer behaviour. Agriculture and Agri-Food Canada. [www.ats-sea.agr.gc.ca/amr/5285-eng.htm#d](http://www.ats-sea.agr.gc.ca/amr/5285-eng.htm#d)

2010 impaired driving tactics

Tactic name and description	Tactic objective	Rationale
<p><b>Enhanced Enforcement</b></p> <p>Funding for enhanced levels of impaired driving enforcement through Memorandum of Understanding (MOU).</p>	<p>In 2010, 42% of survey respondents feel they are likely to get caught if they drink and drive, maintaining October 2009 levels.</p> <p><i>Comment*: Police make independent operational decisions and therefore ICBC does not use operational targets for its plan. However, ICBC can use awareness measures as one proxy to assess perceptions of risk.</i></p>	<p>Strong focus on impaired driving and targeted partnerships with local enforcement will continue at a level similar to 2009.</p>
<p><b>Impaired Driving Awareness Campaign</b></p> <p>CounterAttack radio and TV advertising is produced by ICBC. ICBC purchases media buys for TV and radio during the July and December campaign periods. Additionally, the BC Association of Broadcasters airs the ads free as public service announcements throughout the year. The campaign includes community partnerships, including working with the police to publicize enforcement programs and providing information to employers.</p>	<p>In 2010, the existing awareness campaign is being refreshed with new creative materials. At least 50% of survey respondents will demonstrate aided recall of the new slogan: <i>"Attitudes towards drinking and driving are changing. Harsher penalties will begin at .05 and are now the toughest in Canada."</i></p>	<p>Awareness campaigns are typically refreshed after two years because creative materials and messages lose their ability to reach audiences.</p> <p>ICBC will fund the new campaign at similar levels to campaigns in previous years.</p> <p>It is expected that, since CounterAttack is associated with enforcement that has high relevance, most people will pay attention to the ads. In previous years, recall of new materials has been approximately 50%.</p>

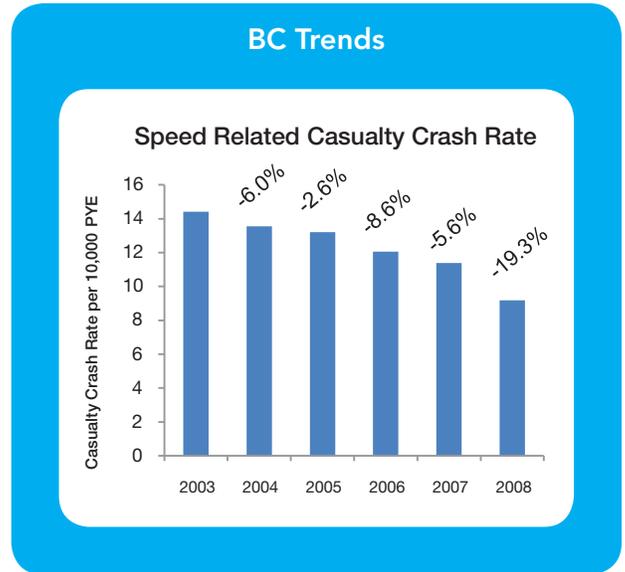
Tactic name and description	Tactic objective	Rationale
<p><b>CounterAttack (CA) Community Outreach (formerly Get Home Safe)</b></p> <p>CA Community Outreach tactic involves working with municipalities and sports/entertainment facility owners to endorse and promote the CA message. Municipalities require special event licensees to display impaired driving materials at their private event. Banners, rink boards, electronic boards and other messaging tools are used at sports/entertainment facilities.</p>	<p>In 2010, 60 municipalities agree to adopt or endorse a policy to promote safe alternatives to driving, an increase from 53 attained in 2009.</p> <p>In 2010, 209 private and public sports facilities, bars, restaurants, and hotels that serve alcohol year-round agree to promote CounterAttack Community Outreach, an increase from 69 in 2009.</p>	<p>In 2009, this program focused on municipalities and sport facilities, achieving partnerships with 53 municipalities and 69 sport facilities.</p> <p>In 2010, the scope will be expanded to include restaurants and bars that serve alcohol. Investment for this tactic has been increased.</p>
<p><b>Operation Red Nose (ORN)</b></p> <p>A Christmas volunteer driving service to drive people and their vehicles home safely from parties or events where alcohol is served or where drivers are too tired to drive. ORN National Office is the current B.C. sponsor. ICBC supports the program by providing insurance coverage for the volunteer ride vehicles and some promotional items.</p>	<p>Maintain 2009 levels for the number of B.C. communities participating in ORN, and the number of rides provided.</p>	<p>ICBC is not increasing its investment in ORN. Program depends on volunteer involvement.</p>

\* This plan was prepared in the first quarter of 2010. This update has been added for the BCUC filing of this document.

## Speeding

Speeding includes driving over the posted speed limit, excessive speed (40 kilometres per hour or more over the limit), and driving too fast for conditions. In 2008, driving too fast for conditions was the most frequently reported speed-related casualty crash factor. An examination of speed-related crashes showed that 22% occur at intersections (ICBC, 2008 data).

In 2008, police cited speeding as a contributing factor in 6,476 crashes resulting in approximately 4,200 injured victims and 133 fatalities. The cost of speed-related crashes is about \$250 million annually.



## Program objectives, targets, and rationale

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>The casualty crash rate for speed-related crashes will decrease by 5% compared to the average rate for the years 2004 to 2007.</li> </ul>	<ul style="list-style-type: none"> <li>Overall speeding enforcement levels are expected to remain the same in 2010.</li> <li>It is expected that police will have a stronger focus on intersection safety. Integrating speed and intersection safety will enhance the results.</li> <li>The average annual rate of decline in speed-related casualty crashes was 5.7% for the years 2004 to 2007. In 2008, a 19.3% reduction occurred, believed to be the result of the economic downturn, higher gas prices, and subsequent reduced driving speeds and kilometres. Improving economic conditions in 2010 are expected to result in a return to previous driving habits. Program objectives were thus established based on pre-recession years.</li> </ul>

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>In 2010 surveys, 3% fewer respondents will agree with the following speeding behavioural statement as compared with 2009: <i>"I am fully in control of my driving even when I drive more than 10km more than the speed limit"</i>.</li> </ul>	<ul style="list-style-type: none"> <li>In 2008, a 3-year objective was established for the new messaging: 5% fewer drivers will report, <i>"I don't have the time or patience to drive at the posted speed limit"</i>, as compared to the 2007 result of 19%. An interim measure was done in 2009 and it was found that the proportion increased to 23%. The final measure for this 3-year objective will be completed in 2010.</li> <li>A new speeding message will relate to a vehicle's speed relative to conditions. In certain circumstances (such as road conditions, weather, traffic volumes, etc.), even travelling at the posted speed limit may increase the risk of crashing. To measure the effect of this message, a new objective was established measuring agreement with the statement, <i>"I am fully in control of my driving even when I drive more than 10km more than the speed limit"</i>.</li> <li>The new messaging that drivers are responsible for their speed choices will have a stronger impact on changing driving behaviour. The 2010 level of messaging about speeding will remain the same as in 2009.</li> </ul>

2010 speeding tactics

Tactic name and description	Tactic objective	Rationale
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of speed enforcement through Memorandum of Understanding (MOU). This is supported by advertising with a new slogan introduced November 2009: <i>That's why we've stepped up enforcement in your community.</i></p>	<p>In 2010, 36% of survey respondents feel they are likely to get caught if they speed, a 3% increase from June 2009.</p>	<p>MOU will ensure visible, dedicated officers for traffic enforcement at high-risk intersections.</p> <p>The perceived risk of apprehension will increase because of consistency of enforcement and repetition of the message.</p>
<p><b>Speed awareness</b></p> <p>Campaign will encourage safe speed choices using the new tagline:</p> <p><i>When you slow down, you see more of the road.</i></p>	<p>The new message, "<i>When you slow down you see more of the road</i>" was introduced in Q4, 2009. A baseline of 51% aided slogan recall was established in December 2009.</p> <p>In 2010, 54% of survey respondents have aided recall of the new speeding advertising campaign slogan, an increase of 3% compared to 2009.</p> <p>71% of survey respondents agree that the new campaign slogan has relevance to them personally, an increase of 3% compared to December 2009.</p>	<p>Increase in slogan familiarity and recall is expected due to repetition of the new tagline that was introduced in November 2009.</p> <p>In October/November, police will partner with communities in conducting vehicle safety checks for driving in bad weather.</p>
<p><b>Driving Tips</b></p> <p>Driving Tips offer driver education information through online video presentations. Topics include basic driving skill and behavioural driving issues.</p>	<p>Up to 10 notifications are sent to 100,000 e-mail recipients annually.</p>	<p>100,000 individuals, including GLP drivers and the general public, have signed on to receive e-mail tips.</p> <p>Tips delivered personally by credible presenters in an easily accessible format increase awareness of specific driving behaviours, including personal consequences.</p>

Tactic name and description	Tactic objective	Rationale
<p><b>RoadSense Speakers</b></p> <p>Through the RoadSense Speakers Tour, speakers use their experiences to motivate youth to make safe driving decisions.</p>	<p>Presentations are conducted in 180 schools provincially in 2010, maintaining 2009 level.</p>	<p>The level of resources for this tactic supports presentations at 180 schools.</p>
<p><b>Premier Agenda Books</b></p> <p>High school students (grades 8 to 11) in 2010/2011 school year are invited to submit artwork portraying a Road Safety theme. This artwork will be used as the back cover on student agenda books for the 2011/2012 school year.</p>	<p>200 B.C. secondary schools receive Premier Agenda Books that includes our message in 2010.</p> <p>Develop a contest in 2010 for students to create artwork for the 2011/2012 Agenda Book, creating more engagement/ awareness among students of road safety messages.</p>	<p>ICBC has no control over which schools place orders with Premier Agenda Books. In the past, a maximum of 240 orders for the agenda books have been filled during a school year.</p>
<p><b>Young Driver Film Contest</b></p> <p>Young filmmakers aged 19 to 25 are invited to submit their short films on road safety issues such as impaired driving and speed, with an opportunity to win prizes and receive exposure for their work.</p>	<p>Launch contest in August 2010, with judging occurring in early 2011. Provides a low-cost means of acquiring creative content targeting a difficult to reach audience; these materials can be used to support multiple road safety programs.</p>	<p>A single 30 second television ad costs approximately \$200,000 to produce, and will be largely unseen by the target audience. This tactic will provide 8 to 10 short films for the same cost, and requires and encourages audience engagement with road safety messages.</p>
<p><b>Trade Off</b></p> <p>This program targets young males enrolled in trades and technical post-secondary education programs to raise awareness of the career loss consequences of risky driving behaviours – <i>What have you got to lose?</i></p>	<p>Continue refinement of program by increasing presentations from 1 to 4 technical post-secondary institutions throughout the province.</p>	<p>Success of the pilot at one post-secondary technical institution provided a basis for further development of the program in other locations and with other types of technical institutions.</p>

## 2010 road safety business plan

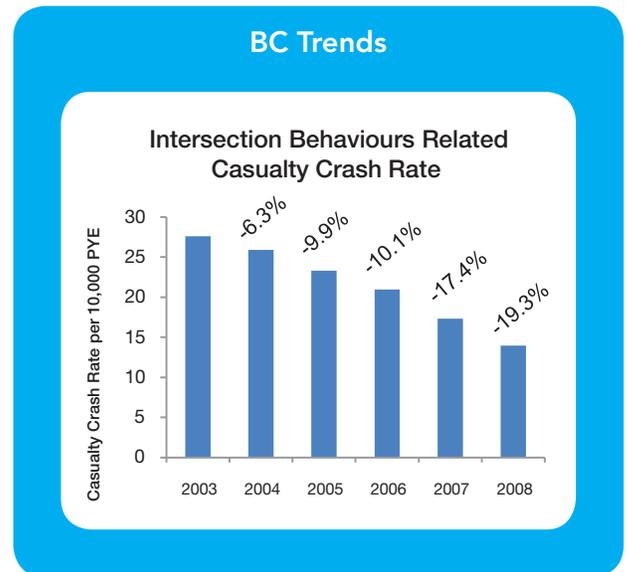
Tactic name and description	Tactic objective	Rationale
<p><b>Speed Watch</b></p> <p>Community volunteers use speed readerboards to raise awareness of the actual speeds drivers are travelling at targeted high crash locations.</p>	<p>More than 1,350 Speed Watch deployments are organized at or near high-crash locations and corridors. This represents a 10% increase from 2009.</p> <p>55% of survey respondents have seen a Speed Watch operation in 2010, a 3% increase from June 2009.</p>	<p>An increase deployment near high crash corridors and earned media will result in moderate increase from 2009.</p>
<p><b>Fixed Speed Readerboards</b></p> <p>Installation of pole mounted speed readerboards at or near high crash locations and corridors. Enforcement may be present at these sites.</p>	<p>Five new Fixed Speed Readerboards are installed in high-risk locations.</p> <p>4% decrease in mean speeds for vehicles travelling in a Fixed Speed Readerboard deployment zone in 2009 and 2010, as compared with speeds when the boards are not activated.</p>	<p>Budget allows for purchase of five new Fixed Speed Readerboards.</p> <p>As police may be present at the speed readerboard locations, drivers will have an increased perception that they will be caught for speeding, and will slow down.</p> <p>Data collection for existing boards began in 2009 and will be available for analysis after one year. Data collection for the new boards will begin during 2010 and will be available for analysis in 2011. Final reporting will follow all analysis in 2011.</p>

### Intersection Safety

In 2008, there were more than 92,000 intersection crashes in B.C., accounting for 34% of all crashes. From 2005 to 2007, intersection crashes cost an average of almost \$1.2 billion annually, and resulted in an average of 9,016 injured victims and 89 fatalities per year. Of the collisions which occurred at intersections, police noted that 41% of intersections are equipped with traffic control devices, and that "Ignoring Traffic Control Device" accounts for more than 7% of the human actions that contributed to crashes.

According to police, about half (53%) of all crashes involving pedestrians occur at intersections, and the second most common contributing behaviour by drivers to those crashes is "Failure to Yield Right of Way."

In 1999, B.C. began deploying red-light cameras at some of the intersections with the worst crash records, achieving an average annual 5% reduction in crashes at those sites for the five years post-implementation. A 2009 Road Safety survey found that just over half of B.C. drivers (56%) consider intersections to be a highly serious safety concern and 96% consider running red lights to be highly dangerous, but only 31% think they are likely to get caught if they run a red light at an intersection.



### Program objectives, targets, and rationale

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>The intersection behaviour casualty crash rate will decrease by 10% compared to the average rate for the years 2004 to 2007.</li> </ul>	<ul style="list-style-type: none"> <li>The average annual change in the intersection-related casualty crash rate for 2004 to 2008 was -12.6%. This change in the casualty crash rate may reflect an increased focus by traffic police during those years, and the annual decrease is unlikely to be sustained. It is expected that 2009 levels of enforcement will be maintained.</li> </ul>

## 2010 road safety business plan

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>In 2010 surveys, 5% fewer drivers will report personal high-risk intersection behaviours compared to 2007.</li> </ul>	<ul style="list-style-type: none"> <li>In 2008, a 3-year plan was established to reduce high-risk intersection behaviours by 5% in 2010 compared to baseline levels of November 2007. These baseline levels were:               <ul style="list-style-type: none"> <li>- Not coming to a full stop at a stop sign: 14%</li> <li>- Driving through a yellow light that is turning red: 12%</li> </ul> </li> <li>In December 2009, interim measures were taken with the following results:               <ul style="list-style-type: none"> <li>- Not coming to a full stop at a stop sign: 22%</li> <li>- Driving through a yellow light that is turning red: 9%</li> </ul> </li> <li>The final measure for these behaviours will be completed in 2010.</li> <li>The 2009 level of messaging about intersection safety will remain the same in 2010.</li> <li>The new messaging that drivers are responsible for their safe intersection driving choices will have a stronger impact on changing driving behaviour.</li> <li>Visibility of Intersection Safety Cameras (ISC) at targeted intersections will act as a deterrent to running red lights and failing to yield, and increase the perception that you will get caught.</li> </ul>

### 2010 intersection safety tactics

Tactic name and description	Tactic objective	Rationale
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of intersection safety enforcement through Memorandum of Understanding (MOU). This is supported by advertising with a new slogan introduced in November 2009: <i>"That's why we've stepped up enforcement in your neighborhood."</i></p>	<p>In 2010, there is a 5% increase in the number of survey respondents who feel they are likely to get caught if they engage in unsafe intersection behaviours, compared to 2009.</p>	<p>MOU funded traffic programs will ensure officers are conducting traffic enforcement at high-risk intersections.</p> <p>The perceived risk of apprehension should increase because of consistency of enforcement and repetition of the message.</p> <p>Expansion of the ISC program will increase visibility of enforcement tools. The tactic also includes media coverage of enforcement related to drivers at intersections.</p>

Tactic name and description	Tactic objective	Rationale
<p><b>Intersection Awareness</b></p> <p>An advertising campaign linked to accompanying police enforcement, with a focus on running red lights and failing to yield.</p> <p>The new slogan (introduced in November 2009) <i>When you slow down you see more of the road</i>, encourages drivers to stop rushing and to be more cautious at intersections.</p>	<p>In 2010, there is a 5% increase in the number of survey respondents who can describe the consequences of unsafe intersection driving behaviours, compared to 2009.</p> <p>60% of survey respondents consider intersections to be a very or somewhat serious safety concern, an increase of 4% from 2009.</p>	<p>The new ad demonstrates how intersection hazards become more evident when the driver slows down. It is believed this image, combined with a message targeting rushing, will have a greater impact on changing behaviour among what the research describes as “pragmatic red-light runners”.*</p>
<p><b>Intersection Safety Camera Program upgrade</b></p> <p>Upgrade and expand the ISC program.</p>	<p>2010 project milestones are met. Major milestones include:</p> <ul style="list-style-type: none"> <li>• Contract signed with vendor (Q1, 2010)</li> <li>• Computer infrastructure is implemented and cameras rolled out at a number of sites (Q4, 2010)</li> <li>• Complete rollout (Q1, 2011)</li> </ul>	<p>ISC is a large technology implementation project. A contract between ICBC and a red-light camera vendor to implement new software and equip/maintain sites was signed in Spring 2010. Implementation is proceeding in 2010 with an expected completion in 2011.</p>

\* Pragmatic red-light runners as defined in Transport Canada (November 2007). Driver Attitude to Speeding and Speed Management: A quantitative and Qualitative Study. Final Report.

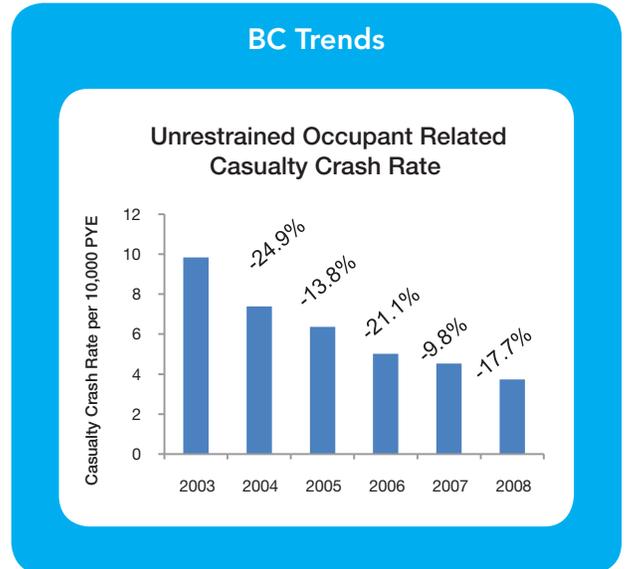
### Occupant restraints

In 2008, B.C. police attended 1,182 crashes in which an occupant restraint device was not used. These crashes resulted in 1,198 injured victims and 85 fatalities. There has been a downward trend in related crash rates, but the issue remains a concern for police, government and ICBC.

Legislation for child booster seats was introduced in 2008, but correct use of child safety restraints is an ongoing concern in particular for new immigrants and First Nations communities.

Transport Canada conducts regular observation surveys on seatbelt wearing rates. These surveys are done on an alternating schedule, with rural surveys conducted one year and urban the next.

Following the urban survey, the results are combined to calculate an overall seatbelt wearing rate. In 2007, Transport Canada reported the urban/rural rate for wearing seatbelts in B.C. was 94.8%, the second highest rate among Canadian provinces and above the national average of 92.5%. In 2009, results of the rural survey showed that the wearing rate in those B.C. communities had risen from 87.5% in 2006 to 91.6% in 2009. A survey of urban seatbelt use will be conducted by Transport Canada in 2010, and the new urban/rural rate calculated.



### Program objectives, targets, and rationale

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>The provincial seatbelt wearing rate will remain at the national average.</li> </ul>	<ul style="list-style-type: none"> <li>In 2007, Transport Canada reported the urban/rural rate for wearing seatbelts in B.C. was 94.8%, higher than the national average of 92.5%. It is difficult to reach the remaining high-risk occupants who do not wear seatbelts at all times.</li> <li>ICBC will support police enforcement campaigns with a moderate level of advertising and tactics, but will not have a year-round focus on occupant restraints.</li> </ul>

2010 occupant restraint tactics

Tactic name and description	Tactic objective	Rationale
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of seatbelt enforcement through Memorandum of Understanding (MOU).</p>	<p>In 2010, 38% of survey respondents feel they are likely to get caught if they drive unrestrained, maintaining the November 2007 results.</p>	<p>Since B.C. has already realized a higher than average seatbelt wearing rate, there is little expectation that a change in attitudes or behaviours can be attained by increasing the effort. Therefore, no additional resources will be allocated in 2010.</p>
<p><b>Occupant restraint awareness</b></p> <p>Radio tag advertising during September to increase awareness of police enforcement of seatbelts and child seats.</p> <p>Provide occupant restraint information through fact sheets, posters, icbc.com and the Aboriginal Toolkit to educate drivers and high-risk groups.</p>	<p>In 2010, 38% of survey respondents feel they are likely to get caught if they drive unrestrained, maintaining the November 2007 results.</p>	<p>See above.</p>
<p><b>Curriculum Education</b></p> <p>ICBC provides grades K to 10 teaching packages to meet mandatory learning outcomes.</p> <p>In 2010, K to 7 resources are being updated and revised. Grade 8 and 9 Health and Career Education packages are also being reviewed and revised.</p>	<p>10% more educational materials focused on K to 7 students are ordered in 2010, compared to 2009 (1240 vs. 1129).</p> <p>20% more Grade 8 and 9 curriculum resource packages are ordered in 2010, compared to 2009 (165 vs. 149 for grade 8 and 122 vs. 111 for grade 9).</p> <p>100 new orders in 2010 for the Planning 10 resource.</p>	<p>New curriculum K to 7 and 8 to 9 resources will be created, and ICBC will be actively promoting them.</p> <p>Planning 10 was a new resource that was ordered by 500 teachers in 2009. These teachers will not likely re-order the resource in 2010.</p>

## 2010 road safety business plan

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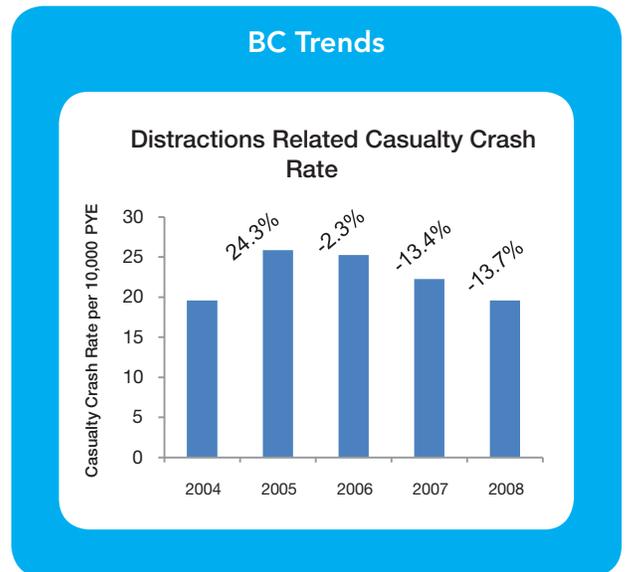
Tactic name and description	Tactic objective	Rationale
<p><b>Child passenger safety</b></p> <p>Partnership with BCAA's Traffic Safety Foundation to provide child passenger safety information through a toll-free information line, child seat clinics, information sessions, and child restraint training to police, health workers, and volunteers.</p>	<p>2009 partnership review recommendations are implemented and all partnership outcomes are achieved.</p>	<p>A review was undertaken in 2009 to guide investment in the program and desired outcomes for 2010 to 2012.</p>
<p><b>Aboriginal outreach occupant restraint</b></p> <p>Support the promotion of child passenger safety in Aboriginal communities through training and re-certification of Aboriginal Children's Restraint System Technicians by private contractor.</p>	<p>Eighteen certified technicians will be trained.</p> <p>Twenty trained technicians will be re-certified.</p> <p>Two <i>First Nations Child Seat Technicians Update</i> newsletters will be published.</p>	<p>Budget for this tactic allows for training of 18 technicians and re-certification of 20 technicians.</p>

### Driver distractions

In January 2010, new provincial legislation took effect that limits/prohibits the use of hand-held cellphones and personal electronic devices (PEDs) while driving. ICBC supported the introduction of the law by developing a public awareness campaign focusing on the details of the law and the risk the behaviour poses.

In B.C., collection of data on driver inattention as a contributing factor of crashes began in March 2004. In 2008, police cited one or more of the following driver behaviours as contributing factors in 6,197 crashes: use of communication/video equipment; driver inattentive; and driver internal/external distraction.

The Office of the Superintendent of Motor Vehicles (OSMV) estimates that driver distractions, such as the use of PEDs, eating, and personal grooming, are involved in as many as 25% of crashes, including 1,400 injury and 117 fatal crashes per year.



### 2010 objectives, targets, and rationale

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>90% of survey respondents will report that they are aware of new legislation restricting use of hand-held cellphones and PEDs while driving.</li> </ul>	<ul style="list-style-type: none"> <li>In 2009, the B.C. government announced its intention to introduce legislation regarding cellphone use while driving.</li> <li>In 2009, media attention informed drivers that new legislation regarding cellphone use while driving would take effect January 2010.</li> <li>Radio, TV, and newspaper ads in 2010 will inform residents of the details of the new legislation.</li> </ul>
<ul style="list-style-type: none"> <li>Establish baseline use of hand-held cellphones or PEDs while driving, and develop appropriate crash and casualty crash measures.</li> </ul>	<ul style="list-style-type: none"> <li>In Finland, introduction of legislation banning the use of hand-held cellphones resulted in decline in self-reported use from 55.6% to 15.2%.<sup>9</sup></li> <li>Enforcement of legislation will increase the perception that drivers will be caught and fined for disobeying the law, acting as a deterrent.</li> </ul>

<sup>9</sup> Rajalin, S., Summala, H., Poysti, L., Anteroinen, P., & Porter, B. E. (2005). In-car cellphone use and hazards following hands-free legislation. *Traffic Injury Prevention*, 6(3), 225-229.

**2010 driver distractions tactics**

Tactic name and description	Tactic objective	Rationale
<p><b>Legislation awareness</b></p> <p>Develop public awareness campaign focused on increasing awareness of new legislation and the risk the behaviour poses.</p>	<p>90% of survey respondents demonstrate awareness of new legislation.</p>	<p>A high level of media attention occurred prior to full implementation of the new law and influenced awareness. It is expected that the level of media attention on the new legislation will not be sustained throughout the year.</p>

**Road programs**

**Road improvement program**

In 2007, approximately 19% of all police-reported crashes cited “environmental factors” as contributing to the crash.

In the 1950s and 1960s, a major program was launched to upgrade alignment and pave the rural trunk system of roadways in the province. These roadways, built to the standards and road-building techniques of the day, are no longer adequate for the high traffic volumes and speeds of today’s travellers. Growth of B.C.’s towns and cities, as well as changes in the mobility patterns of its citizens, has resulted in a need for safety improvements to roadways.

ICBC’s Road Improvement program works in partnership with local and provincial authorities, participating in engineering studies to assess local areas of concern and assisting communities in undertaking engineering upgrades.

**2010 objectives, targets, and rationale**

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>Road improvement projects achieve a minimum 50% internal rate of return.</li> </ul>	<ul style="list-style-type: none"> <li>The most recent program evaluation (2006) concluded that road improvement projects produced a 260% return on investment.*</li> <li>Investment levels are expected to remain fairly constant between 2008 and 2010.</li> </ul>

\* The 2010 Road Safety Business Plan was prepared before the release of the 2009 Road Improvement Program evaluation.

2010 road improvement tactics

Tactic name and description	Tactic objective	Rationale
<p><b>Engineering retrofits</b></p> <p>Share the costs of road improvements to reduce crashes at crash-prone locations.</p>	<p>Participate in 200 road improvement projects and 3 modern roundabouts.</p> <p>Achieve a 50% Internal Rate of Return for retrofit projects.</p>	<p>Number of projects undertaken depends on the value of each project. Roundabouts require a high level of resources.</p>
<p><b>Road safety audits</b></p> <p>Review planned infrastructure projects to ensure safety is given priority during design/ construction.</p>	<p>Conduct 15 safety audits, with an audit recommendation implementation rate of 60%.</p>	<p>The budget for these audits will remain the same as 2007 and 2008.</p>
<p><b>Innovation fund</b></p> <p>Facilitate the assessment of new road improvement technology.</p>	<p>Funding is provided for partnering on a new technology by Q4.</p>	<p>Budget is estimated to support three projects. Selection of up to three projects is dependent upon the quality of the submissions for funding.</p>
<p><b>High-risk corridors (HRC)</b></p> <p>Identify high crash risk corridors and use engineering, enforcement and education to reduce the frequency and/or severity of crashes.</p>	<p>Assemble four HRC locations, develop crash reduction targets, and begin implementation of road improvements and/or enforcement by Q4.</p>	<p>Reduction of crashes results in reduced claims.</p>
<p><b>Program evaluation</b></p> <p>Evaluate how the benefits of the Road Improvement program have acted over time.</p>	<p>Complete long-term evaluation of road improvements by Q4, 2010.</p>	<p>Evaluations will advise what benefits are realized by past projects.</p>

## Vehicle programs

### Safer vehicles

In B.C., vehicle condition factors were cited in approximately 1.7% of all police-reported collisions in 2007. It is likely that this is under-reported since it often takes time and expertise to identify vehicle contributions to crashes.

Emerging vehicle technologies and improved vehicle engineering standards are promising to reduce crashes and injuries in crashes. Research conducted by Monash University Accident Research Centre shows that if every driver bought a vehicle with a high safety rating, the number of people killed or seriously injured on Western Australian Roads would fall by about one third.<sup>10</sup> Transport Canada estimates 4,000 crashes, 40 fatalities, and 1,200 injuries would be prevented if all light vehicles in B.C. were equipped with electronic stability control (ESC) alone.

In keeping with its commitment to protect customers, Road Safety has identified a need to inform drivers about the availability, effectiveness, and use of new vehicle technologies, and help support their decision-making during the purchase of safer vehicles.

### 2010 objectives, targets, and rationale

Objectives & targets	Rationale
<ul style="list-style-type: none"><li>• In 2010, 30% of B.C. drivers will mention safety as one of their top three considerations when purchasing a vehicle, an increase of 3% compared to 2008.</li></ul>	<ul style="list-style-type: none"><li>• Buyers have shifted from dealerships and print to the internet to obtain information during the purchase of a vehicle.</li><li>• A new website will be developed to provide B.C. drivers with more information on vehicle safety features.</li><li>• Some automotive manufacturers have begun to advertise safety features of their vehicles.</li></ul>

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<sup>10</sup> McMahon, M. (2008). The safer vehicles program partnership between the RAC and the Road Safety Council. Draft Report.

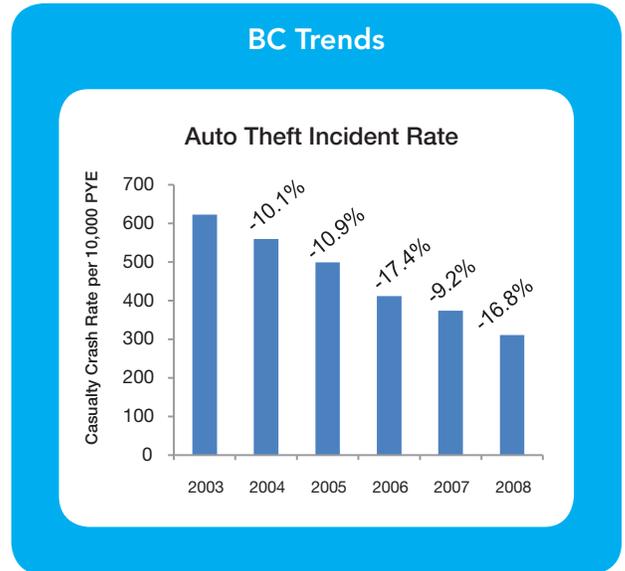
2010 safer vehicle tactics

Tactic name and description	Tactic objective	Rationale
<p><b>Develop tools for fleet managers</b></p> <p>Introduce a program to promote ICBC vehicle fleet purchase policies that include vehicle safety.</p>	<p>Develop Purchase/Policy guide for ICBC fleet by Q3.</p>	<p>Vehicles bought and/or leased by ICBC are usually sold within two to five years when they then enter the private market.</p>
<p><b>Targeted awareness</b></p> <p>Paid and earned media to inform customers of the benefits of vehicle safety features.</p>	<p>In 2010, 30% of respondents will identify 'safety' as one of their top three considerations when deciding to buy a vehicle, an increase of 3% from 2008 results.</p>	<p>ICBC investment in this tactic is relatively small. However, increased advertising of safety features by automotive manufacturers will help increase awareness.</p>
<p><b>Safer vehicle website</b></p> <p>Website to feature information on availability and importance of vehicle safety features.</p>	<p>Develop a website and an evaluation plan by Q3.</p>	<p>Increases consumer awareness and knowledge of vehicle safety to influence their purchase of safer vehicles.</p>
<p><b>Head restraints</b></p> <p>Driver examiners provide head restraint safety education and correct adjustment of driver and passenger head restraints during Class 5 and 7 road tests.</p>	<p>Driver examiners continue to check all head restraints and provide head restraint adjustment education during Class 5 and 7 road tests.</p>	<p>Direct intervention in adjusting head restraints increases safety compliance and influences knowledge and attitude change.</p>

**Auto crime**

In 2008, total auto crime costs to ICBC’s customers were approximately \$103 million, approximately \$60 million from theft of auto, \$19 million from ‘theft from’, and \$24 million from vandalism. Final 2009 costs have not yet been determined but in 2009, each type of incident declined by at least 14%.

According to Statistics Canada, in 2003 B.C.’s auto theft rate was 958 per 100,000 people, 77% higher than the Canadian national average of 541<sup>11</sup> and double the US national average of 433.7<sup>12</sup> per 100,000 people. By 2008, with the implementation of more aggressive police strategies including the Bait Car program, the B.C. rate had declined by 46% to 521<sup>13</sup> per 100,000 people. However, B.C.’s auto theft rate still remains above the Canadian national average.



ICBC data shows that B.C.’s auto theft rate per 10,000 policy years earned decreased more than 10% per year since the inception of the Bait Car program in 2004. ICBC also supports police, through IMPACT (Integrated Municipal and Provincial Auto Crime Team), in their efforts to reduce auto crime. The introduction of immobilizers has had a large impact on auto crime. Since September 2007, all new passenger and light truck vehicles sold in Canada have been equipped with immobilizers and as new vehicles are purchased, the theft of vehicles is expected to become more difficult.

**2010 objectives, targets, and rationale**

Objectives & targets	Rationale
<ul style="list-style-type: none"> <li>The auto theft incident rate decreases by 10% in 2010 compared to 2009.</li> </ul>	<ul style="list-style-type: none"> <li>The auto theft incident rate has decreased by more than 10% each year for the past six years. However, it is expected that the improvement will level off, as enforcement levels will remain constant and no new major enforcement strategies are planned.</li> </ul>

<sup>11</sup> Statistics Canada. (2005). Exploring Crime Patterns in Canada. <http://www.statcan.gc.ca/pub/85-561-m/85-561-m2005005-eng.pdf>

<sup>12</sup> Department of Justice – Federal Bureau of Investigation. (2006). Motor Vehicle Theft. [http://www.fbi.gov/ucr/cius\\_04/offenses\\_reported/property\\_crime/motor\\_vehicle\\_theft.html](http://www.fbi.gov/ucr/cius_04/offenses_reported/property_crime/motor_vehicle_theft.html)

<sup>13</sup> Statistics Canada. (2009). Juristat Article: Police-reported crime statistics in Canada, 2008. <http://www.statcan.gc.ca/pub/85-002-x/2009003/article/10902-eng.pdf>

2010 auto crime tactics

Tactic name and description	Tactic objective	Rationale
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of auto crime enforcement.</p>	<p>Continue funding the IMPACT program to reduce auto crime throughout the province.</p>	<p>Car thieves are apprehended and deterred.</p>
<p><b>Auto crime awareness</b></p> <p>Run a campaign to raise awareness of auto crime enforcement (including Bait cars).</p> <p>Ads placed in targeted locations warn potential thieves that they will be caught.</p>	<p>In 2010, 50% of survey respondents will demonstrate aided recall of the slogan, "Steal a Bait Car, Go to Jail".</p>	<p>Auto thieves are deterred by higher perceived risk of getting caught.</p> <p>With auto theft on the decline, paid and earned media has been reduced accordingly. As a result, auto theft is less visible in the media.</p>
<p><b>Crime prevention strategies</b></p> <p>Partner with community and government agencies to develop new auto crime reduction programs.</p>	<p>In 2010, identify and fund a minimum of three new and existing community-based initiatives that reduce the impact of auto crime.</p>	<p>New strategies will improve ability to prevent auto crime in B.C..</p>
<p><b>Auto crime partnerships</b></p> <p>Stolen Auto Recovery and Lock Out Auto Crime community volunteers check licence plates to recover stolen vehicles, and distribute notices to educate vehicle owners about protecting their vehicle.</p> <p>Private security staff patrols high crime locations where volunteer activity is not sufficient. Funding depends on cost-sharing with municipalities and businesses.</p>	<p>Community patrols will provide 130,000 patrol hours in high crime locations, a decrease from 160,000 in 2009.</p>	<p>Number of patrol hours decreased 25% from 2007 to 2009. Auto crime has been experiencing reductions every year since 2003 and as a result, Community Policing and Crime Prevention groups are shifting the focus of volunteers to other programs. ICBC implemented changes to funding community auto crime programs in 2008 realizing the level of support for previous years was no longer required. Further erosion of the volunteer base is expected through attrition.</p>

Tactic name and description	Tactic objective	Rationale
<p><b>Vehicle immobilization</b></p> <p>Awareness activity: owners of high-risk vehicles (e.g., Ford F-series vehicles) are sent letters offering free engine immobilizers.</p>	<p>The “immobilizer” tactic has 900 owners of high-risk vehicles take up ICBC’s offer, an increase from 800 in 2009.</p> <p>Project will realize a positive return on investment (ROI).</p>	<p>Stolen vehicles are immobilized, reducing the risk of auto theft.</p> <p>During the first year of the program launched in the Lower Mainland, 2009, a 1.14:1 ROI was realized. In 2010 the program will be extended to Kelowna and Prince George for the first time. High uptake on the offer of free immobilizers is expected.</p>

## Research and strategy development

The Road Safety department carries out anticipatory research and strategy development. The work in this area is guided by how it can be used for practical purposes. Periodically, the Road Safety department makes explorations of future road safety developments and updates research on current priorities.

In 2010, the Road Safety department will research and review the need for strategy on the following issue:

Issue	Timeline	Rationale
<p><b>Commercial vehicle safety</b></p>	<p>Strategy to be developed by Q4 and options to be reviewed in 2011.</p>	<p>In 2008, commercial vehicles were involved in a total of 37,940 incidents in B.C., costing ICBC’s customers approximately \$329 million. Commercial vehicle crashes represented 13% of crashes reported to ICBC.</p>

## Investment summary

Overall, ICBC's 2010 investment in Road Safety will be about \$5.1 million more than the 2009 actual costs. The major factors are summarized below:

### Drivers

1. The total investment in Driver programs in 2010 will increase by approximately \$3.9 million. The total investment in enhanced enforcement will be approximately \$1.1 million more in 2010. This is due to an increase in payments under the Traffic and Law Enforcement Funding Memorandum of Understanding (MOU).
2. An additional \$2.5 million will be invested in a public awareness campaign to support new legislation restricting the use in vehicles of handheld personal electronic devices such as cellphones.

### Roads

3. The planned 2010 investment in the Road Improvement Program will be \$175,000 less than 2009 as the 2009 budget also included the 3-year evaluation.

### Vehicles

4. The planned 2010 investment in Vehicle programs will increase by \$590,000, caused by expansion of auto crime tactics and the introduction of new tactics to encourage motorists to purchase safer vehicles.

### General expenses

5. General expenses are higher in 2010 by \$533,000 mainly due to \$520,000 of unallocated plan. Other operating expenses including vehicles and travel and accommodation will also increase.

## 2010 road safety business plan

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The following table summarizes the planned investment to achieve the program and tactic objectives.

<b>Road Safety Department Expenses (\$000's)</b>		<b>2009 Actual</b>	<b>2010 Plan</b>
<b>Drivers</b>			
Impaired Driving	Enhanced Enforcement	6,436	6,779
	Impaired Driving Awareness Campaign	841	865
	Community Partnerships	72	191
	<b>Subtotal Impaired Driving</b>	<b>7,349</b>	<b>7,835</b>
Speeding	Enhanced Enforcement	9,686	10,165
	Speed Awareness Campaign	950	802
	Roadside Speed Readerboards	177	178
	Youth Outreach	235	380
	Research (note 1)	22	0
	<b>Subtotal Speeding</b>	<b>11,070</b>	<b>11,525</b>
Intersection Safety (note 2)	Enhanced Enforcement	1,071	1,095
	Intersection Awareness Campaign	554	555
	<b>Subtotal Intersection Safety</b>	<b>1,625</b>	<b>1,650</b>
Driver Distractions	Driver Distractions Awareness Campaign	0	2,480
Comm. Veh. Safety	Strategy Development	14	100
Occupant Restraints	Enhanced Enforcement	5,271	5,556
	Child Passenger Safety	188	292
	<b>Subtotal Occupant Restraints</b>	<b>5,459</b>	<b>5,848</b>
<b>SUBTOTAL DRIVERS</b>		<b>25,517</b>	<b>29,438</b>
<b>Roads</b>			
Road Improvements	Engineering Retrofits	8,645	8,470
	<b>Subtotal Road Improvements</b>	<b>8,645</b>	<b>8,470</b>
<b>SUBTOTAL ROADS</b>		<b>8,645</b>	<b>8,470</b>

**Vehicles**

Safer Vehicles	Safer Vehicle Programs	14	85
	Safer Vehicle Awareness Campaign	0	100
	<b>Subtotal Safer Vehicles</b>	<b>14</b>	<b>185</b>
Auto Crime	Enhanced Enforcement	2,000	2,000
	Auto Crime Awareness Campaign	162	182
	High-Risk Vehicle Immobilization	136	400
	High-Risk Auto Crime Partnerships	319	454
	<b>Subtotal Auto Crime</b>	<b>2,617</b>	<b>3,036</b>
<b>SUBTOTAL VEHICLES</b>		<b>2,631</b>	<b>3,221</b>
<b>TOTAL DIRECT EXPENSES</b>		<b>36,793</b>	<b>41,129</b>
	Research and Measurement Direct Expenses (note 1)	144	235
	Compensation	4,224	4,395
	General Expenses	1,419	1,952
<b>TOTAL ROAD SAFETY EXPENSES</b>		<b>42,580</b>	<b>47,711</b>
<b>TOTAL ROAD SAFETY FTE'S</b>		<b>42.7</b>	<b>44.4</b>

Note 1: Speed Research 2010 plan moved to Research and Measurement.

Note 2: The investment summary does not include the investment for the Intersection Safety Camera Upgrade tactic, which is funded from the Corporate Project Fund. The investment summary also does not include the relocation costs for the Integrated Traffic Camera Unit, which have been deducted from enforcement funding remitted to the Province.





## **ATTACHMENT B-2**

# **2009 ROAD SAFETY ANNUAL REPORT**

# 2009 road safety annual report



building trust. driving confidence.

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## Introduction

The Road Safety department develops and manages programs that help prevent and minimize the impact of crashes and auto crime. This benefits ICBC's customers by helping to prevent and reduce their losses, and also by maintaining low and stable insurance premiums. In addition to protecting customers, the department's activities support the corporate objective of maintaining financial stability by reducing the growth in claims costs, which ultimately benefits the customer.

This report summarizes the approach that guides ICBC's road safety programs and provides information on 2009 objectives and results.

## Road Safety's approach

The department invests in many different types of programs, some of which produce short-term claims reduction benefits and others that help bring about long-term improvements in driving attitudes and behaviours that affect crashes. All investments are focused on initiatives whose primary goal is to prevent and minimize the impact of crashes and crime.

The following assumptions and principles guide development of detailed program and tactical plans.

### Key assumptions

Road Safety and ICBC's Customers:

- ICBC's road safety function is focussed on protecting ICBC's insurance and driver licensing customers throughout the province.
- Road Safety investments are designed to prevent and minimize the impact of crashes and crime so that insurance premiums remain low and stable.

### Road Safety principles

Road Safety will:

- Ensure that all programs have clear measurable objectives.
- Deliver programs that target the most serious road safety risks.
- Focus programs on delivering claims savings benefits.
- Proactively partner with others where appropriate on road safety programs.
- Deliver programs consistently to customers around the province.

## Strategic framework

ICBC classifies all Road Safety programs into three categories which represent the major causes of crashes: Drivers, Roads, and Vehicles.

Strategic Intent	Protect customers from risks on the road by preventing and minimizing the impact of crashes and crime				
Strategic Outcomes	Fewer Crashes Caused by Unsafe Driving	Attitude Changes, More Accountability	Safer, More Forgiving Roads	Fewer Auto Crime Incidents	Vehicles that Minimize Impact of Crashes and Crime
Goals	<p style="text-align: center;"><b>Drivers</b></p> <p>Help our customers improve their unsafe driving behaviours</p> <ol style="list-style-type: none"> <li>1. Make customers aware of the impact and consequences of unsafe driving and the accountability they have to improve the way they drive.</li> <li>2. Support the development and implementation of insurance, driver licensing and other tactics that reduce unsafe driving.</li> <li>3. Support and promote enforcement activities targeted at unsafe driving and auto crime risks.</li> <li>4. Support the development of legislation, sanctions and other means to protect customers and reduce unsafe driving.</li> </ol>		<p style="text-align: center;"><b>Roads</b></p> <p>Reduce road-related driving hazards</p> <ol style="list-style-type: none"> <li>5. Work with partners to:                             <ul style="list-style-type: none"> <li>- prevent crashes at targeted locations throughout B.C.</li> <li>- make road safety more prominent in transportation planning.</li> </ul> </li> </ol>	<p style="text-align: center;"><b>Vehicles</b></p> <p>Reduce vehicle-related safety and crime vulnerabilities</p> <ol style="list-style-type: none"> <li>6. Partner with others to improve vehicle safety so customers are protected from injury.</li> <li>7. Partner with others to improve vehicle security to protect customers from being victims of crime.</li> </ol>	

## Trends and objectives

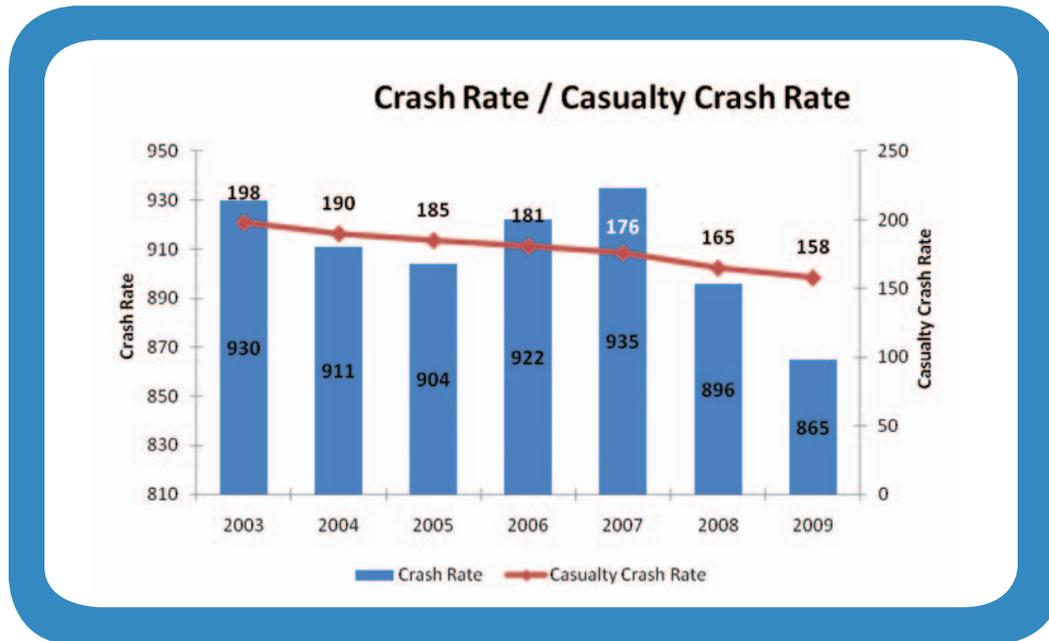
### Crash prevention

The **crash rate** is the number of crashes reported to ICBC per 10,000 vehicle policy years earned.

In 2009 the crash rate was 865, a 7.5% decrease from the 2007 crash rate. From 2007 to 2009, the average annual rate of decrease was 3.9%.

The **casualty crash rate** is the number of injury and fatality crashes reported to ICBC per 10,000 vehicle policy years earned.

There was a 10.3% decrease in the casualty crash rate in 2009 over 2007. From 2007 to 2009, the average annual rate of decrease was 5.3%.



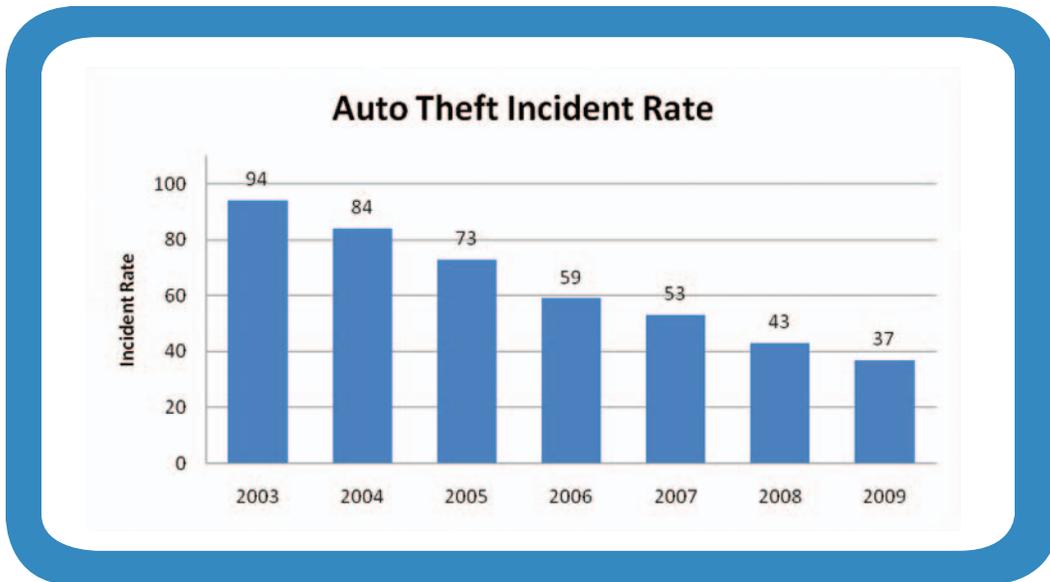
### Crash prevention objectives for 2009

- A decline in the crash rate by 1% in 2009, as compared with 2007.
- A decline in the casualty crash rate by 5% in 2009, as compared with 2007.

## Auto crime prevention

The **auto theft incident** rate is the number of auto theft incidents reported to ICBC per 10,000 vehicle policy years earned.

The 2009 auto theft incident rate was 37, a 30.2% decrease from 2007. From 2007 to 2009, the average annual rate of decrease was 16.4%.



*Note: In ICBC's October 17, 2008 Filing, page 30, ICBC inadvertently labelled the table "Auto Theft Incident Rate". The label in the October 17, 2008 Filing should have read "Auto Crime Incident Rate" as the table provides rates for all types of auto crime, including theft, break-ins, and vandalism. ICBC's tactics focus primarily on auto theft reduction; therefore, this 2009 Road Safety Annual Report includes rates only for auto theft.*

## Auto crime prevention objectives for 2009

- A decline in the auto theft incident rate by 5% in 2009, as compared with 2007.

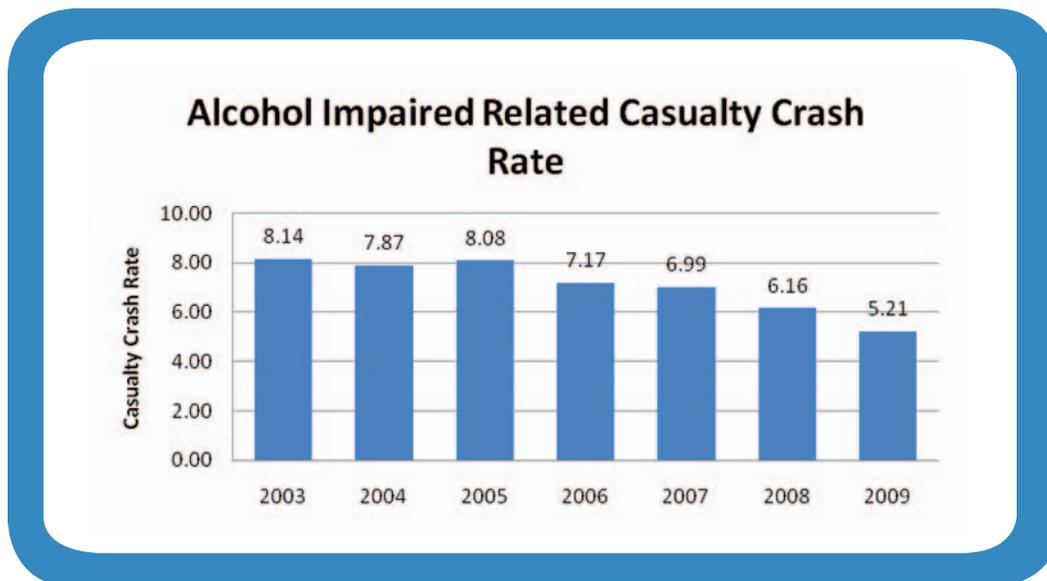
## 2009 program objectives and results

### Drivers

#### Impaired driving

There are many causes of driver impairment, including fatigue, alcohol, and drugs. Based upon police-attended collision data, alcohol impairment continues to be a major road safety issue in B.C. and a primary focus of the B.C. Association of Chiefs of Police Traffic Safety Committee. ICBC's focus is on impairment caused by alcohol.

Since the inception of B.C.'s CounterAttack program in 1976, the number of deaths in alcohol-related crashes has been reduced by more than half while the population of the province has almost doubled. However, Road Safety surveys have shown that while the majority of B.C.'s citizens agree that drinking and driving is a serious problem, one quarter of all drivers feel they are fully in control of their driving after consuming a "small" amount of alcohol — one or two drinks. In 2009, Road Safety developed new messaging to address this problem, and supported enforcement to increase the perception that if you drink and drive, you will get caught.



The alcohol impaired **casualty crash rate** is the number of alcohol impaired driving related casualty crashes reported by the police per 10,000 vehicle policy years earned.

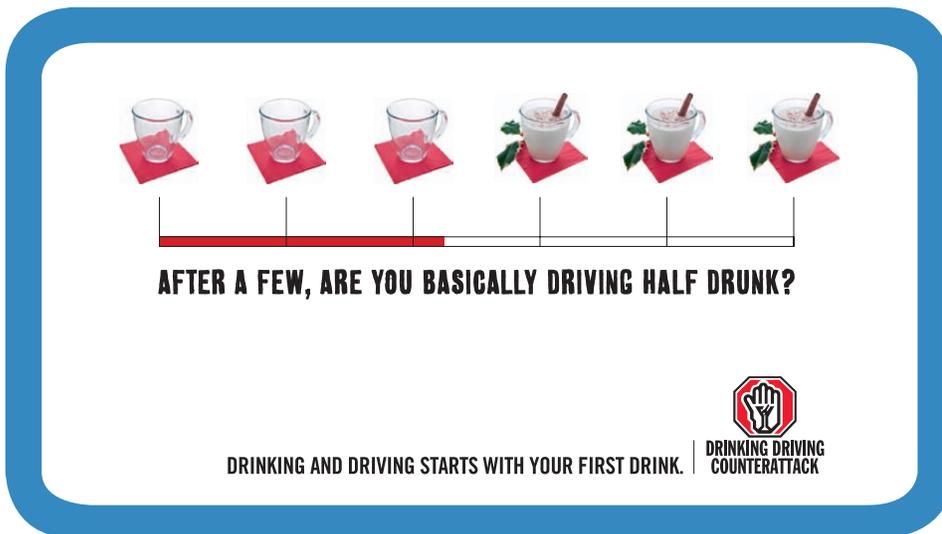
Program strategic objectives

Objective	Result
A decline in the impaired driving casualty crash rate by 4% for each year from 2009 to 2011, when compared with the average of years from 2005 to 2007.	<p>✔ Strategic objective on track. Between 2007 and 2009, the average annual rate of decline was 13.7%.</p>
In 2011, 3% fewer drivers will report personal drinking and driving behaviours, as compared to 2008.	<p>✘ In 2009, a new direction for the drinking and driving campaign was established, focusing on educating people that impairment begins with the first drink. Recognizing that attitude and behaviour change takes time, a 3-year target to change personal drinking and driving behaviours was established. The 2008 baseline survey found that 26% of survey respondents agree that on at least one occasion in the past six months, they have driven within two hours after consuming two or more drinks of alcohol. There was no change in 2009. The final measure will be assessed in 2011.</p>

Impaired driving program activities: 2009 highlights

Campaigns

Two impaired driving campaigns were held in 2009 (June 29 to July 31 and Dec 4 to 31) with community events to launch the campaigns. The campaigns included additional police enforcement and community activities to raise awareness of this dangerous driving behaviour.



### Community partnerships

In 2009, Road Safety established a new program partnering with sports facilities to promote the message, "Drinking and driving starts with the first drink." The response exceeded expectations, and 69 partners supported the new program.

### Operation Red Nose (ORN)

For the 13th consecutive year, ICBC supported the ORN program that offers volunteer rides home to people who have been drinking during the Christmas season. In 2009, 403 more volunteers supplied safe rides home to 23% more people, compared to the previous year. ICBC provides insurance for all ride and escort vehicles, and provides support to volunteers.

### 2009 impaired driving tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of impaired driving enforcement.</p>	<p>39% of survey respondents feel they are likely to get caught if they drink and drive, a 2% increase from 2008.</p>	<p>✔ Post July campaign - 42% of survey respondents feel they are likely to get caught if they drink and drive.</p> <p>Post December campaign - 47% of survey respondents feel they are likely to get caught if they drink and drive.</p>
<p><b>Impaired Driving Awareness Campaign</b></p> <p>CounterAttack radio and TV advertising is produced by ICBC; the B.C. Association of Broadcasters airs the ads free as public service announcements. The campaign includes community partnerships, including working with the police to publicize enforcement programs and providing information to large employers.</p>	<p>In 2009, 59% of survey respondents have aided recall of the impaired driving campaign slogan, a 3% increase from 2008.</p>	<p>☐ Post July campaign - 54% of survey respondents had aided recall.</p> <p>Post December campaign - 61% of respondents had aided recall.</p>

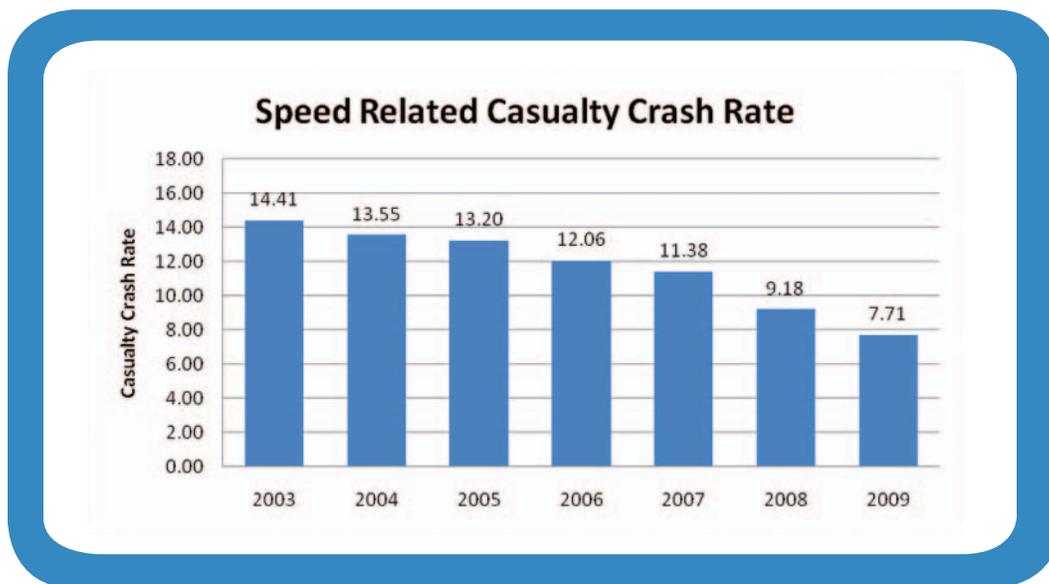
## 2009 road safety annual report

Tactic name and description	Objective	Results
<p><b>Community partnerships</b></p> <p>The Get Home Safe tactic involves working with municipalities and facility owners to endorse the "Get Home Safe" message and require special event licensees to display impaired driving materials.</p>	<p>60 sports/entertainment facilities and 40 municipalities will confirm their endorsement and active participation.</p>	<p>✓ 69 sports/entertainment facilities and 53 municipalities agreed to endorse and promote "Get Home Safe" in 2009.</p>
<p><b>Operation Red Nose (ORN)</b></p> <p>A Christmas volunteer driving service to get people and their vehicle home safely. B.C. Crime Prevention Association is the official B.C. sponsor of the national ORN program. ICBC supports the program by providing insurance coverage for the volunteer ride vehicles.</p>	<p>Maintain or increase the number of rides in the participating ORN communities.</p>	<p>✓ In 2009 6,061 rides were provided, a 24% increase from the 4,907 that were provided in 2008.</p>
<p><b>Drug impairment strategy</b></p> <p>Research and prepare a strategy on impaired by drugs other than alcohol.</p>	<p>Complete strategy by Q3, 2009.</p>	<p>✘ Research summary completed in Q2, 2009. Strategy development ongoing.</p>

## Speed

Speeding is defined as exceeding the posted speed limit, excessive speed (40 kilometres per hour or more over the speed limit), or driving too fast for conditions.

The majority of B.C. drivers believe speeding is a serious safety concern; however, one-half still say that they have recently driven at speeds more than 10 km above the posted limit. Although they may feel that speeding itself is not a problem, they understand that speeding contributes to crashes by reducing the amount of time the driver has to see, interpret, and react to the road, pedestrians, vehicles, and other hazards, especially during bad weather. Road Safety programs are designed to encourage drivers to realize that speeding is a high-risk choice that is made by the driver.



The above **casualty crash rate** is the number of speed-related casualty crashes reported by police per 10,000 vehicle policy years earned.

**Program strategic objectives**

Objective	Result
A decline in the speed casualty crash rate by 4% for each year from 2009 to 2011, when compared with the average for years 2005 to 2007.	✔ Strategic objective on track. The 2009 casualty crash rate (7.71) was 37% lower than the average 2005 to 2007 crash rate of 12.21.
In 2010, 5% fewer drivers will report personal speed-related driving behaviours, as compared to 2007.	✘ In 2008, a 3-year objective was established for the new messaging to change personal speed-related behaviours. This measure will be completed in 2010. However, in the first year of the new messaging, the number of survey respondents who agree that they usually don't have the time or patience to drive at the posted speed limit has increased by 4% to 23% (measured in 2009).

## Speed program activities: 2009 highlights

### Campaign

The summer campaign received positive coverage, generating 33 news stories throughout B.C. The campaign was supported by local police and Speed Watch volunteers targeting high crash corridors and intersections throughout the province.

Since many intersection crashes arise from drivers rushing through intersections, the November speed campaign was integrated with the intersection safety campaign, focusing on driver inattention and running red lights.

### RoadSense speakers

Participant feedback was collected to determine what factors contribute to the success of the program. Results helped improve how the messages were delivered to young drivers through the personalized stories of vehicle crash survivors.

### Speed relative to conditions

During 2009, examination of police data showed that most speed-related crashes occur during the winter months. A new campaign was developed to remind drivers to adjust their speed according to the weather conditions not the posted speed limit, and be prepared for winter. The campaign was launched at the RoadHealth Conference in Prince George on October 20, 2009 and received excellent media coverage and support from police.



*Nicolas Jimenez demonstrating how to measure tire tread depth in the campaign launch in Prince George.*



### Speed readerboards

Nine communities in the Lower Mainland displayed fixed radar speed readerboards periodically throughout 2009 at locations with a history of crashes due to speed as a causal factor. Media events were held in Richmond, Mission, and Port Coquitlam. Richmond reported that in areas where the boards were displayed, they realized a reduction in speeds among the fastest drivers.

### TradeOff

As part of Youth Outreach, a pilot study was developed to reach young male drivers age 19 to 25 attending technical/trades post-secondary education. Two pilot sessions were held at Vancouver Island University, and follow-up focus group interviews were used to refine the program. Initial feedback from participants was positive and indicated retention of key messages.

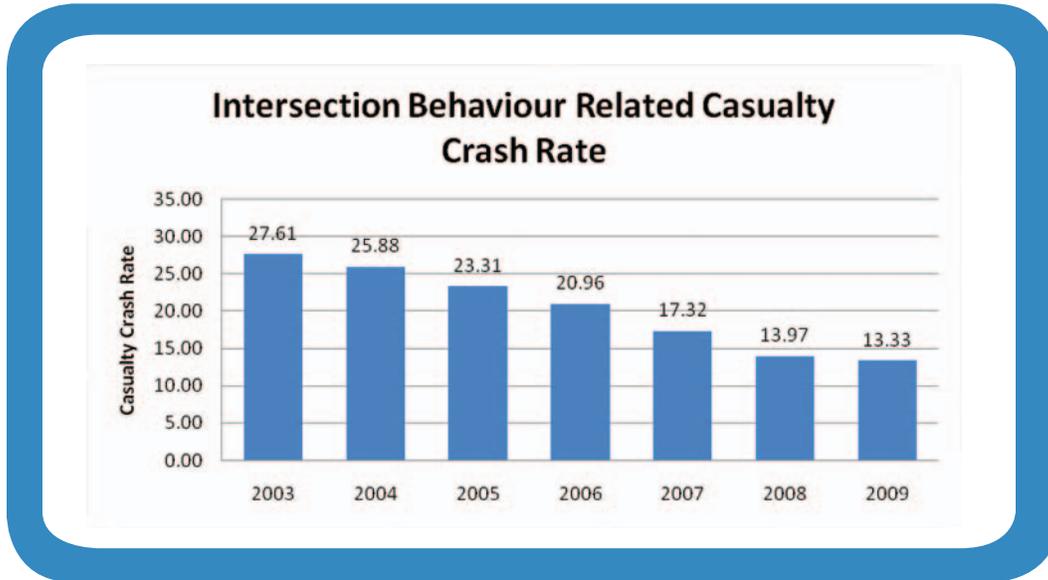
### 2009 speed driving tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of speed enforcement.</p>	<p>In 2009, 43% of survey respondents feel they are likely to get caught if they speed, a 4% increase from June 2008.</p>	<p><b>X</b> 33% of survey respondents feel they are likely to get caught if they speed, a decrease from June 2008 results.</p> <p><i>(Comment: Results are being reviewed to better understand why this target may not have been met and will be reflected in the 2010 Road Safety Business Plan)</i></p>
<p><b>Speed Awareness Campaign</b></p> <p>Raises awareness of the dangers and consequences of speeding. Tactic also supports enforcement activities.</p>	<p>In 2009, 23% of survey respondents have aided recall of the speeding advertising campaign slogan.</p> <p><i>(Comment: New messaging will be introduced. It is expected that it will take some time to build awareness levels)</i></p>	<p><b>✓</b> 54% of survey respondents have aided recall of the slogan "Listen to your RoadSense and slow down. Police enforcement is up."</p> <p>49% of survey respondents have aided recall of the slogan "180 crash deaths are caused by speeding each year. So slow down on the road."</p>

Tactic name and description	Objective	Results
<p><b>Speed Watch</b></p> <p>Community volunteers use speed readerboards to raise awareness of the actual speeds drivers are travelling at targeted "speed problem" locations.</p>	<p>a) 48% of survey respondents have seen a Speed Watch operation in 2009, a 3% increase from June 2008.</p> <p>b) Speed Watch readerboards are deployed in 75 high-crash corridors in 2009, a 25% increase from 2008.</p>	<p>✓ 52% of survey respondents saw a Speed Watch operation in 2009.</p> <p>In 2009 there were 87 unique high-crash corridors. This represents a 45% increase from the 2008 base number of 60 unique high-crash locations.</p>
<p><b>Youth Outreach</b></p> <p>Through RoadSense Speakers Tour, speakers use their experience to motivate youth to make safe driving decisions, with a strong focus on the consequences of speeding.</p>	<p>a) Presentations are conducted in 180 schools provincially in 2009, a 7% increase from 2008 plan.</p>	<p>✓ 184 presentations conducted in 2008: 111 in the Lower Mainland, 73 outside the Lower Mainland.</p>
<p>ICBC provides grades 8 to 10 teaching packages to meet mandatory learning outcomes.</p>	<p>b) Complete updates to Grades 8 to 10 curriculum package by August 2009.</p>	<p>✓ New Grade 10 package developed and completed on time and on budget. Order level for Grade 8 curriculum package increased from 125 in 2008 to 149 in 2009. Order level for Grade 9 curriculum package increased from 101 in 2008 to 111 in 2009.</p>
<p><b>Strategy</b></p> <p>Develop strategies for people aged 19 to 25.</p>	<p>Complete 19 to 25 strategy by Q1, 2009.</p>	<p>✓ TradeOff pilot program developed in Q1, and delivered in Nanaimo.</p>

### Intersection safety

More than half of all casualty crashes occur at intersections, and are caused primarily by driver actions such as failure to yield right-of-way, following too closely, and ignoring a traffic control device. The Intersection Safety programs focus on these behaviours, especially on running red lights.



The above **casualty crash rate** is the number of casualty crashes involving intersection safety-related behaviours reported by police per 10,000 vehicle policy years earned.

Program strategic objectives

Objective	Result
<p>A decline in the intersection behaviour casualty crash rate by 4% each year from 2008 to 2010, when compared with the average of years from 2005 to 2007.</p>	<p>✔ Strategic objective on track. The 2009 casualty crash rate (13.33) was 35.1% lower than the average 2005 to 2007 crash rate of 20.53.</p> <p><i>(Comment: Results are being reviewed to better understand targets for this tactic and will be reflected in the 2010 Road Safety Business Plan)</i></p>
<p>In 2010, 5% fewer drivers will report personal high-risk intersection behaviours as compared to 2007.</p>	<p>✘ In 2008, a 3-year plan was established to reduce high-risk intersection behaviours by 5% in 2010 compared to baseline levels of November 2007. These baseline levels were:</p> <ul style="list-style-type: none"> <li>• Not coming to a full stop at a stop sign: 14%</li> <li>• Driving through a yellow light that is turning red: 12%</li> </ul> <p>In December 2009, interim measures were taken with the following results:</p> <ul style="list-style-type: none"> <li>• Not coming to a full stop at a stop sign: 20%</li> <li>• Driving through a yellow light that is turning red: 9%</li> </ul> <p>The final measure for these behaviours will be assessed in 2010.</p>

### Intersection safety program activities: 2009 highlights

#### Campaign

In early November, the Intersections Safety Awareness campaign was launched at a major intersection (Robson at Beatty) in downtown Vancouver. This year, the launch featured a mock crash in the intersection depicting a vehicle T-boned as a result of running a red light. The new marketing campaign ads were also screened. The launch and community enforcement generated 71 media stories on intersection enforcement activities.

#### Intersection Safety Camera (ISC) upgrade

Road Safety worked together with the provincial government, police, and industry suppliers to develop a comprehensive plan for bringing intersection safety cameras up to today's standards. This includes acquiring new software to process tickets, new camera technology and data transmission processes to improve program response times, and new site selection methodology to identify those sites with the potential to maximize the crash prevention benefits of the cameras.



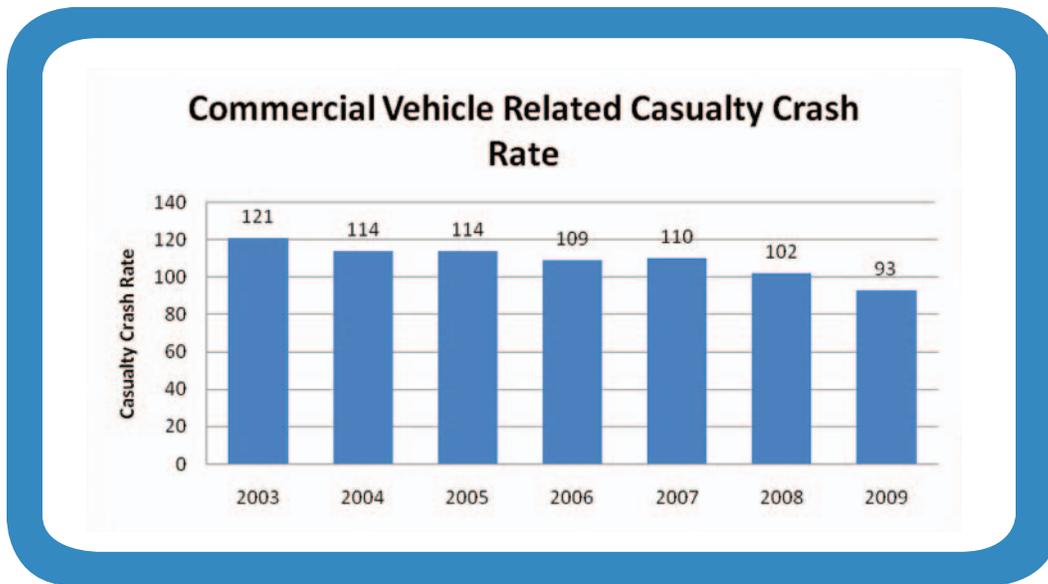
2009 intersection safety tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of intersection safety enforcement.</p>	<p>In 2009, a 5% increase, compared to 2008, in the number of survey respondents who feel they are likely to get caught if they engage in unsafe intersection behaviours.</p>	<p>✓ In December 2009 47% of survey respondents stated that they are likely to get caught if they run a red light at an intersection, an increase from 31% in December 2008.</p>
<p><b>Impaired Driving Awareness Campaign</b></p> <p>An advertising campaign linked to accompanying police enforcement, with a focus on failing to yield, ignoring traffic control devices, and following too closely.</p>	<p>In 2009, a 5% increase, compared to 2008, in the number of survey respondents who recall the intersection safety campaign slogan.</p>	<p>✓ 48% of survey respondents have aided recall of the new intersection slogan "When you slow down, you see more of the road."</p> <p><i>(Comment: This was a new slogan in 2009. Since previous slogans were discontinued, their recall was not measured.)</i></p>
<p><b>Intersection Safety Camera upgrade</b></p> <p>Upgrade and expand the ISC tactic.</p>	<p>All 2009 deliverables in the ISC upgrade project plan are completed on time and on budget.</p>	<p>✗ To meet the objective of delivering a high-quality enforcement tool, the project plan for upgrading ISCs was amended to incorporate more time to conclude negotiations with the primary vendor and to deal with the emergence of a new software solution that better meets the program's needs. Both will improve the quality of the upgrade, but increased the project complexity, extended timelines, and increased costs.</p>

### Commercial vehicle safety

The definition of commercial vehicles includes a wide range of vehicle types, ranging from passenger vehicles such as taxis, to semi-trailers and combination vehicles. Buses, emergency vehicles, light and heavy trucks, panel vans, and pull trailers are all included.

In 2008 and 2009, Road Safety undertook a review of this very complex issue, examining the research evidence, analyzing police and claims data, and seeking input from other agencies. Because each agency defines commercial vehicles differently, and because 'commercial vehicles' includes such a wide variety of vehicle types and driver characteristics, the analysis was more complex than expected. Development and approval of a strategy that could be undertaken in 2009 was thus delayed.



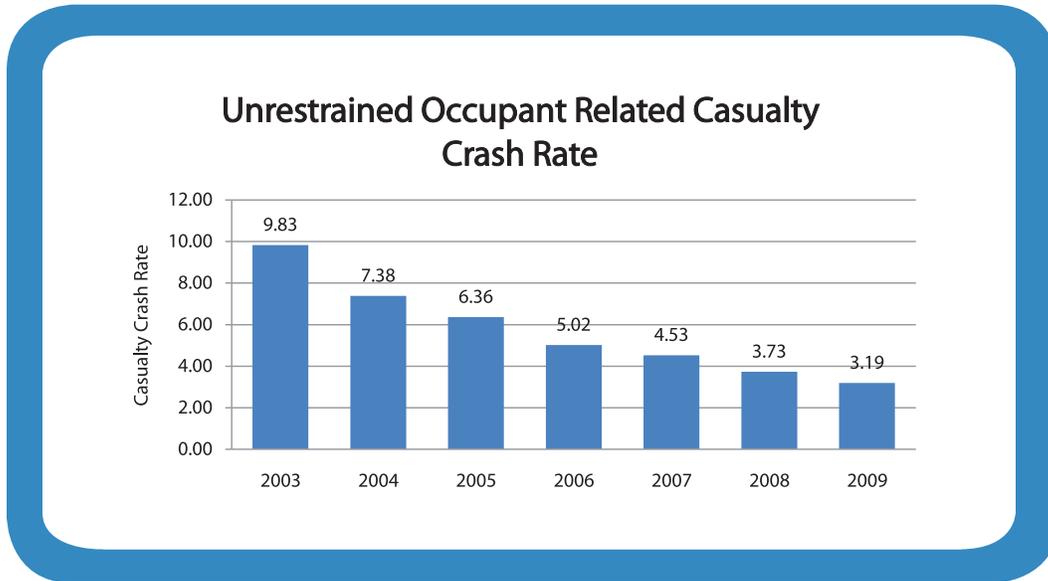
The above **casualty crash rate** is the number of commercial vehicle related casualty crashes reported to ICBC per 10,000 commercial vehicle policy years earned.

#### Program strategic objectives

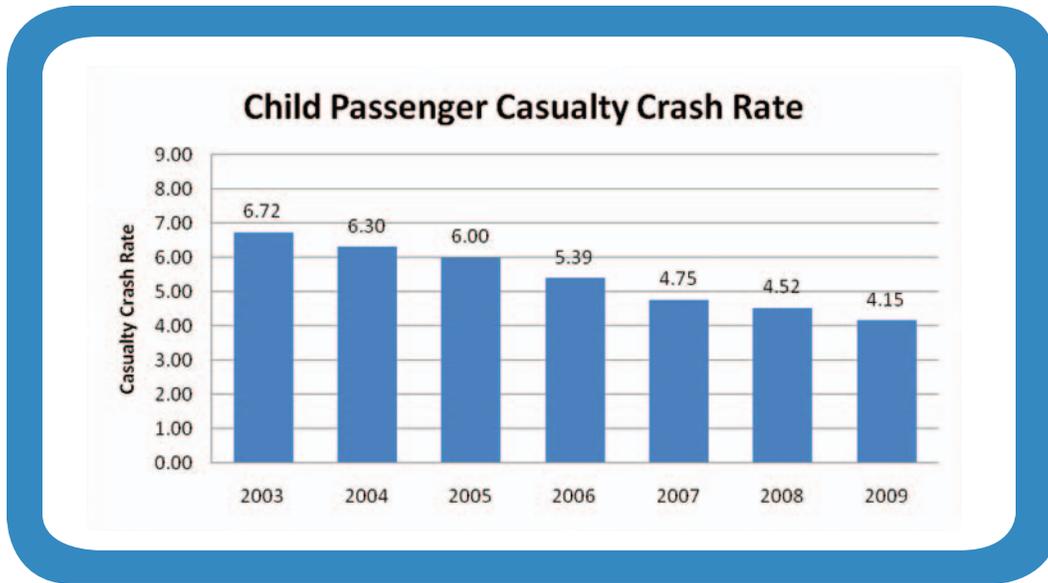
Objective	Result
Develop commercial vehicle crash prevention strategies, tactics, and objectives.	<ul style="list-style-type: none"> <li>Background research and development of partnerships continued in 2009. Due to the issue's complexity and competing priorities, work to define program direction was deferred to 2010.</li> </ul>

## Occupant restraints

Enforcement of seatbelt use continues to be a priority for police since it impacts injuries during vehicle collisions. As the seatbelt wearing rate in B.C. has increased, the rate of crashes involving injuries and fatalities has declined. To assist in maintaining the wearing rate, ICBC continues to support police enforcement campaigns with moderate levels of advertising. ICBC also supports tactics to promote improved child passenger safety, especially in Aboriginal and new immigrant communities where use of child restraints is lower.



The above **casualty crash rate** is the number of casualty crashes where one or more participants was not wearing a restraint, reported to police per 10,000 vehicle policy years earned.



The **child passenger casualty crash rate** is the number of casualty crashes involving child passengers (0 to 12) reported to ICBC per 10,000 vehicle policy years earned.

**Program strategic objectives**

Objective	Result
Maintain the provincial seatbelt wearing rate at 2006 levels, for the years 2008 to 2010.	<ul style="list-style-type: none"> <li>✓ Although ICBC does not directly measure seatbelt wearing, Transport Canada conducts observation surveys on an annual basis. In 2009, Transport Canada conducted a survey for rural communities only. The results showed that the wearing rate was 91.6%, an increase from 87.5% in 2006. A survey of urban seatbelt use will be conducted by Transport Canada in 2010; therefore this measure will be completed in 2010.</li> </ul>
Maintain the crash rate of casualty crashes involving child passengers at 2006 levels, for the years 2008 to 2010.	<ul style="list-style-type: none"> <li>✓ Strategic objective on track. The 2009 casualty crash rate (4.15) was 23.1% lower than the 2006 level (5.39).</li> </ul>

## Occupant restraint program activities: 2009 highlights

### Booster seat education/awareness

Road Safety renewed its long-standing partnership with the BCAA Traffic Safety Foundation that delivers education about child passenger safety throughout the province. The new agreement includes important program changes, especially a stronger focus on new immigrant communities.



keeping your  
children **safe**

building trust. driving confidence.

2009 occupant restraint tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of seatbelt enforcement.</p>	<p>In 2009, 38% of survey respondents feel they are likely to get caught if they drive unrestrained, maintaining the 2007 results.</p>	<p>✓ In 2009, 40% of survey respondents felt they are likely to get caught if they do not wear a seatbelt.</p>
<p><b>Occupant Restraint Awareness Campaign</b></p> <p>Radio announcements to increase awareness of police enforcement of seatbelts and child seats.</p> <p>Provide occupant restraint information through fact sheets, icbc.com, and the Aboriginal Toolkit to educate drivers and high-risk groups.</p>	<p>In 2009, 38% of survey respondents can recall hearing seatbelt messages, maintaining the November 2007 awareness level.</p>	<p>✘ Due to an oversight in survey design, this question was not asked in 2009. Survey question to be asked in 2010.</p>
<p><b>Child passenger safety</b></p> <p>Partnership with BCAA's Traffic Safety Foundation to provide child passenger safety information through a toll-free information line, child seat clinics, information sessions, and child restraint training to police, health and volunteers.</p>	<p>a) 60 child seat clinics and 14,000 calls to the information line will be completed in 2009.</p>	<p>✓ 187 child seat clinics and 12,199 calls to the information line were conducted in 2009.</p> <p><i>The decrease in the number of calls to the information line reflects the phasing out of child seat check; people are no longer calling in for appointments. The decrease also reflects the fact that booster seat legislation has now been in effect for over one year.</i></p>
<p>Grades K to 7 road safety teaching resources support learning outcomes established by the B.C. Ministry of Education.</p>	<p>b) 410 <i>Passport to Education</i> (K to 3) material orders, and 310 <i>Going Places</i> (grades 4 to 7) material orders in 2009, a maintenance of 2008 levels.</p>	<p>✓ 649 <i>Passport to Road Safety</i> (K to 3) material orders and 494 <i>Going Places</i> (grades 4 to 7) material orders were fulfilled in 2009.</p>

## Roads

### Road improvement program

During the past 20 years since the start of ICBC's Road Improvement Program, a notable growth of B.C.'s towns and cities, as well as the mobility patterns of its citizens, has brought to light the pressing need for a systemic approach to road engineering.

ICBC's Road Improvement Program works in partnership with local and provincial authorities including municipalities, Ministry of Transportation, First Nations, B.C. Ferries, B.C. Parks, Public Works Canada to make roads safer by addressing the causes and impacts of crashes. Road Safety participates in engineering studies to assess local areas of concern and investigate causal factors, as well as assists communities to identify and prioritize road safety issues which will reduce crashes, deaths, injuries and claims costs.

Proposed road improvement projects are assessed to ensure they make the roads safer for all users. In December 2009, an independent evaluation of ICBC-funded road improvements found that, measured over a 2-year period after a project's completion, ICBC saves \$5.6 in claims costs for every dollar invested. Road users will continue to benefit from these road improvements for many years.

### Program strategic objectives

Objective	Result
Achieve an average 50% internal rate of return on road improvement projects, in an evaluation to be conducted in 2009.	 The 2009 Road Improvement Program Evaluation found that there was a 290% internal rate of return for 2004 to 2006 projects. This represents a 5.6:1 return on investment (ROI), compared to the target 3:1 ROI.

### Road improvement program activities: 2009 highlights



#### Engineering retrofits

ICBC's Road Improvement program was instrumental in introducing modern roundabouts to the province. Modern roundabouts not only reduce crashes, they reduce the severity of crashes and injuries when collisions do occur. In 2009, Road Safety partnered to construct three more roundabouts at high-crash intersections. Province-wide, more than 240 other road improvement projects were completed.

#### Road safety audits

ICBC's reputation as a leader in road safety has led to a continued demand for consultation on how to improve the safety of existing roads. Road safety audits were conducted at 18 sites across the province, and 82% of the recommendations were implemented by the road authorities.

2009 road improvement tactics

Tactic name and description	Objective	Results
<p><b>Engineering retrofits</b></p> <p>Share the costs of road improvements to reduce crashes at crash-prone locations.</p>	<p>50% Internal Rate of Return achieved for retrofit projects as measured in 2009.</p>	<p>✓ The internal rate of return for road improvements was 290%. In 2009, 245 improvement projects were implemented and 11 studies were conducted. The 2009 Road Improvement Program Evaluation found that there was a 5.6:1 ROI for 2004 to 2006 projects. The 2004 to 2006 criterion was 3:1 ROI.</p>
<p><b>Road safety audits</b></p> <p>Review planned infrastructure projects to ensure safety is given priority during design/ construction.</p>	<p>Conduct 15 safety audits in 2009.</p>	<p>✓ 18 safety audits were conducted in 2009, 82% of recommendations implemented.</p>
<p><b>Innovation fund</b></p> <p>Facilitate the assessment of new road improvement technology.</p>	<p>Develop plan by Q1, 2009 and implement tactics in accordance with plan.</p>	<p>✓ Plan developed and implemented in Q1, 2009.</p>
<p><b>Program evaluation</b></p> <p>Evaluate the crash prevention impact of the Road Improvement Program.</p>	<p>Complete program evaluation by Q4, 2009.</p>	<p>✓ Review completed in Q4, 2009 and report finalized in June 2010. Analysis showed an 11.9% decrease in property damage only incidents and a 19.6% decrease in severe incidents (those involving fatalities and injuries) for all treatment sites (102 sites).</p>

## Vehicles

### Safer vehicles

The last two decades have seen a vast improvement to vehicle safety, from specially designed head restraints, integrated seatbelts, airbags, electronic stability control, high intensity discharge headlights, to energy absorbing side structures. ICBC has identified a need to educate B.C. drivers about the availability and correct use of these devices, and is continuing to take an active role in promoting available passenger protection and crash avoidance features. Informed and aware drivers will use their vehicles' safety features most effectively, which will in turn reduce crashes and the severity of injuries.

### Program strategic objectives

Objective	Result
Develop specific targets for vehicle safety improvement in 2009.	✔ A target for public awareness of vehicle safety features was established (see 2009 safer vehicles tactics).

### Safer vehicles program activities: 2009 highlights



#### Head restraints checks

2009 was the 10 year anniversary of the Driver Examiner Head Restraint program. Road Safety visited Driver Licensing Centres to celebrate the success of the program and to show appreciation of the efforts the Driver Licensing staff has provided.

## 2009 safer vehicles tactics

Tactic name and description	Objective	Results
<p><b>Targeted Awareness Campaign</b></p> <p>Paid and earned media to inform customers of the benefits of vehicle safety features.</p>	<p>In 2009, 27% of respondents will identify "safety" as one of their top three considerations when deciding to buy a vehicle, maintaining the 2008 results.</p>	<p>✓ 46% of survey respondents mentioned "safety" as one of their top three considerations when deciding which vehicles to buy. "Safety" was the second most frequently mentioned consideration; "fuel efficiency/consumption" was mentioned the most, by 64% of respondents.</p>
<p><b>Safer vehicle information</b></p> <p>Consumer information on the icbc.com supporting program.</p>	<p>Develop information strategy by Q3, 2009.</p>	<p>✓ Safer Vehicle Program communication plan developed and to be implemented in 2010.</p>
<p><b>Driver Examiner Head Restraint Program</b></p> <p>Provision of head restraint safety education and correct adjustment of driver and passenger head restraint during Class 5 and 7 road tests.</p>	<p>Head restraint education provided on all Class 5 and 7 road tests across the province, as measured in annual completion reports.</p>	<p>✓ Head restraints checked on all Class 5 and 7 road tests. In total, 190,000 head restraints checked, with 13.7% adjusted for improved safety.</p>
<p><b>Develop Canadian Vehicle Safety Rating Program</b></p> <p>Rating program that allows consumers to obtain information on and compare the crashworthiness and crash avoidance features of vehicles available in Canada.</p>	<p>Work with partners and stakeholders to develop a Canadian Vehicle Safety Program by Q3, 2009.</p>	<p>✖ Canadian Vehicle Safety Program reviewed and an alternative strategy to inform consumers will be developed in 2010.</p>

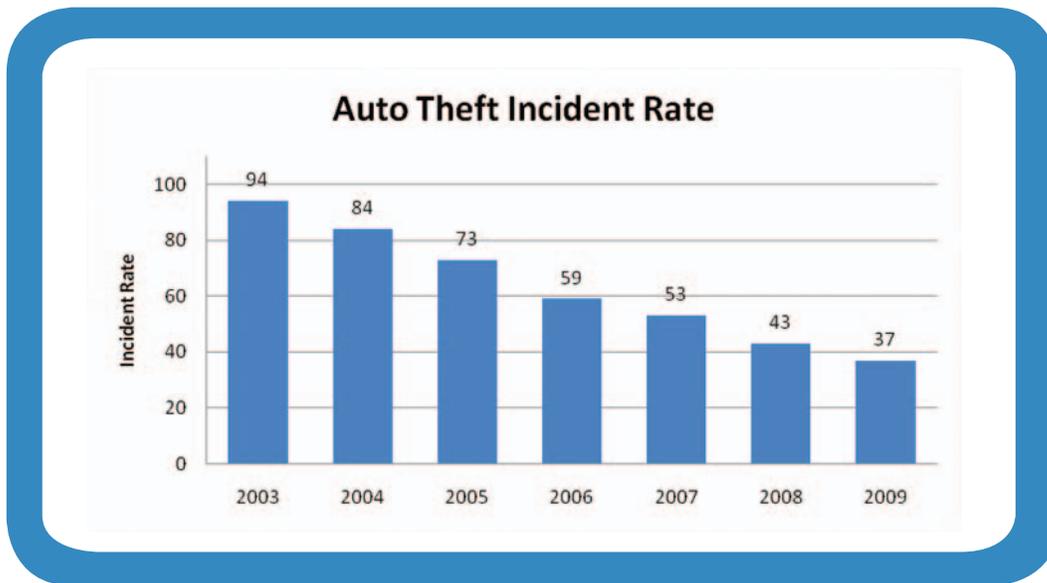
## 2009 road safety annual report

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Tactic name and description	Objective	Results
<p><b>Develop tools to assist fleet managers</b></p> <p>Develop a plan to inform fleet managers of available safety features and the importance of such features in preventing crash and serious injury.</p>	<p>Plan developed by Q3, 2009.</p>	<p>☐ Piloted with ICBC's fleet in 2010 as per business plan.</p>
<p><b>Research</b></p> <p>Maintain and establish partnership to promote and support vehicle safety research.</p>	<p>Develop partnership strategy by Q3, 2009.</p>	<p>☐ Partnership database developed with Material Damage Services.</p>

## Auto crime

A consistent auto crime problem in B.C. over the past decade, has led to the development of aggressive policing strategies supported with public education. The success of these efforts is apparent in the reduction of the auto theft rate by 46% in the past six years. To further this substantial reduction, ICBC supports innovative auto crime reduction strategies through the Bait Car program, collaborates with police through the Integrated Municipal Provincial Auto Crime Team (IMPACT), implements public education about various methods to prevent auto crime, and with the use of media, promotes enforcement efforts throughout B.C.



**Auto Theft Incident Rate** represents the number of auto theft incidents reported to ICBC per 10,000 vehicle policy years earned.

*Note: In ICBC's October 17, 2008 Filing, page 30, ICBC inadvertently labelled the table "Auto Theft Incident Rate". The label in the October 17, 2008 Filing should have read "Auto Crime Incident Rate", as the table provides rates for all types of auto crime, including theft, break-ins, and vandalism. ICBC's tactics focus on auto theft reduction; therefore, this 2009 Road Safety Annual Report includes rates only for auto theft.*

### Program strategic objectives

Objective	Result
Reduce the auto theft incident rate by 5% in 2009 compared to 2007.	<span style="color: green;">✔</span> From 2007 to 2009, the auto theft incident rate declined 30.2%. The average annual rate of decline for that period was 16.4%

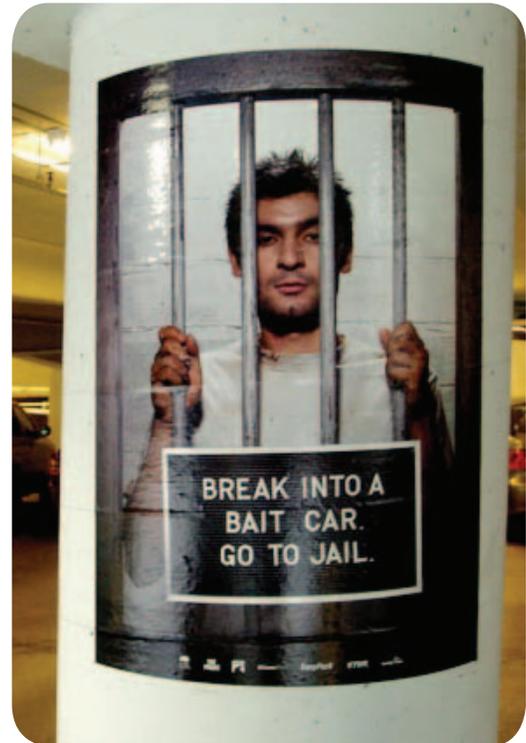
### **Auto crime program activities: 2009 highlights**

#### **Auto Crime Enforcement Campaign**

ICBC partnered with IMPACT on a Provincial Auto Crime media event at Emergency Communications for Southwest BC Inc. (E-COMM) and the announcement that Bait cars have live video to the police. The increased police focus on auto crime during the campaign resulted in the arrests of nine of the 10 most wanted car thieves in B.C. and front page coverage of the auto crime media event with IMPACT.

#### **Auto Crime Communications (Signage, Stolen Lives DVD)**

Auto crime signage was provided throughout B.C. to assist property managers, parking lot operators, strata councils, municipal governments, security and police address auto crime issues in the community. As an educational tool that is part of an overall auto crime reduction strategy, 174 Stolen Lives DVDs and guides were distributed to schools and police throughout B.C. in 2009.



#### **Auto Crime Immobilization Strategy**

A targeted direct mail campaign was undertaken for owners of Ford F-series 350 and 250 trucks, the number one stolen vehicle in B.C. The second time this offer was made in the Lower Mainland area achieved a very good result by direct mail standards of 25.6% participation. Data from the initial pilot indicates that there will be a better than average decline in the theft rate for policyholders who make use of this offer.

#### **Auto Crime Prevention Tactic (Dedicated Bike Patrol Programs, Surrey Mobile Patrol)**

ICBC co-funded dedicated bike patrol programs in Vancouver, North Road of Burnaby and Coquitlam, and Chilliwack with local businesses and Business Improvement Associations (BIAs). These highly visible patrol programs work closely with the local BIA's and the police. The areas patrolled have received immediate attention to any auto crime issues and have significantly contributed to the decline of auto crime in these areas.

2009 auto crime tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b> Funding for enhanced levels of auto crime enforcement.</p>	<p>59% of survey respondents are aware of efforts to catch car thieves or prevent thefts through enforcement.</p>	<p>✓ 59% of survey respondents recall recent messaging about efforts to catch car thieves or prevent the theft of vehicles.</p>
<p><b>Auto Crime Awareness Campaign</b> A campaign to raise awareness of enforcement (including Bait Cars) and to encourage motorists to protect their vehicles.</p>	<p>79% of survey respondents have aided recall of Bait Car tagline "Steal a Bait Car, Go to Jail," a maintenance of the 2007 level.</p>	<p>✗ 77% of survey respondents have aided recall of Bait Car tagline "Steal a Bait Car. Go to Jail."</p>
<p>Information for youth on icbc.com and in schools dissuade youth from getting involved in auto crime.</p>		<p>✓ In 2009, 174 copies of the Stolen Lives DVD were requested and sent, primarily to educational institutions.</p>
<p><b>High-risk Vehicle Immobilization</b> Initiative that targets high-risk vehicles (target is Ford F-Series vehicles) to encourage motorists to install engine immobilizers.</p>	<p>Review 2008 results by Q1, 2009 and establish targets for 2009.</p>	<p>✓ Strategy reviewed and found that there was a 1.14:1 Return on investment in its first year, and projecting a 5.7:1 Return on investment over the next five years.</p> <p>1,500 owners of high-risk vehicles received an offer for immobilization.</p>

Tactic name and description	Objective	Results
<p><b>High-risk Auto Crime Partnerships</b></p> <p>Stolen Auto Recovery community volunteers check licence plates to recover stolen vehicles and stolen plates.</p>	<p>All funding tactics meet the measurement criteria specified in the partnership funding agreements. Criteria include measurability and the potential to minimize the impact and severity of auto crime.</p>	<p>✓ All funding initiatives met specified criteria, producing the following results:</p> <ul style="list-style-type: none"> <li>• 2,666,215 vehicles checked and 614 stolen vehicles recovered</li> <li>• 8,043 volunteers participated in programs</li> <li>• 90,524 security staff patrol hours logged</li> <li>• 123,986 vehicles audited with a Lock Out Auto Crime Prevention Notice</li> </ul>
<p>Private security staff patrols high-crime locations where volunteer activity is not sufficient. Funding depends on cost-sharing with municipalities and businesses.</p>	<p>Maintain four targeted partnerships in 2009 to provide visible security in high-risk locations.</p>	<p>✓ Four partnerships maintained with Business Improvement Associations in Vancouver, Burnaby/Coquitlam, Chilliwack, and Surrey.</p>

## 2009 Investment Summary

<b>Road Safety Department Expenses (\$000's)</b>		<b>2009 Plan</b>	<b>2009 Actual</b>
<b>Drivers</b>			
Impaired Driving	Enhanced Enforcement	6,439	6,436
	Impaired Driving Awareness Campaign	1,166	841
	Community Partnerships	88	72
	<b>Subtotal Impaired Driving</b>	<b>7,693</b>	<b>7,349</b>
Speeding	Enhanced Enforcement	9,656	9,686
	Speed Awareness Campaign	631	950
	Roadside Speed Readerboards	165	177
	Youth Outreach	280	235
	Research	35	22
<b>Subtotal Speeding</b>	<b>10,767</b>	<b>11,070</b>	
Intersection Safety	Enhanced Enforcement	1,095	1,071
	Intersection Awareness Campaign	335	554
	<b>Subtotal Intersection Safety</b>	<b>1,430</b>	<b>1,625</b>
Comm. Veh. Safety	Strategy Development	40	14
Occupant Restraints	Enhanced Enforcement	5,273	5,271
	Child Passenger Safety	198	188
	<b>Subtotal Occupant Restraints</b>	<b>5,471</b>	<b>5,459</b>
<b>SUBTOTAL DRIVERS</b>		<b>25,401</b>	<b>25,517</b>
<b>Roads</b>			
Road Improvements	Engineering Retrofits	8,470	8,645
	<b>Subtotal Road Improvements</b>	<b>8,470</b>	<b>8,645</b>
<b>SUBTOTAL ROADS</b>		<b>8,470</b>	<b>8,645</b>

## 2009 road safety annual report

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### Vehicles

Safer Vehicles	Strategy Development	150	0
	Safer Vehicle Programs	0	14
	<b>Subtotal Safer Vehicles</b>	<b>150</b>	<b>14</b>
Auto Crime	Enhanced Enforcement	2,000	2,000
	Auto Crime Awareness Campaign	182	162
	High-Risk Vehicle Immobilization	400	136
	High-Risk Auto Crime Partnerships	454	319
	<b>Subtotal Auto Crime</b>	<b>3,036</b>	<b>2,617</b>
<b>SUBTOTAL VEHICLES</b>		<b>3,186</b>	<b>2,631</b>
<b>TOTAL DIRECT EXPENSES</b>		<b>37,057</b>	<b>36,793</b>
	Research and Measurement Direct Expenses	200	144
	Compensation	4,261	4,224
	General Expenses	1,505	1,419
<b>TOTAL ROAD SAFETY EXPENSES</b>		<b>43,023</b>	<b>42,580</b>

Note: The investment summary does not include the investment for the Intersection Safety Camera Upgrade tactic, which is being funded from the Corporate Project Fund. The Investment Summary also does not include the relocation costs for the Integrated Traffic Camera Unit, which has been deducted from the enforcement funding remitted to the Province.

### Variance explanation:

- Total actual expenses were \$443,000 less than the 2009 planned budget. The variance is primarily due to an under spend in general expenses and total direct expenses.
- The variance in total direct expenses is due to Vehicles being \$555,000 lower than plan offset by Drivers being \$116,000 and Roads \$175,000 higher than plan. The investment in Vehicles is lower than plan due to a reduction in expenditure for Auto Crime tactics.
- The Impaired Driving awareness campaign variance is \$325,000 under plan due to changes in the 2009 campaign direction.
- The Speed awareness campaign variance is \$319,000 over plan and the Intersection Safety awareness campaign variance is \$219,000 over plan due to the development of new creative in support of an integrated campaign approach.
- The High-risk Vehicle Immobilization variance is \$264,000 under plan due to a lower than expected response rate to a direct mail offer sent to owners of high-risk vehicles.



## **ATTACHMENT B-3**

# **BRITISH COLUMBIA ENHANCED ROAD SAFETY ENFORCEMENT 2008 ANNUAL REPORT (MINISTRY OF PUBLIC SAFETY AND SOLICITOR GENERAL)**



The Best Place on Earth

## **British Columbia Enhanced Road Safety Enforcement Initiative 2008 Annual Report**



**Ministry of Public Safety and Solicitor General  
Police Services Division  
Road Safety Unit**

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## Message from the Assistant Deputy Minister



I am pleased to present the Road Safety Unit, Police Services Division *2008 Enhanced Road Safety Enforcement Annual Report*. This report is prepared for the Solicitor General under the terms of the Traffic and Road Safety Law Enforcement Funding Memorandum of Understanding (MOU) between the Insurance Corporation of British Columbia (ICBC) and the Ministry of Public Safety and Solicitor General (MPSSG).

Our goal is to make BC's roads the safest in Canada by reducing serious injuries and fatalities.

The integrated road safety model was introduced into BC in 2003. In the intervening five years, the significant decline in serious injuries and fatalities due to driver behaviour is proof positive that the model is working.

The integrated road safety enforcement model first establishes its priorities then employs data driven, evidence-based strategies to target the most dangerous driving behaviours.

The 2008 provincial enhanced traffic safety priorities include:

- targeting impaired drivers
- reducing incidents of aggressive driving
- raising provincial occupant restraint rates
- improving intersection safety

These priorities are identified through research and analysis, and are supported by the police, road safety partners and the public.

Along with reducing the carnage on BC's roads, there are also continuing reductions in auto theft through our Integrated Municipal Provincial Auto Crime Team and Bait Car initiatives. Other highlights for 2008 include the expansion of the Automated Licence Plate Recognition (ALPR) pilot program as well as the purchase of a second road safety helicopter.

I would like to take this opportunity to thank all the partners for their ongoing commitment and dedication to striving towards important road safety goals and, delivering on BC's vision for safer roads and communities.

*Kevin Begg*  
*Assistant Deputy Minister*  
*Ministry of Public Safety & Solicitor General*  
*August 2009*

## 2008 Highlights

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**Provincial Fatalities and Serious Injuries are down** – there was a 15 per cent reduction in all police-reported motor vehicle fatalities in BC and a 12 per cent reduction in serious motor vehicle injuries in 2008 when compared to 2007.<sup>1</sup>

### Enhanced Enforcement Results

- Enhanced enforcement issued 25% of the total violations issued in BC for 2008 compared to 24% for the previous year.
- Violation tickets issued for impaired driving and intersection infractions increased. Speed violations were the largest enforcement category in 2008 with 42% of all enhanced enforcement violation output.
- Auto theft in BC decreased by 16% from 2007 to 2008.

**Intersection Safety Camera Program Upgrade** - An upgrade of the Intersection Safety Camera is being carried out in partnership with the Insurance Corporation of BC (ICBC), RCMP, and the Office of the Superintendent of Motor Vehicles (OSMV). A lead vendor was chosen and throughout 2008 work progressed on site selection, operational and administrative procedures and technological requirements. The program will expand from 30 'wet film' cameras to 140 digital cameras located at high-crash intersections throughout BC.

**In-Car Video Cameras** - The Office of the Superintendent of Motor Vehicles, in consultation with the Road Safety Unit, provided grants totalling \$198,000 to municipal police departments in Abbotsford, Central Saanich, Delta, New Westminster, Port Moody, Nelson, Oak Bay, Saanich, Vancouver, Victoria and West Vancouver. The grants covered purchase and installation of 33 camera units at \$6,000 each.

**Air Two** - A second traffic safety helicopter was purchased in 2008 with funding from ICBC in partnership with the Ministry of Public Safety and Solicitor General and the RCMP. Air Two will supplement the work of Air One by providing support to lower mainland police ground units. The traffic safety helicopters significantly reduce the need for police pursuits and play a major role in apprehending dangerous drivers and other criminals.

**Drug Impairment** - on July 2, 2008, new federal legislation was introduced allowing police to test drivers for drug impairment and issue *Criminal Code* charges.

**Child Passenger Safety** - on July 1, 2008 the provincial government introduced changes to child passenger safety regulations that made booster seats mandatory. Failure to comply with the booster seat requirement carries a \$109 fine and failure to pay the fine is grounds to refuse to issue both a driver's licence and insurance.

**Premier's Award** - Police Services Divisions' Road Safety Unit won prestigious silver in the Partnership category at the 2008/2009 Premier's Regional Awards for their work establishing and supporting Integrated Road Safety Units.

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<sup>1</sup> Motor vehicle casualty statistics are current as of March 31, 2009.

\*Unless otherwise footnoted, numbers used in the Annual Report are current as of May 31, 2009.

## Enhanced Road Safety Enforcement Program

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### Strategic Objectives

The enhanced traffic enforcement program was established through the *Traffic and Road Safety Law Enforcement Memorandum of Understanding* (MOU) between the Ministry of Public Safety and Solicitor General and the Insurance Corporation of British Columbia (ICBC).

The Road Safety Unit (RSU), Police Services Division manages the program on behalf of government. The RSU provides policy direction, financial oversight, and data analysis, engages in road safety research, and provides secretariat support to the committees that advise on various aspects of the enhanced enforcement portfolio. The RSU also works to increase public awareness of road safety issues, assesses progress against performance indicators, conducts program evaluations and supports the delivery of advanced traffic training to independent police departments.

The budget for the 2008 calendar year was \$18,244,772 as calculated on one per cent of ICBC basic insurance premiums earned two years prior.

### Program Mandate

The Enhanced Traffic Enforcement Program uses data-driven, evidence-led enforcement strategies and dedicated human and financial resources to help reduce crashes that cause serious injury and death, and to prevent auto theft.

### Program Goals

The Enhanced Traffic Enforcement Program has four specific program outcomes:

- reduce traffic fatalities
- reduce serious injuries
- reduce auto theft
- increase public awareness of traffic enforcement

### Program Priorities

The road safety priorities for the enhanced traffic enforcement program are established through analysis of enforcement data and fatal and serious injury crashes. The current enforcement priorities, aimed at reducing fatalities and serious injury crashes, include:

- impaired driving
- aggressive driving (includes speed)
- seatbelts
- intersections

## Road Safety Outcomes

### Fatality and Injury Reduction<sup>2</sup>

The primary goal of the enhanced enforcement program is to reduce the number of motor vehicle fatalities and serious injuries in the Province.

Total Number Provincial Fatalities and Injuries (TAS)			
	2007	2008	% change
Fatalities	410	350	-14.6%
Serious Injuries	2,327	2,058	-11.6%
Injuries*	26,029	21,833	-16.1%

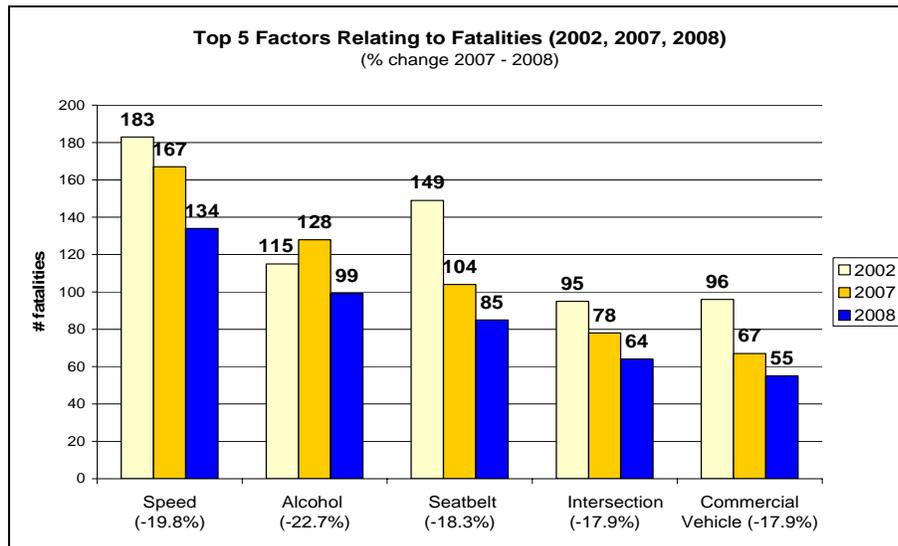
\*Injuries' represents all injuries including 'serious injuries'

- In BC, at of the end of 2008 there were 60 fewer fatalities and 4,196 fewer injuries than the end of the previous year.

Pre/Post MOU Fatalities and Injuries (2002-2008)							
	Pre-MOU		Development MOU		Ongoing MOU		
	2002	2003	2004	2005	2006	2007	2008
Fatalities	455	451	440	453	402	410	350
Injuries*	29,381	30,817	29,203	28,762	27,623	26,029	21,833

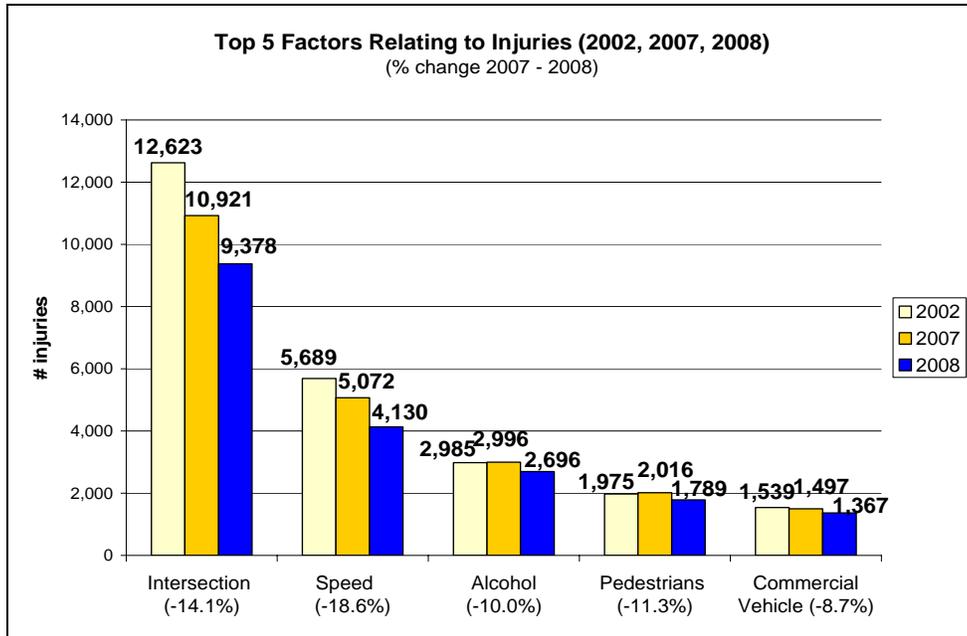
\*Injuries' represents all injuries including 'serious injuries'

- Motor vehicle fatalities and injuries have decreased since the development and implementation of the MOU.



- All factors relating to fatalities decreased in 2008.
- See Appendix A for a graphical representation of factors relating to fatalities (Figure 1: Provincial Fatalities).

<sup>2</sup> Motor vehicle casualty statistics are current as of March 31, 2009 and are subject to change.



- All factors relating to injuries decreased in 2008, with the exception of motorcycles which increased by 4%.
- See Appendix A for a graphical representation of the factors relating to injuries (Figure 2: Provincial Injuries).



*“We have made significant investments in traffic policing in this province, and we’re seeing the results of that investment. Despite increases in population and more drivers and cars on our roads, traffic fatalities and injuries from preventable crashes are coming down. We want to have the safest roads in Canada, and enhanced traffic enforcement is playing a significant role in helping BC achieve that goal.”*

*Assistant Deputy Minister Kevin Begg*

### Impaired Driving<sup>3</sup>

Enhanced enforcement of impaired driving violations and charges has increased from 2007 to 2008; at the same time impaired driving related motor vehicle fatalities and serious injuries decreased.

<b>Enhanced Enforcement of Impaired Driving*</b>			
	<b>2007</b>	<b>2008</b>	<b>% change</b>
CC impaired charges	1,023	1,164	+13.8%
24-hour prohibitions	3,494	3,660	+4.8%
ADPs	517	746	+44.3%
<b>Total impaired driving violations</b>	<b>5,034</b>	<b>5,570</b>	<b>+10.6%</b>

\* Impaired driving includes alcohol and drugs

<b>Total Enhanced Enforcement of Impaired Driving Related Violations* by Region</b>			
	<b>2007</b>	<b>2008</b>	<b>% change</b>
Lower Mainland	1,904	2,100	+10.3%
North	884	981	+11.0%
South East	1,131	1,154	+2.0%
Vancouver Island	1,115	1,335	+19.7%

\* Impaired driving related violations includes Criminal Code charges, 24-hour prohibitions and Administrative Driving Prohibitions for both alcohol and drugs

<b>Impaired Driving* Related Fatalities and Serious Injuries</b>			
	<b>2007</b>	<b>2008</b>	<b>% change</b>
Fatalities	170	113	-33.5%
Serious Injuries	664	531	-20.0%

\*Impaired driving includes alcohol and drugs

Impaired driving is traditionally associated with alcohol, but in recent years, drug-impaired driving has emerged as an important road safety enforcement issue.

- On July 2, 2008, Bill C-2 came into effect allowing police officers to conduct roadside tests for drug impairment and issue charges. For 2008, there were 25 *Criminal Code* charges and 561 24-hour suspensions issued for drug impairment by enhanced enforcement officers.

Police Services Division co-sponsored the 2008 Roadside Alcohol and Drug Survey conducted by the Canadian Centre on Substance Abuse. Out of 1,533 vehicles stopped, 8.8% tested positive for alcohol, 10.1% tested positive for drugs and overall 16.5% tested positive for alcohol and/or drugs. Alcohol use among drivers has decreased in recent years, however, drug use is increasing and drugs are now more common among night time drivers.

*“The police, ICBC, and the provincial government have been working hard to combat drinking and driving over the years. While we’ve helped reduce the number of fatalities, impaired driving is still the number one criminal cause of death in Canada.”*

*Deputy Chief Constable Mike Chadwick, Saanich PD and  
Chair of the CRD IRSU Joint Management Team*

<sup>3</sup> Impaired driving related statistics settle over time; numbers are current as of March 31, 2009.

## Auto Theft

Another important goal of the enhanced enforcement program is reducing the level of auto theft in the province. The Integrated Municipal and Provincial Auto Crime Team (IMPACT), and the Bait Car Program target auto crime in BC.

Auto theft in BC decreased by 16% from 15,900 stolen vehicles in 2007 to 13,400 stolen vehicles in 2008. Over the past five years, auto theft claims have decreased by 47%.

Auto Theft in BC	
	% change (2007-2008)
Lower Mainland	-18%
North and South East	-5%
Vancouver Island	-22%
<b>All BC</b>	<b>-16%</b>

- Auto theft decreased in all regions of BC from 2007 to 2008.

Enhanced Enforcement of Auto Theft			
	2007	2008	% change
<b>IMPACT</b>			
Enforcement Team recoveries	208	238	+14.4%
Enforcement Team arrests	70	60	-14.3%
Bait Car activations*	247	244	-1.2%
Bait Car arrests	60	66	+10.0%

\*An activation occurs when there is a break into a vehicle, theft from a vehicle or theft of a vehicle. In some activations, the video evidence requires viewing to determine if a criminal offence has occurred.

- Enforcement Team recoveries increased from 2007 to 2008 while Enforcement Team arrests decreased.
- Bait Car activations decreased slightly from 2007 to 2008 while Bait Car arrests increased.

## Violations<sup>4</sup>

An important measure of the enhanced enforcement program is the number of violations issued by officers participating in Integrated Road Safety Units (IRSU) and Enhanced Road Safety Enforcement Initiatives (ERSEI).

<b>Total Number Violations Issued by Enhanced Enforcement</b>			
	<b>2007</b>	<b>2008</b>	<b>% change</b>
Total Violations	150,205	142,516	-5.1%

- Enhanced enforcement issued violations decreased by 5% from 150,205 in 2007 to 142,516 in 2008, while all police issued violations in BC decreased by 9%.
- Ticket fine revenue has increased by 4% from 2007 to 2008.

<b>Total Enhanced Enforcement Issued Violations by Priority</b>			
	<b>2007</b>	<b>2008</b>	<b>% change</b>
Speed	59,817	59,315	-0.8%
Seatbelts	38,844	30,314	-22.0%
Intersections	9,589	11,118	+15.9%
Impaired*	5,034	5,570	+10.6%

\*Impaired includes Criminal Code impaired charges, 24-hour prohibitions, and Administrative Driving Prohibitions (for both alcohol and drugs).

- Intersection and impaired related violations issued by enhanced enforcement increased from 2007 to 2008, while speed and seatbelt related violations decreased.

<b>Enhanced Enforcement (EE) vs Total Provincial Enforcement (BC)</b>			
<b>2008</b>	<b>EE</b>	<b>BC</b>	<b>%EE of BC</b>
Speed	59,315	222,988	26.6%
Seatbelts	30,314	73,730	41.1%
Intersections	11,118	59,835	18.6%
<b>Total Violations</b>	<b>142,516</b>	<b>566,764</b>	<b>25.1%</b>

- Enhanced enforcement issued 25% of the total violations issued in BC for 2008. This is up from 24% of BC's enforcement for the previous year.

Roadways are also a major conduit for the transportation of stolen goods, drugs, other contraband, and persons of interest to police. Enhanced traffic enforcement plays a major role in identifying and apprehending people engaged in other forms of illegal activity. Criminal interdictions increased dramatically from 1,173 violations/charges in 2006 to 1,715 in 2007 and levelled off at 1,511 in 2008.

<sup>4</sup> Enhanced enforcement statistics are current as of February 2009.

## Road Safety Vision 2010

Road Safety Vision 2010 (RSV 2010) is a national initiative to help make Canada's roads the safest in the world by providing road safety targets against which to develop new strategies and measure intervention efforts. The enhanced road safety program has adopted RSV 2010 as a guide for provincial road safety targets and enforcement strategies.

RSV 2010 established the following targets to reach by 2010 which call for decreases in the average number of road users killed or seriously injured during the 2008-2010 period (compared to 1996-2001):

<b>BC's Progress Towards Road Safety Vision 2010 Targets in 2008<sup>5</sup></b>	
<b>2010 Target</b>	<b>% change (1996-2001 average vs. 2008)</b>
30% decrease in all fatally and seriously injured road users	-31%
40% decrease in unbelted occupant casualties.	-58%
40% decrease in drinking driving related casualties.	-18%
20% decrease in intersection related casualties.	-35%
20% decrease in speed related casualties.	-26%
20% decrease in commercial vehicles related casualties.	-13%
30% decrease in motorcyclists casualties.	+36%
30% decrease in pedestrians casualties.	-19%
20% decrease in young drivers (16-19 years) related casualties.	-55%

As of 2008, BC has already exceeded the RSV 2010 target of reducing all fatal and serious injury victims by 30%. BC has also exceeded the following sub-targets: unbelted occupant casualties, intersection related casualties, speed related casualties, and young drivers.

<sup>5</sup> RSV 2010 targets are measured using the number of fatal and injured victims. These numbers are current as of March 31, 2009.

## Enhanced Road Safety Program Provincial Cost/Benefit

The Road Safety Program is built on the vision of creating the safest roads in Canada. Along with the significant societal benefit of reductions in serious injuries and fatalities, it is also important that the program demonstrates real value for money both to government and the taxpayer.

The cost of the program to the Province in 2008 was \$18,244,772.

The following chart demonstrates the social cost benefit of the Enhanced Road Safety Program.

Estimated Benefit to the Province of Enhanced Enforcement Program (2008) <sup>6</sup>		
	Estimated Benefit	ROI
Social Cost Savings (includes insurance claims savings) <sup>7</sup>	\$37,400,000	2.05
Federal Contribution <sup>8</sup>	\$5,000,000	0.27
Traffic Fine Revenue <sup>9</sup>	\$15,400,000	0.85
Intersection Safety Camera Ticket Revenue <sup>10</sup>	\$3,200,000	0.18
Auto Crime Cost Savings <sup>11</sup>	\$38,700,000	2.13
<b>Total</b>	<b>\$99,700,000</b>	<b>5.48</b>

- In 2008, the total estimated benefit to the Province of the enhanced enforcement program exceeded the cost of delivery by approximately \$81 million.
- For every dollar spent, \$5.48 was returned to the taxpayers

<sup>6</sup> These calculations represent best estimates with figures available at the time of writing this Report. Improved data collection is underway to better quantify the cost/benefit of the Enhanced Road Safety Program.

<sup>7</sup> Social Cost Savings were estimated using 2003 Ministry of Transportation and Infrastructure (MoTI) MicroBencost figures. Savings per IRSU member were calculated using the 2007 CRD IRSU Evaluation injury and property damage only (PDO) collision reductions (2000-2004 average to 2006). CRD IRSU injury and PDO reductions were multiplied by the MicroBencost injury and PDO figures. Savings per member was calculated by dividing the CRD social cost saving by the average number of CRD IRSU members in 2006. The savings per member value was then multiplied by the number of IRSU officers in BC for 2008. This social cost saving is a conservative estimate which does not take into account fatality reductions.

<sup>8</sup> Federal Contribution to the program is 30% of the total cost of the enhanced enforcement program in 2008.

<sup>9</sup> Traffic Fine Revenue generated by the program was estimated using the total provincial traffic fine revenue and the total number of contraventions issued in BC for 2008 to calculate the average revenue per violation ticket. This average revenue per ticket value was multiplied by the number of violations issued by enhanced enforcement in 2008.

<sup>10</sup> Intersection Safety Camera (ISC) ticket revenue provided by the ISC program.

<sup>11</sup> Auto crime cost savings provided by IMPACT's 2008-2013 Strategic Plan which states a 9,000 reduction in vehicles being stolen annually; this represents an annual savings of \$38.7 million. Auto crime savings are estimated for all auto crime efforts including in addition to IMPACT, Bait Car, Independent Municipal Police Departments and RCMP and other crime reduction efforts.

## Enhanced Enforcement Initiatives

### Integrated Road Safety Unit (IRSU)<sup>12</sup>

The Integrated Road Safety Unit (IRSU) model, comprising both RCMP and Independent Municipal Police Department officers, is designed to encompass centrally-housed, dedicated mobile enforcement units throughout BC. IRSUs are charged with using data-driven enforcement strategies to address the most serious traffic issues in their areas.

IRSU operate in major municipal regions in BC. As a companion initiative in smaller centres, the RCMP oversees its Enhanced Road Safety Enforcement Initiative (ERSEI) by adding members to existing RCMP detachments and funding overtime.

Number of IRSU Authorized Members by Region	
	# Members
Lower Mainland	40
North	20
South East	30
Vancouver Island	20
<b>Total BC</b>	<b>110</b>

Total Number Violations Issued by Enhanced Enforcement			
	2007	2008	% change
IRSU	70,526	77,522	+9.9%
IRSU overtime	16,622	20,070	+20.7%
ERSEI	63,057	44,924	-28.8%
<b>Total Violations</b>	<b>150,205</b>	<b>142,516</b>	<b>-5.1%</b>

- IRSU and IRSU overtime issued violations increased from 2007 to 2008 while ERSEI issued violations decreased.
- Overall total enhanced enforcement issued violations decreased by 5% from 150,205 in 2007 to 142,516 in 2008.

Total Number Enhanced Enforcement Violations Issued by Region			
	2007	2008	% change
Lower Mainland	58,946	62,003	+5.2%
North	25,932	26,912	+3.8%
South East	37,741	30,546	-19.1%
Vancouver Island	27,586	23,054	-16.4%

- Lower Mainland enhanced enforcement units issued the greatest number of violations in 2008, followed by the South East, North, and Vancouver Island enhanced enforcement units.

<sup>12</sup> Enhanced enforcement statistics are current as of February 2009.

Quarterly Enhanced Enforcement Issued Violations (Cumulative)								
	2007				2008			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Speed	15,042	26,978	45,238	59,817	11,407	30,211	50,958	59,315
Seatbelts	6,779	17,050	29,678	38,844	7,846	16,205	25,954	30,314
Intersections	1,775	3,364	5,945	9,589	3,215	6,062	8,823	11,118
Impaired*	797	1,837	3,049	5,034	830	1,877	3,360	5,570
<b>Total Violations</b>	<b>32,598</b>	<b>64,036</b>	<b>109,132</b>	<b>150,205</b>	<b>32,558</b>	<b>73,050</b>	<b>117,366</b>	<b>142,516</b>

\*Impaired includes Criminal Code impaired charges, 24-hour prohibitions, and Administrative Driving Prohibitions (for both alcohol and drugs).

Number of Enhanced Enforcement Violations Issued by type			
	2007	2008	% change
Speed	59,817	59,315	-0.8%
Seatbelt	38,844	30,314	-22.0%
Intersection	9,589	11,118	+15.9%
Impaired Driving			
♦ Alcohol- CC Impaired	992	1,139	+14.8%
♦ Alcohol- 24 hour	2,972	3,099	+4.3%
♦ Alcohol- ADP	517	746	+44.3%
♦ Drugs- CC Impaired	31	25	-19.4%
♦ Drugs- 24 hour	522	561	+7.5%
Commercial Vehicle	4,501	5,523	+22.7%
Criminal Interdiction	1,715	1,511	-11.9%
Vehicle Defect	1,310	910	-30.5%
Other Violations	29,395	28,255	-3.9%

- The top five violations issued for both 2007 and 2008 were: speed, seatbelts, other violations, intersections, and commercial vehicles.
- See Appendix B for a graphical representation of the number of enhanced enforcement violations by type (Figure 3: Violations) and the percentage of violations types by region (Figure 4: Violations by Region).

An evaluation of the FV IRSU is currently being conducted and is expected to be completed in 2009. The CRD IRSU was evaluated in 2006 with positive results.



*“The addition of 110 traffic enforcement officers in Integrated Road Safety Units across the Province in 2004 bolstered all police efforts. We will continue to be strategic in our approach to traffic safety and are confident that we’ll see fewer people dying in crashes in the future.”*  
 Superintendent Norm Gaumont, RCMP “E” Division Traffic Services

## Integrated Municipal Provincial Auto Crime Team (IMPACT)

IMPACT serves all RCMP and Independent Municipal police jurisdictions in British Columbia. However, the majority of the team's work takes place in the Lower Mainland where 70% of all auto theft in BC occurs. IMPACT's 2008 enforcement priorities included targeted enforcement of dangerous and prolific car thieves, Bait Car deployment throughout the province, use of ALPR, and public awareness.

IMPACT is responsible for the provincial Bait Car program and website <http://www.baitcar.com/>. The program has been expanded throughout the province to include the Lower Mainland, Vancouver Island, the Interior, and the North.

<b>IMPACT* statistics</b>			
<b>Bait Car Program</b>	<b>2007</b>	<b>2008</b>	<b>% change</b>
# activations	247	244	-1.2%
# arrests	60	66	+10.0%
<b>Enforcement Team</b>			
# recovered vehicles	208	238	+14.4%
# arrests	70	60	-14.3%

\* Data Source: IMPACT 2008 Report and IMPACT 2007 weekly reports

- The number of Bait Car activations decreased by 1% from 2007 to 2008 while arrests increased by 10%.
- IMPACT's Enforcement Team recovered vehicles increased by 14% from 2007 to 2008 while arrests decreased by 14%.

In 2008:

- IMPACT installed 81 Global Positioning Systems (GPS) tracking devices on stolen vehicles, resulting in 20 GPS tracking device activations and 17 arrests.
- IMPACT worked with Air One on the surveillance of 43 stolen vehicles which resulted in 71 arrests.
- Auto Crime Enforcement Month was centered on the "Stolen Lives" Documentary; 383 copies were distributed to various law enforcement agencies and schools.



*"The statistics show clearly that car thieves are getting the message: steal a bait car, go to jail. With the flexibility and growth of the bait-car program and other approaches, car thieves should know that it's not a matter of if, but when we're going to catch them."*  
 Sgt. Gord Elias, Integrated Municipal Provincial Auto Crime Team

## Intersection Safety Cameras (ISC)

The ISC is an automated enforcement program dedicated to improving intersection safety by identifying and penalizing aggressive drivers who run red lights.

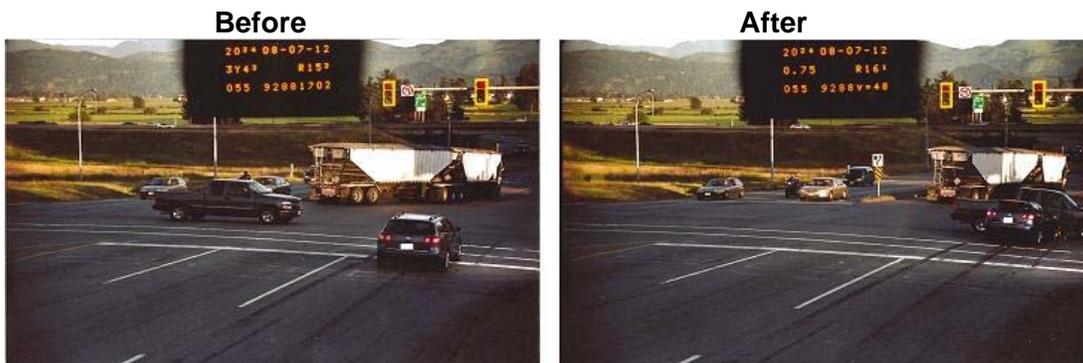
There are currently 120 ISC sites, with 30 operational cameras that are rotated amongst the sites throughout the Province. The original analog camera technology is currently undergoing a digital upgrade and the program will also see an expansion from 120 sites to 140 sites. The new cameras can be turned on remotely at any time and will be deployed during those times when the risk to motorists is greatest. The technology to upgrade the ISC Program in 2009 is currently in 'proof-of-performance' phase.

In 2008, PSD actively participated in:

- The Site Selection Committee alongside partners from ICBC, the RCMP, and Engineering Consultants to collectively develop the criteria and methodology to select sites for the new digital ISC's.
- The Legal and Policy Committee alongside partners from ICBC, the Criminal Justice Branch and the Legal Services Branch which collectively worked on policy, regulatory and legislative requirements within the new ISC legal model and program.

Intersection Safety Camera (ISC) Violations			
	2007	2008	% change
Images received	41,306	41,967	+1.6%
Violations issued	23,107	24,581	+6.4%
Ticket Fine revenue	\$2,856,283	\$3,221,716	+13%

- The current ISC Program generated 24,581 violations tickets in 2008, compared to 23,107 in 2007 (6% increase).
- The 2008 'violation ticket issued' to 'image received' ratio increased by 5% over 2007.



*"Running red lights puts everyone at risk. There are about 270 intersection crashes every day in BC, so everyone needs to use extra caution when approaching intersections."  
Nicolas Jimenez, Director, ICBC Road Safety Program*

## Automated Licence Plate Recognition (ALPR)

ALPR is a camera and computer database system. Cameras mounted in police cars capture licence plate images of vehicles on public roadways. The ALPR system instantly compares plates against a database in the onboard computer containing daily information associated with stolen vehicles and uninsured, unlicensed and prohibited drivers.

The Automated Licence Plate Recognition (ALPR) project was piloted in the Lower Mainland to help police and the Province identify the best applications for this innovative crime fighting technology. It will remain a pilot project until all federal and provincial privacy assessments have been completed and technical issues associated with remote data transfer are fully addressed. The ALPR pilot will be expanded in 2009.

Quarterly ALPR* Recovered Vehicles (Cumulative)								
	2007 (2 <sup>nd</sup> half)				2008			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enforcement Team	n/a	n/a	12	26	18	35	52	65
Surrey Crime Prevention	n/a	n/a	9	20	18	43	73	93
Other Agencies	n/a	n/a	0	0	1	4	4	4
<b>Total</b>	n/a	n/a	<b>21</b>	<b>46</b>	<b>37</b>	<b>82</b>	<b>129</b>	<b>162</b>

\* ALPR used by IMPACT (An additional 7 ALPR units are used in IRSU vehicles).

- IMPACT's ALPR vehicles recovered 162 stolen vehicles in 2008, of which 65 vehicles were recovered by IMPACT's enforcement team, 97 were recovered by Surrey Crime Prevention, Vancouver Police Department and other agencies.
- In 2007 and 2008, ALPR was used to read over 2 million licence plates. Over 47,000 of these plates provided hits from the Stolen Plate/Stolen Vehicle database.

ALPR identifies the following violations and charges:

- ◆ no drivers licence
- ◆ no insurance
- ◆ driving while prohibited–MVA
- ◆ driving while prohibited–CCC
- ◆ notice of driving prohibition
- ◆ 24-hour prohibition issued
- ◆ driving while impaired
- ◆ possession of drugs
- ◆ O/S warrant executed
- ◆ breach of conditions/probation
- ◆ recovered stolen vehicle
- ◆ possession of stolen property
- ◆ other MVA offences
- ◆ other *Criminal Code* offence

## Traffic Safety Helicopter Program

The Traffic Safety Helicopter 'Air One', supports traffic units and operations targeting many enhanced enforcement priorities including: traffic patrol, impaired driving, aggressive driving, stolen vehicles, vehicle pursuits, street racing, and hit and runs. Air One also provides aerial back up and enforcement support for ground units responding to other types of public safety emergencies and motor vehicle incidents. A second traffic safety helicopter 'Air Two' is expected to be launched in 2009.

- In 2008, Air One spent a total of 72,165 minutes in the air (1,203 hours), up 105% from 35,136 minutes (586 hours) the previous year.
- In 2008, Air One was involved in approximately 500 traffic related incidents; 42% of traffic related incidents were dispatched, 41% resulted from monitoring the radio, and 17% were self generated.

<b>Number of Air One Incidents by Type</b>			
	<b>2007</b>	<b>2008</b>	<b>% change</b>
Pursuits controlled by Air One	26	24	-7.7%
Possible street racing incidents attended	8	9	+12.5%
Aggressive driving reports investigated	94	38	-59.6%
Impaired driving reports detected/ investigated	59	78	+32.2%
Stolen Vehicle incidents investigated	227	160	-29.5%
Dangerous driving incidents investigated	18	25	+38.9%
Motor Vehicle Incidents investigated	87	76	-12.6%
Other MOV (traffic, speed, intersection) incidents investigated	20	34	+70.0%
Traffic safety projects	30	4	-86.7%

- The top ten road safety calls for Air One in 2008 were: patrol, suspected person/vehicle, auto theft, impaired driving, hit and run, failure to stop, other moving operation of vehicle (MOV) violations (traffic, speed, intersection), aggressive driving, motor vehicle incident, and pursuit.

<b>Number Arrests Where Air One was Instrumental</b>			
	<b>2007</b>	<b>2008</b>	<b>% change</b>
Pursuits	31	25	-19.4%
Street racing	0	4	0.0%
Aggressive driving	3	2	-33.3%
Impaired driving	13	32	+146.2%
Stolen Vehicle	137	90	-34.3%
Dangerous driving/ without due care	14	13	-7.1%
Motor Vehicle Incidents	21	20	-4.8%
Other MOV (traffic, speed, intersection)	1	4	+300.0%

- Impaired driving and other MOV (traffic, speed, intersection) arrests increased from 2007 to 2008 while other types of arrests decreased.



*According to an RCMP news release, Air 1, the Lower Mainland's traffic safety helicopter is playing an important role in reducing the number of serious injury and fatal crashes on British Columbia Highways. "If you are a high risk driver or demonstrate aggressive behaviors, beware. We will be targeting you, using the Traffic Safety Helicopter and ground officers."  
Cst. Dave Babineau, RCMP "E" Division Traffic Services*

## Public Awareness

To increase public awareness about road safety and traffic enforcement, the Road Safety Unit is involved in two strategic initiatives: ICBC Public Education/Advertising campaigns and Provincial Government Public Awareness activity.

### Public Awareness Campaigns

Under the MOU, ICBC directs \$600,000 of its total annual contribution towards media initiatives that address enhanced enforcement campaigns. These annual enforcement campaigns are reinforced with specialized media strategies focussing on the identified seasonal enforcement themes.

The Road Safety Unit promotes the activities of the enhanced enforcement program through pro-active or earned media strategies, public events and media releases.

<b>Provincial Monthly Media and Enforcement Campaigns* (2008)</b>	
<b>Month</b>	<b>Media/Enforcement Campaign</b>
January	
February	
March	
April	Auto Crime
May	Aggressive Driving and Motorcycles
June	Impaired Driving
July	Impaired Driving
August	
September	Occupant Restraint and Intersections
October	
November	Speed Relative to Conditions
December	Impaired Driving

\*Other regional and seasonal-specific media and enforcement campaigns are carried out throughout the year in BC.

## Public Attitude Survey 2008

In 2008, the Police Services Division commissioned its third annual public opinion survey measuring driver attitudes about road safety in the Province of British Columbia. The survey probed citizen opinions regarding road safety, perceptions of traffic enforcement, support for new enforcement technology, causes of collisions, factors affecting driving behaviour and self-reported behaviours.

The 2008 survey continued to show positive results, with increased support for police traffic enforcement, impaired driving road checks, Intersection Safety Camera and Traffic Safety Helicopter programs. See Appendix C for the full results of the 2008, 2007, and 2006 Public Attitude Surveys.

### Risk factors

- Driving under the influence of alcohol is perceived to be the most serious risk factor in crashes (91% believe it is a risk factor), followed by aggressive driving (87%) and failing to stop at a red light or stop sign (87%).
- Driving while talking in a hands-free cell phone (34% believe it is a risk factor) and while using a car stereo or other electronic (37%) are perceived to be the least serious risk factors.

### Likelihood of being caught

- Drivers believe they are most likely to be caught for driving under the influence of alcohol or drugs than any other driving behaviour (42% and 36% respectively believe it is likely).
- Drivers believe they are least likely to be caught for aggressive driving (17% believe it is likely).

### Road safety strategies

- Road checks for impaired drivers are perceived to be the most effective strategy in encouraging safe driving (80% believe it encourages safe driving), followed by targeted traffic enforcement (71%) and intersection safety cameras (63%).
- Advertising and educational campaigns were perceived to be the least effective (33% believe it encourages safety driving).

### Motorcycle safety

- Graduated licenses for new riders is perceived by drivers as the most effective initiative in improving motorcycle safety (71% believe it would improve motorcycle safety), followed by power restrictions for new riders (65%) and increased visibility (61%).
- Educational campaigns for car drivers were perceived to be the least effective (50% believe it would improve motorcycle safety).

### Police traffic enforcement

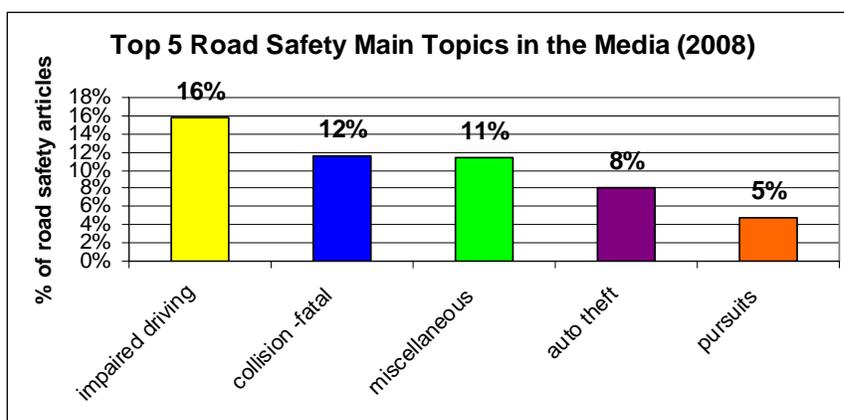
- More than half the drivers believed the police are committed to road safety enforcement (54%)
- The majority of drivers believed police traffic enforcement had remained the same over the past three months (76%).

## Media Scan

The provincial government conducts a daily media scan of major BC media to identify stories associated with government programs, activities, or issues, including policing and road safety. From these summaries, road safety stories were identified and tracked.

Data from media articles have been collected since April 2007. Data collection and coding methods evolved between late 2007 and 2008; as a result, there are some differences between the media scan prior to November 2007 and the current methods.

In 2008 there were a total of 6770 articles in the PSSG media scan. Of these articles, 4359 were related to policing (64%), and 977 were related to road safety (14%). There were a total of 842 articles which discussed both policing and road safety together.



- The percent of road safety articles which did not have a main topic related to road safety but still discussed road safety issues within the articles was 21%. This is due to the fact that a large portion of articles which discussed road safety issues were actually focusing on another issue outside of road safety.
- Impaired driving, fatal crashes, miscellaneous, auto theft, and pursuits were the most common main topics of road safety articles.
- See Appendix D for a graphical representation of the percent of road safety main topics in the media for 2007 and 2008 (Figure 5).

Every month, police focus their enforcement on a certain type of road safety issue. This enforcement is also the focus of that month's media campaign notifying drivers that police will be out in force targeting this type of driving behaviour.

- During the April auto theft campaign, articles focusing on auto theft increased to 16% of the road safety articles. During the June, July and December impaired driving campaigns, articles focusing on impaired driving increased to 18%, 8%, and 39% of the road safety articles respectively. Other road safety campaigns did not increase the number of articles focusing on the enforcement issue.

## Other

### Training

Enhanced traffic training for independent municipal police officers falls under the responsibility of the Road Safety Unit. Police Services Division supports three strategies to ensure that police officers are well-trained and that police have a forum for identifying improvement in traffic enforcement – Justice Institute Police Academy Advanced Training, the BC Association of Chiefs of Police Traffic Safety Committee, and road safety partnerships and advocacy. The number of independent municipal police officers taking courses at the Justice Institute in enhanced traffic enforcement increased to 129 in 2008 from 105 in 2007.

### BC Association of Chiefs of Police Traffic Safety Committee

The purpose of the BCACP Traffic Safety Committee is “to promote public safety by identifying, prioritizing, and addressing common road safety issues to the police community and their partners, to promote legislative reform in support of increased road safety.” The BCACP Traffic Safety Executive Committee meets three times a year and the General Membership meets twice a year to discuss emerging issues, policy and legislative reforms, enhanced traffic safety enforcement technologies, review pilot projects and share information/updates from its enforcement and road safety partners. The Road Safety Unit acts as the Secretariat to the BCACP TSC, and coordinates the business and carries out the financial management of biannual General Membership meetings and Executive meetings.

- Motions passed in 2008 included the recommendation that government be petitioned to explore alternate violation ticket processes which includes, as a prerequisite, a mandatory or optional mediation hearing as a prerequisite to the formal court hearing.

### Research

Research and evaluation are central elements of the Road Safety Unit’s mandate. PSD increased its capacity in research, policy and analysis of key traffic safety issues and enhanced enforcement tactics in 2008 by:

- improving sharing and analysis of traffic safety data (particularly information on traffic deaths) through participation on the inter-agency Data and Management Committee
- standardizing data sources, definitions and categories, and increasing efficiency in data entry to improve the timeliness and accuracy of data capture for program areas
- developing a series of standardized fact sheets on enforcement-related road safety topics and activities
- producing quarterly reports of Enhanced Road Safety Enforcement activities
- developing evaluation measures for the in-car video program
- participating in research to support the ISC upgrade business case and enforcement issues associated with proposed operational models, including policy and legal consideration, public safety benefits, mailed service of ISC tickets and site selection
- developing a framework and initiating an evaluation of the Fraser Valley IRSU

## Changes to the Motor Vehicle Act

On July 1, 2008, the *Motor Vehicle Act (MVA) Section 67* requirement to report to police after a motor vehicle accident was repealed. It was replaced with *MVA 249* in order to remove the 'compelled statement' argument and address charter issues of 'self-incrimination' at the scene of an accident. *MVA 249* now requires police to complete an accident form (the MV6020) in the manner prescribed by ICBC. The old legislation (*MVA 67*) required drivers to provide information to police.

## Motor Vehicle Incident Response Protocol

The Road Safety Unit assisted in the creation of a multi-agency Motor Vehicle Incident Response (MVIR) Protocol to address road closures caused by traffic incidents. Participants included RCMP, BCAMCP, Police Services Division, Ministry of Transportation and Infrastructure, Provincial Emergency Preparedness, Office of the Fire Commissioner, Volunteer Road Rescue, PEP, BC Ambulance Service, Maintenance Contractors, Coroners Service, and Ministry of Environment. The MVIR Protocol recognizes the unique role of each party at an emergency scene and aims to coordinate emergency responders, improve emergency response times, and mitigate lengthy closures.

- **Sea to Sky Pilot Project** – A working committee of emergency first responders developed policies and procedures to expedite resources and traffic management for incidents on Highway 99.

## In-Car Video Cameras

In April 2008, the provincial government announced \$198,000 in grants for Independent Municipal Police Departments to purchase additional patrol car video cameras to combat dangerous and impaired drivers. The Road Safety Unit assisted the Office of the Superintendent of Motor Vehicles (OSMV) in providing grants to municipal police departments in Abbotsford, Central Saanich, Delta, New Westminster, Port Moody, Nelson, Oak Bay, Saanich, Vancouver, Victoria and West Vancouver. The grants will pay for the purchase of 33 camera units at \$6,000 each. These cameras will supplement the more than 100 in-car video cameras currently in use by RCMP and IRSUs. Further provincial funding for in-car cameras is anticipated in 2009.

## Premier's Award

Police Services Divisions' Road Safety Unit won silver in the Partnership category at the 2008/2009 Premier's Regional Awards for their work with Integrated Road Safety Units. The Road Safety Unit was recognized for its partnership between MPSSG, ICBC, RCMP "E" Division Traffic Services and Independent Municipal Police Departments.



Premier's Award Recipients  
2008/09

## Future Directions

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### 2009/10 Road Safety Priorities

Provincial enhanced road safety priorities for 2009 will be expanded to include:

- targeting impaired drivers including impairment by drugs
- reducing incidents of aggressive driving
- raising provincial occupant restraint rates
- improving intersection safety
- improving commercial vehicle enforcement
- deploying Automated Licence Plate Recognition (ALPR) technology

### 2009/10 Road Safety Strategies

In support of provincial enhanced road safety priorities, the program will continue with current strategies and consider the deployment of complementary strategies subject to budget considerations:

- increased enforcement through enhancing the capabilities of the IRSUs
- support the implementation of the ISC program upgrade
- dedicate Counter Attack funding to Independent Municipal Police Departments
- implement a second traffic safety helicopter "Air Two" as part of the traffic safety helicopter program
- expansion of the ALPR pilot program
- support the development of a provincial road safety information systems business case for e-ticketing and e-collision reporting
- required capital expenditures for evergreen mobile work stations in IRSU vehicles and update alcohol testing devices for deployment in IRSU units
- support the roll out and provincial training of IRSU officers on the Traffic Services Management Information Tool (TSMIT)
- explore the use of civil forfeiture legislation in cases where the dangerous use of a vehicle is likely to cause serious injury or death
- conduct an evaluation the Fraser Valley IRSU to improve practices in traffic law enforcement and measure enhanced enforcement program results

These strategic additions to the enhanced provincial road safety program will result in higher visibility of traffic enforcement efforts and are expected to bring about:

- increases in the apprehension of impaired and other dangerous drivers
- further reductions in traffic fatalities and serious injuries in BC
- increased violation ticket revenue for further public safety investment by municipalities (IRSU officers engaged in pro-active, targeted enforcement write more violation tickets than regular traffic officers)

Police Services Division Road Safety Unit will continue work with enforcement partners to manage the implementation and monitor the effectiveness of identified traffic safety initiatives and prepare an annual report of program activities.

## Appendices

### A. Traffic Accident System - Factors Relating to Motor Vehicle Incidents

British Columbia's Traffic Accident System compiles and maintains information on all traffic collisions in the province reported to the police. Traffic collision information is used to determine collision trends over time and to identify problem factors (e.g., driver, vehicle, environmental). The information supports road safety programs and enforcement campaigns.

Data extracted from the system are used in planning and research by the Insurance Corporation of British Columbia (ICBC), provincial government ministries and by the federal government. The Ministry of Transportation & Infrastructure and municipal engineering departments across the province rely on traffic collision data to assist in the planning, design and improvement of roads and highways. The Royal Canadian Mounted Police (RCMP) and municipal police forces also use the data to assist in determining law enforcement priorities and locations to target traffic enforcement.

**FIGURE 1: PROVINCIAL FATALITIES**

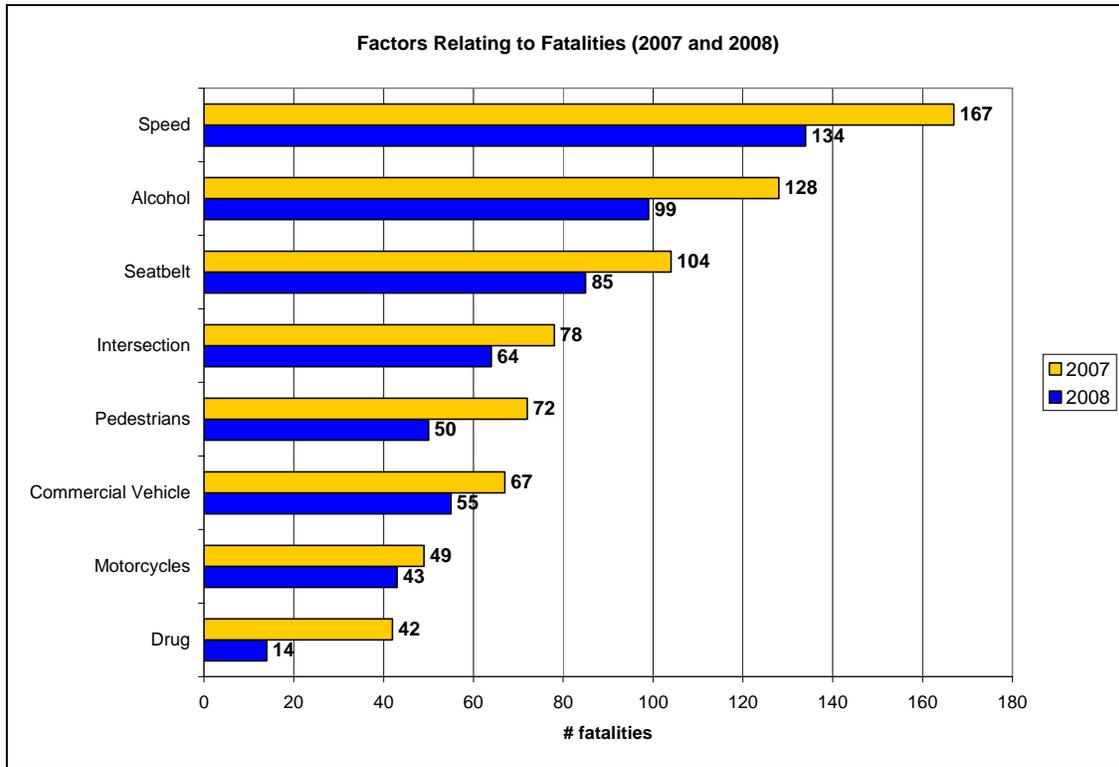
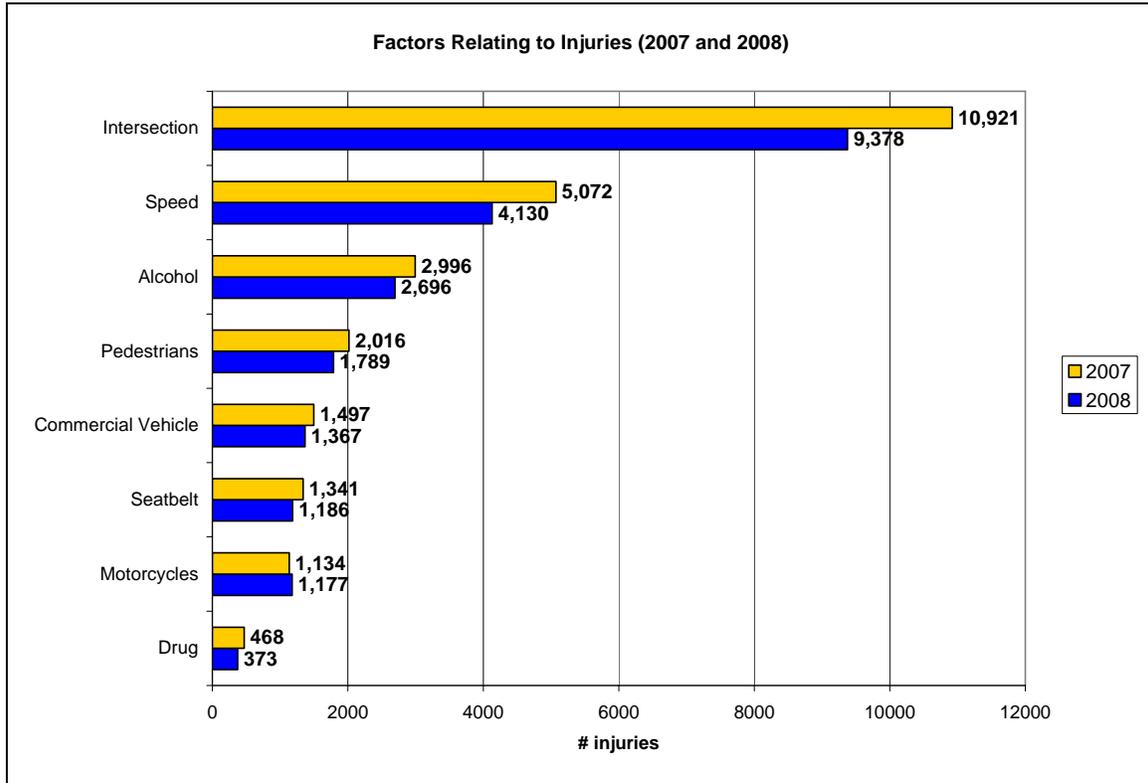


FIGURE 2: PROVINCIAL INJURIES



## B. Enhanced Enforcement Violations Issued

FIGURE 3: VIOLATIONS

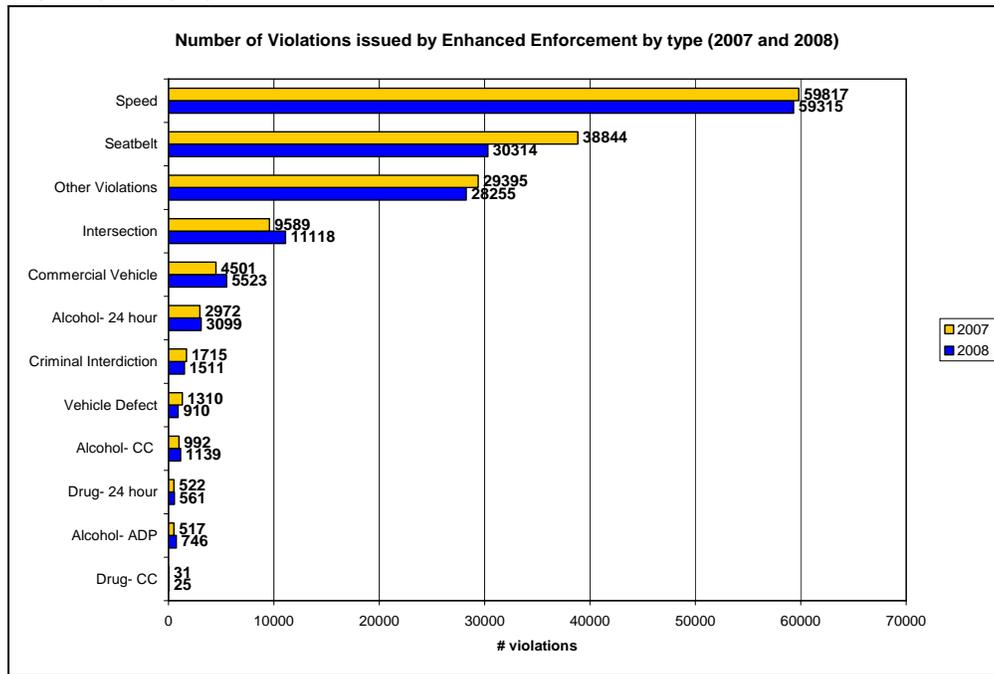
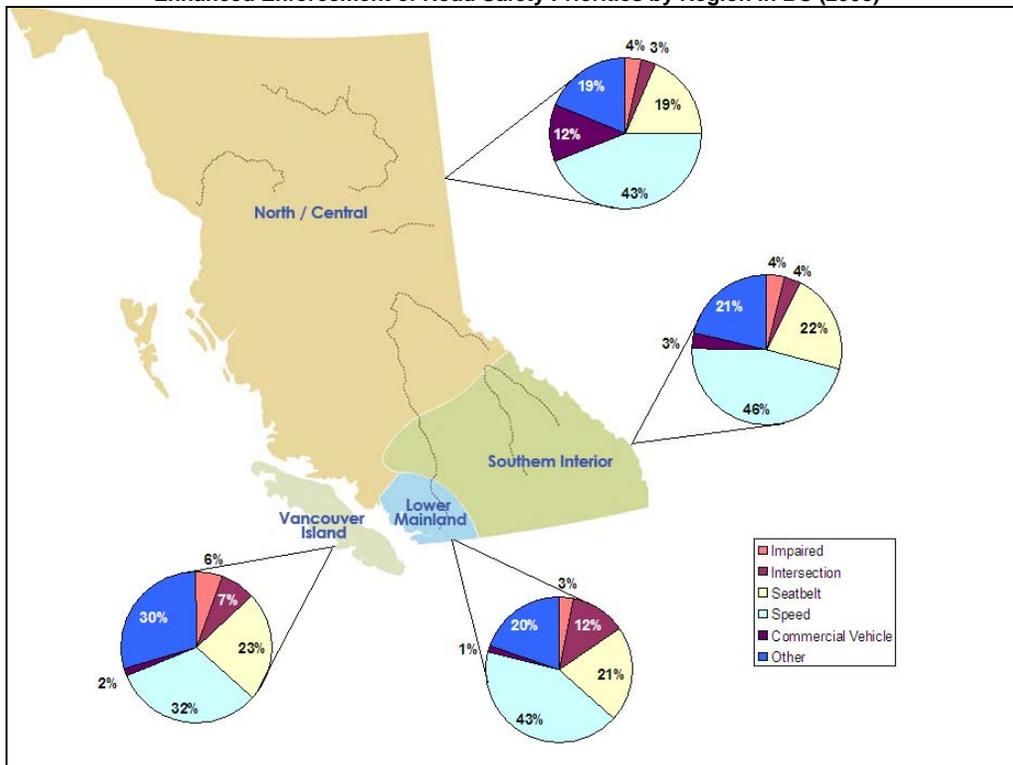


FIGURE 4: VIOLATIONS BY REGION

Enhanced Enforcement of Road Safety Priorities by Region in BC (2008)



### C. 2008 Public Attitude Survey

Percentage of drivers who believe driving behaviours are a risk factor in crashes		
	is a risk factor	is not a factor
Driving under the influence of alcohol	91%	2%
Aggressive Driving	87%	2%
Failing to stop at a red light or stop sign	87%	4%
Driving under the influence of drugs	82%	5%
Speeding (over 20km)	74%	8%
<b>Driving while distracted:</b>		
driving while tired, sleepy, or fatigued	75%	5%
talking on a hand-held cell phone	69%	8%
taking over-the-counter or prescription medications causing drowsiness	55%	12%
using car stereo or other electronics	37%	25%
talking on a hands-free cell phone	34%	34%

Percentage of drivers who believe it is likely to be caught for driving behaviours		
	is likely to be caught	is not likely to be caught
Driving under the influence of alcohol	42%	24%
Driving under the influence of drugs	36%	41%
Speeding (over 20km)	35%	30%
Failing to stop at a red light	32%	37%
Failing to wear a seatbelt	27%	45%
Failing to stop at a stop sign	22%	50%
Aggressive Driving	17%	56%

Percentage of drivers who believe the strategy encourages safe driving		
	does encourage safe driving	does not encourage safe driving
Road checks for impaired drivers	80%	4%
Targeted traffic enforcement	71%	7%
Intersection Safety Cameras	63%	12%
Increasing fines and penalties	57%	19%
Traffic Safety Helicopter	35%	31%
Advertisement and educational campaigns	33%	32%

Percentage of drivers who believe the initiative would improve motorcycle safety		
	would improve motorcycle safety	would have little impact on motorcycle safety
Graduated licenses for new riders	71%	10%
Power restrictions for new riders	65%	10%
Increased visibility	61%	11%
Helmet laws	58%	21%
Educational campaigns for car drivers	50%	20%

Drivers perception of police traffic enforcement		
	police are committed	police are not committed
Police commitment to road safety enforcement	54%	13%
	has increased	has decreased
Police traffic enforcement	17%	6%

<b>Percentage of drivers who reported committing driving behaviours</b>		
	<b>did commit</b>	<b>did not commit</b>
Speeding (over 20km)	12%	72%
Failing to wear a seatbelt	4%	92%
Failing to stop at red light or stop sign	2%	94%
Driving under the influence of alcohol	1%	98%
Driving under the influence of drugs	1%	98%

### 2006-2008 Public Attitude Surveys

<b>Drivers who believe driving behaviours are serious risk factors in crashes<sup>13</sup></b>			
	<b>2006</b>	<b>2007</b>	<b>2008<sup>13</sup></b>
Impaired (alcohol)	96%	96%	91%
Failure to stop (red light & stop sign)	90%	91%	87%
Aggressive driving	86%	91%	87%
Distracted (fatigued)	77%	76%	75%
Speeding <sup>14</sup>	71%	72%	74%
Distracted (cell phone) <sup>15</sup>	68%	69%	69%

<b>Perception of Police traffic enforcement</b>			
	<b>2006</b>	<b>2007</b>	<b>2008<sup>13</sup></b>
Drivers who believe police are committed to road safety enforcement	59%	57%	54%
Drivers who believe police traffic enforcement has increased <sup>16</sup>	16%	17%	17%

<b>Drivers who believe it is likely to be caught for various driving behaviours</b>			
	<b>2006</b>	<b>2007</b>	<b>2008<sup>13</sup></b>
Speeding <sup>15</sup>	40%	37%	35%
Impaired (alcohol)	38%	36%	42%
Failure to stop (red light)	33%	29%	32%
Aggressive Driving <sup>17</sup>	25%	20%	17%
Failure to wear seatbelt	24%	19%	27%
Failure to stop (stop sign)	23%	19%	22%

<b>Drivers who believe road safety strategies encourages safe driving<sup>18</sup></b>			
	<b>2006</b>	<b>2007</b>	<b>2008<sup>13</sup></b>
Police traffic enforcement <sup>19</sup>	35%	33%	71%
Advertisement and educational campaigns	30%	26%	33%
Intersection safety cameras	29%	30%	63%
Impaired driving road checks	38%	36%	80%
Traffic safety helicopter	16%	14%	35%

<sup>13</sup> In 2006 and 2007 respondents were asked how serious they thought the various driving behaviours were on a scale from not at all serious to extremely serious, while in 2008 respondents were asked how much they thought the various driving behaviours were a risk factor in causing serious crashes on a scale from not a very big factor to a very big factor.

<sup>14</sup> In 2006 and 2007 speeding was defined as driving over the speed limit however in 2008 it was defined as driving more than 20 km over the speed limit.

<sup>15</sup> In 2006 and 2007 cell phone was not defined but in 2008 it was defined and divided into 2 categories: hand-held and hands-free. This table examines distracted driving with a hand-held cell phone for 2008.

<sup>16</sup> In 2006 and 2007 respondents were asked whether the amount of police traffic enforcement had changed in the past year, while in 2008 respondents were asked whether they felt that police traffic enforcement had changed in the past three months.

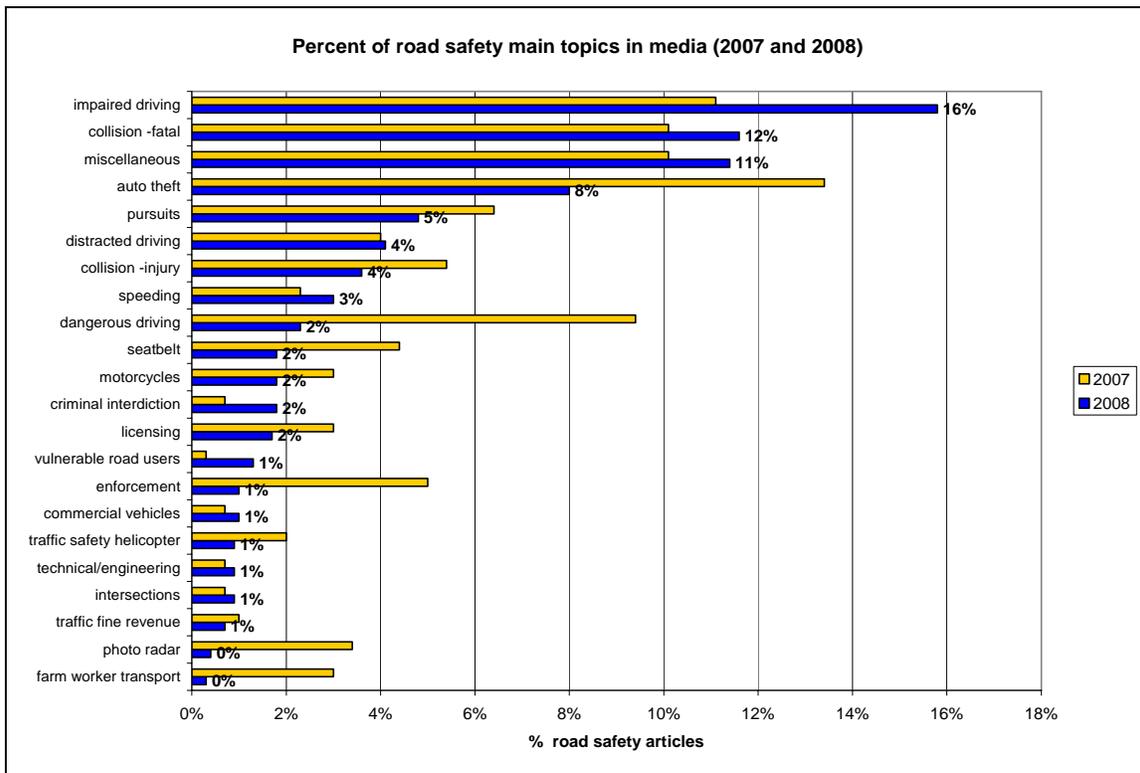
<sup>17</sup> In 2006 and 2007 aggressive driving was divided into 2 categories, continual aggressive lane changes and tailgating, for the question likelihood of being caught,; only the continual aggressive lane changes was used for 2006 and 2007 for this question while in 2008 aggressive driving was defined as unsafe passing, lane changes or tailgating.

<sup>18</sup> In 2006 and 2007 respondents were asked how much the way they drove was affected by various road safety strategies on a scale from does not influence at all to has a very big influence, while in 2008 respondents were asked how much the various road safety strategies encouraged safe driving on a scale from does not encourage safe driving at all to does encourage safe driving a great deal.

<sup>19</sup> In 2006 and 2007 police traffic enforcement was defined as general traffic enforcement by police while in 2008 it was defined as targeted traffic enforcement by police.

D. Media Scan Articles

FIGURE 5: MAIN TOPICS





## **ATTACHMENT B-4**

# **ICBC BCAA-TSF CHILD PASSENGER SAFETY PROGRAM PARTNERSHIP ASSESSMENT**



Road Safety Department

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# **ICBC BCAA-TSF Child Passenger Safety Program Partnership Assessment**

December 2009



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## EXECUTIVE SUMMARY

Since 2003, ICBC has partnered with the British Columbia Auto Association's Traffic Safety Foundation (BCAA-TSF) in the Child Passenger Safety (CPS) Program. The CPS program provides information, education and training to interested groups and individuals regarding the proper use and installation of child passenger safety devices in motor vehicles.

By the end of 2009, ICBC will have provided \$935,000 in funding to the program. In that time, the casualty crash rate for child passengers in British Columbia has fallen steadily.

From the start, an expectation of the partnership was that ICBC would support BCAA-TSF in developing the program, while BCAA-TSF worked to secure alternate means of funding. The security of the agreements over the years has enabled the BCAA-TSF to continue its search for partners to fund the continuation of the program. BCAA-TSF has received some additional funding from the Ministry of Children and Family Development, specifically in relation to the Boost BC initiative. That funding agreement terminated in 2008. As well, Health Canada has recently agreed to provide support for First Nations outreach programs.

When the program began, online resources for parents and other caregivers were not as widely available as they are today. There currently are many good online resources, including bulletin boards, manuals and free instructional videos. Face to face instruction - one of the cornerstones of the current program - is no longer as necessary as it once was. Prior to BCAA-TSF's most recent proposal, it has not shown much initiative in providing online instruction.

Given the current levels of awareness and use of child restraints, and the prevalence of online resources available, it is difficult to make a case for maintaining current levels of investment in the program, without significant changes in approach. This assessment recommends a move toward 'just in time' information provision, and a refocusing of efforts toward addressing higher risk communities and providing more training for police.

## BACKGROUND

Child passenger safety is a sub-issue of the Occupant Restraints program, along with seat belt use. Transport Canada's "Road Safety Vision 2010" targets for occupant restraints require "minimum seat belt [wearing] rates of 95% and proper use of child restraints by all motor vehicle occupants".<sup>1</sup>

Since 2007,<sup>2</sup> ICBC's provincial seat belt wearing rate has been approximately 95%.<sup>3</sup> BCAA-TSF has estimated that the rate of child passenger restraint use in British Columbia is similarly 90-95%,<sup>4</sup> while an observational study commissioned by ICBC found that approximately 95% of child passengers were restrained.<sup>5</sup> As such, the Occupant Restraints program as a whole is considered a maintenance item.

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<sup>1</sup> ["Canada's Road Safety Targets to 2010"](#)

<sup>2</sup> Transport Canada did not conduct its annual observational study of occupant restraint use in 2008. Surveys will resume in 2009.

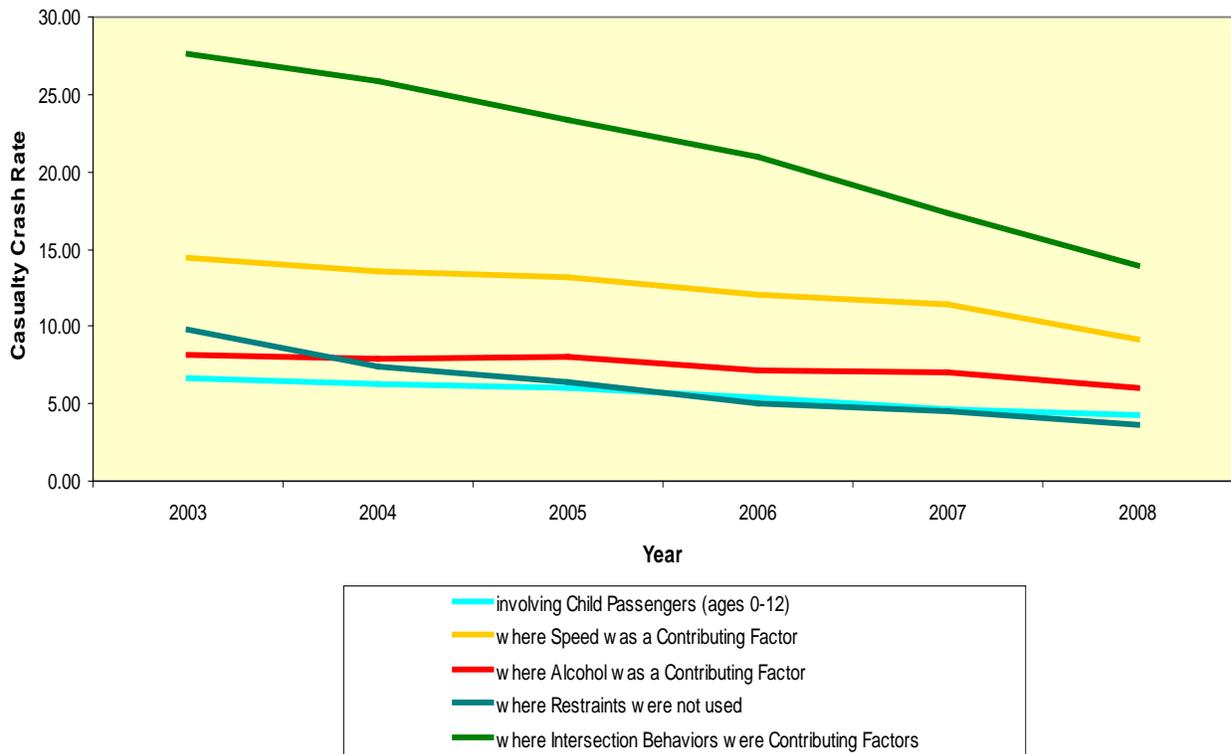
<sup>3</sup> ["Results of Transport Canada's Rural and Urban Surveys of Seat Belt use in Canada 2006-2007"](#)

<sup>4</sup> ["Child Passenger Safety Partnership Proposal 2010-2012"](#) page 6.

<sup>5</sup> J. Pedder, "2008 Child Passenger Restraint Survey" (Rona Kinetics-ICBC, 2008) page v.

Since 2003, the casualty crash<sup>6</sup> rate for child passengers has decreased in each year, and is currently 4.85 per 10,000 policy years earned. From 2005-2007, the average annual change in the child passenger casualty crash rate was -11.76%. The total number of casualty crash incidents involving child passengers has also decreased by approximately 27% from 1,847 incidents in 2003 to 1,357 incidents in 2008.

Some of that change is no doubt attributable to the work of the Child Passenger Safety Program.<sup>7</sup> Additionally, stricter regulations governing the use of child restraints, requiring booster seats for children from 4.5 years old up to age 9, were introduced on July 1, 2008. These new regulations have fewer exemptions, and should ensure that the casualty crash rate continues to decline.



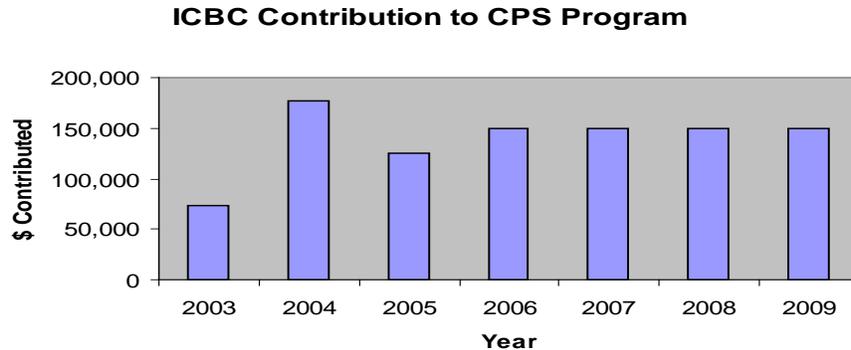
As the above chart demonstrates, child passenger safety and Occupant Restraints as a whole are the only driver behaviour issues ICBC Road Safety focuses on that have casualty crash rates below 5 per 10,000 Policy Years Earned. They are also the only issues not directly associated with crash causation. It is highly probable that a significant reduction in intersection, speed or impaired casualty crashes would result in a subsequent correlative reduction in unrestrained and/or child passenger injuries and fatalities.

ICBC’s current contribution to the CPS budget is 50%, or up to \$150,000, annually. By the end of 2009, ICBC will have provided \$975,000 in funding to the program since 2003. (It

<sup>6</sup> A ‘casualty crash’ is one resulting in personal injury or fatality.

<sup>7</sup> The work of other partners, including police, nurses, community workers and the Child Passenger Safety Network (not affiliated with BCAA-TSF), also deserves credit here.

should be noted that the 2003 contribution period was for August to December of that year.)



In each of 2008 and 2009, ICBC has spent a total of \$45,000 (annually) in support of seat belt enforcement, and nothing on seat belt education. ICBC spent a further \$40,000.00 for Occupant Restraints information provision in 2009, the bulk on child seat information and training sessions for First Nations communities through the Child Passenger Safety Network (not affiliated with BCAA-TSF).

Many of the crashes contributing to the Child Passenger casualty crash rate would have involved speed or alcohol, or been the result of someone running a red light, failing to yield or following too close at an intersection.<sup>8</sup> Preventing the behaviours that cause crashes will, in itself, reduce the number of children injured or killed on our roads.

## BCAA-TSF PROPOSAL

Early in 2009, ICBC received a proposal from BCAA-TSF for continuation of the existing CPS program. The highlights of the proposal are as follows:

- Contract term to run from January 1, 2010 through December 31, 2012, with an option to extend through 2014.
- Program budget to increase to \$400,000, with ICBC contributing 50% of that amount (\$200,000)
- BCAA-TSF would remain the managing partner, with ICBC providing funding and oversight.
- Program services and messaging would be re-focused and re-positioned toward higher risk populations.
- Continuation of existing program features:
  - Toll free number
  - Information sessions
  - Educator training
  - Web page maintenance

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<sup>8</sup> Intersections are not reflected in spending prior to 2008, when the first intersection campaign was held. Even then, the money spent was solely for advertising.



BCAA-TSF has broken down the costs for that increased budget as follows:

<b><u>Child Passenger Safety Program Indirect &amp; Administrative Expenses for 2010 Proposal Costs (\$)</u></b>	
<b>Child Seat Information Line</b>	<b>62,700</b>
<b>Information sessions</b>	<b>25,000</b>
- high risk programs	
<b>Instructional sessions</b>	<b>25,000</b>
- community workers, ministry workers	
<b>Educator Training</b>	<b>10,000</b>
- certify 45 educators	
<b>Website</b>	<b>50,000</b>
- development of online learning programs for educators, enforcement, public health, community workers, ministry workers etc	
- development of educational videos webinars	
- update website	
<b>Communication and Support Materials</b>	<b>30,000</b>
- educational materials - bookmarks, posters etc	
- CPS handbook	
- Translation	
- videos	
<b>Enforcement</b>	<b>10,000</b>
<b>1st Nations</b>	<b>50,000</b>
<b>Immigrant support</b>	<b>50,000</b>
<b>Partnership Roles</b>	<b>5,000</b>
<b>Booster Seat promotion</b>	<b>8,000</b>
<b>CPS Educator Support</b>	<b>8,000</b>
- on line refresher course	
- 1/2 day workshop at end of Injury Prevention conference	
- news letters	
Vehicle	<b>21,200</b>
Telephone	<b>7,800</b>
Operation expenses	<b>6,300</b>
Business Travel	<b>13,000</b>
Professional Fees	<b>2,150</b>
Contract Services - WCB Assessable	<b>1,185</b>
Depreciation Micro Computer	<b>1,685</b>
Communication	<b>1,685</b>
Rent - Office	<b>11,295</b>
<b>Total</b>	<b>400,000</b>

Some of the costs indicated in the proposal have other funders, notably the First Nations outreach, funded in part by Health Canada, the First Nations Health Council and the BC Ministry of Healthy Living and Sport.



## CURRENT PROGRAM

### *Program Inputs*

#### **Budget**

The CPS Program has a current annual operating budget of \$300,000, of which ICBC contributes 50%, up to \$150,000. In 2008, the budget was allocated as follows:

<b><u>Child Passenger Safety Program Indirect &amp; Administrative Expenses for CPS 2008 (\$)</u></b>	
Cost to staff phone line	<b>60,000</b>
Cost to staff clinics	<b>82,500</b>
Cost to staff info sessions	<b>39,600</b>
Training cost	<b>25,000</b>
Website	<b>4,800</b>
Vehicle - Operating Costs	<b>23,724</b>
Telephone - Basic Rental	<b>4,131</b>
Operating Supplies	<b>9,952</b>
Print & Publication	<b>14,239</b>
Business Travel	<b>11,730</b>
Professional Fees	<b>1,033</b>
Contract Services - WCB Assessable	<b>1,185</b>
Sundry	<b>243</b>
Depreciation Vehicles	<b>5,001</b>
Depreciation Micro Computer	<b>1,688</b>
Communication	<b>2,468</b>
Rent - Office	<b>9,268</b>
<b>Total</b>	<b>296,562<sup>9</sup></b>

It should be noted that the foregoing account comprises self-reported expenditures by BCAA-TSF, and not the result of an audit.

### ***Program Outputs***

Required program outputs are documented in the schedules to the contract between BCAA-TSF and ICBC. They include specified activities, as well as regional distribution of specific activities, such as training and education sessions.

Schedule A (below) documents and describes the activities, and quantifies the minimum expectation agreed to in the 2006-2008 contract:

<sup>9</sup> This total differs from that given in BCAA-TSF's 2008 Year End Report for the CPS program, which reported total expenditures for the year of \$291,634. The unused balance of ICBC's 2008 contribution (\$4,183) was donated to TSF's seat matching program, which provides child restraints to families in need through social service agencies. TSF matches donor contributions in purchasing the child restraints.



SCHEDULE A  
Program Activities

Child Passenger Safety Program Outcome Summary				
Program Area	2006	2007	2008	Notes
Child Seat Info Line	13,000	13,500	14,000	Maintain toll free information line; returning customer calls within 24 hours; number of calls anticipated annually.
Child Seats Inspected	4,000	4,500	5,500	Includes scheduled inspection appointments as well as road checks done with police.
Inspection Clinics	100	100	100	Clinics to be conducted in each of ICBC's regions to be apportioned as set out in 1.2.
Community CPS Strategy	3	5	10	Number of new communities participating in the CPS Community Strategy (police, public health and ICR Techs).
ICR Technicians Trained	40	40	40	Number of ICR Technicians trained annually. Minimum one training session held in each of ICBC's regions and in line with Community Strategy, to be apportioned as set out in 1.2.
ICR Technicians Re-certified	40	60	60	Number of ICR Technicians provided refresher training and support in re-certification process, to be apportioned as set out in 1.2.
Police Officers Trained	50	50	50	Number of traffic officers receiving customized police child seat enforcement training. One training session to be conducted in each of ICBC's regions annually, to be apportioned as set out in 1.2.
Child Seat Info Sessions (General Public)	60	60	60	Includes booster seat information sessions, retail and auto dealer info sessions as well as general child seat info sessions to be apportioned as set out in 1.2.
Booster Seat School Promo	30	30	30	Number of schools receiving booster seat public education program; minimum 6 schools new to the program, in each of ICBC's regions annually.
ICR Technician Support	4	4	4	Number of e-newsletters to all BC ICR Technicians annually. Ongoing support includes toll-free line, access to trainers and other support.
Occupant Restraint Ratings	36	48	60	Number of Occupant Restraint Ratings completed annually on new vehicle models.
Provincial Child Seat Survey	0	1	0	Conduct follow up study & survey on child seat use in BC.

From the start, BCAA-TSF has met or exceeded many of its required outputs documented under Schedule A of their contract. The charts below record the main activities undertaken by BCAA-TSF, and what they have done in relation to contractual targets. Items in red indicate a failure to meet the target.

TACTIC	Target 2003	Achieved 2003	Target 2004	Achieved 2004	Target 2005	Achieved 2005
Clinics	48	40	98	120	100	123
Seats Inspected	n/a	966	n/a	3,163	n/a	2,969
Toll Free Line Calls	n/a	5,454	n/a	13,150	n/a	12,601
Information Sessions	17	20	62	59	62	53
Present at Info. Sessions	n/a	1,853	n/a	2,126	n/a	2,610
Technicians Trained	8	Not Avail.	32	44	32	40

TACTIC	Target 2006	Achieved 2006	Target 2007	Achieved 2007	Target 2008	Achieved 2008
Clinics	100	134	100	173	100	185
Seats Inspected	4,000	3,746	4,500	4,609	5,000	3,895
Toll Free Line Calls	13,000	12,522	13,500	15,657	14,000	16,432
Information Sessions	60	56	60	125	60	198
Present at Info. Sessions	n/a	1,264	n/a	4,193	n/a	5,832
Technicians Trained	40	50	40	77	40	115

A more detailed breakdown is available for 2006-08:

Child Passenger Safety Program Outcome Summary 2006 - 2008							
Program Area	2006 Planned	2006 Actual	2007 Planned	2007 Actual	2008 Planned	2008 Actual	% Change '06 - '08
Child Seat Info Line	13,000	12,522	13,500	15,657	14,000	16,432	+ 31%
Inspection Clinics	100	134	100	173	100	185	+ 38%
Child Seats Checked	4,000	3,746	4,500	4,609	5,500	3,895	+ 4%
CPS Technicians Trained	40	50	40	77	40	115	+ 130%
Police Officers Trained	50	133	50	63	50	34	- 74%
Child Seat Info Sessions (General Public)	60	56	60	125	60	198	+ 253%
Info Session Attendance	--	1,264	--	4,193	--	5,832	+ 361%
Booster Seat School Promo	30	33	30	287	30	535	+ 1,521%
Provincial Child Seat Study	0	0	1	1	0	1	--

It is notable that in two key areas of concern – Police Trained and Child Seats Inspected – BCAA-TSF failed to meet the targets set in the contract for 2008. The number of police officers trained actually declined by 74% over the life of the contract. As noted above, there was excess budget (more than \$8,000, according to the 2008 Year-End Report) which could have been used to train more police officers, and to provide outreach to higher risk groups, such as recent immigrants and first nations.

BCAA-TSF explains this deficiency in their annual report:

**Police Enforcement Activities** – With the challenge of coordinating efforts with police detachments throughout the province as well as the priority of increasing awareness of the new child car seat regulations, we were not able to conduct as much police training as originally planned. However, all police (traffic) in the province were provided with convenient 'Child Car Seat Regulation' information cards that were used to both educate police officers regarding the new regulations as well as provide them with information they could pass on to the public in their capacity as providing pro-active public education throughout the year. We produced over 40,000 cards that were circulated throughout every region of the province.

Enforcement has almost universally been recognized as the key to changing attitudes and behaviours in most areas of road safety, including the area of occupant restraint use.<sup>10</sup> Significant enforcement of child restraint use, however, cannot occur unless police officers are knowledgeable about the types of seats required at different developmental stages and the correct installation of child restraints. In consultations with police throughout the

<sup>10</sup> Prior to the introduction and enforcement of seat belt legislation in 1977, the wearing rate in British Columbia was approximately 31%. Thirty-one years later, with the help of police enforcement and public education campaigns, the wearing rate was 94.8%.

province, numerous RCMP detachments have expressed interest in more training. While training of police officers is included as one aspect of the CPS program ("Enforcement" in the 2010-12 proposal), it comprises less than 7% of the proposed budget.

There is also no mention of how many technicians have been recertified; of the number of occupant restraint ratings provided; or of new communities participating in the CPS Community Strategy. Knowing how many technicians have been recertified is vital to understanding how people are using the training and information provided. Occupant restraint ratings help provide guidance to parents and other caregivers prior to purchasing seats. Expanding the reach of the program to include more communities throughout the province is a priority. Such expansion ensures the ongoing success of the program. Without measures indicating the current reach of the program, no useful targets can be set for the future.

The areas where the program met or exceeded its targets also raise questions regarding the priority placed on certain activities. For example, since 2004 the CPS program has consistently exceeded its target for number of clinics. In 2008, it held nearly twice the required number, a 7% increase from the previous year. The number of seats inspected at those clinics, however, declined by 15%, from 4,609 in 2007 to 3,895 in 2008. BCAA-TSF notes that average attendance at clinics has declined slightly, but this is more than compensated by the increased number of clinics. No explanation is given for the corresponding decline in the number of seats inspected at those clinics.

While the toll-free information line has generally met or exceeded its targets, with only 2006 falling slightly short, it is only available Monday through Friday, from 9 a.m. to 5 p.m., excluding holidays. It is likely that information is required outside of those very limited times. Moreover, there is no system to track the nature of the incoming calls or their resolution.

## RECOMMENDATIONS

BCAA-TSF is an important stakeholder and a valuable partner in the field of road safety, particularly on the issue of child passenger safety. They have, for the most part, fulfilled the more important terms and conditions of the CPS agreements well. Going forward, however, ICBC believes that it is important to provide clarity regarding its role in matters of program governance, and that there should be a mechanism for the partners to review strategy, direction and objectives.

The program has undoubtedly served its main purpose: improving the welfare of children on the roads of British Columbia. After careful consideration of the current program and BCAA-TSF's proposal for the next three years, and viewing the issue in context, ICBC recommends the following changes:

- **Decreased emphasis on 'technician' or 'educator' training.** As BCAA-TSF note in their recent proposal, there is nothing particularly 'technical' about the installation of car seats anymore. With the introduction of Universal Anchor Systems, and other 'ease of use' enhancements, there is a decreasing need for the sort of technical training offered in the past. ICBC supports BCAA-TSF's proposal to move toward more general information provision.
- **Increased emphasis on enforcement training.** Enforcement of occupant restraints, including child restraints, is a national priority for the RCMP. Although use

rate for both seat belts and child restraints is very high in BC (approximately 95%), as compared to other parts of the country, there are still some areas where enhanced enforcement can have a significant road safety benefit. Increased availability of training for police, especially for outlying detachments, should be made a priority. ICBC recommends training a minimum of 75 police officers per year, representing at least 15 detachments, with no fewer than three detachments in each of the five regions: Metro Vancouver, Fraser Valley, Southern Interior, North Coast, and Vancouver Island.

- **Shifting emphasis from clinics & information sessions toward online information provision.** Inspection clinics and information sessions, while highly visible, are not the most efficient means of disseminating information. ICBC would like to see a shift toward online provision of information, which can be accessed by parents and other caregivers where and when the information is needed. Online materials can more easily be provided in multiple languages, which will help to target some higher risk groups identified by BCAA-TSF. ICBC is more than willing to help with production of online materials, including videos that can be streamed or downloaded.
- **Shifting emphasis toward higher risk populations.** BCAA-TSF has identified recent immigrant communities and First Nations as being higher risk populations, with regard to non-use or misuse of child restraints. ICBC supports BCAA-TSF's plan to refocus their efforts to target these communities, particularly urban, off-reserve First Nations members, who often do not have adequate community support, and recent immigrants from countries with low occupant restraint use.
- **Decreased emphasis on toll-free phone line.** It is expected that the number and nature of calls will decrease over time, particularly as more caregivers become familiar with Division 36 of the Motor Vehicle Act and Regulations (Child Seating and Restraint Systems), and as more – and more robust – information becomes available online. ICBC would prefer to see the hours of operation of the phone line expanded, to provide more 'just in time' information.
- **Increased utilisation of volunteers.** ICBC believes the CPS Program can, and should, increase its efforts to recruit and utilise its trained technicians as volunteers. Volunteers can be used to conduct information sessions, inspect seat installations, and even man the toll-free phone line. This will allow the program to decrease its reliance on contractors for education and information provision, increase its community involvement and engender a deeper sense of commitment and involvement from those who have completed their certification.
- **Discontinuation of Boost BC as a distinct program element.** Now that BC's child passenger restraint legislation has been updated, there is little reason to continue with this program, as distinct from the main stream of the program's information provision. Enforcement supported by education will ensure the use rate increases, as it did with seat belts.

ICBC agrees with BCAA-TSF that the contract term should run from Jan 1, 2010 through Dec 31, 2012, with an option to extend the contract by one year, should the parties agree to do so. Another thorough assessment should be conducted in 2011-12, to determine the success of changes to the program.



The following chart shows the cost comparison between BCAA-TSF's proposal and ICBC Road Safety's recommendation:

Deliverable item	BCAA Proposal (all years)	ICBC Proposal			Rationale
		2010	2011	2012	
<b>Child Seat Information Line</b>	62,700	30,000	25,000	20,000	<i>Reduced budget to compensate for increased emphasis on online information provision.</i>
<b>Information sessions</b> - high-risk programs	25,000	15,000	10,000	10,000	<i>Reduced budget, with exception of high risk groups (see rows below)</i>
<b>Instructional sessions</b> - community workers, ministry workers	25,000	15,000	15,000	15,000	<i>Reduced to equal enforcement budget, in keeping with shift to online instruction</i>
<b>Educator Training</b> - certify 45 educators	10,000	10,000	10,000	10,000	<i>As proposed by BCAA</i>
<b>Website</b> - development of online learning programs for educators, enforcement, public health, community workers, ministry workers, etc. - development of educational videos, webinars - update website	50,000	50,000	15,000	10,000	<i>As proposed by BCAA in year one.  Reduced in years two and three of the contract as upgrade work should be largely complete. This is still a more than 100% increase over 2008 cost.</i>
<b>Communication and Support Materials</b> - educational materials - bookmarks, posters, etc. - CPS handbook - Translation - videos	30,000	15,000	10,000	5,000	<i>Reduced to reflect lower cost of online information provision, with associated reductions in reproduction, storage and distribution costs.</i>
<b>Enforcement</b>	10,000	20,000	20,000	20,000	<i>Increased to reflect demand from RCMP detachments</i>
<b>First Nations</b>	50,000	25,000	25,000	25,000	<i>Expected contribution from other partners will compensate for reduced program budget. Online information provision should help offset costs.</i>
<b>Immigrant support</b>	50,000	25,000	25,000	25,000	<i>Scope of problem does not warrant \$50,000 budget. Materials for this covered elsewhere in budget. Much of this can be addressed online.</i>
<b>Partnership Roles</b>	5,000	0	0	0	<i>Does not require a distinct line item</i>
<b>Booster Seat Promotion</b>	8,000	0	0	0	<i>Does not require a distinct line item</i>



Deliverable item	BCAA Proposal (all years)	ICBC Proposal			Rationale
<b>CPS Educator Support</b> - on line refresher course - 1/2 day workshop at end of Injury Prevention conference - news letters	<b>8,000</b>	<b>6,000</b>	<b>6,000</b>	<b>6,000</b>	<i>Slight reduction from BCAA proposal to reflect electronic distribution of materials.</i>
Vehicle	<b>21,200</b>	<b>14,000</b>	<b>14,000</b>	<b>14,000</b>	<i>Reduced to reflect operating cost of vehicle only Ongoing administrative costs to be covered solely by BCAA TSF</i>
Telephone	<b>7,800</b>				
Operation expenses	<b>6,300</b>				
Business Travel	<b>13,000</b>				
Professional Fees	<b>2,150</b>				
Contract Services - WCB Assessable	<b>1,185</b>				
Depreciation Micro Computer	<b>1,685</b>				
Communication	<b>1,685</b>				
Rent - Office	<b>11,295</b>				
<b>Total</b>	<b>400,000</b>				
ICBC 50%	200,000	112,500	87,500	80,000	
TSF 50%	200,000	112,500	87,500	80,000	

With these few recommended changes to the program, ICBC believes it will continue to see significant declines in the rate and number of child passengers being injured and killed on BC roads each year. ICBC looks forward to working with BCAA-TSF toward that end.

## **ATTACHMENT B-5**

# **GRADUATED LICENSING PROGRAM (ENHANCED) ESTIMATE OF CLAIMS SAVINGS 2004-2006 (RELEASED NOVEMBER 27, 2009)**



Business Intelligence Competency Centre

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## Graduated Licensing Program (Enhanced)

# Estimate of Claims Savings: 2004- 2006

**Authored by:**

Sandi Wiggins and Wayne Meckle  
Business Intelligence Competency Centre

## GLPe Benefit Analysis: January 1, 2004 - December 31, 2006

### 1.1 Executive Summary

Graduated Licensing Program enhancements (GLPe) were implemented in October 2003. All drivers and motorcycle riders<sup>1</sup> who obtained a Class 7 or 8 learner (“L”) or novice (“N”) licence on or after October 6, 2003 became subject to the new GLPe conditions. The benefits attributable to GLPe were estimated for two groups of drivers: 1) **new drivers** who obtained their first “L” licence in 2004, 2005, or 2006 and would be subject to all of the GLPe conditions as they progressed through the learner and novice stages of licensure, and 2) **transitional novice drivers** who obtained their first “N” licence in 2004, 2005, or 2006 but who had completed their learner stage either out-of-province or in the original GLP.

Using crash rates from comparison groups of drivers who entered GLP between 1999 and 2001, the crash incident counts expected had GLPe not been introduced were estimated and compared to the actual crash counts observed for drivers who entered GLPe between 2004 and 2006. To estimate the possible effects of factors other than GLPe on crash rates, comparison groups of experienced (non-new) drivers were also used in the analysis. GLPe driver crash rates were adjusted to take into account such external factors.

To estimate crash claims savings, analyses were undertaken to assess whether the introduction of GLPe might have affected the incurred costs of new driver and novice driver claims. Using “piecewise” linear regression methods to test for changes in the slope and height of the fitted trend line before and after the implementation of GLPe no evidence of a GLPe effect on costs was found. Consequently, actual incident costs were used in the calculation of GLPe claims savings. One exception was for fatal crashes. Due to the small number of such incidents in the new driver groups, fatal crash costs were found to vary substantially from year to year – although they were generally similar to those of non-new drivers. Consequently, to smooth out the variability, an average new driver fatal crash cost was computed using the fatal crash incidents of all new driver and non-new drivers.

Between January 1, 2004 and December 31, 2006, there were 44,357 crash incidents involving at least one new or transitional GLPe driver. Had GLPe not been implemented, an estimated 61,893 incidents involving at least one new or transitional driver would have been expected to occur. Thus, in total, during the first three calendar years after GLPe implementation there were 17,536 (28%) fewer crash incidents involving a GLPe driver than would have been expected had GLPe not been implemented:

- 31 fewer fatal crash incidents involving new or transitional novice drivers
- 4,137 fewer Injury crash incidents involving new or transitional novice drivers
- 13,368 fewer Material Damage Only crash incidents involving new or transitional novice drivers

The associated claims savings attributed to GLPe are estimated conservatively at **\$172 Million** (\$26 Million in 2004, \$62 Million in 2005, and \$84 Million in 2006). All of the crash incident counts and claims costs used in the analysis were current as of October 31, 2008, and ultimated using loss development factors at October 31, 2008.

### 1.2 Background

Graduated licensing was introduced to British Columbia in August 1998. The original Graduated Licensing Program (GLP) was found (Wiggins, 2004) to be effective and contributed to claims savings of approximately \$56 million between 1999 and 2001. The benefits of GLP were found to be largely the result of extending the supervised Learner stage from a minimum of 30 days to a minimum of six months (with a reduction of up to three months for drivers who completed an approved driver education course); few benefits were found once drivers entered the 18-month unsupervised Novice stage. In an effort to enhance the benefits of GLP, and to improve the effectiveness of the Novice stage, additional restrictions

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<sup>1</sup> New drivers and new motorcycle riders were included in this analysis. For ease of presentation and due to the very small percentage (<1%) of riders in the programs, all GLP and GLPe participants will be referred to as drivers.

and conditions were implemented in October 2003 (GLPe). Specifically, the minimum learner stage was extended by another six months, a passenger restriction and a prohibition-free requirement were added to the novice stage, and the novice stage was extended by six months in an effort to maximize the potential benefits resulting from these new novice stage conditions. The new conditions were applied to any driver who obtained a Learner or Novice licence on or after October 6, 2003, regardless of their status prior to that. Thus, drivers applying for their very first licence, renewing a licence, graduating from the Learner to Novice stage, entering the BC licensing system from out-of-province, or reinstating a cancelled licence from October 6, 2003 through March 31, 2007 were subject to the new GLPe rules. Additional enhancements were added to the program in April 2007, but claims savings resulting from those changes are not assessed in this report.

A comprehensive evaluation of the impact of GLPe on the crash rates of new drivers and, particularly, for drivers in the Novice (“N”) stage of the program is currently underway and will be reported in a separate document. Preliminary results indicate that the six month extension of the Learner (“L”) stage introduced in October 2003 has had a dramatic impact on new driver crash involvement rates, reducing them by about 72% during the first year of licensure and about 36% over the first two years of licensure. The very high reduction in rates observed for drivers in their first year of licensure is largely attributable to the fact that most of this time is spent in the low risk “L” stage. As the period of licensure extends, and the mix of “N” stage and “L” stage drivers in the GLPe and GLP groups become more similar, the percentage reduction declines.

Reductions have also been observed for the crash involvement rates of GLPe and GLP drivers in their first two years of “N” stage of licensure. These reductions are small (about 6-7%) but still indicative of a positive program effect. Due to limited availability of data for GLPe drivers who had started their licensing at the “L” stage and accumulated two or more years in the “N” stage when the study was initiated, these early results are based on both ‘pure’ (entered GLPe as a learner driver and subsequently graduated into the GLPe “N” stage) and ‘transitional’ (entered GLPe in “N” stage) novice drivers. ‘Transitional’ novice drivers may have completed their “L” stage in GLP or in another jurisdiction.

In the current report, the claims savings attributable to GLPe are also computed for two groups: 1) GLPe new drivers (who entered the GLPe “L” stage and are subsequently exposed over time to all of the GLPe “L” and “N” stage enhancements) and 2) GLPe transitional novice drivers (who entered the GLPe “N” stage and will be exposed to the “N” stage, but not the “L” stage components of GLPe). The current study differs from that of the crash impact evaluation in that it aggregates drivers and their crashes by calendar years and not by licensure periods. Consequently, the crash rate changes reported here, although similar, are not directly comparable to the results reported in the crash impact study.

### 1.3 Purpose

The purpose of this analysis is to estimate the claims savings attributable to GLPe during its first three calendar years of operation (2004-2006). No savings are claimed for 2003 because during the short (three month) period that GLPe was in place all newly licensed drivers would have still been in the learner stage, regardless of their program (GLP or GLPe), and any benefits that may have been associated with drivers who transitioned from an out-of-province or GLP Learner licence into the GLPe Novice stage would have been minimal. As well, no claims savings are reported in 2004-2006 for drivers who entered the program in 2003.

GLPe is expected to reduce new and novice driver crash rates and claims costs as a result of the following program enhancements:

- the six-month extension of the minimum holding periods for learner.
- the addition of a passenger restriction in the novice stage.
- the addition of a prohibition-free requirement for drivers in the novice stage.

## 1.4 Method

To estimate the claims savings attributable to GLPe a comparison was made between the crash claims costs expected in 2004, 2005, and 2006 had GLPe not been implemented, and the actual crash claims costs incurred. Claims savings were estimated separately for GLPe new drivers and GLPe transitional novice drivers.

### 1.4.1 Driver Groups

Three sets of driver groups were used in the analysis: 1) GLPe and GLP new drivers, 2) GLPe and GLP transitional drivers, and 3) GLPe and GLP time-matched experienced drivers. The new driver groups were used to estimate the benefits associated with full participation in GLPe, starting as a Learner and progressing through the “N” stage to full licensure. The transitional novice groups were used to estimate any incremental benefits that might have been incurred as a result of requiring non-GLPe learner drivers, and inexperienced out-of-province drivers, to complete the GLPe “N” stage before obtaining a full privilege licence. The two experienced driver groups were used to assess trends in crash rates and incident severities not associated with GLPe.

The following are the specific inclusion and exclusion criteria used to define the groups:

**GLPe New Drivers** Drivers who obtained their first Class 7 or 8 Learner’s licence in 2004, 2005, or 2006. Drivers with out-of-province experience were excluded.

**GLP New Drivers** Drivers who obtained their first Class 7 or 8 Learner’s licence in 1999, 2000, or 2001. Drivers with out-of-province experience were excluded.

**GLPe Transitional Novice Drivers** Drivers who obtained their first Class 7 or 8 Novice licence in 2004, 2005, or 2006.

This group does not include:

- Transitional Novice drivers who obtained both their first Novice licence and a full privilege (class 5 or 6) licence in their intake year.
- Transitional Novice drivers for whom the Class 7 or 8 road test was waived

**GLP Transitional Novice Drivers** Drivers who obtained their first Class 7 or 8 Learner’s or Novice licence in 1999, 2000, or 2001.

This group does not include:

- Transitional Novice drivers who obtained both their first Novice licence and a full privilege (class 5 or 6) licence in their intake year.
- Transitional Novice drivers for whom the Class 7 or 8 road test was waived

**GLPe Experienced Drivers** Drivers who held a valid class 5 or 6 licence at the beginning and end of 2004, 2005, and 2006, and who had held that licence for a minimum of six years at the end of their intake year. Class 5 or 6 licence holders from out-of-Province who had less than six years of licensure in BC were included if they were at least 25 years of age at the end of their intake year. Drivers in the New or Novice driver groups were excluded.

**GLP Experienced Drivers** Drivers who held a valid class 5 or 6 licence at the beginning and end of 1999, 2000, or 2001, and who had held that licence for a minimum of six years at the beginning of the intake year. Class 5 or 6 licence holders from out-of-Province who had less than six years of licensure in BC were included if they were at least 25 years of age at the end of their intake year. Drivers in the New or Novice driver groups were excluded.

**Procedures**

The following steps were taken to estimate the annual claims savings associated with GLPe:

- Total crash incident counts and incurred costs for the new driver, transitional driver, and non-new driver groups were computed and ultimated using loss development factors as of October 31, 2008 (See Appendix A).
- Crash incident rates and average incident costs by crash type (fatal, injury and MDO) and driver group were computed for each calendar year from 1999 through 2006, and analysed for trends over time.
- Non-new driver data were used to estimate to what extent factors other than GLPe may have been influencing any observed trends in new and transitional novice driver rates and costs, and to estimate the number of new and transitional novice driver crash incidents and per incident costs expected in 2004, 2005, and 2006 if GLPe had not been implemented.
- After adjusting for the influence of external factors, the estimated expected crash counts were multiplied by the estimated expected per incident costs to obtain the estimated total costs expected in 2004, 2005, and 2006. These estimated expected total costs were compared to the actual incurred crash costs to obtain the estimated number of claims dollars saved.

**1.5 Results**

**1.5.1 Drivers**

Due to the dynamic nature of the licensing process, new drivers enter the licensing system continuously throughout each year, and remain in the system for varying numbers of years. To accommodate this variation in exposure to risk, licensed driver-time rather than simple driver counts were used in all rate calculations. The amount of licensed driver-time contributed by each of the driver groups in each of the program (GLP and GLPe) years of interest is shown in Table 1.

**Table 1. Driver-years contributed in each program year by new drivers, transitional novice drivers, and non-new drivers**

<b>Intake Year</b>	<b>New Driver-years</b>	<b>Transitional Novice Driver-years</b>	<b>Experienced Driver-years</b>
<b>GLPe:</b>			
2004	26,450.30	14,580.81	2,357,791
2005	81,052.93	30,194.71	2,410,048
2006	130,297.33	38,214.07	2,419,378
<b>GLP:</b>			
1999	25,874.86	11,048.11	2,132,938
2000	78,604.43	22,627.50	2,179,194
2001	123,255.25	26,204.22	2,213,972

**1.5.2 Estimation of Crash Incidents Prevented by GLPe**

For new and transitional novice drivers, driver-years were accumulated from the date of the driver’s first learner licence (for those who entered the program as a Learner) or first novice licence (for those who entered the program as a Novice) to the end of December 2001, for GLP participants, and to December 2006, for GLPe participants. Only time during which the driver held a valid BC licence was included in the tabulation of driver-years. For the non-new driver groups, only drivers who held a valid BC licence throughout each year of interest were included. For the new driver groups, crash incidents were counted from the date on which drivers entered their licensing program (as a Learner or Novice) to the end of

## GLPe Benefits Analysis: 2004-2006

December 2001 or 2006, for the GLP and GLPe groups respectively. For the non-new drivers, all crash incidents in which they were involved in each year were counted.

Table 2 shows the ultimated number of crash incidents accumulated for each group during each program year and type (severity) of crash. Table 3 shows the computed crash incident rates. Rates were computed as the number of crash incidents of each type in each year and driver group divided by the number of driver-years contributed in each year by each driver group. Rates are shown per 10,000 driver-years.

**Table 2. Crash Incident Counts\* multiplied by Loss Development Factors by Driver Group, Program, Year and Type of Crash**

	New Driver Incidents			Transitional Novice Incidents			Experienced Driver Incidents		
	Fatal	Injury	MDO**	Fatal	Injury	MDO	Fatal	Injury	MDO
GLPe:									
2004	1.01	176.09	531.03	10.05	1,259.63	2,919.16	302.55	45,705.90	172,875.56
2005	13.05	1,972.14	4,805.74	12.05	2,104.28	5,030.77	280.16	46,308.17	179,670.54
2006	24.25	4,715.20	12,328.37	7.07	2,582.78	5,864.55	275.79	46,527.10	189,257.44
GLP:									
1999	4.01	714.04	1,841.99	9.01	1,178.06	2,540.98	254.39	46,527.54	157,071.75
2000	21.03	3,676.30	9,019.87	6.01	1,719.14	3,935.94	259.39	45,229.65	159,432.69
2001	38.11	6,805.81	17,016.70	7.02	1,919.23	4,341.92	241.68	45,832.45	169,812.01

\*Crash data current as of October 31, 2008 and ultimated using loss developments factors as of October 31, 2008.

\*\*MDO= Material Damage Only

**Table 3. Crash Incident Rates\* for New Drivers, Transitional Novice Drivers and Non-new drivers (per 10,000 driver-years)**

	New Driver Incidents			Transitional Novice Incidents			Experienced Driver Incidents		
	Fatal	Injury	MDO**	Fatal	Injury	MDO	Fatal	Injury	MDO
GLPe:									
2004	0.38	66.57	200.76	6.89	863.90	2,002.06	1.28	193.85	733.21
2005	1.61	243.31	592.91	3.99	696.90	1,666.11	1.16	192.15	745.51
2006	1.86	361.88	946.17	1.85	675.87	1,534.66	1.14	192.31	782.26
GLP:									
1999	1.55	275.96	711.88	8.16	1,066.30	2,299.92	1.19	218.14	736.41
2000	2.68	467.70	1,147.50	2.66	759.76	1,739.45	1.19	207.55	731.61
2001	3.09	552.17	1,380.61	2.68	732.41	1,656.96	1.09	207.01	767.00

\*Based on crash data current as of October 31, 2008 and ultimated using loss developments factors as of October 31, 2008.

\*\*MDO= Material Damage Only

Several patterns emerge in Table 3. Most notably, fatal, injury, and material damage only crash rates were lower in each GLPe program year (2004, 2005, and 2006) for the new drivers, and for all but the 2005/2000 comparison of fatal crash rates for the transitional novice drivers, than the rates observed for the GLP driver groups in their comparative program years (1999, 2000, and 2001, respectively). A similar pattern was observed for the experienced driver group, but only for injury crash rates; fatal rates were higher in 2004 and 2006, relative to 1999/2001, and lower in 2005 relative to 2000. Material damage only rates were slightly higher in 2005 and 2006, relative to 2000/2001 while 2004 rates were lower relative to 1999. Table 4 shows the actual percentage differences computed for each driver group and time period.

**Table 4. Percentage change in crash incident rates by Program year and Crash Type**

	New Driver Incidents			Transitional Novice Incidents			Experienced Driver Incidents		
	Fatal	Injury	MDO	Fatal	Injury	MDO	Fatal	Injury	MDO
2004/1999	-75%	-76%	-72%	-16%	-19%	-13%	+8%	-11%	0%
2005/2000	-40%	-48%	-48%	+50%	-8%	-4%	-2%	-7%	+2%
2006/2001	-40%	-34%	-31%	-31%	-8%	-7%	+4%	-7%	+2%

The percentage differences for the experienced drivers, as shown in Table 4, were used to estimate the amount of change attributable to factors other than GLP for the new and transitional novice drivers, and to estimate the number of crash incidents expected in 2004, 2005, and 2006 if GLPe had not been implemented. This was done by multiplying the driver-years contributed in each target year (2004, 2005, and 2006) by the crash rate obtained for each driver group (and crash type) in each base year (1999, 2000, 2001) and then multiplying that result by the appropriate experienced driver adjustment factor [adjustment factor = (percentage change/100) + 1]. The expected crash incident counts before adjustment, the adjustment factors, and the expected counts after adjustment are summarized in Table 5, and the estimated number of crash incidents prevented in each year are summarized in Table 6.

**Table 5. Expected Crash Incident Counts for GLPe New and Transitional Novice Drivers in 2004, 2005, and 2006 by Type of Crash Before and After Adjustment for Non-GLPe-related Factors**

Target Year	New Driver Count before Adjustment			Adjustment Factors*			New Driver Count after Adjustment*		
	Fatal	Injury	MDO	Fatal	Injury	MDO	Fatal	Injury	MDO
2004	4.08	728.82	1,874.77	1.08	0.89	1.00	4.41	648.65	1,874.77
2005	21.61	3,773.58	9,291.62	0.98	0.93	1.02	21.18	3,509.43	9,477.45
2006	40.28	7,186.68	17,986.98	1.04	0.93	1.02	42.07	6,683.61	18,346.72
Target Year	Transitional Novice Count before Adjustment			Adjustment Factors			Transitional Novice Count after Adjustment		
	Fatal	Injury	MDO	Fatal	Injury	MDO	Fatal	Injury	MDO
2004	11.85	1,552.42	3,338.90	1.08	0.89	1.00	12.80	1,381.65	3,338.90
2005	7.99	2,283.63	5,247.02	0.98	0.93	1.02	7.83	2,123.78	5,351.96
2006	10.28	2,795.74	6,331.22	1.04	0.93	1.02	10.69	2,600.04	6,457.84

\*Differences between the adjusted new driver counts shown and those computed directly from the tabled values are due to rounding.

**Table 6. Estimated count of crashes prevented due to the introduction of GLPe**

Target Year	Expected New Driver Crashes			Actual New Driver Crashes			Difference (Expected – Actual)			
	Fatal	Injury	MDO	Fatal	Injury	MDO	Fatal	Injury	MDO	Total
2004	4.41	648.65	1,874.77	1.01	176.09	531.03	3.40	472.56	1,343.74	1,819.70
2005	21.18	3,509.43	9,477.45	13.05	1,972.14	4,805.74	8.13	1,537.29	4,671.71	6,217.13
2006	42.07	6,683.61	18,346.72	24.25	4,715.20	12,328.37	17.82	1,968.41	6,018.35	8,004.58
<b>Total</b>	<b>67.66</b>	<b>10,841.69</b>	<b>29,698.94</b>	<b>38.31</b>	<b>6,863.43</b>	<b>17,665.14</b>	<b>29.35</b>	<b>3,978.26</b>	<b>12,033.80</b>	<b>16,041.41</b>
Target Year	Expected Transitional Novice Crashes			Actual Transitional Novice Crashes			Difference (Expected – Actual)			
	Fatal	Injury	MDO	Fatal	Injury	MDO	Fatal	Injury	MDO	Total
2004	12.80	1,381.65	3,338.90	10.05	1,259.63	2,919.16	2.75	122.02	419.74	544.51
2005	7.83	2,123.78	5,351.96	12.05	2,104.28	5,030.77	-4.22	19.50	321.19	336.47
2006	10.69	2,600.04	6,457.84	7.07	2,582.78	5,864.55	3.62	17.26	593.29	614.17
<b>Total</b>	<b>31.32</b>	<b>6,105.47</b>	<b>15,148.70</b>	<b>29.17</b>	<b>5,946.69</b>	<b>13,814.48</b>	<b>2.15</b>	<b>158.78</b>	<b>1,334.22</b>	<b>1,495.15</b>

### **1.5.3 Estimation of Claims Dollars Saved Due to Introduction of GLPe**

To estimate the claims savings associated with the crash reductions observed for GLPe new and transitional novice drivers, two sets of numbers were needed: 1) the claims costs expected if GLPe had not been implemented and 2) the actual incurred costs after it was implemented. To obtain the expected costs the actual mean incident costs for the fatal, injury, and material damage only crashes of the new driver, non-new driver, and transitional novice driver groups were examined. Non-new driver costs were used to estimate trends in average crash claims cost over time attributable to factors other than GLPe. These estimates were then used to determine whether, and to what extent, any changes observed in new driver crash costs were likely attributable to these same non-GLPe-related factors, or to an effect of GLPe implementation. Although not included in the crash rate analysis, claims data from 2002 and 2003 were included in the analysis of cost data in order to avoid gaps in cost trends over time.

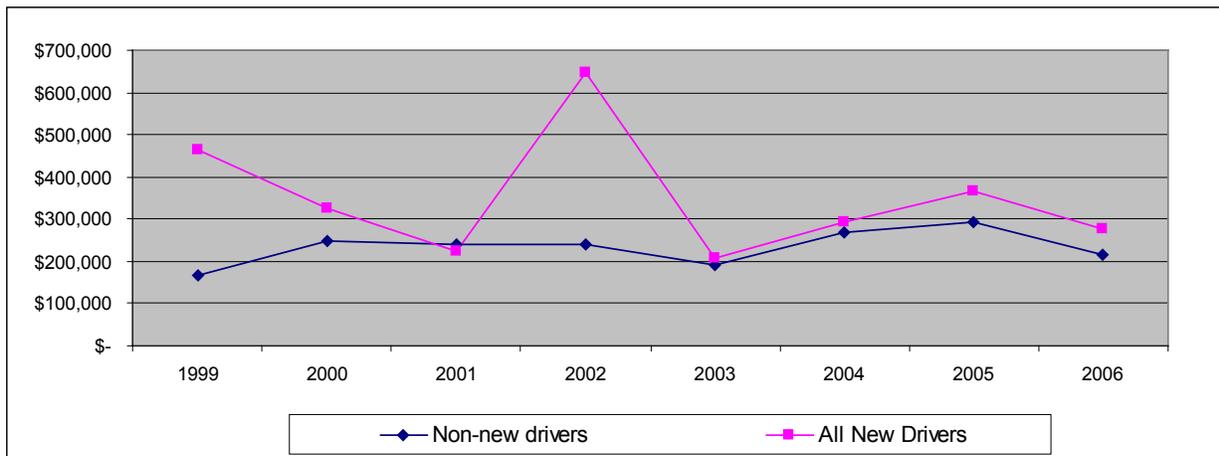
The analysis of incurred costs and the estimation of claims costs expected was initiated with the following several steps.

- First, the actual incurred costs were extracted from the BIW for the new driver, transitional novice driver, and non-new driver incidents that occurred annually from 1999 through 2004. Incurred costs were current as of October 31, 2008 and ultimated using loss development factors as of October 31, 2008.
- Second, average annual incurred costs were computed for incidents involving drivers in the “L” stage of licensure (from the new driver group) and for those in the “N” stage of licensure (from the new driver and transitional novice driver group). This was done to determine whether the average cost of a crash incident involving a learner (but no novice) driver might differ from the average cost of a crash incident involving at least one novice driver. *Student t-tests* were used to test for statistically significant differences in the average costs per fatal, injury or MDO incidents for these two groups. No significant differences were obtained ( $P>0.05$  for all comparisons). It was concluded, therefore, that cost data from all new driver incidents as well as transitional novice incidents could be combined into the calculation of one overall aggregated new driver average cost by year and type of crash.
- Third, the average annual incurred costs (1996-2006) for the “aggregated new driver” and “experienced driver” groups were computed by crash type (fatal, injury and MDO) and graphed (Figures 1, 3, and 6). A visual examination of these graphs suggested that fatal crashes would need to be treated differently from injury and MDO crashes. Fatal crash costs did not demonstrate the same time trends or differences between the new and non-new driver groups exhibited by the injury and MDO crash costs. The specific details relating to the processes selected for estimating expected fatal crash costs, injury, and MDO crash costs are described below.

#### ***Fatal Crash Incident Costs***

Figure 1 shows the mean costs obtained for fatal crash incidents.

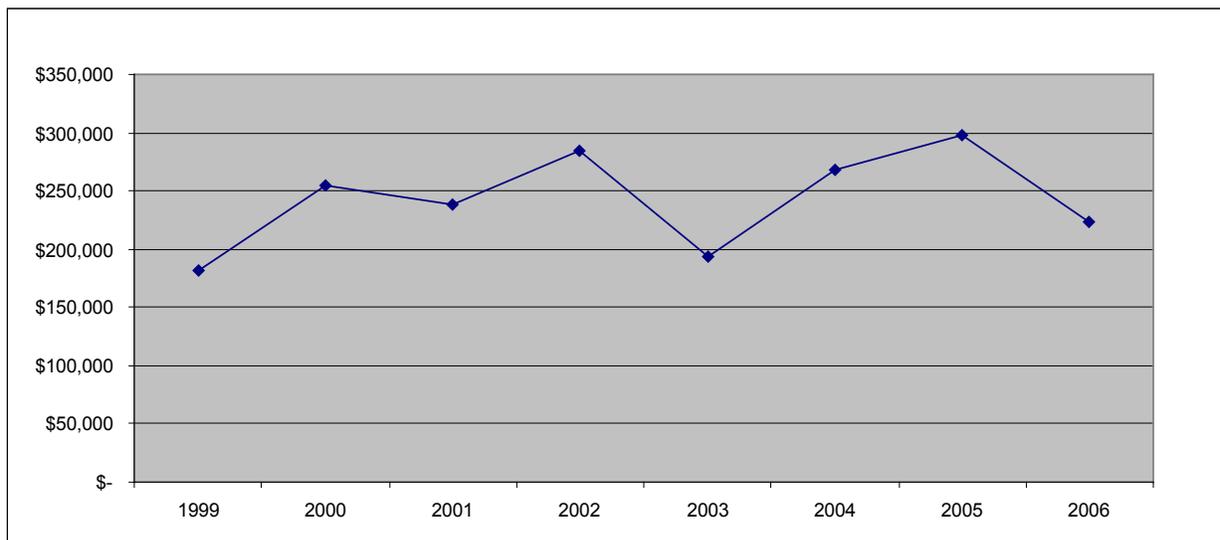
**Figure 1. Mean Crash Incident Incurred Costs\* by Year and Driver Group: Fatal Incidents Only**



\*(Costs Ultimated using Loss Development Factors as of October 31, 2008)

Despite the aggregation of the new driver and transitional novice driver groups, the number of fatal incidents involving these drivers (Table 2) each year was still quite small. High cost incidents therefore have a greater influence on the average cost of a fatal crash for these drivers than for the much larger groups of experienced drivers. Consequently, their average annual fatal crash costs tend to vary more than the average costs of experienced driver fatal crashes. This variability makes it difficult to determine whether there has been a significant change in new driver claims costs incurred for fatal crashes before and after the introduction of GLPe. However, a comparison of the overall average annual cost for the aggregated new driver and experienced driver groups revealed that the difference between the two groups was not statistically significant ( $t=2.20$  – adjusted for unequal variances,  $df=8.06$ ;  $P=0.06$ ). Consequently, to smooth out the influence of the occasional high-cost fatal new driver crashes, the annual costs incurred for fatal crashes were aggregated across the two driver groups, and the combined averages are shown in Figure 2.

**Figure 2. Mean Crash Incident Incurred Costs\* by Year All New Drivers and Non-new drivers Combined: Fatal Incidents Only**



\*(Costs Ultimated using Loss Development Factors as of October 31, 2008)

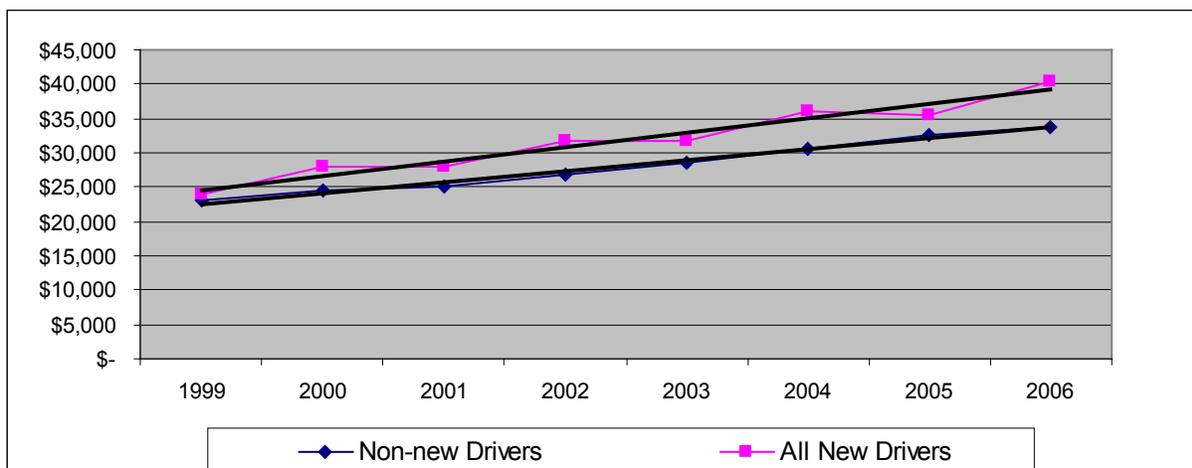
## GLPe Benefits Analysis: 2004-2006

A linear regression model was fit to the average annual fatal crash cost data to determine whether the costs were trending upwards or downwards over time, or in relation to the implementation of GLPe. The fitted regression model accounted for only about 16% of the variability in annual average crash costs, and was not statistically significant ( $P > 0.05$ ). No evidence of either a GLPe effect or linear trend over time was found. Thus, the overall average cost of a fatal crash (computed across all years and all new and non-new drivers) was selected as the per incident cost to use in estimating the expected cost for all GLPe driver fatal crash incidents. Estimated in this way, the expected cost of a new driver fatal crash for each year in the period 2004 through 2006 is (\$242,638.21).

### *Injury and Material Damage Only Crash Incident Costs*

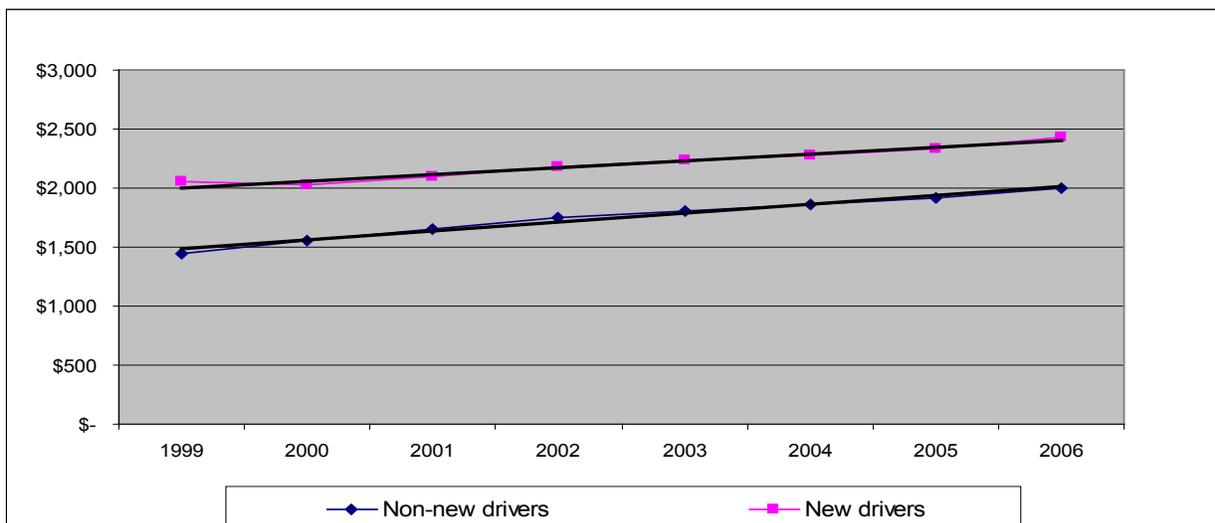
Figures 3 and 4 show the annual mean costs incurred by year and driver group for injury and material damage only crash incidents. In contrast to the data for fatal crashes, the injury and MDO graphs show: 1) an increasing average incident cost for both new and non-new drivers, and 2) a higher average cost each year for the new driver compared to the non-new driver group.

**Figure 3. Mean Crash Incident Incurred Costs\* by Year and Driver Group: Injury Incidents**



*\*(Costs Ultimted using Loss Development Factors as of October 31, 2008)*

**Figure 4. Mean Crash Incident Incurred Costs\* by Year and Driver Group: Material Damage Only Incidents**



*\*(Costs Ultimted using Loss Development Factors as of October 31, 2008)*

In order to estimate the average incident costs expected for new drivers in 2004, 2005, and 2006 assuming GLPe had not been implemented, several regression models were fitted to the data shown in Figures 3 and 4. These models were used to test for significant differences between the estimated linear functions for the new and non-new driver data, and to test for possible changes in the slopes of the fitted trend lines before and after the implementation of GLPe (2003).

The results of the regression analyses confirmed that linear functions would provide a good fit to the data, for both injury and MDO crash incident costs. The first models fitted linear trend lines to the new and non-new driver data and tested for significant differences in the slopes and heights of the estimated functions. The results (Appendix B, Table 1) indicated that average annual new driver MDO crash costs were significantly higher ( $P < 0.0001$ ) than those of the experienced driver groups, whereas injury crash costs were only marginally higher for the new drivers ( $P < 0.08$ ). Over time, the average costs of injury crash incidents increased at about the same rate for both driver groups ( $P > 0.71$ ). In contrast, average costs of MDO incidents were increasing at a significantly slower rate for the new driver than for the non-new driver group ( $p < 0.05$ ).

Although these simple models fitted the data well ( $R^2 > 0.93$  and  $0.99$ , respectively) a second analysis was undertaken to determine whether there was any evidence that the implementation of GLPe might have influenced the average injury and MDO costs incurred by new drivers. For these models, the new driver costs and experienced driver costs were modeled using a method known as 'piecewise' regression. Using this method, linear regression functions are fitted to the data in a way that permits the testing of the rates of change in the pre-GLPe period to the post-GLPe period, for both the new and experienced driver groups. The fitting of these models to the experienced driver group was done in order to investigate whether any changes observed in the post-GLPe period were specific to new drivers (indicative of a GLPe effect) or to both groups of drivers (indicative of an effect attributable to factors other than GLPe).

The results of this second set of models are shown in Appendix B, Table 2. For injury crash incidents, there was no evidence of a significant change in the slope of the fitted linear function after the implementation of GLPe, for either the new or experienced driver group. For MDO crash costs, however, the results were a little more complex. The pre- and post-GLPe rates of change in MDO costs did change for both driver groups, but in opposite directions. Moreover, the rate of change in MDO costs was slower for new drivers prior to GLPe, and greater after GLPe was implemented (from an estimated \$49.31 per MDO crash per year to the end of 2003, to an estimated \$69.66 per MDO crash per year from 2004 to 2006). For experienced drivers the opposite trend was observed: the rate of change was greater before GLPe and slower after GLPe (from an estimated \$89.75 per MDO crash per year to \$52.47 per MDO crash per year). These findings suggested that GLPe might have had an effect on the average costs of new driver MDO crash incidents.

However, before concluding that the observed effect was attributable to GLPe, an additional analysis was undertaken to investigate whether the detected change in trend for MDO crashes for the new driver group started before or after the implementation of GLPe. It was assumed for the previous analysis that it did but this assumption needed to be tested. Particularly since visual inspection of the graph for new driver MDO costs (Figure 4) suggested that the change may actually have begun as far back as 2000 or 2001. If so, then the increasing costs observed in the post-GLPe period may simply reflect the continuation of a pre-existing trend, rather than an effect of GLPe implementation.

To explore when the increase in MDO crash costs for new drivers might have begun, a series of piecewise regressions were undertaken using the years 2000, 2001, 2002, 2003, and 2004 as the cut points in testing for changes in linear slope. The results of these tests (shown in Appendix B, Table 3) indicate that the previously detected change in trend for new driver MDO crash costs most likely began in 2000 or 2001, two years prior to the implementation of GLPe. There was a significant ( $P < 0.05$ ) shift in slope from the 1999-2000 period to the period after 2000, and a marginally significant shift ( $P = 0.10$ ) in slope after 2001. After that, a single linear function appeared to provide the best fit to the data (indicated by the non-

significant slope test parameter. It appears unlikely therefore that GLPe prompted the increase in MDO crash costs observed over the period of the study.

Given these results it can be assumed that the changes in injury and MDO new driver crash incident costs observed over time are most likely not attributable to GLPe. Therefore, there is no need to estimate or adjust the actual costs incurred in the post-GLPe period when calculating the expected costs of new driver crashes; the actual average injury and MDO crash incident incurred (ultimated) costs from 2004, 2005, and 2006 (Table 7) can be used to compute the total expected costs for the post-GLPe period and to obtain the estimated claims savings attributable to GLPe. Based on these analyses, and the estimation of expected claims costs (Table 8), the total estimated claims savings attributable to GLPe for the period 2004 through 2006 is **\$172 million**.

For 2004, \$26 Million

For 2005, \$62 Million

For 2006, \$84 Million

**Table 7. Average Annual Incurred Costs for “New”\* Driver Crashes by Year and Crash Type**

<b>Target Year</b>	<b>Fatal</b>	<b>Injury</b>	<b>MDO</b>
2004	\$242,638.21	\$37,068.69	\$2,278.99
2005	\$242,638.21	\$33,932.83	\$2,335.22
2006	\$242,638.21	\$36,142.63	\$2,436.56

\* Aggregated new and transitional novice drivers.

**Table 8. Estimated Claims Savings in 2004 for GLPe Drivers by Type of Crash**

Target Year	EXPECTED NEW DRIVER CLAIMS COSTS			ACTUAL NEW DRIVER CLAIMS COSTS			DIFFERENCE (EXPECTED - ACTUAL)				
	Fatal	Injury	MDO	Fatal	Injury	MDO	Fatal	Injury	MDO	Total	
2004	\$1,069,072.37	\$24,044,559.91	\$4,272,565.57	\$6,387.14	\$5,528,563.46	\$1,183,128.56	\$1,062,685.23	\$18,515,996.45	\$3,089,437.01	\$22,668,118.69	
2005	\$5,138,980.59	\$119,084,971.66	\$22,131,944.06	\$4,228,061.19	\$68,374,901.36	\$12,030,822.94	\$910,919.40	\$50,710,070.30	\$10,101,121.12	\$61,722,110.82	
2006	\$10,207,098.89	\$241,563,314.88	\$44,702,839.19	\$5,894,076.70	\$182,675,191.00	\$30,741,687.21	\$4,313,022.19	\$58,888,123.88	\$13,961,151.98	\$77,162,298.05	
<b>Total GLPe</b>										\$161,552,527.56	
Target Year	EXPECTED TRANSITIONAL NOVICE DRIVER CLAIMS COSTS			ACTUAL TRANSITIONAL NOVICE DRIVER CLAIMS COSTS			DIFFERENCE (EXPECTED - ACTUAL)				
	Fatal	Injury	MDO	Fatal	Injury	MDO	Fatal	Injury	MDO	Total	
2004	\$3,105,493.97	\$51,215,920.05	\$7,609,302.39	\$3,501,127.96	\$48,359,077.12	\$6,880,364.53	\$(395,633.99)	\$2,856,842.93	\$728,937.86	\$3,190,146.80	
2005	\$1,900,122.17	\$72,065,918.27	\$12,498,005.44	\$5,163,665.89	\$70,168,951.66	\$11,037,597.22	\$(3,263,543.72)	\$1,896,966.61	\$1,460,408.22	\$93,831.11	
2006	\$2,593,813.43	\$93,972,286.53	\$15,734,896.69	\$2,716,833.74	\$89,347,413.07	\$13,487,979.42	\$(123,020.31)	\$4,624,873.46	\$2,246,917.27	\$6,748,770.42	
<b>Total GLPe</b>										\$10,032,748.33	
*Differences in the expected costs shown in this table and those computed from the data provided in Tables 6 and 7 are due to rounding.										<b>Total estimated Claims Savings =</b>	<b>\$171,585,275.89</b>

**Appendix A. Loss Development Factors (LDFs) as of October 31, 2008**

Claim Year	Crash Type	Count LDF	Incurred LDF
1999	Fatal	1.001526	1.000184
	Injury	1.000055	1.002735
	MDO*	0.999992	0.998212
2000	Fatal	1.001491	1.000000
	Injury	1.000081	1.001597
	MDO*	0.999986	0.997899
2001	Fatal	1.002816	1.000628
	Injury	1.000119	1.006910
	MDO*	0.999982	0.997679
2002	Fatal	1.003168	0.999024
	Injury	1.000161	1.008380
	MDO*	0.999997	0.997618
2003	Fatal	1.005110	0.993557
	Injury	1.000277	1.019680
	MDO*	1.000010	0.996481
2004	Fatal	1.005147	0.993505
	Injury	1.000501	1.040643
	MDO*	1.000055	0.995246
2005	Fatal	1.004158	0.959766
	Injury	1.001085	1.088070
	MDO*	1.000153	0.994019
2006	Fatal	1.010219	0.938051
	Injury	1.003020	1.234378
	MDO*	1.000436	0.993403

*\*Material Damage Only*

Appendix B. Crash Incurred Cost Regression Analysis Results

**Table 1. Linear Regression Results for Average Incident Costs - Injury Crashes (Model 1) and Material Damage Only Crashes (Model 2) – Testing For Equality of the Aggregated New Driver and Experienced Driver Trend Lines**

Model 1 (Injury costs)	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	20,945	1003.24	20.88	<0.0001
	Year	1	1591.17	198.67	8.01	<0.0001
	Driver Group	1	2766.52	1418.80	1.95	0.0749
	Interaction Term (Driver group by Year)	1	103.94	280.96	0.37	0.7179
<i>R</i> <sup>2</sup>	0.93	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (3,12)</i>	54.06 ( <i>P</i> <0.0001)	<i>Driver Group: 0=Non-new drivers, 1=New drivers</i>				
Model 2 (MDO costs)	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	1414.38	23.36	60.55	<0.0001
	Year	1	74.66	4.63	16.14	<0.0001
	Driver Group	1	531.25	33.04	16.08	<0.0001
	Interaction Term (Driver group by Year)	1	-17.11	6.54	-2.62	0.0226
<i>R</i> <sup>2</sup>	0.99	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (3,12)</i>	444.48 ( <i>P</i> <0.0001)	<i>Driver Group: 0=Non-new drivers, 1=New drivers</i>				

**Table 2. Regression Results for Average Incident Costs – For Injury Crashes (Model 1) and Material Damage Only Crashes (Model 2) – Testing for Changes in Slope After GLPe**

Model 1 (Injury)	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	21379.00	1244.18	17.18	<0.0001
	Year	1	1427.48	357.60	3.99	0.0026
	Driver Group	1	904.38	1759.53	0.51	0.6184
	Interaction Term (Driver group by Year)	1	807.41	505.72	1.60	0.1414
	Slope Change After GLPe	1	404.39	751.90	0.54	0.6025
	Slope Change different for new and experienced drivers	1	-1737.99	1063.34	-1.63	0.1332
<i>R</i> <sup>2</sup>	0.95	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (5,10)</i>	37.00 ( <i>P</i> <0.0001)	<i>Driver Group: 0=Non-new drivers, 1=New drivers</i>				
Model 2 (MDO)	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	1374.44	25.17	54.60	<0.0001
	Year	1	89.75	7.24	12.40	<0.0001
	Driver Group	1	593.00	35.60	16.66	<0.0001
	Interaction Term (Driver group by Year)	1	-40.44	10.23	-3.95	0.0027
	Slope Change After GLPe	1	-37.28	15.21	-2.45	0.0342
	Slope Change different for new and experienced drivers	1	57.63	21.51	2.68	0.0231
<i>R</i> <sup>2</sup>	0.99	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (5,10)</i>	397.01 ( <i>P</i> <0.0001)	<i>Driver Group: 0=Non-new drivers, 1=New drivers</i>				

Appendix B cont.

**Table 3. Regression Results for Average Incident Costs – Material Damage Only Crashes – Testing for the year in which the slope of the New Driver linear trend line changed.**

Year 2000 as Cutpoint	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	2073.73	34.64	59.87	<0.0001
	Year	1	-20.74	19.84	-1.05	0.3438
	Slope Test	1	85.40	21.46	3.98	0.0105
<i>R</i> <sup>2</sup>	0.99	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (2,5)</i>	266.66 ( <i>P</i> <0.0001)	<i>Slope Test: 1999-2000 slope= -20.74; 2001-2006 slope =85.40-20.74 = 64.66</i>				
Year 2001 as Cutpoint	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	2006.19	36.39	55.14	<0.0001
	Year	1	28.39	15.27	1.86	0.1222
	Slope Test	1	37.68	19.10	1.97	0.1055
<i>R</i> <sup>2</sup>	0.98	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (2,5)</i>	112.43 ( <i>P</i> <0.0001)	<i>Slope Test: 1999-2001 slope= 28.39; 2002-2006 slope = 28.39+37.68 = 66.07</i>				
Year 2002 as Cutpoint	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	1975.97	35.00	56.46	<0.0001
	Year	1	44.91	11.86	3.79	0.0128
	Slope Test	1	21.23	18.37	1.16	0.2999
<i>R</i> <sup>2</sup>	0.97	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (2,5)</i>	79.38 ( <i>P</i> <0.0001)	<i>Slope Test: 1999-2002 slope= 44.91; 2003-2006 slope = 44.91+21.23 = 66.14</i>				
Year 2003 as Cutpoint	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	1967.44	30.72	64.05	<0.0001
	Year	1	49.31	8.83	5.58	0.0025
	Slope Test	1	20.35	18.56	1.10	0.3230
<i>R</i> <sup>2</sup>	0.97	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (2,5)</i>	77.64 ( <i>P</i> <0.0001)	<i>Slope Test: 1999-2003 slope= 49.31; 2004-2006 slope = 49.31+20.35 = 69.66</i>				
Year 2004 as Cutpoint	Variable	Degrees of Freedom	Parameter Estimate	Standard Error	t-value	P-value
	Intercept	1	1963.57	26.88	73.03	<0.0001
	Year	1	51.27	6.76	7.59	0.006
	Slope Test	1	27.74	22.24	1.25	0.2675
<i>R</i> <sup>2</sup>	0.97	<i>Year: 1=1999, 2=2000, 3=2001, 4=2002, ..., 8=2006</i>				
<i>Model F (2,5)</i>	82.22 ( <i>P</i> <0.0001)	<i>Slope Test: 1999-2004 slope= 51.27; 2005-2006 slope = 51.27+27.74 =79.01</i>				



# **2012.1 RR IBC.33.1 – Attachment C – 2011 Road Safety Annual Reporting Documentation**



## **ATTACHMENT C-1**

# **2010 ROAD SAFETY ANNUAL REPORT**

# 2010 road safety annual report



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## Introduction

The Road Safety Department develops and manages programs that help prevent traffic crashes and auto crime. This provides a benefit to ICBC customers by protecting them from risks on the road, helping to reduce injuries and fatalities caused by crashes, and helping to maintain low and stable insurance premiums. The department's activities support the corporate objective of maintaining financial stability by helping control claims costs.

Road Safety programs are focused on the key factors impacting crashes, namely drivers, roads and vehicles. Programs have both short-term and long-term objectives, reflecting the fact that some risks and challenges have different timeframes involved in effecting a positive change (e.g., roads can typically be re-engineered more quickly than changing an entrenched attitude or behaviour).

This report summarizes the approach that guides ICBC's Road Safety programs, and provides information on 2010 objectives and results.

## Key assumptions and principles

The following assumptions and principles guided development of detailed program and tactical plans in 2010.

### Key assumptions

- Road Safety is focused on protecting ICBC's insurance and driver licensing customers throughout the province.
- Road Safety investments are designed to protect customers from risk by preventing and minimizing the impact of crashes and crime. In so doing, insurance premiums remain low and stable, and customers are provided with protection and peace of mind.
- Road Safety programs are data driven and evidence based.
- Road Safety will support corporate goals and measures.

### Road Safety principles

Road Safety will:

- Be guided by a clear plan that considers both provincial and local needs.
- Deliver programs that target the most serious road safety risks and minimize the harm (injury, death, and property damage) to customers.
- Focus programs on delivering claims savings benefits.
- Proactively partner with stakeholders and individuals.
- Ensure that all programs and tactics have measurable objectives and appropriate evaluation plans.

## Strategic framework

ICBC classifies all Road Safety programs into three categories which represent the major causes of crashes: Drivers, Roads, and Vehicles.

Strategic Intent	Protect customers from risks on the road by preventing and minimizing the impact of crashes and crime				
Strategic Outcomes	Fewer Crashes Caused by Unsafe Driving	Attitude Changes, More Accountability	Safer, More Forgiving Roads	Fewer Auto Crime Incidents	Vehicles that Minimize Impact of Crashes and Crime
Goals	<p style="text-align: center;"><b>Drivers</b></p> <p>Help our customers improve their unsafe driving behaviours</p> <ol style="list-style-type: none"> <li>1. Lead the development of programs that help customers understand the impact and consequences of their driving choices, and the accountability they have to improve the way they drive.</li> <li>2. Support the development and implementation of insurance, driver licensing and other interventions to increase safe driving.</li> <li>3. Support and promote enforcement strategies targeted to Road Safety issues.</li> <li>4. Support the development and implementation of legislation, sanctions and other means to protect customers and increase safe driving.</li> </ol>		<p style="text-align: center;"><b>Roads</b></p> <p>Reduce road-related driving hazards</p> <ol style="list-style-type: none"> <li>5. Work with partners to:                             <ul style="list-style-type: none"> <li>• prevent crashes at targeted locations throughout B.C.</li> <li>• maintain the priority of road safety infrastructure during roadway planning.</li> </ul> </li> </ol>	<p style="text-align: center;"><b>Vehicles</b></p> <p>Reduce vehicle-related safety and crime vulnerabilities</p> <ol style="list-style-type: none"> <li>6. Partner with others to improve vehicle safety so customers are protected from injury.</li> <li>7. Partner with others to improve vehicle security to protect customers from being victims of crime.</li> </ol>	

## 2010 Road Safety objectives and results

Helping prevent crashes and auto crime are the two main pillars of ICBC's Road Safety program, as presented in the following sections.

For crashes, this includes programs directed towards supporting enforcement, improving roadway engineering, influencing driver attitudes and behaviours, and supporting policy and legislation.

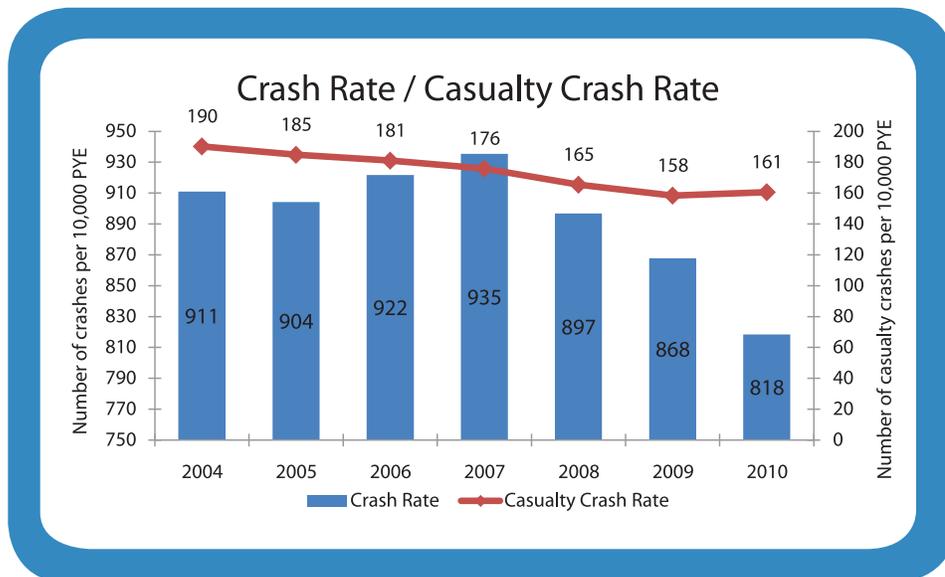
For auto crime, this includes programs aimed at supporting enforcement, deterring criminals and influencing customers to take preventive action.

### Crash prevention

ICBC tracks crash and casualty crash rates over time as indicators of the safety of roadways throughout the province. The crash rate (number of crashes reported to ICBC per 10,000 Basic policy years earned<sup>1</sup>) has fluctuated over time, whereas the casualty crash rate (number of crashes involving injuries or fatalities, per 10,000 Basic policy years earned) shows a slight but steady decline since 2003.

The Road Safety projections for 2010 were:

- The 2010 crash rate will be the same as it was in 2008.
- The 2010 casualty crash rate will be lower than the pre-recession rate of 2007.



Source: ICBC data as of June 30, 2011

<sup>1</sup> Policy years earned are calculated on a per diem basis from the policy effective date up to and including the earlier of the policy expiry date and cancellation date (if any). The policy years earned for a policy effective from January 1 to December 31 is 1; the policy years earned for a policy effective April 1 to September 30 is 0.5; the policy years earned for a policy effective October 1 to September 30 of the following year is 0.25 for the first year and 0.75 for the second year.

## 2010 road safety annual report

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In 2010, the crash rate was below the 2008 level. The crash rate for 2010 was 818, a 9% decrease from 897 in 2008. When comparing to 2009, the 2010 crash rate decreased by 6% from 868.

In 2010, the casualty crash rate was below the 2007 level. The casualty crash rate in 2010 was 161, a 9% decrease from 176 in 2007. However, there was a slight increase of 1% in the casualty crash rate between 2009 and 2010. This increase is being monitored.

### Auto crime prevention

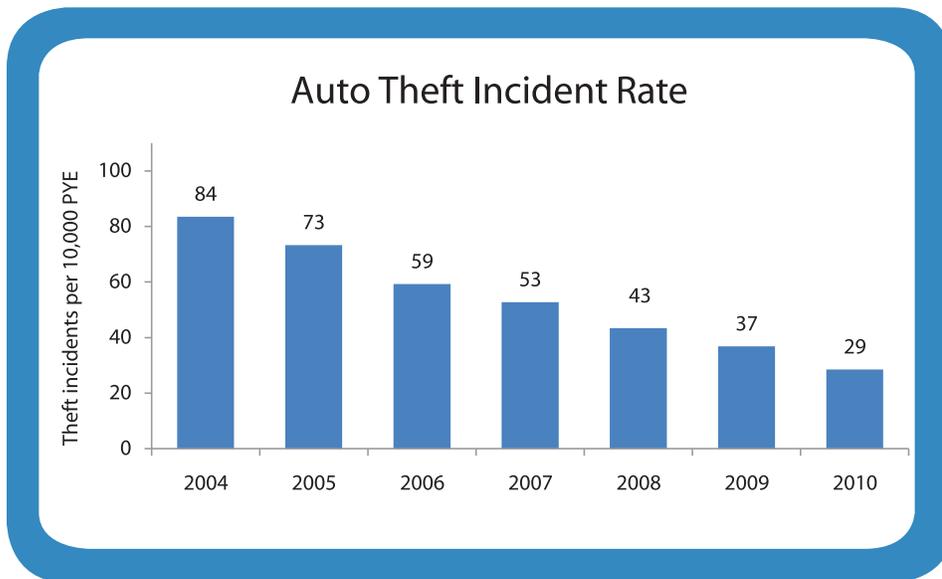
Auto crime includes theft of vehicles, theft of items from within vehicles, and vehicle related vandalism. Road Safety's primary focus is on reducing the theft of vehicles since it has the greatest impact on claims costs.

Since 2003, the auto theft incident rate (number of auto theft incidents reported to ICBC per 10,000 Basic policy years earned) has been decreasing steadily.

The Road Safety auto crime projection for 2010 was:

- The 2010 auto theft incident rate will fall by 10% (from its 2009 level).

The auto theft incident rate continued to decrease in 2010. In 2010, the auto theft rate was 29, a 22% decrease from 37 in 2009.



Source: ICBC data as of June 30, 2011

## 2010 program objectives and results

The following sections summarize the 2010 activities for each Road Safety program. In each section, program details are presented including a brief overview of the problem, program objectives and outcomes, and tactic objectives and outcomes.

The sections are organized according to the Road Safety Strategic Framework and reflect programs targeting drivers, roads, and vehicles.

Driver programs	Road programs	Vehicle programs
Impaired driving	Road improvements	Safer vehicles
Speeding		Auto crime
Intersection safety		
Occupant restraints		
Driver distractions		

### A note about TAS data

The development of targets for the driver programs has previously been based on police-reported crashes in the Traffic Accident System (TAS). This is currently the only source of observation information in B.C. about human factors that contributed to any specific crash.

On July 1, 2008, collision reporting requirements for police were amended under the *Motor Vehicle Act* section 249 and it became no longer mandatory for drivers to report crashes to police, or for police to submit MV6020 forms to ICBC for collisions that were reported by drivers. Police only had to file reports on crashes they attended, and attendance was left to their discretion. Since that change was introduced, the total number of police reports has declined, particularly for property-damage-only and injury crashes.

An internal ICBC analysis of TAS data has found that TAS data can no longer be used to track changes in collisions over time, particularly when comparing data prior to 2008 with data post 2008. This has affected ICBC's ability to use TAS data for driver-based program measuring and monitoring. For this reason, TAS-based program performance measures that were set in the 2010 Road Safety Business Plan will not be reported in the 2010 Annual Report as decreasing crash counts that include police-reported data may be misleading.

During 2011 and 2012, ICBC will explore the feasibility of using other performance measures to design, measure and monitor driver-based programs. In the interim, driver-based program performance will be measured through the use of driver attitudes, perceptions, and self-reported behavioural indicators. Crash rates and casualty crash rates (based on ICBC data) will continue to be used as overall indicators for ICBC's Road Safety program.

## Driver programs

### Impaired driving

Alcohol impaired driving continues to be one of the top contributing factors in fatal crashes in B.C. From 2005 to 2007, males killed in alcohol related crashes outnumbered females 3 to 1. Drivers (male and female) aged 16 to 25 account for the largest proportion at 34% of all impaired drivers involved in a crash.

In September 2010, the B.C. government introduced stronger administrative impaired driving sanctions, making them the toughest in Canada. Under the *Motor Vehicle Act*, police are now able to issue immediate roadside prohibitions (IRPs) to penalize impaired drivers including those who are caught in the “warn” range (between 0.05 and 0.08 Blood Alcohol Content).

### Program strategic objectives

Objective	Result
The alcohol impaired driving casualty crash rate will decrease by 3% in 2010, when compared with the average rate of years 2004, 2005, and 2007.	<p>✔ In 2010, the alcohol impaired driving casualty crash rate decreased from the average rate of years 2004, 2005, and 2007.</p> <p><i>Comment: TAS data shows an overall decrease in the alcohol impaired driving casualty crash rate. The 2010 rate for this objective has not been reported here due to changes in the MVA affecting police attendance of crashes. Please see note on page 5.</i></p>
In 2010, 75% of drivers will report they do not drive within two hours of consuming two or more drinks, a 1% increase compared to 2009.	<p>✔ In 2010, 77% of drivers reported they do not drive within two hours of consuming two or more drinks.</p>

### Impaired driving program activities: 2010 highlights



One of many Designated Driver mini-boards displayed at drinking establishments across B.C.

#### Campaigns

Two impaired driving campaigns were held in 2010: a summer campaign and a winter campaign. The campaigns supported additional police enforcement and community activities to raise awareness of this dangerous driving behaviour. The summer campaign started with a high profile media launch June 28th at Waterfront Park in North Vancouver, with the Solicitor General speaking and 20 invited stakeholders in attendance. Both campaigns had a CounterAttack TV ad and radio tags that ran province-wide. To support the campaigns ICBC purchased designated driver messaging at bars and pubs across B.C.

**CounterAttack community outreach**

The new “Drinking and driving starts with your first drink” concept/messaging was introduced in mid-2009. During 2010 the messaging on rink boards, score boards, and banners continued to be displayed at community sports and entertainment facilities that serve alcohol.

**Operation Red Nose (ORN)**

ICBC sponsored the ORN program for the 14th consecutive year. ORN volunteers provide safe rides home to people who have been drinking during the Christmas season. ICBC sponsored ORN by providing vehicle insurance and some promotional materials. Thanks to all the volunteers across B.C., 4,230 volunteers gave 7,660 rides in 20 communities, and drove 188,000 km to help people get themselves and their vehicles home safely.

**2010 impaired driving tactics**

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of impaired driving enforcement through Memorandum of Understanding (MOU).</p>	<p>In 2010, 42% of survey respondents feel they are likely to get caught if they drink and drive, maintaining October 2009 levels.</p>	<p>✔ In 2010, 59% of survey respondents said it is likely that they will be caught if they drink and drive.</p>
<p><b>Impaired driving awareness campaign</b></p> <p>CounterAttack radio and TV advertising is produced by ICBC. ICBC purchases media buys for TV and radio during the July and December campaign periods. Additionally, the B.C. Association of Broadcasters airs the ads free as public service announcements throughout the year. The campaign includes community partnerships, including working with the police to publicize enforcement programs and providing information to employers.</p>	<p>In 2010, the existing awareness campaign is being refreshed with new creative materials. At least 50% of survey respondents will demonstrate aided recall of the new slogan:</p> <p><i>Attitudes towards drinking and driving are changing. Harsher penalties will begin at .05 and are now the toughest in Canada.</i></p>	<p>✔ In 2010, 53% of survey respondents demonstrated aided recall of the slogan, <i>Harsher penalties will begin at .05 and are now the toughest in Canada.</i></p>

Tactic name and description	Objective	Results
<p><b>CounterAttack (CA) community outreach (formerly Get Home Safe)</b></p> <p>This tactic involves working with municipalities and sports/entertainment facility owners to endorse and promote the CA message. Municipalities require special event licensees to display impaired driving materials at their private events. Banners, rink boards, electronic boards and other messaging tools are used at sports/entertainment facilities.</p>	<p>In 2010, 60 municipalities agree to adopt or endorse a policy to promote safe alternatives to driving, an increase from 53 attained in 2009.</p> <p>In 2010, 209 private and public sports facilities, bars, restaurants, and hotels that serve alcohol year-round agree to promote CounterAttack Community Outreach, an increase from 69 in 2009.</p>	<p> In 2010, 107 municipal partners and community policing offices confirmed participation in the CA Community Outreach endorsements.</p> <p> In 2010, 181 sports and entertainment facilities agreed to promote CA Community Outreach.</p> <p><i>Comment: Results are being reviewed to better understand targets for this tactic. In 2011, this tactic will be expanded to include Designated Driver messaging.</i></p>
<p><b>Operation Red Nose (ORN)</b></p> <p>A Christmas volunteer driving service to drive people and their vehicles home safely from parties or events where alcohol is served or where drivers are too tired to drive. ORN National Office is the current B.C. sponsor. ICBC supports the program by providing insurance coverage for the volunteer ride vehicles and some promotional items.</p>	<p>Maintain 2009 levels for the number of B.C. communities participating in ORN, and the number of rides provided.</p>	<p> In 2010, 7,660 rides were provided in approximately 20 communities during the Christmas season, an increase from 6,061 rides in 14 communities in 2009.</p>

## Speeding

Speeding includes driving over the posted speed limit, excessive speed (40 km/h or more over the limit), and driving too fast for conditions.

On average from 2005 to 2007, police attended 3,630 injury collisions involving speed. Driving too fast for conditions was the most frequently cited contributing factor. Speed was the top contributing factor in fatal collisions during these same years, resulting in an average of 152 speed-related fatal collisions each year.

### Program strategic objectives

Objective	Result
<p>The casualty crash rate for speed-related crashes will decrease by 5% compared to the average rate for the years 2004 to 2007.</p>	<p>✓ In 2010, the speed related casualty crash rate decreased from the average rate for the years 2004 to 2007.</p> <p><i>Comment: TAS data shows an overall decrease in the speed related casualty crash rate. The 2010 rate for this objective has not been reported here due to changes in the MVA affecting police attendance of crashes. Please see note on page 5.</i></p>
<p>In 2010 surveys, 3% fewer respondents will agree with the following speeding behavioural statement as compared with 2009: <i>I am fully in control of my driving even when I drive more than 10 km/h more than the speed limit.</i></p> <p>In 2008, a 3-year objective was established for the new messaging: 5% fewer drivers will report, <i>"I don't have the time or patience to drive at the posted speed limit,"</i> as compared to the 2007 result of 19%.</p>	<p>✓ In December 2010, 11% fewer drivers agreed with the statement: <i>I am fully in control of my driving even when I drive more than 10 km/h more than the speed limit.</i></p> <p>✗ In June 2010, 4% more drivers (23%) reported that they <i>"don't have the time or patience to drive at the posted speed limit"</i>.</p>

### Speeding program activities: 2010 highlights

#### Campaign

The province-wide campaign ran in November to raise driver awareness of the need to adjust one's speed to suit B.C.'s various winter driving conditions. This was a change from the 2009 campaign which occurred in May and June and focused on the summer driving season. The campaign launch was held in Richmond. Media and local stakeholders were invited to drive a vehicle and brake under wet or slippery conditions. This hands-on demonstration illustrated the need for drivers to slow down when travelling in less than ideal weather conditions.

Launches were also held in various locations throughout the province.



*Driving demonstration at the November Speed Relative to Conditions campaign launch in Richmond.*

#### RoadSense Speakers

Through the RoadSense Speakers Tour, speakers use their experience to motivate youth to make safe driving choices. ICBC invited schools to select a RoadSense Speaker for grades 11-12 during their 2010 grad season. In the Lower Mainland, schools were offered up to \$500 to book a speaker of their choice. Speaker tours were conducted in the North Central, Vancouver Island and Southern Interior.



180 Film Contest poster

### Trade Off

As part of Youth Outreach, a pilot study was developed to reach young male drivers age 19 to 25 attending technical/trades post-secondary education. Two pilot sessions were held at Vancouver Island University, and follow-up focus group interviews were used to refine the program. Initial feedback from participants was positive and indicated retention of key messages.

### Speed Watch

The Speed Watch program had another successful year with 235 new Speed Watch volunteers trained in the Lower Mainland and two new Speed Watch groups established for the Surrey reserves and Sayward. A new volunteer guide was also revised as part of a refined training program.

### Young driver film contest

New for 2010, the 180 Film Contest invited young filmmakers aged 19 to 25 across B.C. to submit their short films on road safety issues: impaired driving, distracted driving, and speeding. The contest received more than 120 high quality film submissions with more than 110,000 YouTube views.

## 2010 speeding tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of speed enforcement through Memorandum of Understanding (MOU). This is supported by advertising with a new slogan introduced November 2009:</p> <p><i>That's why we've stepped up enforcement in your community.</i></p>	<p>In 2010, 36% of survey respondents feel they are likely to get caught if they speed, a 3% increase from June 2009.</p>	<p>✓ In October 2010, 40% of survey respondents felt they are likely to get caught if they speed.</p>

Tactic name and description	Objective	Results
<p><b>Speed awareness campaign</b></p> <p>Campaign encouraged safe speed choices using the new tagline:</p> <p><i>When you slow down, you see more of the road.</i></p>	<p>The new message, <i>When you slow down you see more of the road</i>, was introduced in Q4, 2009. A baseline of 51% aided slogan recall was established in December 2009.</p> <p>In 2010, 54% of survey respondents have aided recall of the new speeding advertising campaign slogan, an increase of 3% compared to 2009.</p> <p>71% of survey respondents agree that the new campaign slogan has relevance to them personally, an increase of 3% compared to December 2009.</p>	<p>✓ In December 2010, 69% of survey respondents had aided recall of the new speeding advertising campaign slogan.</p> <p>✓ In December 2010, 76% of survey respondents agreed that the new campaign slogan had relevance to them personally.</p>
<p><b>Driving tips</b></p> <p>Driving tips offer driver education information through online video presentations. Topics include basic driving skill and behavioural driving issues.</p>	<p>Up to 10 notifications are sent to 100,000 e-mail recipients annually.</p>	<p>✓ 9 notifications were sent to email recipients.<sup>2</sup></p>
<p><b>RoadSense Speakers</b></p> <p>Through the RoadSense Speakers Tour, speakers use their experiences to motivate youth to make safe driving decisions.</p>	<p>Presentations are conducted in 180 schools provincially in 2010, maintaining 2009 level.</p>	<p>✓ 195 presentations were conducted throughout B.C. in 2010: 111 presentations were in the Lower Mainland and 84 were outside the Lower Mainland.</p>

<sup>2</sup> In 2011, the Driving tips tactic will move from the Road Safety department to the Driver Licensing division in order to better align with the target audience (early GLP candidates).

Tactic name and description	Objective	Results
<p><b>Premier agenda books</b></p> <p>High school students (grades 8 to 11) in 2010/2011 school year are invited to submit artwork portraying a road safety theme. This artwork will be used as the back cover on student agenda books for the 2011/2012 school year.</p>	<p>200 B.C. secondary schools receive Premier Agenda Books that includes our message in 2010.</p> <p>Develop a contest in 2010 for students to create artwork for the 2011/2012 agenda book, creating more engagement/awareness among students of road safety messages.</p>	<p>✓ In 2010, the Your Ad Here back covers or one page inserts were included in Agendas for 205 schools throughout the provinces.</p> <p>✓ The Your Ad Here contest was developed and implemented in 2010. Winning submissions will be selected in early 2011 and their artwork will be used in the 2011/2012 agenda books.</p>
<p><b>Young driver film contest</b></p> <p>Young filmmakers aged 19 to 25 are invited to submit their short films on road safety issues such as impaired driving and speed, with an opportunity to win prizes and receive exposure for their work.</p>	<p>Launch contest in August 2010, with judging occurring in early 2011. Provides a low-cost means of acquiring creative content targeting a difficult to reach audience; these materials can be used to support multiple road safety programs.</p>	<p>✓ The 180 Film Contest was launched in August 2010, inviting young filmmakers to submit their short films on impaired driving, speeding and distracted driving. 124 film submissions were received and over 110,000 views on YouTube.</p>
<p><b>Trade Off</b></p> <p>This program targets young males enrolled in trades and technical post-secondary education programs to raise awareness of the career loss consequences of risky driving behaviours – <i>What have you got to lose?</i></p>	<p>Continue refinement of program by increasing presentations from 1 to 4 technical post-secondary institutions throughout the province.</p>	<p>✓ 4 sessions were completed in 2010 at:</p> <ul style="list-style-type: none"> <li>• BCIT</li> <li>• Thompson Rivers University</li> <li>• University of Fraser Valley</li> <li>• College of New Caledonia.</li> </ul>

Tactic name and description	Objective	Results
<p><b>Speed Watch</b></p> <p>Community volunteers use Speed Readerboards to raise awareness of the actual speeds drivers are travelling at targeted high-crash locations.</p>	<p>More than 1,350 Speed Watch deployments are organized at or near high-crash locations and corridors. This represents a 10% increase from 2009.</p> <p>55% of survey respondents have seen a Speed Watch operation in 2010, a 3% increase from June 2009.</p>	<ul style="list-style-type: none"> <li>✔ In 2010, there were 1,464 Speed Watch deployments at high crash locations throughout the province.</li> <li>✔ In October 2010, 64% of survey respondents said they had seen a Speed Watch operation.</li> </ul>
<p><b>Fixed speed readerboards</b></p> <p>Installation of pole mounted speed readerboards at or near high crash locations and corridors. Enforcement may be present at these sites.</p>	<p>Five new fixed speed readerboards are installed in high-risk locations.</p> <p>4% decrease in mean speeds for vehicles travelling in a fixed speed readerboard deployment zone in 2009 and 2010, as compared with speeds when the boards are not activated.</p>	<ul style="list-style-type: none"> <li>✔ Fixed speed readerboards were installed at 8 new locations in North Vancouver, Burnaby, Delta, Kelowna, Port Coquitlam, Chilliwack, Kamloops and Courtenay.</li> <li>✔ Initial results from 2010 indicate an average 4.25% reduction in vehicle speeds as compared with speeds when boards were not activated.</li> </ul>

## Intersection safety

On average from 2005 to 2007, police attended 7,870 injury collisions and 80 fatal collisions at intersections. 41% of these intersection collisions occurred at intersections with a traffic signal device. "Ignoring Traffic Control Device" accounts for more than 7% of the human actions that contribute to crashes.

53% of crashes involving pedestrians are at intersections, and the second most common contributing behaviour by drivers to those crashes is "Failure to Yield Right of Way."

In 1999, B.C. began deploying red light cameras at some of the intersections with the worst crash records, achieving an average annual 5% reduction in crashes at those sites for the five years post-implementation. A 2009 Road Safety survey found that just over half of B.C. drivers (56%) consider intersections to be a highly serious safety concern. While 96% consider running red lights to be highly dangerous, only 31% think they are likely to get caught if they run a red light at an intersection.

## Program strategic objectives

Objective	Result
<p>The intersection behaviour casualty crash rate will decrease by 10% compared to the average rate for the years 2004 to 2007.</p>	<p>✓ In 2010, the intersection related casualty crash rate decreased from the 2004 to 2007 average.</p> <p><i>Comment: TAS data shows an overall decrease in the intersection related casualty crash rate. The 2010 rate for this objective has not been reported here due to changes in the MVA affecting police attendance of crashes. Please see note on page 5.</i></p>
<p>In 2010 surveys, 5% fewer drivers will report personal high-risk intersection behaviours compared to 2007.</p>	<p>✗ In 2010, 4% more drivers reported that they have not come to a full stop at a stop sign within the last six months (compared to 2007).</p> <p>In 2010, 5% more drivers reported that they have driven through a yellow light that is turning red within the last six months (compared to 2007).</p> <p><i>Comment: In 2010, the Intersections campaign targeted different high-risk intersection behaviours than those established in the 3-year target. Targets for Intersection Safety have been reviewed and are reflected in the 2011 Road Safety Business Plan.</i></p>

## Intersection safety program activities: 2010 highlights

### Campaign

On May 21, 2010, leading into the Victoria Day long weekend, the Intersection Safety Awareness Campaign was launched provincially during the daily Vancouver Police Department media briefing. The campaign ran until June 18. The campaign launch featured new footage of red-light running drivers as well as police onboard camera footage of a crash resulting from a late red light runner. Speakers included municipal and federal police and ICBC. The Drive Smart web challenge was also showcased live by a VPD Crime Watch volunteer.

### Intersection Safety Camera (ISC) upgrade

Throughout the year, the province's Intersection Safety Cameras were upgraded with 35 sites scheduled to go live in January 2011. When completed the upgrades will see dedicated digital cameras placed at 140 sites in 26 communities across the province. The cameras will be activated remotely at times when data shows the greatest risk for a crash and when they're likely to have the biggest impact on driving behaviour. A webpage on icbc.com was created to provide background information to the public.



Newly installed Intersection Safety Camera at Hastings Street and Nanaimo Street in Vancouver.

### 2010 intersection safety tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of intersection safety enforcement through Memorandum of Understanding (MOU). This is supported by advertising with a new slogan introduced in November 2009:</p> <p><i>That's why we've stepped up enforcement in your neighbourhood.</i></p>	<p>In 2010, there is a 5% increase in the number of survey respondents who feel they are likely to get caught if they engage in unsafe intersection driving behaviours, compared to 2009.</p>	<p><b>X</b> In December 2010 48% of survey respondents felt they were likely to get caught if they were to run a red light, a 1% increase from December 2009.</p>

Tactic name and description	Objective	Results
<p><b>Intersection awareness campaign</b></p> <p>An advertising campaign linked to accompanying police enforcement, with a focus on running red lights and failing to yield.</p> <p>The new slogan (introduced in November 2009), <i>When you slow down you see more of the road</i>, encourages drivers to stop rushing and to be more cautious at intersections.</p>	<p>In 2010, there is a 5% increase in the number of survey respondents who can describe the consequences of unsafe intersection driving behaviours, compared to 2009.</p> <p>60% of survey respondents consider intersections to be a very or somewhat serious safety concern, an increase of 4% from 2009.</p>	<p>✓ In December 2010:</p> <ul style="list-style-type: none"> <li>• 92% of drivers identified consequences of failing to yield at intersections, a 10% increase from 2009</li> <li>• 95% of drivers identified consequences of following too closely at intersections, a 9% increase from 2009</li> <li>• 100% of drivers identified consequences of ignoring traffic control devices, a 14% increase from 2009.</li> </ul> <p>✓ In December 2010, 60% of survey respondents considered intersections to be a very or somewhat serious safety concern.</p>
<p><b>Intersection safety camera program upgrade</b></p> <p>Upgrade and expand the Intersection Safety Camera program.</p>	<p>2010 project milestones are met. Major milestones include:</p> <ul style="list-style-type: none"> <li>• Contract signed with vendor (Q1, 2010)</li> <li>• Computer infrastructure is implemented and cameras rolled out at a number of sites (Q4, 2010)</li> <li>• Complete rollout (Q1, 2011)</li> </ul>	<p>✓</p> <ul style="list-style-type: none"> <li>• Contract was signed with the vendor in March 2010.</li> <li>• 35 sites throughout the province were ready by December 2010. Due to the complex systems involved in the computer infrastructure, additional testing was required and these sites are scheduled to go live in January 2011.</li> <li>• The remaining sites will be upgraded in 2011.</li> </ul>

## Occupant restraints

On average from 2005 to 2007, police reported 110 fatalities where an occupant restraint device was not used. There has been a downward trend in related crash rates, but the issue remains a concern for police, government and ICBC.

Legislation for child booster seats was introduced in 2008, but correct use of child safety restraints is an ongoing concern in particular for new immigrants and First Nations communities.

Transport Canada conducts regular observation surveys on seatbelt wearing rates. These surveys are done on an alternating schedule, with rural surveys conducted one year and urban the next. Following the urban survey, the results are combined to calculate an overall seatbelt wearing rate. In 2007, Transport Canada reported the urban/rural rate for wearing seatbelts in B.C. was 94.8%, the second highest rate among Canadian provinces and above the national average of 92.5%. In 2009, results of the rural survey showed that the wearing rate in those B.C. communities had risen from 87.5% in 2006 to 91.6% in 2009. A survey of urban seatbelt use was conducted by Transport Canada in 2010, and the new urban/rural rate calculated.

## Program strategic objectives

Objective	Result
The provincial seatbelt wearing rate will remain at the national average.	 According to Transport Canada's 2010 survey, B.C.'s urban wearing rate is now 97.3%, the second highest in the nation. The blended urban/rural wearing rate is now 96.9%, giving B.C. the highest wearing rate in the nation.

## Occupant restraint program activities: 2010 highlights

### Aboriginal outreach occupant restraint

For the first year since this program was developed, First Nations communities were able to provide more funding for child passenger technician training than the ICBC contribution. Communities are now fully involved partners ensuring that education and awareness continue within the communities. A review and assessment of the First Nations Outreach contract introduced a new strategic integration of the Child Passenger Safety education model for 2011.

2010 occupant restraint tactics

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of seatbelt enforcement through Memorandum of Understanding (MOU).</p>	<p>In 2010, 38% of survey respondents feel they are likely to get caught if they drive unrestrained, maintaining the November 2007 results.</p>	<p>✔ In October 2010, 41% of survey respondents felt they were likely to get caught if they drive unrestrained.</p>
<p><b>Occupant restraint awareness campaign</b></p> <p>Radio tag advertising during September to increase awareness of police enforcement of seatbelts and child seats.</p> <p>Provide occupant restraint information through fact sheets, posters, icbc.com and the Aboriginal Toolkit to educate drivers and high-risk groups.</p>	<p>In 2010, 38% of survey respondents feel they are likely to get caught if they drive unrestrained, maintaining the November 2007 results.</p>	<p>✔ In October 2010, 41% of survey respondents felt they were likely to get caught if they drive unrestrained.</p>
<p><b>Curriculum education</b></p> <p>ICBC provides grades K to 10 teaching packages to meet mandatory learning outcomes.</p> <p>In 2010, K to 7 resources were updated and revised. Grade 8 and 9 Health and Career Education packages were also reviewed and revised.</p>	<p>10% more educational materials focused on K to 7 students are ordered in 2010, compared to 2009 (1,240 vs. 1,129).</p> <p>20% more Grade 8 and 9 curriculum resource packages are ordered in 2010, compared to 2009 (165 vs. 149 for grade 8 and 122 vs. 111 for grade 9).</p> <p>100 new orders in 2010 for the Planning 10 resource.</p>	<p>✔ In 2010, 1,920 orders were received for the K to 7 curriculum packages, a 70% increase from 2009.</p> <p>✖ 148 Grade 8 packages were ordered in 2010, a 1% decrease from 2009. 149 Grade 9 packages were ordered in 2010, a 34% increase from 2009.</p> <p>✔ In 2010, 271 new orders for the Planning 10 resource were received.</p>

Tactic name and description	Objective	Results
<p><b>Child passenger safety</b></p> <p>Partnership with BCAA's Traffic Safety Foundation to provide child passenger safety information through a toll-free information line, child seat clinics, information sessions, and child restraint training to police, health workers, and volunteers.</p>	<p>The 2009 partnership review recommendations are implemented and all partnership outcomes are achieved.</p>	<p>✓ The key deliverables as identified in the 2009 partnership review were implemented in the 2010-2012 contract. Items include:</p> <ul style="list-style-type: none"> <li>• 258 Child Seat Information Sessions completed, exceeding the target by 108.</li> <li>• A regional presence was achieved.</li> <li>• 111 educators were trained, exceeding the target by 66.</li> <li>• 76 police officers were trained, under the target by 24. This was due to other mandates such as the Olympics and preparation for a new online training program.</li> </ul>
<p><b>Aboriginal outreach occupant restraint</b></p> <p>Support the promotion of child passenger safety in Aboriginal communities through training and re-certification of Aboriginal Children's Restraint System Technicians by private contractor.</p>	<p>Eighteen certified technicians will be trained.</p> <p>Twenty trained technicians will be re-certified.</p> <p>Two <i>First Nations Child Seat Technicians Update</i> newsletters will be published.</p>	<p>✓ In 2010, 32 Child Passenger Safety technicians were certified in 7 classes.</p> <p>✓ In 2010, 21 Child Passenger Safety technicians were re-certified.</p> <p>✓ In 2010, two (one in the summer and one in the winter) newsletters were published and distributed. Hard copies and electronic versions were utilized.</p>

## Driver distractions

In January 2010, new provincial legislation took effect that limits/prohibits the use of hand-held cellphones and personal electronic devices (PEDs) while driving. ICBC supported the introduction of the law by developing a public awareness campaign focusing on the details of the law and the risk the behaviour poses.

The Office of the Superintendent of Motor Vehicles (OSMV) estimates that driver distractions, such as the use of PEDs, eating, and personal grooming, are involved in as many as 25% of crashes, including 1,400 injury and 117 fatal crashes per year.<sup>3</sup>

### Program strategic objectives

Objective	Result
90% of survey respondents will report that they are aware of new legislation restricting use of hand-held cellphones and PEDs while driving.	 In June 2010, 99% of survey respondents were aware of the new legislation restricting use of hand-held cellphones and PEDs while driving.
Establish baseline use of hand-held cellphones or PEDs while driving, and develop appropriate crash and casualty crash measures.	 In 2010, a baseline of 75% was determined for the percent of drivers who say they fully comply with the law that prohibits the use of a hand-held cell phone while driving. Crash and casualty crash measures were not developed (see note about TAS data on page 5).

<sup>3</sup> Office of the Superintendent of Motor Vehicles. (2009). *Addressing the Problem of Distracted Driving and its Impacts to Road Safety*. [http://www.drivecellsafe.com/\\_docs/2009-distracted-driver-cell-phone-discussion-paper.pdf](http://www.drivecellsafe.com/_docs/2009-distracted-driver-cell-phone-discussion-paper.pdf)

## Driver distractions program activities: 2010 highlights

### Legislation awareness

On January 1, 2010, B.C.'s driver distraction legislation came into effect with a one month warning period. ICBC promoted awareness of the new legislation through a province-wide media campaign with newspaper ads, radio ads and a website [www.drivecellsafe.ca](http://www.drivecellsafe.ca) to provide the public with comprehensive information on the new laws and safety tips. High-visibility signs were also placed at border crossings and airports in B.C. ICBC joined the Solicitor General, OSMV and police to hold a media event in Vancouver to promote awareness.

Two month-long awareness campaigns were held in April and September. These campaigns included mass media advertising consisting of two new TV ads, radio tags, messaging at university campuses, PNE, and transit bus backs.



Drive Cell Safe advertising designed for large digital screens.

### 2010 driver distractions tactics

Tactic name and description	Objective	Results
<p><b>Legislation awareness</b></p> <p>Develop public awareness campaign focused on increasing awareness of new legislation and the risk the behaviour poses.</p>	<p>90% of survey respondents demonstrate awareness of new legislation.</p>	<p>✅ In June 2010, 99% of survey respondents were aware of the new legislation restricting use of hand-held cellphones and PEDs while driving.</p>

## Road programs

### Road improvement program

In 2007, approximately 19% of all police-reported crashes cited “environmental factors” as contributing to the crash.

In the 1950s and 1960s, a major program was launched to upgrade alignment and pave the rural trunk system of roadways in the province. These roadways, built to the standards and road-building techniques of the day, are no longer adequate for the high traffic volumes and speeds of today’s travelers. Growth of B.C.’s towns and cities, as well as changes in the mobility patterns of its citizens, has resulted in a need for safety improvements to roadways.

ICBC’s Road Improvement Program works in partnership with local and provincial road authorities, participating in engineering studies to assess local areas of concern and assisting communities in undertaking engineering upgrades.

In December 2009, an independent evaluation of ICBC-funded road improvements during the years 2004-2006 found that, measured over a 2-year period after a project’s completion, ICBC saves \$5.6 in claims costs for every dollar invested (compared to a target of 3:1 during those years). Road users will continue to benefit from these road improvements for many years.

### Program strategic objectives

Objective	Result
Road Improvement Program achieves a minimum 50% internal rate of return.	 The next program evaluation will be conducted in 2014, and will review projects implemented in 2007, 2008, 2009, 2010, and 2011.

## Road improvement activities: 2010 highlights

### Engineering

Since 2001, ICBC’s Road Improvement Program has partnered with municipalities across the province to implement 36 modern roundabouts at high crash intersections to reduce the frequency and severity of crashes. In 2010, four modern roundabouts were completed as part of over 280 road improvement projects throughout the province.

### Road safety audits

Since 2001, the Road Improvement Program has provided municipalities with Road Safety Audit services to determine whether any aspects of the project can be done in a safer way. These audits are completed on infrastructure projects including pre-construction or retrofits. In 2010, 15 audits were completed throughout the province and 75% of recommendations were implemented.

### 2010 road improvement tactics

Tactic name and description	Objective	Results
<p><b>Engineering retrofits</b></p> <p>Share the costs of road improvements to reduce crashes at crash-prone locations.</p>	<p>Participate in 200 road improvement projects and 3 modern roundabouts.</p> <p>Achieve a 50% Internal Rate of Return for retrofit projects.</p>	<p>✓ In 2010, 282 road improvement projects and 4 modern roundabouts were completed. Measurable results of these projects will be evaluated in the 2014 evaluation cycle.</p>
<p><b>Road safety audits</b></p> <p>Review planned infrastructure projects to ensure safety is given priority during design/ construction.</p>	<p>Conduct 15 safety audits, with an audit recommendation implementation rate of 60%.</p>	<p>✓ In 2010, 15 audits were completed. On average, approximately 75% of recommendations stemming from the audits were implemented.</p>
<p><b>Innovation fund</b></p> <p>Facilitate the assessment of new road improvement technology.</p>	<p>Funding is provided for partnering on a new technology by Q4.</p>	<p>✗ In 2010, one Ministry of Transportation and Infrastructure project was identified (in-road illuminated delineation along the Coquihalla Highway near the Brenda mine - ICBC contribution of \$50,000), but was later cancelled due to lack of MOTI funding.</p>

Tactic name and description	Objective	Results
<p><b>High-risk corridors (HRC)</b></p> <p>Identify high crash risk corridors and use engineering, enforcement and education to reduce the frequency and/or severity of crashes.</p>	<p>Assemble four HRC locations, develop crash reduction targets, and begin implementation of road improvements and/or enforcement by Q4.</p>	<p>✓ In 2010, four locations were identified:</p> <ul style="list-style-type: none"> <li>• Malahat (Westshore to Rt. 1)</li> <li>• Tupper to Dawson Creek</li> <li>• Dawson Creek to Salmon Arm</li> <li>• Monte Creek to Salmon Arm</li> </ul> <p>Working committees for these locations have met and shared data, and are currently developing implementation plans.<sup>4</sup></p>
<p><b>Program evaluation</b></p> <p>Evaluate how the benefits of the Road Improvement Program have acted over time.</p>	<p>Complete long-term evaluation of road improvements by Q4, 2010.</p>	<p>✓ The 2009 Road Improvement Program Evaluation was finalized in June 2010.</p>

<sup>4</sup> Although ICBC will continue to participate in these working committees, it is not planning to further invest in this tactic.

## Vehicle programs

### Safer vehicles

Emerging vehicle technologies and improved vehicle engineering standards are promising to reduce crashes and injuries in crashes. Research conducted by Monash University Accident Research Centre shows that if every driver bought a vehicle with a high safety rating, the number of people killed or seriously injured on Western Australian roads would fall by about one third. Transport Canada estimates 4,000 crashes, 40 fatalities, and 1,200 injuries would be prevented if all light vehicles in B.C. were equipped with electronic stability control (ESC) alone.

In keeping with its commitment to protect customers, Road Safety has identified a need to inform drivers about the availability, effectiveness, and use of vehicle safety features and technologies, and help support their decision-making to include safety during the process of purchasing a new or used vehicle.

### Program strategic objectives

Objective	Result
In 2010, 30% of B.C. drivers will mention "safety" as one of their top three considerations when purchasing a vehicle, an increase of 3% compared to 2008.	<b>X</b> In 2010, 29% of survey respondents mentioned "safety" as one of their top three considerations when purchasing a vehicle.  ICBC recognized that further research on consumers' auto purchasing decision-making was required, and in 2010, the focus of the Safer Vehicles Program shifted from implementing awareness activities to conducting focus groups.

## Safer vehicles program activities: 2010 highlights

### Head restraints

In 2010, driver examiners continued to provide information and education on the correct adjustment of head restraints to all those taking a Class 5 or 7 road test. Appreciation events were held for driver examiners with coordinators visiting various Driver Licensing Centres throughout the province.

### Safer vehicle website

The Safer Vehicles webpage on icbc.com was launched in October 2010. The webpage featured two new high quality videos featuring airbags and the electronic stability control (ESC) system.



Safer Vehicles webpage on icbc.com

### 2010 safer vehicles tactics

Tactic name and description	Objective	Results
<p><b>Develop tools for fleet manager<sup>5</sup></b></p> <p>Introduce a program to promote ICBC vehicle fleet purchase policies that include vehicle safety.</p>	<p>Develop Purchase/Policy guide for ICBC fleet by Q3.</p>	<p>— The development of a Purchase/Policy guide in conjunction with ICBC's Procurement department is currently in progress.</p>

<sup>5</sup> This tactic will not be developed in 2011 as the Occupational Road Safety Partnership (ORSP) (WorkSafeBC and BCAA-RSF) is developing fleet management tools based on best practices. Road Safety will continue to work with ORSP and identify opportunities to support this resource.

Tactic name and description	Objective	Results
<p><b>Targeted awareness</b></p> <p>Paid and earned media to inform customers of the benefits of vehicle safety features.</p>	<p>In 2010, 30% of respondents will identify "safety" as one of their top three considerations when deciding to buy a vehicle, an increase of 3% from 2008 results.</p>	<p> In 2010, 29% of survey respondents mentioned "safety" as one of their top three considerations when purchasing a vehicle.</p> <p>ICBC recognized that further research on consumers' auto purchasing decision-making was required, and in 2010, the focus of the Safer Vehicles Program shifted from implementing awareness activities to conducting focus groups.</p>
<p><b>Safer vehicle website</b></p> <p>Website to feature information on availability and importance of vehicle safety features.</p>	<p>Develop a website and an evaluation plan by Q3.</p>	<p> The Safer vehicles website was launched in October 2010 with further enhancements planned throughout 2011.</p> <p>An evaluation plan was developed in collaboration with ICBC's e-Business department.</p>
<p><b>Head restraints</b></p> <p>Driver examiners provide head restraint safety education and correct adjustment of driver and passenger head restraints during Class 5 and 7 road tests.</p>	<p>Driver examiners continue to check all head restraints and provide head restraint adjustment education during Class 5 and 7 road tests.</p>	<p> In 2010, head restraints were checked on all Class 5 and 7 road tests. Over 200,000 head restraints were checked and 13,000 were adjusted correctly for safety.</p>

## Auto crime

According to Statistics Canada, in 2003 B.C.'s auto theft rate was 958 per 100,000 people, 77% higher than the Canadian national average of 541<sup>6</sup> and double the US national average of 434.<sup>7</sup> By 2010, with the implementation of more aggressive police strategies including the Bait Car program, the B.C. rate had declined by 63% to 352<sup>8</sup> per 100,000 people. However, B.C.'s auto theft rate still remains above the Canadian national average of 272.

ICBC data shows that B.C.'s auto theft rate per 10,000 Basic policy years earned decreased more than 10% per year since the inception of the Bait Car program in 2004. ICBC also supports police, through the Integrated Municipal and Provincial Auto Crime Team (IMPACT), in their efforts to reduce auto crime. The introduction of immobilizers has had a large impact on auto crime. Since September 2007, all new passenger and light truck vehicles sold in Canada have been equipped with immobilizers and as new vehicles are purchased, the theft of vehicles is expected to become more difficult.

### Program strategic objectives

Objective	Result
The auto theft incident rate decreases by 10% in 2010 compared to 2009.	✓ In 2010, the auto theft rate decreased by 22% compared to 2009.

### Auto crime program activities: 2010 highlights

#### Auto crime awareness

In 2010, Auto Crime enforcement month was held in February to coincide with the 2010 Olympic Winter Games. The province expected a large influx of visitors during the Winter Games, and an increase in population could lead to more opportunities for auto thieves. Therefore, the 2010 campaign theme was "Securing the Best Winter Games Possible – Making Auto Crime a Priority." B.C. drivers as well as visitors were given key tips to protect themselves from auto crime.



Vancouver Police patrol wagon with Bait Car graphics.

<sup>6</sup> Statistics Canada. (2005). Exploring Crime Patterns in Canada. <http://www.statcan.gc.ca/pub/85-561-m/85-561-m2005005-eng.pdf>

<sup>7</sup> Department of Justice — Federal Bureau of Investigation. (2006). Motor Vehicle Theft. [http://www2.fbi.gov/ucr/cius\\_04/offences\\_reported/property\\_crime/motor\\_vehicle\\_theft.html](http://www2.fbi.gov/ucr/cius_04/offences_reported/property_crime/motor_vehicle_theft.html)

<sup>8</sup> Statistics Canada. (2011). Juristat Article: Police-reported crime statistics in Canada, 2010. <http://www.statcan.gc.ca/pub/85-002-x/2011001/article/11523-eng.pdf>

**Crime prevention strategies**

The crime prevention strategy tactic provided funding to various crime prevention initiatives. These included funding for the Downtown Community Court rehabilitation strategy aimed at getting drug addicted car thieves into drug rehabilitation programs and the RayCam Community Centre for the NAZKARS program which provides at-risk teenagers with the opportunity to learn vehicle repair skills and obtain credits for Vancouver Community College. ICBC also provided support to the Downtown Vancouver and North Road Business Improvement Associations for security patrols in high risk areas and Nanaimo, Capital Regional District, and Langley for steering wheel lock promotions. In December, the Operation Lock Up steering wheel promotions received excellent media coverage in the communities where they were implemented.

**Vehicle immobilizations**

A targeted direct mail campaign was undertaken for owners of Ford F350 and F250 trucks in high risk communities – the Lower Mainland, Fraser Valley, Kelowna, Vernon and Penticton. In 2010, over 1,100 vehicles were immobilized after receiving the offer. In the Lower Mainland, this is the third year for this tactic and as a result, the acceptance rate was lower than in previous years at 15% or 430 vehicles. The Okanagan, where vehicle owners received the offer for the first time, had high acceptance of the offer at 50% or 696 vehicles.

**2010 auto crime tactics**

Tactic name and description	Objective	Results
<p><b>Enhanced enforcement</b></p> <p>Funding for enhanced levels of auto crime enforcement.</p>	<p>Continue funding the IMPACT program to reduce auto crime throughout the province.</p>	<p>✓ In 2010, ICBC continued to provide funding to IMPACT through the Memorandum of Understanding (MOU).</p>
<p><b>Auto crime awareness</b></p> <p>Run a campaign to raise awareness of auto crime enforcement (including Bait Cars).</p> <p>Ads placed in targeted locations warn potential thieves that they will be caught.</p>	<p>In 2010, 50% of survey respondents will demonstrate aided recall of the slogan, <i>Steal a Bait Car, Go to Jail</i>.</p>	<p>✓ In June 2010, 66% of survey respondents recall the slogan, <i>Steal a Bait Car, Go to Jail</i>.</p>

Tactic name and description	Objective	Results
<p><b>Crime prevention strategies</b></p> <p>Partner with community and government agencies to develop new auto crime reduction programs.</p>	<p>In 2010, identify and fund a minimum of three new and existing community-based initiatives that reduce the impact of auto crime.</p>	<p>✔ In 2010 the following initiatives were supported: The Downtown Community Court Drug Rehabilitation program, RayCam Community Centre for the NAZKARS program, steering wheel lock promotions in Langley, Nanaimo and the Capital Regional District, and Operation Lock Up steering wheel promotions in various communities throughout the province.</p>
<p><b>Auto crime partnerships</b></p> <p>Stolen Auto Recovery and Lock Out Auto Crime community volunteers check licence plates to recover stolen vehicles, and distribute notices to educate vehicle owners about protecting their vehicle.</p> <p>Private security staff patrols high crime locations where volunteer activity is not sufficient. Funding depends on cost-sharing with municipalities and businesses.</p>	<p>Community patrols will provide 130,000 patrol hours in high crime locations, a decrease from 160,000 in 2009.</p>	<p>✘ In 2010, community patrols provided 120,100 patrol hours, issuing 209,278 crime prevention notices and recovered 334 stolen vehicles.</p> <p><i>Comment: Auto Crime Patrol hours were less than anticipated and this is appropriate. Auto crime continues to decline and as a result, community policing groups are being more strategic in the deployment of their volunteer patrols.</i></p>
<p><b>Vehicle immobilization</b></p> <p>Awareness activity: owners of high-risk vehicles (e.g., Ford F-series vehicles) are sent letters offering free engine immobilizers.</p>	<p>The “immobilizer” tactic has 900 owners of high-risk vehicles take up ICBC’s offer, an increase from 800 in 2009. Project will realize a positive return on investment (ROI).</p>	<p>✔ In 2010, 1,126 Ford F-Series 350 and 250 pickup trucks were immobilized. ROI will be determined in 2012 after a full year of data is available.</p>

## Research and strategy development

### Commercial vehicle safety

In 2008, commercial vehicles were involved in over 38,000 crashes in B.C., costing ICBC's customers approximately \$367 million. Commercial vehicle crashes represented 14% of crashes reported to ICBC.

#### Program strategic objectives

Objective	Result
Strategy to be developed by Q4 and options to be reviewed in 2011.	<b>X</b> Strategy development was delayed and anticipated to be completed in mid-2011.

## 2010 investment summary

Road Safety department expenses (\$000s)			2010 Plan	2010 Actual	
<b>Drivers</b>	MOU	Enhanced Enforcement	25,595	25,615	
	Impaired Driving	Impaired Driving Awareness Campaign	865	681	
		Community Partnerships	191	210	
		<b>Subtotal Impaired Driving</b>	<b>1,056</b>	<b>891</b>	
	Speeding	Speed Awareness Campaign	802	622	
		Roadside Speed Readerboards	178	148	
		Youth Outreach	380	275	
		<b>Subtotal Speeding</b>	<b>1,360</b>	<b>1,045</b>	
	Intersection Safety	Intersection Awareness Campaign	555	475	
	Comm. Veh. Safety	Strategy Development	100	0	
	Driver Distractions	Driver Distraction Awareness Campaign	2,480	2,129	
	Occupant Restraints	Child Passenger Safety	292	254	
	<b>SUBTOTAL DRIVERS</b>			<b>31,438</b>	<b>30,409</b>
	<b>Roads</b>	Road Improvements	Engineering Retrofits	8,470	8,952
<b>SUBTOTAL ROADS</b>			<b>8,470</b>	<b>8,952</b>	
<b>Vehicles</b>	Safer Vehicles	Safer Vehicle Programs	85	10	
		Safer Vehicle Awareness Campaign	100	40	
		<b>Subtotal Safer Vehicles</b>	<b>185</b>	<b>50</b>	
	Auto Crime	Auto Crime Awareness Campaign	182	181	
		High-Risk Vehicle Immobilization	400	199	
		High-Risk Auto Crime Partnerships	454	277	
		<b>Subtotal Auto Crime</b>	<b>1,036</b>	<b>657</b>	
	<b>SUBTOTAL VEHICLES</b>			<b>1,221</b>	<b>707</b>
<b>TOTAL DIRECT EXPENSES</b>			<b>41,129</b>	<b>40,068</b>	
	Research and Measurement Direct Expenses	235	196		
	Compensation	4,395	4,265		
	General Expenses	1,952	1,227		
<b>TOTAL ROAD SAFETY EXPENSES</b>			<b>47,711</b>	<b>45,756</b>	

Note: The investment summary does not include the investment for the Intersection Safety Camera Upgrade tactic, which is being funded from the Corporate Project Fund.

### Variance explanation:

- Total 2010 actual expenses were \$1,955,000 less than planned. The variance is primarily due to an under spend in general expenses and total direct expenses.

### General expenses:

- The variance in general expenses is primarily due to a transfer of \$500,000 from direct expenses that was not utilized.

### Direct expenses:

- The investment in Drivers programs is under plan due to lower than planned production costs for awareness campaigns and a reduction in scope of the Driver Distractions Awareness Campaign that resulted in a transfer of \$500,000 to general expenses.
- The investment in the Roads program was higher than plan due to more work being done on engineering retrofits than originally planned.
- The investment in the Vehicles program was under plan due to a shift in focus of the Safer Vehicle Awareness Campaign, a lower than anticipated number of qualified vehicles for the High Risk Vehicle Immobilization tactic, and a lack of partnership opportunities that met the program requirement for the High Risk Auto Crime Partnerships.





## **ATTACHMENT C-2**

# **2009 BRITISH COLUMBIA ROAD SAFETY ENHANCED ENFORCEMENT ANNUAL REPORT (MINISTRY OF PUBLIC SAFETY AND SOLICITOR GENERAL)**

# 2009

## British Columbia Road Safety Enhanced Enforcement ANNUAL REPORT

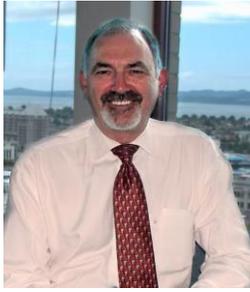


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## MESSAGE FROM THE ASSISTANT DEPUTY MINISTER



I am pleased to present the *2009 Road Safety Enhanced Enforcement Annual Report*.

2009 was another successful year as the enhanced traffic enforcement program made significant strides in its use of innovative technologies, expanding targeted enforcement, and improving measures of accountability.

On the technology front, two Automated Licence Plate Recognition units were approved (Kelowna and Nanaimo) to work in tandem with the regional Integrated Road Safety Units; Bait Car real-time live tracking was officially launched in April; the upgrade of the Intersection Safety Camera Program from analogue to digital cameras took a major step forward with the identification of high crash locations; and plans were developed to assist with the cost of replacing the outdated Datamaster breathalyser tool with new technology from Intoximeters, Inc.

In terms of targeted enforcement, the program saw the addition of new Integrated Road Safety Units to provide better coverage in under-represented areas of the province as well as a reallocation of CounterAttack funding to allow for both summer and winter campaigns. In late 2009, the program also identified resources in support of the 2010 Olympics.

Measures were taken to further demonstrate the value of the program to the taxpayer. A comprehensive evaluation of the Fraser Valley Integrated Road Safety Unit was completed and is available on the PSSG website. At the same time there was a decision to move to the Traffic Services Management Information Tool version two (TSMIT.2), a more precise data collection tool, which will allow for more specific measurement of performance objectives.

The continued success of the program and its contribution to road safety in BC is demonstrated by the ongoing decline in vehicle crashes, serious injuries and fatalities, along with the steady decrease in auto crime rates.

The enhanced traffic enforcement program is a testament to the success of the Province's integrated policing strategy. I would like to take this opportunity to thank all the road safety partners and stakeholders for their ongoing commitment and dedication to saving lives and reducing injuries on BC's roadways.

Kevin Begg  
Assistant Deputy Minister  
Ministry of Public Safety & Solicitor General  
September 2010

## 2009 HIGHLIGHTS

**Provincial Fatalities and Serious Injuries** – progress in reducing injuries and fatalities continues. Based on preliminary police-reported data<sup>1</sup>, the fatality rate in 2009 is estimated at 8.46 per 100,000 population, up slightly from 8.1 in 2008, but significantly lower than pre-program rates when the fatality rate peaked in 2002 at 11.1 per 100,000 population. The injury rate in 2009 is estimated at 450.75 per 100,000 population, down substantially from 716.66 in 2002.

**CounterAttack** – program funding was reallocated to include both summer and winter campaigns; a longer planning cycle was also adopted, enabling local police to more effectively identify and deploy resources.

**Bait Car** – real-time, live tracking of stolen Bait Cars was officially launched on April 1st, 2009. Live tracking allows police to observe auto thieves in action, significantly increasing the safety factor for the police and the public. It also allows police increased options in planning intervention and detention strategies.

**In-Car Video Cameras** – a special one-time contribution of \$1.8 million was allocated to police agencies throughout the province to more than triple the number of in-car police cameras.

**Intersection Safety Camera Program Upgrade** – replacement of outdated analogue red-light cameras with new digital technology achieved two major milestones: proof of performance and camera site selection.

**Fraser Valley Integrated Road Safety Unit Evaluation** – demonstrated that the current enhanced enforcement model is making a positive difference in the Fraser Valley; it is also more efficient and cost effective than the previous overtime-based model.

**Premier's Award** – Police Services Division Road Safety Unit was selected the 2009 winner of the Lower Mainland Premier's Award for Service Excellence for their work in transforming an overtime policing initiative into a fully integrated, provincial targeted traffic enforcement program.

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<sup>1</sup>Traffic collision and accident reporting data from RCMP and Independent Municipal Police Departments, data sets compared to preliminary data collected from police by ICBC, 2009 and published TAS data from previous years. Population statistics taken from BC Statistics website first quarter 2010.

## STRATEGIC OBJECTIVES

The enhanced traffic enforcement program was established through the *Traffic and Road Safety Law Enforcement Memorandum of Understanding* (MOU) between the Ministry of Public Safety and Solicitor General and the Insurance Corporation of British Columbia (ICBC).

Strategic partners in road safety initiatives include: the Office of the Superintendent of Motor Vehicles, RCMP and Municipal Police Departments, as well as the Criminal Justice Branch.

### Program Mandate

The enhanced traffic enforcement program uses data-driven, evidence-led enforcement strategies and dedicated human and financial resources to help reduce crashes that cause serious injury and death, and to prevent auto theft.

### Program Goals

The enhanced traffic enforcement program has four specific program goals:

- reduce traffic fatalities
- reduce serious injuries
- reduce auto theft
- increase public awareness of traffic enforcement

### Program Priorities

Road safety priorities for the program are established through analysis of enforcement data and fatal and serious injury crashes. The current enforcement priorities, aimed at reducing fatalities and serious injury crashes, include:

- targeting impaired drivers, including drug-impaired drivers
- expanding the use of Automated Licence Plate Recognition (ALPR) technology
- reducing incidents of aggressive driving
- maintaining provincial occupant restraint rates
- improving intersection safety
- enhancing commercial vehicle enforcement

### Program Accountability

The Road Safety Unit (RSU), Police Services Division manages the program on behalf of government and provides:

- financial oversight of the Traffic and Road Safety Law Enforcement Program
- performance measure evaluation and accountability
- program policy and strategic direction, data analysis, and road safety research
- secretariat support to the BC Association of Chiefs of Police Traffic Safety Committee (BCACP TSC)
- coordination in carrying out the direction of the Road Safety Advisory Committee and the IMPACT Policy Board

- managing the enforcement operations of the Intersection Safety Camera Program
- financial support for the delivery of advanced traffic training for independent municipal officers
- input to enhanced enforcement road safety public information campaigns
- consultation and collaboration on various road-safety related committees and working groups

ICBC funding for the 2009 calendar year was \$24,463,475 as calculated on one and a quarter (1.25) per cent of ICBC basic insurance premiums earned two years prior.

*"...we're continuing to invest millions of dollars every year on road safety programs that make business sense and also, more importantly, save lives."* Jon Schubert, President & CEO, ICBC.<sup>2</sup>



**Enhanced traffic enforcement at work**

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<sup>2</sup> (Editorial) ICBC head responds to article about its cash reserves, Vancouver Sun, Tuesday, August 24, 2010, Page A10, by Jon Schubert.

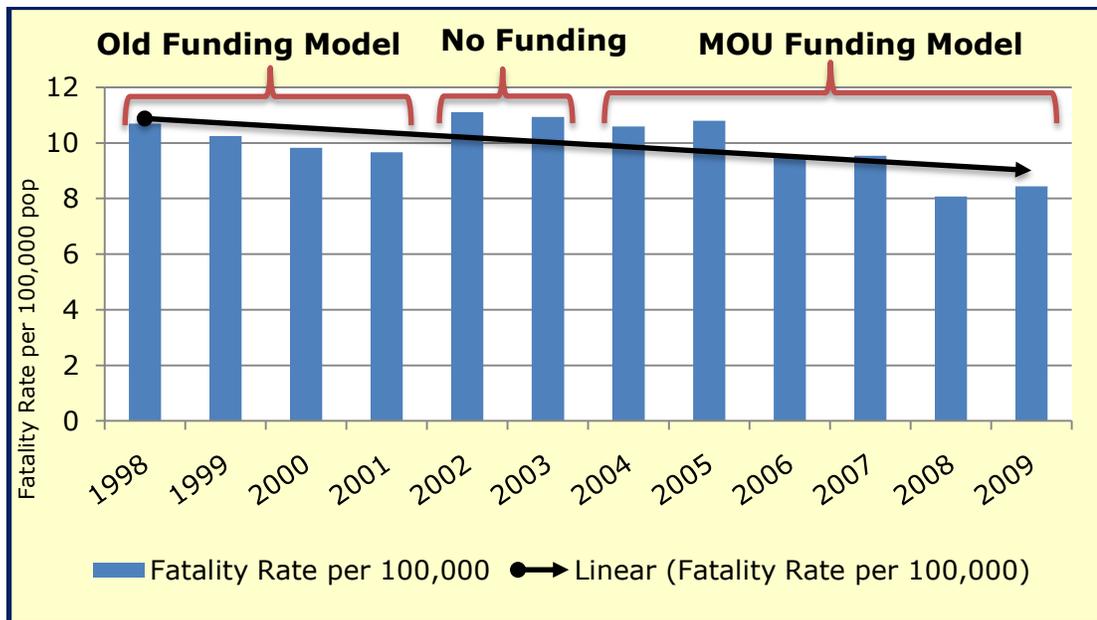
## PROGRAM OUTCOMES

### Provincial Fatality and Serious Injury Overview<sup>3</sup>

The primary goal of enhanced enforcement is to reduce the number of people killed and injured as a result of motor vehicle crashes through the strategic application of targeted enforcement activities.

Because enhanced enforcement is blended with other types of traffic enforcement, it is difficult to extract direct statistical links between enhanced enforcement and casualty reductions. Factors such as weather, population fluctuations, economic activity and other road safety initiatives also play a role in overall crash rates. However it is clear that since the implementation of the enhanced enforcement program, provincial fatality and injury rates have fallen steadily.

**Provincial Fatality Rates (1998 to 2009)<sup>4</sup>**

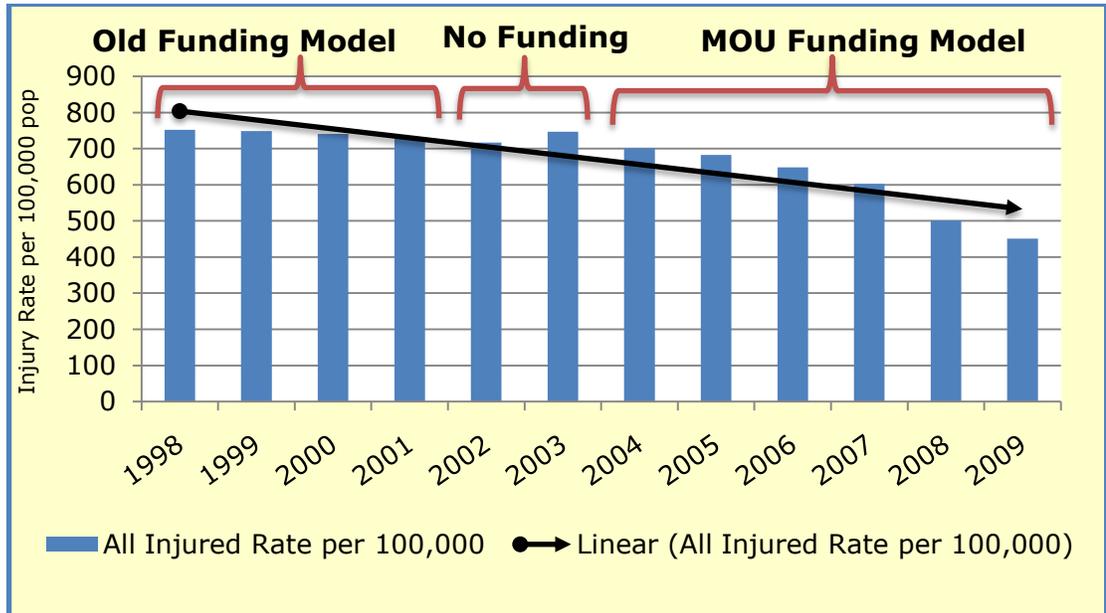


<sup>3</sup> Provincial fatality and injury reductions: enhanced enforcement activity cannot be separated from overall road safety efforts. There is evidence that enhanced enforcement is a significant contributor to reducing fatal/serious injury crashes i.e. Road Safety Unit CRD IRSU and FV IRSU Evaluations.

<sup>4</sup> Rates were calculated with data taken from TAS reports, preliminary 2009 police-reported crash statistics and BC Statistics population data, Spring 2010.

## PROGRAM OUTCOMES

### Provincial Injury Rates (1998 to 2009)<sup>5</sup>



Tracking fatality and injury rates is one method of creating a snapshot of road safety trends.

### Police Output

Another important measure of the enhanced enforcement program is the number of violations targeting specific high-risk driving behaviours issued by officers participating in Integrated Road Safety Units (IRSU) and Enhanced Road Safety Enforcement Initiatives (ERSEI).

Total Violations Issued by Enhanced Enforcement (IRSU & ERSEI) <sup>6</sup>			
	2008	2009	% change
IRSU	77,522	75,671	-2.4%
IRSU overtime	20,070	11,785	-41.3%
ERSEI	44,924	46,887	+4.4%
<b>Total Violations</b>	<b>142,516</b>	<b>134,343</b>	<b>-5.7%</b>

Enhanced enforcement issued violations decreased by 5.7 per cent from 2008 to 2009, and all BC police-issued violations decreased by 4.1 per cent.

The decrease in total violations, speed enforcement, seat belts, and intersections in 2009 is partially explained by the substantial increase in impaired driving investigations (see page 7) which consume significantly more officer time than other types of enforcement interventions.

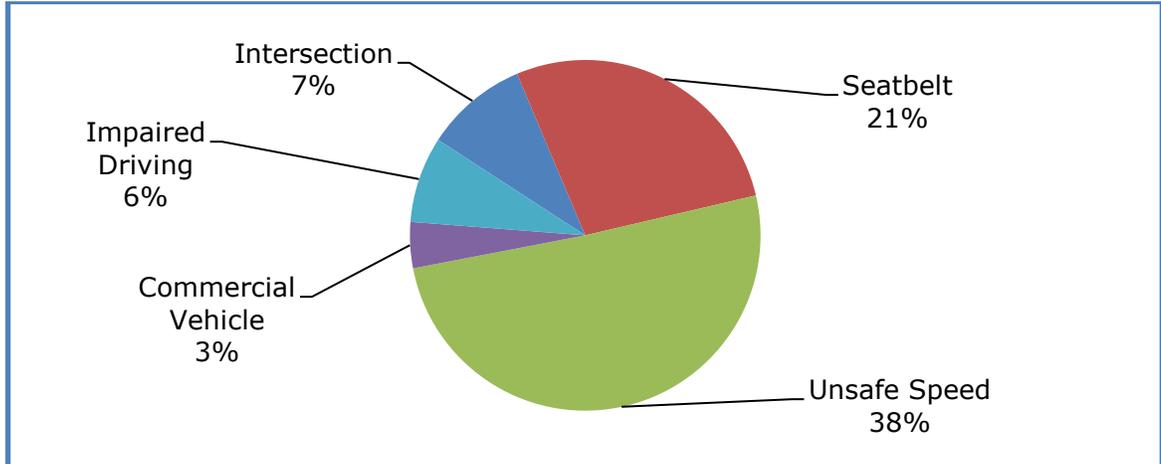
<sup>5</sup> Rates were calculated with data taken from TAS reports, preliminary 2009 police-reported crash statistics and BC Statistics population data, Spring 2010.

<sup>6</sup> Enhanced enforcement statistics are current as of February 2010.

## PROGRAM OUTCOMES

Enhanced enforcement officers focused 75 per cent of their compliance efforts on five road safety priorities. The remaining 25 per cent of their efforts went to other Motor Vehicle and Commercial Vehicle Regulations infractions which would include violations such as following too closely, vehicle defects, criminal interdictions, and non-moving violations.

### Percent of Enhanced Enforcement Effort on Top 5 Priorities<sup>7</sup>



### Enhanced Enforcement compared to all BC Traffic Enforcement

The table below shows four key enforcement categories and the output from enhanced enforcement on those categories compared to all police enforcement in the province.

Enhanced Enforcement (EE) Violation Output compared to Other Provincial Traffic Enforcement Output (BC) <sup>8</sup>			
2009	EE	BC	% EE of BC
Speed <sup>9</sup>	51,721	205,894	25.1%
Seatbelts	28,288	72,067	39.3%
Impaired Driving	8,110	43,158	18.8%
Intersections	9,685	59,247	16.3%
Other	36,539	169,933	21.5%
<b>Total Violations</b>	<b>134,343</b>	<b>550,299</b>	<b>24.5%</b>

Enhanced enforcement issued almost 25 per cent of all traffic-related violations in 2009; this is consistent with enhanced enforcement output from previous years.

<sup>7</sup> Statistics provided by RCMP, 2009 numbers current as of May 2010.

<sup>8</sup> Enhanced enforcement data provided by RCMP and current as of May 2010; provincial enforcement data is provided by ICBC and is current as of March 31, 2010.

<sup>9</sup> IRSU focuses on excessive speed as a function of aggressive driving behaviour.

## INITIATIVES

### 1. *Integrated Road Safety Units (IRSU)*

The Integrated Road Safety Unit (IRSU) model, comprising RCMP and independent municipal police department officers, is designed to encompass centrally-housed, dedicated mobile enforcement units throughout BC. IRSUs are charged with using data-driven enforcement strategies to address program priorities.

IRSU operate in all regions of BC. As a companion initiative, the RCMP oversees the Enhanced Road Safety Enforcement Initiative (ERSEI). This initiative provides overtime funding to support enhanced traffic-related projects.

Total IRSU/ERSEI issued violation output declined slightly in 2009.

<b>Total Enhanced Enforcement Violations Issued by Region<sup>10</sup></b>			
	2008	2009	% change
Lower Mainland	62,003	45,035	-27.4%
North	26,912	27,917	+3.5%
South East	30,546	37,130	+18.0%
Vancouver Island	23,054	24,261	+5.0%
TOTAL	142,515	134,343	-5.8%

Violation output in the lower mainland may have been affected by preparations for the 2010 Olympics.

Of all the priority enforcement categories, the most significant change in 2009 was a significant increase in impairment related output.

<b>IRSU &amp; ERSEI Enforcement Violations by Type</b>			
Priority Issues	2008	2009	% change
Speed <sup>11</sup>	59,315	51,721	-12.8%
Seatbelt	30,314	28,288	-6.7%
Intersection	11,118	9,685	-12.9%
CC Impaired*	1,164	1,749	+50.3%
24 hour	3,660	5,314	+45.2%
ADP	746	1,047	+40.4%
Commercial Vehicle	5,523	4,341	-21.4%
Criminal Interdiction	1,511	1,583	+4.8%
Vehicle Defect	910	1,247	+37.0%
Other Violations	28,255	29,368	+3.9%

\*Impaired includes drugs.

<sup>10</sup> Enhanced enforcement statistics provided by RCMP, current at February 2009.

<sup>11</sup> Speed<sup>11</sup> is one of the major indicators of aggressive driving behaviour, which also includes tailgating, improper passing, failing to yield and intersections. Speed includes all speed-related output, including school zones and excessive speed.

## INITIATIVES

Impaired driving is a top priority for all enhanced traffic enforcement. There was a significant overall increase in 2009 in the number of impairment-related tickets issued to drivers. In recent years drug-impairment has also been identified as a growing road safety issue.

IRSUs continued to refine impairment-related initiatives, building on the success of over-time and undercover enforcement models like the Impaired/Intersection Night-time Seatbelt Traffic Enforcement Project (INSTEP).

<b>Total IRSU Output of Impaired Driving Related Violations*</b>					
	Alcohol - Impaired	Alcohol - 24 hour	Alcohol ADP	Drugs - Impaired	Drugs - 24 hour
2009 IRSU Total	960	2196	583	34	394
2008 IRSU Total	705	1818	517	8	395
Change from 2008 to 2009	+36%	+21%	+13	+325%	No change

\*Total IRSU includes IRSU\_OT output

Technology is increasingly used to support dedicated traffic enforcement, improving the efficiency and effectiveness of their strategies. In 2009 plans were developed to replace outdated Datamaster breathalyser tools with new Intoximeter Inc. technology. Those plans also included arrangements for the Independent Police Departments to purchase Intoximeter units at the negotiated RCMP price. Use of the Intoximeter will be phased in over the next few years.

## **2. *Integrated Municipal Provincial Auto Crime Team (IMPACT)***

Auto theft reduction in BC is another priority for enhanced enforcement. IMPACT is integral to the enhanced enforcement program and is considered an enhancement to regular police auto crime programs while working in cooperation with independent police agencies as well as municipal and provincial RCMP units.

In 2009, auto theft in BC decreased by 15 per cent<sup>12</sup>, with 1,945 fewer vehicles stolen than in 2008. Theft from vehicles also decreased by 15 per cent compared to 2008.



<sup>12</sup> Auto theft statistics were provided by IMPACT, March 2010. Non-enforcement factors such as vehicle immobilizers may also contribute to reductions in auto-crime.

## Auto Theft/Theft from Vehicles: 2008 vs. 2009<sup>13</sup>

	Year		% Change 2008 vs. 2009	Estimated Benefit (\$'000,000)
	2008	2009		
Auto Theft	13,000	11,000	-15%	\$7.98
Theft from Vehicles	23,000	19,000	-15%	\$2.72

IMPACT strategies include a dedicated investigation/enforcement team, the Bait Car program, Global Positioning System (GPS) installations, Automated Licence Plate Recognition (ALPR), as well as outreach programs. IMPACT'S primary benefit, however, is in its deterrent effect; enforcement strategies combined with effective media relations make it clear to car thieves that they will get caught.

### Auto Crime Highlights 2009

- IMPACT recovered 245 vehicles and carried out 76 arrests
- there were 186 Bait Car activations resulting in 59 arrests
- 112 stolen vehicles were recovered using the ALPR technology
- in cooperation with the traffic safety helicopters, Air One/Two, the surveillance of 45 stolen vehicles resulted in 66 arrests
- auto theft in BC decreased by 15 per cent compared to 2008 with an estimated cost benefit of \$7.98 million
- from 2003 to 2009 auto theft decreased by 55 per cent with a cumulative cost benefit of \$149 million
- theft from vehicles decreased by 15 per cent compared to 2008, with an estimated benefit of \$2.72 million

IMPACT continues to actively raise awareness and to reach out to communities; note the highly anticipated annual 'Top 10 Most Wanted' campaign during Auto Crime Enforcement Month. IMPACT is also expanding its auto crime enforcement-related partnerships on a local, regional, national and international level.

### ***3. Impaired Driving: Overtime Programs***

The Road Safety Program also provides, where possible, overtime funding to both the RCMP through the Enhanced Road Safety Enforcement Initiative (ERSEI) and to the Independent Police Departments for seasonal CounterAttack campaigns.

<sup>13</sup> IMPACT 2008 and 2009 Annual Reports.

## INITIATIVES

### Enhanced Road Safety Enforcement Initiative (ERSEI)

In 2009 RCMP officers deployed through ERSEI funding (overtime funding for regular traffic officers not permanently deployed in an integrated unit) issued the following provincial offence violations:

	Alcohol Impaired	Alcohol 24 hour	Alcohol ADP	Drugs Impaired	Drugs 24 hour
ERSEI 2009	735	2458	464	20	266
ERSEI 2008	434	1281	229	17	166
Change from 2008 to 2009	+70%	+92%	+103%	+18%	+60%

RCMP officers in detachments throughout the province increased their impaired driving enforcement across all categories.

### Independent CounterAttack

In 2009, a combination of advance notice for funding and the addition of a summer campaign period contributed to significant increases in impairment-related outputs by the independent municipal police departments.

The total value of the contracts for CounterAttack in 2009/10 was \$948,100.

- \$249,945.00 for Summer CounterAttack (June 29 – July 31, 2009)
- \$698,155.00 for Winter CounterAttack (October 30, 2009 – January 4, 2010)

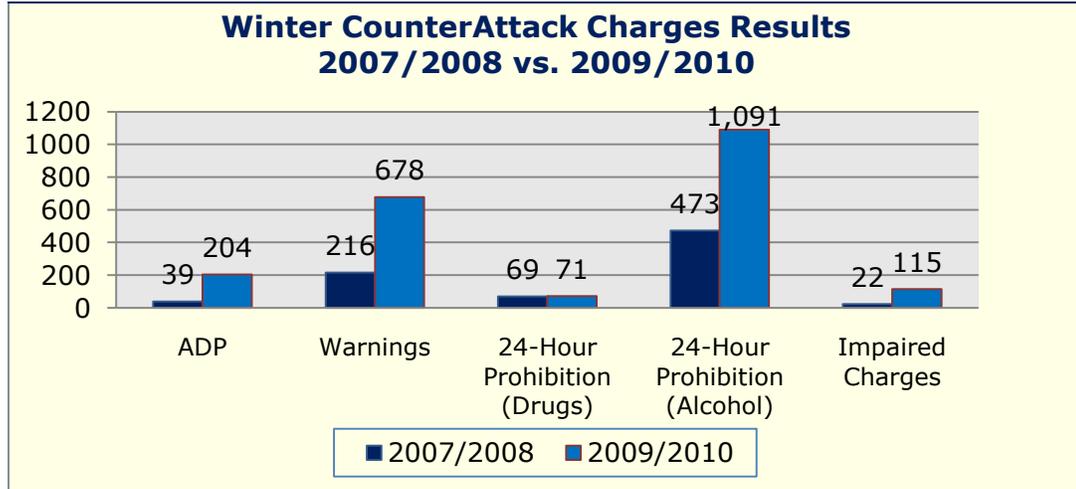
The results of the 2009 CounterAttack campaigns were as follows:

- 424 total roadblocks
- 135 drivers charged with impaired driving
- 1,305 drivers issued 24-hour suspensions for alcohol impairment
- 104 24-hour suspensions for drug impairment
- 204 ADP violations.

Comparing output from Winter CounterAttack 2007/08 to Winter CounterAttack<sup>14</sup> 2009/10, the number of violation tickets issued in 2009/10 increased significantly in each category:

- three per cent increase in 24-hour prohibition for drug impairment
- 11 per cent increase in the total number of violation tickets issued
- 131 per cent increase in 24-hour prohibition for alcohol impairment
- 423 per cent increase in impaired criminal charges
- 423 per cent increase in the number of ADP violations issued.

<sup>14</sup> In 2008, only Winter CounterAttack received additional funding.



\*Impaired charges include impairment by alcohol and/or drugs, unless otherwise specified.

**Note:**

The increase in impairment-related violations and charges province wide may be explained in part by the creation of Alexa’s Team. In May 2008, four year old Alexa Middelaer passed away from injuries suffered when Alexa and her aunt were hit by a car driven by an impaired driver.

Her parents, in partnership with other road safety leaders, created the concept of Alexa’s Team to raise awareness of the seriousness and prevalence of impaired driving.



**Road check underway**

### 4. **Intersection Safety Camera Program (ISC)**

The ISC program is an automated enforcement initiative dedicated to improving intersection safety and to reducing serious injuries and fatalities by identifying and penalizing drivers who run red lights.

Intersection Safety Camera	2008	2009	% change <sup>15</sup>
Images Received	41,967	39,008	-7.05%
Violations Issued	24,581	22,090	-10.13%

In 2009, police, the province and ICBC were actively engaged in upgrading the 10-year old ISC program, expanding from 120 sites and 30 analogue cameras to 140 sites, each equipped with a digital camera.

Highlights in 2009 include: conclusion of 'proof of performance' for the new technology; and reviewing more than 1,400 intersections to identify the 140 high-risk locations that would most benefit from an ISC installation.

To add to an already busy year, the ISC program office and the ICBC ticket centre moved from Delta to a new location in Richmond. The office is equipped to support the communications infrastructure and physical requirements of the digital program upgrade.



**Intersection crashes are a leading cause of serious injury in BC**

A 2006 study by program partner ICBC showed that the red light cameras reduced casualty crashes at designated intersections by 6.4 per cent. Under BC's expanded program, factors such as improvements to site selection, engineering, improved detection, camera technology and multi-lane monitoring, as well as increased public awareness are expected to create improved crash reduction and casualty crash reduction rates as the ISC upgrade rolls out in 2010/11.

<sup>15</sup> In 2009, malfunctioning analogue cameras were not serviced, accounting for decreases in ISC output. This decision allowed program management to start the decommissioning process and maximize program budgets.

### 5. Automated Licence Plate Recognition (ALPR)

ALPR cameras capture licence plate images of vehicles on public roadways. The ALPR system instantly compares plates against a database in the onboard computer and identifies 'hits' which frequently result in charges. Examples of 'hit' types are listed below:

- no drivers licence
- no insurance
- driving while prohibited-MVA
- driving while prohibited-CCC
- notice of driving prohibition
- 24-hour prohibition issued
- driving while impaired
- possession of drugs
- O/S warrant executed
- breach of conditions/probation
- recovered stolen vehicle
- possession of stolen property
- other MVA offences
- other Criminal Code offences

**Results** (from January 1, 2009 to December 31, 2009):

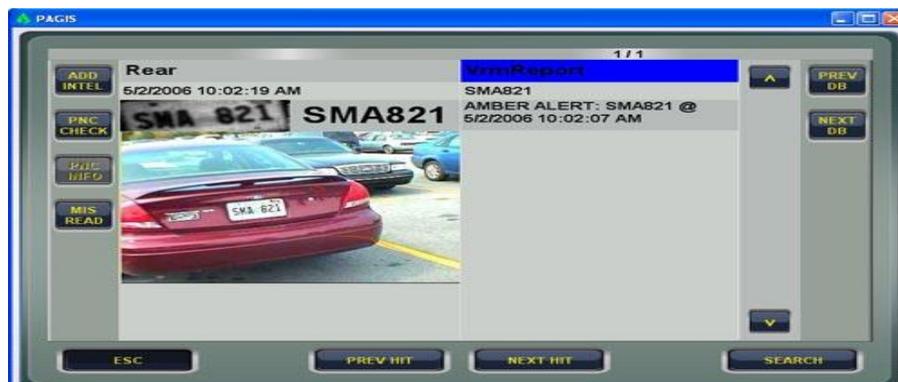
- 859,951 recognizable licence-plates scanned
- 12,682 'hits' generated by those scans
- 2,088 charges or other interventions taken as a result of police action including 980 'no driver licence' and 244 'no insurance' violations

Until early 2009, ALPR data was collected through a paper reporting process and data was saved as a cumulative file. After discussions between the Road Safety Unit and police, a more streamlined process for data collection was developed. The new methodology should allow for more accurate quarter to quarter reporting and annual totals on ALPR activity and outputs.

Near the end of 2009, planning was completed for the implementation of two five-person units, one to be deployed in Kelowna and one in Nanaimo. These new units will work in concert with other IRSU's, Provincial Traffic units and independent police agencies in combined operations.

Also in 2009, work continued on identifying key performance indicators for ALPR technology. Improved data capture and tracking will supplement understanding of the true value that ALPR brings to traffic enforcement.

#### Sample ALPR Scan



### 6. Traffic Safety Helicopters

The RCMP budget provides funding for the traffic safety helicopters. However, the helicopters regularly cooperate with enhanced enforcement by providing valuable tracking and surveillance support, especially when officers are dealing with road safety priorities relating to aggressive driving and auto crime.

Air One and Air Two assist enhanced traffic enforcement by providing aerial support to ground units and by targeting many of the same enhanced enforcement priorities including: impaired driving, aggressive driving, stolen vehicles, vehicle pursuits, street racing, and hit and runs.



Traffic Safety Helicopter

<b>Number of Arrests Where Traffic Safety Helicopter(s) was Instrumental</b>			
	<b>2008</b>	<b>2009</b>	<b>% change</b>
Pursuits	25	25	-
Impaired driving	32	14	-56%
Stolen vehicle	90	87	-3%
Dangerous driving/ without due care	13	11	-15%

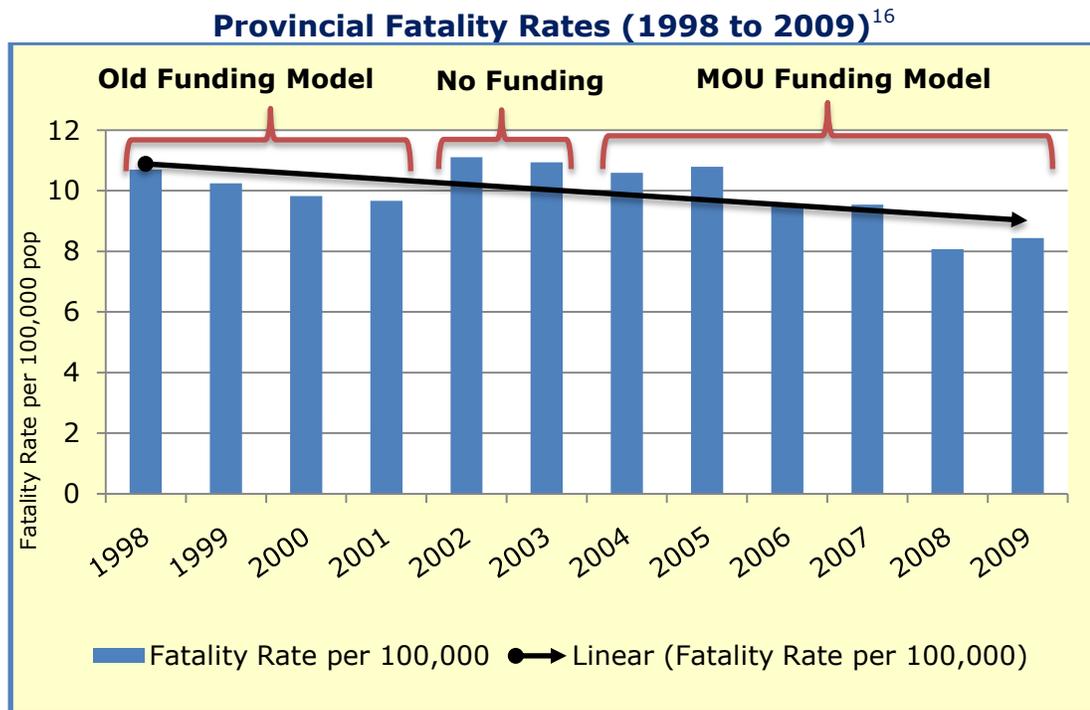
Call distribution and traffic safety helicopter activity are generated through three different response types. About 50 per cent of the time the helicopters are dispatched through a call centre, about 35 per cent of the time the air crew generate calls to ground units through flight observations, and the remaining 15 per cent of their activity is 'monitored' – this is when the air crew overhear a call in progress while on patrol and offer their assistance to ground units.

<b>Number of Traffic Safety Helicopter Response Incidents by Type</b>			
	<b>2008</b>	<b>2009</b>	<b>% change</b>
Pursuits controlled by Air One	24	17	-29%
Possible street racing incidents attended	9	7	-22%
Aggressive driving reports investigated	38	31	-18%
Impaired driving reports detected/ investigated	78	35	-55%
Stolen vehicle incidents investigated	160	121	-24%
Dangerous driving incidents investigated	25	10	-60%

## 1. *Fatality and Injury Trends*

While traffic enforcement programs that target behaviours (impaired driving, not wearing seatbelts, aggressive driving, etc) are notoriously difficult to measure on a peer reviewed statistical basis, there are indicators associated with the program that demonstrate that it, along with other factors including regular police enforcement, makes a significant, positive contribution to driving down injury and fatality rates due to crashes.

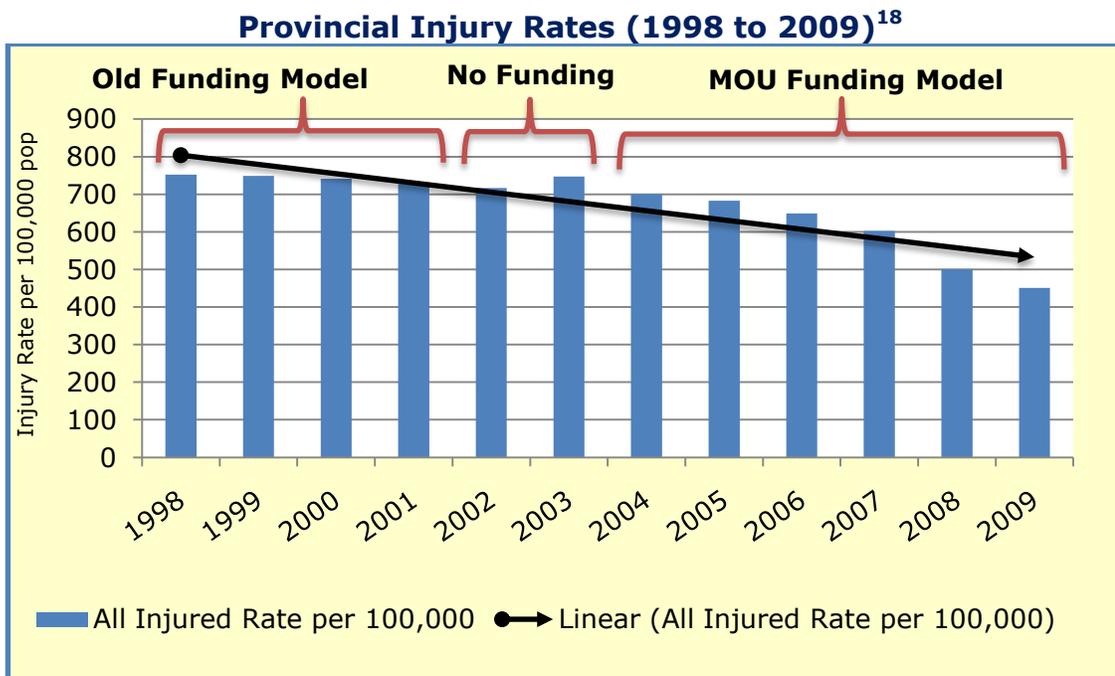
The fatality rate chart below demonstrates how fatality rates changed when there was no visible, enhanced traffic enforcement. From 2002 until mid-2004 there were no dedicated enhanced enforcement deployments. In 2005 the first IRSU began operating in the Capital Regional District on Vancouver Island. Additional IRSUs were created soon after and were deployed throughout the Province.



Injury rates have also declined<sup>17</sup>; this measure has demonstrated a continuous and stable downward trend with the exception of a brief increase in 2003.

<sup>16</sup> Rates were calculated using TAS data: Business Information Warehouse, as of June 30th, 2010: data taken from TAS reports, preliminary 2009 police-reported crash statistics and BC Statistics population data, spring 2010.

<sup>17</sup> In 2008 the *Motor Vehicle Act* requirements for police reporting of accidents was streamlined. This may have had an impact on crash reporting by police.



**2. Impact on the Health Care System**

While the number of motor-vehicle related injuries requiring medical attention is trending downward, health care costs in general are trending upward.

The cost of delivering health care is increasing in part due to growing pressure from an aging population, increases in chronic disease, infrastructure and training requirements, and implementation of new technology and pharmaceuticals.<sup>19</sup>

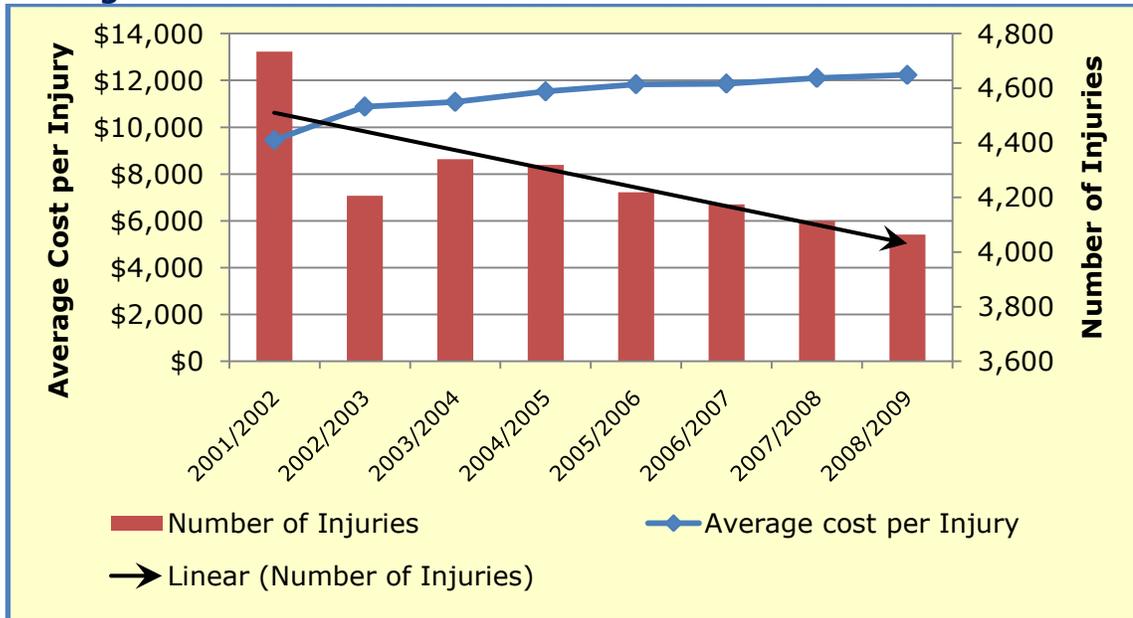
Health care expenditures would be even higher if motor-vehicle related injuries were not steadily decreasing.

<sup>18</sup> Rates were calculated with data taken from TAS reports, preliminary 2009 police-reported crash statistics and BC Statistics population data, spring 2010.

<sup>19</sup> Ministry of Health Services, Service Plan 2010 – 2013.

## COST BENEFITS: FACTS TO CONSIDER

### Average Health Care Costs Related to Motor Vehicle Incidents



\* Graph was generated using the *Online Data Tool* from the BC Injury Research and Prevention Unit website. \*\*Note that police-reported injuries and health care injury counts may not reconcile; police do not attend every motor vehicle crash and injured parties may attend a health care facility several days after a motor vehicle incident.

The average cost of health care of a motor-vehicle related injury is about \$11,000 per injury.

### 3. Intersection Safety Camera (ISC) Program

The ISC program is currently undergoing an upgrade and expansion. The existing system:

- has generated more than 235,000 violation tickets and approximately \$28 million in revenue, and
- intersection injury victims have declined from 12,623 in 2002 to 8,712 in 2009.

#### Violation Output Generated by the Current ISC System

	Annual Average 2000 to 2008	2009
VTs Issued	28,635	22,090
Estimated Value (\$'s) <sup>20</sup>	2,800,401	\$2,164,820

<sup>20</sup> The average intersection violation ticket amount paid is calculated at \$98/ticket.

## ACCOUNTABILITY

### The Upgraded/Expanded ISC Program:

- is expected to result in a minimum 4.3% reduction in casualty crashes at ISC monitored intersections per year, including 266 fewer injured victims
- 266 fewer injuries are estimated to save BC taxpayers about \$2.9 million in health care costs per year

### 4. *IMPACT*<sup>21</sup>

	Change	Year	Average Estimated Savings
Auto theft*	55% decrease	2003 to 2009	\$149 million
Theft from auto	52% decrease	2003 to 2009	\$10 million
<b>CUMULATIVE AUTO CRIME SAVINGS</b>		2003 to 2009	\$159 million in claims costs
* The true value of the IMPACT/Bait Car program is provided by its deterrent effect which is difficult to quantify.			

### 5. *Traffic Fine Revenue*

Year	04/05	05/06	06/07	07/08	08/09	09/10	Cumulative Total
TRF to communities (millions)	\$41.8	\$49	\$50.2	\$58.8	\$61	\$63	<b>\$364.6</b>
IRSU Portion of TRF	n/a	\$11.5	\$10.1	\$14.2	\$15.2	\$15.4	<b>\$66.4</b>

### 6. *Federal Contribution to BC Policing*

- Under the terms of the Provincial Police Services Agreement (PPSA) for every dollar invested in provincial policing the federal government provides a 30% contribution.
- Over the life of the enhanced enforcement program, the federal government has contributed about \$39 million to provincial policing.

<sup>21</sup> IMPACT 2009 Annual Reports.

### Fraser Valley IRSU Evaluation

In 2009, the Road Safety Unit conducted an evaluation of the Fraser Valley IRSU, an enforcement area covering 19 jurisdictions and comprising 23 per cent of the province's total population (2008). The main objectives of the evaluation were to:

- assess whether the change in model/delivery of enhanced traffic altered police traffic enforcement activity levels in the Fraser Valley by comparing 2003 activity with 2008
- assess corresponding changes to crash volumes in that same geographical area
- evaluate the Unit's operations, management, communications and strategic direction

Comparing the 2002/2003 average to the 2007/2008 average, the Fraser Valley Region showed:

- 14 per cent decrease in motor vehicle fatalities
- 17 per cent decrease in the number of injured victims
- 12 per cent decrease in the number of casualty crashes
- 23 per cent decrease in the rate of injured victims per 100,000 population

FV IRSU officers were also interviewed about their work as members of the IRSU unit with the following results:

- 93 per cent felt that the integration was working well at the Fraser Valley IRSU
- 77 per cent responded that they had enjoyed their time working for the Fraser Valley IRSU
- 100 per cent of members said they felt safe on the job



**IRSUs at work**

The evaluation makes 18 recommendations for improvement in seven operational, governance and administrative areas including: program operations, staffing policies and procedures, communications, data-driven enforcement, administration, equipment, and governance.

The complete evaluation report is available on the Police Services Division webpage:

[http://www.pssg.gov.bc.ca/police\\_services/publications/index.htm](http://www.pssg.gov.bc.ca/police_services/publications/index.htm).

### **Traffic Services Management Information Tool version two (TSMIT.2)**

Implementation of data management tools such as TSMIT.2 will enhance performance measures and track output and outcome results. The Road Safety Unit will have better capacity to establish the value of the program including the social cost benefit and return on investment of:

- targeting impaired drivers, including drug-impaired drivers
- expanding the use of ALPR technology
- reducing incidents of aggressive driving
- raising provincial occupant restraint rates
- improving intersection safety
- improving commercial vehicle enforcement

### **In-Car Video Cameras**

In an effort to support more impaired and dangerous driving charges with indisputable evidence, the Solicitor General provided a special one-time contribution of \$1.8 million to policing agencies throughout the province to more than triple the number of in-car police cameras.

The new cameras will increase the number of patrol-car cameras across BC to approximately 450, with 260 new units to be installed in RCMP traffic-duty vehicles and 60 in vehicles used by the Province's 11 independent municipal police departments.

In-car cameras capture real time audio and video evidence collected at roadside and interactions between the officer, suspects and possible witnesses for use in both Courts and Administrative Review proceedings.

### Education and Advertising

The Road Safety Unit is involved in two strategic initiatives to increase public awareness about road safety and traffic enforcement: ICBC Public Education/Advertising campaigns and provincial government public awareness activities.

Under the MOU, ICBC directs \$600,000 of its total annual contribution towards media initiatives that support the enhanced enforcement campaigns approved by the BCACP. These enforcement campaigns are reinforced with specialized media strategies focussing on seasonal enforcement themes.

In 2009, a new intersection and speed campaign was developed and launched with the explicit message to drivers that "When you slow down, you see more of the road". This campaign was supported by targeted enforcement ads and a web component challenging drivers to test their observational skills and reaction times in intersections through an interactive simulator: <http://www.icbc.com/drivesmart>.

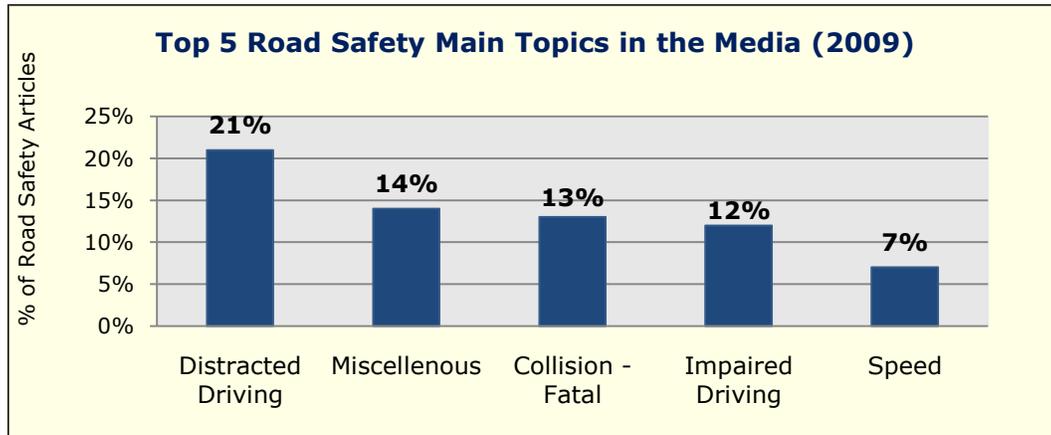
<b>Provincial Monthly Media and Enforcement Campaigns* (2009)</b>	
Month	Media/Enforcement Campaign
February	Auto Crime
May May 21-24 – National	Aggressive Driving and Motorcycles National Road Safety Week
July July 1-4 – National	Impaired Driving First Summer Long Weekend
September	Occupant Restraint and Intersections
October 8-11 – National	Operation Impact
November	Speed Relative to Conditions
December	Impaired Driving

\* Smaller and/or regional campaigns January 1- May 1 as designated by the strategic issues/needs of units in conjunction with local media and partnership support.

The Road Safety Unit also promotes the enhanced enforcement program through pro-active or earned media strategies, public events and media releases.

### Media Scan

The provincial government conducts a daily media scan of major media sources to identify stories associated with government programs, issues and policies in BC, including policing and road safety. In 2009, there were a total of 4,170 articles in the Police Services Division media scan. Of all articles, 36 per cent mentioned policing and 14 per cent of articles discussed road safety.



The main road safety topics discussed in the media were distracted driving, miscellaneous, fatal collisions, impaired driving and speed.

The most common issue in the road safety media scan was 'distracted driving' with 44 articles, a 21 per cent increase over 2008.

Impaired driving and auto theft topics decreased in their frequency in 2009, accounting for 12 per cent and five per cent respectively (compared to 16 per cent and eight per cent in 2008).

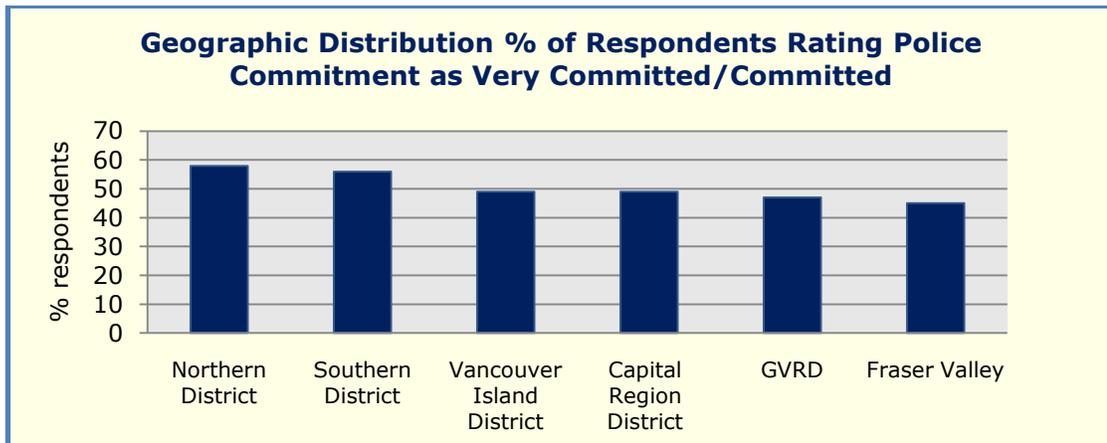
### Public Attitude Survey 2009

Since 2006, the Police Services Division has commissioned an annual public opinion survey which is aimed at assessing driver attitudes about road safety in the Province of British Columbia.

The survey attempts to measure public attitudes towards road safety programs. Survey categories include questions on perception of the programs' effectiveness, priorities, police commitment, attitudes towards new programs and initiatives, causes of collision and factors affecting driving behaviour.

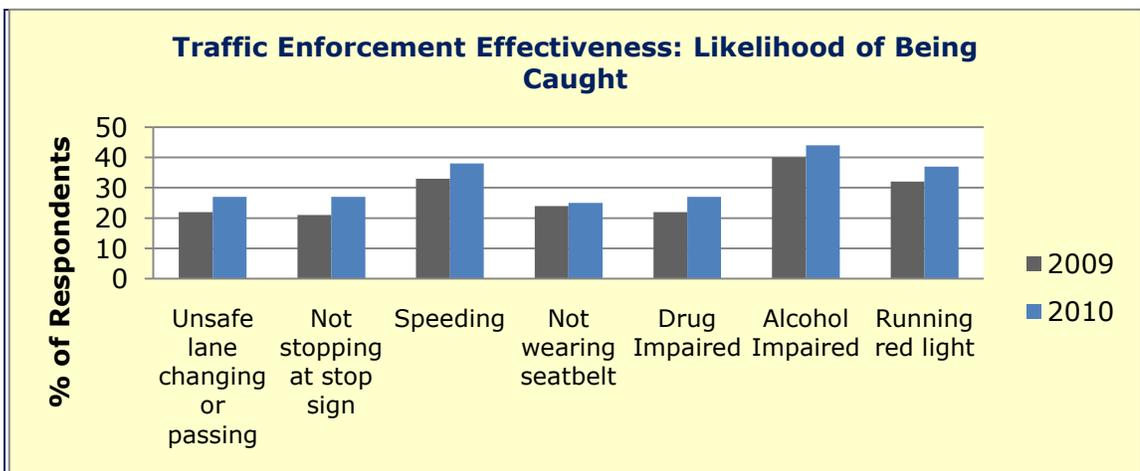
#### Highlights from the survey include:

*Police Commitment* - the majority of respondents consider police commitment to be high, with 50 per cent rating it as "Very Committed" or "Committed". Only 16 per cent of respondents rated police commitment as low.



*Risk factors* - survey respondents consistently rate alcohol impairment as the most significant factor contributing to crashes that cause serious injury and death (91%); followed by aggressive driving (89%); running red lights/stop signs (88%); drug impairment (82%); fatigue (76%) ; and, speed (75%).

There is a gender gap in public perception associated with driving behaviour: females consistently rate most factors as more significant than males, especially for speeding and drug impairment.



*Likelihood of being caught* - drivers believe that they are most likely to be caught for driving when over the legal alcohol limit (40%), running a red light or a stop sign (32%), driving while not wearing seatbelt (24%), speeding (23%) and driving after having taken illegal drugs including marijuana (22%).

### Motorcycle Safety Show

2009 marked the first year of participation in the Vancouver Motorcycle Show – a four-day event drawing over 35,000 people to the Tradex in Abbotsford to experience the latest in motorcycles, gear and accessories, rider safety and training information.

“Live to Ride Another Day” was the message promoted by officers from the Fraser Valley IRSU and partners, offering the riding public a firsthand opportunity to see aggressive and dangerous motorcycle riding footage captured by Air One Traffic Safety Helicopter.

Young and older riders had the opportunity to hop on FV IRSU Harley Davidson and BMW police bikes, and speak directly with officers and examiners about motorcycle and rider safety. The show was also an excellent opportunity for the province to engage the riding public and industry stakeholders in discussions about improvements to motorcycle safety in BC.

**Motorcycles –  
Live to Ride Another Day**

Fact sheets were prepared and distributed by the BCAA Traffic Safety Foundation.

### Premier’s Award

Police Services Division Road Safety Unit was selected the 2009 winner of the Lower Mainland Premier’s Award for Service Excellence for their work in transforming an overtime policing program into a fully integrated, provincial targeted traffic enforcement program. This new service delivery model has helped optimize enhanced traffic enforcement efforts, reduce redundancies, and create financial and resource efficiencies—all while helping to drive down serious injuries and traffic fatalities.



Insurance Bureau of Canada Information Request No. 2012.1 RR IBC.34.1 Dated 15 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 2
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**2012.1 RR IBC.34.1 Reference: Ch. 10 Road Safety  
Appendix 10B 2011 Road Safety Business Plan  
p.33**

**ICBC explains that an objective regarding a safer vehicles program is an increase of 3 percentage points in drivers who mention safety as a top 3 consideration.**

**How does ICBC know that its campaign and dollars are having such an impact when manufacturers and dealers are also promoting safety as a selling feature and auto industry and consumer publications are making such recommendations?**

**Response:**

ICBC's Safer Vehicles program contributes to awareness generated by industry on the importance of safer vehicles to prevent traffic crashes and prevent injuries or reduce the severity of injuries resulting from traffic crashes. ICBC supports the messaging and information that manufacturers are providing, confirming the importance of safety, but from an independent source. This has been ICBC's role in increasing awareness of safer vehicles.

In 2010, ICBC reviewed research and conducted focus groups to explore perceptions and beliefs of BC vehicle buyers and to determine how best to design an effective, well-targeted education campaign. Findings demonstrated that in order for people to include safety features as criteria in purchasing a vehicle, awareness of safety features and knowledge regarding their importance needed to increase. One of the key barriers to acquiring this knowledge was the fact that there was currently no single, easily accessible, trusted source of information regarding these features. Manufacturers were the primary source of information, but many buyers were confused by the different terms used and perceived the discussion on safety features was merely a marketing effort. Buyers indicated that vehicle safety information needed to be communicated as important information and separated from manufacturer marketing jargon. Consequently, ICBC developed the Safer Vehicles program to provide vehicle safety information to BC car buyers from a credible source.

To assess the impact of the Safer Vehicles program, ICBC uses program and tactic measures that include annual driver surveys, with a pre-campaign baseline to measure year over year progress, and detailed web metrics. Through Google analytics, ICBC specifically measures the

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number of viewers of the Safer Vehicles website, the content being viewed, and the length of time spent on various elements designed to increase awareness of safer vehicles.

The objective of the Safer Vehicles program is to change attitudes and ultimately behaviours, which takes time. The more vehicle buyers are exposed to a safer vehicles message from different sources, the more likely it will have an effect on their attitude and behaviours. As with all awareness activities, it is not possible to control for all external influences and isolate the specific contribution of the Safer Vehicle program, but program and tactic measures are in place and monitored annually to ensure the program is meeting its objective of increasing safety as a top buying consideration.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.1 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.1 Reference: The ICBC Investment Portfolio**

**When did ICBC implement matching investment asset Macaulay duration to average liability duration?**

**Response:**

ICBC began moving its investment policy toward a match of its average liability duration in September 2002, when it moved away from the more common Scotia Capital Universe bond mandate. The original Scotia Capital Universe bond mandate began in 1993 and had a duration of nearly six years when it was lowered to approximately 4.6 years in 2002. Successive duration adjustments were implemented in February 2004, October 2005, June 2007, and finally July 2009, when the current duration target was implemented.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.2 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.2 Reference: The ICBC Investment Portfolio**

**Page 22 of the Corporate Service Plan- Corporate Strategy says:**

**“An increase in the interest rate would decrease the market value of fixed income holdings. However, ICBC’s claim liabilities would also decrease as a result of a higher discounting used. To mitigate interest rate risk, the duration of ICBC bonds has been reduced and closely matches the duration of claim liabilities.”**

**Has ICBC conducted an analysis of the overall effects of interest rate risk?**

**Response:**

ICBC has limited its review of interest rate risk to a comparison of the average duration of its fixed income securities relative to the average duration of its claim liabilities.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.3 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.3 Reference: The ICBC Investment Portfolio**

**For a one percent increase in interest rates, what would be the net impact (taking decreased claim liabilities and a decrease in fixed income investment portfolio market value into consideration) if ICBC held a bond portfolio with an average duration of five years instead of the current duration?**

**What about with other longer duration bond portfolios instead of the current average duration?**

**Response:**

ICBC currently holds a fixed income portfolio that approximates the value and duration of its claim liabilities to eliminate the impact from a change in interest rates. A bond portfolio with longer duration would expose ICBC to greater interest rate risk.

The sensitivity of a portfolio (claim liabilities or fixed income investment) with a duration of five years is essentially 5% for a 1% change in yields. Similarly, a portfolio with a duration of 2.5 years would experience a value change of approximately 2.5% for a 1% change in yields. Therefore, a portfolio that has a duration of five years would expose ICBC to a net 2.5% loss in value (5% loss from investment minus 2.5% reduction in claim liabilities) if yields rose 1%. This equates to a dollar loss of approximately \$178 million based on the portfolio's 2011 year end market value.

It can then be seen that for each year of duration that the fixed income portfolio exceeds the average duration of the liabilities, there is an approximate net impact of \$71 million dollars (based on December 31, 2011 market value) of potential loss for every 1% rise in yields.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.4 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.4 Reference: The ICBC Investment Portfolio**

**Does ICBC only match the duration of investments to the average duration of liabilities or does ICBC also match the future tranches?**

**Response:**

ICBC matches the duration of the fixed income portfolio to the average duration of the claim liabilities.

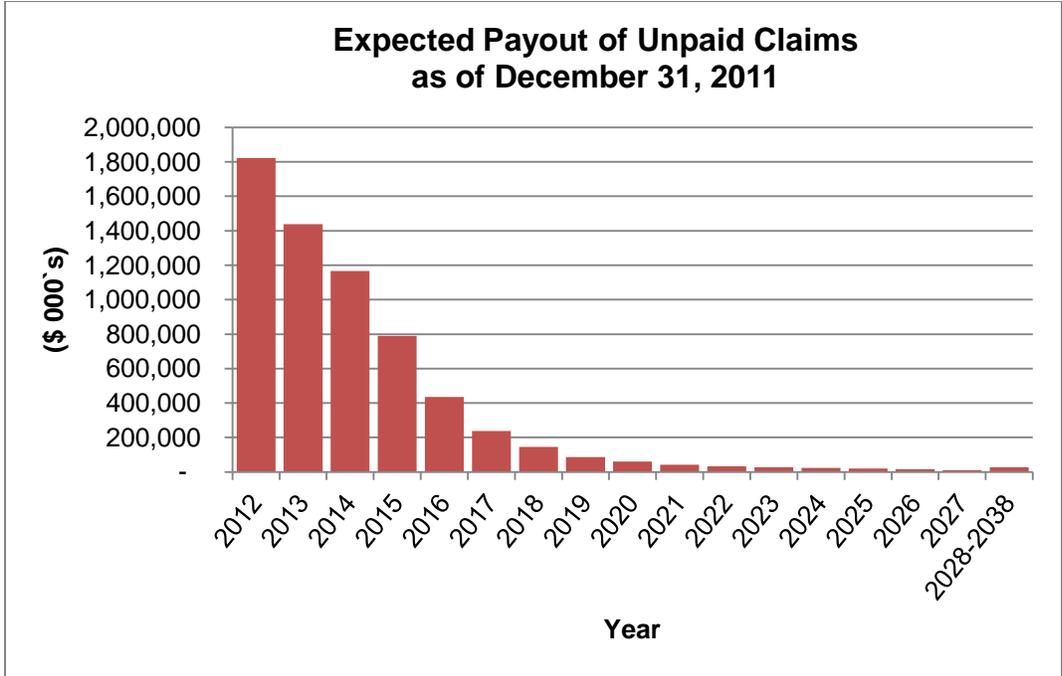
**2012.1 RR VEJ.1.4.1 Reference: The ICBC Investment Portfolio**

**What is the \$-value distribution of claim liability maturity over each year (or finer granulation) for the next ten years or more? Please provide a histogram (and corresponding data) showing the expected \$-value of liabilities per annual tranche of maturity. Please provide in contrast to question 1.2.2 below.**

**Response:**

The expected payout of ICBC’s claims liabilities as of December 31, 2011 is provided in the bar chart and data table below. In order to provide a distribution comparable to the response to information request 2012.1 RR VEJ.1.4.2, claims liabilities for both Basic and Optional insurance are included. The expected payout is consistent with the maturity of the unpaid claims provision shown in ICBC’s annual financial statements. Please note that the expected payout is different from the loss payment patterns described in Chapter 3, Section E.6 of the Application, which were used to discount loss and ALAE payments associated with policy year 2012 Basic insurance policies to calculate the required premium in the Application.

The results shown here are estimates and the actual future results may differ from these estimates.



<b>Year</b>	<b>Expected Payout of Unpaid Claims as of December 31, 2011 (\$ 000's)</b>
<b>2012</b>	1,821,940
<b>2013</b>	1,439,037
<b>2014</b>	1,166,525
<b>2015</b>	789,597
<b>2016</b>	434,634
<b>2017</b>	238,557
<b>2018</b>	144,854
<b>2019</b>	85,683
<b>2020</b>	60,506
<b>2021</b>	42,260
<b>2022</b>	33,016
<b>2023</b>	26,945
<b>2024</b>	23,657
<b>2025</b>	20,064
<b>2026</b>	15,343
<b>2027</b>	11,511
<b>2028</b>	6,905
<b>2029</b>	4,150
<b>2030</b>	3,520
<b>2031</b>	3,110
<b>2032</b>	2,542
<b>2033</b>	2,137
<b>2034</b>	1,699
<b>2035</b>	1,222
<b>2036</b>	725
<b>2037</b>	505
<b>2038</b>	259

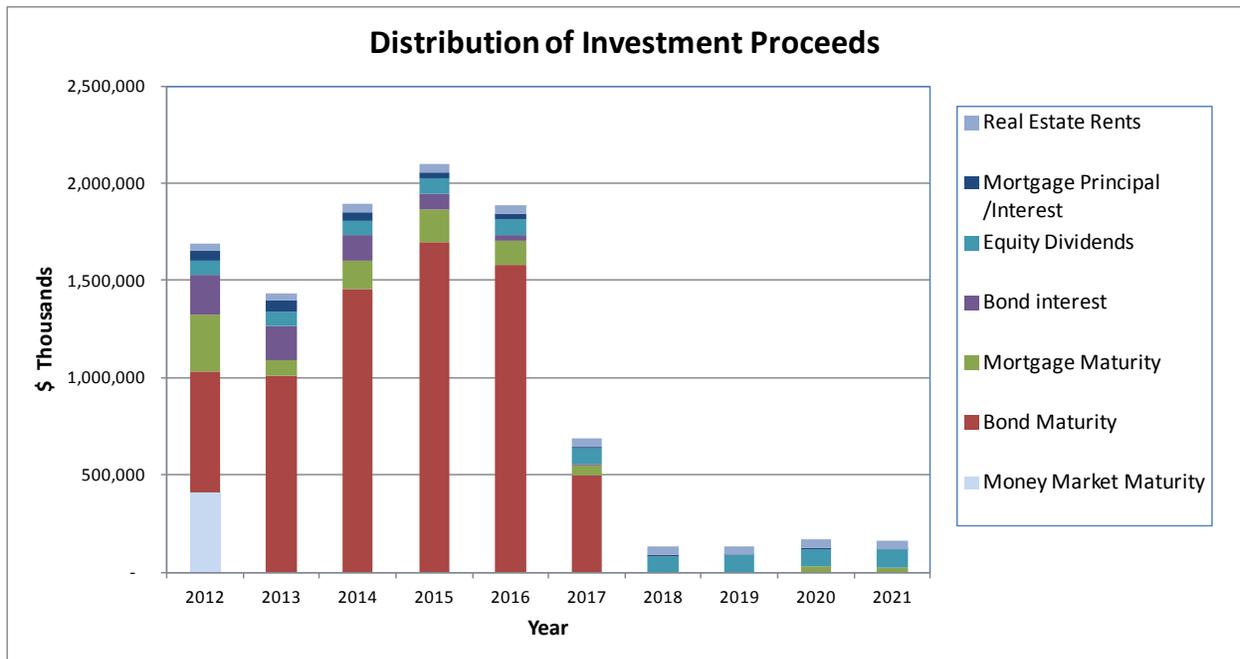
## 2012.1 RR VEJ.1.4.2 Reference: The ICBC Investment Portfolio

What is the \$-value of the distribution of investment proceeds (coupon payments, dividends, maturing instruments, etc) over each year (or finer granulation) for the next ten years or more? Please provide a histogram (and corresponding data) showing the \$-value of investment assets at maturity per year for each of the next ten years. Please provide a note on how you treat any common or preferred regular and irregular dividend streams.

Response:

### Distribution of Investment Proceeds (\$ in thousands)

	Money Market Maturities	Bond Maturities	Mortgage Maturities	Bond Coupons	Equity Dividends	Mortgage Interest & Principal	Real Estate Rents
2012	409,624	621,622	292,073	202,903.	74,017	53,432	38,610
2013	0	1,006,570	85,927	173,892	75,497	55,077	39,382
2014	0	1,458,081	145,237	126,795	77,007	46,390	40,170
2015	0	1,694,340	172,324	79,354	78,547	33,371	40,973
2016	0	1,579,109	122,142	29,927	80,118	35,035	41,793
2017	0	496,944	54,262	3,575	81,721	7,605	42,629
2018	0	0	0	0	83,355	6,009	43,481
2019	0	0	0	0	85,022	6,009	44,351
2020	0	0	31,074	0	86,722	4,310	45,238
2021	0	0	25,740	0	88,457	2,357	46,143
<b>Total</b>	<b>409,624</b>	<b>6,856,666</b>	<b>928,779</b>	<b>616,446</b>	<b>810,463</b>	<b>249,595</b>	<b>422,770</b>



Notes:

1. Money market, bond, and mortgage maturities are not re-invested.
2. 2012 equity dividends are based on 2011 actual dividends received. There are no set maturity and dividend payments for equity securities. It is assumed that future dividends grow by a 2% inflation factor.
3. Dividends are recognized in income on ex-dividend date. ICBC does not have preferred dividends.
4. Floating Rate Note coupons are calculated assuming the current Canadian Dealer Offered Rate.
5. Mortgage payments include interest and principal repayments.
6. Real estate rents are based on 2012 forecast, assuming future rents grow by a 2% inflation factor.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.5 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.5 Reference: The ICBC Investment Portfolio**

**Does ICBC hold any preferred equity investments paying a guaranteed dividend? If so, how large and predictable are these dividends?**

**Response:**

As of December 31, 2011, the equity managers employed by ICBC held seven preferred equity investments, representing less than 0.0003% of the market value of the total portfolio. Based on current dividend rates, annual dividend income from these seven securities totals \$38,975.

Given that these equity managers have discretion with respect to buying and selling equity securities on behalf of ICBC, this dividend income is neither predictable nor guaranteed.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.6 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.6 Reference: The ICBC Investment Portfolio**

**Does ICBC make any allowance to decrease the duration of the bond portfolio to offset the variable nature of the 23 percent of its investment portfolio that resides in equity investments? Why or why not?**

**Response:**

ICBC does not explicitly make any allowance to decrease the duration of the bond portfolio to offset the variable nature of its equity investments. However, when ICBC sets its asset mix, the volatile nature of equity investments and the expected equity return is taken into consideration and compared against the volatility and returns of other asset classes. ICBC decreased the duration of its bond portfolio following a decision to explicitly reduce interest rate risk.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.7 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.7 Reference: The ICBC Investment Portfolio**

**It is my understanding that ICBC manages its investment portfolio as one unit (for basic and optional reserves and equity). Does ICBC's investment-liability duration matching policy include a factor to change the duration of its bond portfolio to accommodate the portion of the portfolio that emanates from equity and does not need to be matched to any short term duration? Why or why not?**

**Response:**

No, there is no duration adjustment factor to accommodate the portion of the portfolio that emanates from equity. This is not necessary because ICBC manages a fixed income portfolio roughly equivalent in size to its claims liabilities.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.8 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.8 Reference: The ICBC Investment Portfolio**

**Please provide data on any Canadian federal, provincial, or municipal government fixed-income securities that ICBC has sold before maturity in the past five years. Please provide the ISIN's (International Securities Identification Numbers), the date purchased, the value of the purchase, the date sold, the value of the sale, and any transaction costs incurred that would not have occurred had the investments been held to maturity.**

**Response:**

Please see Attachment A – Fixed Income Securities Sold From 2007 to 2011 Details, which lists all Canadian federal, provincial, or municipal government fixed income securities that ICBC has sold before maturity in the past five years. The report includes the details of each transaction such as the ISIN, the date of sale, and the average cost of the holding associated with the transaction. Please note that ICBC does not use lot accounting, and instead uses average-cost accounting. Therefore, ICBC is unable to determine the date of the original purchase and the original purchase price. Finally, the only additional costs incurred are the custody transaction costs, which are \$8.00 CAD per trade.



# **2012.1 RR VEJ.1.8 – Attachment A – Fixed Income Securities Sold From 2007 to 2011 Details**

## 2007

CUSIP			Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Base Average Cost	Transaction Type	Contractual Settlement	
Number	ISIN Number	Asset Class									Trade Date	Date
'135087YA6	CA135087YA69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2007	2.75	3,962,000.00	3,914,337.14	3,905,026.44	SELL	1/2/2007	1/4/2007
'135087WH3	CA135087WH3	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2008	6	4,820,000.00	4,945,609.20	4,969,024.26	SELL	1/9/2007	1/12/2007
'135087XM1	CA135087XM17	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2013	5.25	6,000,000.00	6,397,800.00	6,308,255.93	SELL	1/11/2007	1/16/2007
'135087XX7	CA135087XX71	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2015	4.5	2,980,000.00	3,062,099.00	3,074,566.54	SELL	1/11/2007	1/16/2007
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2016	4	6,700,000.00	6,641,777.00	6,504,616.64	SELL	1/11/2007	1/16/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2033	5.75	4,100,000.00	5,135,250.00	4,932,092.07	SELL	1/11/2007	1/16/2007
'11070ZCC6	CA11070ZCC64	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV		8/17/2028	1	2,000,000.00	2,312,000.00	2,262,259.98	SELL	3/9/2007	3/14/2007
'110709FF4	CA110709FF43	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/1/2009	5.7	4,960,000.00	5,130,524.80	5,153,952.50	SELL	3/19/2007	3/22/2007
'110709FF4	CA110709FF43	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/1/2009	5.7	24,000,000.00	24,825,120.00	24,938,479.81	SELL	3/19/2007	3/22/2007
'013051CT2	CA013051CT24	FIXED INCOME	GOVERNMENT ISSUES ALBERTA PROV CDA		12/16/2008	5	5,000,000.00	5,023,780.00	5,073,818.30	SELL	6/1/2007	6/8/2007
'013051CT2	CA013051CT24	FIXED INCOME	GOVERNMENT ISSUES ALBERTA PROV CDA		12/16/2008	5	20,000,000.00	20,095,120.00	20,295,273.20	SELL	6/1/2007	6/8/2007
'135087WH3	CA135087WH3	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2008	6	28,109,000.00	28,459,19.23	28,313,427.04	SELL	6/15/2007	6/20/2007
'135087WH3	CA135087WH3	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2008	6	5,000,000.00	5,063,000.00	5,036,363.32	SELL	6/15/2007	6/20/2007
'135087WH3	CA135087WH3	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2008	6	8,128,000.00	8,230,412.80	8,187,112.17	SELL	6/15/2007	6/20/2007
'135087WH3	CA135087WH3	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2008	6	100,000,000.00	101,250,000.00	100,727,265.52	SELL	6/15/2007	6/20/2007
'110709EX6	CA110709EX67	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/18/2031	6.35	12,237,000.00	14,592,010.65	15,161,029.15	SELL	6/25/2007	6/28/2007
'110709FJ6	CA110709FJ64	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/18/2035	5.4	1,942,000.00	2,074,774.54	2,178,506.40	SELL	6/25/2007	6/28/2007
'110709FL1	CA110709FL11	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/18/2037	4.7	1,775,000.00	1,705,597.50	1,765,920.59	SELL	6/25/2007	6/28/2007
'110709EK4	CA110709EK47	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/18/2029	5.7	9,241,000.00	10,136,452.90	10,396,237.61	SELL	6/25/2007	6/28/2007
'135087XM1	CA135087XM17	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2013	5.25	5,300,000.00	5,464,300.00	5,608,438.71	SELL	6/25/2007	6/28/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2033	5.75	41,991,000.00	49,486,393.50	50,084,732.16	SELL	6/26/2007	6/29/2007
'135087VW1	CA135087VW11	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2027	8	12,612,000.00	18,105,787.20	18,328,759.94	SELL	6/26/2007	6/29/2007
'11070ZCC6	CA11070ZCC64	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV		8/17/2028	1	1,473,000.00	1,581,177.12	1,663,642.60	SELL	6/28/2007	7/4/2007
'11070ZDE1	CA11070ZDE12	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/1/2018	5.6	710,000.00	748,340.00	773,835.68	SELL	6/28/2007	7/4/2007
'110709DK5	CA110709DK55	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		9/8/2023	8	2,925,000.00	3,888,495.00	3,545,892.85	SELL	6/28/2007	7/4/2007
'110709DP4	CA110709DP43	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		8/23/2024	9	2,130,000.00	3,093,462.90	2,792,625.84	SELL	6/28/2007	7/4/2007
'11070ZDK7	CA11070ZDK71	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA (PROV)		6/17/2019	5.3	710,000.00	731,371.00	724,347.73	SELL	6/28/2007	7/4/2007
'135087WX8	CA135087WX8	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2010	5.5	14,024,000.00	15,069,990.48	14,586,080.88	SELL	6/30/2007	6/30/2007
'110709EX6	CA110709EX67	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		6/18/2031	6.35	2,500,000.00	2,974,750.00	3,096,555.89	SELL	7/5/2007	7/10/2007
'135087WX8	CA135087WX8	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2010	5.5	9,957,000.00	10,184,119.17	10,077,383.97	SELL	7/11/2007	7/13/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		9/1/2011	3.75	21,073,000.00	20,675,563.22	20,907,465.92	SELL	8/17/2007	8/22/2007
'135087VW1	CA135087VW11	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2027	8	760,000.00	1,106,636.00	1,101,936.00	SELL	8/17/2007	8/22/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2033	5.75	410,000.00	489,540.00	485,136.17	SELL	8/17/2007	8/22/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2033	5.75	410,000.00	489,540.00	485,136.17	SELL	8/17/2007	8/22/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		9/1/2011	3.75	18,795,000.00	18,436,015.50	18,647,460.59	SELL	8/20/2007	8/23/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		9/1/2011	3.75	1,125,000.00	1,103,512.50	1,116,168.82	SELL	8/20/2007	8/23/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		9/1/2011	3.75	46,205,000.00	45,391,792.00	45,848,462.55	SELL	9/12/2007	9/17/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2033	5.75	1,550,000.00	1,884,025.00	1,833,176.40	SELL	9/17/2007	9/20/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2033	5.75	455,000.00	553,052.50	538,125.98	SELL	9/17/2007	9/20/2007
'110709EW8	CA110709EW8	FIXED INCOME	GOVERNMENT ISSUES BRITISH COLUMBIA PROV CDA		12/1/2009	6.25	25,000,000.00	25,893,250.00	26,184,225.97	SELL	9/18/2007	9/21/2007
'135087VW1	CA135087VW11	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2027	8	325,000.00	472,127.50	470,392.64	SELL	9/27/2007	10/2/2007
'135087VW1	CA135087VW11	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2027	8	331,000.00	486,278.72	478,458.28	SELL	10/25/2007	11/1/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2033	5.75	3,750,000.00	4,545,000.00	4,432,038.62	SELL	10/29/2007	11/1/2007
'135087XG4	CA135087XG45	FIXED INCOME	GOVERNMENT ISSUES CANADA (GOVT OF)		6/1/2033	5.75	3,750,000.00	4,545,000.00	4,432,038.62	SELL	10/29/2007	11/1/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2011	3.75	5,000,000.00	4,939,500.00	4,950,958.92	SELL	1/22/2007	1/30/2007
'135087WH3	CA135087WH3	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2008	6	10,000,000.00	10,238,000.00	10,300,247.24	SELL	1/25/2007	1/30/2007
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2010	4	19,920,000.00	19,848,288.00	19,723,903.27	SELL	1/26/2007	1/31/2007
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2016	4	1,000,000.00	992,300.00	973,221.90	SELL	2/15/2007	2/20/2007
'135087XX7	CA135087XX71	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2015	4.5	1,100,000.00	1,131,163.00	1,134,907.11	SELL	2/15/2007	2/20/2007
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2016	4	1,100,000.00	1,091,530.00	1,070,544.09	SELL	2/15/2007	2/20/2007
'135087WX8	CA135087WX8	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2010	5.5	20,000,000.00	20,906,000.00	21,096,672.06	SELL	2/20/2007	2/23/2007
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2010	4	36,875,000.00	36,867,993.75	36,576,396.31	SELL	2/20/2007	2/23/2007
'135087VW1	CA135087VW11	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2027	8	2,180,000.00	3,297,250.00	3,225,241.47	SELL	2/22/2007	2/27/2007
'135087UT9	CA135087UT96	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2023	8	7,500,000.00	10,936,500.00	10,725,199.78	SELL	2/27/2007	3/2/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2008	4.25	118,645,000.00	119,117,207.10	119,065,973.64	SELL	2/27/2007	3/1/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	65,000,000.00	65,221,000.00	65,333,928.68	SELL	2/27/2007	3/1/2007

## 2007

CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Base Average Cost	Transaction Type	Trade Date	Contractual
Number	ISIN Number											Settlement Date
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	1,625,000.00	1,631,938.75	1,633,229.27	SELL	3/6/2007	3/9/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	11,575,000.00	11,624,425.25	11,633,617.83	SELL	3/6/2007	3/9/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2008	4.25	10,183,000.00	10,241,552.25	10,218,516.27	SELL	3/7/2007	3/12/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	4,967,000.00	4,990,146.22	4,992,017.44	SELL	3/7/2007	3/12/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	9,933,000.00	9,979,287.78	9,983,029.82	SELL	3/7/2007	3/12/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2011	3.75	15,056,000.00	14,977,708.80	14,907,165.33	SELL	3/8/2007	3/13/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2011	3.75	5,019,000.00	4,992,901.20	4,969,385.14	SELL	3/8/2007	3/13/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2011	3.75	50,000,000.00	49,745,000.00	49,507,392.69	SELL	3/14/2007	3/19/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2009	5.5	4,970,000.00	5,133,363.90	5,125,290.99	SELL	3/19/2007	3/22/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2009	5.5	24,050,000.00	24,840,523.50	24,807,682.27	SELL	3/19/2007	3/22/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	5,000,000.00	5,017,550.00	5,024,771.93	SELL	3/19/2007	3/21/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	25,000,000.00	25,087,750.00	25,123,859.66	SELL	3/19/2007	3/21/2007
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2014	5	5,845,000.00	6,187,517.00	6,044,367.77	SELL	3/28/2007	4/2/2007
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2012	5.25	12,200,000.00	12,889,300.00	12,849,399.74	SELL	4/4/2007	4/10/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2011	3.75	15,100,000.00	14,881,050.00	14,954,162.34	SELL	4/12/2007	4/23/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	6,000,000.00	6,005,700.00	6,008,822.09	SELL	4/18/2007	4/23/2007
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2016	4	7,980,000.00	7,880,250.00	7,779,366.82	SELL	4/18/2007	4/23/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2011	3.75	3,986,000.00	3,925,213.50	3,947,657.41	SELL	4/23/2007	4/30/2007
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2011	3.75	12,154,000.00	11,968,651.50	12,037,086.75	SELL	4/23/2007	4/30/2007
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2011	6	24,230,000.00	25,950,330.00	25,985,926.52	SELL	4/25/2007	4/30/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2009	5.5	1,300,000.00	1,335,620.00	1,339,343.27	SELL	4/26/2007	5/1/2007
'135087WH3	CA135087WH3:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2008	6	4,500,000.00	4,583,340.00	4,521,131.02	SELL	4/30/2007	5/3/2007
'135087WH3	CA135087WH3:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2008	6	4,500,000.00	4,583,250.00	4,521,131.02	SELL	4/30/2007	5/3/2007
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2011	6	27,899,000.00	29,847,745.15	29,903,298.44	SELL	5/1/2007	5/4/2007
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2011	6	40,000,000.00	42,740,000.00	42,861,350.43	SELL	5/8/2007	5/11/2007
'135087WH3	CA135087WH3:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2008	6	6,800,000.00	6,918,456.00	6,829,062.69	SELL	5/10/2007	5/15/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2009	5.5	10,000,000.00	10,247,600.00	10,296,626.97	SELL	5/14/2007	5/17/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2009	5.5	10,000,000.00	10,247,500.00	10,296,251.11	SELL	5/15/2007	5/18/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2009	5.5	10,000,000.00	10,243,800.00	10,296,251.11	SELL	5/15/2007	5/18/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2009	5.5	10,000,000.00	10,245,600.00	10,294,747.70	SELL	5/16/2007	5/22/2007
'135087XW9	CA135087XW9:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2037	5	5,675,000.00	6,401,513.50	6,196,083.09	SELL	5/17/2007	5/23/2007
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2016	4	3,753,000.00	3,669,308.10	3,690,827.88	SELL	5/17/2007	5/23/2007
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2017	4	1,000,000.00	966,700.00	984,876.88	SELL	5/23/2007	5/30/2007
'135087WH3	CA135087WH3:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2008	6	1,434,000.00	1,456,026.24	1,445,030.12	SELL	5/24/2007	5/31/2007
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2016	4	12,918,000.00	12,339,273.60	12,511,440.70	SELL	6/25/2007	6/28/2007
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2014	5	18,936,000.00	19,361,113.20	19,641,916.07	SELL	6/25/2007	6/28/2007
'135087XW9	CA135087XW9:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2037	5	10,359,000.00	11,198,079.00	11,301,911.63	SELL	6/25/2007	6/28/2007
'135087XX7	CA135087XX71	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2015	4.5	14,252,000.00	14,138,269.04	14,598,077.87	SELL	6/25/2007	6/28/2007
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2017	4	6,351,000.00	6,032,941.92	6,210,885.34	SELL	6/26/2007	6/29/2007
'135087WL4	CA135087WL4:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2029	5.75	30,324,000.00	35,084,868.00	36,207,356.00	SELL	6/26/2007	6/29/2007
'135087VH4	CA135087VH40	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2025	9	6,159,000.00	9,414,154.68	8,630,594.09	SELL	6/26/2007	6/29/2007
'135087UT9	CA135087UT96	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2023	8	5,787,000.00	7,958,687.49	8,059,817.34	SELL	6/26/2007	6/29/2007
'135087XW9	CA135087XW9:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2037	5	10,359,000.00	11,188,755.90	11,301,911.63	SELL	6/25/2007	6/28/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	6,000,000.00	5,975,520.00	6,005,225.43	SELL	6/29/2007	7/5/2007
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2012	5.25	4,100,000.00	4,223,820.00	4,300,074.92	SELL	6/29/2007	7/5/2007
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2016	4	527,000.00	503,021.50	504,953.23	SELL	7/5/2007	7/10/2007
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2017	4	2,011,000.00	1,910,610.88	1,939,725.05	SELL	7/5/2007	7/10/2007
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2011	6	5,685,000.00	5,954,469.00	5,987,663.03	SELL	7/5/2007	7/10/2007
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2011	6	776,000.00	813,480.80	817,226.22	SELL	7/11/2007	7/13/2007
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2009	4.25	11,471,000.00	11,375,905.41	11,449,008.09	SELL	7/11/2007	7/13/2007
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2010	4	13,852,000.00	13,592,275.00	13,678,780.23	SELL	7/11/2007	7/16/2007
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2012	5.25	22,162,000.00	22,799,157.50	23,250,671.34	SELL	7/12/2007	7/24/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	400,000.00	397,880.00	399,913.81	SELL	7/17/2007	7/20/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		9/1/2008	4.25	5,916,000.00	5,884,467.72	5,914,721.98	SELL	7/17/2007	7/19/2007
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2011	6	5,685,000.00	5,954,469.00	5,987,663.03	SELL	7/5/2007	7/10/2007
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2011	6	776,000.00	813,480.80	821,758.23	SELL	7/11/2007	7/13/2007
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2012	5.25	16,600,000.00	17,065,962.00	17,404,415.41	SELL	8/8/2007	8/17/2007

2007

CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Base Average Cost	Transaction Type	Trade Date	Contractual
Number	ISIN Number											Settlement Date
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2012	5.25	700,000.00	719,649.00	733,921.14	SELL	8/8/2007	8/17/2007
'135087XX7	CA135087XX71	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2015	4.5	1,000,000.00	1,004,080.00	1,013,710.40	SELL	8/15/2007	8/20/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2015	4.5	1,000,000.00	1,004,200.00	1,013,710.40	SELL	8/15/2007	8/20/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	14,994,000.00	14,997,020.29	SELL	8/17/2007	8/21/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	14,985,000.00	14,997,020.31	SELL	8/17/2007	8/21/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	10,385,000.00	10,385,000.00	10,382,937.09	SELL	8/17/2007	8/21/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	15,031,500.00	14,998,449.81	SELL	8/21/2007	8/23/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	15,003,000.00	14,998,453.92	SELL	8/22/2007	8/24/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	15,001,500.00	14,998,453.94	SELL	8/22/2007	8/24/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	935,000.00	934,616.65	934,905.17	SELL	8/27/2007	8/30/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	115,000.00	114,931.00	114,988.33	SELL	8/27/2007	8/30/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	14,991,000.00	14,998,499.42	SELL	8/29/2007	9/4/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	14,997,000.00	14,998,499.40	SELL	8/29/2007	9/4/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	12,250,000.00	12,245,100.00	12,248,774.51	SELL	8/29/2007	9/4/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	15,000,000.00	14,985,503.46	14,998,503.46	SELL	8/30/2007	9/5/2007
'135087XN9	CA135087XN99	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2008	4.25	25,000,000.00	24,966,250.00	24,997,512.77	SELL	8/31/2007	9/6/2007
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2009	4.25	25,000,000.00	24,930,000.00	24,955,445.93	SELL	9/4/2007	9/6/2007
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2009	4.25	25,000,000.00	24,992,500.00	24,955,507.31	SELL	9/5/2007	9/7/2007
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2012	5.25	825,000.00	857,934.00	862,273.71	SELL	9/6/2007	9/13/2007
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2012	5.25	13,375,000.00	13,908,930.00	13,979,285.62	SELL	9/6/2007	9/13/2007
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2009	4.25	21,990,000.00	21,972,408.01	21,951,458.02	SELL	9/14/2007	9/18/2007
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2009	4.25	50,000,000.00	49,959,999.99	49,912,364.73	SELL	9/14/2007	9/18/2007
'135087UT9	CA135087UT96	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2023	8	1,850,000.00	2,610,276.00	2,589,256.53	SELL	9/17/2007	9/20/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2009	5.5	45,000,000.00	45,873,000.00	46,026,811.46	SELL	9/18/2007	9/20/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2009	5.5	45,485,000.00	46,403,797.00	46,521,204.25	SELL	9/19/2007	9/21/2007
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2017	4	2,750,000.00	2,664,750.00	2,666,804.26	SELL	9/19/2007	9/24/2007
'135087WR1	CA135087WR1:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2009	5.5	25,000,000.00	25,487,500.00	25,566,770.48	SELL	9/20/2007	9/24/2007
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2017	4	1,000,000.00	968,790.00	969,764.09	SELL	9/20/2007	9/26/2007
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2012	5.25	25,000,000.00	25,957,500.00	26,121,268.45	SELL	9/20/2007	9/25/2007
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2009	4.25	21,000,000.00	20,998,950.00	20,963,554.03	SELL	9/21/2007	9/25/2007
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	9/1/2009	4.25	21,010,000.00	21,001,596.00	20,973,536.69	SELL	9/21/2007	9/25/2007
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2009	4.25	50,000,000.00	50,095,000.00	50,062,794.65	SELL	9/26/2007	10/1/2007
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2009	4.25	13,515,000.00	13,540,678.50	13,531,973.40	SELL	9/26/2007	10/1/2007
'135087UT9	CA135087UT96	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2023	8	495,000.00	689,782.50	692,387.07	SELL	9/27/2007	10/2/2007
'135087XW9	CA135087XW9:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2037	5	1,405,000.00	1,541,987.50	1,532,627.69	SELL	10/1/2007	10/4/2007
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2017	4	405,000.00	394,275.60	392,809.88	SELL	10/5/2007	10/12/2007
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2009	4.25	22,700,000.00	22,634,170.00	22,728,112.85	SELL	10/9/2007	10/12/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	14,989,500.00	14,985,539.88	SELL	10/19/2007	10/24/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	13,650,000.00	13,648,635.00	13,637,036.71	SELL	10/25/2007	10/30/2007
'135087WL4	CA135087WL4:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2029	5.75	480,000.00	570,528.00	571,697.51	SELL	10/25/2007	10/30/2007
'135087WL4	CA135087WL4:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2029	5.75	2,500,000.00	2,971,475.00	2,977,470.04	SELL	10/29/2007	11/1/2007
'135087WL4	CA135087WL4:	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	6/1/2029	5.75	2,500,000.00	2,971,200.00	2,977,470.05	SELL	10/29/2007	11/1/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	15,016,500.00	14,986,449.66	SELL	11/8/2007	11/13/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	15,014,700.00	14,986,449.66	SELL	11/8/2007	11/13/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	15,016,500.00	14,986,520.24	SELL	11/9/2007	11/15/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	15,016,200.00	14,986,449.67	SELL	11/8/2007	11/13/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	50,000,000.00	50,057,500.00	49,954,949.81	SELL	11/9/2007	11/14/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	10,000,000.00	10,009,000.00	9,991,037.01	SELL	11/13/2007	11/16/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	15,014,700.00	14,986,661.39	SELL	11/14/2007	11/19/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	961,000.00	962,201.25	960,147.70	SELL	11/15/2007	11/20/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	15,019,500.00	14,986,696.65	SELL	11/15/2007	11/20/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	2,000,000.00	2,002,760.00	1,998,226.22	SELL	11/15/2007	11/20/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	15,000,000.00	15,019,650.00	14,986,696.64	SELL	11/15/2007	11/20/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	965,000.00	966,254.50	964,144.16	SELL	11/15/2007	11/20/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	965,000.00	966,254.50	964,144.16	SELL	11/15/2007	11/20/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	25,000,000.00	25,077,500.00	24,977,945.39	SELL	11/19/2007	11/22/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT	GOVERNMENT ISSUES CANADA GOVT	12/1/2008	4.25	27,500,000.00	27,619,625.00	27,475,998.75	SELL	11/21/2007	11/26/2007

## 2007

CUSIP					Maturity	Interest	Shares/Par	Base Net	Base Average	Transaction	Contractual	
Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Date	Rate	Value	Proceed Amount	Cost	Type	Trade Date	Settlement Date
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2008	4.25	27,500,000.00	27,612,750.00	27,475,998.71	SELL	11/21/2007	11/26/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2008	4.25	27,500,000.00	27,616,050.00	27,475,998.72	SELL	11/21/2007	11/26/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2008	4.25	27,500,000.00	27,613,850.00	27,475,998.70	SELL	11/21/2007	11/26/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2008	4.25	16,120,000.00	16,187,704.00	16,105,930.90	SELL	11/21/2007	11/26/2007
'135087YE8	CA135087YE81	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		12/1/2008	4.25	43,880,000.00	44,024,804.00	43,842,115.59	SELL	11/21/2007	11/30/2007
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES CANADA GOVT		6/1/2017	4	1,000,000.00	994,800.00	973,880.80	SELL	12/12/2007	12/17/2007
'1350Z7JS4	CA1350Z7JS40	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILL CDS		12/27/2007	4.07	15,000,000.00	14,815,500.00	14,811,750.00	STSEL	9/6/2007	9/6/2007
'1350Z7JS4	CA1350Z7JS40	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILL CDS		12/27/2007	4.07	6,000,000.00	5,932,200.00	5,924,898.00	STSEL	9/14/2007	9/14/2007
'1350Z7JS4	CA1350Z7JS40	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILL CDS		12/27/2007	4.07	6,000,000.00	5,964,300.00	5,925,060.00	STSEL	11/2/2007	11/2/2007
'1350Z7JS4	CA1350Z7JS40	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILL CDS		12/27/2007	4.07	18,400,000.00	18,296,224.00	18,184,484.00	STSEL	11/5/2007	11/5/2007
'1350Z7KJ2	CA1350Z7KJ22	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS		1/10/2008	4	3,000,000.00	2,970,780.00	2,956,260.00	STSEL	10/11/2007	10/11/2007
'1350Z7KJ2	CA1350Z7KJ22	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS		1/10/2008	4	9,000,000.00	8,913,420.00	8,868,780.00	STSEL	10/12/2007	10/12/2007
'1350Z7KJ2	CA1350Z7KJ22	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS		1/10/2008	4	14,000,000.00	13,901,160.00	13,814,240.00	STSEL	11/5/2007	11/5/2007
'1350Z7JG0	CA1350Z7JG02	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS CDS		5/3/2007	4.17	10,000,000.00	9,974,400.00	9,858,100.00	STSEL	4/10/2007	4/10/2007
'1350Z7HX5	CA1350Z7HX52	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS CDS		6/14/2007	4.44	8,000,000.00	7,664,400.00	7,664,400.00	STSEL	6/14/2007	6/14/2007
'1350Z7JL9	CA1350Z7JL96	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS CDS		11/29/2007	4.009	10,000,000.00	9,961,400.00	9,893,500.00	STSEL	10/24/2007	10/24/2007
'1350Z7KT0	CA1350Z7KT04	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS CDS		3/6/2008	4.1	2,000,000.00	1,973,020.00	1,969,900.00	STSEL	11/5/2007	11/5/2007
'1350Z7JV7	CA1350Z7JV78	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS CDS		1/24/2008	0.01	18,000,000.00	17,845,560.00	17,598,900.00	STSEL	11/5/2007	11/5/2007
'1350Z7KC7	CA1350Z7KC78	CASH EQUIVALENTS	GOVERNMENT ISSUES CANADA GOVT TREAS BILLS CDS		12/13/2007	3.9	10,000,000.00	9,969,300.00	9,885,900.00	STSEL	11/14/2007	11/14/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	8,094,000.00	7,973,804.10	8,084,872.57	SELL	8/15/2007	8/20/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	500,000.00	497,275.00	495,080.39	SELL	11/21/2007	11/26/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	1,500,000.00	1,491,300.00	1,485,241.20	SELL	11/21/2007	11/26/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	50,000,000.00	49,575,500.00	49,531,861.50	SELL	12/14/2007	12/19/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	13,895,000.00	13,777,031.45	13,764,904.29	SELL	12/14/2007	12/19/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	15,000,000.00	14,897,100.00	14,860,179.87	SELL	12/18/2007	12/21/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	15,000,000.00	14,902,500.00	14,862,044.15	SELL	12/20/2007	12/27/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	15,000,000.00	14,893,500.00	14,860,179.86	SELL	12/18/2007	12/21/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	20,000,000.00	19,864,000.00	19,814,816.00	SELL	12/19/2007	12/24/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	15,000,000.00	14,894,400.00	14,861,112.01	SELL	12/19/2007	12/24/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	15,000,000.00	14,892,450.00	14,861,112.02	SELL	12/19/2007	12/24/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	9,025,000.00	8,964,081.25	8,940,874.88	SELL	12/18/2007	12/21/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	15,000,000.00	14,908,200.00	14,862,044.14	SELL	12/20/2007	12/27/2007
'13509PAK9	CA13509PAK9S	FIXED INCOME	GOVERNMENT ISSUES CANADA HOUSING TRUST		3/15/2009	3.55	20,000,000.00	19,875,800.00	19,816,058.85	SELL	12/20/2007	12/27/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	7,000,000.00	6,863,080.00	6,805,553.80	SELL	9/17/2007	9/20/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	21,435,000.00	20,982,721.50	20,842,910.59	SELL	9/21/2007	9/26/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	50,000,000.00	49,221,500.00	48,625,281.35	SELL	10/1/2007	10/4/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	3,580,000.00	3,524,259.40	3,481,570.14	SELL	10/1/2007	10/4/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	47,915,000.00	46,772,227.25	46,619,103.03	SELL	10/10/2007	11/1/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	2,520,000.00	2,459,898.00	2,451,844.70	SELL	10/10/2007	11/1/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	50,435,000.00	49,232,125.25	49,070,947.74	SELL	10/10/2007	11/1/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	850,000.00	831,308.50	826,874.90	SELL	10/17/2007	10/22/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	15,500,000.00	15,159,155.00	15,078,307.47	SELL	10/17/2007	10/22/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	35,700,000.00	34,947,087.00	34,729,318.84	SELL	10/18/2007	10/23/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	4,845,000.00	4,769,030.40	4,716,050.40	SELL	10/25/2007	10/31/2007
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR		6/15/2012	4	255,000.00	251,001.60	248,213.18	SELL	10/25/2007	10/31/2007
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR 1		9/15/2010	3.55	22,000,000.00	21,651,520.00	21,914,766.71	SELL	3/19/2007	3/22/2007
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR 1		9/15/2010	3.55	15,000,000.00	14,448,150.00	14,730,668.78	SELL	7/17/2007	7/20/2007
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR 1		9/15/2010	3.55	7,250,000.00	7,047,725.00	7,105,984.34	SELL	8/15/2007	8/20/2007
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR 1		9/15/2010	3.55	11,735,000.00	11,475,187.10	11,511,242.45	SELL	10/2/2007	10/4/2007
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR 1		9/15/2010	3.55	510,000.00	498,708.60	500,275.58	SELL	10/2/2007	10/4/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	7,255,000.00	7,270,453.15	7,372,768.03	SELL	1/26/2007	1/31/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	4,250,000.00	4,257,990.00	4,318,988.86	SELL	1/26/2007	1/31/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	6,950,000.00	6,963,900.00	7,062,817.06	SELL	1/26/2007	1/31/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	19,365,000.00	19,402,568.10	19,679,345.68	SELL	2/6/2007	2/9/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	12,000,000.00	12,022,560.00	12,194,792.05	SELL	2/6/2007	2/9/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	2,441,000.00	2,446,638.71	2,480,623.94	SELL	2/7/2007	2/15/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	2,000,000.00	2,004,220.00	2,032,465.34	SELL	2/15/2007	2/23/2007

## 2007

CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Base Average Cost	Transaction Type	Contractual Settlement	
Number	ISIN Number										Trade Date	Date
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	2,440,000.00	2,444,806.80	2,479,607.72	SELL	2/21/2007	3/1/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	2,900,000.00	2,905,220.00	2,926,249.61	SELL	2/22/2007	2/27/2007
'13509PAN3	CA13509PAN3S	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2010	3.75	15,870,000.00	15,747,801.00	15,944,946.97	SELL	3/12/2007	3/15/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	8,260,000.00	8,281,310.80	8,330,710.89	SELL	3/13/2007	3/20/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	14,600,000.00	14,611,680.00	14,629,720.29	SELL	4/26/2007	5/1/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	15,000,000.00	15,015,750.00	15,030,534.52	SELL	4/26/2007	5/1/2007
'13509PAG8	CA13509PAG87	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2008	3.7	16,130,000.00	16,006,605.50	16,133,698.02	SELL	4/27/2007	5/2/2007
'13509PAE3	CA13509PAE3C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2008	4.4	15,000,000.00	15,010,050.00	15,030,346.53	SELL	4/30/2007	5/3/2007
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2009	4.65	25,770,000.00	25,964,821.20	26,421,692.21	SELL	5/3/2007	5/8/2007
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2009	4.65	10,310,000.00	10,387,943.60	10,570,727.46	SELL	5/3/2007	5/8/2007
'13509PAW3	CA13509PAW3I	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		3/15/2011	4.05	9,420,000.00	9,295,185.00	9,373,526.63	SELL	5/17/2007	5/23/2007
'13509PAG8	CA13509PAG87	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2008	3.7	10,000,000.00	9,876,600.00	9,991,496.17	SELL	7/11/2007	7/13/2007
'13509PAG8	CA13509PAG87	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2008	3.7	25,000,000.00	24,688,250.00	24,978,740.40	SELL	7/11/2007	7/13/2007
'13509PAG8	CA13509PAG87	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2008	3.7	15,000,000.00	14,814,000.00	14,987,217.88	SELL	7/16/2007	7/18/2007
'13509PAG8	CA13509PAG87	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2008	3.7	14,305,000.00	14,127,188.85	14,292,810.11	SELL	7/16/2007	7/18/2007
'13509PAG8	CA13509PAG87	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2008	3.7	7,885,000.00	7,786,437.50	7,878,275.34	SELL	7/17/2007	7/20/2007
'13509PAG8	CA13509PAG87	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		9/15/2008	3.7	15,000,000.00	14,811,600.00	14,987,212.61	SELL	7/17/2007	7/19/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	25,000,000.00	24,852,250.00	24,986,839.82	SELL	9/4/2007	9/6/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	25,000,000.00	24,898,500.00	24,986,868.07	SELL	9/5/2007	9/7/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	25,000,000.00	24,898,500.00	24,986,868.07	SELL	9/5/2007	9/7/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	25,000,000.00	24,918,000.00	24,987,037.52	SELL	9/10/2007	9/13/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	50,000,000.00	49,790,000.00	49,974,131.51	SELL	9/12/2007	9/14/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	15,355,000.00	15,279,760.50	15,347,125.19	SELL	9/13/2007	9/18/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	24,663,000.00	24,539,561.69	24,650,351.56	SELL	9/14/2007	9/18/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	50,000,000.00	49,749,749.99	49,974,357.43	SELL	9/14/2007	9/18/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	50,000,000.00	49,747,500.00	49,974,470.42	SELL	9/18/2007	9/20/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	50,000,000.00	49,775,000.00	49,974,526.89	SELL	9/19/2007	9/21/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	50,000,000.00	49,762,500.00	49,974,696.34	SELL	9/20/2007	9/24/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	40,000,000.00	39,819,600.00	39,979,802.26	SELL	9/21/2007	9/25/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	4,900,000.00	4,882,115.00	4,897,542.38	SELL	9/25/2007	9/28/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	29,910,000.00	29,734,428.30	29,895,572.89	SELL	10/10/2007	10/15/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	9,970,000.00	9,911,476.10	9,965,190.96	SELL	10/10/2007	10/15/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	5,950,000.00	5,916,085.00	5,947,129.99	SELL	10/10/2007	10/15/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	18,838,000.00	18,740,419.16	18,828,934.73	SELL	10/12/2007	10/16/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	992,000.00	986,861.44	991,522.62	SELL	10/12/2007	10/16/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	18,838,000.00	18,740,419.16	18,828,956.02	SELL	10/11/2007	10/17/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	992,000.00	986,861.44	992,201.23	SELL	10/11/2007	10/17/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	20,332,000.00	20,239,692.72	20,322,284.73	SELL	10/17/2007	10/19/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	1,000,000.00	995,400.00	999,525.55	SELL	10/17/2007	10/22/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	5,440,000.00	5,423,625.60	5,437,462.03	SELL	10/24/2007	10/29/2007
'13509PAH6	CA13509PAH6C	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2008	4.1	2,130,000.00	2,123,610.00	2,129,006.29	SELL	10/24/2007	10/29/2007
'13509PBD4	CA13509PBD4E	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1		12/15/2012	4.55	1,980,000.00	1,994,414.00	1,990,868.11	SELL	10/31/2007	11/5/2007
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1ST		9/15/2011	4.6	50,000,000.00	50,313,500.00	51,052,356.17	SELL	5/17/2007	5/23/2007
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1ST		9/15/2011	4.6	130,000,000.00	130,767,000.00	132,736,125.58	SELL	5/17/2007	5/23/2007
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1ST		9/15/2011	4.6	20,000,000.00	20,118,000.00	20,420,942.43	SELL	5/17/2007	5/23/2007
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES CANADA HSG TR NO 1ST		9/15/2011	4.6	15,000,000.00	14,895,750.00	14,963,883.12	SELL	7/17/2007	7/20/2007
'281173DL5	CA281173DL50	FIXED INCOME	GOVERNMENT ISSUES EDMONTON ALTA CDA		3/25/2013	9	1,775,000.00	2,128,402.50	1,949,221.75	SELL	6/26/2007	6/29/2007
'317385AE2	CA317385AE25	FIXED INCOME	GOVERNMENT ISSUES FINANCEMENT QUE		12/1/2008	5.75	13,550,000.00	13,771,136.00	13,916,632.92	SELL	8/27/2007	8/30/2007
'317385AE2	CA317385AE25	FIXED INCOME	GOVERNMENT ISSUES FINANCEMENT QUE		12/1/2008	5.75	1,450,000.00	1,473,113.00	1,489,233.79	SELL	8/27/2007	8/30/2007
'317385AE2	CA317385AE25	FIXED INCOME	GOVERNMENT ISSUES FINANCEMENT QUE		12/1/2008	5.75	10,000,000.00	10,170,000.00	10,269,988.30	SELL	8/28/2007	8/31/2007
'448814DG5	CA448814DG57	FIXED INCOME	GOVERNMENT ISSUES HYDRO QUEBEC		8/15/2020	11	3,958,000.00	6,170,126.20	6,292,974.90	SELL	6/26/2007	6/29/2007
'448814GY3	CA448814GY37	FIXED INCOME	GOVERNMENT ISSUES HYDRO QUEBEC		8/15/2031	6	11,030,000.00	12,315,987.70	12,803,977.90	SELL	6/26/2007	6/29/2007
'448814DZ3	CA448814DZ39	FIXED INCOME	GOVERNMENT ISSUES HYDRO QUEBEC		7/15/2022	9.625	2,513,000.00	3,685,766.84	3,779,900.74	SELL	6/26/2007	6/29/2007
'448814DW0	CA448814DW0I	FIXED INCOME	GOVERNMENT ISSUES HYDRO QUEBEC		10/15/2021	10.5	3,447,000.00	5,310,206.91	5,444,342.92	SELL	6/26/2007	6/29/2007
'50047JAB4	CA50047JAB40	FIXED INCOME	GOVERNMENT ISSUES KOMMUNALBANKEN AS		6/3/2013	4.125	1,775,000.00	1,697,326.00	1,731,404.94	SELL	6/28/2007	7/4/2007
'56344ZBB4	CA56344ZBB46	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV		11/15/2018	5.5	1,722,000.00	1,799,989.38	1,861,613.14	SELL	6/28/2007	7/4/2007
'563469DX0	CA563469DX01	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		6/2/2008	5.75	25,000,000.00	25,384,250.00	25,420,449.62	SELL	4/25/2007	4/30/2007

2007

CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Base Average Cost	Transaction Type	Contractual Settlement	
Number	ISIN Number										Trade Date	Date
'563469CX1	CA563469CX10	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		3/5/2031	10.5	355,000.00	619,272.65	620,281.97	SELL	6/28/2007	7/4/2007
'563469DS1	CA563469DS16	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		12/22/2025	7.75	710,000.00	934,360.00	943,747.28	SELL	6/28/2007	7/4/2007
'563469EU5	CA563469EU52	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		12/3/2012	5.25	1,065,000.00	1,085,969.85	1,124,882.39	SELL	6/28/2007	7/4/2007
'563469EY7	CA563469EY74	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		12/3/2013	5.05	1,367,000.00	1,380,150.54	1,396,075.59	SELL	6/28/2007	7/4/2007
'563469EZ4	CA563469EZ40	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		3/5/2037	5.7	1,420,000.00	1,563,746.60	1,725,233.92	SELL	6/28/2007	7/4/2007
'563469FB6	CA563469FB62	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		12/3/2014	4.8	1,775,000.00	1,762,646.00	1,855,474.08	SELL	6/28/2007	7/4/2007
'563469FG5	CA563469FG59	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV CDA		3/1/2016	4.3	710,000.00	679,817.90	687,013.02	SELL	6/28/2007	7/4/2007
'56344ZAL3	CA56344ZAL37	FIXED INCOME	GOVERNMENT ISSUES MANITOBA PROV MED TERM NTS		9/22/2017	6.5	2,166,000.00	2,432,916.18	2,514,953.37	SELL	6/28/2007	7/4/2007
'626209GK0	CA626209GK03	FIXED INCOME	GOVERNMENT ISSUES MUNICIPAL FIN AUTH B C		12/3/2012	5.25	2,000,000.00	2,103,760.00	2,070,736.76	SELL	3/22/2007	3/28/2007
'642866EP8	CA642866EP84	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		6/27/2017	6.75	3,125,000.00	3,734,062.50	3,707,945.42	SELL	2/20/2007	2/23/2007
'642866FR3	CA642866FR32	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		1/27/2034	5.5	2,000,000.00	2,296,000.00	2,227,137.51	SELL	3/9/2007	3/14/2007
'642866DY0	CA642866DY01	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		6/28/2013	8.5	3,550,000.00	4,208,347.50	4,292,602.14	SELL	6/28/2007	7/4/2007
'642866EF0	CA642866EF03	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		5/12/2015	8.75	1,775,000.00	2,216,140.75	2,058,914.07	SELL	6/28/2007	7/4/2007
'642866EP8	CA642866EP84	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		6/27/2017	6.75	1,775,000.00	2,022,967.50	2,004,276.09	SELL	6/28/2007	7/4/2007
'642866EQ6	CA642866EQ67	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		12/27/2017	6	4,651,000.00	5,037,544.61	5,194,681.87	SELL	6/28/2007	7/4/2007
'642866ET0	CA642866ET07	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		12/27/2028	5.65	1,420,000.00	1,524,043.40	1,634,160.69	SELL	6/28/2007	7/4/2007
'642866FB8	CA642866FB89	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		12/6/2012	5.875	1,420,000.00	1,489,892.40	1,532,945.88	SELL	6/28/2007	7/4/2007
'642866FR3	CA642866FR32	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		1/27/2034	5.5	6,611,000.00	6,880,060.46	7,149,800.32	SELL	6/28/2007	7/4/2007
'642866FV4	CA642866FV44	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		12/3/2015	4.3	1,775,000.00	1,700,538.75	1,776,282.58	SELL	6/28/2007	7/4/2007
'642866FX0	CA642866FX00	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		7/21/2016	4.7	710,000.00	697,532.40	705,195.13	SELL	6/28/2007	7/4/2007
'642866DY0	CA642866DY01	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		6/28/2013	8.5	1,000,000.00	1,194,100.00	1,204,686.16	SELL	8/15/2007	8/20/2007
'642866FR3	CA642866FR32	FIXED INCOME	GOVERNMENT ISSUES NEW BRUNSWICK PROV CDA		1/27/2034	5.5	965,000.00	1,047,729.45	1,066,838.67	SELL	10/4/2007	10/10/2007
'651333EB8	CA651333EB86	FIXED INCOME	GOVERNMENT ISSUES NEWFOUNDLAND PROV CDA		2/5/2026	8.45	710,000.00	988,596.90	1,009,268.42	SELL	6/28/2007	7/4/2007
'651333EE2	CA651333EE26	FIXED INCOME	GOVERNMENT ISSUES NEWFOUNDLAND PROV CDA		4/17/2028	6.15	1,402,000.00	1,582,339.26	1,656,908.17	SELL	6/28/2007	7/4/2007
'651333FP6	CA651333FP63	FIXED INCOME	GOVERNMENT ISSUES NEWFOUNDLAND PROV CDA		10/17/2035	5.7	3,696,000.00	4,020,952.32	4,211,084.02	SELL	6/28/2007	7/4/2007
'651333EF9	CA651333EF90	FIXED INCOME	GOVERNMENT ISSUES NEWFOUNDLAND PROV CDA		10/7/2008	5.7	413,000.00	418,554.85	419,898.97	SELL	8/27/2007	8/30/2007
'651333EF9	CA651333EF90	FIXED INCOME	GOVERNMENT ISSUES NEWFOUNDLAND PROV CDA		10/7/2008	5.7	1,012,000.00	1,024,346.40	1,025,055.33	SELL	11/27/2007	11/30/2007
'669827DN4	CA669827DN47	FIXED INCOME	GOVERNMENT ISSUES NOVA SCOTIA PROV CDA		1/30/2022	9.6	1,015,000.00	1,485,990.45	1,528,057.87	SELL	6/28/2007	7/4/2007
'669827EW3	CA669827EW37	FIXED INCOME	GOVERNMENT ISSUES NOVA SCOTIA PROV CDA		12/1/2031	6.6	799,000.00	969,634.44	1,057,049.50	SELL	6/28/2007	7/4/2007
'669827FP7	CA669827FP76	FIXED INCOME	GOVERNMENT ISSUES NOVA SCOTIA PROV CDA		6/1/2035	4.9	2,308,000.00	2,256,923.96	2,283,243.28	SELL	6/28/2007	7/4/2007
'669827FR3	CA669827FR33	FIXED INCOME	GOVERNMENT ISSUES NOVA SCOTIA PROV CDA		8/18/2016	4.6	710,000.00	692,519.80	706,203.86	SELL	6/28/2007	7/4/2007
'683078GG8	CA683078GG81	FIXED INCOME	GOVERNMENT ISSUES ONTARIO HYDRO		6/22/2026	8.25	7,313,000.00	10,108,028.60	10,432,916.63	SELL	6/26/2007	6/29/2007
'683234UF3	CA683234UF36	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2014	5	990,000.00	1,031,886.90	1,036,731.22	SELL	2/7/2007	2/12/2007
'683234NM6	CA683234NM66	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2031	6.2	1,780,000.00	2,208,357.00	2,257,111.20	SELL	2/20/2007	2/23/2007
'683234PQ5	CA683234PQ55	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/2/2011	6.1	14,868,000.00	16,090,149.60	16,096,542.84	SELL	2/20/2007	2/23/2007
'683234PQ5	CA683234PQ55	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/2/2011	6.1	3,717,000.00	4,022,537.40	4,024,135.71	SELL	2/20/2007	2/23/2007
'683234SL3	CA683234SL32	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2033	5.85	3,290,000.00	3,940,400.10	3,805,383.90	SELL	2/20/2007	2/23/2007
'683234YX0	CA683234YX06	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2017	4.3	2,500,000.00	2,487,725.00	2,490,150.00	SELL	2/20/2007	2/23/2007
'683234LJ5	CA683234LJ58	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2029	6.5	4,935,000.00	6,308,805.30	6,016,187.07	SELL	3/7/2007	3/12/2007
'683234KG2	CA683234KG29	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2027	7.6	10,170,000.00	13,375,482.30	13,512,467.87	SELL	6/21/2007	6/26/2007
'683234SL3	CA683234SL32	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2033	5.85	9,255,000.00	10,299,611.85	10,726,181.61	SELL	6/21/2007	6/26/2007
'683234NM6	CA683234NM66	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2031	6.2	2,770,000.00	3,204,059.00	3,495,783.27	SELL	6/21/2007	6/26/2007
'683234VR6	CA683234VR64	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2035	5.6	5,135,000.00	5,569,985.85	5,592,002.33	SELL	6/21/2007	6/26/2007
'683234LJ5	CA683234LJ58	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2029	6.5	7,665,000.00	9,123,266.25	9,264,120.30	SELL	6/21/2007	6/26/2007
'683234YD4	CA683234YD42	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2037	4.7	9,940,000.00	9,468,943.40	9,866,183.49	SELL	6/25/2007	6/28/2007
'683234YC6	CA683234YC68	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2016	4.4	8,776,000.00	8,473,754.56	8,788,102.72	SELL	6/25/2007	6/28/2007
'683234KG2	CA683234KG29	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2027	7.6	9,784,000.00	12,909,988.00	12,998,721.99	SELL	6/25/2007	6/28/2007
'683234VW6	CA683234VW66	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2015	4.5	5,520,000.00	5,388,844.80	5,445,145.78	SELL	6/25/2007	6/28/2007
'683234LJ5	CA683234LJ58	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2029	6.5	7,338,000.00	8,753,720.34	8,868,513.22	SELL	6/25/2007	6/28/2007
'683234RX8	CA683234RX88	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/2/2012	5.375	9,408,000.00	9,657,029.76	9,856,235.43	SELL	6/26/2007	6/29/2007
'683234TQ1	CA683234TQ10	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2018	5.5	1,260,000.00	1,318,867.20	1,353,772.10	SELL	6/26/2007	6/29/2007
'683234VR6	CA683234VR64	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2035	5.6	5,006,000.00	5,445,676.98	5,451,390.65	SELL	6/26/2007	6/29/2007
'683234SL3	CA683234SL32	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2033	5.85	8,855,000.00	9,908,745.00	10,262,147.46	SELL	6/26/2007	6/29/2007
'683234HM3	CA683234HM34	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		9/8/2023	8.1	2,432,000.00	3,257,907.20	3,134,735.28	SELL	6/26/2007	6/29/2007
'683234NM6	CA683234NM66	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2031	6.2	2,641,000.00	3,067,627.14	3,332,745.78	SELL	6/26/2007	6/29/2007
'683234UF3	CA683234UF36	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2014	5	2,883,000.00	2,906,352.30	2,979,877.57	SELL	6/26/2007	6/29/2007
'683234TF5	CA683234TF54	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		6/2/2013	4.75	3,071,000.00	3,063,660.31	3,096,694.24	SELL	6/26/2007	6/29/2007

## 2007

CUSIP					Maturity	Interest	Shares/Par	Base Net	Base Average	Transaction	Contractual	
Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Date	Rate	Value	Proceed Amount	Cost	Type	Trade Date	Settlement Date
'683234YX0	CA683234YX06	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2017	4.3	1,775,000.00	1,692,302.75	1,768,323.36	SELL	6/26/2007	6/29/2007
'683234YX0	CA683234YX06	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2017	4.3	1,775,000.00	1,692,302.75	1,768,323.36	SELL	6/26/2007	6/29/2007
'683234HC5	CA683234HC51	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		7/13/2022	9.5	1,669,000.00	2,444,250.50	2,511,877.74	SELL	6/28/2007	7/4/2007
'683234HL5	CA683234HL50	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		2/7/2024	7.5	1,402,000.00	1,779,278.20	1,912,220.05	SELL	6/28/2007	7/4/2007
'683234JQ2	CA683234JQ20	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/2/2025	8.5	1,775,000.00	2,495,117.50	2,594,001.70	SELL	6/28/2007	7/4/2007
'683234RX8	CA683234RX88	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/2/2012	5.375	1,842,000.00	1,910,688.18	1,927,459.04	SELL	8/15/2007	8/20/2007
'683234MD7	CA683234MD75	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/1/2008	5.7	15,025,000.00	15,265,249.75	15,339,985.29	SELL	8/28/2007	8/31/2007
'683234TZ1	CA683234TZ19	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		11/19/2008	4.4	25,000,000.00	24,982,500.00	25,036,526.19	SELL	8/30/2007	9/5/2007
'683234MD7	CA683234MD75	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/1/2008	5.7	795,000.00	806,686.50	811,448.11	SELL	8/31/2007	9/6/2007
'683234MD7	CA683234MD75	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		12/1/2008	5.7	130,000.00	131,820.00	132,689.63	SELL	8/31/2007	9/6/2007
'683234YX0	CA683234YX06	FIXED INCOME	GOVERNMENT ISSUES ONTARIO PROV CDA		3/8/2017	4.3	1,200,000.00	1,170,492.00	1,162,065.29	SELL	10/24/2007	10/29/2007
'683225001	n/a	CASH EQUIVALENTS	SHORT TERMS	ONTARIO PROV CDA TREAS BILLS C	11/26/2007	4	15,000,000.00	14,971,500.00	14,866,970.00	STSEL	11/9/2007	11/9/2007
'683225001	n/a	CASH EQUIVALENTS	SHORT TERMS	ONTARIO PROV CDA TREAS BILLS C	12/3/2007	4.28	10,000,000.00	9,994,300.00	9,902,500.00	STSEL	11/28/2007	11/28/2007
'683225001	n/a	CASH EQUIVALENTS	SHORT TERMS	ONTARIO PROV CDA TREAS BILLS C	12/18/2007	4.22	5,000,000.00	4,994,150.00	4,955,300.00	STSEL	12/7/2007	12/7/2007
'683244AD9	CA683244AD97	FIXED INCOME	GOVERNMENT ISSUES ONTARIO SCH BRDS FING CORP		10/19/2016	6.25	1,590,000.00	1,733,895.00	1,776,265.89	SELL	6/26/2007	6/29/2007
'741666CM1	CA741666CM16	FIXED INCOME	GOVERNMENT ISSUES PRINCE EDWARD ISLAND PROV CDA		1/29/2032	6.25	728,000.00	841,058.40	920,798.32	SELL	6/28/2007	7/4/2007
'741666CP4	CA741666CP47	FIXED INCOME	GOVERNMENT ISSUES PRINCE EDWARD ISLAND PROV CDA		2/21/2034	5.6	1,420,000.00	1,519,826.00	1,639,420.04	SELL	6/28/2007	7/4/2007
'743989006	n/a	CASH EQUIVALENTS	SHORT TERMS	PROV OF BRIT COLUMBIA PROM NT	2/4/2008	3.91	10,000,000.00	9,943,400.00	9,934,000.00	STSEL	12/13/2007	12/13/2007
'743989006	n/a	CASH EQUIVALENTS	SHORT TERMS	PROV OF BRIT COLUMBIA PROM NT	2/4/2008	3.91	4,000,000.00	3,977,720.00	3,973,600.00	STSEL	12/14/2007	12/14/2007
'74814ZDH3	CA74814ZDH34	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV		12/1/2016	4.5	9,368,000.00	9,043,024.08	9,436,970.22	SELL	6/25/2007	6/28/2007
'748148RP0	CA748148RP01	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		12/1/2015	5	1,850,000.00	1,931,400.00	1,892,000.20	SELL	2/20/2007	2/23/2007
'748148QP1	CA748148QP1C	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		6/1/2009	5.5	5,000,000.00	5,148,150.00	5,205,329.22	SELL	3/19/2007	3/22/2007
'748148QP1	CA748148QP1C	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		6/1/2009	5.5	20,000,000.00	20,592,600.00	20,821,316.84	SELL	3/19/2007	3/22/2007
'748148QT3	CA748148QT32	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		6/1/2032	6.25	11,715,000.00	13,503,646.20	13,805,305.00	SELL	6/21/2007	6/26/2007
'748148RP0	CA748148RP01	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		12/1/2015	5	5,847,000.00	5,872,726.80	6,002,375.69	SELL	6/25/2007	6/28/2007
'748148RN5	CA748148RN52	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		12/1/2014	5.5	9,053,000.00	9,370,669.77	9,572,127.89	SELL	6/25/2007	6/28/2007
'748148RL9	CA748148RL96	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		12/1/2036	5.75	8,854,000.00	9,714,166.10	9,973,399.20	SELL	6/25/2007	6/28/2007
'748148NX7	CA748148NX70	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		1/16/2023	9.375	1,846,000.00	2,684,268.60	2,718,018.31	SELL	6/26/2007	6/29/2007
'748148QT3	CA748148QT32	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		6/1/2032	6.25	3,397,000.00	3,930,736.64	4,002,926.34	SELL	6/26/2007	6/29/2007
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		10/1/2012	6	5,886,000.00	6,190,306.20	6,234,218.35	SELL	6/26/2007	6/29/2007
'748148RK1	CA748148RK14	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		10/1/2013	5.25	4,828,000.00	4,919,828.56	5,145,476.34	SELL	6/26/2007	6/29/2007
'748148PZ0	CA748148PZ01	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		4/1/2026	8.5	2,130,000.00	2,979,231.00	3,028,849.75	SELL	6/28/2007	7/4/2007
'748148QP1	CA748148QP1C	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		6/1/2009	5.5	12,333,000.00	12,537,851.14	12,560,926.53	SELL	9/26/2007	10/1/2007
'748148QP1	CA748148QP1C	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		6/1/2009	5.5	50,000,000.00	50,830,499.99	50,924,051.48	SELL	9/26/2007	10/1/2007
'748148QP1	CA748148QP1C	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV CDA		6/1/2009	5.5	4,762,000.00	4,852,620.86	4,838,301.35	SELL	12/18/2007	12/21/2007
'74814ZDE0	CA74814ZDE03	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROV MEDIUM TERM NT CD:		6/1/2025	5.35	1,179,000.00	1,204,820.10	1,297,820.01	SELL	6/28/2007	7/4/2007
'74814ZDR1	CA74814ZDR16	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROVINCE		12/1/2017	4.5	5,247,000.00	5,038,379.28	5,209,684.75	SELL	6/26/2007	6/29/2007
'74814ZDR1	CA74814ZDR16	FIXED INCOME	GOVERNMENT ISSUES QUEBEC PROVINCE		12/1/2017	4.5	753,000.00	733,120.80	741,333.99	SELL	9/25/2007	9/28/2007
'803854JF6	CA803854JF67	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		6/3/2014	5.25	2,500,000.00	2,653,100.00	2,728,000.00	SELL	2/20/2007	2/23/2007
'803854GX0	CA803854GX01	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		6/2/2008	5.5	25,000,000.00	25,318,500.00	25,341,436.93	SELL	4/25/2007	4/30/2007
'803854FE3	CA803854FE39	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		2/4/2022	9.6	1,661,000.00	2,434,361.60	2,518,519.79	SELL	6/28/2007	7/4/2007
'803854GY8	CA803854GY83	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		3/5/2029	5.75	1,065,000.00	1,163,885.25	1,172,675.41	SELL	6/28/2007	7/4/2007
'803854HN1	CA803854HN1C	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		9/5/2031	6.4	1,065,000.00	1,265,113.50	1,271,636.11	SELL	6/28/2007	7/4/2007
'803854HZ4	CA803854HZ40	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		12/3/2012	5.25	888,000.00	905,688.96	920,086.75	SELL	6/28/2007	7/4/2007
'803854JA7	CA803854JA70	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		9/5/2033	5.8	1,690,000.00	1,873,229.80	1,943,290.35	SELL	6/28/2007	7/4/2007
'803854JF6	CA803854JF67	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		6/3/2014	5.25	1,775,000.00	1,813,854.75	1,893,095.53	SELL	6/28/2007	7/4/2007
'803854JH2	CA803854JH24	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		9/5/2035	5.6	5,503,000.00	5,978,073.99	6,284,264.65	SELL	6/28/2007	7/4/2007
'803854JH2	CA803854JH24	FIXED INCOME	GOVERNMENT ISSUES SASKATCHEWAN PROV CDA		9/5/2035	5.6	1,872,000.00	2,073,483.36	2,135,392.95	SELL	10/11/2007	10/4/2007
'891288CJ9	CA891288CJ95	FIXED INCOME	GOVERNMENT ISSUES TORONTO ONT CDA		5/20/2015	4.55	799,000.00	773,831.50	806,647.69	SELL	6/26/2007	6/29/2007
'975026EP6	CA975026EP69	FIXED INCOME	GOVERNMENT ISSUES WINNIPEG MAN		5/12/2015	9.125	1,775,000.00	2,238,985.00	2,220,919.13	SELL	6/26/2007	6/29/2007

2008

CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Base Average Cost	Transaction Type	Trade Date	Contractual Settlement Date
'1350Z7KP8	CA1350Z7KP81	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDA	2/7/2008	4.22	15,000,000.00	14,956,050.00	14,737,650.00	STSEL	1/9/2008	1/9/2008
'110709EW8	CA110709EW84	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV CDA	12/1/2009	6.25	2,900,000.00	3,026,585.00	3,017,501.20	SELL	1/10/2008	1/15/2008
'110709EW8	CA110709EW84	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV CDA	12/1/2009	6.25	22,100,000.00	23,064,665.00	22,995,440.20	SELL	1/10/2008	1/15/2008
'683234NX2	CA683234NX25	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA	11/19/2010	6.1	17,245,000.00	18,345,575.90	18,029,979.19	SELL	1/14/2008	1/17/2008
'683234NX2	CA683234NX25	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA	11/19/2010	6.1	500,000.00	531,910.00	522,759.63	SELL	1/14/2008	1/17/2008
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5	1,000,000.00	1,077,440.00	1,037,109.79	SELL	1/15/2008	1/22/2008
'135087UT9	CA135087UT96	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	8	1,000,000.00	1,457,290.00	1,390,955.17	SELL	1/17/2008	1/22/2008
'135087XM1	CA135087XM17	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	5.25	1,000,000.00	1,083,600.00	1,052,604.87	SELL	1/17/2008	1/22/2008
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5	500,000.00	539,700.00	518,554.90	SELL	1/17/2008	1/22/2008
'669827EJ2	CA669827EJ26	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROV CDA	6/1/2009	5.4	1,426,000.00	1,458,726.70	1,444,170.69	SELL	1/25/2008	1/30/2008
'669827EJ2	CA669827EJ26	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROV CDA	6/1/2009	5.4	24,164,000.00	24,718,563.80	24,471,907.83	SELL	1/25/2008	1/30/2008
'1350Z7LF9	CA1350Z7LF90	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/1/2008	0.01	8,000,000.00	7,996,640.00	7,993,920.00	STSEL	1/28/2008	1/28/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	25,000,000.00	26,715,000.00	26,163,886.79	SELL	1/29/2008	2/1/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	2,500,000.00	2,671,775.00	2,616,388.67	SELL	1/29/2008	2/1/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	25,000,000.00	26,718,750.00	26,163,886.78	SELL	1/29/2008	2/1/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	25,000,000.00	26,712,500.00	26,163,886.79	SELL	1/29/2008	2/1/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	25,000,000.00	26,713,000.00	26,163,886.79	SELL	1/29/2008	2/1/2008
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5	750,000.00	805,500.00	777,712.48	SELL	1/29/2008	2/1/2008
'135087XW9	CA135087XW98	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	5	1,485,000.00	1,691,563.50	1,658,944.45	SELL	1/29/2008	2/1/2008
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6	3,000,000.00	3,255,720.00	3,185,245.00	SELL	1/29/2008	2/1/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	1,400,000.00	1,469,860.00	1,444,839.38	SELL	1/30/2008	2/4/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	22,800,000.00	23,937,720.00	23,530,241.14	SELL	1/30/2008	2/4/2008
'317385AG7	CA317385AG72	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUE	12/1/2009	4.75	23,550,000.00	24,014,406.00	23,665,826.01	SELL	1/30/2008	2/4/2008
'317385AG7	CA317385AG72	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUE	12/1/2009	4.75	1,450,000.00	1,478,594.00	1,457,131.55	SELL	1/30/2008	2/4/2008
'1350Z7KT0	CA1350Z7KT04	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/6/2008	4.1	5,000,000.00	4,984,400.00	4,924,750.00	STSEL	2/1/2008	2/1/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	22,080,000.00	22,737,984.00	22,601,437.93	SELL	2/8/2008	2/13/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	1,920,000.00	1,977,216.00	1,965,342.49	SELL	2/8/2008	2/13/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	1,000,000.00	1,020,630.00	1,003,498.28	SELL	2/11/2008	2/13/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	24,000,000.00	24,495,120.00	24,083,958.58	SELL	2/11/2008	2/13/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	965,000.00	992,907.80	987,693.15	SELL	2/13/2008	2/15/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	18,260,000.00	18,788,079.20	18,689,405.84	SELL	2/13/2008	2/15/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	580,000.00	597,400.00	593,494.92	SELL	2/14/2008	2/20/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	4,820,000.00	4,964,600.00	4,932,147.42	SELL	2/14/2008	2/20/2008
'1350Z7J47	CA1350Z7J473	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/20/2008	4.23	2,000,000.00	1,994,120.00	1,964,260.00	STSEL	2/15/2008	2/15/2008
'1350Z7J47	CA1350Z7J473	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/20/2008	4.23	2,000,000.00	1,994,100.00	1,964,260.00	STSEL	2/15/2008	2/15/2008
'13509PAE3	CA13509PAE30	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2008	4.4	10,000,000.00	10,004,000.00	10,012,000.00	SELL	2/22/2008	2/26/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	23,973,000.00	24,663,662.13	24,516,449.26	SELL	2/27/2008	3/3/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	13,585,000.00	13,978,965.00	13,892,961.37	SELL	2/27/2008	3/3/2008
'683234SL3	CA683234SL32	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2003	5.85	4,138,000.00	4,818,080.30	4,748,640.66	SELL	3/4/2008	3/7/2008
'1350Z7J47	CA1350Z7J473	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/20/2008	4.23	6,000,000.00	5,992,740.00	5,892,780.00	STSEL	3/5/2008	3/5/2008
'0985ZU008	n/a	CASH EQUIVALENT	SHORT TERMS	BONS DU TRESOR DU QUE PROV	3/7/2008	3.45	6,000,000.00	5,998,980.00	5,993,760.00	STSEL	3/5/2008	3/5/2008
'1350Z7J47	CA1350Z7J473	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/20/2008	4.23	8,000,000.00	7,991,600.00	7,865,200.00	STSEL	3/6/2008	3/6/2008
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	27,500,000.00	28,595,875.00	27,453,029.17	SELL	3/13/2008	3/18/2008
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	27,500,000.00	28,597,250.00	27,453,029.18	SELL	3/13/2008	3/18/2008
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	20,000,000.00	20,834,000.00	19,965,866.17	SELL	3/14/2008	3/19/2008
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	18,000,000.00	18,757,980.00	17,969,279.53	SELL	3/14/2008	3/19/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	100,000,000.00	103,720,000.00	102,187,206.19	SELL	3/17/2008	3/19/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	25,000,000.00	25,927,500.00	25,546,801.56	SELL	3/17/2008	3/19/2008
'135087XW9	CA135087XW98	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	5	4,045,000.00	4,762,987.50	4,516,685.48	SELL	3/17/2008	3/20/2008
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	20,000,000.00	20,925,400.00	19,965,892.93	SELL	3/17/2008	3/20/2008
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	18,000,000.00	18,815,000.00	17,969,303.62	SELL	3/17/2008	3/20/2008
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	20,000,000.00	20,907,800.00	19,965,892.94	SELL	3/17/2008	3/20/2008
'683234LJ5	CA683234LJ58	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2009	6.5	2,465,000.00	3,078,464.55	2,976,461.68	SELL	3/17/2008	3/20/2008
'748148QT3	CA748148QT32	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	6/1/2032	6.25	2,465,000.00	3,174,370.30	3,114,099.32	SELL	3/17/2008	3/20/2008
'748148RL9	CA748148RL96	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2036	5.75	4,160,000.00	4,749,222.40	4,666,346.67	SELL	3/17/2008	3/20/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	10,525,000.00	10,883,586.75	10,752,057.18	SELL	3/19/2008	3/25/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	20,925,000.00	21,620,756.25	21,374,332.60	SELL	3/20/2008	3/27/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	9,600,000.00	9,924,480.00	9,807,102.05	SELL	3/20/2008	3/25/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	6,665,000.00	6,876,280.50	6,807,788.72	SELL	3/26/2008	3/28/2008

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CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual
								Proceed Amount	Base Average Cost			Settlement Date
'642866EY9	CA642866EY91	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	7/12/2011	5.8	1,715,000.00	1,841,052.50	1,803,546.52	SELL	3/26/2008	3/31/2008
'642866EZ6	CA642866EZ66	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	12/1/2011	5.85	2,000,000.00	2,162,400.00	2,120,234.37	SELL	3/26/2008	3/31/2008
'642866FB8	CA642866FB89	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	12/6/2012	5.875	580,000.00	636,840.00	619,825.06	SELL	3/26/2008	3/31/2008
'135087XX7	CA135087XX71	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2015	4.5	915,000.00	987,696.75	927,018.73	SELL	3/27/2008	4/2/2008
'563469EU5	CA563469EU52	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	12/3/2012	5.25	435,000.00	465,885.00	456,097.28	SELL	3/27/2008	4/1/2008
'651333EH5	CA651333EH56	FIXED INCOME	GOVERNMENT ISSUES	NEWFOUNDLAND PROV CDA	11/3/2009	6.7	1,000,000.00	1,058,380.00	1,031,683.48	SELL	3/27/2008	4/1/2008
'669827EV5	CA669827EV53	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROVINCE	6/1/2011	6.25	2,815,000.00	3,059,342.00	2,863,804.41	SELL	3/27/2008	4/1/2008
'683234RX8	CA683234RX88	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2012	5.375	2,000,000.00	2,156,580.00	2,081,977.60	SELL	3/27/2008	4/1/2008
'135027KX1	CA135027KX16	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/2/2008	2.27	7,000,000.00	6,919,780.00	6,917,820.00	STSEL	3/28/2008	3/28/2008
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	18,180,000.00	18,589,231.80	18,103,749.44	SELL	3/31/2008	4/3/2008
'135027LH5	CA135027LH56	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/21/2008	2.655	10,000,000.00	9,917,800.00	9,891,340.00	STSEL	3/31/2008	3/31/2008
'135027LH5	CA135027LH56	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/21/2008	2.655	6,000,000.00	5,948,160.00	5,943,120.00	STSEL	4/1/2008	4/1/2008
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5	435,000.00	477,456.00	450,600.49	SELL	4/4/2008	4/9/2008
'135087XG4	CA135087XG49	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2033	5.75	2,500,000.00	3,113,525.00	3,036,852.84	SELL	4/16/2008	4/21/2008
'135087XW9	CA135087XW98	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2037	5	1,000,000.00	1,141,500.00	1,153,361.05	SELL	4/16/2008	4/21/2008
'135027LT9	CA135027LT94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	5/5/2008	3.11	5,000,000.00	4,995,200.00	4,992,750.00	STSEL	4/23/2008	4/23/2008
'135027LT9	CA135027LT94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	5/5/2008	3.11	400,000.00	3,996,520.00	3,994,420.00	STSEL	4/24/2008	4/24/2008
'135027LT9	CA135027LT94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	5/5/2008	3.11	4,000,000.00	3,996,520.00	3,994,200.00	STSEL	4/24/2008	4/24/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	25,000,000.00	26,905,500.00	26,099,681.57	SELL	4/25/2008	4/30/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	25,000,000.00	26,905,000.00	26,099,681.56	SELL	4/25/2008	4/30/2008
'135027KY9	CA135027KY98	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	5/1/2008	4.22	10,000,000.00	9,995,100.00	9,808,400.00	STSEL	4/25/2008	4/25/2008
'683234ZK7	CA683234ZK75	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2012	4.5	17,075,000.00	17,536,366.50	17,049,481.08	SELL	4/25/2008	4/30/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	665,000.00	683,354.00	678,198.26	SELL	4/29/2008	5/1/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	7,775,000.00	7,948,149.25	7,798,166.11	SELL	5/1/2008	5/9/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	3,400,000.00	3,478,642.00	3,410,212.56	SELL	5/1/2008	5/5/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	24,300,000.00	24,829,011.00	24,372,550.01	SELL	5/2/2008	5/8/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	3,500,000.00	3,602,200.00	3,567,359.54	SELL	5/8/2008	5/13/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	6,380,000.00	6,560,554.00	6,516,238.70	SELL	5/14/2008	5/16/2008
'6832Z5001	n/a	CASH EQUIVALENT	SHORT TERMS	ONTARIO PROV CDA TREAS BILLS C	6/2/2008	3.9	8,000,000.00	7,988,960.00	7,872,160.00	STSEL	5/14/2008	5/14/2008
'6426Z8006	n/a	CASH EQUIVALENT	SHORT TERMS	NEW BRUNSWICK PROV CDA T BILLS	7/24/2008	3.33	6,000,000.00	5,970,180.00	5,909,400.00	STSEL	5/15/2008	5/15/2008
'6426Z8006	n/a	CASH EQUIVALENT	SHORT TERMS	NEW BRUNSWICK PROV CDA T BILLS	7/24/2008	3.33	6,000,000.00	5,970,180.00	5,909,400.00	STSEL	5/15/2008	5/16/2008
'6832Z5001	n/a	CASH EQUIVALENT	SHORT TERMS	ONTARIO PROV CDA TREAS BILLS C	6/2/2008	3.9	4,000,000.00	3,995,160.00	3,936,080.00	STSEL	5/15/2008	5/16/2008
'6832Z5001	n/a	CASH EQUIVALENT	SHORT TERMS	ONTARIO PROV CDA TREAS BILLS C	6/2/2008	3.9	4,000,000.00	3,995,160.00	3,936,080.00	STSEL	5/15/2008	5/15/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	1,900,000.00	1,953,428.00	1,939,933.74	SELL	5/16/2008	5/22/2008
'135027KQ6	CA135027KQ64	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/7/2008	0.01	8,000,000.00	7,952,800.00	7,943,040.00	STSEL	5/16/2008	5/16/2008
'317385AG7	CA317385AG72	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUE	12/1/2009	4.75	4,575,000.00	4,687,224.75	4,593,818.60	SELL	5/20/2008	5/23/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	15,000,000.00	15,412,500.00	15,311,903.19	SELL	5/21/2008	5/26/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	6,625,000.00	6,808,115.00	6,762,757.25	SELL	5/21/2008	5/26/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	10,000,000.00	10,275,100.00	10,207,935.46	SELL	5/21/2008	5/26/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	15,000,000.00	15,412,500.00	15,311,903.21	SELL	5/21/2008	5/26/2008
'135087WR1	CA135087WR13	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2009	5.5	15,000,000.00	15,412,500.00	15,311,903.21	SELL	5/21/2008	5/26/2008
'317385AG7	CA317385AG72	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUE	12/1/2009	4.75	9,575,000.00	9,787,182.00	9,614,031.82	SELL	5/23/2008	5/28/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	6,050,000.00	6,140,145.00	6,142,087.52	SELL	5/28/2008	6/2/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	10,750,000.00	10,906,842.50	10,912,550.12	SELL	5/29/2008	6/5/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	10,121,000.00	10,302,165.90	10,272,687.70	SELL	6/4/2008	6/9/2008
'748148QU0	CA748148QU05	FIXED INCOME	GOVERNMENT ISSUES	QUEBEC PROV CDA	12/1/2010	6.25	46,635,000.00	49,882,195.05	48,743,023.80	SELL	6/4/2008	6/6/2008
'317385AG7	CA317385AG72	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUE	12/1/2009	4.75	5,265,000.00	5,388,622.20	5,285,956.96	SELL	6/5/2008	6/10/2008
'683234NX2	CA683234NX25	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA	11/19/2010	6.1	62,253,000.00	65,614,662.00	64,674,085.85	SELL	6/11/2008	6/16/2008
'683234NX2	CA683234NX25	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA	11/19/2010	6.1	57,571,134.75	57,571,134.75	56,801,369.32	SELL	6/12/2008	6/16/2008
'683234TF5	CA683234TF54	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2013	4.75	1,254,000.00	1,288,083.72	1,262,771.51	SELL	6/13/2008	6/18/2008
'0129Z0009		CASH EQUIVALENT	SHORT TERMS	ALTA TREASURY BDN	6/16/2008	4.08	10,000,000.00	9,997,600.00	9,771,700.00	STSEL	6/13/2008	6/13/2008
'135087XG4	CA135087XG49	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2033	5.75	4,785,000.00	5,901,340.50	5,805,926.62	SELL	6/16/2008	6/19/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	12,225,000.00	12,354,951.75	12,401,692.17	SELL	6/20/2008	6/25/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	24,400,000.00	24,657,176.00	24,748,589.40	SELL	6/25/2008	6/30/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	24,400,000.00	24,657,176.00	24,748,589.40	SELL	6/25/2008	6/30/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	24,400,000.00	24,657,176.00	24,705,291.58	SELL	6/25/2008	6/30/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	1,850,000.00	1,875,622.50	1,854,931.94	SELL	6/25/2008	6/30/2008
'0985ZU008		CASH EQUIVALENT	SHORT TERMS	BONS DU TRESOR DU QUE PROV	6/27/2008	4.05	10,000,000.00	9,999,200.00	9,775,500.00	STSEL	6/26/2008	6/26/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	19,845,000.00	21,137,107.95	20,678,169.04	SELL	7/2/2008	7/7/2008

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CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
								Proceed Amount	Base Average Cost			
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	20,000,000.00	21,298,800.00	20,839,676.54	SELL	7/2/2008	7/7/2008
'135087XT6	CA135087XT69	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2009	4.25	2,715,000.00	2,745,652.35	2,753,425.20	SELL	7/2/2008	7/4/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	15,000,000.00	15,992,250.00	15,626,663.83	SELL	7/9/2008	7/14/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	10,000,000.00	10,663,500.00	10,417,775.88	SELL	7/9/2008	7/14/2008
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5	460,000.00	497,950.00	481,989.83	SELL	7/11/2008	7/16/2008
'135027KX1	CA135027KX16	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/2/2008	2.27	7,000,000.00	6,964,860.00	6,917,820.00	STSEL	7/11/2008	7/11/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	10,085,000.00	10,251,402.50	10,110,608.50	SELL	7/16/2008	7/21/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	10,085,000.00	10,251,402.50	10,110,608.51	SELL	7/16/2008	7/21/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	10,085,000.00	10,252,007.60	10,110,608.50	SELL	7/16/2008	7/21/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	15,000,000.00	15,941,400.00	15,620,476.74	SELL	7/23/2008	7/28/2008
'135027KU7	CA135027KU76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/4/2008	2.585	12,000,000.00	11,967,240.00	11,898,840.00	STSEL	7/23/2008	7/23/2008
'317385AG7	CA317385AG72	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUE	12/1/2009	4.75	19,460,000.00	19,863,989.60	19,528,980.31	SELL	7/31/2008	8/8/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	23,850,000.00	25,710,300.00	24,823,909.85	SELL	8/12/2008	8/15/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,475,000.00	25,059,711.93	SELL	8/12/2008	8/15/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	23,375,000.00	25,215,080.00	24,327,447.24	SELL	8/13/2008	8/18/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,475,000.00	25,059,259.55	SELL	8/13/2008	8/18/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	23,840,000.00	25,729,558.40	24,809,287.22	SELL	8/18/2008	8/21/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,477,500.00	25,058,807.19	SELL	8/18/2008	8/21/2008
'135027K52	CA135027K521	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/27/2008	0.01	2,000,000.00	1,986,100.00	1,967,300.00	STSEL	8/18/2008	8/18/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	23,850,000.00	25,708,153.50	24,816,180.40	SELL	8/12/2008	8/26/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,464,000.00	25,058,053.24	SELL	8/21/2008	8/26/2008
'135027K52	CA135027K521	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/27/2008	0.01	6,000,000.00	5,960,940.00	5,917,560.00	STSEL	8/21/2008	8/21/2008
'317385AG7	CA317385AG72	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUE	12/1/2009	4.75	24,300,000.00	24,780,168.00	24,382,727.18	SELL	8/22/2008	8/27/2008
'975026EK7	CA975026EK72	FIXED INCOME	GOVERNMENT ISSUES	WINNIPEG MAN	12/14/2009	10	13,240,000.00	14,361,428.00	13,775,030.88	SELL	8/28/2008	9/2/2008
'95026EK7	CA95026EK72	FIXED INCOME	GOVERNMENT ISSUES	WINNIPEG MAN	12/14/2009	10	13,240,000.00	14,361,428.00	13,775,030.88	SELL	8/28/2008	9/2/2008
'0985ZUXJ1	CA0985ZUXJ14	FIXED INCOME	GOVERNMENT ISSUES	BONS DU TRESOR DU QUE T BILL	10/17/2008	0	6,000,000.00	5,982,240.00	5,941,320.00	SELL	9/2/2008	9/2/2008
'135027K52	CA135027K521	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/27/2008	0.01	5,000,000.00	4,972,000.00	4,957,400.00	STSEL	9/2/2008	9/2/2008
'135027KZ6	CA135027KZ63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/30/2008	0.01	9,000,000.00	8,966,970.00	8,878,500.00	STSEL	9/2/2008	9/2/2008
'6832Z5GZ7	CA6832Z5GZ71	CASH EQUIVALENT	GOVERNMENT ISSUES	ONTARIO PROV CDA TREAS BILLS	9/15/2008	0.000001	8,000,000.00	7,992,320.00	7,945,360.00	STSEL	9/2/2008	9/2/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,471,250.00	25,054,585.14	SELL	9/15/2008	9/18/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	12,030,000.00	12,258,329.40	12,056,266.38	SELL	9/15/2008	9/18/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,472,500.00	25,054,585.11	SELL	9/15/2008	9/18/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,473,750.00	25,054,585.11	SELL	9/15/2008	9/18/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	10,000,000.00	10,190,200.00	10,021,834.05	SELL	9/15/2008	9/18/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	25,000,000.00	25,471,250.00	25,055,429.57	SELL	9/15/2008	9/18/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	6,774,000.00	7,101,861.60	6,932,625.32	SELL	9/16/2008	9/19/2008
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2010	4	12,045,000.00	12,370,335.45	12,349,571.68	SELL	9/16/2008	9/19/2008
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2010	4	50,000,000.00	51,350,000.00	51,264,307.57	SELL	9/16/2008	9/19/2008
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2010	4	50,000,000.00	51,345,000.00	51,264,307.56	SELL	9/16/2008	9/19/2008
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	50,610,000.00	51,632,322.00	51,498,031.61	SELL	9/16/2008	9/19/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	100,000,000.00	101,990,000.00	100,217,737.43	SELL	9/16/2008	9/19/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	20,000,000.00	20,405,000.00	20,043,547.49	SELL	9/16/2008	9/19/2008
'13509PAL7	CA13509PAL72	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	9/15/2009	4.65	20,000,000.00	20,397,000.00	20,043,547.50	SELL	9/16/2008	9/19/2008
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2010	4	10,000,000.00	10,256,500.00	10,251,440.93	SELL	9/18/2008	9/23/2008
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2010	4	15,000,000.00	15,385,650.00	15,377,161.36	SELL	9/18/2008	9/23/2008
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	25,000,000.00	25,486,250.00	25,434,658.04	SELL	9/18/2008	9/23/2008
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	25,000,000.00	25,492,500.00	25,434,658.03	SELL	9/18/2008	9/23/2008
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2010	4	15,000,000.00	15,310,500.00	15,376,628.68	SELL	9/19/2008	9/24/2008
'135087XY5	CA135087XY54	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	9/1/2010	4	20,000,000.00	20,415,000.00	20,502,171.54	SELL	9/19/2008	9/24/2008
'135027K94	CA135027K943	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2008	0.01	3,000,000.00	2,983,980.00	2,942,220.00	STSEL	9/23/2008	9/23/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	25,000,000.00	26,067,500.00	25,578,810.08	SELL	9/24/2008	9/26/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	25,000,000.00	25,405,000.00	25,535,924.29	SELL	9/24/2008	9/29/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	11,290,000.00	11,785,066.50	11,548,405.73	SELL	9/30/2008	10/3/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	2,875,000.00	3,006,100.00	2,940,368.72	SELL	10/2/2008	10/7/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	20,190,000.00	20,829,013.50	20,620,021.70	SELL	10/7/2008	10/10/2008
'13509PAN3	CA13509PAN39	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2010	3.75	21,735,000.00	22,080,586.50	21,691,064.98	SELL	10/7/2008	10/9/2008
'683234NX2	CA683234NX25	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA	11/19/2010	6.1	15,000,000.00	15,954,000.00	15,588,326.11	SELL	10/7/2008	10/10/2008
'683234NX2	CA683234NX25	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA	11/19/2010	6.1	29,265,000.00	31,126,254.00	30,412,824.22	SELL	10/7/2008	10/10/2008
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	8,000,000.00	7,951,200.00	7,901,120.00	SELL	10/8/2008	10/14/2008

2008

CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
								Proceed Amount	Base Average Cost			
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	6	1,750,000.00	1,909,092.50	1,878,812.72	SELL	10/9/2008	10/15/2008
'135027MA9	CA135027MA94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/5/2009	0.01	10,000,000.00	9,947,500.00	9,938,700.00	STSEL	10/10/2008	10/10/2008
'135027LJ1	CA135027LJ13	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/19/2009	0.01	1,700,000.00	1,689,630.00	1,685,992.00	STSEL	10/14/2008	10/14/2008
'642866EX1	CA642866EX19	FIXED INCOME	GOVERNMENT ISSUES	NEW BRUNSWICK PROV CDA	6/15/2010	6.375	13,800,000.00	14,551,824.00	14,329,692.13	SELL	10/15/2008	10/20/2008
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	17,998,000.00	17,965,243.64	17,775,544.72	SELL	10/21/2008	10/24/2008
'13509PBG7	CA13509PBG78	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.6	48,000,000.00	48,249,600.00	48,033,940.00	SELL	10/24/2008	10/29/2008
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5	2,390,000.00	2,628,283.00	2,520,625.34	SELL	10/28/2008	10/31/2008
'135027LV4	CA135027LV41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/13/2008	1.825	7,000,000.00	6,993,630.00	6,992,650.00	STSEL	10/28/2008	10/28/2008
'135087XM1	CA135087XM17	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	5.25	3,300,000.00	3,652,605.00	3,635,118.94	SELL	11/7/2008	11/12/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	5,525,000.00	5,699,037.50	5,653,969.78	SELL	11/7/2008	11/13/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	5,000,000.00	5,269,450.00	5,399,640.90	SELL	11/10/2008	11/14/2008
'01292ZYD0	CA01292ZYD00	FIXED INCOME	GOVERNMENT ISSUES	ALBERTA CAPITAL FINANCE AUTHOR	11/12/2008	0	8,500,000.00	8,500,000.00	8,477,050.00	SELL	11/12/2008	11/12/2008
'0985ZUYV3	CA0985ZUYV33	CASH EQUIVALENT	GOVERNMENT ISSUES	BONS DU TRESOR DU QUEBEC	11/28/2008	0.01	10,000,000.00	9,991,200.00	9,958,300.00	STSEL	11/12/2008	11/12/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	923,000.00	972,740.47	996,773.71	SELL	11/12/2008	11/17/2008
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5	5,000,000.00	5,525,000.00	5,276,400.02	SELL	11/12/2008	11/17/2008
'135027K94	CA135027K943	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2008	0.01	7,000,000.00	6,985,370.00	6,865,180.00	STSEL	11/12/2008	11/12/2008
'135027L36	CA135027L362	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/8/2009	2.77	12,000,000.00	11,965,080.00	11,849,040.00	STSEL	11/12/2008	11/12/2008
'135027LE2	CA135027LE26	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/22/2009	2.83	12,000,000.00	11,955,840.00	11,832,120.00	STSEL	11/12/2008	11/12/2008
'135027LY8	CA135027LY89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/11/2008	0.01	20,000,000.00	19,973,000.00	19,840,400.00	STSEL	11/12/2008	11/12/2008
'135027L77	CA135027L776	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/5/2009	0.01	5,000,000.00	4,978,450.00	4,956,600.00	STSEL	11/13/2008	11/13/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	2,500,000.00	2,634,575.00	2,699,820.43	SELL	11/17/2008	11/20/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	25,635,000.00	26,532,225.00	26,233,396.44	SELL	11/17/2008	11/20/2008
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR 1	9/15/2010	3.55	2,680,000.00	2,734,806.00	2,631,174.28	SELL	11/17/2008	11/20/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	2,345,000.00	2,430,358.00	2,399,739.19	SELL	11/19/2008	11/24/2008
'135087WX8	CA135087WX80	FIXED INCOME	GOVERNMENT ISSUES	CANADA (GOVT OF)	6/1/2010	5.5	2,412,000.00	2,544,418.80	2,604,786.77	SELL	11/24/2008	11/27/2008
'13509PAN3	CA13509PAN39	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2010	3.75	50,000,000.00	51,050,000.00	49,864,207.11	SELL	11/24/2008	11/27/2008
'13509PAN3	CA13509PAN39	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2010	3.75	28,330,000.00	28,923,513.50	28,253,059.76	SELL	11/24/2008	11/26/2008
'13509PAN3	CA13509PAN39	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2010	3.75	2,412,000.00	2,462,652.00	2,405,449.36	SELL	11/24/2008	11/27/2008
'13509PAN3	CA13509PAN39	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2010	3.75	89,258,000.00	91,138,666.06	89,015,587.98	SELL	11/24/2008	11/27/2008
'6832Z5LX6	CA6832Z5LX68	CASH EQUIVALENT	GOVERNMENT ISSUES	ONTARIO PROV CDA TREAS BILLS	12/15/2008	1	8,000,000.00	7,990,320.00	7,968,480.00	STSEL	11/24/2008	11/24/2008
'6832Z5LX6	CA6832Z5LX68	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA TREAS BILLS	12/15/2008	1.95	8,000,000.00	7,990,320.00	7,968,480.00	SELL	11/24/2008	11/24/2008
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	6	55,200,000.00	60,864,624.00	59,864,627.48	SELL	12/1/2008	12/4/2008
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	65,600,000.00	72,415,840.00	68,959,663.49	SELL	12/1/2008	12/4/2008
'135087XM1	CA135087XM17	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	5.25	7,725,000.00	8,672,239.50	8,509,483.01	SELL	12/1/2008	12/4/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	44,470,000.00	46,649,030.00	45,508,060.86	SELL	12/1/2008	12/4/2008
'642866EX1	CA642866EX19	FIXED INCOME	GOVERNMENT ISSUES	NEW BRUNSWICK PROV CDA	6/15/2010	6.375	14,800,000.00	15,700,432.00	16,245,154.21	SELL	12/3/2008	12/9/2008
'669827EM5	CA669827EM54	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROV CDA	9/1/2010	6.4	25,000,000.00	26,693,500.00	26,647,000.00	SELL	12/3/2008	12/9/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	20,000,000.00	21,078,000.00	20,474,583.23	SELL	12/4/2008	12/9/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	23,750,000.00	24,977,875.00	24,313,567.59	SELL	12/4/2008	12/8/2008
'110709EY4	CA110709EY41	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV CDA	8/23/2010	6.375	14,050,000.00	15,036,310.00	15,232,305.41	SELL	12/8/2008	12/11/2008
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	40,000,000.00	42,240,000.00	40,949,166.47	SELL	12/8/2008	12/11/2008
'135027K94	CA135027K943	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2008	2.715	16,000,000.00	15,989,600.00	15,861,510.00	STSEL	12/8/2008	12/8/2008
'135027K94	CA135027K943	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2008	2.715	7,000,000.00	6,996,570.00	6,994,260.00	STSEL	12/10/2008	12/10/2008
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR 1	9/15/2010	3.55	13,000,000.00	13,390,130.00	12,763,158.81	SELL	12/11/2008	12/16/2008
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR 1	9/15/2010	3.55	62,000,000.00	63,884,800.00	60,870,449.58	SELL	12/11/2008	12/16/2008
'135027MM3	CA135027MM33	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/18/2008	0	8,000,000.00	8,000,000.00	7,995,920.00	SELL	12/18/2008	12/18/2008
'0985ZUZL4	CA0985ZUZL42	FIXED INCOME	GOVERNMENT ISSUES	BONS DU TRESOR DU QUE PROV TRE	12/19/2008	0	7,000,000.00	7,000,000.00	6,903,540.00	SELL	12/19/2008	12/19/2008

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CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Average Cost	Transaction Type	Trade Date	Contractual
Number	ISIN Number											Settlement Date
'135027LJ1	CA135027LJ13	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/19/2009	0.01	1,700,000.00	1,689,630.00	1,685,992.00	STSEL	10/14/2008	10/14/2008
'135087WL4	CA135087WL43	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2029	5.75	6,320,000.00	8,084,544.00	7,724,271.29	SELL	1/6/2009	1/9/2009
'135087YR9	CA135087YR94	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2019	3.75	4,635,000.00	4,902,393.15	4,616,734.48	SELL	1/6/2009	1/9/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	20,000,000.00	21,384,000.00	20,474,583.24	SELL	1/7/2009	1/12/2009
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR 1	9/15/2010	3.55	83,000,000.00	86,017,880.00	81,487,859.93	SELL	1/7/2009	1/9/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	20,000,000.00	21,390,000.00	20,474,583.23	SELL	1/8/2009	1/13/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	30,000,000.00	32,193,000.00	30,711,874.85	SELL	1/9/2009	1/14/2009
'683225KF6	CA683225KF61	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA TREAS BILLS	1/19/2009	-	9,000,000.00	8,999,010.00	8,877,060.00	SELL	1/14/2009	1/14/2009
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR 1	9/15/2010	3.55	37,050,000.00	38,532,000.00	36,375,002.55	SELL	1/15/2009	1/20/2009
'683234NX2	CA683234NX25	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA	11/19/2010	6.10	8,157,000.00	8,838,843.63	8,642,736.66	SELL	1/15/2009	1/20/2009
'110709EY4	CA110709EY41	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV CDA	8/23/2010	6.38	11,565,000.00	12,479,675.85	12,560,028.50	SELL	1/15/2009	1/20/2009
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR 1	9/15/2010	3.55	15,200,000.00	15,805,720.00	14,923,077.96	SELL	1/15/2009	1/20/2009
'683225KF6	CA683225KF61	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO PROV CDA TREAS BILLS	1/19/2009	-	1,000,000.00	1,000,000.00	986,340.00	SELL	1/19/2009	1/19/2009
'683234YC6	CA683234YC68	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2016	4.40	1,000,000.00	1,047,700.00	1,001,225.14	SELL	1/20/2009	1/23/2009
'748148QU0	CA748148QU05	FIXED INCOME	GOVERNMENT ISSUES	QUEBEC PROV CDA	12/1/2010	6.25	15,275,000.00	16,555,503.25	16,338,214.74	SELL	1/21/2009	1/26/2009
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	17,908,000.00	19,832,214.60	18,825,147.15	SELL	2/2/2009	2/4/2009
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	17,908,000.00	19,832,214.60	18,825,147.15	SELL	2/2/2009	2/4/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	18,775,000.00	19,698,730.00	18,636,343.20	SELL	2/4/2009	2/9/2009
'110709EY4	CA110709EY41	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV CDA	8/23/2010	6.38	10,000,000.00	10,727,000.00	10,860,379.16	SELL	2/4/2009	2/9/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	18,775,000.00	19,689,730.00	18,636,343.20	SELL	2/4/2009	2/9/2009
'13509PAT0	CA13509PAT09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR 1	9/15/2010	3.55	13,077,000.00	13,510,894.86	12,838,755.95	SELL	2/4/2009	2/9/2009
'135027LJ1	CA135027LJ13	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/19/2009	0.01	7,700,000.00	7,698,691.00	7,636,552.00	STSEL	2/9/2009	2/9/2009
'135027LJ1	CA135027LJ13	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/19/2009	0.01	7,700,000.00	7,698,691.00	7,636,552.00	STSEL	2/9/2009	2/9/2009
'135027LJ1	CA135027LJ13	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/19/2009	0.01	1,500,000.00	1,499,820.00	1,487,640.00	STSEL	2/13/2009	2/13/2009
'135027LJ1	CA135027LJ13	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/19/2009	0.01	1,500,000.00	1,499,820.00	1,487,640.00	STSEL	2/13/2009	2/13/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	6,000,000.00	6,400,800.00	6,142,374.97	SELL	2/24/2009	2/27/2009
'803854HZ4	CA803854HZ40	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF SASKATCHEWAN	12/3/2012	5.25	362,000.00	394,254.20	393,421.60	SELL	2/25/2009	3/2/2009
'642866DY0	CA642866DY01	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	6/28/2013	8.50	450,000.00	549,000.00	563,811.82	SELL	2/25/2009	3/2/2009
'563469EY7	CA563469EY74	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	12/3/2013	5.05	558,000.00	605,831.76	571,671.00	SELL	2/25/2009	3/2/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	6,855,000.00	7,291,663.50	7,017,663.41	SELL	2/25/2009	3/2/2009
'683234HM3	CA683234HM34	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	9/8/2023	8.10	993,000.00	1,311,633.84	1,297,073.15	SELL	3/4/2009	3/6/2009
'110709DK5	CA110709DK55	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	9/8/2023	8.00	1,195,000.00	1,563,275.10	1,527,965.18	SELL	3/4/2009	3/6/2009
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	6.00	1,720,000.00	1,905,760.00	1,865,347.09	SELL	3/4/2009	3/9/2009
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	6.00	8,625,000.00	9,556,500.00	9,353,848.05	SELL	3/4/2009	3/9/2009
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	6.00	1,720,000.00	1,905,760.00	1,865,347.09	SELL	3/4/2009	3/9/2009
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	6.00	8,600,000.00	9,535,164.00	9,326,735.42	SELL	3/5/2009	3/10/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	30,000,000.00	31,646,100.00	29,778,444.53	SELL	3/5/2009	3/9/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	15,100,000.00	15,928,537.00	14,988,483.75	SELL	3/5/2009	3/9/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	15,000,000.00	15,821,400.00	14,889,222.24	SELL	3/6/2009	3/10/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	6,007,000.00	6,339,187.10	5,962,637.20	SELL	3/6/2009	3/11/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	8,300,000.00	8,754,425.00	8,238,702.99	SELL	3/6/2009	3/10/2009
'135027ME1	CA135027ME17	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/2/2009	0.01	1,800,000.00	1,799,640.00	1,785,672.00	STSEL	3/11/2009	3/11/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	15,000,000.00	16,061,850.00	15,357,749.67	SELL	3/12/2009	3/17/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	10,000,000.00	10,715,000.00	10,238,499.76	SELL	3/12/2009	3/17/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	19,100,000.00	20,137,130.00	18,958,943.00	SELL	3/16/2009	3/19/2009
'135027ME1	CA135027ME17	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/2/2009	0.01	21,500,000.00	21,496,775.00	21,412,397.00	STSEL	3/16/2009	3/16/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	19,100,000.00	20,139,995.00	18,958,943.01	SELL	3/17/2009	3/20/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	30,000,000.00	31,643,100.00	29,778,444.53	SELL	3/17/2009	3/20/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	13,225,000.00	13,949,333.25	13,127,330.98	SELL	3/17/2009	3/20/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	50,000,000.00	53,690,000.00	50,190,479.21	SELL	3/17/2009	3/20/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	23,225,000.00	24,475,666.25	23,053,479.14	SELL	3/18/2009	3/23/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	41,898,000.00	44,947,336.44	42,057,613.97	SELL	3/25/2009	3/25/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	20,880,000.00	22,387,744.80	20,959,544.13	SELL	3/26/2009	3/31/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	2,650,000.00	2,787,694.00	2,630,429.27	SELL	3/27/2009	3/31/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	15,000,000.00	16,077,000.00	15,474,834.65	SELL	3/30/2009	4/2/2009
'135087XS8	CA135087XS86	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	5.00	5,675,000.00	6,552,355.00	5,988,714.05	SELL	3/30/2009	4/2/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	15,000,000.00	16,080,300.00	15,474,834.64	SELL	3/30/2009	4/2/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	15,000,000.00	16,115,100.00	15,474,834.64	SELL	3/31/2009	4/3/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	5,035,000.00	5,347,170.00	5,303,554.43	SELL	4/1/2009	4/6/2009

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CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Average Cost	Transaction		Contractual
Number	ISIN Number									Type	Trade Date	Settlement Date
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	3,020,000.00	3,207,240.00	3,181,079.33	SELL	4/1/2009	4/6/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	23,200,000.00	24,957,864.00	23,934,410.93	SELL	4/1/2009	4/6/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	15,000,000.00	16,137,300.00	15,474,834.67	SELL	4/1/2009	4/6/2009
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	20,000,000.00	21,844,000.00	20,534,631.68	SELL	4/3/2009	4/8/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	20,000,000.00	21,432,000.00	20,633,112.83	SELL	4/3/2009	4/8/2009
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6.00	20,000,000.00	22,480,200.00	21,543,034.80	SELL	4/3/2009	4/8/2009
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	20,000,000.00	21,817,000.00	20,534,631.68	SELL	4/6/2009	4/9/2009
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6.00	20,000,000.00	22,461,200.00	21,543,034.80	SELL	4/6/2009	4/9/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	21,350,000.00	22,848,556.50	22,025,847.99	SELL	4/6/2009	4/9/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	24,205,000.00	25,559,753.85	25,183,318.58	SELL	4/23/2009	4/28/2009
'135087YM0	CA135087YM08	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	6/1/2010	3.75	20,265,000.00	20,994,540.00	20,945,908.65	SELL	4/23/2009	4/28/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	55,000,000.00	58,102,000.00	57,222,991.99	SELL	4/27/2009	4/30/2009
'13509PAW3	CA13509PAW38	FIXED INCOME	GOVERNMENT ISSUES	CANADA HSG TR NO 1	3/15/2011	4.05	55,000,000.00	58,102,000.00	57,222,991.99	SELL	4/27/2009	4/30/2009
'563469FB6	CA563469FB62	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	12/3/2014	4.80	725,000.00	792,425.00	763,414.71	SELL	4/28/2009	5/1/2009
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2011	3.75	28,236,000.00	29,951,337.00	28,601,023.61	SELL	4/28/2009	5/1/2009
'135087XB5	CA135087XB51	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	6.00	3,750,000.00	4,138,050.00	4,066,890.47	SELL	4/28/2009	5/1/2009
'803854JF6	CA803854JF67	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF SASKATCHEWAN	6/3/2014	5.25	725,000.00	809,825.00	781,963.02	SELL	4/28/2009	5/1/2009
'135087XX7	CA135087XX71	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2015	4.50	870,000.00	982,317.00	888,879.18	SELL	4/28/2009	5/5/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	4,600,000.00	4,909,580.00	4,745,825.50	SELL	4/28/2009	5/5/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	3,670,000.00	3,915,890.00	3,786,176.20	SELL	4/29/2009	5/4/2009
'135087YG3	CA135087YG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	10,273,000.00	11,003,410.30	11,008,544.26	SELL	4/29/2009	5/4/2009
'135087YC2	CA135087YC26	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2011	3.75	37,120,000.00	39,354,624.00	37,599,872.35	SELL	4/29/2009	5/4/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	20,350,000.00	21,890,495.00	20,468,608.82	SELL	4/29/2009	5/4/2009
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	15,000,000.00	16,719,000.00	15,772,830.35	SELL	5/1/2009	5/6/2009
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	15,000,000.00	16,698,000.00	15,772,830.33	SELL	5/4/2009	5/7/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	39,523,000.00	42,156,022.26	41,075,182.72	SELL	5/5/2009	5/6/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	4,580,000.00	4,796,634.00	4,815,573.66	SELL	5/6/2009	5/11/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	1,908,000.00	1,997,294.40	2,006,138.56	SELL	5/6/2009	5/11/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	4,695,000.00	5,045,153.10	4,722,364.54	SELL	5/6/2009	5/8/2009
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4.00	15,000,000.00	15,945,750.00	14,983,559.03	SELL	5/8/2009	5/13/2009
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4.00	26,640,000.00	28,310,328.00	26,610,800.86	SELL	5/13/2009	5/19/2009
'01292ZG73	CA01292ZG738	CASH EQUIVALENT	GOVERNMENT ISSUES	ALBERTA CAPITAL FIN AUTHORITY	7/7/2009	0.01	6,378,000.00	6,375,959.04	6,376,022.82	STSEL	5/15/2009	5/15/2009
'135027MJ0	CA135027MJ04	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/29/2009	0.33	14,150,000.00	14,132,171.00	14,126,929.00	STSEL	5/15/2009	5/15/2009
'56347PL97	CA56347PL971	CASH EQUIVALENT	GOVERNMENT ISSUES	MANITOBA T BILL	7/29/2009	0.01	11,000,000.00	10,995,050.00	10,995,270.00	STSEL	5/15/2009	5/15/2009
'683225PH7	CA683225PH72	CASH EQUIVALENT	GOVERNMENT ISSUES	ONTARIO PROV CDA TREAS BILLS	7/8/2009	0.17	2,371,000.00	2,370,288.70	2,370,241.28	STSEL	5/15/2009	5/15/2009
'135027MQ4	CA135027MQ47	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	7/23/2009	0.43	11,400,000.00	11,396,922.00	11,383,356.00	STSEL	5/19/2009	5/19/2009
'135087UT9	CA135087UT96	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2023	8.00	1,370,000.00	1,986,500.00	1,952,598.86	SELL	5/26/2009	5/29/2009
'135087XG4	CA135087XG49	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2033	5.75	1,280,000.00	1,603,840.00	1,591,158.21	SELL	5/26/2009	5/29/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	10,420,000.00	10,921,202.00	10,750,326.46	SELL	5/27/2009	6/1/2009
'135027MK7	CA135027MK76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	5/28/2009	0.37	4,600,000.00	4,599,954.00	4,599,954.00	STSEL	5/27/2009	5/27/2009
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	35,000,000.00	37,554,300.00	36,126,093.41	SELL	5/28/2009	6/2/2009
'135087XH2	CA135087XH22	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	5.25	39,682,000.00	43,562,899.60	41,726,496.87	SELL	5/28/2009	6/2/2009
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	10,000,000.00	10,725,000.00	10,321,740.98	SELL	5/28/2009	6/2/2009
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2016	4.00	470,000.00	497,730.00	458,395.00	SELL	5/28/2009	6/1/2009
'683234YZ5	CA683234YZ53	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2012	4.60	20,000,000.00	20,000,000.00	20,036,300.00	SELL	6/2/2009	6/2/2009
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	10,050,000.00	10,770,786.00	10,373,349.67	SELL	6/2/2009	6/4/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	9,000,000.00	9,604,170.00	9,052,455.99	SELL	6/2/2009	6/5/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	24,345,000.00	25,518,429.00	25,116,765.63	SELL	6/2/2009	6/5/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	23,040,000.00	24,584,140.80	23,174,287.30	SELL	6/3/2009	6/8/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	48,775,000.00	49,969,987.50	51,014,802.98	SELL	6/4/2009	6/9/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	20,000,000.00	20,693,000.00	20,634,023.92	SELL	6/11/2009	6/16/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	38,400,000.00	39,955,200.00	39,617,325.92	SELL	6/16/2009	6/19/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	55,000,000.00	58,388,000.00	55,320,564.35	SELL	6/16/2009	6/19/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	5,035,000.00	5,258,050.50	5,194,615.54	SELL	6/23/2009	6/26/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	5,270,000.00	5,396,480.00	5,512,004.33	SELL	6/26/2009	7/2/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	10,223,000.00	10,881,361.20	10,313,450.19	SELL	7/14/2009	7/17/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	4,220,000.00	4,493,456.00	4,257,337.40	SELL	7/14/2009	7/17/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	3,400,000.00	3,617,362.00	3,430,082.23	SELL	7/15/2009	7/20/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	1,950,000.00	2,072,674.50	1,967,253.04	SELL	7/15/2009	7/20/2009

## 2009

CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Average Cost	Transaction Type	Trade Date	Contractual
Number	ISIN Number											Settlement Date
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	4,755,000.00	5,061,222.00	4,797,070.90	SELL	7/16/2009	7/21/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	5,630,000.00	5,990,883.00	5,679,812.65	SELL	7/16/2009	7/21/2009
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.50	16,455,000.00	17,187,247.50	16,976,643.18	SELL	7/16/2009	7/21/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	5,630,000.00	5,990,883.00	5,679,812.65	SELL	7/16/2009	7/21/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	1,892,000.00	2,013,750.20	1,908,739.87	SELL	7/20/2009	7/23/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	6,185,000.00	6,585,169.50	6,239,723.15	SELL	7/21/2009	7/24/2009
'683234YM4	CA683234YM41	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2011	4.40	27,950,000.00	29,653,552.50	28,326,530.20	SELL	7/22/2009	7/27/2009
'683234YM4	CA683234YM41	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2011	4.40	25,325,000.00	26,836,902.50	25,666,167.35	SELL	7/22/2009	7/27/2009
'1350Z7MY7	CA1350Z7MY70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADIAN T BILL	11/12/2009	0.01	8,000,000.00	7,988,640.00	7,988,640.00	STSEL	8/1/2009	8/1/2009
'1350Z7MS0	CA1350Z7MS03	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/20/2009	0.01	10,000,000.00	9,975,500.00	9,984,900.00	STSEL	8/1/2009	8/1/2009
'1350Z7MS0	CA1350Z7MS03	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/20/2009	0.01	10,000,000.00	9,984,900.00	9,984,900.00	STSEL	8/1/2009	8/1/2009
'1350Z7MR2	CA1350Z7MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	9,000,000.00	8,985,240.00	8,985,240.00	STSEL	8/1/2009	8/1/2009
'1350Z7MJ0	CA1350Z7MJ04	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/29/2009	0.33	8,000,000.00	7,987,360.00	7,987,360.00	STSEL	8/1/2009	8/1/2009
'1350Z7MF8	CA1350Z7MF81	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/1/2009	0.01	10,000,000.00	9,975,500.00	9,975,500.00	STSEL	8/1/2009	8/1/2009
'1350Z7M50	CA1350Z7M501	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/7/2010	0.01	10,000,000.00	9,982,400.00	9,982,400.00	STSEL	8/1/2009	8/1/2009
'1350Z7M27	CA1350Z7M279	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/10/2009	0.37	10,000,000.00	9,981,800.00	9,981,800.00	STSEL	8/1/2009	8/1/2009
'642866E0	CA642866E07	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	12/27/2028	5.65	580,000.00	617,990.00	668,722.60	SELL	8/4/2009	8/7/2009
'683234VR6	CA683234VR64	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2035	5.60	2,494,000.00	2,739,060.44	2,734,790.40	SELL	8/4/2009	8/7/2009
'683234YD4	CA683234YD42	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2037	4.70	5,360,000.00	5,275,312.00	5,288,423.20	SELL	8/4/2009	8/7/2009
'44889ZCM6	CA44889ZCM64	FIXED INCOME	GOVERNMENT ISSUES	HYDRO QUEBEC	2/15/2035	6.50	2,100,000.00	2,540,958.00	2,568,700.00	SELL	8/4/2009	8/7/2009
'448814DG5	CA448814DG57	FIXED INCOME	GOVERNMENT ISSUES	HYDRO QUEBEC	8/15/2020	11.00	2,242,000.00	3,469,853.72	3,706,233.07	SELL	8/4/2009	8/7/2009
'110709FX5	CA110709FX58	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	12/18/2018	4.65	1,000,000.00	1,033,710.00	996,060.00	SELL	8/4/2009	8/7/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	10,400,000.00	11,036,064.00	10,492,016.23	SELL	8/5/2009	8/10/2009
'563469FG5	CA563469FG59	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	3/1/2016	4.30	290,000.00	300,851.80	279,554.20	SELL	8/5/2009	8/10/2009
'642866FR3	CA642866FR32	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	1/27/2034	5.50	1,674,000.00	1,783,981.80	1,860,867.90	SELL	8/5/2009	8/10/2009
'110709EX6	CA110709EX67	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	6/18/2031	6.35	2,498,000.00	2,959,030.88	3,134,371.93	SELL	8/5/2009	8/10/2009
'748148QJ5	CA748148QJ59	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2029	6.00	1,295,000.00	1,449,415.80	1,457,231.13	SELL	8/5/2009	8/10/2009
'803854HN1	CA803854HN10	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF SASKATCHEWAN	9/5/2031	6.40	435,000.00	521,712.90	522,765.60	SELL	8/5/2009	8/10/2009
'74814ZDR1	CA74814ZDR16	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2017	4.50	2,430,000.00	2,499,984.00	2,391,343.55	SELL	8/5/2009	8/10/2009
'74814ZDK6	CA74814ZDK62	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2038	5.00	2,725,000.00	2,760,997.25	2,787,538.75	SELL	8/5/2009	8/10/2009
'683078GG8	CA683078GG81	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO ELECTRICITY FIN	6/22/2026	8.25	2,987,000.00	4,077,434.22	4,401,882.16	SELL	8/5/2009	8/10/2009
'110709EK4	CA110709EK47	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	6/18/2029	5.70	3,774,000.00	4,147,663.74	4,254,221.80	SELL	8/5/2009	8/10/2009
'748148QJ5	CA748148QJ59	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2029	6.00	1,295,000.00	1,449,415.80	1,465,046.45	SELL	8/5/2009	8/10/2009
'683234KG2	CA683234KG29	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2027	7.60	3,996,000.00	5,235,559.20	5,390,312.85	SELL	8/6/2009	8/11/2009
'683234SL3	CA683234SL32	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2033	5.85	3,500,000.00	3,923,115.00	4,036,899.14	SELL	8/6/2009	8/11/2009
'683234TQ1	CA683234TQ10	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2018	5.50	3,440,000.00	3,752,455.20	3,712,276.90	SELL	8/6/2009	8/11/2009
'683234YC6	CA683234YC68	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2016	4.40	2,584,000.00	2,688,522.80	2,587,165.78	SELL	8/6/2009	8/11/2009
'683234YX0	CA683234YX06	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2017	4.30	2,725,000.00	2,791,898.75	2,636,974.72	SELL	8/6/2009	8/11/2009
'748148NX7	CA748148NX70	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	1/16/2023	9.38	754,000.00	1,084,983.38	1,134,883.10	SELL	8/6/2009	8/11/2009
'748148PZ0	CA748148PZ01	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	4/1/2026	8.50	870,000.00	1,204,080.00	1,258,533.30	SELL	8/6/2009	8/11/2009
'748148QT3	CA748148QT32	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	6/1/2032	6.25	1,250,000.00	1,447,200.00	1,480,238.59	SELL	8/6/2009	8/11/2009
'748148RL9	CA748148RL96	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2036	5.75	3,500,000.00	3,898,335.00	3,942,915.17	SELL	8/6/2009	8/11/2009
'74814ZDE0	CA74814ZDE03	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	6/1/2025	5.35	481,000.00	496,165.93	531,024.00	SELL	8/6/2009	8/11/2009
'74814ZDH3	CA74814ZDH34	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2016	4.50	3,827,000.00	3,970,742.12	3,822,734.74	SELL	8/6/2009	8/11/2009
'74814ZDU4	CA74814ZDU45	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2018	4.50	1,585,000.00	1,610,708.70	1,602,435.00	SELL	8/6/2009	8/11/2009
'74814ZEE9	CA74814ZEE93	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2019	4.50	1,000,000.00	1,003,380.00	988,070.00	SELL	8/6/2009	8/11/2009
'110709FL1	CA110709FL11	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	6/18/2037	4.70	725,000.00	714,726.75	721,186.50	SELL	8/6/2009	8/11/2009
'110709FJ6	CA110709FJ64	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	6/18/2035	5.40	793,000.00	852,919.08	892,288.33	SELL	8/6/2009	8/11/2009
'683234HC5	CA683234HC51	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	7/13/2022	9.50	681,000.00	993,676.85	1,053,557.33	SELL	8/7/2009	8/12/2009
'683234HL5	CA683234HL50	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	2/7/2024	7.50	573,000.00	730,689.60	788,717.31	SELL	8/7/2009	8/12/2009
'683234JQ2	CA683234JQ20	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2025	8.50	725,000.00	1,008,504.00	1,082,251.00	SELL	8/7/2009	8/12/2009
'683234LJ5	CA683234LJ58	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2029	6.50	3,000,000.00	3,577,080.00	3,658,834.95	SELL	8/7/2009	8/12/2009
'683234NM6	CA683234NM69	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2031	6.20	1,079,000.00	1,249,330.94	1,368,215.16	SELL	8/7/2009	8/12/2009
'683234WT1	CA683234WT12	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2020	4.85	420,000.00	432,537.00	422,898.00	SELL	8/7/2009	8/12/2009
'448814GY3	CA448814GY37	FIXED INCOME	GOVERNMENT ISSUES	HYDRO QUEBEC	8/15/2031	6.00	4,505,000.00	5,045,600.00	5,266,709.09	SELL	8/10/2009	8/13/2009
'56344ZAL3	CA56344ZAL37	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	9/22/2017	6.50	884,000.00	1,032,936.32	1,043,851.69	SELL	8/10/2009	8/13/2009
'56344ZBB4	CA56344ZBB46	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	11/15/2018	5.50	703,000.00	766,073.16	766,270.00	SELL	8/10/2009	8/13/2009
'563469CX1	CA563469CX10	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	3/5/2031	10.50	145,000.00	248,557.55	257,766.50	SELL	8/10/2009	8/13/2009
'563469DS1	CA563469DS16	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	12/22/2025	7.75	290,000.00	377,469.80	390,456.00	SELL	8/10/2009	8/13/2009

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CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Average Cost	Transaction Type	Trade Date	Contractual
Number	ISIN Number											Settlement Date
'563469EZ4	CA563469EZ40	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	3/5/2037	5.70	580,000.00	655,759.60	707,008.40	SELL	8/10/2009	8/13/2009
'563469FP5	CA563469FP58	FIXED INCOME	GOVERNMENT ISSUES	MANITOBA (PROVINCE OF)	3/5/2018	4.25	1,000,000.00	1,010,960.00	995,810.00	SELL	8/10/2009	8/13/2009
'642866EF0	CA642866EF03	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	5/12/2015	8.75	725,000.00	917,291.75	976,060.39	SELL	8/10/2009	8/13/2009
'642866EP8	CA642866EP84	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	6/27/2017	6.75	725,000.00	855,956.75	860,243.37	SELL	8/10/2009	8/13/2009
'642866EQ6	CA642866EQ67	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	12/27/2017	6.00	1,899,000.00	2,142,831.60	2,147,479.34	SELL	8/10/2009	8/13/2009
'642866FV4	CA642866FV44	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	12/3/2015	4.30	725,000.00	748,888.75	725,601.75	SELL	8/10/2009	8/13/2009
'642866FX0	CA642866FX00	FIXED INCOME	GOVERNMENT ISSUES	PROV OF NEW BRUNSWICK	7/21/2016	4.70	290,000.00	304,401.40	287,830.80	SELL	8/10/2009	8/13/2009
'651333EB8	CA651333EB86	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF NEWFOUNDLAND	2/5/2026	8.45	290,000.00	394,901.70	419,418.30	SELL	8/10/2009	8/13/2009
'651333EE2	CA651333EE26	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF NEWFOUNDLAND	4/17/2028	6.15	573,000.00	642,447.60	683,451.81	SELL	8/10/2009	8/13/2009
'651333FP6	CA651333FP63	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF NEWFOUNDLAND	10/17/2035	5.70	1,509,000.00	1,655,870.97	1,728,599.90	SELL	8/10/2009	8/13/2009
'651333FQ4	CA651333FQ47	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF NEWFOUNDLAND	4/17/2037	4.50	300,000.00	281,610.00	278,394.00	SELL	8/10/2009	8/13/2009
'448814DZ3	CA448814DZ39	FIXED INCOME	GOVERNMENT ISSUES	HYDRO QUEBEC	7/15/2022	9.63	1,052,000.00	1,524,032.40	1,625,979.11	SELL	8/10/2009	8/13/2009
'448814DW0	CA448814DW08	FIXED INCOME	GOVERNMENT ISSUES	HYDRO QUEBEC	10/15/2021	10.50	1,408,000.00	2,148,608.00	2,294,474.96	SELL	8/10/2009	8/13/2009
'31739ZAG0	CA31739ZAG06	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUEBEC	6/1/2034	5.25	1,000,000.00	1,016,000.00	1,035,600.00	SELL	8/10/2009	8/13/2009
'11070ZDK7	CA11070ZDK71	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	6/17/2019	5.30	290,000.00	313,055.00	296,473.76	SELL	8/10/2009	8/13/2009
'11070ZDE1	CA11070ZDE12	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	6/1/2018	5.60	290,000.00	321,001.00	319,063.86	SELL	8/10/2009	8/13/2009
'11070ZCC6	CA11070ZCC64	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	8/17/2028	1.00	602,000.00	644,140.00	682,872.68	SELL	8/10/2009	8/13/2009
'110709DP4	CA110709DP43	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	8/23/2024	9.00	870,000.00	1,258,020.00	1,289,270.40	SELL	8/10/2009	8/13/2009
'110709FR8	CA110709FR80	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	12/1/2017	4.70	2,745,000.00	2,882,250.00	2,753,097.75	SELL	8/10/2009	8/13/2009
'803854FE3	CA803854FE39	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF SASKATCHEWAN	2/4/2022	9.60	679,000.00	1,003,901.50	1,059,607.20	SELL	8/11/2009	8/14/2009
'803854GY8	CA803854GY83	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF SASKATCHEWAN	3/5/2029	5.75	435,000.00	481,888.65	480,936.00	SELL	8/11/2009	8/14/2009
'803854JA7	CA803854JA70	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF SASKATCHEWAN	9/5/2033	5.80	690,000.00	779,541.30	798,357.95	SELL	8/11/2009	8/14/2009
'803854JH2	CA803854JH24	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF SASKATCHEWAN	9/5/2035	5.60	375,000.00	417,480.00	430,603.46	SELL	8/11/2009	8/14/2009
'8912456Y3	CA8912456Y35	FIXED INCOME	GOVERNMENT ISSUES	METRO TORONTO	12/12/2017	6.10	105,000.00	117,240.90	115,452.75	SELL	8/11/2009	8/14/2009
'891288AB8	CA891288AB87	FIXED INCOME	GOVERNMENT ISSUES	CITY OF TORONTO	12/18/2018	5.60	115,000.00	123,050.00	122,538.25	SELL	8/11/2009	8/14/2009
'891288BA9	CA891288BA95	FIXED INCOME	GOVERNMENT ISSUES	CITY OF TORONTO	9/25/2013	5.13	584,000.00	630,287.84	612,925.52	SELL	8/11/2009	8/14/2009
'891288CJ9	CA891288CJ95	FIXED INCOME	GOVERNMENT ISSUES	CITY OF TORONTO	5/20/2015	4.55	326,000.00	340,272.28	329,260.00	SELL	8/11/2009	8/14/2009
'891288CV2	CA891288CV24	FIXED INCOME	GOVERNMENT ISSUES	CITY OF TORONTO	7/28/2016	4.85	311,000.00	325,480.16	320,006.56	SELL	8/11/2009	8/14/2009
'626209HW3	CA626209HW32	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	10/13/2015	4.15	580,000.00	593,920.00	555,239.80	SELL	8/11/2009	8/14/2009
'626209JA9	CA626209JA93	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	4/19/2016	4.65	725,000.00	755,631.25	742,363.75	SELL	8/11/2009	8/14/2009
'626209JB7	CA626209JB76	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	12/1/2017	4.80	400,000.00	414,348.00	399,736.00	SELL	8/11/2009	8/14/2009
'626209JC5	CA626209JC59	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	12/1/2027	4.95	500,000.00	483,145.00	498,320.00	SELL	8/11/2009	8/14/2009
'669827DN4	CA669827DN47	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROVINCE	1/30/2022	9.60	415,000.00	603,908.00	642,778.81	SELL	8/11/2009	8/14/2009
'669827EW3	CA669827EW37	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROVINCE	12/1/2031	6.60	326,000.00	390,958.76	433,743.00	SELL	8/11/2009	8/14/2009
'669827FN2	CA669827FN29	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROVINCE	1/14/2015	4.70	471,000.00	501,789.27	469,624.68	SELL	8/11/2009	8/14/2009
'669827FP7	CA669827FP76	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROVINCE	6/1/2035	4.90	942,000.00	921,822.36	931,487.28	SELL	8/11/2009	8/14/2009
'669827FR3	CA669827FR33	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROVINCE	8/18/2016	4.60	765,000.00	802,485.00	755,938.10	SELL	8/11/2009	8/14/2009
'66989ZDY1	CA66989ZDY12	FIXED INCOME	GOVERNMENT ISSUES	NOVA SCOTIA PROVINCE	10/24/2021	4.45	235,000.00	228,243.75	224,519.00	SELL	8/11/2009	8/14/2009
'741666CM1	CA741666CM16	FIXED INCOME	GOVERNMENT ISSUES	PRINCE EDWARD ISLAND	1/29/2032	6.25	297,000.00	341,223.30	377,487.00	SELL	8/11/2009	8/14/2009
'741666CP4	CA741666CP47	FIXED INCOME	GOVERNMENT ISSUES	PRINCE EDWARD ISLAND	2/21/2034	5.60	580,000.00	622,786.60	670,654.00	SELL	8/11/2009	8/14/2009
'626209HW3	CA626209HW32	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	10/13/2015	4.15	580,000.00	592,992.00	555,239.80	SELL	8/11/2009	8/14/2009
'975026EP6	CA975026EP69	FIXED INCOME	GOVERNMENT ISSUES	CITY OF WINNIPEG	5/12/2015	9.13	725,000.00	922,591.50	1,000,782.75	SELL	8/13/2009	8/18/2009
'975026EM3	CA975026EM39	FIXED INCOME	GOVERNMENT ISSUES	CITY OF WINNIPEG	2/1/2013	9.38	725,000.00	883,992.50	931,514.30	SELL	8/13/2009	8/18/2009
'281173DL5	CA281173DL50	FIXED INCOME	GOVERNMENT ISSUES	CITY OF EDMONTON	3/25/2013	9.00	725,000.00	875,829.00	811,506.78	SELL	8/13/2009	8/18/2009
'975026EN1	CA975026EN12	FIXED INCOME	GOVERNMENT ISSUES	CITY OF WINNIPEG	1/20/2014	8.00	870,000.00	1,037,640.30	1,052,765.05	SELL	8/13/2009	8/18/2009
'135087XG4	CA135087XG49	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2033	5.75	7,518,000.00	9,468,469.92	9,345,568.14	SELL	8/14/2009	8/19/2009
'135087WL4	CA135087WL43	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2029	5.75	12,067,000.00	14,861,113.85	14,681,106.34	SELL	8/14/2009	8/19/2009
'135087XW9	CA135087XW98	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2037	5.00	13,407,000.00	15,836,348.40	15,551,909.05	SELL	8/14/2009	8/19/2009
'135027ML5	CA135027ML59	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/26/2009	0.01	13,000,000.00	12,991,160.00	12,989,080.00	STSEL	8/14/2009	8/14/2009
'135027MS0	CA135027MS03	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/20/2009	0.01	10,000,000.00	9,999,700.00	9,984,900.00	STSEL	8/14/2009	8/14/2009
'135027MS0	CA135027MS03	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/20/2009	0.01	10,000,000.00	9,999,700.00	9,984,900.00	STSEL	8/14/2009	8/14/2009
'135027ML5	CA135027ML59	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/26/2009	0.01	13,000,000.00	12,991,160.00	12,989,080.00	STSEL	8/14/2009	8/14/2009
'135087YR9	CA135087YR94	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2019	3.75	4,027,000.00	4,140,561.40	4,074,564.82	SELL	8/17/2009	8/20/2009
'135087XG4	CA135087XG49	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2033	5.75	6,000,000.00	7,590,240.00	7,458,553.98	SELL	8/17/2009	8/20/2009
'135087YR9	CA135087YR94	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2019	3.75	694,000.00	712,668.60	713,432.00	SELL	8/18/2009	8/21/2009
'135087XW9	CA135087XW98	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2037	5.00	12,387,000.00	14,667,446.70	14,430,824.67	SELL	8/18/2009	8/21/2009
'135087YL2	CA135087YL25	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2018	4.25	15,469,000.00	16,614,943.52	16,239,152.05	SELL	8/19/2009	8/24/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	5,937,000.00	6,000,941.49	6,010,009.37	SELL	8/19/2009	8/24/2009
'135087YF5	CA135087YF56	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2017	4.00	24,704,000.00	26,224,778.24	25,448,276.79	SELL	8/19/2009	8/24/2009

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CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Average Cost	Transaction Type	Trade Date	Contractual
Number	ISIN Number											Settlement Date
'135087UT9	CA135087UT96	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2023	8.00	6,429,000.00	9,273,382.47	9,188,450.28	SELL	8/19/2009	8/24/2009
'135027MY7	CA135027MY70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADIAN T BILL	11/12/2009	0.01	13,100,000.00	13,094,236.00	13,085,019.00	STSEL	8/20/2009	8/20/2009
'135027MY7	CA135027MY70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADIAN T BILL	11/12/2009	0.01	13,100,000.00	13,094,236.00	13,085,019.00	STSEL	8/20/2009	8/20/2009
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	21,540,000.00	22,712,637.60	22,472,539.65	SELL	8/21/2009	8/26/2009
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	18,460,000.00	19,473,823.20	19,259,196.00	SELL	8/21/2009	8/26/2009
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	17,880,000.00	18,824,064.00	18,654,085.84	SELL	8/21/2009	8/26/2009
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	22,120,000.00	23,304,747.20	23,077,649.82	SELL	8/21/2009	8/26/2009
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	21,460,000.00	22,582,358.00	22,389,076.15	SELL	8/21/2009	8/26/2009
'135087YB4	CA135087YB43	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2016	4.00	15,141,000.00	16,124,407.95	15,405,959.71	SELL	8/21/2009	8/26/2009
'135087XX7	CA135087XX71	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2015	4.50	13,060,000.00	14,282,546.60	13,688,571.42	SELL	8/21/2009	8/26/2009
'135087WL4	CA135087WL43	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2029	5.75	12,919,000.00	15,913,624.20	15,734,924.58	SELL	8/21/2009	8/26/2009
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	18,540,000.00	19,505,007.00	19,342,659.48	SELL	8/21/2009	8/26/2009
'135087VH4	CA135087VH40	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2025	9.00	2,516,000.00	3,967,732.00	3,595,372.21	SELL	8/21/2009	8/26/2009
'135087VW1	CA135087VW17	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2027	8.00	4,059,000.00	6,083,020.35	5,873,534.87	SELL	8/21/2009	8/26/2009
'135027ML5	CA135027ML59	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/26/2009	0.01	7,300,000.00	7,296,131.00	7,294,239.00	STSEL	8/21/2009	8/21/2009
'135087YT5	CA135087YT50	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	1.25	43,700,000.00	43,789,148.00	43,840,856.14	SELL	8/24/2009	8/26/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	51,535,000.00	54,740,477.00	51,990,967.03	SELL	8/24/2009	8/26/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	60,000,000.00	63,726,000.00	60,530,862.94	SELL	8/24/2009	8/26/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	30,000,000.00	31,860,000.00	30,265,431.45	SELL	8/24/2009	8/26/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	22,000,000.00	23,365,980.00	22,194,649.75	SELL	8/24/2009	8/26/2009
'135027M27	CA135027M279	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/10/2009	0.01	10,000,000.00	9,993,300.00	9,991,979.00	STSEL	8/26/2009	8/26/2009
'135027ML5	CA135027ML59	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/26/2009	0.01	6,700,000.00	6,696,516.00	6,694,841.00	STSEL	8/26/2009	8/26/2009
'135027M27	CA135027M279	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/10/2009	0.01	20,000,000.00	19,986,400.00	19,972,500.00	STSEL	8/26/2009	8/26/2009
'135027MP6	CA135027MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	30,700,000.00	30,674,826.00	30,669,806.00	STSEL	8/26/2009	8/26/2009
'135027MP6	CA135027MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	30,700,000.00	30,674,826.00	30,669,806.00	STSEL	8/26/2009	8/26/2009
'135027MP6	CA135027MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	30,700,000.00	30,674,826.00	30,669,806.00	STSEL	8/26/2009	8/26/2009
'135027MF8	CA135027MF81	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/1/2009	0.01	5,400,000.00	5,399,352.00	5,386,770.00	STSEL	8/27/2009	8/27/2009
'135027MF8	CA135027MF81	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/1/2009	0.01	4,600,000.00	4,599,448.00	4,588,730.00	STSEL	8/28/2009	8/28/2009
'135027MR2	CA135027MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	9,000,000.00	8,989,740.00	8,988,030.00	STSEL	8/28/2009	8/28/2009
'135027MY7	CA135027MY70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADIAN T BILL	11/12/2009	0.01	5,900,000.00	5,897,522.00	5,895,811.00	STSEL	8/28/2009	8/28/2009
'135027MR2	CA135027MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	9,000,000.00	8,989,740.00	8,985,240.00	STSEL	8/28/2009	8/28/2009
'135027M27	CA135027M279	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/10/2009	0.01	12,400,000.00	12,393,180.00	12,391,780.00	STSEL	9/3/2009	9/3/2009
'135027ML5	CA135027ML59	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/26/2009	0.01	4,300,000.00	4,298,151.00	4,296,689.00	STSEL	9/3/2009	9/3/2009
'135027MJ0	CA135027MJ04	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/29/2009	0.01	4,000,000.00	3,999,160.00	3,993,680.00	STSEL	9/3/2009	9/3/2009
'135027MJ0	CA135027MJ04	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/29/2009	0.01	4,000,000.00	3,999,120.00	3,993,680.00	STSEL	9/4/2009	9/4/2009
'135027MP6	CA135027MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	22,200,000.00	22,184,460.00	22,182,914.00	STSEL	9/4/2009	9/4/2009
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4.00	15,830,000.00	16,722,812.00	15,812,649.31	SELL	9/11/2009	9/16/2009
'135027M50	CA135027M501	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/7/2010	0.01	14,000,000.00	13,989,640.00	13,978,600.00	STSEL	9/11/2009	9/11/2009
'135027MT8	CA135027MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.32	1,500,000.00	1,498,155.00	1,497,765.00	STSEL	9/11/2009	9/11/2009
'135027MT8	CA135027MT85	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.01	12,500,000.00	12,484,625.00	12,485,125.00	SELL	9/11/2009	9/11/2009
'135027MT8	CA135027MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.01	12,500,000.00	12,484,625.00	12,485,125.00	STSEL	9/11/2009	9/11/2009
'135027M84	CA135027M840	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/4/2010	0.01	10,300,000.00	10,289,288.00	10,282,106.84	STSEL	9/14/2009	9/14/2009
'135027MR2	CA135027MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	15,000,000.00	14,986,950.00	14,984,156.00	STSEL	9/14/2009	9/14/2009
'135027MR2	CA135027MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	15,000,000.00	14,986,950.00	14,981,490.00	STSEL	9/14/2009	9/14/2009
'135027M50	CA135027M501	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/7/2010	0.01	10,000,000.00	9,992,700.00	9,991,256.00	STSEL	9/15/2009	9/15/2009
'135027MT8	CA135027MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.32	5,600,000.00	5,593,280.00	5,591,656.00	STSEL	9/15/2009	9/15/2009
'135027MP6	CA135027MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	10,000,000.00	9,994,100.00	9,992,840.00	STSEL	9/15/2009	9/15/2009
'135027M50	CA135027M501	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/7/2010	0.01	5,000,000.00	4,997,000.00	4,996,150.00	STSEL	9/17/2009	9/17/2009
'01308ZAK5	CA01308ZAK53	FIXED INCOME	GOVERNMENT ISSUES	ALBERTA TREASURY BRANCH	6/1/2011	4.10	25,000,000.00	26,187,500.00	25,240,000.00	SELL	9/21/2009	9/24/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	25,000,000.00	25,535,000.00	26,147,408.70	SELL	9/21/2009	9/24/2009
'135027MR2	CA135027MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	3,000,000.00	2,997,810.00	2,997,390.00	STSEL	9/24/2009	9/24/2009
'135027MR2	CA135027MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	3,000,000.00	2,997,810.00	2,996,730.00	STSEL	9/24/2009	9/24/2009
'135027M50	CA135027M501	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/7/2010	0.01	18,800,000.00	18,788,720.00	18,786,884.00	STSEL	9/25/2009	9/25/2009
'135027MR2	CA135027MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	14,000,000.00	13,989,920.00	13,987,021.00	STSEL	9/28/2009	9/28/2009
'135087YT5	CA135087YT50	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	1.25	1,043,000.00	1,046,441.90	1,046,361.85	SELL	9/29/2009	10/2/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	14,500,000.00	14,828,425.00	15,165,497.03	SELL	10/1/2009	10/5/2009
'135027MT8	CA135027MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.01	4,000,000.00	3,996,000.00	3,995,600.00	STSEL	10/1/2009	10/1/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	12,040,000.00	12,357,856.00	12,592,592.01	SELL	10/6/2009	10/9/2009
'13509PBY8	CA13509PBY84	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	3.42	480,000,000.00	484,569,600.01	484,569,600.01	SELL	10/7/2009	10/7/2009

## 2009

CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Average Cost	Transaction Type	Trade Date	Contractual
Number	ISIN Number											Settlement Date
'1350Z7MP6	CA1350Z7MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	24,500,000.00	24,489,220.00	24,484,490.00	STSEL	10/9/2009	10/9/2009
'1350Z7MP6	CA1350Z7MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	24,500,000.00	24,489,220.00	24,484,490.00	STSEL	10/9/2009	10/9/2009
'1350Z7NB6	CA1350Z7NB68	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	6,400,000.00	6,393,408.00	6,389,168.00	STSEL	10/15/2009	10/15/2009
'1350Z7NB6	CA1350Z7NB68	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	2,000,000.00	1,997,940.00	1,996,615.00	STSEL	10/16/2009	10/16/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	3,100,000.00	3,112,090.00	3,138,121.78	SELL	10/21/2009	10/26/2009
'1350Z7M50	CA1350Z7M501	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/7/2010	0.01	11,500,000.00	11,494,940.00	11,492,985.00	STSEL	10/23/2009	10/23/2009
'1350Z7MP6	CA1350Z7MP63	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/24/2009	0.01	2,000,000.00	1,999,280.00	1,998,800.00	STSEL	10/23/2009	10/23/2009
'1350Z7MR2	CA1350Z7MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	1,400,000.00	1,399,314.00	1,398,852.00	STSEL	10/29/2009	10/29/2009
'1350Z7M50	CA1350Z7M501	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/7/2010	0.01	9,800,000.00	9,796,080.00	9,795,267.00	STSEL	10/29/2009	10/29/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	18,300,000.00	18,341,175.00	18,525,041.50	SELL	11/2/2009	11/10/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	5,070,000.00	5,084,196.00	5,132,347.56	SELL	11/3/2009	11/6/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	36,096,000.00	38,210,142.72	37,394,657.32	SELL	11/5/2009	11/10/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.60	36,096,000.00	38,213,752.32	37,394,657.30	SELL	11/5/2009	11/10/2009
'1350Z7MR2	CA1350Z7MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	23,500,000.00	23,489,660.00	23,484,158.00	STSEL	11/6/2009	11/6/2009
'1350Z7MR2	CA1350Z7MR20	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	23,500,000.00	23,489,660.00	23,489,660.00	SELL	11/6/2009	11/6/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	10,000,000.00	10,181,900.00	10,458,963.51	SELL	11/10/2009	11/16/2009
'1350Z7M84	CA1350Z7M840	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/4/2010	0.01	5,400,000.00	5,397,354.00	5,397,084.00	SELL	11/10/2009	11/10/2009
'1350Z7M84	CA1350Z7M840	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/4/2010	0.01	5,400,000.00	5,397,354.00	5,390,736.16	STSEL	11/10/2009	11/10/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	15,000,000.00	15,259,500.00	15,688,445.20	SELL	11/12/2009	11/17/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	15,000,000.00	15,260,100.00	15,688,445.20	SELL	11/12/2009	11/17/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	15,000,000.00	15,259,950.00	15,688,445.19	SELL	11/12/2009	11/17/2009
'1350Z7M84	CA1350Z7M840	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/4/2010	0.01	16,400,000.00	16,392,456.00	16,377,669.00	STSEL	11/12/2009	11/12/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	2,895,000.00	2,899,197.75	2,930,600.82	SELL	11/13/2009	11/18/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	6,125,000.00	6,133,268.75	6,200,321.28	SELL	11/13/2009	11/18/2009
'1350Z7M84	CA1350Z7M840	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/4/2010	0.01	18,700,000.00	18,691,772.00	18,688,370.00	STSEL	11/13/2009	11/13/2009
'1350Z7MR2	CA1350Z7MR20	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/21/2010	0.01	7,500,000.00	7,497,225.00	7,495,275.00	STSEL	11/13/2009	11/13/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	9,800,000.00	9,812,348.00	9,920,514.03	SELL	11/16/2009	11/19/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	15,000,000.00	15,291,000.00	15,688,445.21	SELL	11/16/2009	11/19/2009
'1350Z7MT8	CA1350Z7MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.01	14,700,000.00	14,692,062.00	14,685,799.00	STSEL	11/19/2009	11/19/2009
'1350Z7MT8	CA1350Z7MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.01	100,000.00	99,948.00	99,924.00	STSEL	11/20/2009	11/20/2009
'1350Z7MT8	CA1350Z7MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.32	12,900,000.00	12,893,292.00	12,880,779.00	STSEL	11/20/2009	11/20/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	20,000,000.00	20,475,800.00	20,917,926.96	SELL	11/23/2009	11/26/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	20,000,000.00	20,479,800.00	20,917,926.97	SELL	11/23/2009	11/26/2009
'1350Z7MT8	CA1350Z7MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.01	10,400,000.00	10,395,736.00	10,392,824.28	STSEL	11/26/2009	11/26/2009
'135087YT5	CA135087YT50	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	1.25	40,000,000.00	40,280,000.00	40,128,930.10	SELL	11/27/2009	12/1/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	1,724,281.26	1,724,281.26	1,745,231.28	SELL	12/1/2009	12/1/2009
'135087YJ7	CA135087YJ78	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT	12/1/2009	4.25	1,724,281.26	1,724,281.26	1,745,231.28	SELL	12/1/2009	12/1/2009
'1350Z7ND2	CA1350Z7ND25	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	-	16,400,000.00	16,388,028.00	16,381,160.00	SELL	12/1/2009	12/1/2009
'1350Z7NB6	CA1350Z7NB68	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	3,000,000.00	2,998,440.00	2,997,690.00	SELL	12/3/2009	12/3/2009
'1350Z7MT8	CA1350Z7MT85	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/18/2010	0.01	4,900,000.00	4,897,991.00	4,896,975.72	STSEL	12/3/2009	12/3/2009
'1350Z7NB6	CA1350Z7NB68	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	3,000,000.00	2,998,440.00	2,996,310.00	STSEL	12/3/2009	12/3/2009
'1350Z7NB6	CA1350Z7NB68	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	28,900,000.00	28,884,972.00	28,883,195.00	SELL	12/4/2009	12/4/2009
'1350Z7NB6	CA1350Z7NB68	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	28,900,000.00	28,884,972.00	28,870,440.00	STSEL	12/4/2009	12/4/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	25,000,000.00	25,724,000.00	26,147,408.68	SELL	12/8/2009	12/11/2009
'1350Z7NB6	CA1350Z7NB68	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	11,000,000.00	10,994,830.00	10,994,170.00	SELL	12/8/2009	12/8/2009
'1350Z7NB6	CA1350Z7NB68	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	11,000,000.00	10,994,830.00	10,983,417.50	STSEL	12/8/2009	12/8/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	25,000,000.00	25,694,000.00	26,147,408.70	SELL	12/9/2009	12/14/2009
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3.00	30,000,000.00	30,829,500.00	31,376,890.41	SELL	12/9/2009	12/14/2009
'1350Z7NB6	CA1350Z7NB68	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	16,400,000.00	16,392,784.00	16,390,873.00	STSEL	12/9/2009	12/9/2009
'1350Z7NB6	CA1350Z7NB68	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/4/2010	0.01	20,000,000.00	19,991,200.00	19,989,400.00	STSEL	12/9/2009	12/9/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	14,000,000.00	13,992,020.00	13,982,696.00	STSEL	12/9/2009	12/9/2009
'1350Z7ND2	CA1350Z7ND25	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	-	18,100,000.00	18,087,873.00	18,081,589.00	SELL	12/10/2009	12/10/2009
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	20,000,000.00	19,984,400.00	19,970,691.00	STSEL	12/10/2009	12/10/2009
'1350Z7MV3	CA1350Z7MV32	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	3,000,000.00	2,998,500.00	2,997,600.00	SELL	12/11/2009	12/11/2009
'1350Z7MV3	CA1350Z7MV32	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	9,000,000.00	8,995,860.00	8,993,177.00	SELL	12/14/2009	12/14/2009
'1350Z7MV3	CA1350Z7MV32	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	18,000,000.00	17,991,540.00	17,989,806.00	SELL	12/15/2009	12/15/2009
'1350Z7MV3	CA1350Z7MV32	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	2,000,000.00	1,999,060.00	1,999,000.00	SELL	12/15/2009	12/15/2009
'1350Z7MV3	CA1350Z7MV32	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	28,000,000.00	27,987,120.00	27,985,732.00	SELL	12/18/2009	12/18/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	9,800,000.00	9,796,276.00	9,788,464.00	STSEL	12/23/2009	12/23/2009

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CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed Amount	Average Cost	Transaction Type	Trade Date	Contractual Settlement Date
'1350Z7MV3	CA1350Z7MV32	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	4,000,000.00	3,998,480.00	3,997,920.00	SELL	12/23/2009	12/23/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	4,500,000.00	4,498,335.00	4,495,140.00	STSEL	12/24/2009	12/24/2009

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CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
								Proceed Amount	Average Cost			
'1350Z7ND2	CA1350Z7ND25	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0.01	16,400,000.00	16,388,028.00	16,380,091.00	STSEL	12/1/2009	12/1/2009
'1350Z7ND2	CA1350Z7ND25	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0.01	18,100,000.00	18,087,873.00	18,080,012.00	STSEL	12/10/2009	12/10/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	3,000,000.00	2,998,500.00	2,997,600.00	STSEL	12/11/2009	12/11/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	9,000,000.00	8,995,860.00	8,993,177.00	STSEL	12/14/2009	12/14/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	2,000,000.00	1,999,060.00	1,999,000.00	STSEL	12/15/2009	12/15/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	18,000,000.00	17,991,540.00	17,989,806.00	STSEL	12/15/2009	12/15/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	28,000,000.00	27,987,120.00	27,985,732.00	STSEL	12/18/2009	12/18/2009
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	4,000,000.00	3,998,480.00	3,997,920.00	STSEL	12/23/2009	12/23/2009
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	50,000,000.00	52,730,000.00	51,798,893.68	SELL	1/6/2010	1/11/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	25,274,000.00	26,647,641.90	26,183,304.76	SELL	1/6/2010	1/11/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	25,000,000.00	26,362,750.00	25,899,446.84	SELL	1/6/2010	1/11/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	25,285,000.00	26,655,952.70	26,194,700.49	SELL	1/6/2010	1/11/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	50,000,000.00	52,725,500.00	51,798,893.66	SELL	1/6/2010	1/11/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	25,000,000.00	26,368,000.00	25,899,446.84	SELL	1/6/2010	1/11/2010
'1350Z7ND2	CA1350Z7ND25	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0	27,100,000.00	27,088,618.00	27,080,429.00	SELL	1/6/2010	1/6/2010
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	1,700,000.00	1,699,473.00	1,698,164.00	STSEL	1/6/2010	1/6/2010
'1350Z7MV3	CA1350Z7MV32	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	2,600,000.00	2,599,194.00	2,598,648.00	SELL	1/6/2010	1/6/2010
'1350Z7ND2	CA1350Z7ND25	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0.01	27,100,000.00	27,088,618.00	27,077,690.00	STSEL	1/6/2010	1/6/2010
'1350Z7MV3	CA1350Z7MV32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	3/18/2010	0.01	2,600,000.00	2,599,194.00	2,598,648.00	STSEL	1/6/2010	1/6/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	17,000,000.00	17,929,050.00	17,611,623.84	SELL	1/7/2010	1/12/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	25,000,000.00	26,372,500.00	25,899,446.84	SELL	1/7/2010	1/12/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	25,000,000.00	26,371,000.00	25,899,446.83	SELL	1/7/2010	1/12/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	29,284,000.00	30,887,299.00	30,337,576.03	SELL	1/7/2010	1/12/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	30,716,000.00	32,398,622.48	31,821,096.37	SELL	1/7/2010	1/12/2010
'135087YT5	CA135087YT50	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2011	1.25	35,054,000.00	35,174,936.30	35,166,987.88	SELL	1/7/2010	1/12/2010
'1350Z7ND2	CA1350Z7ND25	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0	8,500,000.00	8,496,685.00	8,494,902.00	SELL	1/7/2010	1/7/2010
'1350Z7ND2	CA1350Z7ND25	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0.01	8,500,000.00	8,496,685.00	8,494,730.00	STSEL	1/7/2010	1/7/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	18,700,000.00	19,749,444.00	19,372,786.22	SELL	1/12/2010	1/15/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	50,000,000.00	52,768,000.00	52,164,669.55	SELL	1/12/2010	1/15/2010
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	10,425,000.00	10,103,910.00	10,052,353.08	SELL	1/13/2010	1/18/2010
'1350Z7MX9	CA1350Z7MX97	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	18,700,000.00	18,692,146.00	18,689,368.00	SELL	1/14/2010	1/14/2010
'1350Z7ND2	CA1350Z7ND25	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0.01	9,000,000.00	8,996,760.00	8,994,620.00	STSEL	1/14/2010	1/14/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	18,700,000.00	18,692,146.00	18,687,073.00	STSEL	1/14/2010	1/14/2010
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3	5,290,000.00	5,401,619.00	5,532,791.65	SELL	1/15/2010	1/20/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	18,170,000.00	19,178,435.00	18,823,717.93	SELL	1/15/2010	1/20/2010
'1350Z7ND2	CA1350Z7ND25	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	4/1/2010	0.01	5,000,000.00	4,998,300.00	4,997,100.00	STSEL	1/15/2010	1/15/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	16,400,000.00	16,393,604.00	16,377,090.00	STSEL	1/15/2010	1/15/2010
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	51,780,000.00	50,340,516.00	49,929,097.61	SELL	1/19/2010	1/22/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	26,565,000.00	27,989,415.30	26,535,883.08	SELL	1/19/2010	1/22/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	2,800,000.00	2,800,000.00	2,798,488.00	STSEL	1/22/2010	1/22/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	2,800,000.00	2,799,104.00	2,798,488.00	STSEL	1/22/2010	1/22/2010
'1350Z7MX9	CA1350Z7MX97	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	2,800,000.00	2,799,104.00	2,798,488.00	SELL	1/22/2010	1/22/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	4,300,000.00	4,298,710.00	4,297,678.00	STSEL	1/26/2010	1/26/2010
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	26,500,000.00	26,033,600.00	25,606,592.63	SELL	1/27/2010	2/1/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	44,000,000.00	46,380,400.00	43,951,773.20	SELL	1/27/2010	1/29/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	30,000,000.00	32,184,900.00	30,965,222.94	SELL	1/27/2010	1/29/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	33,500,000.00	35,925,400.00	34,577,832.27	SELL	1/27/2010	1/29/2010
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3	21,250,000.00	21,877,937.50	22,225,297.38	SELL	1/27/2010	2/1/2010
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	30,000,000.00	31,517,700.00	30,957,827.78	SELL	1/27/2010	2/1/2010
'135087YG3	CA135087YG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	10,975,000.00	11,538,237.00	11,670,200.82	SELL	1/27/2010	1/29/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	34,500,000.00	36,594,495.00	35,993,622.00	SELL	1/27/2010	2/1/2010
'13509PBZ5	CA13509PBZ59	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	2.75	36,000,000.00	36,349,200.00	35,831,413.36	SELL	1/27/2010	2/1/2010
'13509PBZ5	CA13509PBZ59	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	2.75	9,850,000.00	9,914,714.50	9,803,872.83	SELL	1/27/2010	1/29/2010
'13509PBW2	CA13509PBW29	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2014	3.15	42,000,000.00	43,210,020.00	42,914,261.17	SELL	1/27/2010	2/1/2010
'13509PBS1	CA13509PBS17	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2014	2.2	15,000,000.00	14,909,250.00	14,867,485.52	SELL	1/27/2010	2/1/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	31,000,000.00	32,449,870.00	31,994,041.57	SELL	1/27/2010	2/1/2010
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	26,500,000.00	26,033,600.00	25,610,639.49	SELL	1/27/2010	2/1/2010
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	30,000,000.00	29,481,000.00	28,988,595.41	SELL	1/28/2010	2/1/2010
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	30,000,000.00	29,481,000.00	28,993,176.77	SELL	1/28/2010	2/1/2010

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CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
								Proceed Amount	Average Cost			
'1350Z7MX9	CA1350Z7MX97	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0	2,600,000.00	2,599,298.00	2,599,298.00	SSELL	1/28/2010	1/28/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	2,600,000.00	2,599,298.00	2,598,596.00	STSEL	1/28/2010	1/28/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	2,600,000.00	2,599,298.00	2,598,596.00	STSEL	1/28/2010	1/28/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	7,365,000.00	7,690,017.45	7,605,735.53	SELL	1/29/2010	2/3/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	7,365,000.00	7,690,017.45	7,601,165.03	SELL	1/29/2010	2/3/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	1,500,000.00	1,499,190.00	1,499,190.00	STSEL	2/3/2010	2/3/2010
'1350Z7NH3	CA1350Z7NH39	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/29/2010	0.01	5,700,000.00	5,698,005.00	5,693,160.00	STSEL	2/3/2010	2/3/2010
'1350Z7NH3	CA1350Z7NH39	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	4/29/2010	0.01	5,700,000.00	5,698,005.00	5,693,160.00	SELL	2/3/2010	2/3/2010
'1350Z7MX9	CA1350Z7MX97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/15/2010	0.01	1,500,000.00	1,499,565.00	1,499,190.00	STSEL	2/3/2010	2/3/2010
'1350Z7NH3	CA1350Z7NH39	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/29/2010	0.01	6,500,000.00	6,497,920.00	6,492,490.00	STSEL	2/4/2010	2/4/2010
'448814HG1	CA448814HG12	FIXED INCOME	GOVERNMENT ISSUES	HYDRO QUEBEC	2/15/2011	6.5	12,910,000.00	13,649,743.00	13,950,818.60	SELL	2/10/2010	2/16/2010
'1350Z7NH3	CA1350Z7NH39	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/29/2010	0.01	5,600,000.00	5,598,096.00	5,594,904.00	STSEL	2/10/2010	2/10/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	4,600,000.00	4,598,160.00	4,592,042.00	STSEL	2/11/2010	2/11/2010
'1350Z7NH3	CA1350Z7NH39	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/29/2010	0.01	18,400,000.00	18,394,112.00	18,385,856.00	STSEL	2/11/2010	2/11/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	29,400,000.00	29,388,534.00	29,357,618.00	STSEL	2/12/2010	2/12/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	12,100,000.00	12,093,950.00	12,089,089.00	STSEL	2/12/2010	2/12/2010
'683234YM4	CA683234YM41	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2011	4.4	23,310,000.00	24,559,182.90	24,665,476.50	SELL	2/18/2010	2/23/2010
'317385AH5	CA317385AH55	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUEBEC	12/1/2011	5.25	28,055,000.00	29,959,934.50	29,219,066.00	SELL	2/18/2010	2/23/2010
'13509PBW2	CA13509PBW29	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2014	3.15	23,000,000.00	23,494,500.00	23,500,666.86	SELL	2/18/2010	2/23/2010
'317385AH5	CA317385AH55	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUEBEC	12/1/2011	5.25	50,000,000.00	53,395,000.00	52,074,614.16	SELL	2/18/2010	2/23/2010
'110709FD9	CA110709FD94	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	1/9/2012	5.75	33,345,000.00	36,042,610.50	34,930,576.28	SELL	2/18/2010	2/23/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	6,200,000.00	6,197,334.00	6,194,501.00	STSEL	2/18/2010	2/18/2010
'317385AH5	CA317385AH55	FIXED INCOME	GOVERNMENT ISSUES	FINANCEMENT QUEBEC	12/1/2011	5.25	9,995,000.00	10,670,262.20	10,409,715.36	SELL	2/19/2010	2/24/2010
'13509PBW2	CA13509PBW29	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2014	3.15	15,000,000.00	15,292,950.00	15,326,521.86	SELL	2/19/2010	2/24/2010
'110709DG4	CA110709DG44	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	8/23/2013	8.5	18,655,000.00	22,460,806.55	22,967,272.06	SELL	2/19/2010	2/24/2010
'448814HG1	CA448814HG12	FIXED INCOME	GOVERNMENT ISSUES	HYDRO QUEBEC	2/15/2011	6.5	14,925,000.00	17,761,844.75	16,128,270.15	SELL	2/22/2010	2/25/2010
'13509PBW2	CA13509PBW29	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2014	3.15	20,000,000.00	20,415,000.00	20,435,362.47	SELL	2/22/2010	2/25/2010
'110709DG4	CA110709DG44	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	8/23/2013	8.5	15,000,000.00	18,077,550.00	18,467,385.74	SELL	2/22/2010	2/25/2010
'110709FT4	CA110709FT47	FIXED INCOME	GOVERNMENT ISSUES	BRITISH COLUMBIA PROV OF	6/18/2014	4.25	8,000,000.00	8,508,480.00	8,538,720.00	SELL	2/22/2010	2/25/2010
'626209GC8	CA626209GC86	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	6/1/2011	5.9	2,730,000.00	2,868,083.40	2,844,189.57	SELL	2/23/2010	2/26/2010
'626209Z6	CA626209Z63	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	6/1/2014	3.1	7,000,000.00	7,081,130.00	6,997,410.00	SELL	2/23/2010	2/26/2010
'50047JAB4	CA50047JAB40	FIXED INCOME	GOVERNMENT ISSUES	KOMMUNALBANKEN AS	6/3/2013	4.125	725,000.00	756,994.25	703,576.25	SELL	2/23/2010	2/26/2010
'13509PBW2	CA13509PBW29	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2014	3.15	20,000,000.00	20,449,800.00	20,435,362.47	SELL	2/23/2010	2/26/2010
'13509PAY9	CA13509PAY93	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2011	4.6	15,270,000.00	16,083,891.00	15,819,382.17	SELL	2/23/2010	2/26/2010
'13509PBW2	CA13509PBW29	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2014	3.15	20,000,000.00	20,449,800.00	20,435,362.46	SELL	2/23/2010	2/26/2010
'626209GC8	CA626209GC86	FIXED INCOME	GOVERNMENT ISSUES	BRIT COL MUNI FIN AUTH	6/1/2011	5.9	2,730,000.00	2,895,383.40	2,844,189.57	SELL	2/23/2010	2/26/2010
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6	28,300,000.00	31,247,162.00	30,777,197.75	SELL	2/25/2010	3/2/2010
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6	30,000,000.00	33,124,200.00	32,626,004.71	SELL	2/25/2010	3/2/2010
'683234ZK7	CA683234ZK75	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2012	4.5	29,890,000.00	31,955,697.90	30,225,585.24	SELL	2/25/2010	3/2/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	17,500,000.00	17,492,825.00	17,486,532.00	STSEL	2/25/2010	2/25/2010
'683234ZK7	CA683234ZK75	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2012	4.5	20,000,000.00	21,374,000.00	20,224,546.83	SELL	2/26/2010	3/3/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	15,600,000.00	15,592,044.00	15,581,904.00	STSEL	2/26/2010	2/26/2010
'683234ZK7	CA683234ZK75	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	12/2/2012	4.5	20,000,000.00	21,333,800.00	20,224,546.85	SELL	3/2/2010	3/5/2010
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6	20,000,000.00	22,039,600.00	21,750,669.80	SELL	3/2/2010	3/5/2010
'1350Z7M92	CA1350Z7M923	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/5/2010	0.01	5,900,000.00	5,893,274.00	5,892,861.00	STSEL	3/4/2010	3/4/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	24,213,000.00	24,161,426.31	24,231,095.74	SELL	3/10/2010	3/15/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	25,000,000.00	24,940,250.00	25,018,683.90	SELL	3/10/2010	3/15/2010
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6	2,670,000.00	2,929,283.70	2,903,714.42	SELL	3/10/2010	3/12/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	30,000,000.00	29,990,400.00	29,984,700.00	STSEL	3/11/2010	3/12/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	30,000,000.00	29,990,700.00	29,984,700.00	STSEL	3/11/2010	3/12/2010
'1350Z7M92	CA1350Z7M923	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/5/2010	0.01	7,400,000.00	7,391,934.00	7,391,046.00	STSEL	3/11/2010	3/11/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	20,000,000.00	19,993,800.00	19,990,000.00	STSEL	3/12/2010	3/12/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	22,000,000.00	21,993,180.00	21,989,000.00	STSEL	3/12/2010	3/12/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	20,000,000.00	19,982,000.00	19,978,527.00	STSEL	3/12/2010	3/12/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	20,100,000.00	20,089,749.00	20,085,448.00	STSEL	3/12/2010	3/12/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	32,000,000.00	31,990,400.00	31,984,000.00	STSEL	3/15/2010	3/16/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	33,000,000.00	32,990,100.00	32,983,640.00	STSEL	3/16/2010	3/16/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	33,000,000.00	32,986,800.00	32,979,870.00	STSEL	3/16/2010	3/16/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	25,000,000.00	24,936,250.00	25,018,683.90	SELL	3/17/2010	3/22/2010

## 2010

CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual
								Proceed Amount	Average Cost			Settlement Date
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	25,000,000.00	26,168,750.00	24,972,598.39	SELL	3/17/2010	3/19/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	25,000,000.00	24,937,250.00	25,018,683.90	SELL	3/17/2010	3/22/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	25,000,000.00	24,937,500.00	25,018,683.90	SELL	3/17/2010	3/22/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	25,000,000.00	24,940,000.00	25,018,683.91	SELL	3/17/2010	3/22/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	25,000,000.00	26,162,500.00	24,972,598.41	SELL	3/17/2010	3/19/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	25,000,000.00	24,937,500.00	25,018,683.91	SELL	3/17/2010	3/22/2010
'13508YY4	CA13508YY46	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2011	1.25	25,000,000.00	24,941,250.00	25,018,683.93	SELL	3/17/2010	3/22/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	25,000,000.00	26,164,250.00	24,972,598.39	SELL	3/17/2010	3/19/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	25,000,000.00	26,164,250.00	24,972,598.41	SELL	3/17/2010	3/19/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	17,400,000.00	17,391,126.00	17,391,126.00	STSEL	3/18/2010	3/18/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	20,700,000.00	20,689,236.00	20,689,390.00	STSEL	3/26/2010	3/26/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	20,700,000.00	20,689,236.00	20,680,567.00	STSEL	3/26/2010	3/26/2010
'1350Z7NQ3	CA1350Z7NQ38	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	6/23/2010	0.01	41,000,000.00	40,974,580.00	40,966,338.00	STSEL	3/31/2010	3/31/2010
'1350Z7NQ3	CA1350Z7NQ38	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	6/23/2010	0.01	11,000,000.00	10,993,620.00	10,992,780.00	STSEL	4/1/2010	4/1/2010
'1350Z7NQ3	CA1350Z7NQ38	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	6/23/2010	0.01	10,400,000.00	10,394,592.00	10,393,552.00	STSEL	4/8/2010	4/8/2010
'1350Z7NQ3	CA1350Z7NQ38	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	6/23/2010	0.01	8,800,000.00	8,795,688.00	8,794,760.00	STSEL	4/9/2010	4/9/2010
'1350Z7MZ4	CA1350Z7MZ46	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/13/2010	0.01	33,000,000.00	32,995,050.00	32,984,160.00	STSEL	4/13/2010	4/13/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	39,300,000.00	39,291,354.00	39,276,350.00	STSEL	4/14/2010	4/14/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	17,700,000.00	17,696,283.00	17,689,380.00	STSEL	4/14/2010	4/14/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	17,700,000.00	17,696,283.00	17,689,380.00	STSEL	4/14/2010	4/14/2010
'1350Z7NQ3	CA1350Z7NQ38	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	6/23/2010	0.01	8,000,000.00	7,996,560.00	7,995,440.00	STSEL	4/14/2010	4/14/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	6,300,000.00	6,297,921.00	6,296,724.00	STSEL	4/14/2010	4/14/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	20,000,000.00	19,996,400.00	19,988,000.00	STSEL	4/15/2010	4/15/2010
'13508ZD9	CA13508ZD99	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	3/1/2013	1.75	20,380,000.00	19,952,427.60	20,148,126.55	SELL	4/15/2010	4/19/2010
'1350Z7NQ3	CA1350Z7NQ38	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	6/23/2010	0.01	7,400,000.00	7,397,040.00	7,396,078.00	STSEL	4/15/2010	4/15/2010
'1350Z7NM2	CA1350Z7NM24	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/27/2010	0.01	30,000,000.00	29,995,500.00	29,982,500.00	STSEL	4/16/2010	4/16/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	30,000,000.00	29,990,700.00	29,977,800.00	STSEL	4/20/2010	4/20/2010
'13508YG3	CA13508YG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	23,895,000.00	24,645,303.00	25,167,476.53	SELL	4/21/2010	4/26/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	10,100,000.00	10,093,233.00	10,088,930.00	STSEL	4/22/2010	4/22/2010
'1350Z7NQ3	CA1350Z7NQ38	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	6/23/2010	0.01	11,000,000.00	10,995,160.00	10,994,170.00	STSEL	4/22/2010	4/22/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	20,000,000.00	19,987,000.00	19,981,926.00	STSEL	4/23/2010	4/23/2010
'13508YG3	CA13508YG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	12,269,000.00	12,673,999.69	12,922,359.03	SELL	4/28/2010	5/3/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	12,500,000.00	12,497,125.00	12,491,125.00	STSEL	4/29/2010	4/29/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	7,200,000.00	7,195,824.00	7,194,364.00	STSEL	4/29/2010	4/29/2010
'13508YG3	CA13508YG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	23,000,000.00	23,865,720.00	24,224,815.21	SELL	5/4/2010	5/7/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	17,200,000.00	17,192,088.00	17,186,874.00	STSEL	5/7/2010	5/7/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	21,400,000.00	21,390,798.00	21,385,876.00	STSEL	5/11/2010	5/13/2010
'1350Z7M35	CA1350Z7M352	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/10/2010	0.01	17,500,000.00	17,497,900.00	17,487,575.00	STSEL	5/11/2010	5/13/2010
'13509PBZ5	CA13509PBZ59	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	2.75	25,000,000.00	24,651,500.00	24,902,940.03	SELL	5/12/2010	5/17/2010
'13509PBZ5	CA13509PBZ59	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	2.75	25,615,000.00	25,257,670.75	25,515,552.36	SELL	5/12/2010	5/17/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	16,200,000.00	16,193,844.00	16,190,061.00	STSEL	5/13/2010	5/13/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	11,600,000.00	11,595,940.00	11,592,344.00	STSEL	5/14/2010	5/14/2010
'13508YN8	CA13508YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	47,600,000.00	49,316,932.00	49,264,877.28	SELL	5/14/2010	5/21/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	17,000,000.00	16,994,390.00	16,990,377.00	STSEL	5/14/2010	5/14/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	1,500,000.00	1,499,520.00	1,498,995.00	STSEL	5/14/2010	5/14/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	27,000,000.00	26,987,310.00	26,978,170.86	STSEL	5/18/2010	5/18/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,419,250.00	26,002,425.95	SELL	5/18/2010	5/25/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,410,250.00	26,002,425.97	SELL	5/18/2010	5/25/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	37,170,000.00	39,263,414.40	38,727,316.74	SELL	5/19/2010	5/21/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,451,250.00	26,002,425.94	SELL	5/19/2010	5/25/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	23,800,000.00	25,173,260.00	24,797,151.93	SELL	5/19/2010	5/25/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	23,800,000.00	25,173,260.00	24,754,309.51	SELL	5/19/2010	5/25/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	37,170,000.00	39,263,414.40	38,660,406.87	SELL	5/19/2010	5/21/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	20,000,000.00	19,994,000.00	19,986,258.00	STSEL	5/20/2010	5/20/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	18,000,000.00	17,994,780.00	17,988,974.00	STSEL	5/21/2010	5/21/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	30,000,000.00	29,988,000.00	29,976,300.00	STSEL	5/25/2010	5/27/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	10,900,000.00	10,897,384.00	10,894,441.00	STSEL	5/25/2010	5/27/2010
'1350Z7NS9	CA1350Z7NS93	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0	14,100,000.00	14,094,642.00	14,094,642.00	SSELL	5/25/2010	5/27/2010
'1350Z7M68	CA1350Z7M683	FIXED INCOME	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0	10,900,000.00	10,897,384.00	10,897,384.00	SSELL	5/25/2010	5/27/2010

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CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual
								Proceed Amount	Average Cost			Settlement Date
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	14,100,000.00	14,094,642.00	14,087,133.00	STSEL	5/25/2010	5/27/2010
'1350Z7M68	CA1350Z7M683	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/8/2010	0.01	10,900,000.00	10,897,384.00	10,894,441.00	STSEL	5/25/2010	5/27/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	8,200,000.00	8,196,720.00	8,192,042.00	STSEL	5/27/2010	5/27/2010
'748148RN5	CA748148RN52	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2014	5.5	7,275,000.00	7,986,495.00	8,121,435.00	SELL	6/3/2010	6/8/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	15,300,000.00	15,293,727.00	15,287,112.00	STSEL	6/4/2010	6/4/2010
'1350Z7M92	CA1350Z7M923	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/5/2010	0.01	40,000,000.00	39,976,800.00	39,961,200.00	STSEL	6/8/2010	6/10/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	6,000,000.00	5,997,900.00	5,995,020.00	STSEL	6/9/2010	6/9/2010
'748148BG7	CA748148BG75	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2012	6	17,330,000.00	18,792,652.00	18,846,955.34	SELL	6/10/2010	6/15/2010
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	7,902,000.00	8,195,480.28	8,178,383.61	SELL	6/10/2010	6/15/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	7,700,000.00	7,697,305.00	7,693,609.00	STSEL	6/10/2010	6/10/2010
'1350Z7NC4	CA1350Z7NC42	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/2/2010	0.01	10,000,000.00	9,989,300.00	9,986,600.00	STSEL	6/11/2010	6/16/2010
'1350Z7M92	CA1350Z7M923	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/5/2010	0.01	10,000,000.00	9,995,000.00	9,990,600.00	STSEL	6/11/2010	6/16/2010
'1350Z7NV2	CA1350Z7NV23	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILLS	8/19/2010	0.01	30,000,000.00	29,977,500.00	29,966,952.50	STSEL	6/11/2010	6/16/2010
'1350Z7NC4	CA1350Z7NC42	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/2/2010	0.01	10,000,000.00	9,989,300.00	9,986,600.00	STSEL	6/11/2010	6/16/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	13,000,000.00	12,996,360.00	12,988,629.00	STSEL	6/14/2010	6/14/2010
'1350Z7NX8	CA1350Z7NX88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/16/2010	0.01	9,500,000.00	9,487,555.00	9,482,995.00	STSEL	6/15/2010	6/18/2010
'1350Z7NV2	CA1350Z7NV23	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILLS	8/19/2010	0.01	8,900,000.00	8,893,592.00	8,890,165.50	STSEL	6/15/2010	6/18/2010
'1350Z7NC4	CA1350Z7NC42	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/2/2010	0.01	31,600,000.00	31,567,452.00	31,563,260.00	STSEL	6/15/2010	6/18/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	17,800,000.00	17,795,728.00	17,784,241.00	STSEL	6/18/2010	6/18/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	19,200,000.00	19,196,736.00	19,183,518.00	STSEL	6/23/2010	6/23/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	6,000,000.00	5,998,980.00	5,994,900.00	STSEL	6/24/2010	6/24/2010
'1350Z7NX8	CA1350Z7NX88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/16/2010	0.01	48,000,000.00	47,951,040.00	47,924,181.75	STSEL	6/25/2010	6/30/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	3,015,000.00	3,146,604.75	3,011,695.38	SELL	6/28/2010	7/2/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	10,315,000.00	10,763,186.75	10,303,694.12	SELL	6/28/2010	7/2/2010
'1350Z7M92	CA1350Z7M923	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/5/2010	0.01	40,000,000.00	39,988,400.00	39,959,001.00	STSEL	6/28/2010	6/28/2010
'1350Z7M92	CA1350Z7M923	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/5/2010	0.01	40,000,000.00	39,988,400.00	39,959,001.00	STSEL	6/28/2010	6/30/2010
'1350Z7NV2	CA1350Z7NV23	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILLS	8/19/2010	0.01	30,000,000.00	29,984,700.00	29,966,991.00	STSEL	6/28/2010	6/30/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	23,870,000.00	24,942,717.80	23,843,836.94	SELL	6/29/2010	7/7/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	10,350,000.00	10,818,544.50	10,338,655.75	SELL	6/29/2010	7/5/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	1,030,000.00	1,076,628.10	1,028,871.07	SELL	6/29/2010	7/5/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	10,350,000.00	10,815,232.50	10,338,655.76	SELL	6/29/2010	7/5/2010
'1350Z7NC4	CA1350Z7NC42	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/2/2010	0.01	50,000,000.00	49,963,000.00	49,932,877.00	STSEL	6/29/2010	6/29/2010
'1350Z7NC4	CA1350Z7NC42	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/2/2010	0.01	50,000,000.00	49,963,000.00	49,932,877.00	STSEL	6/29/2010	6/30/2010
'1350Z7NS9	CA1350Z7NS93	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/22/2010	0.01	9,900,000.00	9,898,812.00	9,891,585.00	STSEL	6/29/2010	6/30/2010
'1350Z7NX8	CA1350Z7NX88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/16/2010	0.01	25,000,000.00	24,976,000.00	24,956,775.00	STSEL	6/29/2010	6/30/2010
'1350Z7M92	CA1350Z7M923	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	8/5/2010	0.01	15,000,000.00	14,995,950.00	14,985,000.00	STSEL	6/29/2010	6/30/2010
'1350Z7N34	CA1350Z7N343	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/14/2010	0.01	19,000,000.00	18,969,980.00	18,957,648.00	STSEL	6/30/2010	6/30/2010
'1350Z7NV2	CA1350Z7NV23	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILLS	8/19/2010	0.01	13,700,000.00	13,690,136.00	13,687,670.00	STSEL	6/30/2010	6/30/2010
'1350Z7NE0	CA1350Z7NE08	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/30/2010	0.01	22,000,000.00	21,972,500.00	21,958,020.00	STSEL	6/30/2010	6/30/2010
'1350Z7NX8	CA1350Z7NX88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/16/2010	0.01	48,100,000.00	48,053,824.00	48,025,110.00	STSEL	6/30/2010	6/30/2010
'1350Z7NC4	CA1350Z7NC42	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/2/2010	0.01	13,700,000.00	13,690,136.00	13,684,141.00	STSEL	6/30/2010	6/30/2010
'1350Z7NC4	CA1350Z7NC42	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/2/2010	0.01	13,700,000.00	13,690,136.00	13,684,141.00	STSEL	6/30/2010	6/30/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	12,160,000.00	12,699,296.00	12,146,671.83	SELL	7/6/2010	7/9/2010
'1350Z7NX8	CA1350Z7NX88	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/16/2010	0	15,500,000.00	15,488,840.00	15,488,840.00	SSELL	7/7/2010	7/12/2010
'1350Z7NX8	CA1350Z7NX88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/16/2010	0.01	15,500,000.00	15,488,840.00	15,477,393.25	STSEL	7/7/2010	7/12/2010
'1350Z7NV2	CA1350Z7NV23	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILLS	8/19/2010	0.01	16,000,000.00	15,995,680.00	15,987,338.00	STSEL	7/8/2010	7/9/2010
'1350Z7NV2	CA1350Z7NV23	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILLS	8/19/2010	0.01	8,000,000.00	7,997,680.00	7,992,800.00	STSEL	7/8/2010	7/8/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	25,339,000.00	26,281,610.80	26,151,516.76	SELL	7/14/2010	7/19/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,485,250.00	26,002,425.96	SELL	7/14/2010	7/19/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,485,750.00	26,002,425.96	SELL	7/14/2010	7/19/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,485,750.00	26,002,425.96	SELL	7/14/2010	7/19/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,489,250.00	26,002,425.97	SELL	7/14/2010	7/19/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	10,185,000.00	10,613,177.40	10,173,836.56	SELL	7/14/2010	7/19/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	5,685,000.00	5,922,633.00	5,678,768.88	SELL	7/14/2010	7/19/2010
'1350Z7NE0	CA1350Z7NE08	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/30/2010	0.01	7,000,000.00	6,993,140.00	6,986,744.00	STSEL	7/14/2010	7/14/2010
'1350Z7NV2	CA1350Z7NV23	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILLS	8/19/2010	0.01	9,600,000.00	9,596,928.00	9,593,601.00	STSEL	7/14/2010	7/14/2010
'1350Z7NE0	CA1350Z7NE08	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/30/2010	0.01	2,000,000.00	1,997,980.00	1,996,220.00	STSEL	7/15/2010	7/15/2010
'1350Z7NE0	CA1350Z7NE08	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/30/2010	0.01	6,000,000.00	5,993,520.00	5,988,660.00	STSEL	7/16/2010	7/16/2010
'1350Z7NE0	CA1350Z7NE08	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/30/2010	0.01	6,000,000.00	5,993,700.00	5,989,002.00	STSEL	7/22/2010	7/22/2010

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CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
								Proceed Amount	Average Cost			
'1350Z7N34	CA1350Z7N343	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/14/2010	0.01	20,000,000.00	19,974,200.00	19,956,305.00	STSEL	7/29/2010	7/30/2010
'1350Z7NE0	CA1350Z7NE08	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/30/2010	0.01	2,500,000.00	2,497,500.00	2,496,700.00	STSEL	7/29/2010	7/29/2010
'1350Z7NE0	CA1350Z7NE08	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	9/30/2010	0.01	30,000,000.00	29,970,600.00	29,963,189.00	STSEL	7/29/2010	7/30/2010
'1350Z7N34	CA1350Z7N343	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/14/2010	0.01	27,500,000.00	27,463,975.00	27,440,854.00	STSEL	7/30/2010	7/30/2010
'683234UF3	CA683234UF36	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2014	5	9,520,000.00	10,392,698.40	10,369,911.68	SELL	8/3/2010	8/6/2010
'683234TF5	CA683234TF54	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2013	4.75	3,160,000.00	3,386,192.80	3,358,427.02	SELL	8/5/2010	8/10/2010
'1350Z7N34	CA1350Z7N343	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/14/2010	0.01	2,000,000.00	1,996,560.00	1,996,560.00	STSEL	8/5/2010	8/5/2010
'1350Z7N34	CA1350Z7N343	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/14/2010	0.01	16,500,000.00	16,480,365.00	16,465,820.00	STSEL	8/5/2010	8/5/2010
'1350Z7N34	CA1350Z7N343	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/14/2010	0.01	14,500,000.00	14,469,260.00	14,469,260.00	STSEL	8/5/2010	8/5/2010
'1350Z7N34	CA1350Z7N343	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/14/2010	0.01	24,900,000.00	24,865,697.00	24,865,697.00	STSEL	8/6/2010	8/6/2010
'1350Z7NJ9	CA1350Z7NJ94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/28/2010	0.01	12,600,000.00	12,578,580.00	12,577,698.00	STSEL	8/6/2010	8/6/2010
'1350Z7NJ9	CA1350Z7NJ94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/28/2010	0.01	7,200,000.00	7,180,560.00	7,187,522.00	STSEL	8/12/2010	8/12/2010
'1350Z7NJ9	CA1350Z7NJ94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/28/2010	0.01	11,200,000.00	11,185,104.00	11,181,100.00	STSEL	8/13/2010	8/13/2010
'1350Z7NJ9	CA1350Z7NJ94	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	10/28/2010	0.01	11,200,000.00	11,185,104.00	11,181,100.00	STSEL	8/13/2010	8/13/2010
'1350Z7PA6	CA1350Z7PA67	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/10/2010	0.01	23,000,000.00	22,962,510.00	22,955,800.00	STSEL	8/13/2010	8/13/2010
'683234TF5	CA683234TF54	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2013	4.75	20,000,000.00	21,501,600.00	21,255,867.20	SELL	8/17/2010	8/20/2010
'1350Z7PA6	CA1350Z7PA67	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/10/2010	0.01	2,100,000.00	2,096,787.00	2,096,193.00	STSEL	8/17/2010	8/17/2010
'1350Z7PA6	CA1350Z7PA67	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/10/2010	0.01	6,500,000.00	6,490,965.00	6,488,822.00	STSEL	8/19/2010	8/19/2010
'135087YG3	CA135087YG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	19,000,000.00	19,863,170.00	20,011,803.90	SELL	8/25/2010	8/30/2010
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	5,330,000.00	5,579,444.00	5,324,157.98	SELL	8/26/2010	8/31/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	2,500,000.00	2,495,200.00	2,493,300.00	STSEL	8/26/2010	8/26/2010
'1350Z7PA6	CA1350Z7PA67	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/10/2010	0.01	21,300,000.00	21,271,671.00	21,264,216.00	STSEL	8/27/2010	8/27/2010
'683234UF3	CA683234UF36	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2014	5	25,000,000.00	27,510,000.00	27,231,910.95	SELL	8/30/2010	9/2/2010
'748148RN5	CA748148RN52	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2014	5.5	30,000,000.00	33,942,900.00	33,490,453.67	SELL	8/30/2010	9/2/2010
'1350Z7PA6	CA1350Z7PA67	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/10/2010	0.01	3,500,000.00	3,495,520.00	3,494,155.00	STSEL	9/2/2010	9/2/2010
'683234UF3	CA683234UF36	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2014	5	15,000,000.00	16,422,750.00	16,339,146.57	SELL	9/9/2010	9/14/2010
'748148RN5	CA748148RN52	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2014	5.5	15,000,000.00	16,873,350.00	16,745,226.85	SELL	9/9/2010	9/14/2010
'683234UF3	CA683234UF36	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2014	5	15,000,000.00	16,424,250.00	16,339,146.56	SELL	9/9/2010	9/14/2010
'748148RN5	CA748148RN52	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	12/1/2014	5.5	15,000,000.00	16,870,350.00	16,745,226.84	SELL	9/9/2010	9/14/2010
'1350Z7NN0	CA1350Z7NN07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/25/2010	0.01	12,500,000.00	12,477,375.00	12,469,124.00	STSEL	9/10/2010	9/10/2010
'135087YG3	CA135087YG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	3,640,000.00	3,783,052.00	3,833,840.32	SELL	9/13/2010	9/16/2010
'1350Z7NN0	CA1350Z7NN07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/25/2010	0.01	21,500,000.00	21,463,880.00	21,455,325.00	STSEL	9/14/2010	9/14/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,546,500.00	26,002,425.98	SELL	9/15/2010	9/20/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,538,750.00	26,002,425.92	SELL	9/15/2010	9/20/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,531,750.00	26,002,425.93	SELL	9/15/2010	9/20/2010
'1350Z7NN0	CA1350Z7NN07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/25/2010	0.01	11,400,000.00	11,381,646.00	11,378,226.00	STSEL	9/15/2010	9/15/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	33,500,000.00	33,433,000.00	33,425,330.00	STSEL	9/15/2010	9/15/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	16,845,000.00	17,863,954.05	17,520,434.63	SELL	9/16/2010	9/21/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	20,000,000.00	21,209,800.00	20,801,940.80	SELL	9/16/2010	9/21/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	25,000,000.00	26,515,750.00	26,002,425.92	SELL	9/16/2010	9/21/2010
'13509PBD4	CA13509PBD48	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2012	4.55	20,000,000.00	21,209,800.00	20,801,940.80	SELL	9/16/2010	9/21/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	5,900,000.00	5,888,495.00	5,888,164.00	STSEL	9/16/2010	9/16/2010
'1350Z7PA6	CA1350Z7PA67	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	11/10/2010	0.01	2,100,000.00	2,097,522.00	2,096,493.00	STSEL	9/17/2010	9/17/2010
'6832348C5	CA6832348C50	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	9/8/2014	3.25	10,290,000.00	10,692,339.00	10,477,116.63	SELL	9/22/2010	9/27/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	1,500,000.00	1,497,285.00	1,497,060.00	STSEL	9/23/2010	9/23/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	27,400,000.00	27,350,954.00	27,345,999.00	STSEL	9/24/2010	9/24/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	9,000,000.00	9,618,300.00	9,393,666.43	SELL	9/29/2010	10/1/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	9,000,000.00	9,528,300.00	9,393,666.43	SELL	9/29/2010	10/1/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	2,300,000.00	2,296,297.00	2,294,871.00	STSEL	9/30/2010	9/30/2010
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	2,025,000.00	2,129,753.25	2,100,785.49	SELL	10/5/2010	10/8/2010
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	3,470,000.00	3,650,960.50	3,599,864.50	SELL	10/5/2010	10/8/2010
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	2,550,000.00	2,681,911.50	2,645,433.56	SELL	10/5/2010	10/8/2010
'683234TF5	CA683234TF54	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	6/2/2013	4.75	43,000,000.00	46,349,700.00	45,700,114.48	SELL	10/6/2010	10/12/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	33,960,000.00	35,964,998.40	35,445,434.68	SELL	10/6/2010	10/18/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	4,800,000.00	4,792,896.00	4,789,296.00	STSEL	10/7/2010	10/7/2010
'1350Z7NR1	CA1350Z7NR11	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/23/2010	0.01	5,000,000.00	4,990,850.00	4,986,550.00	STSEL	10/8/2010	10/8/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	16,700,000.00	16,675,284.00	16,662,759.00	STSEL	10/8/2010	10/8/2010
'1350Z7PD0	CA1350Z7PD07	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/9/2010	0.01	16,700,000.00	16,675,284.00	16,662,759.00	STSEL	10/8/2010	10/8/2010
'1350Z7NR1	CA1350Z7NR11	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/23/2010	0.01	21,000,000.00	20,964,720.00	20,948,404.00	STSEL	10/14/2010	10/14/2010

2010

CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
								Proceed Amount	Average Cost			
'1350Z7NR1	CA1350Z7NR11	FIXED INCOME	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/23/2010	0.01	1,800,000.00	1,796,976.00	1,796,976.00	SELL	10/15/2010	10/15/2010
'1350Z7NR1	CA1350Z7NR11	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/23/2010	0.01	1,800,000.00	1,793,952.00	1,796,976.00	STSEL	10/15/2010	10/15/2010
'1350Z7NR1	CA1350Z7NR11	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/23/2010	0.01	1,800,000.00	1,793,952.00	1,795,829.00	STSEL	10/15/2010	10/15/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	2,380,000.00	2,520,848.40	2,494,512.27	SELL	10/18/2010	10/21/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	3,630,000.00	3,842,572.80	3,804,655.25	SELL	10/18/2010	10/21/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	3,630,000.00	3,843,298.80	3,804,655.25	SELL	10/18/2010	10/21/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	35,290,000.00	37,381,285.40	36,987,956.89	SELL	10/21/2010	11/2/2010
'1350Z7NR1	CA1350Z7NR11	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/23/2010	0.01	5,200,000.00	5,192,096.00	5,187,728.00	STSEL	10/21/2010	10/21/2010
'13509PCF8	CA13509PCF86	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2015	2.95	23,630,000.00	24,587,015.00	24,268,498.46	SELL	10/22/2010	11/1/2010
'13509PCF8	CA13509PCF86	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2015	2.95	18,050,000.00	18,662,797.50	18,537,723.11	SELL	10/22/2010	11/2/2010
'1350Z7NR1	CA1350Z7NR11	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	12/23/2010	0.01	18,700,000.00	18,672,137.00	18,656,518.00	STSEL	10/22/2010	10/22/2010
'1350Z7PJ7	CA1350Z7PJ76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/6/2011	0.01	1,000,000.00	998,170.00	997,280.00	STSEL	10/22/2010	10/22/2010
'1350Z7PJ7	CA1350Z7PJ76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/6/2011	0.01	19,000,000.00	18,967,700.00	18,948,320.00	STSEL	10/28/2010	10/28/2010
'1350Z7NT7	CA1350Z7NT76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/20/2011	0.01	5,000,000.00	4,989,800.00	4,982,862.00	STSEL	10/29/2010	10/29/2010
'1350Z7PJ7	CA1350Z7PJ76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/6/2011	0.01	4,500,000.00	4,492,440.00	4,488,390.00	STSEL	10/29/2010	10/29/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	5,980,000.00	6,330,188.80	6,300,458.29	SELL	11/1/2010	11/4/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	5,980,000.00	6,330,188.80	6,300,458.30	SELL	11/1/2010	11/4/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	6,420,000.00	6,750,180.60	6,639,396.68	SELL	11/4/2010	11/9/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	6,000,000.00	6,297,180.00	6,205,043.62	SELL	11/5/2010	11/10/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	6,000,000.00	6,297,180.00	6,205,043.62	SELL	11/5/2010	11/10/2010
'1350Z7NT7	CA1350Z7NT76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/20/2011	0.01	20,400,000.00	20,361,648.00	20,335,622.00	STSEL	11/5/2010	11/5/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	6,700,000.00	7,019,657.00	6,928,965.37	SELL	11/8/2010	11/12/2010
'13508YGG3	CA13508YGG30	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	3.75	16,360,000.00	16,924,420.00	17,231,216.42	SELL	11/10/2010	11/15/2010
'748148RK1	CA748148RK14	FIXED INCOME	GOVERNMENT ISSUES	PROVINCE OF QUEBEC	10/1/2013	5.25	30,000,000.00	32,726,700.00	32,588,214.92	SELL	11/10/2010	11/16/2010
'1350Z7NT7	CA1350Z7NT76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/20/2011	0.01	6,000,000.00	5,989,500.00	5,982,096.00	STSEL	11/10/2010	11/10/2010
'1350Z7NT7	CA1350Z7NT76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/20/2011	0.01	13,000,000.00	12,977,640.00	12,963,769.00	STSEL	11/12/2010	11/12/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	94,000,000.00	98,850,400.00	99,037,303.93	SELL	11/17/2010	11/24/2010
'1350Z7NT7	CA1350Z7NT76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/20/2011	0.01	26,300,000.00	26,257,657.00	26,233,406.00	STSEL	11/17/2010	11/17/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	11,000,000.00	10,978,770.00	10,966,230.00	STSEL	11/19/2010	11/19/2010
'1350Z7NT7	CA1350Z7NT76	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	1/20/2011	0.01	5,400,000.00	5,391,576.00	5,386,770.00	STSEL	11/19/2010	11/19/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	11,000,000.00	10,957,540.00	10,966,230.00	STSEL	11/19/2010	11/19/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	11,000,000.00	10,978,770.00	10,966,230.00	STSEL	11/19/2010	11/19/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	11,000,000.00	10,978,770.00	10,966,230.00	STSEL	11/19/2010	11/19/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	11,000,000.00	10,966,230.00	10,966,230.00	STSEL	11/19/2010	11/19/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	1,900,000.00	1,896,447.00	1,894,167.00	STSEL	11/23/2010	11/23/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	1,900,000.00	1,894,167.00	1,894,167.00	STSEL	11/23/2010	11/23/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	2,585,000.00	2,708,666.40	2,723,525.86	SELL	11/24/2010	11/30/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	17,500,000.00	17,467,450.00	17,447,629.00	STSEL	11/25/2010	11/25/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	17,500,000.00	17,434,900.00	17,447,629.00	STSEL	11/25/2010	11/25/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	17,500,000.00	17,434,900.00	17,447,629.00	STSEL	11/25/2010	11/25/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	17,500,000.00	17,447,629.00	17,447,629.00	STSEL	11/25/2010	11/25/2010
'13508ZE7	CA13508ZE72	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	1.5	26,100,000.00	26,083,818.00	25,961,409.00	SELL	11/26/2010	12/1/2010
'13509PCF8	CA13509PCF86	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2015	2.95	6,825,000.00	6,951,945.00	7,009,416.08	SELL	11/29/2010	12/2/2010
'13509PCF8	CA13509PCF86	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2015	2.95	19,050,000.00	19,454,050.50	19,564,743.78	SELL	11/30/2010	12/3/2010
'13509PCF8	CA13509PCF86	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2015	2.95	15,000,000.00	15,318,000.00	15,405,310.07	SELL	11/30/2010	12/3/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	23,000,000.00	22,961,820.00	22,933,880.00	STSEL	12/3/2010	12/3/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	23,000,000.00	22,933,880.00	22,933,880.00	STSEL	12/3/2010	12/3/2010
'13508ZE7	CA13508ZE72	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	1.5	13,000,000.00	13,002,340.00	12,930,970.00	SELL	12/7/2010	12/10/2010
'13508ZE7	CA13508ZE72	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	1.5	14,000,000.00	14,002,940.00	13,925,660.00	SELL	12/7/2010	12/10/2010
'13508ZE7	CA13508ZE72	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	1.5	14,000,000.00	14,002,940.00	13,925,660.00	SELL	12/7/2010	12/10/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	9,550,000.00	10,003,434.00	10,061,768.67	SELL	12/8/2010	12/15/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	15,835,000.00	16,000,475.75	16,683,571.37	SELL	12/8/2010	12/15/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	17,190,000.00	17,999,820.90	18,111,183.53	SELL	12/8/2010	12/15/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	9,200,000.00	9,175,300.00	9,175,300.00	STSEL	12/8/2010	12/8/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	9,200,000.00	9,186,200.00	9,175,300.00	STSEL	12/8/2010	12/8/2010
'13509PCC5	CA13509PCC55	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2014	2.75	15,835,000.00	16,000,475.75	15,737,733.32	SELL	12/9/2010	12/15/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	19,080,000.00	19,987,635.60	20,102,465.52	SELL	12/9/2010	12/16/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	19,080,000.00	19,987,444.80	20,102,465.54	SELL	12/9/2010	12/16/2010

## 2010

CUSIP		Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
Number	ISIN Number							Proceed Amount	Average Cost			
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	6,500,000.00	6,482,905.00	6,482,905.00	STSEL	12/9/2010	12/9/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	6,500,000.00	6,490,575.00	6,482,905.00	STSEL	12/9/2010	12/9/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	7,800,000.00	7,800,000.00	7,781,826.00	STSEL	12/10/2010	12/10/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	7,800,000.00	7,781,826.00	7,781,826.00	STSEL	12/10/2010	12/10/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	7,800,000.00	7,778,004.00	7,781,826.00	STSEL	12/10/2010	12/10/2010
'1350Z7PM0	CA1350Z7PM06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/3/2011	0.01	7,800,000.00	7,781,826.00	7,781,826.00	STSEL	12/10/2010	12/10/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	15,000,000.00	14,974,350.00	14,953,278.00	STSEL	12/14/2010	12/14/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	15,000,000.00	14,948,700.00	14,953,278.00	STSEL	12/14/2010	12/14/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	15,000,000.00	15,000,000.00	14,953,278.00	STSEL	12/14/2010	12/14/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	15,000,000.00	14,953,278.00	14,953,278.00	STSEL	12/14/2010	12/14/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	15,000,000.00	14,944,122.00	14,953,278.00	STSEL	12/14/2010	12/14/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	15,000,000.00	14,973,955.38	14,953,278.00	STSEL	12/14/2010	12/14/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	27,000,000.00	26,954,640.00	26,920,858.00	STSEL	12/15/2010	12/15/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	27,000,000.00	26,920,858.00	26,920,858.00	STSEL	12/15/2010	12/15/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	10,270,000.00	10,747,349.60	10,820,352.26	SELL	12/16/2010	12/21/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	8,500,000.00	8,482,660.00	8,473,480.00	STSEL	12/16/2010	12/16/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	5,800,000.00	5,790,430.00	5,783,354.00	STSEL	12/16/2010	12/16/2010
'1350Z7NW0	CA1350Z7NW06	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA GOVT TREAS BILLS CDS	2/17/2011	0.01	5,800,000.00	5,783,354.00	5,783,354.00	STSEL	12/16/2010	12/16/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	7,070,000.00	7,409,784.20	7,448,869.57	SELL	12/17/2010	12/22/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	24,000,000.00	24,966,720.00	24,820,174.45	SELL	12/17/2010	12/22/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	5,080,000.00	5,323,941.60	5,352,228.77	SELL	12/17/2010	12/22/2010
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	7,630,000.00	7,998,529.00	8,038,879.03	SELL	12/17/2010	12/22/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	33,700,000.00	33,631,252.00	33,595,851.00	STSEL	12/17/2010	12/17/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	1,300,000.00	1,297,348.00	1,296,152.00	STSEL	12/17/2010	12/17/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	1,300,000.00	1,296,152.00	1,296,152.00	STSEL	12/17/2010	12/17/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	33,700,000.00	33,595,851.00	33,595,851.00	STSEL	12/17/2010	12/17/2010
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	23,000,000.00	23,954,040.00	23,786,000.53	SELL	12/20/2010	12/23/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	2,500,000.00	2,493,000.00	2,493,000.00	STSEL	12/21/2010	12/21/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	2,500,000.00	2,495,225.00	2,493,000.00	STSEL	12/21/2010	12/21/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	3,500,000.00	3,493,420.00	3,490,200.00	STSEL	12/22/2010	12/22/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	3,500,000.00	3,490,200.00	3,490,200.00	STSEL	12/22/2010	12/22/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	1,700,000.00	1,696,872.00	1,695,240.00	STSEL	12/23/2010	12/23/2010
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	16,000,000.00	15,964,320.00	15,949,644.00	STSEL	12/23/2010	12/23/2010
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	16,000,000.00	15,949,644.00	15,949,644.00	STSEL	12/23/2010	12/23/2010
'1350Z7PQ1	CA1350Z7PQ10	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/3/2011	0.01	1,700,000.00	1,695,240.00	1,695,240.00	STSEL	12/23/2010	12/23/2010
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	4,500,000.00	4,490,100.00	4,486,455.00	STSEL	12/24/2010	12/24/2010
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	4,500,000.00	4,486,455.00	4,486,455.00	STSEL	12/24/2010	12/24/2010
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	11,200,000.00	11,177,376.00	11,170,566.00	STSEL	12/31/2010	12/31/2010
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	11,200,000.00	11,170,566.00	11,170,566.00	STSEL	12/31/2010	12/31/2010

## 2011

CUSIP					Maturity	Interest	Shares/Par	Base Net		Transaction		Contractual
Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Date	Rate	Value	Amount	Average cost	Type	Trade Date	Settlement Date
'13509PBZ5	CA13509PBZ59	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	2.75	19,970,000.00	20,179,485.30	19,892,468.50	SELL	1/6/2011	1/11/2011
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	7,000,000.00	6,987,470.00	6,985,164.00	STSEL	1/6/2011	1/6/2011
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	7,000,000.00	6,985,164.00	6,985,164.00	STSEL	1/6/2011	1/6/2011
'1350Z7PU2	CA1350Z7PU22	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/31/2011	0.01	3,200,000.00	3,193,056.00	3,188,736.00	STSEL	1/7/2011	1/7/2011
'1350Z7PU2	CA1350Z7PU22	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/31/2011	0.01	3,200,000.00	3,188,736.00	3,188,736.00	STSEL	1/7/2011	1/7/2011
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	1,800,000.00	1,796,310.00	1,796,310.00	STSEL	1/7/2011	1/7/2011
'1350Z7NY6	CA1350Z7NY61	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/17/2011	0.01	1,800,000.00	1,796,814.00	1,796,310.00	STSEL	1/7/2011	1/7/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	8,000,000.00	7,980,800.00	7,969,280.00	STSEL	1/12/2011	1/12/2011
'1350Z7PU2	CA1350Z7PU22	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/31/2011	0.01	20,700,000.00	20,658,807.00	20,628,255.00	STSEL	1/12/2011	1/12/2011
'1350Z7PU2	CA1350Z7PU22	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/31/2011	0.01	20,700,000.00	20,628,255.00	20,628,255.00	STSEL	1/12/2011	1/12/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	8,000,000.00	7,969,280.00	7,969,280.00	STSEL	1/12/2011	1/12/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	8,000,000.00	7,980,800.00	7,969,610.00	STSEL	1/12/2011	1/12/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	8,000,000.00	7,969,610.00	7,969,610.00	STSEL	1/12/2011	1/12/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	8,000,000.00	7,969,610.00	7,970,720.00	STSEL	1/12/2011	1/12/2011
'1350Z7PU2	CA1350Z7PU22	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/31/2011	0.01	20,700,000.00	20,628,255.00	20,628,255.00	STSEL	1/12/2011	1/12/2011
'13509PCJ0	CA13509PCJ09	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2015	3.15	10,430,000.00	10,631,194.70	10,720,698.00	SELL	1/13/2011	1/18/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	8,700,000.00	8,666,718.00	8,666,718.00	STSEL	1/14/2011	1/14/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	8,700,000.00	8,679,468.00	8,666,718.00	STSEL	1/14/2011	1/14/2011
'1350Z7PU2	CA1350Z7PU22	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/31/2011	0.01	25,000,000.00	24,951,250.00	24,914,890.00	STSEL	1/14/2011	1/14/2011
'1350Z7PU2	CA1350Z7PU22	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/31/2011	0.01	25,000,000.00	24,914,890.00	24,914,890.00	STSEL	1/14/2011	1/14/2011
'13509PCF8	CA13509PCF86	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2015	2.95	23,830,000.00	24,201,748.00	24,237,068.55	SELL	1/19/2011	1/24/2011
'13509PBZ5	CA13509PBZ59	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	2.75	25,000,000.00	25,301,750.00	24,902,940.05	SELL	1/19/2011	1/24/2011
'683234YC6	CA683234YC68	FIXED INCOME	GOVERNMENT ISSUES	ONTARIO (PROVINCE OF)	3/8/2016	4.4	36,935,000.00	39,384,159.85	40,610,032.50	SELL	1/19/2011	1/24/2011
'13509PCF8	CA13509PCF86	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2015	2.95	23,830,000.00	24,201,748.00	24,237,068.54	SELL	1/19/2011	1/24/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	7,500,000.00	7,483,875.00	7,472,550.00	STSEL	1/20/2011	1/20/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	7,500,000.00	7,472,550.00	7,472,550.00	STSEL	1/20/2011	1/20/2011
'13508Z7F4	CA13508Z7F48	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2015	3	24,380,000.00	24,879,790.00	25,122,510.15	SELL	1/25/2011	1/28/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	1,500,000.00	1,497,090.00	1,494,685.00	STSEL	1/27/2011	1/27/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	1,500,000.00	1,494,685.00	1,494,685.00	STSEL	1/27/2011	1/27/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	30,500,000.00	30,441,745.00	30,411,445.00	STSEL	1/28/2011	1/28/2011
'1350Z7N42	CA1350Z7N426	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/14/2011	0.01	30,500,000.00	30,411,445.00	30,411,445.00	STSEL	1/28/2011	1/28/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	21,000,000.00	20,933,010.00	20,933,010.00	STSEL	1/28/2011	1/28/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	21,000,000.00	20,950,860.00	20,933,010.00	STSEL	1/28/2011	1/28/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	13,000,000.00	12,958,691.00	12,958,691.00	STSEL	2/3/2011	2/3/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	13,000,000.00	12,971,920.00	12,958,691.00	STSEL	2/3/2011	2/3/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	6,000,000.00	5,984,880.00	5,980,760.00	STSEL	2/4/2011	2/4/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	6,000,000.00	5,980,760.00	5,980,760.00	STSEL	2/4/2011	2/4/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	17,000,000.00	16,946,422.00	16,946,422.00	STSEL	2/9/2011	2/9/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	17,000,000.00	16,946,790.00	16,946,422.00	STSEL	2/9/2011	2/9/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	17,000,000.00	16,959,370.00	16,946,790.00	STSEL	2/9/2011	2/9/2011
'13509PBZ5	CA13509PBZ59	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	2.75	3,785,000.00	3,805,211.90	3,770,305.13	SELL	2/11/2011	2/14/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	27,500,000.00	27,435,650.00	27,416,891.00	STSEL	2/11/2011	2/11/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	27,500,000.00	27,416,891.00	27,416,891.00	STSEL	2/11/2011	2/11/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	8,300,000.00	8,277,756.00	8,270,120.00	STSEL	2/14/2011	2/14/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	8,300,000.00	8,270,120.00	8,270,120.00	STSEL	2/14/2011	2/14/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	11,700,000.00	11,669,353.00	11,669,353.00	STSEL	2/14/2011	2/14/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	11,700,000.00	11,673,558.00	11,669,353.00	STSEL	2/14/2011	2/14/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	10,000,000.00	9,981,200.00	9,969,021.00	STSEL	2/14/2011	2/14/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	10,000,000.00	9,969,021.00	9,969,021.00	STSEL	2/14/2011	2/14/2011
'13509PCQ4	CA13509PCQ42	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2015	2.75	24,950,000.00	24,623,903.50	24,919,062.00	SELL	2/16/2011	2/18/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	2,400,000.00	2,392,920.00	2,392,920.00	STSEL	2/17/2011	2/17/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	2,400,000.00	2,395,728.00	2,392,920.00	STSEL	2/17/2011	2/17/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	1,000,000.00	998,370.00	997,110.00	STSEL	2/23/2011	2/23/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	1,000,000.00	997,110.00	997,110.00	STSEL	2/23/2011	2/23/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	20,000,000.00	19,953,200.00	19,937,614.00	STSEL	2/25/2011	2/25/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	20,000,000.00	19,937,614.00	19,937,614.00	STSEL	2/25/2011	2/25/2011

## 2011

CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net		Transaction Type	Trade Date	Contractual Settlement Date
								Proceed Amount	Average cost			
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	6,000,000.00	5,990,520.00	5,982,660.00	STSEL	2/25/2011	2/25/2011
'1350Z7PY4	CA1350Z7PY44	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	4/28/2011	0.01	6,000,000.00	5,982,660.00	5,982,660.00	STSEL	2/25/2011	2/25/2011
'135087ZF4	CA135087ZF48	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2015	3	43,875,000.00	44,641,935.00	45,211,244.14	SELL	3/2/2011	3/9/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	14,400,000.00	14,362,004.00	14,362,004.00	STSEL	3/3/2011	3/3/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	14,400,000.00	14,369,184.00	14,362,004.00	STSEL	3/3/2011	3/3/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	41,000,000.00	40,930,710.00	40,927,430.00	STSEL	3/7/2011	3/7/2011
'1350Z7PB4	CA1350Z7PB41	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/12/2011	0.01	41,000,000.00	40,927,430.00	40,927,430.00	STSEL	3/7/2011	3/7/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	10,500,000.00	10,474,905.00	10,463,670.00	STSEL	3/9/2011	3/9/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	10,500,000.00	10,463,670.00	10,463,670.00	STSEL	3/9/2011	3/9/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	11,000,000.00	10,974,150.00	10,964,145.00	STSEL	3/10/2011	3/10/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	11,000,000.00	10,964,145.00	10,964,145.00	STSEL	3/10/2011	3/10/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	7,800,000.00	7,784,946.00	7,780,188.00	STSEL	3/11/2011	3/11/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	22,000,000.00	21,949,180.00	21,939,424.00	STSEL	3/11/2011	3/11/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	22,000,000.00	21,939,424.00	21,939,424.00	STSEL	3/11/2011	3/11/2011
'1350Z7P32	CA1350Z7P322	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	5/26/2011	0.01	7,800,000.00	7,780,188.00	7,780,188.00	STSEL	3/11/2011	3/11/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	8,500,000.00	8,477,960.00	8,477,960.00	STSEL	3/14/2011	3/14/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	8,500,000.00	8,481,130.00	8,477,960.00	STSEL	3/14/2011	3/14/2011
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	25,210,000.00	25,000,757.00	24,438,747.63	SELL	3/23/2011	3/28/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	11,000,000.00	10,967,440.00	10,965,900.00	STSEL	3/24/2011	3/24/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	11,000,000.00	10,965,900.00	10,965,900.00	STSEL	3/24/2011	3/24/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	33,200,000.00	33,104,140.00	33,104,140.00	STSEL	3/25/2011	3/25/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	33,200,000.00	33,113,348.00	33,104,140.00	STSEL	3/25/2011	3/25/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	3,000,000.00	2,990,700.00	2,990,700.00	STSEL	3/25/2011	3/25/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	3,000,000.00	2,991,090.00	2,990,700.00	STSEL	3/25/2011	3/25/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	44,900,000.00	44,900,000.00	44,763,002.00	STSEL	3/31/2011	3/31/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	44,900,000.00	44,763,002.00	44,763,002.00	STSEL	3/31/2011	3/31/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	44,900,000.00	44,668,263.00	44,763,002.00	STSEL	3/31/2011	3/31/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	8,500,000.00	8,478,070.00	8,478,070.00	STSEL	3/31/2011	3/31/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	8,500,000.00	8,485,125.00	8,478,070.00	STSEL	3/31/2011	3/31/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	50,000,000.00	50,635,000.00	50,476,000.00	SELL	4/5/2011	4/8/2011
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	30,000,000.00	29,488,800.00	29,082,206.65	SELL	4/6/2011	4/11/2011
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	20,000,000.00	20,796,000.00	21,058,631.22	SELL	4/7/2011	4/11/2011
'13509PBK8	CA13509PBK80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2013	3.95	24,780,000.00	25,765,500.60	26,091,644.06	SELL	4/7/2011	4/11/2011
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	30,000,000.00	29,489,700.00	29,082,206.64	SELL	4/7/2011	4/12/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	3,000,000.00	2,991,360.00	2,991,360.00	STSEL	4/7/2011	4/7/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	3,000,000.00	2,991,660.00	2,991,360.00	STSEL	4/7/2011	4/7/2011
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	30,000,000.00	29,447,700.00	29,082,206.63	SELL	4/8/2011	4/13/2011
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	30,000,000.00	29,447,700.00	29,082,206.64	SELL	4/8/2011	4/13/2011
'13509PBB8	CA13509PBB81	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2012	4	15,930,000.00	16,272,535.40	16,433,069.88	SELL	4/8/2011	4/12/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	15,000,000.00	14,958,600.00	14,956,800.00	STSEL	4/8/2011	4/8/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	15,000,000.00	14,956,800.00	14,956,800.00	STSEL	4/8/2011	4/8/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	8,000,000.00	7,980,480.00	7,980,480.00	STSEL	4/8/2011	4/8/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	8,000,000.00	7,981,040.00	7,980,480.00	STSEL	4/8/2011	4/8/2011
'135087ZL1	CA135087ZL16	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2016	2	25,580,000.00	24,685,979.00	24,665,248.07	SELL	4/14/2011	4/28/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	11,500,000.00	11,483,670.00	11,470,330.00	STSEL	4/14/2011	4/14/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	20,000,000.00	19,951,160.00	19,951,160.00	STSEL	4/14/2011	4/14/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	11,500,000.00	11,470,330.00	11,470,330.00	STSEL	4/14/2011	4/14/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	20,000,000.00	19,956,800.00	19,951,160.00	STSEL	4/14/2011	4/14/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	4,500,000.00	4,491,900.00	4,490,730.00	STSEL	4/14/2011	4/14/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	4,500,000.00	4,490,730.00	4,490,730.00	STSEL	4/14/2011	4/14/2011
'135087ZL1	CA135087ZL16	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2016	2	5,660,000.00	5,481,766.60	5,457,595.93	SELL	4/19/2011	4/21/2011
'135087ZF4	CA135087ZF48	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2015	3	20,000,000.00	20,351,400.00	20,609,114.14	SELL	4/19/2011	4/21/2011
'135087ZF4	CA135087ZF48	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2015	3	20,000,000.00	20,334,400.00	20,609,114.14	SELL	4/20/2011	4/26/2011
'135087ZF4	CA135087ZF48	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2015	3	7,680,000.00	7,799,808.00	7,913,899.83	SELL	4/20/2011	4/26/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	21,000,000.00	20,957,040.00	20,957,040.00	STSEL	4/21/2011	4/21/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	21,000,000.00	20,965,350.00	20,957,040.00	STSEL	4/21/2011	4/21/2011

## 2011

CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed		Transaction Type	Trade Date	Contractual Settlement
								Amount	Average cost			Date
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	11,000,000.00	10,985,508.00	10,985,508.00	STSEL	4/21/2011	4/21/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	11,000,000.00	10,986,030.00	10,985,508.00	STSEL	4/21/2011	4/21/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	1,200,000.00	1,198,428.00	1,198,428.00	STSEL	4/28/2011	4/28/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	14,000,000.00	13,966,900.00	13,966,900.00	STSEL	4/28/2011	4/28/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	14,000,000.00	13,974,520.00	13,966,900.00	STSEL	4/28/2011	4/28/2011
'1350Z7PE8	CA1350Z7PE89	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/9/2011	0.01	1,200,000.00	1,198,740.00	1,198,428.00	STSEL	4/28/2011	4/28/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	21,000,000.00	20,974,800.00	20,974,606.15	STSEL	5/6/2011	5/6/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	23,000,000.00	22,976,310.00	22,975,664.23	STSEL	5/12/2011	5/12/2011
'1350Z7P73	CA1350Z7P736	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	6/23/2011	0.01	4,500,000.00	4,495,455.00	4,495,352.02	STSEL	5/13/2011	5/13/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	15,500,000.00	15,478,765.00	15,476,208.48	STSEL	5/13/2011	5/13/2011
'135087ZE7	CA135087ZE72	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	1.5	20,375,000.00	20,403,728.75	20,400,672.50	SELL	5/17/2011	5/25/2011
'13509BPB7	CA13509BPB77	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	12/15/2013	2.7	75,983,000.00	77,224,562.22	77,682,325.88	SELL	5/18/2011	5/26/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	50,000,000.00	51,793,000.00	51,717,215.05	SELL	5/18/2011	5/26/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	25,000,000.00	25,896,000.00	25,858,607.51	SELL	5/18/2011	5/26/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	25,000,000.00	25,908,500.00	25,858,607.52	SELL	5/18/2011	5/26/2011
'1350Z7PR9	CA1350Z7PR92	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/1/2011	0.01	10,000,000.00	9,972,700.00	9,971,561.06	STSEL	5/20/2011	5/20/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	10,000,000.00	9,989,900.00	9,989,118.18	STSEL	5/26/2011	5/26/2011
'1350Z7QA5	CA1350Z7QA58	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/21/2011	0.01	11,700,000.00	11,685,758.05	11,673,125.58	STSEL	6/3/2011	6/3/2011
'1350Z7PR9	CA1350Z7PR92	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/1/2011	0.01	6,800,000.00	6,784,088.00	6,783,319.18	STSEL	6/3/2011	6/3/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	4,000,000.00	3,996,564.93	3,996,476.36	STSEL	6/3/2011	6/3/2011
'1350Z7PK4	CA1350Z7PK40	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	7/7/2011	0.01	4,000,000.00	3,996,600.00	3,996,476.36	STSEL	6/3/2011	6/3/2011
'1350Z7PN8	CA1350Z7PN88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	8/4/2011	0.01	7,500,000.00	7,473,300.00	7,473,300.00	STSEL	6/9/2011	6/9/2011
'1350Z7PN8	CA1350Z7PN88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	8/4/2011	0.01	2,000,000.00	1,992,880.00	1,992,880.00	STSEL	6/9/2011	6/9/2011
'1350Z7PN8	CA1350Z7PN88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	8/4/2011	0.01	16,500,000.00	16,478,830.27	16,442,370.00	STSEL	6/14/2011	6/14/2011
'1350Z7PN8	CA1350Z7PN88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	8/4/2011	0.01	13,500,000.00	13,484,070.00	13,472,320.00	STSEL	6/17/2011	6/17/2011
'1350Z7QD9	CA1350Z7QD97	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	8/18/2011	0.01	8,000,000.00	7,987,680.00	7,986,707.20	STSEL	6/17/2011	6/17/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	50,000,000.00	50,630,000.00	50,476,000.00	SELL	6/20/2011	6/23/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	50,000,000.00	50,630,000.00	50,476,000.00	SELL	6/20/2011	6/23/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	50,000,000.00	50,630,000.00	50,476,000.00	SELL	6/20/2011	6/23/2011
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	13,000,000.00	12,969,320.00	12,962,894.65	STSEL	6/23/2011	6/23/2011
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	13,000,000.00	12,963,116.36	12,963,116.36	STSEL	6/23/2011	6/23/2011
'135087ZD9	CA135087ZD99	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	3/1/2013	1.75	29,560,000.00	29,754,504.80	29,223,681.10	SELL	6/24/2011	6/29/2011
'135087ZD9	CA135087ZD99	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	3/1/2013	1.75	25,060,000.00	25,234,668.20	24,774,879.85	SELL	6/24/2011	6/29/2011
'135087ZK3	CA135087ZK33	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2012	1.5	25,010,000.00	25,105,538.20	24,932,969.20	SELL	6/27/2011	6/30/2011
'135087ZE7	CA135087ZE72	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2012	1.5	4,625,000.00	4,641,002.50	4,630,827.50	SELL	6/27/2011	6/30/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	25,000,000.00	26,075,750.00	25,858,607.54	SELL	6/28/2011	6/30/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	15,815,000.00	16,487,453.80	16,358,155.11	SELL	6/28/2011	6/30/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	15,815,000.00	16,487,453.80	16,358,155.13	SELL	6/28/2011	6/30/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	25,000,000.00	26,075,750.00	25,858,607.54	SELL	6/28/2011	6/30/2011
'1350Z7QH0	CA1350Z7QH02	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/15/2011	0.01	28,000,000.00	27,945,120.00	27,938,658.90	STSEL	6/30/2011	6/30/2011
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	26,000,000.00	25,939,940.00	25,935,183.69	STSEL	6/30/2011	6/30/2011
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	26,000,000.00	25,939,569.59	25,935,183.69	STSEL	6/30/2011	6/30/2011
'1350Z7PR9	CA1350Z7PR92	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/1/2011	0.01	13,000,000.00	12,979,590.00	12,979,714.00	STSEL	6/30/2011	6/30/2011
'1350Z7PN8	CA1350Z7PN88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	8/4/2011	0.01	5,000,000.00	4,995,650.00	4,995,333.33	STSEL	6/30/2011	6/30/2011
'13509PBL6	CA13509PBL63	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2013	3.55	32,760,000.00	34,077,279.60	33,885,119.29	SELL	7/6/2011	7/11/2011
'13509PBS1	CA13509PBS17	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2014	2.2	30,000,000.00	30,298,200.00	29,795,746.92	SELL	7/6/2011	7/11/2011
'13509PBS1	CA13509PBS17	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2014	2.2	25,000,000.00	25,209,750.00	24,829,789.11	SELL	7/7/2011	7/12/2011
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	30,000,000.00	31,079,400.00	31,122,747.90	SELL	7/7/2011	7/12/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	10,000,000.00	10,125,000.00	10,095,200.00	SELL	7/14/2011	7/19/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	19,500,000.00	19,455,109.93	19,451,692.59	STSEL	7/14/2011	7/14/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	19,500,000.00	19,455,345.00	19,451,692.59	STSEL	7/14/2011	7/14/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	21,000,000.00	20,952,960.00	20,946,884.97	STSEL	7/15/2011	7/15/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	21,000,000.00	20,952,735.62	20,946,884.97	STSEL	7/15/2011	7/15/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	21,000,000.00	20,952,960.00	20,949,101.36	STSEL	7/15/2011	7/15/2011
'135087ZD9	CA135087ZD99	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	3/1/2013	1.75	25,000,000.00	25,114,750.00	24,715,562.50	SELL	7/21/2011	7/26/2011
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	9,000,000.00	8,984,340.00	8,983,787.69	STSEL	7/21/2011	7/21/2011

## 2011

CUSIP Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Base Net Proceed		Transaction		Contractual Settlement
								Amount	Average cost	Type	Trade Date	Date
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	9,000,000.00	8,984,233.97	8,983,787.69	STSEL	7/21/2011	7/21/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	148,700,000.00	150,630,126.00	150,115,624.00	SELL	7/28/2011	8/3/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	1,500,000.00	1,497,090.00	1,497,037.83	STSEL	7/28/2011	7/28/2011
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	1,500,000.00	1,497,630.00	1,497,609.04	STSEL	7/28/2011	7/28/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	4,100,000.00	4,092,046.00	4,091,589.96	STSEL	7/28/2011	7/28/2011
'1350Z7PZ1	CA1350Z7PZ19	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/27/2011	0.01	23,500,000.00	23,447,360.00	23,445,447.34	STSEL	7/29/2011	7/29/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	6,500,000.00	6,487,715.00	6,487,521.93	STSEL	7/29/2011	7/29/2011
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	26,631,000.00	27,818,209.98	27,627,187.17	SELL	8/5/2011	8/10/2011
'13509PBS1	CA13509PBS17	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2014	2.2	25,000,000.00	25,657,500.00	24,829,789.12	SELL	8/9/2011	8/12/2011
'13509PBS1	CA13509PBS17	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2014	2.2	25,000,000.00	25,662,000.00	24,829,789.12	SELL	8/9/2011	8/12/2011
'13509PBS1	CA13509PBS17	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	3/15/2014	2.2	25,000,000.00	25,656,000.00	24,829,789.10	SELL	8/9/2011	8/12/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	4,500,000.00	4,491,225.00	4,489,058.67	STSEL	8/11/2011	8/11/2011
'1350Z7PZ1	CA1350Z7PZ19	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/27/2011	0.01	13,700,000.00	13,677,258.00	13,673,524.42	STSEL	8/12/2011	8/12/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	180,000,000.00	181,944,000.00	181,713,600.01	SELL	8/17/2011	8/24/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	1,000,000.00	998,790.00	998,818.75	STSEL	8/18/2011	8/18/2011
'1350Z7QH0	CA1350Z7QH02	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/15/2011	0.01	19,000,000.00	18,991,450.00	18,990,902.36	STSEL	8/19/2011	8/24/2011
'1350Z7PZ1	CA1350Z7PZ19	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/27/2011	0.01	20,000,000.00	19,971,600.00	19,972,594.86	STSEL	8/19/2011	8/24/2011
'1350Z7PV0	CA1350Z7PV05	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	9/29/2011	0.01	30,000,000.00	29,977,200.00	29,976,888.00	STSEL	8/22/2011	8/24/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	30,000,000.00	29,946,300.00	29,948,876.08	STSEL	8/23/2011	8/24/2011
'135087YU2	CA135087YU24	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	12/1/2014	2	24,500,000.00	25,125,730.00	23,750,468.75	SELL	8/24/2011	8/29/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	30,500,000.00	30,443,270.00	30,438,189.30	STSEL	8/24/2011	8/24/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	4,000,000.00	3,995,440.00	3,995,950.00	STSEL	8/26/2011	8/26/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	7,600,000.00	7,591,868.00	7,593,110.20	STSEL	8/31/2011	8/31/2011
'135087ZP2	CA135087ZP20	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	8/1/2013	2	43,000,000.00	43,981,260.00	43,009,171.92	SELL	9/9/2011	9/14/2011
'135087ZP2	CA135087ZP20	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	8/1/2013	2	40,000,000.00	40,902,800.00	40,008,532.01	SELL	9/9/2011	9/14/2011
'135087YN8	CA135087YN80	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2013	3.5	100,448,000.00	104,694,941.44	104,205,463.34	SELL	9/15/2011	9/20/2011
'135087ZP2	CA135087ZP20	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	8/1/2013	2	27,312,000.00	27,833,659.20	27,317,825.67	SELL	9/15/2011	9/20/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	25,000,000.00	24,969,000.00	24,965,443.23	STSEL	9/15/2011	9/15/2011
'1350Z7QM9	CA1350Z7QM96	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/13/2011	0.01	12,500,000.00	12,492,625.00	12,492,644.07	STSEL	9/15/2011	9/15/2011
'1350Z7PZ1	CA1350Z7PZ19	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	10/27/2011	0.01	17,500,000.00	17,483,900.00	17,482,006.77	STSEL	9/15/2011	9/15/2011
'135087ZG2	CA135087ZG21	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2013	2.5	52,132,000.00	53,693,874.72	52,852,618.66	SELL	9/20/2011	9/23/2011
'135087ZG2	CA135087ZG21	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2013	2.5	41,782,000.00	43,036,713.46	42,359,550.99	SELL	9/20/2011	9/23/2011
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3	50,000,000.00	52,565,000.00	51,918,989.30	SELL	9/20/2011	9/23/2011
'135087YS7	CA135087YS77	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2014	3	50,000,000.00	52,565,000.00	51,918,989.33	SELL	9/20/2011	9/23/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	2,200,000.00	2,197,602.00	2,197,547.55	STSEL	9/22/2011	9/22/2011
'1350Z7P40	CA1350Z7P405	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/24/2011	0.01	20,200,000.00	20,171,720.00	20,167,064.02	STSEL	9/23/2011	9/23/2011
'1350Z7P40	CA1350Z7P405	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/24/2011	0.01	25,000,000.00	24,967,250.00	24,963,596.28	STSEL	9/27/2011	9/28/2011
'1350Z7QV9	CA1350Z7QV95	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/8/2011	0.01	30,000,000.00	29,952,900.00	29,949,594.14	STSEL	9/29/2011	9/29/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	10,600,000.00	10,590,142.00	10,590,246.65	STSEL	9/29/2011	9/29/2011
'13509PCX9	CA13509PCX92	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2016	1.34214	330,000,000.00	329,340,000.00	329,340,000.00	SELL	10/4/2011	10/4/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	4,000,000.00	3,996,880.00	3,996,941.30	STSEL	10/6/2011	10/6/2011
'1350Z7QV9	CA1350Z7QV95	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/8/2011	0.01	20,000,000.00	19,972,000.00	19,972,470.59	STSEL	10/6/2011	10/6/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	20,000,000.00	19,984,200.00	19,984,706.52	STSEL	10/6/2011	10/6/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	20,000,000.00	19,984,600.00	19,985,143.48	STSEL	10/7/2011	10/7/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	9,900,000.00	9,892,377.00	9,892,646.02	STSEL	10/7/2011	10/7/2011
'1350Z7P40	CA1350Z7P405	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/24/2011	0.01	25,000,000.00	24,975,750.00	24,975,104.32	STSEL	10/11/2011	10/13/2011
'135087ZQ0	CA135087ZQ03	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2016	2.75	10,050,000.00	10,599,735.00	10,680,066.68	SELL	10/12/2011	10/17/2011
'135087ZG2	CA135087ZG21	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2013	2.5	25,000,000.00	25,706,750.00	25,345,574.04	SELL	10/13/2011	10/18/2011
'135087ZQ0	CA135087ZQ03	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2016	2.75	100,000,000.00	105,770,000.00	106,269,320.19	SELL	10/13/2011	10/18/2011
'135087ZQ0	CA135087ZQ03	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2016	2.75	100,000,000.00	105,770,000.00	106,269,320.19	SELL	10/13/2011	10/18/2011
'135087ZG2	CA135087ZG21	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2013	2.5	25,000,000.00	25,706,750.00	25,345,574.07	SELL	10/13/2011	10/18/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	7,600,000.00	7,595,136.00	7,595,350.78	STSEL	10/13/2011	10/13/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	3,500,000.00	3,491,880.00	3,492,398.38	STSEL	10/13/2011	10/13/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	3,800,000.00	3,797,568.00	3,797,579.40	STSEL	10/13/2011	10/13/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	3,400,000.00	3,392,112.00	3,385,252.81	STSEL	10/13/2011	10/13/2011
'1350Z7QS6	CA1350Z7QS66	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	11,400,000.00	11,392,704.00	11,392,704.00	SSELL	10/13/2011	10/13/2011

## 2011

CUSIP							Base Net		Transaction		Contractual	
Number	ISIN Number	Asset Class	Investment Type Name	Security Name	Maturity Date	Interest Rate	Shares/Par Value	Proceed Amount	Average cost	Type	Trade Date	Settlement Date
'1350Z7QS6	CA1350Z7Q566	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/10/2011	0.01	11,400,000.00	11,392,704.00	11,392,930.18	STSEL	10/13/2011	10/13/2011
'1350Z7P40	CA1350Z7P405	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/24/2011	0.01	24,450,000.00	24,427,017.00	24,428,012.36	STSEL	10/14/2011	10/14/2011
'1350Z7QV9	CA1350Z7QV95	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/8/2011	0.01	20,000,000.00	19,976,800.00	19,976,581.73	STSEL	10/14/2011	10/19/2011
'1350Z7QV9	CA1350Z7QV95	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/8/2011	0.01	25,000,000.00	24,970,000.00	24,968,387.23	STSEL	10/17/2011	10/17/2011
'1350Z7QV9	CA1350Z7QV95	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/8/2011	0.01	9,400,000.00	9,389,096.00	9,387,914.29	STSEL	10/19/2011	10/19/2011
'1350Z7P40	CA1350Z7P405	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	11/24/2011	0.01	22,000,000.00	21,981,520.00	21,981,732.06	STSEL	10/19/2011	10/19/2011
'13508ZC1	CA13508ZC17	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	6/1/2015	2.5	15,345,000.00	15,972,303.60	15,311,796.02	SELL	10/20/2011	10/25/2011
'13508ZQ0	CA13508ZQ03	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2016	2.75	3,775,000.00	3,984,890.00	4,011,666.83	SELL	10/20/2011	10/25/2011
'1350Z7QV9	CA1350Z7QV95	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/8/2011	0.01	20,000,000.00	19,979,800.00	19,978,122.85	STSEL	10/26/2011	10/26/2011
'1350Z7P81	CA1350Z7P819	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/22/2011	0.01	3,000,000.00	2,995,980.00	2,996,260.97	STSEL	10/26/2011	10/26/2011
'1350Z7P81	CA1350Z7P819	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/22/2011	0.01	25,000,000.00	24,966,750.00	24,969,605.37	STSEL	10/27/2011	10/27/2011
'1350Z7QV9	CA1350Z7QV95	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/8/2011	0.01	25,200,000.00	25,175,304.00	25,173,655.04	STSEL	10/27/2011	10/27/2011
'1350Z7P81	CA1350Z7P819	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/22/2011	0.01	16,300,000.00	16,278,321.00	16,277,947.89	STSEL	10/27/2011	10/27/2011
'1350Z7P81	CA1350Z7P819	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/22/2011	0.01	25,000,000.00	24,966,750.00	24,969,314.89	STSEL	10/27/2011	10/27/2011
'1350Z7P81	CA1350Z7P819	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	12/22/2011	0.01	26,400,000.00	26,367,792.00	26,367,137.69	STSEL	10/31/2011	10/31/2011
'1350Z7Q23	CA1350Z7Q239	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/5/2012	0.01	3,800,000.00	3,794,376.00	3,794,232.64	STSEL	11/3/2011	11/3/2011
'1350Z7Q23	CA1350Z7Q239	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/5/2012	0.01	10,400,000.00	10,384,608.00	10,384,508.30	STSEL	11/4/2011	11/4/2011
'1350Z7Q23	CA1350Z7Q239	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/5/2012	0.01	21,000,000.00	20,972,490.00	20,972,247.19	STSEL	11/10/2011	11/10/2011
'1350Z7Q23	CA1350Z7Q239	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/5/2012	0.01	3,500,000.00	3,495,730.00	3,495,722.45	STSEL	11/14/2011	11/14/2011
'13509PBV4	CA13509PBV46	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	9/15/2014	1	41,300,000.00	41,690,285.00	41,693,176.00	SELL	11/16/2011	11/23/2011
'13508ZQ0	CA13508ZQ03	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2016	2.75	21,532,000.00	22,928,350.20	22,881,910.02	SELL	11/17/2011	11/23/2011
'1350Z7Q23	CA1350Z7Q239	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/5/2012	0.01	1,500,000.00	1,498,305.00	1,498,314.70	STSEL	11/17/2011	11/17/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	25,000,000.00	24,963,500.00	24,947,622.71	STSEL	11/18/2011	11/18/2011
'1350Z7Q23	CA1350Z7Q239	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/5/2012	0.01	25,000,000.00	24,972,000.00	24,971,766.30	STSEL	11/18/2011	11/18/2011
'1350Z7Q23	CA1350Z7Q239	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/5/2012	0.01	14,900,000.00	14,883,610.00	14,882,920.72	STSEL	11/18/2011	11/18/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	25,000,000.00	24,963,500.00	24,965,459.19	STSEL	11/18/2011	11/18/2011
'13509PCT8	CA13509PCT80	FIXED INCOME	GOVERNMENT ISSUES	CANADA HOUSING TRUST	6/15/2016	2.75	125,829,000.00	131,881,374.90	128,328,352.47	SELL	11/23/2011	11/28/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	25,000,000.00	24,967,250.00	24,967,121.18	STSEL	11/23/2011	11/23/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	25,000,000.00	24,967,250.00	24,967,121.18	STSEL	11/23/2011	11/23/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	40,000,000.00	39,948,400.00	39,947,113.56	STSEL	11/24/2011	11/24/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	13,000,000.00	12,983,490.00	12,982,651.91	STSEL	11/24/2011	11/24/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	13,000,000.00	12,983,490.00	12,982,855.20	STSEL	11/24/2011	11/24/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	40,000,000.00	39,948,400.00	39,946,910.27	STSEL	11/24/2011	11/24/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	20,000,000.00	19,970,200.00	19,969,460.32	STSEL	11/29/2011	11/29/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	25,000,000.00	24,963,500.00	24,949,155.52	STSEL	11/30/2011	11/30/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	25,000,000.00	24,963,500.00	24,963,476.83	STSEL	11/30/2011	11/30/2011
'1350Z7QB3	CA1350Z7QB32	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	1/19/2012	0.01	7,700,000.00	7,691,915.00	7,691,192.51	STSEL	12/2/2011	12/2/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	20,000,000.00	19,974,600.00	19,972,288.88	STSEL	12/6/2011	12/6/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	11,000,000.00	10,986,250.00	10,984,926.66	STSEL	12/7/2011	12/7/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	25,000,000.00	24,970,000.00	24,966,708.18	STSEL	12/8/2011	12/8/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	12,000,000.00	11,985,840.00	11,983,818.95	STSEL	12/8/2011	12/8/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	25,000,000.00	24,962,750.00	24,959,996.25	STSEL	12/9/2011	12/9/2011
'13508ZQ0	CA13508ZQ03	FIXED INCOME	GOVERNMENT ISSUES	CANADIAN GOVERNMENT	9/1/2016	2.75	14,880,000.00	15,884,400.00	15,812,874.84	SELL	12/12/2011	12/15/2011
'1350Z7Q56	CA1350Z7Q569	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/2/2012	0.01	4,500,000.00	4,495,005.00	4,494,365.53	STSEL	12/12/2011	12/12/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	3,300,000.00	3,300,000.00	3,294,933.07	STSEL	12/13/2011	12/13/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	3,300,000.00	3,295,380.00	3,294,933.07	STSEL	12/13/2011	12/13/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	21,500,000.00	21,469,900.00	21,465,968.57	STSEL	12/14/2011	12/14/2011
'1350Z7RD8	CA1350Z7RD88	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/29/2012	0.01	10,000,000.00	9,976,300.00	9,974,227.27	STSEL	12/15/2011	12/15/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	25,000,000.00	24,965,500.00	24,961,319.79	STSEL	12/15/2011	12/15/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	3,000,000.00	2,995,920.00	2,995,470.12	STSEL	12/16/2011	12/16/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	31,000,000.00	30,962,800.00	30,957,011.66	STSEL	12/21/2011	12/21/2011
'1350Z7QE7	CA1350Z7QE70	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	2/16/2012	0.01	10,700,000.00	10,687,160.00	10,685,469.49	STSEL	12/22/2011	12/22/2011
'1350Z7Q98	CA1350Z7Q981	CASH EQUIVALENT	GOVERNMENT ISSUES	CANADA T BILL	3/1/2012	0.01	19,300,000.00	19,274,138.00	19,271,560.26	STSEL	12/30/2011	12/30/2011

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**2012.1 RR VEJ.1.9 Reference: The ICBC Investment Portfolio**

**1.9 Please provide a division of the investment portfolio based on basic and optional insurance.**

**1.9.1 Please provide a further division based on reserves (unearned premium and unpaid claims) and equity. I'd like to have four numbers for the current application: basic insurance reserves, basic insurance equity, optional insurance reserves, and optional insurance equity. Please provide these numbers for the past five years.**

**Response:**

**1.9**

ICBC manages one investment portfolio for both the Basic insurance business and Optional insurance business based on the premise that the duration of ICBC's Basic insurance liabilities and Optional insurance liabilities are similar. This approach allows ICBC to take advantage of the cost efficiencies associated with running one integrated portfolio. Consequently, ICBC is not able to provide a split of its portfolio based on Basic insurance and Optional insurance.

**1.9.1**

Please see the response to information request 2012.1 RR VEJ.1.9.

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**2012.1 RR VEJ.1.10 Reference: The ICBC Investment Portfolio**

**Please provide five years worth of previous editions of the "Statement of Investment Policy and Procedures" booklet.**

**Response:**

Please see Attachment A – Statement of Investment Policy and Procedures – 2007 to 2011 in effect at December 31 for each year.



# **2012.1 RR VEJ.1.10 – Attachment A – Statement of Investment Policy and Procedures – 2007 to 2011**

**INSURANCE CORPORATION OF BRITISH COLUMBIA**

**STATEMENT OF INVESTMENT**

**POLICY AND PROCEDURES**

**NOVEMBER 29, 2007**

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# INSURANCE CORPORATION OF BRITISH COLUMBIA

## Statement of Investment Policies and Procedures

### 1 PURPOSE

The purpose of this investment policy is to establish guidelines which will ensure ICBC's assets are managed prudently. The investment policy will establish eligible investments, asset allocation ranges and the discretion given to fund managers, and consequently dictate the portfolio risk return profile.

### 2 CORPORATE LIABILITY & RISK PROFILE

ICBC is a public automobile insurance company providing compulsory basic automobile insurance and optional extension insurance.

As of December 31, 2002, ICBC's liabilities were profiled as follows:

	Liabilities (\$000)	Duration in Years
Basic	3,758,796	2.68
Optional	1,779,681	2.93
Total	5,538,477	2.77

For the purposes of prudence and efficiency, ICBC will continue to manage one investment portfolio for both Basic and Optional insurance businesses since the duration of the liabilities for each respective business are similar.

Like other insurers, ICBC's liabilities are subject to inflation risk and can be sensitive to price increases.

ICBC has significant cash needs due to the volatility of claims payments. However, the relative predictability and volume of premium cashflows considerably reduce ICBC's cashflow risks.

Additionally, ICBC is a non-taxable provincial corporation and benefits from the financial integrity of the Province of British Columbia.

### **3 REGULATORY FRAMEWORK**

The legislative framework with respect to ICBC's obligations and responsibilities in the management of its investment portfolio is based on the "prudent person rule". This general prudent person standard is set out in section 492 of the *Insurance Companies Act (Canada)*. This standard requires ICBC to make investments for its insurance business in the manner that "a reasonable and prudent person would apply in respect of a portfolio of investments to avoid undue risk of loss and to obtain a reasonable return".

The specific statutory framework and asset class limits with respect to ICBC's investments are outlined in Section 29 of the *Insurance Corporation Act* and Section 2 of the Application of Legislation Regulation, BC Reg. 322/03 deposited.

The regulatory asset class limits applicable to ICBC's investment policy are as follows:

1. real estate investments are limited to 10% of total assets, as that term is defined;
2. the value of participating shares or other ownership interests in unincorporated businesses cannot exceed 25% of total assets;
3. investments in (a) and (b) in the aggregate cannot exceed 30% of assets; and
4. commercial and consumer lending cannot exceed 5% of total assets.

It should be noted that the ICBC investment policy may prescribe more restrictive limits than those established by the legislative framework.

### **4 ROLES AND RESPONSIBILITIES**

#### **1. Board of Directors**

Under Corporate By-Laws, the Board of Directors has the responsibilities to define and control strategies, policies and limitations related to the investment of the Corporation's funds, exercise voting rights attached to corporate securities, provide for the custody of assets, registration of securities and the disposition of investments. The execution of most of these responsibilities has been delegated to Officers of the Corporation and the Investment Committee. The Board of Directors still retains responsibility for major changes to investment policies and procedures.

## 2. Investment Committee

The Investment Committee has the following responsibilities:

- a) recommends to the Board of Directors investment policies and procedures regarding:
  - return objectives
  - risk parameters
  - asset allocation parameters
  - eligible investments
- b) approves management's recommendation for external investment management services for the fund
- c) approves performance benchmarks
- d) ensures policy compliance, and
- e) monitors investment performance.

## 3. Investment Management

Investment managers have the following responsibilities:

- a) recommend investment policies to the Investment Committee;
- b) develop investment strategies to meet investment objectives;
- c) manage all day-to-day investment decisions;
- d) ensure adequate cashflows to meet the Corporation's payment obligations;
- e) ensures policy compliance and investment performance is monitored and reported independently to the Investment Committee;
- f) assemble required resources for the management and operations of the investment portfolio; and
- g) arrange custodial and securities lending services.

## **5 CONFLICT OF INTEREST**

All actual, potential, or perceived conflicts of interest between all parties associated with the investment of insurance assets, including officers, directors, designated employees, employees or agents of ICBC shall be disclosed before any decision regarding the specific transactions are completed. If a conflict of interest arises, the party shall disclose such a conflict to the Chair of the Investment Committee or in the Chair's absence, the acting Chair. The party must be excluded from participating in any discussion or decision related to the area of conflict.

The Secretary of the Investment Committee will be responsible for recording the declaration of conflict and will advise the Board of Directors of the details of the conflict.

Guidance on what constitutes conflicts of interest will be provided by:

1. Section 2.04 of the Corporate By-Law No. 6 dated March 3, 2005 of the Insurance Corporation of British Columbia;
2. The Insurance Corporation of British Columbia, Investment Department, Conflict of Interest Rules dated May 26, 2005, for designated employees; and
3. The Insurance Corporation of British Columbia's Code of Ethics for officers and employees of ICBC.

## **6 ASSET ALLOCATION**

### Strategic Asset Mix

The strategic asset mix is used to set the total return performance benchmark for the portfolio.

It establishes the long-term combination of asset classes normally split into two major groups categorized as fixed income or equities. The fixed income category includes all interest-bearing instruments like bonds, mortgages and money market instruments. The equity category includes investments exhibiting elements of participation in ownership like common stocks and real estate.

The optimal strategic asset mix is determined based on expected rate of return for each asset class for the forecasting period and their associated range of returns expressed in standard deviations. Liquidity, risk constraints, and cashflow considerations are also incorporated in the determination of the strategic asset mix.

### Tactical Asset Mix

Tactical asset mix focuses on short-term asset allocations that attempt to increase investment return through these opportunistic shifts in asset weightings. Since tactical asset allocation can both add or detract from the overall strategic asset mix return, the extent of tactical asset mix decisions are limited by the following ranges. These ranges are set in consideration of the overall financial strength of ICBC and its sensitivity to negative or positive investment returns.

## Asset Mix Ranges

Asset Class	Tactical Minimum %	Strategic Mix %	Tactical Maximum %
<b>Fixed Income</b>	<b>62.0</b>	<b>72.0</b>	<b>83.0</b>
Money Market	0	2.0	5.0
Canadian Bonds	52.0	57.0	62.0
Global Bonds	4.0	5.0	6.0
Mortgages	6.0	8.0	10.0
<b>Equity</b>	<b>20.0</b>	<b>23.0</b>	<b>28.0</b>
Canadian Equities	10.0	13.0	16.0
US Equities	4.0	5.0	6.0
EAFE Equities	4.0	5.0	6.0
<b>Real Estate</b>	<b>4.0</b>	<b>5.0</b>	<b>6.0</b>

## **7 INVESTMENT RISK**

Diversification of investment risk between asset classes is provided through the asset allocation guidelines set forth in the previous section.

Investment risk guidelines within each asset class is set out in the definitions of eligible investments.

## **8 RETURN OBJECTIVES AND PERFORMANCE MEASUREMENT**

The return objectives for ICBC's investment portfolio is to achieve superior investment returns through management of its assets subject to level of risk deemed appropriate by the policy.

ICBC will measure individual asset categories against the appropriate index with added excess returns. Measurement will be assessed after associated management fees over four-year moving periods.

Below is a list of the appropriate benchmarks for each asset class and the expected incremental return for active management.

<b>ASSET CLASS BENCHMARK</b>	<b>BENCHMARK</b>	<b>TARGET EXCESS RETURN</b>
<b>Fixed Income</b>		
Money Market	DEX 91-day T-Bill Index	+12.5 basis points
Canadian Bonds	Weighting of: <ul style="list-style-type: none"> <li>▪ 90% of DEX Short Term Bond Index</li> <li>▪ 10% of DEX Universe Bond Index</li> </ul>	+15 basis points
Global Bonds	Global bond benchmark <ul style="list-style-type: none"> <li>▪ Merrill Lynch Global Government Index Series: <ul style="list-style-type: none"> <li>– 50% G0Q0</li> <li>– 10% G0Y0</li> <li>– 33% EG00</li> <li>– 7% G0L0</li> </ul> </li> </ul>	+15 basis points
Mortgages	DEX Short Term Bond Index + 100 basis points	N/A
<b>Equities</b>		
Canadian Equities	S&P/TSX 10% Capped Composite Index	+75 basis points
US Equities	S&P 500	+50 basis points
EAFE Equities	MSCI EAFE Index	+100 basis points
<b>Real Estate</b>	ICREIM/IPD Canadian Index	N/A

In addition, the total fund investment return will be expected to exceed the weighted average of benchmark returns for the strategic asset mix plus an excess return over four years of 0.268%.

Investment returns will be reported to the Investment Committee on a quarterly basis. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Non-publicly traded securities shall be valued at cost or valued by a qualified appraiser at least every three years as in the case of real estate. Performance standards established by the Association of Investment Management and Research will be applied.

## **9 OPERATING PRACTICES**

### **1. Trading Activity**

Trading transactions are left to the discretion of the investment manager based on the criteria of achieving the most cost-effective result.

### **2. Trading Authority**

Each investment manager takes their trading authority and limits directly from the parameters set out in the appropriate section of the Statement of Investment Policies and Procedures.

## **10 ELIGIBLE INVESTMENTS**

### **10.1 MONEY MARKET INVESTMENTS**

Money market investments will include all debt securities with maturities under one year.

#### **Quality**

All money market investments must be rated investment grade by a recognized rating agency and have the senior long term debt of the corporation rated BBB, if applicable. In the case of split ratings, Dominion Bond Rating Service (DBRS) will be considered the appropriate rating. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated R1 High or better
- 50% of the portfolio will be rated R1 Mid or better
- 95% of the portfolio will be rated R1 Low or better
- 100% of the portfolio will be rated R2 High or better

## Diversification

Money market investments will be diversified to reduce the risk of loss resulting from the over concentration of assets with a specific issuer or a specific type of security. Individual issuer exposure will be limited to 25% of the overall money market portfolio to a maximum of \$50 million, except for AAA government guaranteed debt in which case limits do not apply. Category limits are as follows:

	<u>Rating</u>	<u>Category Limit</u>
Province of BC and guarantees	N/A	no restrictions
AAA Governments and guarantees	R1 High	no restrictions
All other Provinces & guarantees		75% of mmkt portfolio
Bank Debt		50% of mmkt portfolio
Commercial Paper		50% of mmkt portfolio
Sovereign Credits	R1 High	25% of mmkt portfolio

## Liquidity

Liquidity will be maintained by emphasizing the most marketable and liquid types of securities. These factors will be achieved by using criteria that will ensure that issues can be sold quickly with little or no concession from quoted prices.

## Other Considerations:

Repurchase Agreements are permitted where proper documentation is in place and all other guidelines are met.

## Call Loan Agreements

Call loan agreements are permitted for periods less than a week where collateral is posted meeting ICBC's quality constraints and is at least 102.5% of the amount lent.

## **10.2 BOND INVESTMENTS**

ICBC can invest in secured and unsecured floating, fixed rate and inflation linked debt obligations denominated in Canadian dollars or any major foreign currency of Canadian and foreign corporations, governments and government agencies, and supranational development banks.

Private placement bonds are permitted provided it can be demonstrated that they conform to quality and diversification guidelines.

All bond investments will comply with the following guidelines:

### Quality

All domestic bonds must be rated BBB and foreign bonds must be rated A by a recognized rating agency. In the case of split ratings, Dominion Bond Rating Service (DBRS) will be considered the appropriate rating for Canadian bonds, and Standard & Poor's (S&P) will be considered the appropriate rating for foreign bonds. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
Federal, BC & BCMFA	no restriction	no restriction
Major Province (Alta, Ont, & Que)	no restriction	33% of total portfolio
Minor Province	no restriction	16% of total portfolio
Municipal	20% of total portfolio	5% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	20% of total portfolio	2% of total portfolio
Derivatives	10% of total portfolio	2% of total portfolio
Foreign	10% of total portfolio	2% of total portfolio

### Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in Government of Canada, Government of Canada Agency and major Provincial bonds at all times.

### Duration

The duration of the Canadian bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 3.0 years and the performance benchmark is a weighting of 90% of DEX Short Term Bond Index and 10% of DEX Universe Bond Index.

### Related Securities

Coupons, residuals, and synthetic securities will fall under the category and guidelines of the underlying security.

## **10.3 MORTGAGES**

ICBC can invest in long-term mortgages through one or all of the following vehicles: open or closed end pools, segregated funds, NHA mortgage-backed securities and direct mortgage loans. With the approval of the Investment Committee, ICBC can sell its mortgage portfolio, in whole or in part, directly or through securitization, to the public market.

### Credit risk philosophy

The Corporate credit risk philosophy towards mortgage investments is to focus the lending activities on premium loans, in order to maintain a mortgage portfolio of the highest quality with low inherent risk of default, while achieving an acceptable investment return.

### Credit risk assessment

A credit risk assessment must be completed for each loan application and retained with the loan documentation based upon what a reasonable and prudent person would require under the circumstances.

### Prohibition

1. ICBC cannot invest in a mortgage on a property where ICBC is a tenant under a lease with the owner/borrower.
2. As a general policy, ICBC will not lend on construction loans, except if the following criteria are met or subject to approval of the Investment Committee:
  - a) Recourse financing with clients with very strong covenant;
  - b) Minimum Required Pre-leasing, except multi-family, in place (MRP – as defined under guideline) with approved tenants;
  - c) ICBC is confirmed to be the long-term take out mortgagee of the construction loan, except if a pre-sale agreement is in place; and
  - d) Construction loan on multi-family projects requires either confirmed long-term take out mortgage from ICBC or pre-sale agreements in place.
3. ICBC cannot invest in second or third mortgages.

## Quality

The quality of the mortgage portfolio will be maintained by adhering to the following guidelines:

1. Insured mortgage investments will not exceed 85% of the purchase price or appraised value of the real estate it is secured against.
2. Conventional mortgages will not exceed 75% of the purchase price or appraised value of the real estate it is secured against.
3. No further encumbrance to the property is allowed, except with approval of the Investment Committee.

## Diversification:

1. No single mortgage will account for more than 5% of the market value of the mortgage portfolio.
2. ICBC will not provide to any one borrower mortgage financing greater than 10% of the mortgage portfolio.
3. At no time is the aggregate amount of all construction loans to exceed 20% of the Committed and Funded portfolio

In addition, diversification will be achieved by property type and location using the following guidelines:

<u>Property Type</u>	<u>Target</u>	<u>Range</u>
	%	%
Office	25	15 - 35
Retail	25	15 - 35
Industrial	25	15 - 35
Residential	20	10 - 30
Other	5	0 - 10

<u>Location</u>	<u>Target</u>	<u>Range</u>
	%	%
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Quebec & Maritimes	5	0 - 10

### Duration

The duration of the mortgage portfolio will not be permitted to deviate from the DEX Short Term Bond Index by more than 1.5 years.

### Real Estate Appraisals

The Manager Mortgage Investment will obtain an independent real estate appraisal if the loan to value ratio is judged to be in excess of 60%. For all loans under a loan to value ratio of 60%, an in-house appraisal should be compiled, supported by market based assessments, where applicable and available.

## **10.4 EQUITIES**

Canadian and foreign equity investments will be made through direct holdings of securities (common shares, convertible preferred shares, convertible debentures, options, warrants, installment receipts, rights, etc.), stock index futures contracts, equity linked bonds and swaps or indirectly through pooled and mutual funds or any combination of the above.

### Diversification

Diversification will be maintained by restricting the number of equity holdings in any separate asset class to no less than 20 individual holdings. No single issuer will represent more than 10% of the portfolio's equity exposure as calculated by market value.

### Liquidity

Liquidity will be maintained by limiting equity holdings to securities listed on major exchanges. No more than 20% of the equity portfolio will be invested in companies with market capitalization of less than \$100 million.

## **10.5 REAL ESTATE**

Real estate investments will be made on an active basis by investing directly in individual revenue producing real estate assets or in segregated fund accounts with third party investment managers who in turn invest in individual revenue producing real estate assets. Real estate investments may also be in the form of joint ventures or co-ownership vehicles with like-minded investors. The selection of any investment manager, joint venture partner or co-ownership vehicle requires the prior approval of the Investment Committee.

## Quality

1. Focus should be on good quality core properties of institutional investment quality that are cash flow yield oriented.
2. Investments will not be made in specialty properties, defined as any property with a business component such as hotels, motels, retirement homes, and mini warehouses.
3. Investment in opportunistic properties, defined as any property that requires repositioning or development with a view to creating value, will only be permitted with specific approval of the full ICBC Board of Directors.
4. Investments will not be made in properties specifically for development purposes.

## Diversification

Portfolio risk is to be minimized through product type and geographic location diversification and through the acquisition of quality properties that feature maximum liquidity.

### 1. Geographic Diversification

Investments will be made in major Canadian metropolitan areas, being defined as urban areas with a population base greater than 250,000 persons and will be based on the following guidelines

<u>Location</u>	<u>Target</u> %	<u>Range</u> %
British Columbia	25	15-35
Prairies	25	15-35
Ontario	45	30-60
Quebec & Maritimes	5	0-10

### 2. Product Type Diversification

The portfolio is to be diversified across office, industrial, retail and residential properties with the following guidelines as a percentage of the total Investment Real Estate allocation:

<u>Property Type</u>	<u>Target</u> %	<u>Range</u> %
Office	35	20 - 50
Industrial	35	20 – 50
Retail	20	10 - 30
Residential	10	0 - 20

All diversification measures will be made as if the portfolio allocation was fully funded.

3. Investment Concentration

- a) Risk diversification will be maintained in order to minimize the exposure in any single investment.
- b) No single investment should account for more than 15% of the Investment Real Estate allocation.
- c) Properties with a value of less than \$5 million will not be considered.

4. Level of Liquidity

- a) Property specific exit strategies will be identified for all real estate assets at the time of acquisition and will be reviewed and updated on a regular basis.
- b) Due to their illiquid nature, segregated funds should be limited to no more than 20% of the portfolio.

Use of Debt (Leverage)

1. The use of debt or leverage will not be permitted except at the time of acquisition of a specific property. Such debt will be considered within the approval of the acquisition on the basis that it will be discharged upon maturity. Any such debt will be included in the gross amount invested, as it will be converted to equity as soon as allowable under the mortgage agreement.
2. At no time would the total exposure to debt exceed the permitted statutory limits for any particular property or 25% of the value of the total real estate portfolio.

Approvals & Authorities

1. Major decision-making, defined as the decision to buy or sell a property with a value in excess of \$20 million or any exception to this policy, requires the approval of the full ICBC Board of Directors.
2. The decision to buy or sell a property with a value of less than \$20 million requires the approval of the Investment Committee.

Delegation Policy

1. As a general delegation policy, the Manager Real Estate Investments shall be responsible for the day-to-day operations of the real estate investment portfolio.
2. The Manager Real Estate Investments has the ability to delegate the day-to-day property management functions to third party property managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## Valuation of Real Estate Investments

In order to achieve a sound portfolio of real estate investments, the following prudent real estate appraisal policies are required:

1. Prior to the acquisition or sale of any property a full external appraisal which conforms to the AIC appraisal standards will be completed;
2. Appraisal companies utilized should meet the AIC standards as well as carry appropriate errors & omissions insurance; and
3. Real estate assets should be re-appraised whenever management determines that there has been a material change in the condition and quality of the investment or of the general economic and real estate market conditions or at a minimum every three years. Between external appraisals, an internally prepared estimate of value will be prepared annually.

## Annual Budgets

Budgets will be prepared annually for each investment property that will include annual operating and cash flow budgets together with a summary of budgeted capital expenditures and an updated valuation of the property.

## Related Party Transactions

Inter-company transactions may be entered into between different operating divisions of ICBC for the use of real estate provided the transaction must be treated by management as an arms-length transaction, with market-based lease agreements between the two parties.

Related party transactions may be entered into with specific approval of the full ICBC Board of Directors, providing the terms and conditions of the transaction are at market. For purposes of this section, a related party is as defined by OSFI.

## **10.6 DERIVATIVE INSTRUMENTS**

Swaps, options, forwards, future contracts and other derivative instruments are permitted as long as they are used to hedge portfolio risks or enhance portfolio returns. These strategies can involve foreign exchange components on a hedged basis.

Derivatives are not permitted to lever the portfolio or increase portfolio risk (speculation). Derivatives can only be applied to asset classes contemplated in the Investment Policy. Derivatives will not be used to extend asset class weights outside the stated asset mix ranges.

All derivative activity will be disclosed to the Investment Committee on a quarterly basis.

## **10.7 BORROWING AUTHORITY**

In general, neither the Investment Department nor the external managers can borrow funds directly to make investments. Exceptions include short-term borrowing to finance temporary cash flow shortfalls, financing techniques to support customer payment plans, real estate transactions, and derivative transactions where financing techniques are used to hedge revenue enhancing strategies.

## **11 VOTING RIGHTS**

Portfolio managers will exercise any voting powers and execute any proxies in conjunction with all the securities held in the Portfolio. Voting rights will be exercised in the best financial interests of ICBC. Issues deemed to be of concern to the Board will be brought to the attention of the Chair of the Investment Committee.

## **12 SECURITIES LENDING**

The Insurance Portfolio may lend its securities provided that:

1. the loan is secured by collateral that has a market value equal to or greater than 105% of the value of the loaned securities;
2. the loan and collateral are valued daily on a "market-to-market" basis;
3. the collateral meets all investment criteria of the Insurance Portfolio;
4. all potential borrowers have been approved by ICBC; and,
5. all appropriate agreements and documentation have been completed.

## **13 POLICY REVIEW**

This investment policy will be reviewed annually to confirm that the existing asset allocations will result in the best projected investment return for the selected risk level. Current economic and political conditions will be reviewed to ascertain if the necessary conditions exist for the investment policies to succeed. Current guidelines will be reviewed to maintain their relevance and updated if changes are required. The annual review will not prohibit the interim modification of the investment policy if there have been fundamental changes which affect the underlying assumptions of the investment policy.

**INSURANCE CORPORATION OF BRITISH COLUMBIA**

**STATEMENT OF INVESTMENT**

**POLICY AND PROCEDURES**

**SEPTEMBER 25,2008**

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# INSURANCE CORPORATION OF BRITISH COLUMBIA

## Statement of Investment Policies and Procedures

### 1 PURPOSE

The purpose of this investment policy is to establish guidelines which will ensure ICBC's assets are managed prudently. The investment policy will establish eligible investments, asset allocation ranges and the discretion given to fund managers, and consequently dictate the portfolio risk return profile.

### 2 CORPORATE LIABILITY & RISK PROFILE

ICBC is a public automobile insurance company providing compulsory basic automobile insurance and optional extension insurance.

As of December 31, 2002, ICBC's liabilities were profiled as follows:

	Liabilities (\$000)	Duration in Years
Basic	3,758,796	2.68
Optional	1,779,681	2.93
Total	5,538,477	2.77

For the purposes of prudence and efficiency, ICBC will continue to manage one investment portfolio for both Basic and Optional insurance businesses since the duration of the liabilities for each respective business are similar.

Like other insurers, ICBC's liabilities are subject to inflation risk and can be sensitive to price increases.

ICBC has significant cash needs due to the volatility of claims payments. However, the relative predictability and volume of premium cashflows considerably reduce ICBC's cashflow risks.

Additionally, ICBC is a non-taxable provincial corporation and benefits from the financial integrity of the Province of British Columbia.

### **3 REGULATORY FRAMEWORK**

The legislative framework with respect to ICBC's obligations and responsibilities in the management of its investment portfolio is based on the "prudent person rule". This general prudent person standard is set out in section 492 of the *Insurance Companies Act (Canada)*. This standard requires ICBC to make investments for its insurance business in the manner that "a reasonable and prudent person would apply in respect of a portfolio of investments to avoid undue risk of loss and to obtain a reasonable return".

The specific statutory framework and asset class limits with respect to ICBC's investments are outlined in Section 29 of the *Insurance Corporation Act* and Section 2 of the Application of Legislation Regulation, BC Reg. 322/03 deposited.

The regulatory asset class limits applicable to ICBC's investment policy are as follows:

1. real estate investments are limited to 10% of total assets, as that term is defined;
2. the value of participating shares or other ownership interests in unincorporated businesses cannot exceed 25% of total assets;
3. investments in (a) and (b) in the aggregate cannot exceed 30% of assets; and
4. commercial and consumer lending cannot exceed 5% of total assets.

It should be noted that the ICBC investment policy may prescribe more restrictive limits than those established by the legislative framework.

### **4 ROLES AND RESPONSIBILITIES**

#### **1. Board of Directors**

Under Corporate By-Laws, the Board of Directors has the responsibilities to define and control strategies, policies and limitations related to the investment of the Corporation's funds, exercise voting rights attached to corporate securities, provide for the custody of assets, registration of securities and the disposition of investments. The execution of most of these responsibilities has been delegated to Officers of the Corporation and the Investment Committee. The Board of Directors still retains responsibility for major changes to investment policies and procedures.

## 2. Investment Committee

The Investment Committee has the following responsibilities:

- a) recommends to the Board of Directors investment policies and procedures regarding:
  - return objectives
  - risk parameters
  - asset allocation parameters
  - eligible investments
- b) approves management's recommendation for external investment management services for the fund
- c) approves performance benchmarks
- d) ensures policy compliance, and
- e) monitors investment performance.

## 3. Investment Management

Investment managers have the following responsibilities:

- a) recommend investment policies to the Investment Committee;
- b) develop investment strategies to meet investment objectives;
- c) manage all day-to-day investment decisions;
- d) ensure adequate cashflows to meet the Corporation's payment obligations;
- e) ensures policy compliance and investment performance is monitored and reported independently to the Investment Committee;
- f) assemble required resources for the management and operations of the investment portfolio; and
- g) arrange custodial and securities lending services.

## **5 CONFLICT OF INTEREST**

All actual, potential, or perceived conflicts of interest between all parties associated with the investment of insurance assets, including officers, directors, designated employees, employees or agents of ICBC shall be disclosed before any decision regarding the specific transactions are completed. If a conflict of interest arises, the party shall disclose such a conflict to the Chair of the Investment Committee or in the Chair's absence, the acting Chair. The party must be excluded from participating in any discussion or decision related to the area of conflict.

The Secretary of the Investment Committee will be responsible for recording the declaration of conflict and will advise the Board of Directors of the details of the conflict.

Guidance on what constitutes conflicts of interest will be provided by:

1. Section 2.04 of the Corporate By-Law No. 6 dated March 3, 2005 of the Insurance Corporation of British Columbia;
2. The Insurance Corporation of British Columbia, Investment Department, Conflict of Interest Rules dated May 26, 2005, for designated employees; and
3. The Insurance Corporation of British Columbia's Code of Ethics for officers and employees of ICBC.

## **6 ASSET ALLOCATION**

### Strategic Asset Mix

The strategic asset mix is used to set the total return performance benchmark for the portfolio.

It establishes the long-term combination of asset classes normally split into two major groups categorized as fixed income or equities. The fixed income category includes all interest-bearing instruments like bonds, mortgages and money market instruments. The equity category includes investments exhibiting elements of participation in ownership like common stocks and real estate.

The optimal strategic asset mix is determined based on expected rate of return for each asset class for the forecasting period and their associated range of returns expressed in standard deviations. Liquidity, risk constraints, and cashflow considerations are also incorporated in the determination of the strategic asset mix.

### Tactical Asset Mix

Tactical asset mix focuses on short-term asset allocations that attempt to increase investment return through these opportunistic shifts in asset weightings. Since tactical asset allocation can both add or detract from the overall strategic asset mix return, the extent of tactical asset mix decisions are limited by the following ranges. These ranges are set in consideration of the overall financial strength of ICBC and its sensitivity to negative or positive investment returns.

## Asset Mix Ranges

Asset Class	Tactical Minimum %	Strategic Mix %	Tactical Maximum %
<b>Fixed Income</b>	<b>62.0</b>	<b>72.0</b>	<b>83.0</b>
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Below is a list of the appropriate benchmarks for each asset class and the expected incremental return for active management.

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Money Market	DEX 91-day T-Bill Index	+12.5 basis points
Canadian Bonds	Weighting of: <ul style="list-style-type: none"> <li>▪ 90% of DEX Short Term Bond Index</li> <li>▪ 10% of DEX Universe Bond Index</li> </ul>	+15 basis points
US Bonds	Weighting of: <ul style="list-style-type: none"> <li>– 90% Merrill Lynch Short-Term US Domestic Master Bond Index (DVA0)</li> <li>– 10% Merrill Lynch Domestic Master Bond Index (D0A0)</li> </ul>	+20 basis points
Mortgages	DEX Short Term Bond Index + 100 basis points	N/A
<b>Equities</b>		
Canadian Equities	S&P/TSX 10% Capped Composite Index	+75 basis points
US Equities	S&P 500	+50 basis points
EAFE Equities	MSCI EAFE Index	+100 basis points
<b>Real Estate</b>	ICREIM/IPD Canadian Index	N/A

In addition, the total fund investment return will be expected to exceed the weighted average of benchmark returns for the strategic asset mix plus an excess return over four years of 0.271%.

Investment returns will be reported to the Investment Committee on a quarterly basis. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Non-publicly traded securities shall be valued at cost or valued by a qualified appraiser at least every three years as in the case of real estate. Performance standards established by the Association of Investment Management and Research will be applied.

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Each investment manager takes their trading authority and limits directly from the parameters set out in the appropriate section of the Statement of Investment Policies and Procedures.

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### **10.1 MONEY MARKET INVESTMENTS**

Money market investments will include all debt securities with maturities under one year.

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All money market investments must be rated investment grade by a recognized rating agency and have the senior long term debt of the corporation rated BBB, if applicable. In the case of split ratings, Dominion Bond Rating Service (DBRS) will be considered the appropriate rating. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated R1 High or better
- 50% of the portfolio will be rated R1 Mid or better
- 95% of the portfolio will be rated R1 Low or better
- 100% of the portfolio will be rated R2 High or better

## Diversification

Money market investments will be diversified to reduce the risk of loss resulting from the over concentration of assets with a specific issuer or a specific type of security. Individual issuer exposure will be limited to 25% of the overall money market portfolio to a maximum of \$50 million, except for AAA government guaranteed debt in which case limits do not apply. Category limits are as follows:

	<u>Rating</u>	<u>Category Limit</u>
Province of BC and guarantees	N/A	no restrictions
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Bank Debt		50% of mmkt portfolio
Commercial Paper		50% of mmkt portfolio
Sovereign Credits	R1 High	25% of mmkt portfolio

## Liquidity

Liquidity will be maintained by emphasizing the most marketable and liquid types of securities. These factors will be achieved by using criteria that will ensure that issues can be sold quickly with little or no concession from quoted prices.

## Other Considerations:

Repurchase Agreements are permitted where proper documentation is in place and all other guidelines are met.

## Call Loan Agreements

Call loan agreements are permitted for periods less than a week where collateral is posted meeting ICBC's quality constraints and is at least 102.5% of the amount lent.

## **10.2 BOND INVESTMENTS**

ICBC can invest in secured and unsecured floating, fixed rate and inflation linked debt obligations denominated in Canadian dollars or any major foreign currency of Canadian and foreign corporations, governments and government agencies, and supranational development banks.

Private placement bonds are permitted provided it can be demonstrated that they conform to quality and diversification guidelines.

## Canadian Bond Portfolio

All Canadian bond investments will comply with the following guidelines:

### Quality

All domestic bonds must be rated a minimum of BBB and foreign bonds must be rated A by a recognized rating agency. In the case of split ratings, Dominion Bond Rating Service (DBRS) will be considered the appropriate rating for Canadian bonds, and Standard & Poor's (S&P) will be considered the appropriate rating for foreign bonds. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
Federal, BC & BCMFA	no restriction	no restriction
Major Province (Alta, Ont, & Que)	no restriction	33% of total portfolio
Minor Province	no restriction	16% of total portfolio
Municipal	20% of total portfolio	5% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	20% of total portfolio	2% of total portfolio
Derivatives	10% of total portfolio	2% of total portfolio
Foreign	10% of total portfolio	2% of total portfolio

### Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in Government of Canada, Government of Canada Agency and major Provincial bonds at all times.

### Duration

The duration of the Canadian bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 3.0 years and the performance benchmark is a weighting of 90% of DEX Short Term Bond Index and 10% of DEX Universe Bond Index.

## US Bonds

All US bond investments will comply with the following guidelines:

### Quality

All US bonds must be rated a minimum of BBB. In the case of split ratings, Standard and Poors (S&P) will be considered the appropriate rating for US bonds. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
US Treasuries	no restriction	no restriction
Quasi Government	10% of total portfolio	3% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	25% of total portfolio	2% of total portfolio

### Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in US Treasuries or Quasi Government bonds at all times.

### Duration

The duration of the US bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 3.0 years and the performance benchmark is a weighting of 90% of the Merrill Lynch Short-term US Domestic Master Bond Index (DVA0) and 10% of the US Domestic Master Bond Index (DOA0).

### Related Securities

Coupons, residuals, and synthetic securities will fall under the category and guidelines of the underlying security.

### 10.3 MORTGAGES

ICBC can invest in long-term mortgages through one or all of the following vehicles: open or closed end pools, segregated funds, NHA mortgage-backed securities and direct mortgage loans. With the approval of the Investment Committee, ICBC can sell its mortgage portfolio, in whole or in part, directly or through securitization, to the public market.

#### Credit risk philosophy

The Corporate credit risk philosophy towards mortgage investments is to focus the lending activities on premium loans, in order to maintain a mortgage portfolio of the highest quality with low inherent risk of default, while achieving an acceptable investment return.

#### Credit risk assessment

A credit risk assessment must be completed for each loan application and retained with the loan documentation based upon what a reasonable and prudent person would require under the circumstances.

#### Prohibition

1. ICBC cannot invest in a mortgage on a property where ICBC is a tenant under a lease with the owner/borrower.
2. As a general policy, ICBC will not lend on construction loans, except if the following criteria are met or subject to approval of the Investment Committee:
  - a) Recourse financing with clients with very strong covenant;
  - b) Minimum Required Pre-leasing, except multi-family, in place (MRP – as defined under guideline) with approved tenants;
  - c) ICBC is confirmed to be the long-term take out mortgagee of the construction loan, except if a pre-sale agreement is in place; and
  - d) Construction loan on multi-family projects requires either confirmed long-term take out mortgage from ICBC or pre-sale agreements in place.
3. ICBC cannot invest in second or third mortgages.

## Quality

The quality of the mortgage portfolio will be maintained by adhering to the following guidelines:

1. Insured mortgage investments will not exceed 85% of the purchase price or appraised value of the real estate it is secured against.
2. Conventional mortgages will not exceed 75% of the purchase price or appraised value of the real estate it is secured against.
3. No further encumbrance to the property is allowed, except with approval of the Investment Committee.

## Diversification:

1. No single mortgage will account for more than 5% of the market value of the mortgage portfolio.
2. ICBC will not provide to any one borrower mortgage financing greater than 10% of the mortgage portfolio.
3. At no time is the aggregate amount of all construction loans to exceed 20% of the Committed and Funded portfolio

In addition, diversification will be achieved by property type and location using the following guidelines:

<u>Property Type</u>	<u>Target</u>	<u>Range</u>
	%	%
Office	25	15 - 35
Retail	25	15 - 35
Industrial	25	15 - 35
Residential	20	10 - 30
Other	5	0 - 10

<u>Location</u>	<u>Target</u>	<u>Range</u>
	%	%
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Quebec & Maritimes	5	0 - 10

### Duration

The duration of the mortgage portfolio will not be permitted to deviate from the DEX Short Term Bond Index by more than 1.5 years.

### Real Estate Appraisals

The Manager Mortgage Investment will obtain an independent real estate appraisal if the loan to value ratio is judged to be in excess of 60%. For all loans under a loan to value ratio of 60%, an in-house appraisal should be compiled, supported by market based assessments, where applicable and available.

## **10.4 EQUITIES**

Canadian and foreign equity investments will be made through direct holdings of securities (common shares, convertible preferred shares, convertible debentures, options, warrants, installment receipts, rights, etc.), stock index futures contracts, equity linked bonds and swaps or indirectly through pooled and mutual funds or any combination of the above.

### Diversification

Diversification will be maintained by restricting the number of equity holdings in any separate asset class to no less than 20 individual holdings. No single issuer will represent more than 10% of the portfolio's equity exposure as calculated by market value.

### Liquidity

Liquidity will be maintained by limiting equity holdings to securities listed on major exchanges. No more than 20% of the equity portfolio will be invested in companies with market capitalization of less than \$100 million.

## **10.5 REAL ESTATE**

Real estate investments will be made on an active basis by investing directly in individual revenue producing real estate assets or in segregated fund accounts with third party investment managers who in turn invest in individual revenue producing real estate assets. Real estate investments may also be in the form of joint ventures or co-ownership vehicles with like-minded investors. The selection of any investment manager, joint venture partner or co-ownership vehicle requires the prior approval of the Investment Committee.

## Quality

1. Focus should be on good quality core properties of institutional investment quality that are cash flow yield oriented.
2. Investments will not be made in specialty properties, defined as any property with a business component such as hotels, motels, retirement homes, and mini warehouses.
3. Investment in opportunistic properties, defined as any property that requires repositioning or development with a view to creating value, will only be permitted with specific approval of the full ICBC Board of Directors.
4. Investments will not be made in properties specifically for development purposes.

## Diversification

Portfolio risk is to be minimized through product type and geographic location diversification and through the acquisition of quality properties that feature maximum liquidity.

### 1. Geographic Diversification

Investments will be made in major Canadian metropolitan areas, being defined as urban areas with a population base greater than 250,000 persons and will be based on the following guidelines

<u>Location</u>	<u>Target</u> %	<u>Range</u> %
British Columbia	25	15-35
Prairies	25	15-35
Ontario	45	30-60
Quebec & Maritimes	5	0-10

### 2. Product Type Diversification

The portfolio is to be diversified across office, industrial, retail and residential properties with the following guidelines as a percentage of the total Investment Real Estate allocation:

<u>Property Type</u>	<u>Target</u> %	<u>Range</u> %
Office	35	20 - 50
Industrial	35	20 - 50
Retail	20	10 - 30
Residential	10	0 - 20

All diversification measures will be made as if the portfolio allocation was fully funded.

3. Investment Concentration

- a) Risk diversification will be maintained in order to minimize the exposure in any single investment.
- b) No single investment should account for more than 15% of the Investment Real Estate allocation.
- c) Properties with a value of less than \$5 million will not be considered.

4. Level of Liquidity

- a) Property specific exit strategies will be identified for all real estate assets at the time of acquisition and will be reviewed and updated on a regular basis.
- b) Due to their illiquid nature, segregated funds should be limited to no more than 20% of the portfolio.

Use of Debt (Leverage)

1. The use of debt or leverage will not be permitted except at the time of acquisition of a specific property. Such debt will be considered within the approval of the acquisition on the basis that it will be discharged upon maturity. Any such debt will be included in the gross amount invested, as it will be converted to equity as soon as allowable under the mortgage agreement.
2. At no time would the total exposure to debt exceed the permitted statutory limits for any particular property or 25% of the value of the total real estate portfolio.

Approvals & Authorities

1. Major decision-making, defined as the decision to buy or sell a property with a value in excess of \$20 million or any exception to this policy, requires the approval of the full ICBC Board of Directors.
2. The decision to buy or sell a property with a value of less than \$20 million requires the approval of the Investment Committee.

Delegation Policy

1. As a general delegation policy, the Manager Real Estate Investments shall be responsible for the day-to-day operations of the real estate investment portfolio.
2. The Manager Real Estate Investments has the ability to delegate the day-to-day property management functions to third party property managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## Valuation of Real Estate Investments

In order to achieve a sound portfolio of real estate investments, the following prudent real estate appraisal policies are required:

1. Prior to the acquisition or sale of any property a full external appraisal which conforms to the AIC appraisal standards will be completed;
2. Appraisal companies utilized should meet the AIC standards as well as carry appropriate errors & omissions insurance; and
3. Real estate assets should be re-appraised whenever management determines that there has been a material change in the condition and quality of the investment or of the general economic and real estate market conditions or at a minimum every three years. Between external appraisals, an internally prepared estimate of value will be prepared annually.

## Annual Budgets

Budgets will be prepared annually for each investment property that will include annual operating and cash flow budgets together with a summary of budgeted capital expenditures and an updated valuation of the property.

## Related Party Transactions

Inter-company transactions may be entered into between different operating divisions of ICBC for the use of real estate provided the transaction must be treated by management as an arms-length transaction, with market-based lease agreements between the two parties.

Related party transactions may be entered into with specific approval of the full ICBC Board of Directors, providing the terms and conditions of the transaction are at market. For purposes of this section, a related party is as defined by OSFI.

## **10.6 DERIVATIVE INSTRUMENTS**

Swaps, options, forwards, future contracts and other derivative instruments are permitted as long as they are used to hedge portfolio risks or enhance portfolio returns. These strategies can involve foreign exchange components on a hedged basis.

Derivatives are not permitted to lever the portfolio or increase portfolio risk (speculation). Derivatives can only be applied to asset classes contemplated in the Investment Policy. Derivatives will not be used to extend asset class weights outside the stated asset mix ranges.

All derivative activity will be disclosed to the Investment Committee on a quarterly basis.

## **10.7 BORROWING AUTHORITY**

In general, neither the Investment Department nor the external managers can borrow funds directly to make investments. Exceptions include short-term borrowing to finance temporary cash flow shortfalls, financing techniques to support customer payment plans, real estate transactions, and derivative transactions where financing techniques are used to hedge revenue enhancing strategies.

## **11 VOTING RIGHTS**

Portfolio managers will exercise any voting powers and execute any proxies in conjunction with all the securities held in the Portfolio. Voting rights will be exercised in the best financial interests of ICBC. Issues deemed to be of concern to the Board will be brought to the attention of the Chair of the Investment Committee.

## **12 SECURITIES LENDING**

The Insurance Portfolio may lend its securities provided that:

1. the loan is secured by collateral that has a market value equal to or greater than 105% of the value of the loaned securities with the following exception:
  - i) the loan of US equity securities is secured by collateral that has a market value equal to or greater than 102% of the value of the loaned securities provided the loan is fully indemnified by the investment portfolio custodian
2. the loan and collateral are valued daily on a "market-to-market" basis;
3. the collateral meets all investment criteria of the Insurance Portfolio;
4. all potential borrowers have been approved by ICBC; and,
5. all appropriate agreements and documentation have been completed.

## **13 POLICY REVIEW**

This investment policy will be reviewed annually to confirm that the existing asset allocations will result in the best projected investment return for the selected risk level. Current economic and political conditions will be reviewed to ascertain if the necessary conditions exist for the investment policies to succeed. Current guidelines will be reviewed to maintain their relevance and updated if changes are required. The annual review will not prohibit the interim modification of the investment policy if there have been fundamental changes which affect the underlying assumptions of the investment policy.

**INSURANCE CORPORATION OF BRITISH COLUMBIA**

**STATEMENT OF INVESTMENT  
POLICY AND PROCEDURES**

**OCTOBER 29, 2009**

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# INSURANCE CORPORATION OF BRITISH COLUMBIA

## Statement of Investment Policies and Procedures

### 1 PURPOSE

The purpose of this investment policy is to establish guidelines which will ensure ICBC's assets are managed prudently. The investment policy will establish eligible investments, asset allocation ranges and the discretion given to fund managers, and consequently dictate the portfolio risk return profile.

### 2 CORPORATE LIABILITY & RISK PROFILE

ICBC is a public automobile insurance company providing compulsory basic automobile insurance and optional extension insurance.

As of December 31, 2002, ICBC's liabilities were profiled as follows:

	Liabilities (\$000)	Duration in Years
Basic	3,758,796	2.68
Optional	1,779,681	2.93
Total	5,538,477	2.77

For the purposes of prudence and efficiency, ICBC will continue to manage one investment portfolio for both Basic and Optional insurance businesses since the duration of the liabilities for each respective business are similar.

Like other insurers, ICBC's liabilities are subject to inflation risk and can be sensitive to price increases.

ICBC has significant cash needs due to the volatility of claims payments. However, the relative predictability and volume of premium cashflows considerably reduce ICBC's cashflow risks.

Additionally, ICBC is a non-taxable provincial corporation and benefits from the financial integrity of the Province of British Columbia.

### **3 REGULATORY FRAMEWORK**

The legislative framework with respect to ICBC's obligations and responsibilities in the management of its investment portfolio is based on the "prudent person rule". This general prudent person standard is set out in section 492 of the *Insurance Companies Act (Canada)*. This standard requires ICBC to make investments for its insurance business in the manner that "a reasonable and prudent person would apply in respect of a portfolio of investments to avoid undue risk of loss and to obtain a reasonable return".

The specific statutory framework and asset class limits with respect to ICBC's investments are outlined in Section 29 of the *Insurance Corporation Act* and Section 2 of the Application of Legislation Regulation, BC Reg. 322/03 deposited.

The regulatory asset class limits applicable to ICBC's investment policy are as follows:

1. real estate investments are limited to 10% of total assets, as that term is defined;
2. the value of participating shares or other ownership interests in unincorporated businesses cannot exceed 25% of total assets;
3. investments in (a) and (b) in the aggregate cannot exceed 30% of assets; and
4. commercial and consumer lending cannot exceed 5% of total assets.

It should be noted that the ICBC investment policy may prescribe more restrictive limits than those established by the legislative framework.

### **4 ROLES AND RESPONSIBILITIES**

#### **1. Board of Directors**

Under Corporate By-Laws, the Board of Directors has the responsibilities to define and control strategies, policies and limitations related to the investment of the Corporation's funds, exercise voting rights attached to corporate securities, provide for the custody of assets, registration of securities and the disposition of investments. The execution of most of these responsibilities has been delegated to Officers of the Corporation and the Investment Committee. The Board of Directors still retains responsibility for major changes to investment policies and procedures.

## 2. Investment Committee

The Investment Committee has the following responsibilities:

- a) recommends to the Board of Directors investment policies and procedures regarding:
  - return objectives
  - risk parameters
  - asset allocation parameters
  - eligible investments
- b) approves management's recommendation for external investment management services for the fund
- c) approves performance benchmarks
- d) ensures policy compliance, and
- e) monitors investment performance.

## 3. Investment Management

Investment managers have the following responsibilities:

- a) recommend investment policies to the Investment Committee;
- b) develop investment strategies to meet investment objectives;
- c) manage all day-to-day investment decisions;
- d) ensure adequate cashflows to meet the Corporation's payment obligations;
- e) ensures policy compliance and investment performance is monitored and reported independently to the Investment Committee;
- f) assemble required resources for the management and operations of the investment portfolio; and
- g) arrange custodial and securities lending services.

## **5 CONFLICT OF INTEREST**

All actual, potential, or perceived conflicts of interest between all parties associated with the investment of insurance assets, including officers, directors, designated employees, employees or agents of ICBC shall be disclosed before any decision regarding the specific transactions are completed. If a conflict of interest arises, the party shall disclose such a conflict to the Chair of the Investment Committee or in the Chair's absence, the acting Chair. The party must be excluded from participating in any discussion or decision related to the area of conflict.

The Secretary of the Investment Committee will be responsible for recording the declaration of conflict and will advise the Board of Directors of the details of the conflict.

Guidance on what constitutes conflicts of interest will be provided by:

1. Section 2.04 of the Corporate By-Law No. 6 dated March 3, 2005 of the Insurance Corporation of British Columbia;
2. The Insurance Corporation of British Columbia, Investment Department, Conflict of Interest Rules dated May 26, 2005, for designated employees; and
3. The Insurance Corporation of British Columbia's Code of Ethics for officers and employees of ICBC.

## **6 ASSET ALLOCATION**

### Strategic Asset Mix

The strategic asset mix is used to set the total return performance benchmark for the portfolio.

It establishes the long-term combination of asset classes normally split into two major groups categorized as fixed income or equities. The fixed income category includes all interest-bearing instruments like bonds, mortgages and money market instruments. The equity category includes investments exhibiting elements of participation in ownership like common stocks and real estate.

The optimal strategic asset mix is determined based on expected rate of return for each asset class for the forecasting period and their associated range of returns expressed in standard deviations. Liquidity, risk constraints, and cashflow considerations are also incorporated in the determination of the strategic asset mix.

### Tactical Asset Mix

Tactical asset mix focuses on short-term asset allocations that attempt to increase investment return through these opportunistic shifts in asset weightings. Since tactical asset allocation can both add or detract from the overall strategic asset mix return, the extent of tactical asset mix decisions are limited by the following ranges. These ranges are set in consideration of the overall financial strength of ICBC and its sensitivity to negative or positive investment returns.

## Asset Mix Ranges

Asset Class	Tactical Minimum %	Strategic Mix %	Tactical Maximum %
<b>Fixed Income</b>	<b>62.0</b>	<b>72.0</b>	<b>83.0</b>
Money Market	0	1.0	5.0
Canadian Bonds	52.0	58.0	62.0
US Bonds	4.0	5.0	6.0
Mortgages	6.0	8.0	10.0
<b>Equity</b>	<b>20.0</b>	<b>23.0</b>	<b>28.0</b>
Canadian Equities	10.0	13.0	16.0
US Equities	4.0	5.0	6.0
EAFE Equities	4.0	5.0	6.0
<b>Real Estate</b>	<b>4.0</b>	<b>5.0</b>	<b>6.0</b>

## 7 INVESTMENT RISK

Diversification of investment risk between asset classes is provided through the asset allocation guidelines set forth in the previous section.

Investment risk guidelines within each asset class are set out in the definitions of eligible investments.

## 8 RETURN OBJECTIVES AND PERFORMANCE MEASUREMENT

The return objectives for ICBC's investment portfolio is to achieve superior investment returns through management of its assets subject to level of risk deemed appropriate by the policy.

ICBC will measure individual asset categories against the appropriate index with added excess returns. Measurement will be assessed after associated management fees over four-year moving periods.

Below is a list of the appropriate benchmarks for each asset class and the expected incremental return for active management.

<b>ASSET CLASS BENCHMARK</b>	<b>BENCHMARK</b>	<b>TARGET EXCESS RETURN</b>
<b>Fixed Income</b>		
Money Market	DEX 91-day T-Bill Index	N/A
Canadian Bonds	Weighting of: <ul style="list-style-type: none"> <li>▪ 85% of DEX Short Term Bond Index</li> <li>▪ 15% of DEX 91-day T-Bill Index</li> </ul>	+17.5 basis points
US Bonds	- 100% Merrill Lynch Corporate & Government, 1-5 Years Index (BVA0)	+20 basis points
Mortgages	DEX Short Term Bond Index + 100 basis points	N/A
<b>Equities</b>		
Canadian Equities	S&P/TSX 10% Capped Composite Index	+75 basis points
US Equities	S&P 500	+50 basis points
EAFE Equities	MSCI EAFE Index	+100 basis points
<b>Real Estate</b>	ICREIM/IPD Canadian Index	N/A

In addition, the total fund investment return will be expected to exceed the weighted average of benchmark returns for the strategic asset mix plus an excess return over four years of 0.284%.

Investment returns will be reported to the Investment Committee on a quarterly basis. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Non-publicly traded securities shall be valued at cost or valued by a qualified appraiser at least every three years as in the case of real estate. Performance standards established by the Association of Investment Management and Research will be applied.

## **9 OPERATING PRACTICES**

### **1. Trading Activity**

Trading transactions are left to the discretion of the investment manager based on the criteria of achieving the most cost-effective result.

### **2. Trading Authority**

Each investment manager takes their trading authority and limits directly from the parameters set out in the appropriate section of the Statement of Investment Policies and Procedures.

## **10 ELIGIBLE INVESTMENTS**

### **10.1 MONEY MARKET INVESTMENTS**

Money market investments will be held for cash management purposes and will be limited to treasury bills.

### **10.2 BOND INVESTMENTS**

ICBC can invest in secured and unsecured floating, fixed rate and inflation linked debt obligations denominated in Canadian dollars or any major foreign currency of Canadian and foreign corporations, governments and government agencies, and supranational development banks.

Private placement bonds are permitted provided it can be demonstrated that they conform to quality and diversification guidelines.

## Canadian Bond Portfolio

All Canadian bond investments will comply with the following guidelines:

### Quality

All domestic bonds must be rated a minimum of BBB and foreign bonds must be rated A by a recognized rating agency. In the case of split ratings, Dominion Bond Rating Service (DBRS) will be considered the appropriate rating for Canadian bonds, and Standard & Poor's (S&P) will be considered the appropriate rating for foreign bonds. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
Federal, BC & BCMFA	no restriction	no restriction
Major Province (Alta, Ont, & Que)	no restriction	33% of total portfolio
Minor Province	no restriction	16% of total portfolio
Municipal	20% of total portfolio	5% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	20% of total portfolio	2% of total portfolio
Derivatives	10% of total portfolio	2% of total portfolio
Foreign	10% of total portfolio	2% of total portfolio

### Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in Government of Canada, Government of Canada Agency and major Provincial bonds at all times.

### Duration

The duration of the Canadian bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 2.5 years and the performance benchmark is a weighting of 85% of DEX Short Term Bond Index and 15% of DEX 91-day T-Bill Index.

## US Bonds

All US bond investments will comply with the following guidelines:

### Quality

All US bonds must be rated a minimum of BBB. In the case of split ratings, Standard and Poors (S&P) will be considered the appropriate rating for US bonds. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
US Treasuries	no restriction	no restriction
FDIC Guaranteed (TLGP) issue	50% of portfolio	2% of any TLPG
Quasi Government	10% of total portfolio	3% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	25% of total portfolio	2% of total portfolio

### Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in US Treasuries or Quasi Government bonds at all times.

### Duration

The duration of the US bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 2.5 years and the performance benchmark is a weighting of 100% of the Merrill Lynch Corporate & Government, 1-5 Years Index (BVA0).

### Related Securities

Coupons, residuals, and synthetic securities will fall under the category and guidelines of the underlying security.

### 10.3 MORTGAGES

ICBC can invest in long-term mortgages through one or all of the following vehicles: open or closed end pools, segregated funds, NHA mortgage-backed securities and direct mortgage loans.

#### Quality

The quality of the mortgage portfolio will be maintained by adhering to the following guidelines:

1. Insured mortgage investments will not exceed 85% of the purchase price or appraised value of the real estate it is secured against.
2. Conventional mortgages will not exceed 75% of the purchase price or appraised value of the real estate it is secured against.
3. No further encumbrance to the property is allowed, except with approval of the Investment Committee.
4. No investments will be made in second or third mortgages.

#### Diversification:

1. No single mortgage will account for more than 5% of the market value of the mortgage portfolio.
2. The aggregate amount of all loans to any one borrower will not be greater than 10% of the mortgage portfolio.
3. The aggregate amount of all construction loans to exceed 20% of the Committed and Funded portfolio

In addition, diversification will be achieved by property type and location using the following guidelines:

<u>Property Type</u>	<u>Target</u>	<u>Range</u>
	%	%
Office	25	15 - 35
Retail	25	15 - 35
Industrial	25	15 - 35

Residential	20	10 - 30
Other	5	0 - 10

<u>Location</u>	<u>Target</u>	<u>Range</u>
	%	%
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Quebec & Maritimes	5	0 - 10

#### Liquidity:

Liquidity will be maintained by focusing the lending activities on premium loans, in order to maintain a mortgage portfolio of the highest quality with low inherent risk of default, while achieving an acceptable investment return.

#### Duration

The duration of the mortgage portfolio will not be permitted to deviate from the DEX Short Term Bond Index by more than 1.5 years.

#### Approvals & Authorities

1. Approval for new loans, renewals and assumptions shall be governed by the Mortgage Approval Structure as approved by the Investment Committee from time to time.
2. Approval of the Investment Committee is required to sell the mortgage portfolio, in whole or in part, either directly or through securitization to the public market.
3. Management shall be responsible for the day-to-day operations of the mortgage portfolio. Management has the ability to delegate the mortgage administration functions to third party managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## 10.4 EQUITIES

Canadian and foreign equity investments will be made through direct holdings of securities (common shares, convertible preferred shares, convertible debentures, options, warrants, installment receipts, rights, etc.), stock index futures contracts, equity linked bonds and swaps or indirectly through pooled and mutual funds or any combination of the above.

### Diversification

Diversification will be maintained by restricting the number of equity holdings in any separate asset class to no less than 20 individual holdings. No single issuer will represent more than 10% of the portfolio's equity exposure as calculated by market value.

### Liquidity

Liquidity will be maintained by limiting equity holdings to securities listed on major exchanges. No more than 20% of the equity portfolio will be invested in companies with market capitalization of less than \$100 million.

## 10.5 REALESTATE

Real estate investments will be made on an active basis by investing directly in individual revenue producing real estate assets or in segregated fund accounts with third party investment managers who in turn invest in individual revenue producing real estate assets. Real estate investments may also be in the form of joint ventures or co-ownership vehicles with like-minded investors.

### Quality

1. Focus should be on good quality core properties of institutional investment quality that are cash flow yield oriented.
2. Investments will not be made in specialty properties, defined as any property with a business component such as hotels, motels, retirement homes, and mini warehouses.
3. Investment in opportunistic properties, defined as any property that requires repositioning or development with a view to creating value, will only be permitted with specific approval of the full ICBC Board of Directors.
4. Investments will not be made in properties specifically for development purposes.

### Diversification

1. No single investment should account for more than 15% of the real estate allocation.

- Properties with a value of less than \$5 million will not be considered.

In addition, diversification will be achieved by property type and location using the following guidelines:

#### Geographic Location

Location	Target %	Range %
British Columbia	25	15-35
Prairies	25	15-35
Ontario	45	30-60
Quebec & Maritimes	5	0-10

#### Product Type

<u>Property Type</u>	<u>Target</u> %	<u>Range</u> %
Office	35	20 - 50
Industrial	35	20 - 50
Retail	20	10 - 30
Residential	10	0 - 20

All diversification measures will be made as if the portfolio allocation was fully funded.

#### Liquidity

- Investments will be made in major Canadian metropolitan areas, being defined as urban areas with a population base greater than 250,000 persons.
- Due to their illiquid nature, segregated funds should be limited to no more than 20% of the portfolio.

#### Use of Debt (Leverage)

- The use of debt or leverage will not be permitted for direct investments except pre-existing debt at the time of acquisition of a specific property. Such debt will be considered within the approval of the acquisition on the basis that it will be discharged upon maturity. Any such debt will be included in the gross amount invested, as it will be converted to equity as soon as allowable under the mortgage agreement.
- The use of debt or leverage will be permitted in segregated fund investments to a maximum of 75% loan-to-value at the property level and a maximum of 50% at the account level.

3. At no time would the total exposure to debt exceed the permitted statutory limits for any particular property or 25% of the value of the total real estate portfolio.

#### Approvals & Authorities

4. Approval for acquisitions and disposals shall be governed by the Real Estate Approval Structure as approved by the Investment Committee from time to time.
5. Approval for capital expenditures shall be governed by the Capital Expenditure Policy and Procedures as approved by the Investment Committee from time to time.
6. The selection of any investment manager, joint venture partner or co-ownership vehicle requires the prior approval of the Investment Committee.
7. Management shall be responsible for the day-to-day operations and leasing of the real estate investment portfolio. Management has the ability to delegate the day-to-day property management functions to third party property managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## **10.6 DERIVATIVE INSTRUMENTS**

Swaps, options, forwards, future contracts and other derivative instruments are permitted as long as they are used to hedge portfolio risks or enhance portfolio returns. These strategies can involve foreign exchange components on a hedged basis.

Derivatives are not permitted to lever the portfolio or increase portfolio risk (speculation). Derivatives can only be applied to asset classes contemplated in the Investment Policy. Derivatives will not be used to extend asset class weights outside the stated asset mix ranges.

All derivative activity will be disclosed to the Investment Committee on a quarterly basis.

## **10.7 BORROWING AUTHORITY**

In general, neither the Investment Department nor the external managers can borrow funds directly to make investments. Exceptions include short-term borrowing to finance temporary cash flow shortfalls, financing techniques to support customer payment plans, real estate transactions, and derivative transactions where financing techniques are used to hedge revenue enhancing strategies.

## **11 VOTING RIGHTS**

Portfolio managers will exercise any voting powers and execute any proxies in conjunction with all the securities held in the Portfolio. Voting rights will be exercised in the best financial interests of ICBC. Issues deemed to be of concern to the Board will be brought to the attention of the Chair of the Investment Committee.

## **12 SECURITIES LENDING**

The Insurance Portfolio may lend its securities provided that:

1. the loan is secured by collateral that has a market value equal to or greater than 105% of the value of the loaned securities with the following exception:
  - i) the loan of US equity securities is secured by collateral that has a market value equal to or greater than 102% of the value of the loaned securities provided the loan is fully indemnified by the investment portfolio custodian
2. the loan and collateral are valued daily on a "marked-to-market" basis;
3. the collateral meets all investment criteria of the Insurance Portfolio;
4. all potential borrowers have been approved by ICBC; and,
5. all appropriate agreements and documentation have been completed.

## **13 POLICY REVIEW**

This investment policy will be reviewed annually to confirm that the existing asset allocations will result in the best projected investment return for the selected risk level. Current economic and political conditions will be reviewed to ascertain if the necessary conditions exist for the investment policies to succeed. Current guidelines will be reviewed to maintain their relevance and updated if changes are required. The annual review will not prohibit the interim modification of the investment policy if there have been fundamental changes which affect the underlying assumptions of the investment policy.

**INSURANCE CORPORATION OF BRITISH COLUMBIA**

**STATEMENT OF INVESTMENT  
POLICY AND PROCEDURES**

**APRIL 29, 2010**

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# INSURANCE CORPORATION OF BRITISH COLUMBIA

## Statement of Investment Policy and Procedures

### 1 PURPOSE

The purpose of this investment policy is to establish guidelines which will ensure ICBC's assets are managed prudently. The investment policy will establish eligible investments, asset allocation ranges and the discretion given to fund managers, and consequently dictate the portfolio risk return profile.

### 2 CORPORATE LIABILITY AND RISK PROFILE

ICBC is a Crown corporation offering compulsory basic automobile insurance and optional extension insurance.

As of December 31, 2009, ICBC's liabilities were profiled as follows:

	Liabilities (\$000)	Duration in Years
Basic	5,472,655	2.27
Optional	2,212,027	2.47
Total	7,684,682	2.33

For the purposes of prudence and efficiency, ICBC will continue to manage one investment portfolio for both Basic and Optional insurance businesses since the duration of the liabilities for each respective business are similar.

Like other insurers, ICBC's liabilities are subject to inflation risk and can be sensitive to price increases.

ICBC has significant cash needs due to the volatility of claims payments. However, the relative predictability and volume of premium cashflows considerably reduce ICBC's cashflow risks.

### **3 REGULATORY FRAMEWORK**

The legislative framework with respect to ICBC's obligations and responsibilities in the management of its investment portfolio is based on the "prudent person rule". This general prudent person standard is set out in section 492 of the *Insurance Companies Act (Canada)*. This standard requires ICBC to make investments for its insurance business in the manner that "a reasonable and prudent person would apply in respect of a portfolio of investments to avoid undue risk of loss and to obtain a reasonable return".

The specific statutory framework and asset class limits with respect to ICBC's investments are outlined in Section 29 of the *Insurance Corporation Act* and Section 2 of the Application of Legislation Regulation, BC Reg. 322/03 deposited.

The regulatory asset class limits applicable to ICBC's investment policy are as follows:

1. real estate investments are limited to 10% of total assets, as that term is defined;
2. the value of participating shares or other ownership interests in unincorporated businesses cannot exceed 25% of total assets;
3. investments in (1) and (2) in the aggregate cannot exceed 35% of assets; and
4. commercial and consumer lending cannot exceed 5% of total assets.

It should be noted that the ICBC investment policy may prescribe more restrictive limits than those established by the legislative framework.

### **4 ROLES AND RESPONSIBILITIES**

#### **1. ICBC Board of Directors**

Under Corporate By-Laws, the Board of Directors has the responsibilities to define and control strategies, policies and limitations related to the investment of the Corporation's funds, exercise voting rights attached to corporate securities, provide for the custody of assets, registration of securities and the disposition of investments. The execution of most of these responsibilities has been delegated to Officers of the Corporation and the ICBC Investment Committee of the Board of Directors. The Board of Directors still retains responsibility for major changes to investment policies and procedures.

## 2. ICBC Investment Committee

The Investment Committee has the following responsibilities:

- a) recommends to the Board of Directors investment policies and procedures regarding:
  - return objectives
  - risk parameters
  - asset allocation parameters
  - eligible investments;
- b) approves management's recommendation for external investment management services for the fund;
- c) approves performance benchmarks;
- d) ensures policy compliance; and
- e) monitors investment performance.

## 3. ICBC Investment Department

The ICBC Investment Department has the following responsibilities:

- a) recommends investment policies and procedures to the Investment Committee;
- b) develops investment strategies to meet investment objectives;
- c) makes all day-to-day investment decisions and handles reporting requirements as it pertains to internally managed mandates;
- d) makes portfolio rebalancing decisions
- e) ensures adequate cashflows to meet the Corporation's payment obligations;
- f) monitors the activity of external investment managers and reports on external investment managers performance to the Investment Committee;
- g) recommends the hiring and termination of the external investment managers;
- h) ensures policy compliance and investment performance is monitored and reported independently to the Investment Committee;
- i) manages costs associated with the investment portfolio; and
- j) arranges custodial and securities lending services.

## 4. External Investment Managers

The investment manager(s) have the following responsibilities:

- a) selects securities within each permitted asset class for the portion of the portfolio allocated to the manager, subject to applicable legislation and to any constraints or directives within the Statement of Investment Policy and Procedures or established by the ICBC Investment Committee;
- b) participates in a review of the Statement of Investment Policy and Procedures when requested by the Investment Committee;

- c) provides a Statement of Investment Policy and Goals for any pooled fund investments it makes;
- d) provides quarterly performance reports;
- e) informs the ICBC Investment Department of any element of the Statement of Investment Policy and Procedures or any other item that could prevent the achievement of the mandate objectives, and obtains prior approval to materially deviate from the Statement of Investment Policy and Procedures;
- f) informs the Investment Department of any changes in ownership of the firm or changes in key personnel, investment process, or style; and
- g) reconciles periodically in conjunction with the custodian the list of assets if managing portfolio assets on a segregated basis, and report any discrepancies to the Investment Department.

#### 5. Custodian

The custodian has the following responsibilities:

- a) carries out the duties of the custodian as set out in the Plan's custodial agreement and as required by law or regulation; and
- b) processes the security transactions that result from the buy and sell orders placed by the investment manager(s) or the ICBC Investment Department as applicable.

#### 6. Performance Measurer

The performance measurer has the following responsibilities:

- a) provides the Investment Committee with quarterly reports on the performance of the portfolio; and
- b) attends Investment Committee meetings at the request of the Investment Committee.

### **5 CONFLICT OF INTEREST**

All actual, potential, or perceived conflicts of interest between all parties associated with the investment of insurance assets, including officers, directors, designated employees, employees or agents of ICBC shall be disclosed before any decision regarding the specific transactions are completed. If a conflict of interest arises, the party shall disclose such a conflict to the Chair of the Investment Committee or in the Chair's absence, the acting Chair. The party must be excluded from participating in any discussion or decision related to the area of conflict.

The Secretary of the Investment Committee will be responsible for recording the declaration of conflict and will advise the Board of Directors of the details of the conflict.

Guidance on what constitutes conflicts of interest will be provided by:

1. Section 2.04 of the Corporate By-Law No. 6 dated March 3, 2005 of the Insurance Corporation of British Columbia;
2. The Insurance Corporation of British Columbia, Investment Department, Personal Trading Rules and Procedures dated November 29, 2007, for designated employees; and
3. The Insurance Corporation of British Columbia's Code of Ethics for officers and employees of ICBC.

## **6 ASSET ALLOCATION**

### Strategic Asset Mix

The strategic asset mix is used to set the total return performance benchmark for the portfolio.

It establishes the long-term combination of asset classes normally split into two major groups categorized as fixed income or equities. The fixed income category includes all interest-bearing instruments like bonds, mortgages and money market instruments. The equity category includes investments exhibiting elements of participation in ownership like common stocks and real estate.

The optimal strategic asset mix is determined based on expected rate of return for each asset class for the forecasting period and their associated range of returns expressed in standard deviations. Liquidity, risk constraints, and cashflow considerations are also incorporated in the determination of the strategic asset mix.

### Tactical Asset Mix

Tactical asset mix focuses on short-term asset allocations that attempt to increase investment return through these opportunistic shifts in asset weightings. Since tactical asset allocation can either add or detract from the overall strategic asset mix return, the extent of tactical asset mix decisions are limited by the following ranges. These ranges are set in consideration of the overall financial strength of ICBC and its sensitivity to negative or positive investment returns.

## Asset Mix Ranges

Asset Class	Tactical Minimum %	Strategic Mix %	Tactical Maximum %
<b>Fixed Income</b>	<b>69.0</b>	<b>72.0</b>	<b>76.0</b>
Money Market	0	1.0	5.0
Canadian Bonds	52.0	58.0	62.0
US Bonds	4.0	5.0	6.0
Mortgages	6.0	8.0	10.0
<b>Equity</b>	<b>20.0</b>	<b>23.0</b>	<b>25.0</b>
Canadian Equities	10.0	13.0	16.0
US Equities	4.0	5.0	6.0
EAFE Equities	4.0	5.0	6.0
<b>Real Estate</b>	<b>4.0</b>	<b>5.0</b>	<b>6.0</b>

## 7 INVESTMENT RISK

Diversification of investment risk between asset classes is provided through the asset allocation guidelines set forth in the previous section.

Investment risk guidelines within each asset class are set out in the definitions of eligible investments.

## 8 RETURN OBJECTIVES AND PERFORMANCE MEASUREMENT

The return objectives for ICBC's investment portfolio is to achieve superior investment returns through management of its assets subject to level of risk deemed appropriate by the policy.

ICBC will measure individual asset categories against the appropriate index with added excess returns. Measurement will be assessed net of associated management fees over four-year moving periods.

Below is a list of the appropriate benchmarks for each asset class and the expected incremental return for active management.

<b>ASSET CLASS BENCHMARK</b>	<b>BENCHMARK</b>	<b>TARGET EXCESS RETURN AFTER FEES</b>
<b>Fixed Income</b>		
Money Market	DEX 91-day T-Bill Index	N/A
Canadian Bonds	Weighting of: <ul style="list-style-type: none"> <li>▪ 85% of DEX Short Term Bond Index</li> <li>▪ 15% of DEX 91-day T-Bill Index</li> </ul>	+17.5 basis points
US Bonds	– 100% Merrill Lynch Corporate & Government, 1-5 Years Index (BVA0)	+20 basis points
Mortgages	DEX Short Term Bond Index + 100 basis points	N/A
<b>Equities</b>		
Canadian Equities	S&P/TSX 10% Capped Composite Index	+75 basis points
US Equities	S&P 500	+50 basis points
EAFE Equities	MSCI EAFE Index	+100 basis points
<b>Real Estate</b>		
	ICREIM/IPD Canadian Index	N/A

In addition, the total fund investment return will be expected to exceed the weighted average of benchmark returns for the strategic asset mix plus an excess return over four years, net of management fees and operating expenses, of 0.284% effective July 30, 2009 on a go forward basis.

Investment returns will be reported to the Investment Committee on a quarterly basis. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Investments that are not regularly traded should be valued at least annually by the custodian in cooperation with each investment manager. When valuing less liquid assets, the custodian and investment manager shall consider at least one of the following. The method used will be dependent on the asset type.

1. bid and ask prices;
2. previous transaction prices;
3. independent appraisal values
4. discounted cash flow;
5. the valuation of comparable publicly-traded investments; and
6. other valuation techniques judged relevant.

The valuation of securities within a pooled fund that are not regularly traded will be subject to the investment policies of the pooled fund.

Performance standards established by the CFA Institute will be applied.

## **9 FUND MANAGEMENT STRUCTURE AND INVESTMENT MANAGER MANDATES**

### Manager Structure

The ICBC Investment Committee has adopted a diversified manager structure which employs a mix of active and passive styles. Active management has been adopted for a small portion of assets because it provides the opportunity to outperform market indices over the long run. Passive management, in the form of index or enhanced index mandates, has been adopted for a portion of the assets because it minimizes the risk of underperformance relative to a benchmark index and is less expensive than active management. Specialist managers are used where there is a potential added value benefit.

### Rebalancing

The ICBC Investment Department is responsible for portfolio rebalancing. Portfolio assets will be rebalanced whenever actual allocations to an asset class fall outside the maximum and minimum allocation or whenever it is deemed otherwise appropriate. Rebalancing may be suspended if market conditions, such as excessive volatility or illiquidity, preclude cost effective rebalancing. Should such conditions occur, the ICBC Investment Committee and the Board will assess the Fund's asset allocation and market conditions with regard to

the appropriateness of rebalancing and approve deviations from the tactical asset mix range as required.

### Evaluation of Investment Managers

Investment managers will be reviewed at least quarterly. All external investment managers will be monitored in accordance with the ICBC External Investment Manager Selection, Monitoring and Termination Policy.

Investment manager(s) will be measured, before fees, on a quarterly basis by an external performance measurer. Investment manager(s), excluding index managers, will be expected to exceed their applicable index, including an additional return net of fees for active management, and exceed the median manager, as applicable. Quarterly and annual returns will be monitored, but the four year moving average return will be the primary measurement. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Performance standards established through the CFA institute (GIPS standards) will be applied.

## **10 ELIGIBLE INVESTMENTS**

### **10.1 MONEY MARKET INVESTMENTS**

Money market investments will be held for cash management purposes and will be limited to treasury bills.

### **10.2 BOND INVESTMENTS**

ICBC can invest in secured and unsecured floating, fixed rate and inflation linked debt obligations denominated in Canadian dollars or any major foreign currency of Canadian and foreign corporations, governments and government agencies, and supranational development banks.

Private placement bonds are permitted provided it can be demonstrated that they conform to quality and diversification guidelines. For clarification purposes, private placements are bond issues that are legally private, subscription based and/or do not have a broad issuance, liquidity, dealer support, or, are of small deal size.

#### **Canadian Bond Portfolio**

All Canadian bond investments will comply with the following guidelines:

## Quality

All domestic bonds must be rated a minimum of BBB and foreign bonds must be rated A by a recognized rating agency. In the case of split ratings, Standard and Poor's (S&P) will be considered the appropriate rating. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

Quality constraints do not preclude the bond manager from the responsibility of performing a credit assessment on bonds purchased.

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
Federal	no restriction	no restriction
Major Province (BC, Alta, Ont, & Que)	no restriction	33% of total portfolio
Minor Province	no restriction	16% of total portfolio
Municipal	20% of total portfolio	5% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	20% of total portfolio	2% of total portfolio
Derivatives	10% of total portfolio	2% of total portfolio
Foreign	10% of total portfolio	2% of total portfolio

## Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in Government of Canada, Government of Canada Agency and major Provincial bonds at all times.

## Duration

The duration of the Canadian bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 2.5 years and the performance benchmark is a weighting of 85% of DEX Short Term Bond Index and 15% of DEX 91-day T-Bill Index.

## US Bond Portfolio

All US bond investments will comply with the following guidelines:

### Quality

All US bonds must be rated a minimum of BBB. In the case of split ratings, Standard and Poors (S&P) will be considered the appropriate rating for US bonds. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

Quality constraints do not preclude the bond manager from the responsibility of performing a credit assessment on bonds purchased.

<u>Diversification</u>	<u>Category Limit</u>	<u>Individual Limit</u>
US Treasuries	no restriction	no restriction
FDIC Guaranteed (TLGP)*	50% of portfolio	2% of any TLPG issue
Quasi Government	10% of total portfolio	3% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	25% of total portfolio	2% of total portfolio

\*Temporary Liquidity Guarantee Program

### Liquidity

Liquidity will be maintained by holding at least 25% of the portfolio in US Treasuries or Quasi Government bonds at all times.

### Duration

The duration of the US bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 2.5 years and the performance benchmark is a weighting of 100% of the Merrill Lynch Corporate & Government, 1-5 Years Index (BVA0).

## **Related Securities**

Coupons, residuals, and synthetic securities will fall under the category and guidelines of the underlying security.

### **10.3 MORTGAGES**

ICBC can invest in long-term mortgages through one or all of the following vehicles: open or closed end pools, segregated funds, NHA mortgage-backed securities and direct mortgage loans.

#### **Quality**

The quality of the mortgage portfolio will be maintained by adhering to the following guidelines:

1. Insured mortgage investments will not exceed 85% of the purchase price or appraised value of the real estate it is secured against.
2. Conventional mortgages will not exceed 75% of the purchase price or appraised value of the real estate it is secured against.
3. No further encumbrance to the property is allowed, except with approval of the Investment Committee.
4. No investment will be made in second or third mortgages.

#### **Diversification:**

1. No single mortgage will account for more than 5% of the market value of the mortgage portfolio.
2. The aggregate amount of all loans to any one borrower will not be greater than 10% of the mortgage portfolio.
3. The aggregate amount of all construction loans will not exceed 20% of the Committed and Funded portfolio.

In addition, diversification will be achieved by property type and location using the following guidelines:

<u>Property Type</u>	<u>Target</u>	<u>Range</u>
	%	%
Office	25	15 - 35
Retail	25	15 - 35
Industrial	25	15 - 35
Residential	20	10 - 30
Other	5	0 - 10

<u>Location</u>	<u>Target</u>	<u>Range</u>
	%	%
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Quebec & Maritimes	5	0 - 10

#### Liquidity

Liquidity will be maintained by focusing the lending activities on premium loans, in order to maintain a mortgage portfolio of the highest quality with low inherent risk of default, while achieving an acceptable investment return.

#### Duration

The duration of the mortgage portfolio will not be permitted to deviate from the DEX Short Term Bond Index by more than 1.5 years.

#### Approvals & Authorities

1. Approval for new loans, renewals and assumptions shall be governed by the Mortgage Approval Structure as approved by the Investment Committee from time to time.
2. Approval of the Investment Committee is required to sell the mortgage portfolio, in whole or in part, either directly or through securitization to the public market.
3. Management shall be responsible for the day-to-day operations of the mortgage portfolio. Management has the ability to delegate the mortgage administration functions to third party managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## 10.4 EQUITIES

Canadian and foreign equity investments will be made through direct holdings of securities (common shares, convertible preferred shares, convertible debentures, options, warrants, installment receipts, rights, etc.), stock index futures contracts, equity linked bonds and swaps or indirectly through pooled and mutual funds or any combination of the above.

### Diversification

Diversification will be maintained by restricting the number of equity holdings in any separate asset class to no less than 20 individual holdings. No single issuer will represent more than 10% of the portfolio's equity exposure as calculated by market value.

### Liquidity

Liquidity will be maintained by limiting equity holdings to securities listed on major exchanges. No more than 20% of the equity portfolio will be invested in companies with market capitalization of less than \$100 million.

## 10.5 REAL ESTATE

Real estate investments will be made on an active basis by investing directly in individual revenue producing real estate assets or in segregated fund accounts with third party investment managers who in turn invest in individual revenue producing real estate assets. Real estate investments may also be in the form of joint ventures or co-ownership vehicles with like-minded investors.

### Quality

1. Investments will focus on good quality core properties of institutional investment quality that are cash flow yield oriented.
2. Investments will not be made in specialty properties, defined as any property with a business component such as hotels, motels, retirement homes, and mini warehouses.
3. Investment in opportunistic properties, defined as any property that requires repositioning or development with a view to creating value, will only be permitted with specific approval of the full ICBC Board of Directors.

### Diversification

1. No single investment will account for more than 15% of the real estate allocation.
2. Properties with a value of less than \$5 million will not be considered.

In addition, diversification will be achieved by property type and location using the following guidelines:

#### Geographic Location

<u>Location</u>	<u>Target</u> %	<u>Range</u> %
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Québec & Maritimes	5	0 - 10

#### Product Type

<u>Property Type</u>	<u>Target</u> %	<u>Range</u> %
Office	35	20 - 50
Industrial	35	20 - 50
Retail	20	10 - 30
Residential	10	0 - 20

All diversification measures will be made as if the portfolio allocation was fully funded.

#### Liquidity

1. Investments will be made in major Canadian metropolitan areas, being defined as urban areas with a population base greater than 250,000 persons.
2. Due to their illiquid nature, segregated funds will be limited to no more than 20% of the portfolio.

#### Use of Debt (Leverage)

1. The use of debt or leverage will not be permitted for direct investments except pre-existing debt at the time of acquisition of a specific property. Such debt will be considered within the approval of the acquisition on the basis that it will be discharged upon maturity. Any such debt will be included in the gross amount invested, as it will be converted to equity as soon as allowable under the mortgage agreement.
2. The use of debt or leverage will be permitted in segregated fund investments to a maximum of 75% loan-to-value at the property level and a maximum of 50% at the account level.
3. At no time will the total exposure to debt exceed the permitted statutory limits for any particular property or 25% of the value of the total real estate portfolio.

## Approvals & Authorities

1. Approval for acquisitions and disposals shall be governed by the Real Estate Approval Structure as approved by the Investment Committee from time to time.
2. Approval for capital expenditures shall be governed by the Capital Expenditure Policy and Procedures as approved by the Investment Committee from time to time.
3. The selection of any investment manager, joint venture partner or co-ownership vehicle requires the prior approval of the Investment Committee.
4. Management shall be responsible for the day-to-day operations and leasing of the real estate investment portfolio. Management has the ability to delegate the day-to-day property management functions to third party property managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## **10.6 DERIVATIVE INSTRUMENTS**

Swaps, options, forwards, future contracts and other derivative instruments are permitted as long as they are used to hedge portfolio risks or enhance portfolio returns. These strategies can involve foreign exchange components on a hedged basis.

Derivatives are not permitted to lever the portfolio or increase portfolio risk (speculation). Derivatives can only be applied to asset classes contemplated in the Investment Policy. Derivatives will not be used to extend asset class weights outside the stated asset mix ranges.

The ICBC Investment Department is authorized to post cash or securities as collateral for ICBC's obligations under derivative agreements, and to receive cash or securities posted by counterparties as collateral for their obligations to ICBC under those agreements.

All derivative activity will be disclosed to the Investment Committee on a quarterly basis.

## **10.7 BORROWING AUTHORITY**

In general, neither the Investment Department nor the external managers can borrow funds directly to make investments. Exceptions include short-term borrowing to finance temporary cash flow shortfalls, financing techniques to support customer payment plans, real estate transactions, and derivative transactions where financing techniques are used to hedge revenue enhancing strategies.

## **11 VOTING RIGHTS**

Portfolio managers will exercise any voting powers and execute any proxies in conjunction with all the securities held in the Portfolio. Voting rights will be exercised in the best

financial interests of ICBC. The voting policies and practices of each manager are to be periodically reviewed and each manager will provide written confirmation of adherence to their voting policy on a quarterly basis.

Issues deemed to be of concern to the Board will be brought to the attention of the Chair of the Investment Committee.

## **12 SECURITIES LENDING**

The Insurance Portfolio may lend its securities provided that:

1. the loan is secured by collateral that has a market value equal to or greater than 105% of the value of the loaned securities with the following exception:
  - a) the loan of US equity securities is secured by collateral that has a market value equal to or greater than 102% of the value of the loaned securities provided the loan is fully indemnified by the investment portfolio custodian;
2. the loan and collateral are valued daily on a "marked-to-market" basis;
3. the collateral meets all investment criteria of the Insurance Portfolio;
4. all potential borrowers have been approved by ICBC; and
5. all appropriate agreements and documentation have been completed.

## **13 POOLED FUNDS**

The policies covering conflicts of interest, investment constraints, voting rights and securities lending for assets invested in pooled funds will be subject to the investment policies of the said pooled fund.

## **14 POLICY REVIEW**

This investment policy will be reviewed annually to confirm that the existing asset allocations will result in the best projected investment return for the selected risk level. Current economic and political conditions will be reviewed to ascertain if the necessary conditions exist for the investment policies to succeed. Current guidelines will be reviewed to maintain their relevance and updated if changes are required. The annual review will not prohibit the interim modification of the investment policy if there have been fundamental changes which affect the underlying assumptions of the investment policy.

**INSURANCE CORPORATION OF BRITISH COLUMBIA**

**STATEMENT OF INVESTMENT  
POLICY AND PROCEDURES**

**JULY 28, 2011**

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# INSURANCE CORPORATION OF BRITISH COLUMBIA

## Statement of Investment Policy and Procedures

### 1 PURPOSE

The purpose of this investment policy is to establish guidelines which will ensure ICBC's assets are managed prudently. The investment policy will establish eligible investments, asset allocation ranges and the discretion given to fund managers, and consequently dictate the portfolio risk return profile.

### 2 CORPORATE LIABILITY AND RISK PROFILE

ICBC is a Crown corporation offering compulsory basic automobile insurance and optional extension insurance.

As of December 31, 2009, ICBC's liabilities were profiled as follows:

	Liabilities (\$000)	Duration in Years
Basic	5,472,655	2.27
Optional	2,212,027	2.47
Total	7,684,682	2.33

For the purposes of prudence and efficiency, ICBC will continue to manage one investment portfolio for both Basic and Optional insurance businesses since the duration of the liabilities for each respective business are similar.

Like other insurers, ICBC's liabilities are subject to inflation risk and can be sensitive to price increases.

ICBC has significant cash needs due to the volatility of claims payments. However, the relative predictability and volume of premium cashflows considerably reduce ICBC's cashflow risks.

### **3 REGULATORY FRAMEWORK**

The legislative framework with respect to ICBC's obligations and responsibilities in the management of its investment portfolio is based on the "prudent person rule". This general prudent person standard is set out in section 492 of the *Insurance Companies Act (Canada)*. This standard requires ICBC to make investments for its insurance business in the manner that "a reasonable and prudent person would apply in respect of a portfolio of investments to avoid undue risk of loss and to obtain a reasonable return".

The specific statutory framework and asset class limits with respect to ICBC's investments are outlined in Section 29 of the *Insurance Corporation Act* and Section 2 of the Application of Legislation Regulation, BC Reg. 322/03 deposited.

The regulatory asset class limits applicable to ICBC's investment policy are as follows:

1. real estate investments are limited to 10% of total assets, as that term is defined;
2. the value of participating shares or other ownership interests in unincorporated businesses cannot exceed 25% of total assets;
3. investments in (1) and (2) in the aggregate cannot exceed 35% of assets; and
4. commercial and consumer lending cannot exceed 5% of total assets.

It should be noted that the ICBC investment policy may prescribe more restrictive limits than those established by the legislative framework.

### **4 ROLES AND RESPONSIBILITIES**

#### **1. ICBC Board of Directors**

Under Corporate By-Laws, the Board of Directors has the responsibilities to define and control strategies, policies and limitations related to the investment of the Corporation's funds, exercise voting rights attached to corporate securities, provide for the custody of assets, registration of securities and the disposition of investments. The execution of most of these responsibilities has been delegated to Officers of the Corporation and the ICBC Investment Committee of the Board of Directors. The Board of Directors still retains responsibility for major changes to investment policies and procedures.

## 2. ICBC Investment Committee

The Investment Committee has the following responsibilities:

- a) recommends to the Board of Directors investment policies and procedures regarding:
  - return objectives
  - risk parameters
  - asset allocation parameters
  - eligible investments;
- b) approves management's recommendation for external investment management services for the fund;
- c) approves performance benchmarks;
- d) ensures policy compliance; and
- e) monitors investment performance.

## 3. ICBC Investment Department

The ICBC Investment Department has the following responsibilities:

- a) recommends investment policies and procedures to the Investment Committee;
- b) develops investment strategies to meet investment objectives;
- c) makes all day-to-day investment decisions and handles reporting requirements as it pertains to internally managed mandates;
- d) makes portfolio rebalancing decisions
- e) ensures adequate cashflows to meet the Corporation's payment obligations;
- f) monitors the activity of external investment managers and reports on external investment managers performance to the Investment Committee;
- g) recommends the hiring and termination of the external investment managers;
- h) ensures policy compliance and investment performance is monitored and reported independently to the Investment Committee;
- i) manages costs associated with the investment portfolio; and
- j) arranges custodial and securities lending services.

## 4. External Investment Managers

The investment manager(s) have the following responsibilities:

- a) selects securities within each permitted asset class for the portion of the portfolio allocated to the manager, subject to applicable legislation and to any constraints or directives within the Statement of Investment Policy and Procedures or established by the ICBC Investment Committee;
- b) participates in a review of the Statement of Investment Policy and Procedures when requested by the Investment Committee;

- c) provides a Statement of Investment Policy and Goals for any pooled fund investments it makes;
- d) provides quarterly performance reports;
- e) informs the ICBC Investment Department of any element of the Statement of Investment Policy and Procedures or any other item that could prevent the achievement of the mandate objectives, and obtains prior approval to materially deviate from the Statement of Investment Policy and Procedures;
- f) informs the Investment Department of any changes in ownership of the firm or changes in key personnel, investment process, or style; and
- g) reconciles periodically in conjunction with the custodian the list of assets if managing portfolio assets on a segregated basis, and report any discrepancies to the Investment Department.

#### 5. Custodian

The custodian has the following responsibilities:

- a) carries out the duties of the custodian as set out in the Plan's custodial agreement and as required by law or regulation; and
- b) processes the security transactions that result from the buy and sell orders placed by the investment manager(s) or the ICBC Investment Department as applicable.

#### 6. Performance Measurer

The performance measurer has the following responsibilities:

- a) provides the Investment Committee with quarterly reports on the performance of the portfolio; and
- b) attends Investment Committee meetings at the request of the Investment Committee.

### **5 CONFLICT OF INTEREST**

All actual, potential, or perceived conflicts of interest between all parties associated with the investment of insurance assets, including officers, directors, designated employees, employees or agents of ICBC shall be disclosed before any decision regarding the specific transactions are completed. If a conflict of interest arises, the party shall disclose such a conflict to the Chair of the Investment Committee or in the Chair's absence, the acting Chair. The party must be excluded from participating in any discussion or decision related to the area of conflict.

The Secretary of the Investment Committee will be responsible for recording the declaration of conflict and will advise the Board of Directors of the details of the conflict.

Guidance on what constitutes conflicts of interest will be provided by:

1. Section 2.04 of the Corporate By-Law No. 6 dated March 3, 2005 of the Insurance Corporation of British Columbia;
2. The Insurance Corporation of British Columbia, Investment Department, Personal Trading Rules and Procedures dated November 29, 2007, for designated employees; and
3. The Insurance Corporation of British Columbia's Code of Ethics for officers and employees of ICBC.

## **6 ASSET ALLOCATION**

### Strategic Asset Mix

The strategic asset mix is used to set the total return performance benchmark for the portfolio.

It establishes the long-term combination of asset classes normally split into two major groups categorized as fixed income or equities. The fixed income category includes all interest-bearing instruments like bonds, mortgages and money market instruments. The equity category includes investments exhibiting elements of participation in ownership like common stocks and real estate.

The optimal strategic asset mix is determined based on expected rate of return for each asset class for the forecasting period and their associated range of returns expressed in standard deviations. Liquidity, risk constraints, and cashflow considerations are also incorporated in the determination of the strategic asset mix.

### Tactical Asset Mix

Tactical asset mix focuses on short-term asset allocations that attempt to increase investment return through these opportunistic shifts in asset weightings. Since tactical asset allocation can either add or detract from the overall strategic asset mix return, the extent of tactical asset mix decisions are limited by the following ranges. These ranges are set in consideration of the overall financial strength of ICBC and its sensitivity to negative or positive investment returns.

## Asset Mix Ranges

Asset Class	Tactical Minimum %	Strategic Mix %	Tactical Maximum %
<b>Fixed Income</b>	<b>69.0</b>	<b>72.0</b>	<b>76.0</b>
Money Market	0	1.0	5.0
Canadian Bonds	56.0	63.0	68.0
Mortgages	6.0	8.0	10.0
<b>Equity</b>	<b>20.0</b>	<b>23.0</b>	<b>25.0</b>
Canadian Equities	10.0	13.0	16.0
US Equities	4.0	5.0	6.0
EAFE Equities	4.0	5.0	6.0
<b>Real Estate</b>	<b>4.0</b>	<b>5.0</b>	<b>6.0</b>

## 7 INVESTMENT RISK

Diversification of investment risk between asset classes is provided through the asset allocation guidelines set forth in the previous section.

Investment risk guidelines within each asset class are set out in the definitions of eligible investments.

## 8 RETURN OBJECTIVES AND PERFORMANCE MEASUREMENT

The return objectives for ICBC's investment portfolio is to achieve superior investment returns through management of its assets subject to level of risk deemed appropriate by the policy.

ICBC will measure individual asset categories against the appropriate index with added excess returns. Measurement will be assessed net of associated management fees over four-year moving periods.

Below is a list of the appropriate benchmarks for each asset class and the expected incremental return for active management.

<b>ASSET CLASS BENCHMARK</b>	<b>BENCHMARK</b>	<b>TARGET EXCESS RETURN AFTER FEES</b>
<b>Fixed Income</b>		
Money Market	DEX 91-day T-Bill Index	N/A
Canadian Bonds	Weighting of: <ul style="list-style-type: none"> <li>▪ 85% of DEX Short Term Bond Index</li> <li>▪ 15% of DEX 91-day T-Bill Index</li> </ul>	+17.5 basis points
Mortgages	DEX Short Term Bond Index + 100 basis points	N/A
<b>Equities</b>		
Canadian Equities	S&P/TSX 10% Capped Composite Index	+75 basis points
US Equities	S&P 500	+50 basis points
EAFE Equities	MSCI EAFE Index	+100 basis points
<b>Real Estate</b>		
	ICREIM/IPD Canadian Index	N/A

In addition, the total fund investment return will be expected to exceed the weighted average of benchmark returns for the strategic asset mix plus an excess return over four years, net of management fees and operating expenses, of 0.28275% effective July 28, 2011 on a go forward basis.

Investment returns will be reported to the Investment Committee on a quarterly basis. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Investments that are not regularly traded should be valued at least annually by the custodian in cooperation with each investment manager. When valuing less liquid assets, the custodian and investment manager shall consider at least one of the following. The method used will be dependent on the asset type.

1. bid and ask prices;
2. previous transaction prices;
3. independent appraisal values
4. discounted cash flow;
5. the valuation of comparable publicly-traded investments; and
6. other valuation techniques judged relevant.

The valuation of securities within a pooled fund that are not regularly traded will be subject to the investment policies of the pooled fund.

Performance standards established by the CFA Institute will be applied.

## **9 FUND MANAGEMENT STRUCTURE AND INVESTMENT MANAGER MANDATES**

### Manager Structure

The ICBC Investment Committee has adopted a diversified manager structure which employs a mix of active and passive styles. Active management has been adopted for a small portion of assets because it provides the opportunity to outperform market indices over the long run. Passive management, in the form of index or enhanced index mandates, has been adopted for a portion of the assets because it minimizes the risk of underperformance relative to a benchmark index and is less expensive than active management. Specialist managers are used where there is a potential added value benefit.

### Rebalancing

The ICBC Investment Department is responsible for portfolio rebalancing. Portfolio assets will be rebalanced whenever actual allocations to an asset class fall outside the maximum and minimum allocation or whenever it is deemed otherwise appropriate. Rebalancing may be suspended if market conditions, such as excessive volatility or illiquidity, preclude cost effective rebalancing. Should such conditions occur, the ICBC Investment Committee and the Board will assess the Fund's asset allocation and market conditions with regard to

the appropriateness of rebalancing and approve deviations from the tactical asset mix range as required.

### Evaluation of Investment Managers

Investment managers will be reviewed at least quarterly. All external investment managers will be monitored in accordance with the ICBC External Investment Manager Selection, Monitoring and Termination Policy.

Investment manager(s) will be measured, before fees, on a quarterly basis by an external performance measurer. Investment manager(s), excluding index managers, will be expected to exceed their applicable index, including an additional return net of fees for active management, and exceed the median manager, as applicable. Quarterly and annual returns will be monitored, but the four year moving average return will be the primary measurement. All return calculations will be determined using time-weighted rates of return based on market values derived from independent pricing sources. Performance standards established through the CFA institute (GIPS standards) will be applied.

## **10 ELIGIBLE INVESTMENTS**

### **10.1 MONEY MARKET INVESTMENTS**

Money market investments will be held for cash management purposes and will be consolidated with the bond portfolio for the purpose of measuring credit quality, liquidity, and diversification as outlined in section 10.2. All non-government guaranteed issuers will be subject to the same due diligence process that is applied to credit in the bond portfolio. The following investments will be authorized for cash management purposes:

Treasury Bills; Repo; Certificates of Deposit; Bankers Acceptances; Commercial Paper

### **10.2 BOND INVESTMENTS**

ICBC can invest in secured and unsecured floating, fixed rate and inflation linked debt obligations denominated in Canadian dollars or any major foreign currency of Canadian and foreign corporations, governments and government agencies, and supranational development banks.

Private placement bonds are permitted provided it can be demonstrated that they conform to quality and diversification guidelines. For clarification purposes, private placements are bond issues that are legally private, subscription based and/or do not have a broad issuance, liquidity, dealer support, or, are of small deal size.

## **Canadian Bond Portfolio**

All Canadian bond investments will comply with the following guidelines:

### **Quality**

All bonds must be rated a minimum of BBB by a recognized rating agency. In the case of split ratings, Standard and Poor's (S&P) will be considered the appropriate rating. The following minimum quality limits will apply at all times:

- 25% of the portfolio will be rated AAA or better
- 50% of the portfolio will be rated AA or better
- 90% of the portfolio will be rated A or better
- 100% of the portfolio will be rated BBB or better

Quality constraints do not preclude the bond manager from the responsibility of performing a credit assessment on bonds purchased.

<b><u>Diversification</u></b>	<b><u>Category Limit</u></b>	<b><u>Individual Limit</u></b>
Federal	no restriction	no restriction
Major Province (BC, Alta, Ont, & Que)	no restriction	33% of total portfolio
Minor Province	no restriction	16% of total portfolio
Municipal	20% of total portfolio	5% of total portfolio
Corporate	50% of total portfolio	3% of total portfolio
Asset-Backed Securities	20% of total portfolio	2% of total portfolio
Derivatives	10% of total portfolio	2% of total portfolio
Foreign	10% of total portfolio	2% of total portfolio

### **Liquidity**

Liquidity will be maintained by holding at least 25% of the portfolio in Government of Canada, Government of Canada Agency and major Provincial bonds at all times.

### Duration

The duration of the Canadian bond portfolio will not be permitted to deviate from the benchmark duration by more than 0.5 years. A target duration has been set at 2.5 years and the performance benchmark is a weighting of 85% of DEX Short Term Bond Index and 15% of DEX 91-day T-Bill Index.

### Related Securities

Coupons, residuals, and synthetic securities will fall under the category and guidelines of the underlying security.

## **10.3 MORTGAGES**

ICBC can invest in long-term mortgages through one or all of the following vehicles: open or closed end pools, segregated funds, NHA mortgage-backed securities and direct mortgage loans.

### Quality

The quality of the mortgage portfolio will be maintained by adhering to the following guidelines:

1. Insured mortgage investments will not exceed 85% of the purchase price or appraised value of the real estate it is secured against.
2. Conventional mortgages will not exceed 75% of the purchase price or appraised value of the real estate it is secured against.
3. No further encumbrance to the property is allowed, except with approval of ICBC.
4. No investment will be made in second or third mortgages.

### Diversification:

1. No single mortgage will account for more than 5% of the market value of the mortgage portfolio.
2. The aggregate amount of all loans to any one borrower will not be greater than 10% of the mortgage portfolio.
3. The aggregate amount of all construction loans will not exceed 20% of the Committed and Funded portfolio.

In addition, diversification will be achieved by property type and location using the following guidelines:

<u>Property Type</u>	<u>Target</u>	<u>Range</u>
	%	%
Office	25	15 - 35
Retail	25	15 - 35
Industrial	25	15 - 35
Residential	20	10 - 30
Other	5	0 - 10

<u>Location</u>	<u>Target</u>	<u>Range</u>
	%	%
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Quebec & Maritimes	5	0 - 10

#### Liquidity

Liquidity will be maintained by focusing the lending activities on premium loans, in order to maintain a mortgage portfolio of the highest quality with low inherent risk of default, while achieving an acceptable investment return.

#### Duration

The duration of the mortgage portfolio will not be permitted to deviate from the DEX Short Term Bond Index by more than 1.5 years.

#### Approvals & Authorities

1. Approval for new loans, renewals, assumptions and the placement of secondary debt or encumbrances shall be governed by the Mortgage Approval Structure as approved by the Investment Committee from time to time.
2. Approval of the Investment Committee is required to sell the mortgage portfolio, in whole or in part, either directly or through securitization to the public market.
3. Management shall be responsible for the day-to-day operations of the mortgage portfolio. Management has the ability to delegate the mortgage administration functions to third party managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## 10.4 EQUITIES

Canadian and foreign equity investments will be made through direct holdings of securities (common shares, convertible preferred shares, convertible debentures, options, warrants, installment receipts, rights, etc.), stock index futures contracts, equity linked bonds and swaps or indirectly through pooled and mutual funds or any combination of the above.

### Diversification

Diversification will be maintained by restricting the number of equity holdings in any separate asset class to no less than 20 individual holdings. No single issuer will represent more than 10% of the portfolio's equity exposure as calculated by market value.

### Liquidity

Liquidity will be maintained by limiting equity holdings to securities listed on major exchanges. No more than 20% of the equity portfolio will be invested in companies with market capitalization of less than \$100 million.

## 10.5 REAL ESTATE

Real estate investments will be made on an active basis by investing directly in individual revenue producing real estate assets or in segregated fund accounts with third party investment managers who in turn invest in individual revenue producing real estate assets. Real estate investments may also be in the form of joint ventures or co-ownership vehicles with like-minded investors.

### Quality

1. Investments will focus on good quality core properties of institutional investment quality that are cash flow yield oriented.
2. Investments will not be made in specialty properties, defined as any property with a business component such as hotels, motels, retirement homes, and mini warehouses.
3. Investment in opportunistic properties, defined as any property that requires repositioning or development with a view to creating value, will only be permitted with specific approval of the full ICBC Board of Directors.

### Diversification

1. No single investment will account for more than 15% of the real estate allocation.
2. Properties with a value of less than \$5 million will not be considered.

In addition, diversification will be achieved by property type and location using the following guidelines:

### Geographic Location

<u>Location</u>	<u>Target</u> %	<u>Range</u> %
British Columbia	25	15 - 35
Prairies	25	15 - 35
Ontario	45	30 - 60
Québec & Maritimes	5	0 - 10

### Product Type

<u>Property Type</u>	<u>Target</u> %	<u>Range</u> %
Office	35	20 - 50
Industrial	35	20 - 50
Retail	20	10 - 30
Residential	10	0 - 20

All diversification measures will be made as if the portfolio allocation was fully funded.

### Liquidity

1. Investments will be made in major Canadian metropolitan areas, being defined as urban areas with a population base greater than 250,000 persons.
2. Due to their illiquid nature, segregated funds will be limited to no more than 20% of the portfolio.

### Use of Debt (Leverage)

1. Leverage will be permitted for direct investments to a maximum of 75% loan-to-value at the property level and to a maximum of 45% of the value of the total real estate portfolio. All new debt will be non-recourse to ICBC.
2. Pre-existing debt at the time of acquisition of a specific property will be permitted to be assumed.
3. The use of debt or leverage will be permitted in segregated fund investments to a maximum of 75% loan-to-value at the property level and a maximum of 50% at the account level.

## Approvals & Authorities

1. Approval for acquisitions and disposals shall be governed by the Real Estate Approval Structure as approved by the Investment Committee from time to time.
2. Approval for capital expenditures shall be governed by the Capital Expenditure Policy and Procedures as approved by the Investment Committee from time to time.
3. The selection of any investment manager, joint venture partner or co-ownership vehicle requires the prior approval of the Investment Committee.
4. Management shall be responsible for the day-to-day operations and leasing of the real estate investment portfolio. Management has the ability to delegate the day-to-day property management functions to third party property managers with appropriate knowledge, ability, experience and integrity required to complete the assignment competently.

## **10.6 DERIVATIVE INSTRUMENTS**

Swaps, options, forwards, future contracts and other derivative instruments are permitted as long as they are used to hedge portfolio risks or enhance portfolio returns. These strategies can involve foreign exchange components on a hedged basis.

Derivatives are not permitted to lever the portfolio or increase portfolio risk (speculation). Derivatives can only be applied to asset classes contemplated in the Investment Policy. Derivatives will not be used to extend asset class weights outside the stated asset mix ranges.

The ICBC Investment Department is authorized to post cash or securities as collateral for ICBC's obligations under derivative agreements, and to receive cash or securities posted by counterparties as collateral for their obligations to ICBC under those agreements.

All derivative activity will be disclosed to the Investment Committee on a quarterly basis.

## **10.7 BORROWING AUTHORITY**

In general, neither the Investment Department nor the external managers can borrow funds directly to make investments. Exceptions include short-term borrowing to finance temporary cash flow shortfalls, financing techniques to support customer payment plans, real estate transactions, and derivative transactions where financing techniques are used to hedge revenue enhancing strategies.

## **11 VOTING RIGHTS**

Portfolio managers will exercise any voting powers and execute any proxies in conjunction with all the securities held in the Portfolio. Voting rights will be exercised in the best financial interests of ICBC. The voting policies and practices of each manager are to be periodically reviewed and each manager will provide written confirmation of adherence to their voting policy on a quarterly basis.

Issues deemed to be of concern to the Board will be brought to the attention of the Chair of the Investment Committee.

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The Insurance Portfolio may lend its securities provided that:

1. the loan is secured by collateral that has a market value equal to or greater than 105% of the value of the loaned securities with the following exception:
  - a) the loan of US equity securities is secured by collateral that has a market value equal to or greater than 102% of the value of the loaned securities provided the loan is fully indemnified by the investment portfolio custodian;
2. the loan and collateral are valued daily on a "marked-to-market" basis;
3. the collateral meets all investment criteria of the Insurance Portfolio;
4. all potential borrowers have been approved by ICBC; and
5. all appropriate agreements and documentation have been completed.

## **13 POOLED FUNDS**

The policies covering conflicts of interest, investment constraints, voting rights and securities lending for assets invested in pooled funds will be subject to the investment policies of the said pooled fund.

## **14 POLICY REVIEW**

This investment policy will be reviewed annually to confirm that the existing asset allocations will result in the best projected investment return for the selected risk level. Current economic and political conditions will be reviewed to ascertain if the necessary conditions exist for the investment policies to succeed. Current guidelines will be reviewed to maintain their relevance and updated if changes are required. The annual review will not prohibit the interim modification of the investment policy if there have been fundamental changes which affect the underlying assumptions of the investment policy.

Voice for Economic Justice Information Request No. 2012.1 RR VEJ.1.11 Dated 13 February 2012 Insurance Corporation of British Columbia Response Issued 12 March 2012	Page 1 of 1
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**2012.1 RR VEJ.1.11 Reference: The ICBC Investment Portfolio**

**Figure 5.12 on page 5-13 of the application shows the annual management expense ratios for internal and external portfolios.**

**Please describe the decision logic for managing an investment internally versus externally.**

**Response:**

ICBC has adopted an investment management model which utilizes both internal and external investment managers. ICBC manages its bonds, mortgages, and real estate portfolios in-house.

Internal management has been utilized for these asset classes because:

- i) Asset management services can be delivered in a cost effective manner.
- ii) The risk profile of managed assets can be controlled to align with ICBC's specific risk objectives.
- iii) Internal management provides additional transparency into the investment process.

Specifically related to bond management:

- iv) Internal management enhances ICBC's ability to effectively manage corporate cash flow requirements.
- v) The credit analysis function, which is part of the bond management process, has broader corporate benefits and can be applied to managing corporate credit risk exposures.

ICBC has outsourced the management of its equity portfolios to external managers because the research resources necessary to manage these portfolios, in general, is costly.

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**2012.1 RR VEJ.1.11.1 Reference: The ICBC Investment Portfolio**

**Figure 5.12 on page 5-13 of the application shows the annual management expense ratios for internal and external portfolios.**

**Is it correct to assume that ICBC employs no intermediaries and no investment dealers for the management of its Canadian Bonds, US Bonds, Mortgages and Real Estate holdings?**

**Response:**

Intermediaries and investment dealers are not employed by ICBC for the management of Canadian bonds, US bonds, mortgages, and real estate. Intermediaries such as investment dealers, mortgage brokers, and real estate brokers are only used to facilitate transaction flow. ICBC uses the services of mortgage servicers, property managers, and a custodian to administer ICBC's internally managed assets.

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**2012.1 RR VEJ.1.11.2 Reference: The ICBC Investment Portfolio**

**Figure 5.12 on page 5-13 of the application shows the annual management expense ratios for internal and external portfolios.**

**Please provide information on any investments included in this heading of "Internal Portfolios" to which intermediaries and/ or investment dealers are provided any form of compensation or opportunity.**

**Response:**

As discussed in the response to information request 2012.1 RR VEJ.1.11.1, ICBC utilizes intermediaries and investment dealers to facilitate the servicing and administration of its portfolio and security transactions. These intermediaries are paid compensation for the services they provide.

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**2012.1 RR VEJ.1.11.3 Reference: The ICBC Investment Portfolio**

**Figure 5.12 on page 5-13 of the application shows the annual management expense ratios for internal and external portfolios.**

**Please describe the settlement, clearing, holding, safe-keeping and record-keeping transactions and relationships that ICBC maintains for the management of its internal investments portfolios. Where are the bond certificates that ICBC owns and manages internally?**

**Response:**

Bond Portfolios

ICBC has contracted State Street Trust Company Canada (SSTCC) to be its custodian bank and thus to handle ICBC trade settlements, holdings, clearing, and safe-keeping. In addition, SSTCC handles recordkeeping of ICBC’s transactions and relationships that ICBC maintains for the management of its internal and external segregated investment portfolios. SSTCC is a financial service holding company that specializes in global custody and accounting, valuations, investment performance and analytics, compliance reporting, customized information delivery, cash management, benefit payments and fund administration, and reporting. Upon trade settlement, SSTCC registers and holds ICBC’s internal and segregated external assets in the Canadian Depository for Securities Limited (CDS). CDS is Canada’s national securities depository, clearing, and settlement hub. CDS provides depository, clearing, and settlement services to participants in Canada’s equity, fixed income, and money markets.

ICBC currently holds two bond certificates in a safe vault at RBC Royal Bank in Toronto. RBC Royal Bank acts as a sub-custodian to SSTCC for physical securities in Canada.

Mortgage Portfolio

ICBC’s mortgage investments are administered under contract by external mortgage servicing companies (Servicers). Original mortgage security documents are registered in the appropriate Land Registry or Land Titles office in the jurisdiction where the mortgaged property is located. ICBC and the Servicers maintain copies of all security and other documentation relating to each

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mortgage investment. The Servicers perform all day-to-day administration for each mortgage investment including, but not limited to, collection of financial information, collection and remittance of payments, maintaining complete accounting records, and handling all borrower contact. All mortgage payments collected are held in the Servicers' Trust accounts and are remitted, in aggregate, to ICBC along with a detailed accounting for all funds received. Mortgage advances are handled on a lawyer trust basis, with loan advances only being released upon satisfactory title registration; and pay-offs are received based upon ICBC's undertaking to discharge.

Real Estate Portfolio

For the real estate investment portfolio, day-to-day operations are administered by third party property managers who handle the collection of rent and payment of operating expenses through property specific trust accounts, with periodic remittances to ICBC of the excess cash balances. Detailed property management reports are provided to ICBC on a monthly basis to ICBC from property managers. Property purchases are handled on a lawyer trust basis, with the closing proceeds only being released upon satisfactory title registration. ICBC maintains all purchase closing documentation and all property leasing documentation.

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**2012.1 RR VEJ.1.11.4 Reference: The ICBC Investment Portfolio**

**Figure 5.12 on page 5-13 of the application shows the annual management expense ratios for internal and external portfolios.**

**Please describe the calculation of the real-estate management expense ratio listed under the "Internal Portfolios" heading.**

**Response:**

The following process is used to calculate real estate management expense ratio:

- Calculate an average annual market value for the real estate portfolio using beginning and end of year market values.
- Tabulate the annual investment management costs related to the real estate portfolio – this information is obtained directly from the ICBC book of records. The costs included in the calculation are: regular salaries and benefits, legal and professional services, training expenses, professional certification expenses, and business travel/accommodation related expenses, etc.
- Divide the annual investment management costs by the above calculated average annual market value to arrive at an expense ratio.

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**2012.1 RR VEJ.1.11.5 Reference: The ICBC Investment Portfolio**

**Figure 5.12 on page 5-13 of the application shows the annual management expense ratios for internal and external portfolios.**

**Presumably, there is a professional third-party real-estate management firm or firms that manage ICBC real estate holdings. Is it correct to assume that those third-party management expenses are not here included?**

**Response:**

Third party management expenses are not included in the annual management expense ratios. As per standard industry practice, third party management expenses are considered recoverable expenses and, for the most part, are recovered as additional rent collected from the tenants pursuant to their leases. These expenses, therefore, are netted against property revenue.

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**2012.1 RR VEJ.1.11.6 Reference: The ICBC Investment Portfolio**

**Figure 5.12 on page 5-13 of the application shows the annual management expense ratios for internal and external portfolios.**

**Is the 0.13% real-estate annual management expense ratio for 2010 the result of actual identifiable expenses or the result of fixed/ overhead expenses allocated based upon some metric?**

**Response:**

The real estate annual management expense ratio is based on the result of actual identifiable expenses. Please see the response to information request 2012.1 RR VEJ.1.11.4 for a detailed list of expenses included in the calculation of the real estate management expense ratio.

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**2012.1 RR VEJ.1.12 Reference: The ICBC Investment Portfolio**

**Can we be assured that any investment dealers, intermediaries or similar third-parties do not engage in any arbitrage with ICBC investment holdings?**

**Response:**

Arbitrage is defined as the simultaneous purchase and sale of an asset in order to profit from a difference in price. The potential for arbitrage is expected to exist due to market inefficiencies after adjusting for transaction costs. Investment dealers and other parties do not have access to any of ICBC's securities so they cannot engage in arbitrage opportunities for their own account. In the case of investment managers, investment managers have the ability to trade assets in ICBC's accounts, and therefore theoretically can engage in arbitrage trades for the benefit of ICBC.

As per standard industry practice, ICBC utilizes the safekeeping services of an independent custodian, State Street Trust Company of Canada (SSTCC), for all its equity and bond assets. All trades settle through accounts held in the name of ICBC and all trades, with the exception of the sale and purchase of pooled fund units, are matched by SSTCC against cash proceeds. Also, account activity is reconciled daily. The use of an independent custodian is a key control that ensures investment dealers or other third parties do not engage in arbitrage activities for their own benefit.

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**2012.1 RR VEJ.1.13 Reference: The ICBC Investment Portfolio**

**Can we be assured that ICBC investment holdings could be readily transferred to another/ other investment dealers/ intermediaries without any substantial notice at any time? i.e., the external investment dealers do not use ICBC investments for any non-ICBC arbitrage purposes.**

**Response:**

ICBC does not transfer investments from one investment dealer or intermediary to another unless there is a sale of assets for cash. This ensures that investment dealers do not use ICBC investments for any non-ICBC arbitrage purposes. Please see the response to information request 2012.1 RR VEJ.1.12.

ICBC investment holdings in bonds and equities are highly liquid and can be readily sold. All money market instruments can be sold and settled (asset transferred and cash received) on the same day; bonds have either a two or three day settlement standard depending on the type of bond; and equities have a three day settlement standard.

Real estate and mortgage investments are illiquid and cannot be readily sold and transferred to a third party.

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**2012.1 RR VEJ.1.14 Reference: The ICBC Investment Portfolio**

**Who are the "potential borrowers" approved by ICBC to borrow ICBC Insurance Portfolio securities per item 12.4 on Page 18 of the "ICBC Statement of Investment Policy and Procedures"? Is it other BC Crown corporations? Is it the provincial treasury? Is it any private or public-private entities? Is it external investment dealers? Other?**

**Response:**

All borrowers of ICBC securities are major financial institutions that have undergone a credit review by both ICBC and ICBC's custodian, State Street Trust Company of Canada. The following is a comprehensive list of entities permitted to borrow from ICBC in its securities lending program.

- Bank of Montreal
- Bank of Nova Scotia
- BMO Nesbitt Burns
- Canadian Imperial Bank of Commerce
- CIBC World Markets
- Desjardins Securities Inc.
- HSBC Securities (Canada) Inc.
- National Bank Financial
- National Bank of Canada
- RBC Dominion Securities Inc.
- Royal Bank of Canada
- Toronto Dominion Bank
- Scotia Capital Inc.
- TD Securities Inc.

**2012.1 RR VEJ.1.15 Reference: The ICBC Investment Portfolio**

**What has ICBC earned from the lending of its securities over the past five years? How is the profit earned from securities-lending accounted for?**

**Response:**

The following table shows what ICBC earned from lending of its securities over the past five years. The earnings from the securities lending program are taken into investment income.

2007 Earnings	\$915,395.02
2008 Earnings	\$857,380.55
2009 Earnings	\$0
2010 Earnings	\$51,868.59
2011 Earnings	\$638,094.16
<b>Total</b>	<b>\$2,462,738.32</b>

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**2012.1 RR VEJ.1.16 Reference: The ICBC Investment Portfolio**

**Item 10.6 of the ICBC Statement of Investment Policy and Procedures (page 17) says that derivative investments are permitted as long as they are used to "hedge portfolio risks or enhance portfolio returns." It is generally not possible to enhance (interpreted as "increase") portfolio returns without also increasing portfolio risk, which is prohibited in the next paragraph. Please describe hypothetical or actual scenarios where ICBC will "enhance" portfolio returns through the use of derivative investments.**

**Response:**

A derivative is a contract which has a value derived from something that is observable. By combining various contracts together into a package, it becomes possible to synthetically create an investment with the same risk characteristics as a physical security that would typically be held in the investment portfolio. In this way, it is possible to use derivatives without changing the portfolio risk. There are times when synthetically created securities are priced more cheaply than the physical security being replicated, and this provides an opportunity to enhance portfolio returns. In this case, derivatives can be used to enhance portfolio returns without adding to portfolio risk.

For example, on February 14, 2012 it was possible to replicate a Canadian denominated Province of Ontario bond exposure using a Province of Ontario bond denominated in Euros, with a maturity of 2013, in combination with interest rate and currency swaps. Due to a pricing differential between the physical and synthetic positions, it was possible at the time, to add to portfolio return by selling the Province of Ontario bond denominated in Canadian dollars and buying the synthetic exposure. From a portfolio perspective, risk would be neutral. Interest rate and currency swaps (derivatives) eliminated the added interest rate risk and currency risks of holding the foreign issued bond in the bond portfolio. Derivative counterparty risks would be managed contractually through a collateral exchange mechanism.

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**2012.1 RR VEJ.1.17 Reference: The ICBC Investment Portfolio**

**What are ICBC's outstanding derivative positions?**

**Response:**

As of December 31, 2011, the portfolio had no outstanding derivative positions.

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**2012.1 RR VEJ.1.18 Reference: The ICBC Investment Portfolio**

**Please provide a copy of the most recent derivative activity report prepared for the Investment Committee as mentioned in the investment policy and practices statement.**

**Response:**

ICBC does not have a recent report on derivatives because there are no material derivative holdings in the investment portfolio. However, equity managers on occasion hold rights and warrants which are technically derivatives. Because of their low-risk nature, these positions are reported via a quarterly investment compliance report which is submitted to the Investment Committee of the Board. The relevant excerpt from the compliance report submitted for the quarter ending December 31, 2011 is provided below:

Derivatives

The portfolio's equity managers owned warrants and rights during the quarter. It is against policy to use derivatives for leverage or speculation. However, the securities in the portfolio were not explicitly acquired for either of these purposes and were acquired at zero or close to zero value as part of private placement equity purchases or corporate actions, and therefore present no risk to the portfolio.

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**2012.1 RR VEJ.1.19 Reference: The ICBC Investment Portfolio**

**It is my understanding that ICBC borrows money from third parties to finance customer's premium payment plans. Is this correct? If so, please provide details. If not, please explain the transactions and accounting for customer's premium payment plans.**

**Response:**

ICBC does not borrow money from third parties to finance customer's premium financing plans. ICBC's premium financing plan affords customers the opportunity to pay for their insurance premiums via monthly installments rather than paying the full amount up front. Each participant on using ICBC's premium financing plan is assigned a customer account which is initially debited with the full amount of the insurance policy. The customer's account is then subsequently credited each month once their installment payment has been received. Each month, every customer account is also assessed a finance fee, which in turn is paid simultaneously with the monthly installment and then credited from the customer's account.

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## **2012.1 RR VEJ.1.20 Reference: The ICBC Investment Portfolio**

**Page 3-16 of the Application says that the result of the updated estimates for premium financing plan revenue is an impact of 0.3 percent on the 2012 rate indication. Why are the costs to finance premiums not borne entirely by the portion of the population that finances premiums? Some consumers pay their premium for an entire year in cash upfront; why are they required to pay for the financing of other's premiums through a 0.3 percent increase on their own rates?**

### **Response:**

ICBC charges a fee to policyholders who choose to take advantage of ICBC's premium financing plan. The net revenue from the premium financing plan is included in the actuarial rate level indication analysis in order to offset the required premium and lower the rates for all policyholders.

Please see the response to information request 2012.1 RR BCUC.16.1 for further details on the amount of this offset included in the actuarial rate level indication analysis.

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**2012.1 RR VEJ.1.21 Reference: The ICBC Investment Portfolio**

**Page 16 of the ICBC Statement of Investment Policy and Procedures handbook says that ICBC may use debt to finance real estate holdings. Does ICBC have any outstanding debt on real estate holdings that should be paid off, that can be paid off ahead of schedule, for which it would be reasonable and profitable to pay-off?**

**Response:**

Yes, ICBC has outstanding debt on real estate holdings. As is typical of most commercial real estate mortgages, the outstanding debts on real estate holdings are not repayable except by paying a defeasance penalty for early repayment based upon the current bond yields. With bond yields at historic lows, the defeasance costs are significant and it would neither be reasonable, nor profitable to pay-off early.

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**2012.1 RR VEJ.1.22 Reference: The ICBC Investment Portfolio**

**Does ICBC have any debt on any real estate holdings that is recourse to ICBC? If so, did it arise from taking over title and debt to a property with existing debts or was it entered into a new?**

**Response:**

Yes, ICBC does have debt on real estate holdings that is recourse to ICBC. All recourse debt arose from taking over title and debt to a property with existing debts. No debt has been entered into anew.

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**2012.1 RR VEJ.1.23 Reference: The ICBC Investment Portfolio**

**What is the value of ICBC recourse debt on title for real estate owned by ICBC?**

**Response:**

Of the \$71.5 million of debt on real estate holdings outstanding at December 31, 2010, \$62.5 million was recourse to ICBC.

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**2012.1 RR VEJ.1.24 Reference: The ICBC Investment Portfolio**

**Please describe and quantify any private placement bond holdings that ICBC holds.**

**Response:**

A private placement is a negotiated sale in which the securities are sold directly to institutional or private investors, rather than through a public offering. Such placements are not registered with the Securities and Exchange Commission.

ICBC has two such investments in its portfolio that fit the definition of private placement:

1. Hydro-One Floating Rate Note maturing 07/24/15 with a market value at December 31, 2011 of \$49,754,287.
2. Petro-Canada Centre 6.379% maturing 06/09/14 with a market value at December 31, 2011 of \$47,766,924.

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**2012.1 RR VEJ.2.1 Reference: Financials**

**Can you please divide the consolidated statements on pages 42 through 45 of the ICBC 2010 annual report on the basis of basic and optional insurance?**

**Response:**

The Basic insurance and Optional insurance split is not available for the Consolidated Statement of Financial Position and the Consolidated Statement of Cash Flows. Please refer to the 2010 ICBC Annual Report, Notes to the Consolidated Financial Statements, Note 16 Rate Regulation, pages 65 to 66, where Basic insurance and Optional insurance information is available for the Consolidated Statement of Operations, Equity and related liabilities.

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**2012.1 RR VEJ.2.2 Reference: Financials**

**Can you please provide recent consolidated statements divided by basic and optional insurance?**

**Response:**

Please see the response to information request 2012.1 RR VEJ.2.1. More recent Basic insurance and Optional insurance financial information than that contained in the 2010 ICBC Annual Report is not available.

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**2012.1 RR VEJ.2.3 Reference: Financials**

**I have not been able to locate recent (only December 31, 2010) financial statements in this rate application or attached documentation. Is it correct that ICBC has not yet provided BCUC or the interveners with at least a 3<sup>rd</sup> quarter 2011 financial statement update?**

**Response:**

Like other rate-regulated entities, ICBC provides regular compliance reporting to the Commission. While ICBC does not provide full financial statements on a quarterly basis, it does report on certain financial metrics such as Basic insurance net income and the Basic insurance Minimum Capital Test (MCT) ratio, and did so to the Commission on November 29, 2011 for the third quarter ending September 30, 2011. ICBC reported to the Commission a net loss of \$151.3 million and a Minimum Capital Test ratio of 120% for Basic insurance for the nine months ended September 30, 2011. Please see the response to information request 2012.1 RR AIC.13.4.

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**2012.1 RR VEJ.2.4 Reference: Financials**

**Can ICBC please provide its 2011 annual report (with the statements broken apart for basic and optional insurance) before the BCUC hearing commences?**

**Response:**

The ICBC 2011 Annual Report will be tabled with the Legislature by the end of May 2012 and publicly available thereafter.

**2012.1 RR VEJ.3.1 Reference: MCT**

MINIMUM CAPITAL TEST		
(\$'000)		
	Current Year (01)	Prior Year (02)
<b>Capital Available</b>		
Total Equity less Accumulated Other Comprehensive Income .....	02	
Add:		
Subordinated Indebtedness and Redeemable Preferred Shares ...	03	
Accumulated Other Comprehensive Income (Loss) on:		
Available for Sale Equity Securities .....	04	
Available for Sale Debt Securities .....	06	
Foreign Currency (Net of Hedging Activities) .....	08	
Included in Capital Available of Regulated FI Subsidiaries .....	10	
.....	30	
Capital Available reported by Regulated FI Subsidiaries .....	11	
Less:		
Accumulated net after-tax fair value gains (losses) arising from changes in the company's own credit risk .....	12	
.....	13	
Balance Sheet Value of Investments in Regulated FI Subsidiaries ..	14	
Assets with a Capital Requirement of 100% .....	17	
<b>Total Capital Available .....</b>	<b>19</b>	
<b>Minimum Capital Required</b>		
Balance Sheet Assets .....	20	
Unearned Premiums/Unpaid Claims/Premium Deficiencies .....	22	
Catastrophes .....	24	
Reinsurance Ceded to Unregistered Insurers .....	26	
Capital Required reported by Regulated FI Subsidiaries .....	27	
Structured Settlements, Letters of Credit, Derivatives and Other Exposures .....	28	
<b>Minimum Capital Required .....</b>	<b>29</b>	
<b>Excess Capital Available over Minimum Capital Required</b>		
(line 19 minus line 29) .....	89	
<b>Line 19 as a % of line 29 .....</b>	<b>90</b>	

I post here a copy of the Office of the Superintendent of Financial Institutions (OSFI) Minimum Capital Test (MCT) worksheet (referenced as 30.70 by OSFI). Please provide this (or similar), in completed form, for basic and optional insurance separately, for each year (or quarter if you have it) between the current time and the past five years. I

**understand that ICBC would have had to complete a worksheet like this to calculate MCT, so I trust it's straightforward to provide copies of that work already completed.**

**Response:**

The Commission does not regulate ICBC's Optional insurance business. The requested information relating to ICBC's Optional insurance business is competitive information and is not relevant to this proceeding.

The following table summarizes the most recent five years (December 31, 2006 to December 31, 2010) of the Basic Minimum Capital Test (MCT) ratio filed with the Commission:

<b>Basic MCT (\$ millions)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Capital Available:</b>					
Retained earnings	\$ 690	\$ 983	\$ 1,159	\$ 1,334	\$ 1,384
Other components of equity	165	188	69	262	319
Less: Assets with 100% requirement	-	-	(12)	(17)	(50)
<b>Total capital available</b>	<b>855</b>	<b>1,171</b>	<b>1,216</b>	<b>1,579</b>	<b>1,653</b>
<b>Capital Required:</b>					
Balance sheet assets	309	358	349	442	463
Unpaid claims / unearned premiums	489	505	514	530	541
<b>Minimum capital required</b>	<b>\$ 798</b>	<b>\$ 863</b>	<b>\$ 863</b>	<b>\$ 972</b>	<b>\$ 1,004</b>
<b>MCT ratio <sup>1</sup></b>	<b>107%</b>	<b>136%</b>	<b>141%</b>	<b>162%</b>	<b>165%</b>

<sup>1</sup> The 2006 MCT ratio is based on the Office of the Superintendent of Financial Institutions (OSFI) guidelines effective July 2003, the 2007 MCT ratio is based on OSFI guidelines effective January 2007 and the 2008 to 2010 MCT ratios are based on OSFI guidelines effective March 2008.

For 2011 MCT ratio information, please see the response to information request 2012.1 RR BCUC.20.2.

**2012.1 RR VEJ.3.2 Reference: MCT**

MINIMUM CAPITAL TEST				
CAPITAL REQUIRED FOR BALANCE SHEET ASSETS				
(\$'000)				
		Factor	Balance Sheet Value	Capital Required
		(%)		
		(01)	(02)	(03)
Cash .....	01	0.00%		
Investment Income Due and Accrued .....	02	2.00%		
Investments:				
Term Deposits, Bonds and Debentures:				
- Expiring or redeemable in one year or less:				
Government Grade .....	03	0.00%		
Investment Grade .....	04	0.50%		
Not-Investment Grade .....	05	4.00%		
- Expiring or redeemable in more than one year:				
Government Grade .....	10	0.00%		
Investment Grade .....	11	2.00%		
Not-Investment Grade .....	12	8.00%		
Loans (at amortized cost):				
Government Grade .....	13	0.00%		
Investment Grade Loans, and Residential Mortgages .....	14	4.00%		
Commercial Mortgages .....	15	8.00%		
Other .....	18	10.00%		
Adjustment to reflect difference between amortized cost and Balance Sheet value of loans .....	19			
Preferred Shares:				
Investment Grade .....	21	4.00%		
Not-Investment Grade .....	22	15.00%		
Common Shares .....	27	15.00%		
Investment in Real Estate .....	30	15.00%		
Investment in Subsidiaries, Affiliates, Partnerships:				
Regulated FI Subsidiaries .....	32	Note		
Other .....	33	Note		
Other Investments .....	35	Note		
Receivables:				
Government Grade .....	50	0.00%		
Facility Association and the "P.R.R." .....	51	0.50%		
Agents, Brokers, Policyholders, Subsidiaries, Affiliates, Partnerships and Other Receivables:				
- Instalment Premiums (not yet due) .....	54	0.00%		
- Outstanding less than 60 days .....	55	4.00%		
- Outstanding 60 days or more .....	56	8.00%		
Insurers - Registered .....	57	0.50%		
- Unregistered .....	58			
Recoverable from Reinsurers:				
- Registered - Unearned Premiums .....	60	0.50%		
- Unpaid Claims .....	61	2.00%		
- Unregistered .....	63			
Other Recoverables on Unpaid Claims .....	65	15.00%		
Real Estate for Insurer's own use .....	75	8.00%		
Deferred Policy Acquisition Expenses:				
Premium Taxes .....	76	0.00%		
Commissions .....	77	Note		
Other .....	78	Note		
Future Income Taxes:				
Discounted Reserves and Unrealized Gains .....	80	0.00%		
Other .....	81	Note		
Other Assets:				
Goodwill and Other Intangibles .....	85	Note		
Other Assets (net of Goodwill and Other Intangibles) .....	86	Note		
<b>TOTAL .....</b>	<b>89</b>			

Note: See Section VI and IX of the P&C-1 Instructions

I post here a copy of the Office of the Superintendent of Financial Institutions (OSFI) Minimum Capital Test (MCT) "Capital Required for Balance Sheet Assets" worksheet (referenced as 30.71 by OSFI). Please provide this (or similar), in completed form, for basic and optional insurance separately, for each year (or quarter if you have it) between the current time and the past five years. I understand that ICBC would have had to complete a worksheet like this to calculate MCT, so I trust it's straightforward to provide copies of that work already completed.

**Response:**

The Commission does not regulate ICBC's Optional insurance business. The requested information relating to ICBC's Optional insurance business is competitive information and is not relevant to this proceeding.

The following table summarizes the most recent five years (December 31, 2006 to December 31, 2010) of the information contained in the Office of the Superintendent of Financial Institutions (OSFI) Capital Required for Balance Sheet Assets schedule 30.71 for ICBC's Basic insurance as filed with the Commission. In addition, ICBC has included the December 31, 2011 information as requested.

<b>Capital Required Basic (\$ millions)</b>	<b>Factor (%)</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Investment income due & accrued	2%	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1
Investments:							
Bonds	0% to 8%	27	28	33	55	52	43
Mortgages	8%	37	43	43	46	50	52
Common shares	15%	182	218	191	250	266	233
Investment properties	15%	19	14	21	26	34	46
Receivables	4%	19	20	21	22	22	23
Real estate – own use	8%	2	3	3	3	4	3
Deferred premium acquisition costs	35%	3	10	14	14	8	-
Other assets	35%	19	21	22	25	26	17
<b>Balance sheet assets capital required</b>		<b>\$309</b>	<b>\$358</b>	<b>\$349</b>	<b>\$442</b>	<b>\$463</b>	<b>\$418</b>

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**2012.1 RR VEJ.3.3 Reference: MCT**

**Can you please show the source and calculation of the figure \$971,364,000 in Exhibit G.2 of your application for the "Minimum Capital Required at September 30, 2011?"**

**Response:**

Please see the response to information request 2012.1 RR BCUC.20.2. Minimum capital required at September 30, 2011 of \$971 million is comprised of capital required for balance sheet assets of \$403 million, net unpaid claims of \$484 million, and premiums written/unearned premiums of \$84 million.

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**2012.1 RR VEJ.4.1 Reference: Other Topics**

**Page 52 of the application references merchant fees paid to credit card companies. ICBC sells its product through third-party independent insurance agencies. Do these agencies use this credit card processing system (that goes through ICBC itself) for any non-ICBC business? How is this arranged? Does this mean that independent brokers have two systems: one for processing ICBC-related credit card and debit card transactions and another for their non-ICBC credit card and debit card transactions? On the one hand, allowing brokers to use ICBC systems for non-ICBC business is a benefit to brokers that should be compensated. On the other hand, requiring brokers to have and maintain the expenses of duplicate systems is inefficient and the savings possible from using only one system ought to be estimated and the benefit shared with brokers if sufficiently worthwhile.**

**Response:**

ICBC has implemented and maintains a credit card merchant program, which affords customers the option to pay via credit cards at all ICBC locations, including broker offices. The program includes having point-of-sale terminals in each broker's office, which are used exclusively for ICBC transactions. The proceeds from the transactions on the ICBC point-of-sale terminals flow directly to an ICBC bank account and are reconciled against the ICBC revenue transactions in the broker's office.

Independent brokers who choose to accept credit cards for non-ICBC transactions have their own credit card merchant programs with their own banks and would directly receive the funds associated with those transactions.

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**2012.1 RR VEJ.4.2 Reference: Other Topics**

The BCUC asks a question in its IR no.1 (question 121) that quotes ICBC saying, "In December 2009, the Supreme Court of Canada upheld Alberta's cap on minor auto injuries." The Supreme Court of Canada refused to hear the appeal. As such, the June 12, 2009 decision by the Alberta Court of Appeal upholding the Constitutionality of the Minor Injury Regulation stands. Currently, however, considerations in New Brunswick and Alberta are under way to consider changes to the Minor Injury Regulations in those provinces. As evidence of this, I attach two public documents to its effect. One is entitled, "Report of the Auto Insurance Working Group," published November 2011 by the Province of New Brunswick. The other is entitled, "Alberta's Minor Injury Regulation: Automobile Insurance Profits, Premium Rates, and Costs," and was authored November 15, 2011 by myself and Christopher Bruce for presentation by the Alberta Civil Trial Lawyers Association to the Alberta Cabinet Policy Committee on Finance. With regards to the BCUC question asking for ICBC's opinion on the topic— please confirm that ICBC can hold no opinion on the "merit" of this topic and that the proper place for consideration of it is in the public domain.

**Response:**

The Basic insurance coverage and benefits that ICBC provides are set by the provincial government through legislation and regulation. Changes to the Basic insurance coverage such as a cap on minor auto injuries are the jurisdiction of the BC Legislature.

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**2012.1 RR VEJ.4.3 Reference: Other Topics**

**Appendix 10C provides survey of road safety programs in other jurisdictions. The survey information provided for Saskatchewan is a budget of \$12 million. Saskatchewan levies a premium tax on automobile insurance in the amount of five percent of premium. One percent is levied for driver’s education programs and the other 4 percent is not earmarked (that I’m aware of). I understand that Saskatchewan spends \$2.685 million dollars per year on driver’s education<sup>1</sup> and that it’s financed from this one percent premium tax on all automobile insurance. I understand that this provides free driver’s education for every Saskatchewan high school student (~30 hours in classroom and ~6 hours actual driving) and that learner’s license tests are then provided en-masse in high schools at the end of the training. Does British Columbia have a similar program?**

<sup>1</sup> Page 96 of: <http://www.saskratereview.ca/images/docs/sgi-20121 rate-application-informational-documents.pdf>

**Response:**

BC’s driver training industry is operated primarily by privately-owned driver training schools and regulated by ICBC’s Driver Training Unit (DTU). Although focus is primarily on consumer protection, DTU’s policies and regulations positively impact driver skills development. This regulatory function is funded through a small percentage of ICBC’s premium revenue. ICBC neither offers nor funds high school-based driver education in BC because the current market for driver training provides abundant choice for parents, students and other new drivers.

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**2012.1 RR VEJ.5.1 Reference: Canada Line**

**For the Canada Line Project, ICBC states that "...the logic model for evaluating the impact of the Canada Line on crash claims is weak and depends on the assumption that the addition of the Canada Line has reduced traffic volume within the municipalities that it serves. Evidence does not support a change in traffic volumes related to the completion of the Canada Line." Without the construction of the Canada line, what would traffic volumes be if not higher than they currently are?**

**Response:**

Please see the response to information request 2012.1 RR BCOAPO.13.1.

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## 2012.1 RR VEJ.5.2 Reference: Canada Line

**Can you please explain Figure 3A.6 on page 3A-20, "Ratio of Translink Ridership to Metro Vancouver Population by Quarter?" Please provide the calculations and data you used to construct this figure. Please define and explain the axis on the left-hand side of the Figure that ranges from 0 to 3000. Does this mean that 1 in 2000 people use Translink? ...per day? ...per year?**

### **Response:**

Figure 3A.6 in Appendix 3 A of the Application shows Translink ridership from 2003 to 2010 by quarter in relation to the population of Metro Vancouver (a regional designation consisting of 21 municipalities including the City of Vancouver and the City of Richmond). The "Y" or left-hand axis of the graph indicates the number of rides taken on a TransLink-operated public transportation modality (including Sea Bus, Sky Train, and Canada Line) for every 100 persons in the Metro Vancouver area during each three month period. A ride consists only of the first board; that is, when the fare is paid. It does not include counts for transfers to other services. Please see Attachment A – Ratio of Translink Ridership to Metro Vancouver Population by Quarter for the data and calculations used in the construction of Figure 3A.6.



# **2012.1 RR VEJ.5.2 – Attachment A – Ratio of Translink Ridership to Metro Vancouver Population by Quarter**

**Data Table for Figure 3A.6 –**

**Ratio of TransLink Ridership to Metro Vancouver Population by Quarter**

	<b>A</b>	<b>B</b>	<b>D= (A / B) * 100</b>
<b>Year - Qrt</b>	<b>Total Riders On TransLink</b>	<b>Metro Vancouver*</b>	<b>Ratio of Rides to Population (rides per 100 people)</b>
2003-4	37,804,865	2,113,827	1788.5
2004-1	38,801,117	2,129,427	1822.1
2004-2	38,543,959	2,129,427	1810.1
2004-3	38,618,966	2,129,427	1813.6
2004-4	39,629,956	2,129,427	1861.1
2005-1	39,168,218	2,154,939	1817.6
2005-2	39,730,232	2,154,939	1843.7
2005-3	39,554,403	2,154,939	1835.5
2005-4	41,260,935	2,154,939	1914.7
2006-1	41,246,567	2,179,599	1892.4
2006-2	41,040,175	2,179,599	1882.9
2006-3	40,224,244	2,179,599	1845.5
2006-4	42,562,216	2,179,599	1952.8
2007-1	42,952,577	2,216,636	1937.7
2007-2	42,968,915	2,216,636	1938.5
2007-3	42,052,768	2,216,636	1897.1
2007-4	44,095,261	2,216,636	1989.3
2008-1	44,331,769	2,251,592	1968.9
2008-2	44,497,024	2,251,592	1976.2
2008-3	43,956,221	2,251,592	1952.2
2008-4	46,011,356	2,251,592	2043.5
2009-1	45,704,373	2,298,610	1988.3
2009-2	45,531,140	2,298,610	1980.8
2009-3	46,659,332	2,298,610	2029.9
2009-4	50,017,296	2,298,610	2176.0
2010-1	56,398,244	2,349,791	2400.1
2010-2	50,892,138	2,349,791	2165.8
2010-3	51,298,687	2,349,791	2183.1
2010-4	53,054,584	2,349,791	2257.8

TransLink ridership data were provided by Translink (April 2011).

Population data were obtained from the Statistics Canada website (March 2011).

\*The Metro Vancouver population includes these cities:

Anmore	North Vancouver City
Belcarra	North Vancouver District Municipality
Bowen Island	Pitt Meadows
Burnaby	Port Coquitlam
Coquitlam	Port Moody
Delta	Richmond
Langley City	Surrey
Langley District Municipality	Vancouver
Lions Bay	West Vancouver
Maple Ridge	White Rock
New Westminster	

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**2012.1 RR VEJ.5.3 Reference: Canada Line**

**Did ICBC provide any funding or material support for the Canada line in expectation of a savings in claims?**

**Response:**

ICBC did not provide any funding or material support for the Canada Line.

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**2012.1 RR VEJ.5.4 Reference: Canada Line**

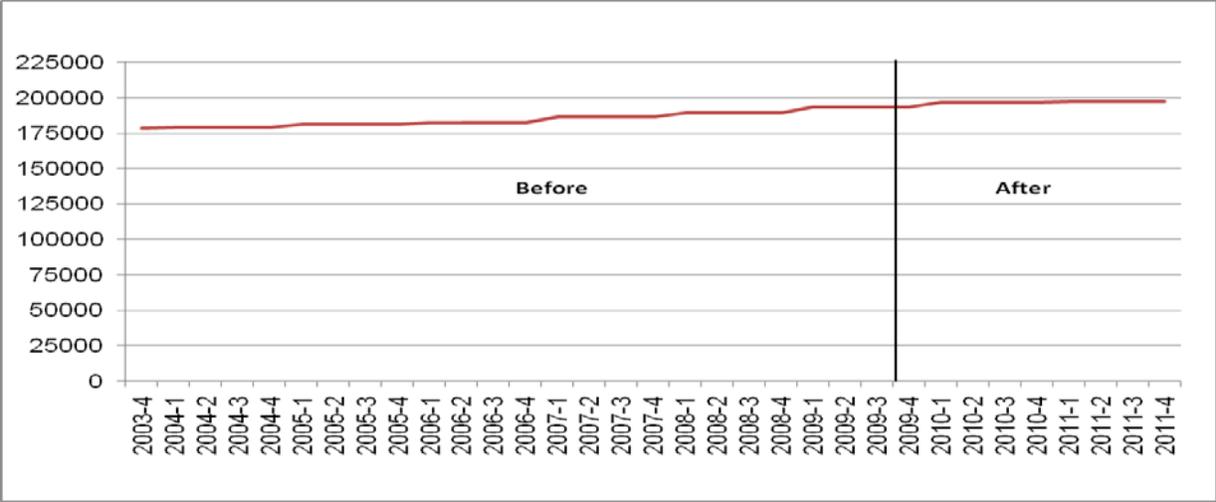
**Has ICBC not sourced data on the ridership and demographics of the Canada line to make estimates of the current vehicle traffic between Richmond and Vancouver if the Canada line were not built?**

**Response:**

As noted in Chapter 3, Appendix 3 A of the Application, traffic volume data from the City of Vancouver and from the City of Richmond were obtained in order to investigate whether there was any indication of a change in traffic trends before and after the introduction of the Canada Line. The trends for both municipalities were similar and did not reveal significant traffic volume growth. Furthermore, there was no indication of a change in the level or slope of the traffic volume trend line for the City of Richmond, for the combined “Vancouver + Richmond” group of municipalities, or in the comparison group of “Other Municipalities”. Consequently, the observed data do not support a hypothesis that traffic volume would have been different had the Canada Line not been introduced.

Population growth is only one factor that may influence traffic volume. Roadway capacity, availability of alternative public transit options, and population growth are all factors, and their relationships with traffic volume are complex. The City of Richmond population has been growing steadily since 2003 (see figure below). There was a small jump in population that occurred in the first few months following the implementation of the Canada Line, but it is not known whether this increase is attributable to the Canada Line or to other factors. Since then, the rate of growth has slowed to a level slightly lower than that observed prior to the introduction of the Canada Line. Given the complex relationships that exist between traffic volumes, travel by public transit, population growth, and roadway capacity, forecasting what traffic volumes might have been in the absence of this new service would be highly speculative.

**Richmond Local Health Area Population (Aged 15 to 90+) Before and After Completion of the Canada Line**



Source: BC Stats (2012)

It should also be noted that the Canada Line was completed in mid-August 2009, and any impact that the new service had on claims would have begun early in 2010. By 2011 and 2012, any continuing effects would be non-incremental and would be captured in current trends. ICBC actuaries monitor claims experience on a monthly basis, and update the trend models regularly throughout the year in order to take into account the most recent information available. As a result, any direct or indirect impacts of the Canada Line on Basic insurance claims costs have been included in the data underlying the actuarial rate indication analysis.

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**2012.1 RR VEJ.5.5 Reference: Canada Line**

**Has ICBC not sourced data on the increase in population in Richmond attributable to the construction of the Canada line?**

**Response:**

ICBC has found no information indicating that there has been a population increase in Richmond that is specifically attributable to the construction of the Canada Line. Please see the response to information request 2012.1 RR VEJ.5.4 for further details on population growth in this municipality.

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**2012.1 RR VEJ.5.6 Reference: Canada Line**

**5.6 On page 3A-21, Figure 3A.7 provides Metro Vancouver traffic counts by quarter before, after and during construction of the Canada line. Can you please provide the data in workable format itself in addition to this graph?**

**5.6.1 I see that two models have been written on this figure with different directional predictions:  $y=3987.5x+7E06$  and  $y=-338.7x+9E+06$ . It is not clear whether these models are for the Vancouver, Richmond and Other Municipalities combined during and after construction...whether one is for the "V+R" data and the other is for the "Other\_municipalities" data over all time...or whether some other specification was intended. Please explain and define.**

**Response:**

**5.6**

Please see Attachment A – Traffic Volume for Figure 3A.7.

**5.6.1**

The equations for the linear regression trend lines shown on Figure 3A.7 on page 3A-21 of Appendix 3 A in the Application describe the trends in traffic volumes from quarter four of 2003 through quarter four of 2010. The equation “ $Y = -338.7X + 9E+06$ ” shown on the graph refers to the estimated trend line for the “Vancouver+Richmond” group of municipalities, while the equation “ $Y = 3987.5X + 7E+06$ ” is the estimated trend line equation for the “Other Municipalities” group. Although seasonal variation is observed in both cases, the estimated trend lines reflect the relative stability of traffic volume over time in these two geographic regions.



## **2012.1 RR VEJ.5.6 – Attachment A – Traffic Volume for Figure 3A.7**

**Traffic Count Data for Metro Vancouver and Other Municipalities**

Date	Traffic Volume	
	V+R	Other_Municipalities
2003-4	8,691,059	6,918,614
2004-1	8,496,722	6,714,824
2004-2	8,877,401	7,230,569
2004-3	8,976,650	7,401,491
2004-4	8,683,485	7,012,238
2005-1	8,300,802	6,661,673
2005-2	8,962,275	7,295,663
2005-3	8,984,176	7,586,084
2005-4	8,502,872	7,049,011
2006-1	8,425,026	6,947,027
2006-2	8,789,747	7,403,290
2006-3	8,862,540	7,559,132
2006-4	8,670,480	6,971,675
2007-1	8,564,476	6,783,580
2007-2	8,741,038	7,371,360
2007-3	9,062,252	7,558,392
2007-4	8,561,057	7,014,089
2008-1	8,448,370	6,892,582
2008-2	8,872,505	7,410,314
2008-3	8,845,165	7,451,658
2008-4	8,196,535	6,889,895
2009-1	8,208,751	6,860,795
2009-2	8,833,699	7,459,559
2009-3	9,057,709	7,463,718
2009-4	8,627,149	6,992,025
2010-1	8,405,149	6,834,669
2010-2	8,897,540	7,319,010
2010-3	9,031,566	7,410,123
2010-4	8,618,342	6,955,931
2011-1	8,373,187	6,887,014
2011-2	8,829,775	7,144,500
2011-3	9,100,627	7,286,166
2011-4	8,708,800	7,129,768

Source: Ministry of Transportation and Infrastructure, January 2012, downloaded from Traffic Data Program at <http://www.th.gov.bc.ca/trafficData/index.asp>

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**2012.1 RR VEJ.6.0 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that ICBC does not issue new licenses to new broker agency offices that wish to sell and service ICBC Autoplan. It is also my understanding that these licenses to do business with our Crown Corporation are worth up to \$200,000 each on the private market.**

**With approximately 900 broker offices, does this mean there are capitalized artificial assets supported by ICBC's non-issuance of new licenses that are worth \$180 million dollars? If true, is it justified and in the public interest? If these licenses are worth this much, could ICBC not issue new licenses for a profit (thereby offsetting the need to raise rates) and simultaneously increase competition and provide opportunities for new and young entrepreneurs to serve their communities and take pride of ownership in a small business?**

**Response:**

ICBC has not issued new Autoplan Agency Agreements (Agreements) since 1992. Since brokers are permitted to sell or transfer an Agreement subject to the approval of ICBC, a market has been created for Agreements that is based on supply and demand. ICBC does not track or regulate the value of Agreements and the value of a transaction is not required to be disclosed to ICBC, therefore ICBC does not comment on their value. ICBC believes the public is well served by the current number of Agreements and believes that because they are transferable, brokers compete for areas that they perceive to be underserved. ICBC does not take into consideration the value of an Agreement when determining Basic insurance fee costs for customers.

ICBC has not considered issuing Agreements for a profit. ICBC is concerned that the creation of more Agreements has the potential to increase ICBC's operational costs for broker support.

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**2012.1 RR VEJ.6.1 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that ICBC has approximately 900 Autoplan broker agreements. Is this correct? How many broker-partners does ICBC have agreements with for the provision of mandatory basic automobile insurance and other services? Please provide this information for each year for the past twenty years.**

**Response:**

ICBC has approximately 900 Autoplan Agency Agreements servicing Basic insurance and other services, and this number has remained constant since 1992.

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**2012.1 RR VEJ.6.2 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that if an entrepreneur wishes to start a new general insurance agency in British Columbia and she already possesses the BC Insurance Council professional licensing requirements, she will need to purchase an Autoplan license on the free-market if she wishes to sell and service ICBC basic mandatory automobile insurance. Is this correct?**

**Response:**

Yes, an Autoplan Agency Agreement is necessary to sell and service ICBC Basic insurance and is transferable, subject to ICBC approval.

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**2012.1 RR VEJ.6.3 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that when these licenses to sell and service Autoplan change hands on the open market, the parties to the deal will need to communicate the deal to ICBC to ensure that ICBC is aware of the transaction. Is this correct?**

**Response:**

Yes, it is. Section 10 of the Autoplan Agency Agreement, set out below, requires that ICBC approve any sales and/or transfers.

**10. ASSIGNMENT OF APPOINTMENT**

The Agent shall not assign this Appointment and Agreement nor any of the power, authority, benefits or advantages arising therefrom without the express written consent of the Corporation and then only subject to such conditions as the Corporation may then impose. The consent of the Corporation shall not be unreasonably withheld.

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**2012.1 RR VEJ.6.4 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that ICBC has no say in the sale and purchase of these licenses to sell and service Autoplan. Is this correct? If it is not correct, what is the extent of ICBC's authority in the matter? Can ICBC nix a deal between independent third-party entrepreneurs who wish to exchange a license to sell and service Autoplan ... or the shares in a private corporation that owns the license?**

**Response:**

Under section 10 of the Autoplan Agency Agreement, which is set out in the response to information request 2012.1 RR VEJ.6.3, ICBC must provide consent for all sales and/or transfers and that the consent of ICBC shall not be unreasonably withheld.

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**2012.1 RR VEJ.6.5 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**I understand that a license to sell and service Autoplan can change hands in at least two ways: (1) the license can remain with the corporate entity and the shares in that corporate entity can be bought and sold. (2) The license to sell and service Autoplan itself can be bought and sold between corporate or natural persons. Are there any restrictions imposed by ICBC on the sale/ beneficial transfer of these licenses?**

**Response:**

Yes. ICBC will assess the ability of the purchaser to comply with the terms and conditions of the Autoplan Agency Agreement and may require additional stipulations to ensure compliance. For example, if a broker is the last remaining Autoplan office in a community, ICBC will not approve a move to another location outside of that community so as to ensure continuity of customer access to Autoplan products and services.

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**2012.1 RR VEJ.6.6 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that when a license to buy and sell Autoplan is changed in the free market (either actually or effectively as the case may be with the sale of the shares of an entity entitled to hold the license) ICBC will become aware of the contract and sale. Is this correct? Is ICBC privy to the details? Is ICBC privy to the value of the sales?**

**Response:**

Yes, ICBC is notified of the sale.

ICBC is privy to the ownership of the purchaser through the Central Securities register. This provides the names of the individuals who form the company. ICBC also requests that the draft purchase agreement, which may contain more details, is included in the information provided.

ICBC does not require the value of a sale to be reported.

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**2012.1 RR VEJ.6.7 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that these licenses to sell Autoplan trade on the free market for prices that have recently been between \$90,000 and \$200,000 per broker/ agency office. Is this true? What are the numbers for the past twenty years?**

**Response:**

As stated in the response to information request 2012.1 RR VEJ.6.0, ICBC does not monitor the selling price of Autoplan Agency Agreements nor are they required to be disclosed, so ICBC does not have any data to provide.

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**2012.1 RR VEJ.6.8 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**What data can ICBC provide on the value of licenses to sell and service Autoplan (ICBC's mandatory basic automobile insurance)?**

**Response:**

As stated in the response to information request 2012.1 RR VEJ.6.0, ICBC does not track these values and has no data to provide.

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**2012.1 RR VEJ.6.9 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**When did ICBC last issue a new license to sell and service Autoplan? What are the reasons for ICBC's non-issuance of new licenses to sell and service Autoplan? What will the conditions and logic matrix be for the future issuance of new licenses to sell and service Autoplan?**

**Response:**

ICBC last issued a new Autoplan Agency Agreement in 1992.

ICBC believes that customers are well served by the current number of brokers in BC, as customer satisfaction scores with the broker distribution network remain high. In addition, ICBC is concerned that the creation of more Autoplan Agency Agreements has the potential to increase ICBC's operational costs. Therefore, at this time, ICBC intends to maintain the current number of Autoplan Agency Agreements.

ICBC will continue to monitor customer satisfaction scores and customer feedback on an ongoing basis and reserves the right to issue new Agreements when it deems customer needs are not being met.

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**2012.1 RR VEJ.6.10 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**For the past 100 new licenses that ICBC has permitted to sell and service Autoplan, what, if anything, has ICBC profited or charged for the right to do business with ICBC?**

**Response:**

As indicated in the response to information request 2012.1 RR VEJ.6.9, ICBC has not issued any new Autoplan Agency Agreements since 1992. When ICBC stopped issuing new Agreements, a value was then created on the open market based on supply and demand. ICBC has never attempted to profit from this value or interfere with pricing valuations that are determined by the open market. ICBC does not take into consideration the value of an Agreement when determining Basic insurance rates for customers.

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**2012.1 RR VEJ.6.11 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**How does ICBC provide balance to the interests of incumbent insurance broker agency offices, young insurance brokers who wish to compete but can't afford a license, and the needs of customers who deserve quality and competitive customer service?**

**Response:**

As indicated in the response to information request 2012.1 RR VEJ.6.9, ICBC believes customers are well served with the current number of broker offices. ICBC does not monitor nor manage the demographic profile of the broker distribution system.

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**2012.1 RR VEJ.6.12 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**What are the estimated costs to ICBC for the issuance of a new license to sell and service Autoplan? For example: training, setup, computer equipment, back-end support, technical support, etc? Please provide this on an initial setup and ongoing basis. How has ICBC recovered these costs (or their lower/ higher historical values) from the incumbent 900 broker offices that ICBC partners with?**

**Response:**

As noted in the response to information request 2012.1 RR VEJ.6.9, ICBC has not issued a new Autoplan Agency Agreement (Agreement) since 1992 and therefore has no data with respect to startup costs. ICBC does not recover support costs from incumbent broker offices to distribute Basic insurance and has not calculated the marginal cost increases from creating new Agreements. Support costs may include face to face office setup assistance and training, primary phone support through the Broker Enquiry Unit, and secondary support from numerous ICBC departments such as Account Services, Agency Banking, Autoplan Education, and Personal and Commercial Insurance.

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**2012.1 RR VEJ.6.13 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**It is my understanding that when a broker partner hires a new insurance agent to sell and service Autoplan, ICBC pays for the cost of training that new hire on the ICBC product and systems. Is this correct? Is there not an ongoing weekly program in North Vancouver for the training of these new hires? What is the ongoing cost of this program? What is the cost of this program per person trained? How many people were trained in each year for each of the past twenty years? It is my understanding that these training sessions are at no-cost to the individual new hire. So who pays for the cost of these trainings? And what is the cost of the entire program? Do the independently owned broker offices compensate ICBC in any way for this program? If one broker office has a high rate of staff turnover due to poor management and poor treatment of its employees ... does this cost get borne by all rate payers or by the broker office that is treating its insurance broker employees poorly?**

**Response:**

The Autoplan Basics for Brokers program provides new Autoplan brokers with comprehensive knowledge of Basic insurance and Optional insurance products. The training ensures that brokers are knowledgeable of ICBC's products and services and are able to address customers' questions or concerns, recommend the appropriate products to meet the customers' individual needs, and show the value and benefits of the various coverages to the customer.

Overall, the program provides a knowledgeable broker force that has a strong understanding of ICBC's products and services in order to ensure policyholders have the right insurance coverage providing them with peace of mind.

Instructors are subject matter experts in their field. They keep up to date with changes to products, policies, and guidelines. ICBC provides a comprehensive product, so by having an ICBC instructor provide this learning to new brokers ICBC knows they are receiving up to date, accurate information to better serve customers. Without this program new brokers would have to learn about ICBC's products and services on their own.

The training ICBC provides is optional for new brokers. It is not a mandatory requirement of the Insurance Council of British Columbia or ICBC for a broker to participate in the training programs. ICBC's in-house instructors provide a 4-day learning program every second week.

The program is delivered primarily out of training facilities in North Vancouver and Surrey. Brokers can also attain this learning through an instructor-supported online course. An online course runs at the beginning of every month over a four week period.

ICBC does not pay for the cost of brokers to attend the programs (travel, wages, time off, etc). ICBC's commitment to brokers is to provide opportunities to learn about ICBC's product as well as the sale and service of the products.

Until July 1, 2010 brokers were charged fees to participate in courses. Effective July 1, 2010 the course fees were removed as a result of a business decision to support brokers in learning ICBC's product and process. This is a common approach across most insurance organizations. The number of course offerings for new broker training did not increase; however, the number of participants who attend the online course increased.

Listed below are the statistics for the past five years identifying the number of sessions offered and total number of participants for that year. ICBC employs the equivalent of approximately 1.5 FTE employees to deliver this learning.

AUTOPLAN BASICS FOR BROKERS Classroom	Sessions	Attendees
2007 (Jan - Dec 31)	42	524
2008 (Jan - Dec 31)	43	523
2009 (Jan - Dec 31)	26	331
2010 (Jan - Dec 31)	27	399
2011 (Jan - Dec 31)	26	381

AUTOPLAN BASICS FOR BROKERS Online		
2007 (Sept)	1	10
2008 (Jan - Dec 31)	11	222
2009 (Jan - Dec 31)	18	303
2010 (Jan - Dec 31)	13	423
2011 (Jan - Dec 31)	13	521

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**2012.1 RR VEJ.6.14 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**Please provide more discussion and information on the "INSURANCE SERVICES SATISFACTION" survey based on only 4,000 of the 3 million customers.<sup>2</sup> How are the 4000 survey participants selected? How is the survey administered? Is it administered in-person immediately after completing the transaction with the broker office? Is it completed at-home by the consumer on his computer? Is it completed by telephone? How is the representation of the general population (AND sufficient randomness) ensured by the design of the survey? What are the questions asked on the survey? How are the results of the surveys tabulated? Please provide the data, calculations and results. Please provide the original survey design report and each report from the firm that conducts the survey (for the past five years).**

<sup>2</sup> Referenced on page 9-3 of the application

**Response:**

Respondents for the Insurance Services Satisfaction survey are randomly selected from all customers who have completed an insurance purchase transaction at a broker's office in the last month. The survey is conducted on a monthly basis over the telephone, via a third party provider.

The ICBC insurance customer base is not the same as the general population base in BC; therefore, the survey is not designed to represent the general population but it is designed to be representative of ICBC customers who purchase insurance. The random selection process is automated; ICBC reviews the data to ensure it is representative of the insurance purchase customer base.

The Insurance Services Satisfaction survey is comprised of two questions. The one survey question that makes up the Insurance Services Satisfaction measure is: "Thinking of this purchase experience with your Autoplan broker, would you say that you were (random reversal) very satisfied, somewhat satisfied, somewhat dissatisfied or very dissatisfied with the service you received?" The other survey question asks customers whether or not the customer has purchased Optional coverage from an insurer other than ICBC. Respondents have the choice of "yes", "no", or "don't know"; results for 2010 are reported in Chapter 9, page 9-4. The results of this question do not form a part of the Insurance Services Satisfaction measure.

The Insurance Services Satisfaction measure is calculated annually by adding the monthly results of those who indicate they are either 'very satisfied' or 'somewhat satisfied' together, and then dividing by the total number of respondents.

ICBC does not have any reports on the Insurance Services Satisfaction measure. ICBC receives the results from the third-party provider in the form of data tables. The results are calculated, as described in the paragraph above, based on the data tables. The Insurance Services Satisfaction results are reported in the ICBC Annual Report, the ICBC Service Plan, and to the Commission annually.

The Insurance Services Satisfaction measure for the past 5 years is:

Year	# of respondents	Insurance Services Satisfaction Measure
2006	1046	93%
2007	1082	93%
2008	1023	93%
2009	3971	96%
2010	3607	97%

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**2012.1 RR VEJ.6.15 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**Please provide more discussion and information on the "AUTOPLAN SATISFACTION SURVEY" referenced on page 9-3. How are the survey participants selected? How is the survey administered? Is it administered in-person immediately after completing the transaction with the broker office? Is it completed at-home by the consumer on his computer? Is it completed by telephone? How is the representation of the general population (AND sufficient randomness) ensured by the design of the survey? What are the questions asked on the survey? How are the results of the surveys tabulated? Please provide the data, calculations and results. Please provide the original survey design report any reports from this survey for the past five years.**

**Response:**

The Autoplan Satisfaction Survey is the Insurance Satisfaction Survey; there is no difference between the two. Please see the response to information request 2012.1 RR VEJ.6.14.

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**2012.1 RR VEJ.6.16 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**Please provide more discussion and information on the "CUSTOMER APPROVAL INDEX" referenced on page 9-2. How is the index structured? How are survey participants selected? How is the survey administered? What are the questions asked on the survey? How are the results of the surveys tabulated? Please provide the calculations and results. Please provide any reports on this index for the past five years.**

**Response:**

The Customer Approval Index is a directional measure based on 11 general statements about rates, service, and road safety. Respondents are randomly selected from those who have either an ICBC insurance policy or a valid BC driver's license; there is no requirement for respondents to have recently completed an ICBC transaction. The random selection process of respondents is automated.

The survey is conducted over the telephone by a third-party provider, with 500 respondents each quarter. The survey is as follows:

**AGREE-DISAGREE STATEMENTS**

Now I am going to read you some statements about ICBC and I would like you to tell me whether you agree or disagree with each statement.

**Rates**

The first few statements are about ICBC rates. In your personal opinion, do you strongly agree, somewhat agree, somewhat disagree or strongly disagree that [INSERT FIRST RANDOM]?

How about [INSERT NEXT RANDOM]?

- My ICBC auto insurance premiums are reasonable
- ICBC makes a real effort to keep my insurance rates as low as possible
- ICBC is fair in the way it sets rates for my insurance coverage
- ICBC provides good value to me as a customer

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Answer Choices:

Strongly agree

Somewhat agree

Somewhat disagree

Strongly disagree

(DO NOT READ) Neither/neutral

The next few statements are about ICBC service. How about [INSERT NEXT RANDOM]?

ICBC is a reliable company to deal with

ICBC treats me fairly in my dealings with them

ICBC is responsive to me as a customer

ICBC is a company I can trust

ICBC values me as a customer

Answer Choices:

Strongly agree

Somewhat agree

Somewhat disagree

Strongly disagree

(DO NOT READ) Neither/neutral

The last few statements are about ICBC's participation in road safety programs. How about [INSERT NEXT RANDOM]?

ICBC road safety programs are effective at reducing traffic accidents and injuries

ICBC road safety programs are effective at controlling the cost of automobile insurance

Answer Choices:

Strongly agree

Somewhat agree

Somewhat disagree

Strongly disagree

(DO NOT READ) Neither/neutral

Results are calculated annually by adding the quarterly results of those who indicate they 'strongly agree' or 'somewhat agree' with each of the 11 statements, and then dividing by the total number of respondents.

ICBC does not have any reports on the Customer Approval Index. ICBC receives the results (from the third-party provider) in the form of data tables. The results are calculated, as described in the paragraph above, based on the data tables. ICBC reports the Customer Approval Index results to the Commission annually.

The Customer Approval Index results for the past five years are:

Year	# of respondents	Customer Approval Index
2006	2000	61%
2007	2000	56%
2008	2000	56%
2009	2000	59%
2010	2000	59%

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**2012.1 RR VEJ.6.17 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**If ICBC was to issue a new license for a new general insurance agency office (to sell and service Autoplan), would ICBC charge that new office for the costs incurred in setting-up the arrangement? What would those costs be?**

**Response:**

ICBC has no plans to issue new Autoplan Agency Agreements and has not determined what costs might be charged, if any, should new Agreements be issued.

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**2012.1 RR VEJ.6.18 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**Can ICBC provide any other information to guide and justify policy regarding issuance and non-issuance of new ICBC licenses to sell Autoplan?**

**Response:**

ICBC's response as to why it is not currently planning to issue any new Autoplan Agency Agreements is discussed in the response to information request 2012.1 RR VEJ.6.9. ICBC has no further information to provide.

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**2012.1 RR VEJ.6.19 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**Has ICBC conducted any cost-benefit (or similar) analysis that guides its decision-making in the issuance/ non-issuance of new Autoplan licenses? If so, please provide.**

**Response:**

ICBC has not conducted any cost-benefit (or similar) analysis related to the issuance of new Autoplan Agency Agreements.

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**2012.1 RR VEJ.6.20 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**When the license to sell and service Autoplan changes hands in the private market, does ICBC receive any type of compensation from the parties to offset the costs involved by ICBC to train the new owners and operators who take over?**

**Response:**

ICBC receives no compensation or cost offsets for this work effort. The work effort may vary considerably depending on whether the current staff in the office are retained, whether or not the Autoplan Agency Agreement is moved to a different location, and depending on the experience level of the new owner and management. ICBC considers expenses that are essential to maintaining continuity of service to customers as a cost of doing business and ICBC has no plans to offset these costs on to brokers.

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**2012.1 RR VEJ.6.21 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**When the ownership of an independent insurance agency office changes hands in the private market, and the license to sell ICBC Autoplan stays with that independent private corporate (natural person, or other) entity, does ICBC receive any type of compensation, remuneration, costs, awards or similar payments or privileges as a result of or connected to the transaction?**

**Response:**

ICBC does not receive any type of compensation, remuneration, costs, awards, or similar payments or privileges for the work performed in the scenario outlined.

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**2012.1 RR VEJ.6.22 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**When the ownership of an independent insurance agency office changes hands in the private market, and the license to sell ICBC Autoplan stays with that independent corporate entity, does ICBC ever provide financing to the parties involved in the sale of that private entity? Has ICBC ever provided financing to pay for the value of the ICBC license to sell and service Autoplan? Please provide an account of all such transactions in the past twenty years. If so, from where does the financing come: basic equity, basic reserves, optional equity, or optional reserves? Please provide details on the interest charged and earned by ICBC, defaults (if any), existence or non-existence of personal guarantees by the owners involved, etc.**

**Response:**

ICBC has never provided financing in any form, including the scenarios described in the information request.

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**2012.1 RR VEJ.6.23 Reference: Independent Insurance Broker Agency Offices that Partner with ICBC**

**Has ICBC ever providing financing to assist one entrepreneur who wishes to buy (in whole or in part) the agency office, license to sell Autoplan, customer accounts, goodwill, employee contracts, etc? Please provide an account of all such transactions in the past twenty years. If so, from where does the financing come: basic equity, basic reserves, optional equity, or optional reserves? Please provide details on the interest rates charged and earned by ICBC, defaults (if any), existence or non-existence of personal guarantees by the owners involved, etc.**

**Response:**

ICBC has never provided financing to assist anyone in the purchase of an Autoplan Agency Agreement, including in any of the scenarios described.

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**2012.1 RR VEJ.7.1 Reference: Prospective Adjustments Demographic Shifts**

**At the BCUC's ICBC workshop in January of this year, 2012, ICBC disclosed that two emergent trends in the rate structure are affecting the need for the revenue requirement to be increased. I understand that changes to the rate structure are not part of this current BCUC project. But in so far as ICBC points a finger to the rate structure as a reason for the revenue requirement, please discuss the following questions. The two emergent trends are: (1) that more customers are becoming lodged into the area of the Claim Rated Scale that provides the greatest discount, and; (2) more and more individuals are becoming eligible for the senior's discount(s). Does ICBC have any direction from government for the amelioration of these effects over time or is the status quo to continue to deteriorate?**

**Response:**

Other than the extent to which changes in the distribution of customers impacts the average premium trend (as addressed in the responses to information requests 2012.1 RR VEJ.7.1 to 7.3), ICBC views the remainder of this series of information requests (information requests 2012.1 RR VEJ.7.4 to 7.12) as relating to rate design and not to the determination of revenue requirements for Basic insurance. ICBC intends to address rate design in a separate future application to the Commission. That future Application will focus on making rates more reflective of risk.

With regards to this information request, it comprises several points and ICBC would like to clarify, as discussed in the January 23, 2012 Workshop, that a lower than expected average premium trend added 0.4 percentage points to the 11.2% actuarial rate indication. Two of the reasons average premium is trending at lower than expected levels are:

- More customers are eligible for the senior discount.
- More customers are receiving higher Claim-Rated Scale (CRS) discounts.

The extent to which “deterioration” is taking place and “amelioration” is necessary depends on the relative loss ratios for the classes gaining and losing customers. Addressing such issues is a matter of rate design rather than a revenue requirements application. ICBC has direction from government regarding the seniors discount and CRS, which can be found in the Government directive of January 31, 2007 with respect to Rate Design approved by Order in Council No. 39/07, February 2, 2007. In particular, ICBC must retain the seniors discount, and was required to retain the CRS until at least 2011.

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**2012.1 RR VEJ.7.2 Reference: Prospective Adjustments Demographic Shifts**

**It is my understanding that the percentage of the rate-paying population in the highest-discount zone of the "Claim Rated Scale" (aka the "bonus-malus" scale) is increasing. Is this correct?**

**Response:**

That is correct. Please refer to the response to information request 2012.1 RR VEJ.7.3, which includes a table showing percentage distribution by Claim-Rated Scale level from calendar year 2001 to 2010.

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**2012.1 RR VEJ.7.3 Reference: Prospective Adjustments Demographic Shifts**

**Please provide data on the percentage of the rate-paying population that has been on/ in each stage/ rung of the bonus-malus scale (on an annual basis) each year. Please provide this for as many years as possible. Please provide notes treating each historical change in the criteria for the scheme.**

**Response:**

The requested data is found in Attachment A – Percentage Distribution by CRS Level. It shows the percentage of customers by Claim-Rated Scale (CRS) level and the discount associated with each CRS level underneath the table. Levels -9 to -20 have been collapsed as customers at these levels all have the same Basic insurance discount (-43%). Note that the attachment includes both Personal and Commercial exposures.

As for historical changes, CRS was first introduced in 1982 and has added levels as it has aged. In 2001 the number of levels was increased.



## **2012.1 RR VEJ.7.3 – Attachment A – Percentage Distribution by CRS Level**



## Percentage Distribution by CRS Level

CRS Level									
Year	-9 to -20	-8	-7	-6	-5	-4	-3	-2	-1
2001	74.0%	4.3%	3.4%	3.4%	3.4%	2.7%	2.6%	2.3%	1.5%
2002	77.3%	3.2%	3.0%	3.1%	2.9%	2.6%	2.3%	1.7%	1.4%
2003	77.8%	3.1%	3.1%	3.1%	2.8%	2.3%	1.9%	1.7%	1.7%
2004	78.5%	3.3%	3.2%	3.0%	2.4%	1.8%	1.8%	1.8%	1.8%
2005	79.2%	3.5%	3.2%	2.4%	2.0%	1.8%	2.0%	2.0%	1.4%
2006	80.0%	3.6%	2.6%	2.1%	2.0%	2.0%	2.2%	1.6%	1.6%
2007	80.7%	3.0%	2.3%	2.1%	2.1%	2.1%	1.7%	1.7%	1.6%
2008	80.9%	2.8%	2.3%	2.3%	2.3%	1.7%	1.8%	1.7%	1.7%
2009	81.2%	2.7%	2.5%	2.4%	1.9%	1.8%	1.8%	1.8%	1.6%
2010	81.3%	2.9%	2.5%	2.0%	1.9%	1.8%	1.9%	1.7%	1.6%

Discount/ Surcharge	-43%	-40%	-35%	-30%	-25%	-20%	-15%	-10%	-5%
------------------------	------	------	------	------	------	------	------	------	-----

Year	0	1	2	3	4	5	6	7	8	9
2001	1.5%	0.3%	0.1%	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%
2002	1.6%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%
2003	1.7%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%
2004	1.5%	0.2%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%
2005	1.5%	0.1%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
2006	1.6%	0.1%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
2007	1.7%	0.1%	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
2008	1.7%	0.1%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
2009	1.6%	0.1%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
2010	1.6%	0.1%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%

Discount/ Surcharge	Base	10%	20%	30%	40%	55%	75%	100%	130%	165%
------------------------	------	-----	-----	-----	-----	-----	-----	------	------	------

Year	10	11	12	13	14	15	16	17	18	19
2001	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Discount/ Surcharge	205%	250%	300%	350%	400%	450%	500%	550%	600%	650%
------------------------	------	------	------	------	------	------	------	------	------	------

Year	20	21	22	23	24	25	26	27	28	29
2001	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Discount/ Surcharge	700%	750%	800%	850%	900%	950%	1000%	1050%	1100%	1150%
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**2012.1 RR VEJ.7.4 Reference: Prospective Adjustments Demographic Shifts**

**Does ICBC have any actuarial evidence tying predictive variables for loss costs to the current bonus malus system?**

**Response:**

ICBC views this information request as related to rate design and not the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.5 Reference: Prospective Adjustments Demographic Shifts**

**Is the bonus-malus system flawed?**

**Response:**

ICBC views this information request as related to rate design and not the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.6 Reference: Prospective Adjustments Demographic Shifts**

**Does the revenue generated by each and every rung of the bonus-malus system provide sufficient income to pay the claims and all expenses incurred by the drivers/ policyholders on that rung?**

**Response:**

ICBC views this information request as related to rate design and not the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.7 Reference: Prospective Adjustments Demographic Shifts**

**Are there, therefore, subsidies flowing from certain rungs of the bonus-malus system to other rungs of the bonus-malus system?**

**Response:**

ICBC views this information request as related to rate design and not the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.8 Reference: Prospective Adjustments Demographic Shifts**

**For the portion of the population that receives the senior citizen's discount, are revenues from this portion of the population sufficient to pay claims or is this segment subsidized by those without the discount?**

**Response:**

ICBC views this information request as related to rate design and not the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.9 Reference: Prospective Adjustments Demographic Shifts**

**Please provide any guidance that ICBC has from government on plans for the future management of these issues.**

**Response:**

ICBC views this information request as related to rate design and not the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.10 Reference: Prospective Adjustments Demographic Shifts**

**How long until the current system deteriorates to the point that major changes are needed to ensure fairness to younger populations?**

**Response:**

ICBC views this information request as relating to rate design and not to the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.11 Reference: Prospective Adjustments Demographic Shifts**

**How long until the current system deteriorates to the point that major changes are needed to ensure fairness for new drivers who enter the province?**

**Response:**

ICBC views this information request as relating to rate design and not to the determination of revenue requirements for Basic insurance. Please see the response to information request 2012.1 RR VEJ.7.1.

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**2012.1 RR VEJ.7.12 Reference: Prospective Adjustments Demographic Shifts**

**It is my understanding that new drivers who come to BC can place themselves lower on the Claim Rated Scale (by up to 8 rungs, 8 years) if they have had continuously-insured non-incident driving experience in other similar jurisdictions (Canada, USA, etc). So if a 30 year old driver comes to BC and has been driving without incident for 14 years, and has had insurance in his home province of Saskatchewan for those 14 years, he can receive a large discount on the CRS (he can receive credit for up to 8 years, at 5 percent for year ... that's 40% !). However, I also understand that if the same driver was insured for ten years in his home province of Saskatchewan (without incident, from his age of 16 to 26) and then sold his car and went without a vehicle for four years in the four years immediately prior to coming to BC, he will then receive no claim rated scale discount in BC and will instead pay top dollar. Is this correct? If so, is this not unfair? In light of the current state of the western world's economy and the deleterious effects that economic recessions have upon young populations in particular (unemployment during a recession hits the youngest populations the hardest), is it not particularly unfair to young people who may have had to sell their vehicles and hence incur an interruption in insurability due to economic reasons...only to be punished on the other end when they re-enter the insurance structure in BC? What is the actuarial evidence to support this non-consideration of the past 10 years simply because of a four year economy-related interruption?**

**Response:**

ICBC views this information request as relating to rate design and not to the determination of revenue requirements for Basic insurance. However, ICBC does not agree with the suggestion that its rules regarding placement of new residents on the Claim–Rated Scale are unfair. There are many scenarios that can account for gaps in one’s insurance coverage, and continuity of insurability provides evidence of an individual’s claims history.

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**2012.1 RR VEJ.8.1 Reference: ICBC Legal Expenses**

**The BCUC Information Request No.1 asks about the legal representation rate (question 94). I would like to understand the legal representation rate too. As it reads in your application, I believe there is no weighting for the expected size of the claim/ loss. Is this correct? Is it simply the quantity of files that include legal representation relative to the total number of files?**

**Response:**

There is no weighting for the expected size of the claim or loss in ICBC's Legal Representation Rate analysis.

ICBC defines Legal Representation Rate as "the number of bodily injury exposures in a calendar year where legal counsel has been retained, regardless of accident year, divided by the number of newly opened bodily injury exposures in a calendar year".

The Legal Representation Rate is not a financial measure. It provides some indication of service satisfaction related to bodily injury claims.

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**2012.1 RR VEJ.8.2 Reference: ICBC Legal Expenses**

**If ICBC was to re-calculate the legal representation rate on a weighted basis, what would the results be?**

**Response:**

ICBC adheres to the agreed upon methodology as determined in the May 2004 Negotiated Settlement Agreement for calculating representation rates. ICBC has not investigated modifying or applying weighting to this methodology for the reasons set out in the response to information request 2012.1 RR VEJ.8.1.

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**2012.1 RR VEJ.8.3 Reference: ICBC Legal Expenses**

**For example, if ICBC was to apply a weighting to each and every file based on either the expected total loss at the time of opening the file, or the eventual settled/ finalized loss, what would the results be?**

**Response:**

Please see the responses to information requests 2012.1 RR VEJ.8.1 and 2012.1 RR VEJ.8.2.

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**2012.1 RR VEJ.8.4 Reference: ICBC Legal Expenses**

**What would the results be for each year or quarterly period of time for the past five years? For example: could we not divide the expected loss/ claim of each newly opened file by the average expected loss/ claim of each newly opened file and multiply that number by either the numeral one or zero (depending if it involves legal representation or not) to arrive at a weighted legal representation rate?**

**Response:**

Please see the response to information request 2012.1 RR VEJ.8.2. ICBC would not use this method for calculating Legal Representation Rate as it is not a financial measure, but provides some indication of service satisfaction related to bodily injury claims.

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**2012.1 RR VEJ.8.5 Reference: ICBC Legal Expenses**

**Could this approach not provide at least two additional metrics for the legal representation rate: one that is prospective and one that is historical?**

**Response:**

The approach suggested in information request 2012.1 RR VEJ.8.4 would not provide additional metrics that would be useful to ICBC. ICBC considers the Legal Representation Rate an indicator, but not a specific measure, of service satisfaction related to bodily injury claims. The metrics proposed would not speak to service satisfaction and ICBC does not use this method of calculation.

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**2012.1 RR VEJ.8.6 Reference: ICBC Legal Expenses**

**ICBC has reported that the legal representation rate has increased from 39 percent (2009) to 40 percent (current). The reader is left with only this information. As presented, it suggests that this is the result of external factors such as the legal profession's involvement when, in fact, it could be driven by underlying changes in the type and complexity of accidents that are resulting on BC roads. Is this not true?**

**Response:**

ICBC believes there are a variety of reasons why claimants seek legal representation. As discussed in the response to information request 2012.1 RR BCUC.94.1, some claims may require representation due to complex medical or legal issues, or the amount involved in the claim. Some claimants may seek representation as the claims and settlement process can appear complex, due to factors such as language barriers or unfamiliarity. ICBC is seeking to address these latter issues through initiatives such as translation services and the streamlined telephone claims handling for low-risk/low-complexity claims in the Centralized Claims Injury Centre.

It is correct that the more complex the claim is in terms of the legal and medical issues or the amount involved, the more likely a claimant is to obtain legal representation to assist them through the claims process.

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**2012.1 RR VEJ.8.7 Reference: ICBC Legal Expenses**

**Are there any other such metrics that could also be used to weight the legal representation rate so that it provides more information?**

**Response:**

Please see the responses to information requests 2012.1 RR VEJ.8.1 and 2012.1 RR VEJ.8.2.

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**2012.1 RR VEJ.9 Reference: Telematics**

**What preparations, if any, has ICBC taken regarding telematics, GPS, and related developments? "Telematics" is the combination of information and communication technology. The most known example of telematics is in the use of automobile insurance. Progressive Insurance Corporation in the USA owns the business method patents in that country to use telematics for the purposes of rating automobile insurance. A small and inexpensive flash-memory computer (you can buy them from manufacturers for around \$5 each) is installed into the on-board-diagnostics port under the steering wheel (every vehicle since 1996 has one). The device then collects data on KM driven, time of day driven, incidents of harsh braking, incidents of too-fast acceleration, incidents of too much velocity while turning corners, etc. That information can then be used for rating automobile insurance. Other telematics devices can be set to provide audible and visual (flashing lights in the vehicle) warnings to customers when they start driving dangerously. These devices can be used to improve the driving behavior of dangerous drivers. These devices have been shown to reduce accidents and save lives. What preparations and investigations has ICBC made into this technology?**

**I have worked on these issues as part of the completion of my MA in Economics. I was awarded an internship for my work funded in part by the Canadian federal government. That project was entitled, "Insurance Pricing with Proprietary Information." I found two likely effects. First, if only some insurance companies use the technology, they will attract the best drivers and the prices for other drivers will increase. This can be expected to happen in BC if other insurance companies adopt the technology and ICBC does not. Second, the technology's main social purpose is to reduce accidents and save lives. Has ICBC analyzed this itself? What can ICBC say about preparations for this topic?**

**Response:**

While ICBC views this information request as relating to rate design and not the determination of the revenue requirements for Basic insurance, ICBC can advise that it monitors developments in the practical uses for telematics in insurance, risk management, and road safety.