

**PUB (MPI)**

**PUB (MPI) 1-1**

<b>Volume:</b>	<b>N/A</b>	<b>Page No.:</b>	
<b>Topic:</b>	<b>Strategic Plan of the Public Utilities Board</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Public Engagement</b>		

**Preamble:** One of the Public Utilities Board's strategic priorities as identified in its Strategic Plan 2013 - 2017 (available on the Board's website) is to review the process for engaging the public in hearings to ensure that the public is well-informed and appropriately engaged.

**Question:**

Please advise of the extent to which ratepayers have been consulted by the Corporation regarding the pending rate application, and the details of any consultation.

**Rationale for Question:**

To ensure that the public engagement strategy relative to the GRA process is appropriate and in keeping with the Board's Strategic Plan.

**RESPONSE:**

In response to the Public Utilities Board's (PUB) strategic priority 1.1, the Corporation has taken steps to engage the public prior to hearings, and ensure the public is well-informed and appropriately engaged.

In June 2016 the Corporation's Executive conducted Public Review Meeting presentations in Winnipeg, The Pas and Winkler. During these presentations, the Corporation presented the key points from the most recent annual report and General Rate Application details for the coming year. The PowerPoint for the 2016 Public Review Meeting in Winnipeg can be viewed as Attachment A.

A table summarizing the date, location and public attendance is provided below.

<b>Date</b>	<b>Location</b>	<b>Venue</b>	<b>MPI Executive</b>	<b>Number of Public in attendance</b>
June 21	Winkler	Days Inn	Brad Bunko	<b>2</b>
June 21	The Pas	Kikiwak Inn	Shannon Leppky	<b>0</b>
June 22	Winnipeg	Victoria Inn	Heather Reichert/ Christine Martin	<b>10</b>

In addition, the Corporation has completed public opinion polls regarding Autopac rates, and also sought public feedback on various aspects related to the Corporation's work. Some of the key findings from the Autopac rates poll indicate that there is a strong connection between Manitobans' awareness of Autopac rates and the amount of media coverage. This connection reiterates the importance of public engagement.

The most recent Rolling Poll on coverage and rates was held in July 2015. An executive summary of that poll is provided as Attachment B.

# Public Review Meeting

*Winnipeg*  
*June 22, 2016*



**Manitoba  
Public Insurance**



# History, mandate and mission

- Created in 1971
- Responsible for administering the Basic compulsory, universally available auto insurance program
- Mission: *Working with Manitobans to reduce risk on the road*



# Value Equation

## Manitoba Public Insurance Value Equation



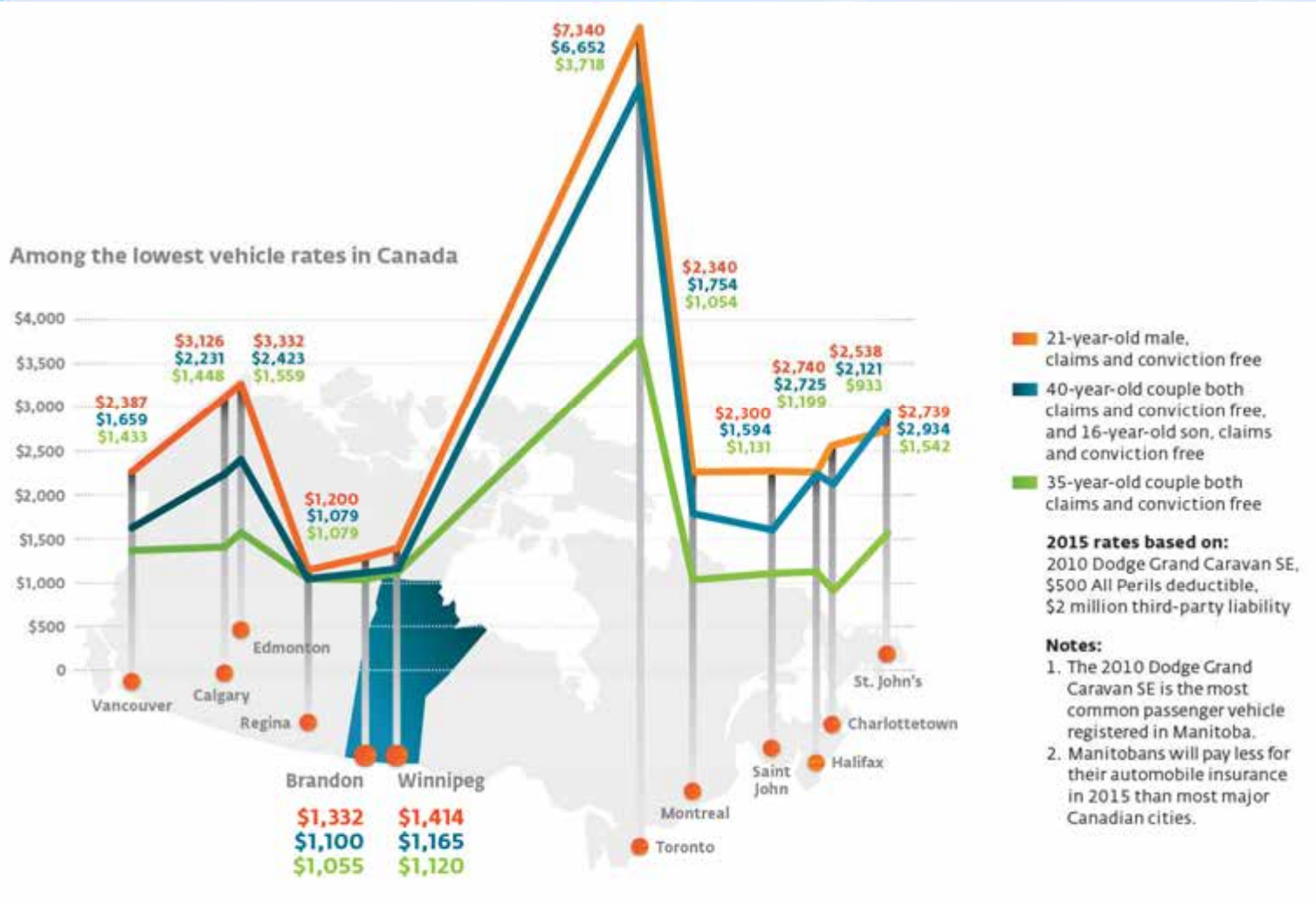
Affordable  
Insurance

Comprehensive  
protection against  
the cost of collisions

Service where  
& when you  
need it

Easily attainable  
coverage & services  
that do not discriminate

for all  
Manitobans





**Rate Comparison Chart**

2016 rates based on:

2010 Dodge Grand Caravan SE,  
 \$500 all-perils deductible,  
 \$2 million third-party liability

**21-Year-Old Male**  
 Claims and conviction free

**35-Year-Old Couple**  
 Both claims and conviction free

**40-Year-Old Couple**  
 Both claims and conviction free

**16-Year-Old Son**  
 Claims and conviction free

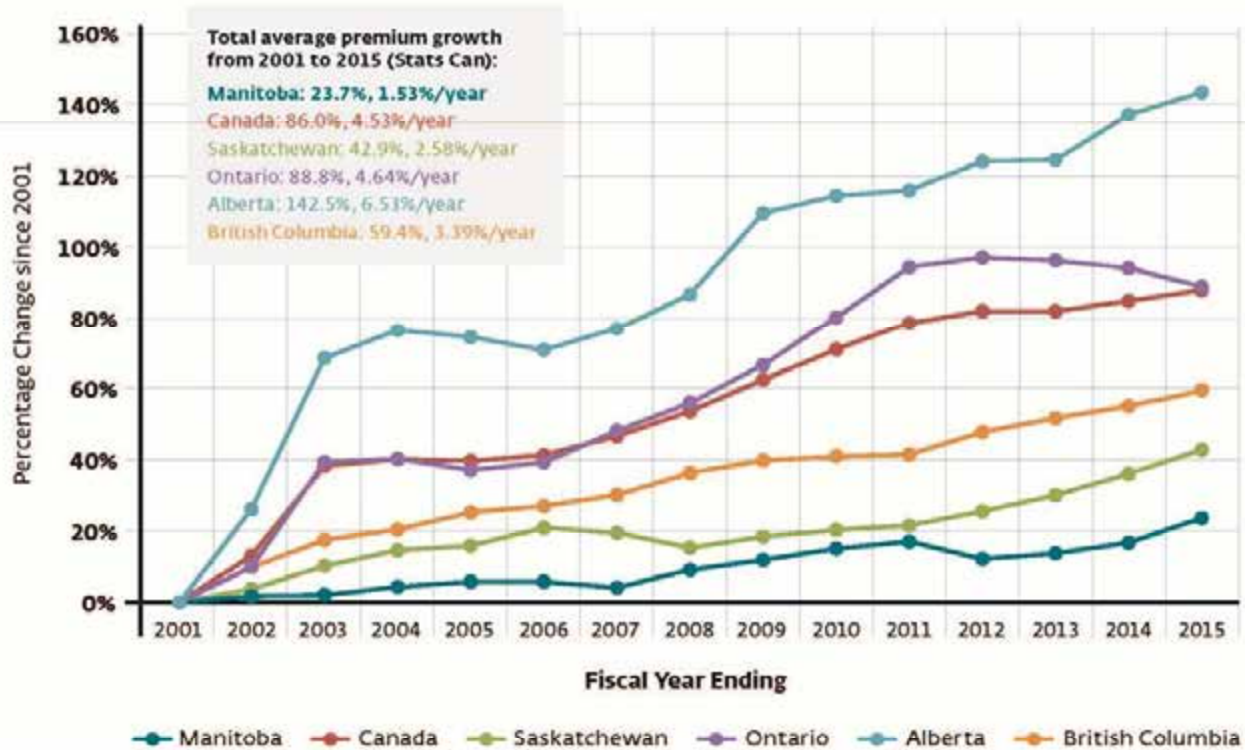
	<b>\$1,464</b>	<b>\$1,161</b>	<b>\$1,206</b>
<b>WINNIPEG, MB</b>			
CALGARY, AB	\$3,109	\$1,465	\$2,299
TORONTO, ON	\$6,861	\$3,778	\$7,041

- Notes: 1. The 2010 Dodge Grand Caravan SE is the most common passenger vehicle registered in Manitoba.  
 2. Manitobans will pay less for their automobile insurance in 2016 than most major Canadian cities.





### Passenger Vehicle Average Premium Growth (Statistics Canada) 2001 to present



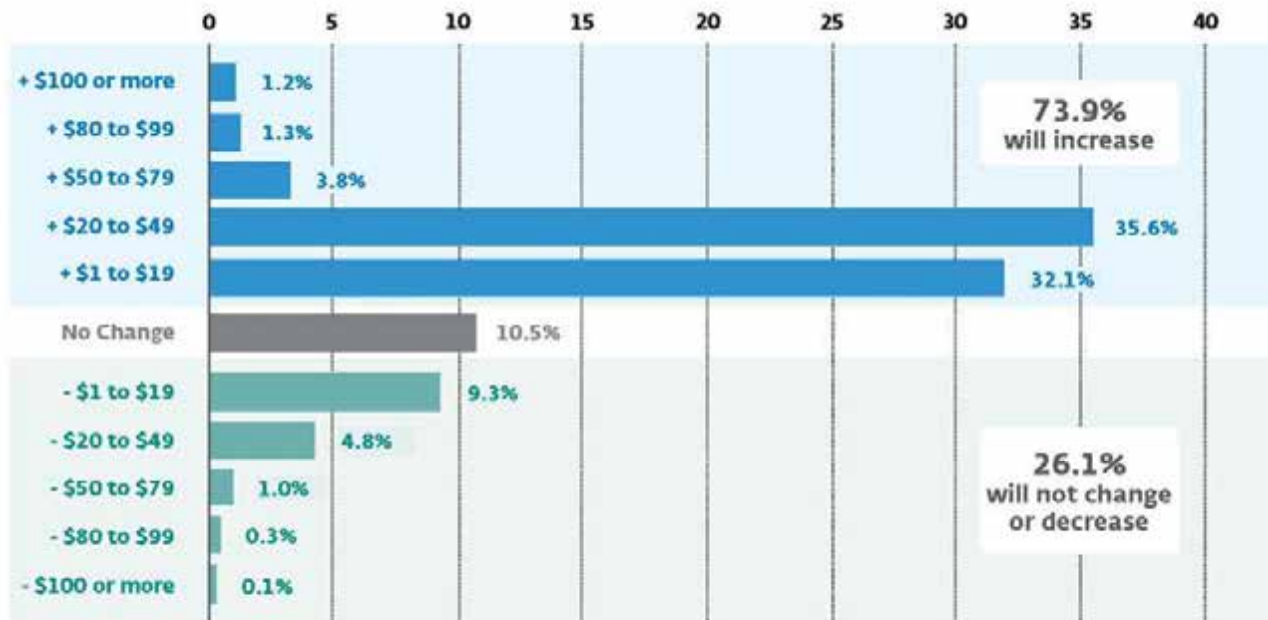


- Our rates are reviewed and approved by the Public Utilities Board
- Seeking an overall rate increase of 2% for 2017/18 insurance year
- Increase driven by higher claims costs and a negative financial climate



### Basic Autopac 2017-18

Effect of rate application on vehicle premiums





## History of Rate Changes

Rate changes

Year	Per cent
2016	0.0
2015	+3.4
2014	+0.9
2013	0.0
2012	-8.0
2011	-4.0
2010	0.0
2009	-1.0
2008	0.0
2007	-2.6

**11.1%**  
Overall  
Rate Decrease





## Basic Autopac

- \$500 all-perils deductible on most vehicles
- \$200,000 third-party liability
- Maximum insured value

## Autopac Extension

- Reduced deductibles
- Higher third-party liability coverage
- Additional coverage options
- New coverage options for motorcycles and mopeds

## Special Risk Extension

- Garages and automobile dealers
- Commercial trucking insurance (including long-haul)
- Support for Manitoba's commercial trucking industry



- Personal Injury Protection Plan offers world-class coverage for Manitobans injured anywhere in Canada and United States
- All Manitoba residents eligible
- New shared care residence opened its doors





- Continue to refine and adapt our products and services with our customers in mind
- Service delivery model combines physical damage claims, insurance sales, driver testing and licensing services
- Contact Centre also offers streamlined service and processes over one million contacts annually



- Continuous dialogue with customers
- 71 per cent of Manitobans have a favourable view of Manitoba Public Insurance\*
- 11 percentage points higher than in 2000
- 77 per cent of Manitobans say they have had good experiences dealing with us\*\*

\* 2015 Fiscal Year Rolling Poll

\*\* October 2015 Rolling Poll





- Universal access to mandatory auto insurance
- Non-discriminatory rates
- 90 per cent of Manitobans live within one hour of a Service or Claim Centre



## Economic impact

- We make a direct contribution of close to \$1 billion to Manitoba's economy
  - \$532.5 million physical damage claims
  - \$149.2 million injury claims
  - \$153.2 million salaries and benefits
  - \$81.7 million commissions to independent brokers
  - \$31.1 million in premium tax
  - \$25.7 million paid to Manitoba Health
  - \$2.6 million in Health and Education
  - \$1.8 million was provided to municipalities as grants
- As part of our corporate citizenship we also support local charities and non-profit organizations



## Rate predictability and stability

- Premiums remain predictable and stable over time
- Collaborative relationship with the Public Utilities Board
- Have held the line or reduced rates for 12 of the last 15 years



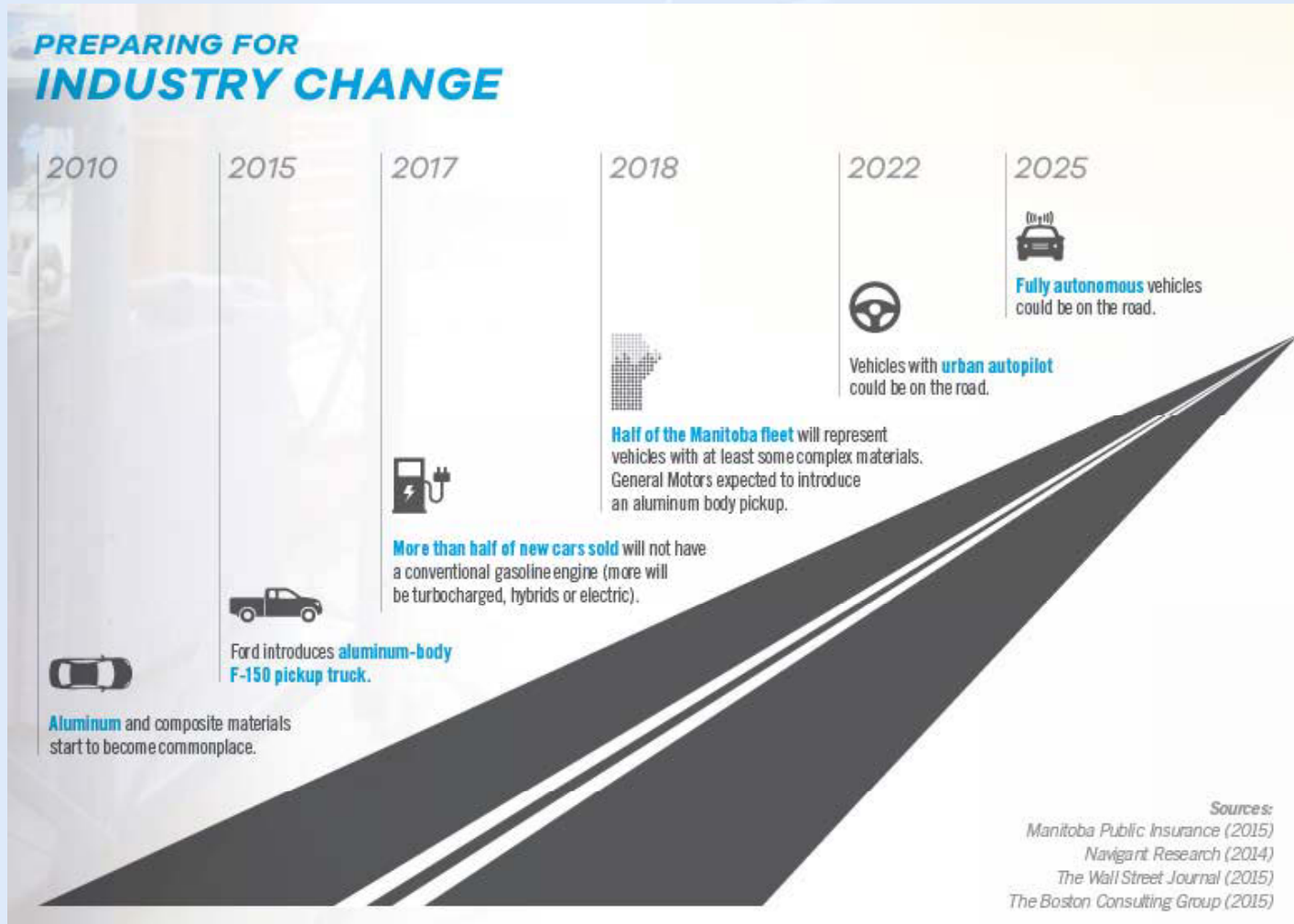
# Preparing for industry change

- Vehicle manufacturing and repair industries are undergoing significant change
- Working with industry to deal with the changes





# Preparing for industry change





# Ensuring quality, safe, reliable repairs

- New Centre of Excellence in Automotive Research and Training
- Working with Red River College and Apprenticeship Manitoba
- Physical Damage Re-engineering Program



# Ensuring quality, safe, reliable repairs

- Informing our customers so they can make proper choices for vehicle repairs
- Committed to a viable repair industry and ensuring all Manitobans get the quality repairs they need



## Loss prevention – passing on savings to ratepayers

- We remain accountable to all Manitobans
- Loss Prevention Strategy and Framework brings together complementary elements of loss prevention
- Overall goal of reduced claims and lower claims costs – savings that can be passed onto ratepayers through lower insurance premiums





## Loss prevention

- Auto thefts in Winnipeg have decreased by 82 per cent since 2004
- Total and attempted thefts across the province have decreased by 78 per cent since 2006
- In the 2015/16 fiscal year:
  - Saved \$7.7 million by pursuing fraudulent and suspicious claims
  - Recovered \$10.3 million in claims costs



# Road safety

- Guided by three-year Operational Plan and formal frameworks
- Sponsor organizations and collaborate with partners across the province
- Key issues: distracted driving, impaired driving, speed, vulnerable road users and occupant restraints
- End goal is to prevent collisions, leading to a reduction in claims and lower rates, lives saved and injuries avoided



## Road safety

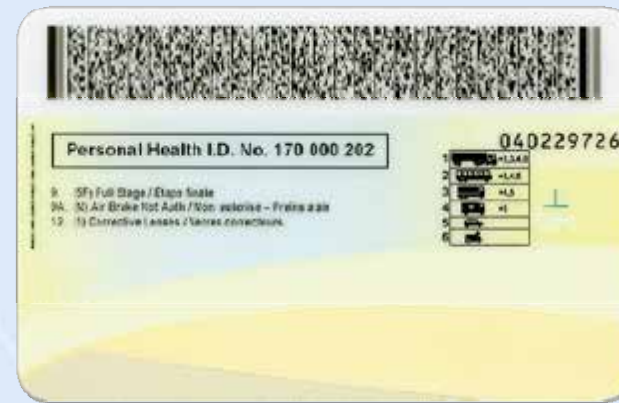
- Member of Provincial Road Safety Committee
- Two-year pilot program to enhance awareness at high-collision intersections
- Annually fund additional law enforcement
- Sponsor of High School Driver Education Program
- Improving driver training opportunities for remote residents
- Tailoring programs to growing immigrant and refugee populations and First Nations people



# Personal Identification Card

- Partnership with Manitoba Health, Healthy Living and Seniors
- Combines a driver's licence, photo ID, health card and travel card
- Will provide added convenience, privacy and security

## Sample driver's licence





# Cost containment

- Focused on cost containment and continuous improvement
- Identifying, investigating and implementing operational cost containment measures
- Exercising fiscal restraint



# Conclusion

- More than one million Autopac policies in force
- Average of 1,201 Autopac claims made every working day
- More than 297,000 total claims last year
- Average of \$2.9 million paid in Autopac claims each day



**Thank you**  
**Questions?**



## ROLLING POLL EXECUTIVE SUMMARY – JULY 2015

### Annual module on products, programs, the pillars of the Personal Injury Protection Plan and insurance rates

#### Overview:

The Corporation's quarterly Rolling Poll brings Manitobans' *'voice to the table'* by collecting public feedback on various aspects related to its work as the provincial vehicle insurer and as a corporate citizen of Manitoba. Each quarter the Corporation receives feedback on their public support from Manitobans, their performance as a corporation, and the communications that people are aware of. The rest of the questions on the Rolling Poll are rotated on a quarterly basis, allowing annual feedback on a wide array of topics. The July poll asks Manitobans about their impressions of corporate programs and services, insurance coverage, perceptions of the pillars of the Personal Injury Protection Plan, and insurance rates.

#### Key findings:

- After a temporary decline in public support recorded last year (following the rate increase announcement), support has returned to a level that has been maintained since 2006, with seven in 10 Manitobans being favourable toward the Corporation (70%).
- About six in 10 Manitobans (61%) have a positive Corporate Performance Index (CPI). The Corporation continues to be known as a company that makes a *positive contribution to the province* (72%), is *responsive* to the general public (70%) and is *well-managed* (68%).
- Manitobans have a good impression of the Corporation's coverage for *vehicle damage* (67%), and *Autopac coverage* (70%) in general, but only about half have a good impression of *insurance for people injured in vehicle accidents* (51%). Results to questions related to the pillars of PIPP<sup>1</sup> (*fair and adequate compensation, payment for direct loss and compensation regardless of fault*) show that Manitobans are undecided about how the Corporation is doing in its works with injured claimants.
- Manitobans' optimism about the *direction of things in the province* is declining; currently 59% of Manitobans say that things in the province are *going in the right direction*, while about four in 10 say things have *gotten off on the wrong track* (41%). Results of the fall poll will show if the federal election has any impact on the outlook of Manitobans.
- As always, if Manitobans could choose their coverage, they would choose *the most complete coverage* (73%) over *the lowest price* (21%).

#### Conclusions:

The Corporation has regained public confidence after temporary declines in support were recorded in 2014 (following news of a rate hike). Contributing to the ongoing support from Manitobans may be the fact that the Corporation has a dynamic relationship with the public. Manitobans recognize the positive social and economic contributions the Corporation makes to



the province and road safety efforts are well received. This month, road safety messaging tops the list of corporate communications the public is aware of.

The findings of this poll show that Manitobans want to be well protected, and they say that the coverage the Corporation offers is fairly complete. Coverage for vehicle damage is consistently rated higher than injury benefits. Part of this divergence in results may be related to experience, people may be more aware of vehicle repairs and claims, and less aware of the benefits offered to those injured in accidents. Feedback from Manitobans supports the Corporation's goal to provide comprehensive benefits, and to include driving experience as a key factor in rate setting.

**Recommendations:**

It is recommended that the Corporation continues its dialogue with the public, to increase awareness of the value it provides to Manitobans through its Personal Injury Protection Plan (PIPP). Poll findings show that Manitobans are undecided if the Corporation treats people fairly when paying injury compensation and the public is also unsure if the Corporation provides adequate injury coverage. The Corporation's Claimant Satisfaction Survey shows that people who actually go through injury claims process are satisfied, but the public in general is uncertain. Communications and messaging that demonstrate the value that the Corporation adds to the province and its road users through its PIPP program would improve Manitobans' understanding of its role as the provincial auto insurer.

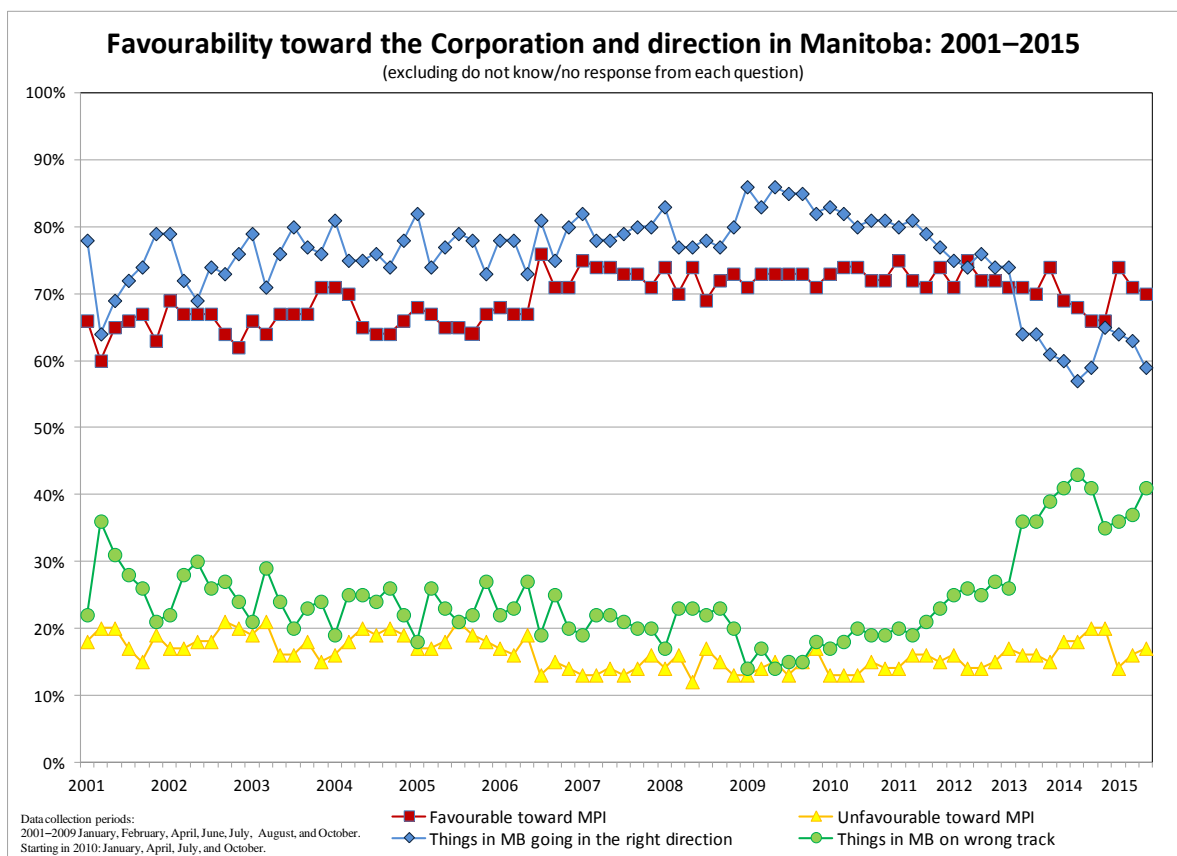
**Research Notes:**

**Poll Details:** The July Rolling Poll was fielded by Prairie Research Associates from June 30 to July 27 (2015), with a random sample of 800 adults in Manitoba. The sample error rate (theoretical) is +/- 3.5%, 19 times out of 20. For complete results or more information on the poll contact Sonia Pankratz Wieler at (204) 985-8770 ext. 7013 or at [spankratzwieler@mpi.mb.ca](mailto:spankratzwieler@mpi.mb.ca)

**Note:** Customer Research wants to acknowledge that this summary builds on the work conducted by Prairie Research Associates on behalf of Manitoba Public Insurance, and that some content may have been directly reproduced from their original report.

## Public Support for Manitoba Public Insurance

- Manitoba Public Insurance’s favourability/public support score is the highest level rating that the public gives for the Corporation. It takes into consideration aspects that are important to the rater. This global measure is used to track an organization’s public support and it is also used as a basis to calculate a company’s reputation score. The Corporation has been tracking its public support for over a decade. This extensive history has allowed the Corporation to observe environmental and corporate factors that may lead to volatility and stability in public support.
- Currently, the Corporation maintains the support of seven in 10 Manitobans (70%, July 2015). With the exception of a temporarily decline in public support recorded last year (following the announcement that the Corporation would be increasing rates), the Corporation has maintained the support of about seven in 10 Manitobans since 2006.



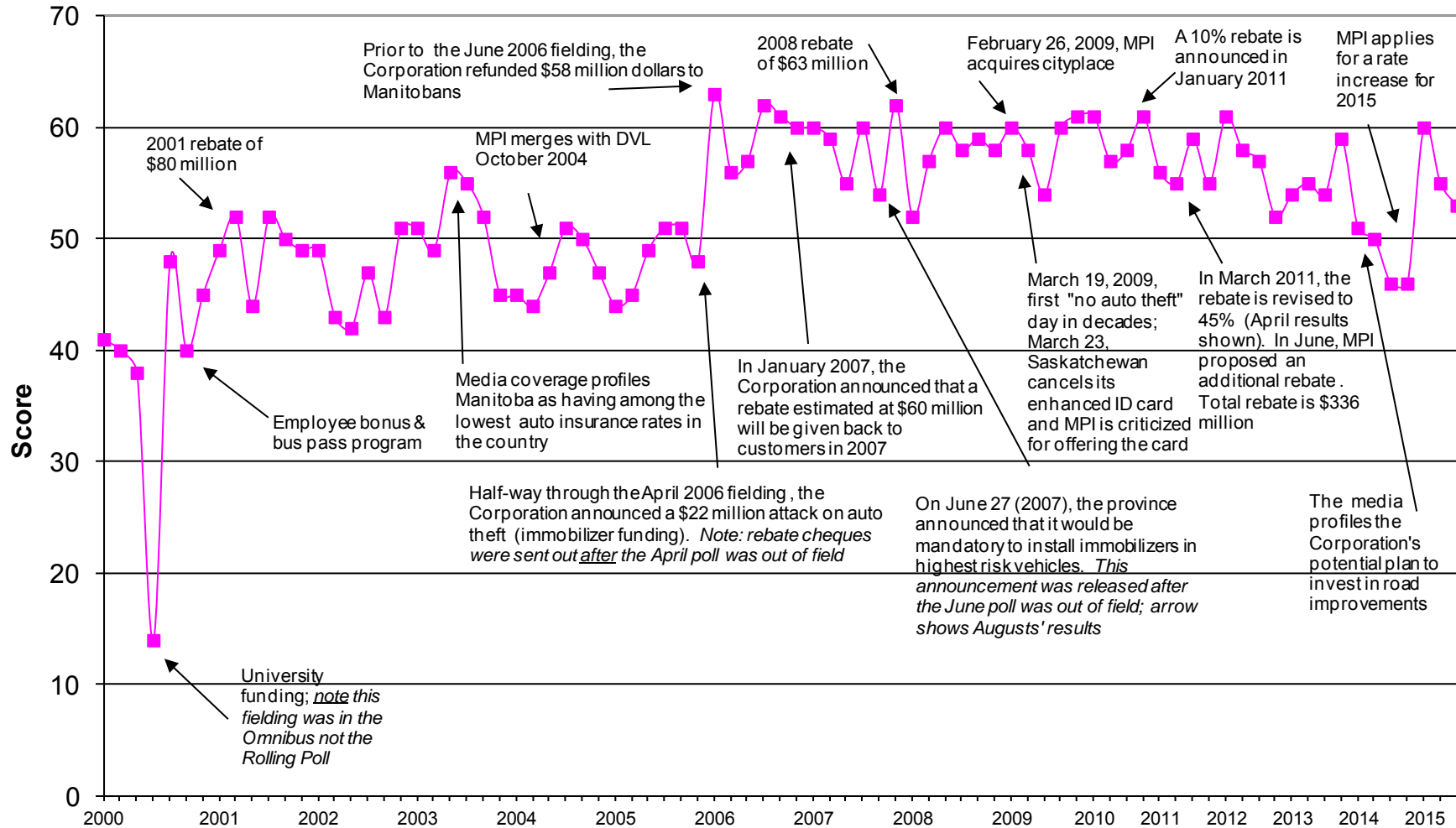
- Over time, survey results have shown trends in those who have greater support for the Corporation. Women and seniors tend to be most favourable toward the Corporation. Further examination shows that women are more receptive to the Corporation’s efforts to improve life in Manitoba including investing in the province, and its work in road safety. This may contribute to women’s more favourable ratings. Additionally, those who have more experience with the Corporation tend to be more favourable. Customers have a higher favourability score than the general public, and physical damage claimants are the most favourable. This shows that those who actually experience the Corporation’s services and its physical damage coverages have a positive impression, and this elevates their support scores.

- Possibly contributing to the continued support from Manitobans is the Corporation's multi-faceted value relationship it has with the public and its customers. Regression analysis shows that multiple factors drive the public's view of the value the Corporation offers to Manitobans. While *price* is a key driver, other attributes including *service*, *coverage* and *access* also play a role. By performing well on other attributes that are valued by Manitobans, the Corporation is better able to handle criticism that may arise.
- Manitobans' optimism about the *direction of things in the province* is declining; currently 59% of Manitobans say that things in the province are *going in the right direction*, while about four in 10 say things have *gotten off on the wrong track* (41%). On a national level, the Conference Board of Canada reports that consumer confidence declined in July. They also show a decline in consumer confidence in the prairie region.<sup>2</sup> Results of the fall polls will show if the federal election has any impact on the outlook of Manitobans.

## Corporate Reputation

- Each quarter the Corporation calculates their reputation score using Leger's methodology (i.e., subtract the proportion of negative favourability scores from the positive favourability scores to produce a reputation score). The Corporation's current reputation score is 53 which shows a marked improvement over last year; 2014 saw declines in reputation after news of a rate increase was released. Currently the reputation score is similar to the five year average (score of 56 for 2010-2014). Over time, the Corporation's score has ranged from a low of 14 in October 2000 (at a time it announced they would fund university infrastructure) to a high of 63 in June 2006.
- The Corporation's five year average reputation score (56, 2010 to 2014) falls behind Alberta vehicle insurers' score (79 for 2013) and also behind SGI's score (63 for 2013). The Corporation's score fares well compared to ICBC (12 for 2013). Lower scores are typical for ICBC; residents of British Columbia are much less positive toward their vehicle insurer than residents of other western provinces. It should be noted that the reputation scores for other insurers are from October 2013 and they may have changed since this last point of measurement. Updated scores for Western Canadian insurers will be available in late 2015.<sup>3</sup>
- The chart on the next page shows the Corporation's reputation score over time, and includes notes inserted to show a timeline of events related to the Corporation.
- The Corporation's positive reputation may have contributed to a quick rebound in support after a temporary decline was recorded last year, immediately following announcements that a rate increase would be applied in 2015. External research<sup>4</sup> shows that companies that are trusted and face an onslaught of negative news stories, will weather the storm better than a company that starts with a poor reputation.

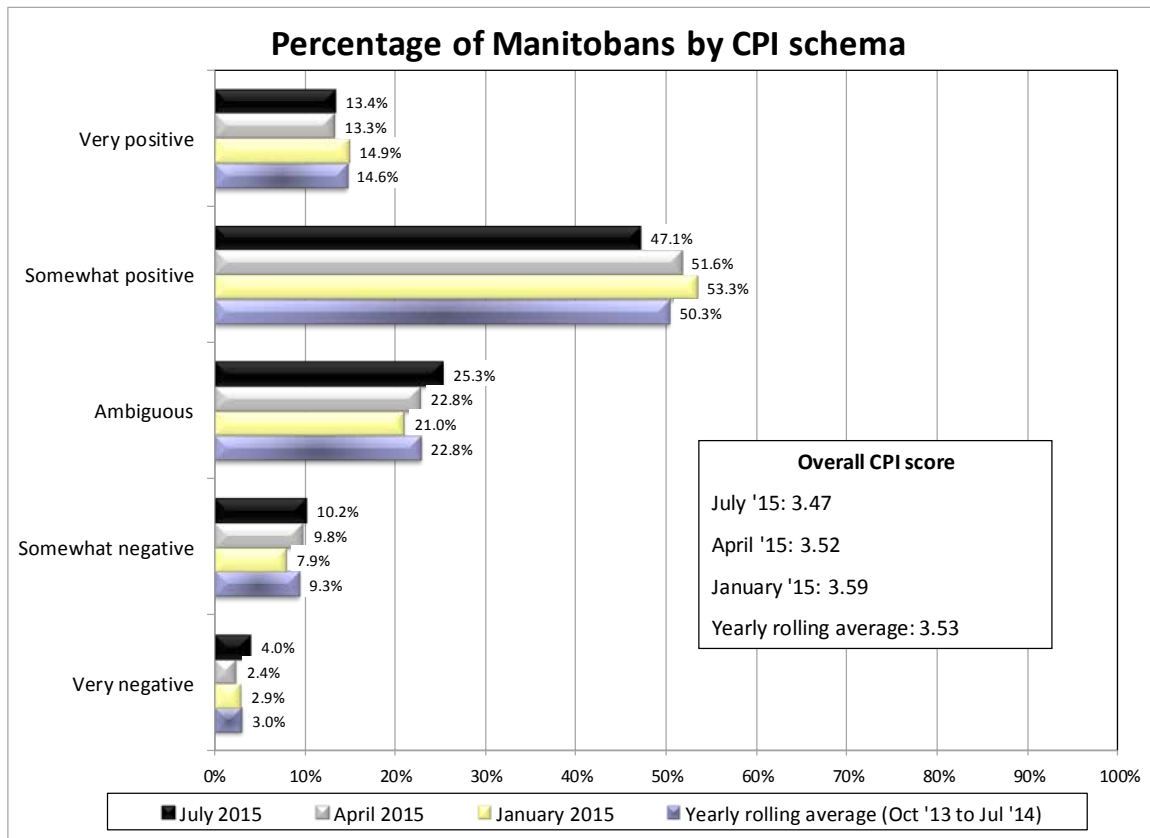
### MPI Reputation (Leger's Model) 2000-2015



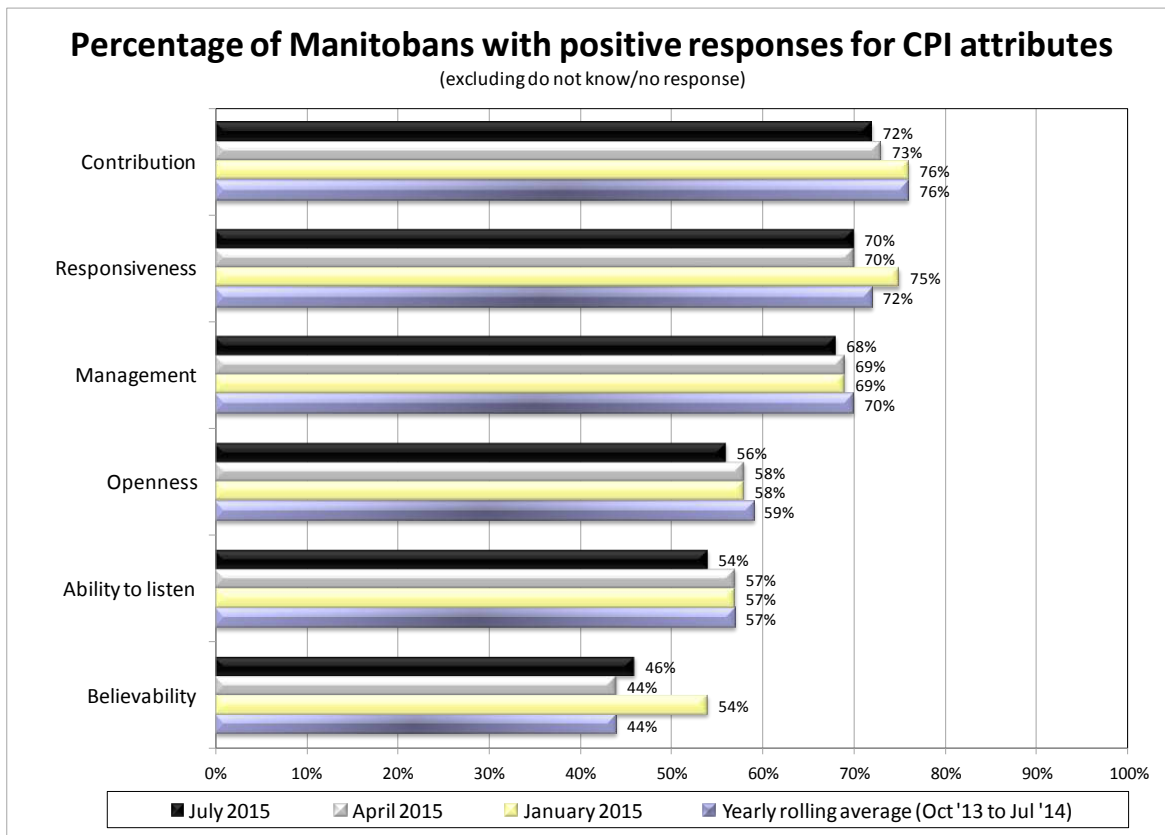
Data collection periods: 2000-2010 January, February, April, June, August and October.  
 Starting in April 2010, data collection is quarterly in April, July, October and January.

## Corporate Performance Index (CPI)

- The Corporate Performance Index demonstrates the public’s views of how well a corporation is performing. The index is calculated based on answers to six CPI attributes which are discussed in this section.
- About six in 10 Manitobans have a positive Corporate Performance Index (61%) and the overall index score is 3.47 out of 5, showing that the public is somewhat positive about the Corporation’s performance.



- The Corporation continues to be known as a company that makes a *positive contribution to the province* (72%), is *responsive to the general public* (70%) and is *well-managed* (68%).
- About six in 10 Manitobans say that the Corporation is *open to new ideas* (56%). About half say that the Corporations *listens to the public* (54%) and that they *believe* all or most of the Corporation’s statements (46%). It is important to note that *believability* is an attribute that other large companies both in Manitoba, and across Western Canada also struggle to maintain. Past poll results show that Manitoba Hydro, MTS and vehicle insurers in Western Canada also receive low believability scores.



## Communication

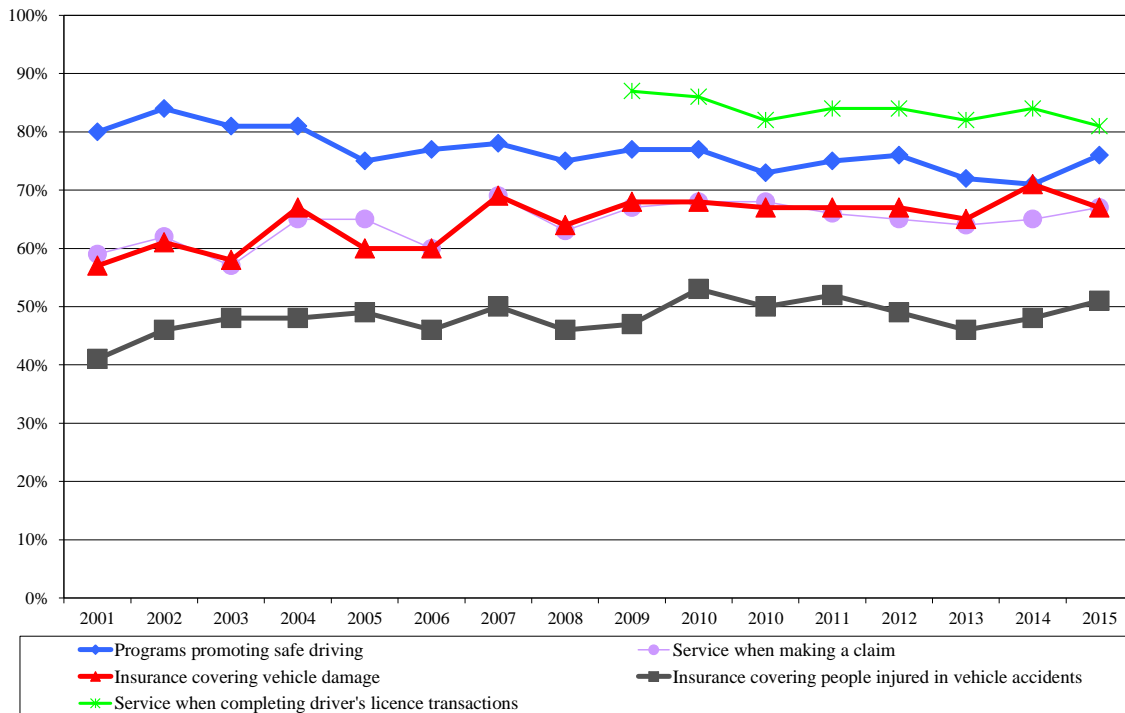
- Slightly less than half of Manitobans report that they have read, seen or heard information about Manitoba Public Insurance within the last few months (45%). The most common topics they have heard or read about include<sup>5</sup>:
  - road safety advertising (34%)
  - information about rates (25%)
  - general news coverage (8%)
  - word of mouth/claims stories (7%)
  - cellphone ban/demerits while driving (5%)
  
- Below are some verbatim responses from respondents:
  - *“The rate hikes; it seems to be a hot topic. The hikes might be 2% or higher. The reason for the hikes is due to harsh winter conditions.”*
  - *“Commercial advertisements on policies on claims; reviewing Autopac online application for different options.”*
  - *“Cellphones being used while driving will get you 5 demerits and a heavy fine.”*
  - *“The CTV commercials: 60 second driver.”*

## Programs and Products

- More than eight in 10 Manitobans say they have a good impression of the service they receive when *completing a driver's licence transaction* (81%).<sup>6</sup> This general population rating is slightly lower than the rating from customers who have recently completed a driver licence transaction<sup>7</sup> (91%) or policy transaction<sup>8</sup> (90%) (Insurance and Licensing Customer Survey, Q1, 2015 fiscal year).<sup>9</sup>
- Manitobans continue to have a good impression of the Corporation's *programs promoting safe driving* (76%), *insurance covering vehicle damage* (67%), and *service when making a claim* (67%). About half of Manitobans say they have good impressions of *insurance covering people injured in a vehicle accident* (51%). It should be noted that 14% of respondents do not provide a rating of *insurance covering people injured in a vehicle accident*.
- As always, more Manitobans are positive about *coverage for vehicle damage* (67%) than *insurance covering people injured in a vehicle accident* (51%).

### Positive impressions of Manitoba Public Insurance's programs and services: 2001 - 2015

(Percent 5 to 7 out of 7, where 1 is very poor impression and 7 is very good impression)



### Lower deductible options

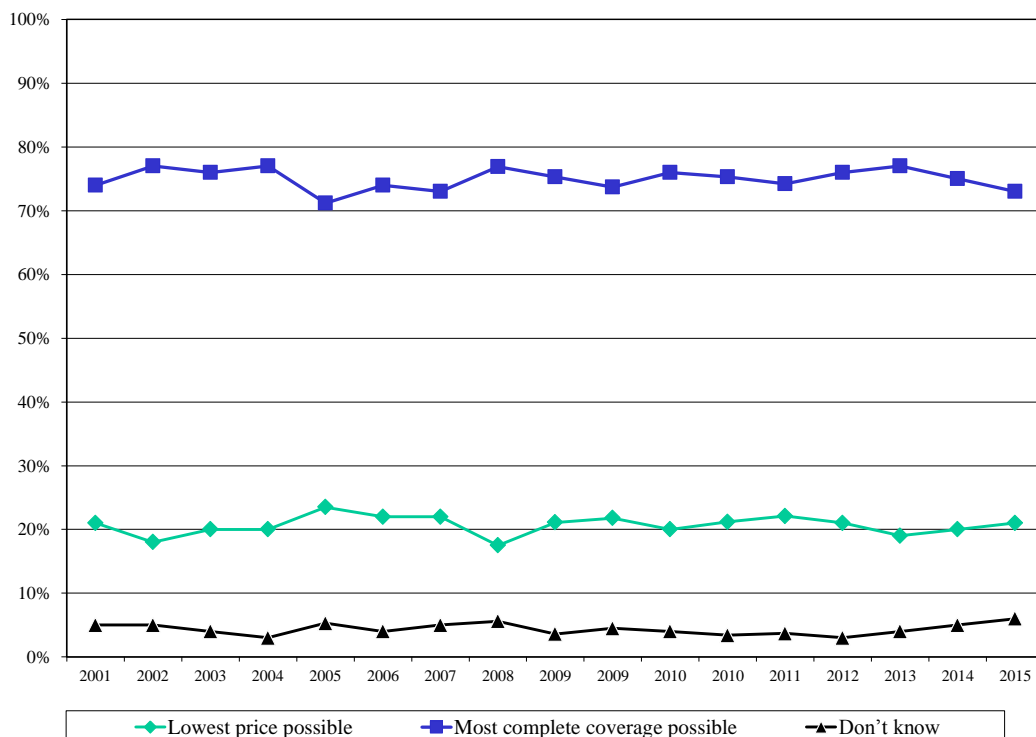
- Manitobans are asked to imagine that they just bought a new car and are insuring it, and to think about what lower deductible options they would want, if they had a choice. As in the past, about one-third would choose to buy all of the seven options listed (34%; the options listed are shown in the graphs on the next page). About seven in 10 would choose to buy at least four or more of the lower deductible options (68%). Only 10% of Manitobans would not choose any of the lower deductible options.

- When reviewing each deductible option individually, results show that at least six in 10 Manitobans would choose to purchase each option. These results support the Corporation’s approach to bundling coverages within deductible options.
- Of all the options listed, Manitobans are most likely to be interested in a lower deductible for damage caused by:
  - a stone hitting their windshield (73%)
  - severe weather such as hail (67%)
  - a collision with wildlife (66%)
  - a collision with another vehicle (66%)
  - vandals (66%)

### Manitobans want complete coverage

- Manitobans say that if they had a choice when buying their vehicle insurance, they would choose the *most complete coverage* (73%) over the *lowest price possible* (21%). The preference for the *most complete coverage* is shared by all demographic groups and has been consistent over time.
- Corporate focus group research<sup>10</sup> as well as research conducted by the Insurance Bureau of Canada<sup>11</sup> show that consumers do not understand insurance coverage. This presents a challenge for the Corporation in its ever evolving relationship with Manitobans. People are aware of the cost of their Autopac, but may be much less aware of what they receive in the coverage they are purchasing. Educating the public on the value of their coverage continues to be important.

Preferred type of vehicle insurance: 2001 - 2015



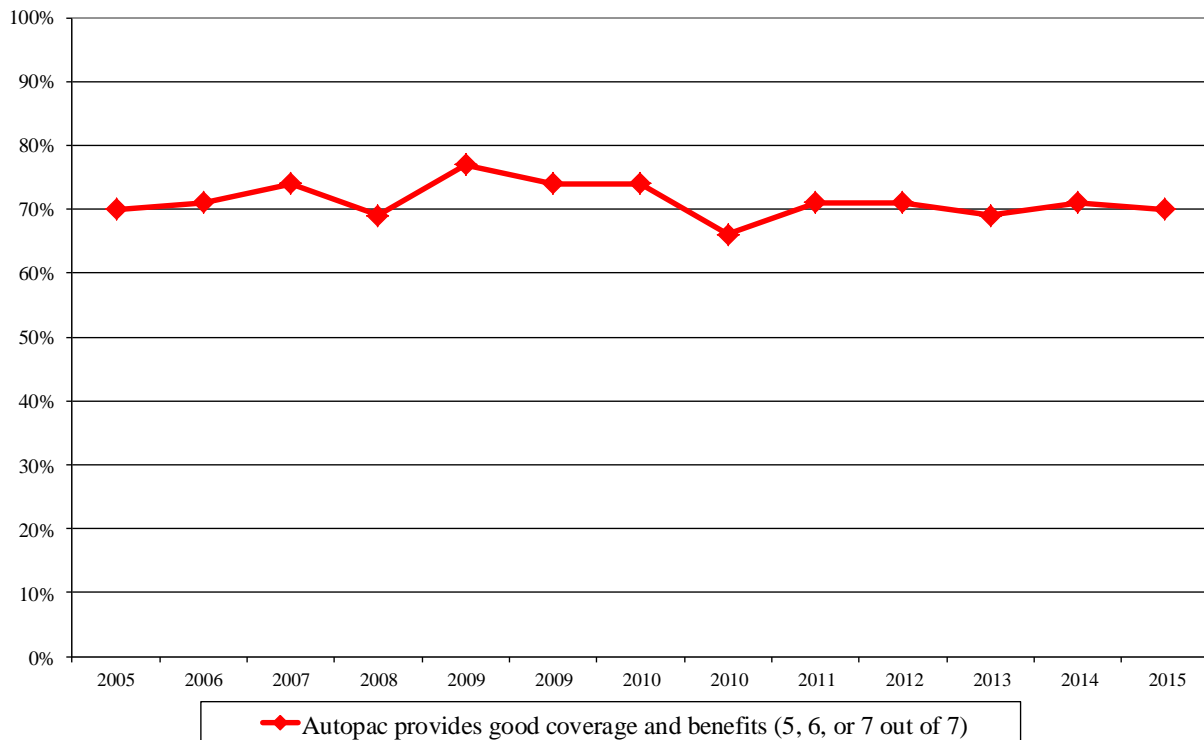


## Autopac provides good coverage<sup>12</sup>, according to Manitobans

- Seven in 10 Manitobans say that the Autopac product provides good coverage and benefits (70% rate Autopac as 5 to 7 on a 7-point scale; mean score of 5.0 out of 7). While coverage is complex and may not be well understood by the general public, the vast majority of Manitobans have an opinion about the completeness of Autopac coverage. Only 4% of respondents did not provide an answer to this question. The view that Autopac provides good coverage is shared by Manitobans from all demographic groups.

### Manitobans' rating of Autopac coverage and benefits: 2005-2015

(Rating of 5 to 7 out of 7, where 1 is minimal coverage and benefits and 7 is complete coverage and benefits)

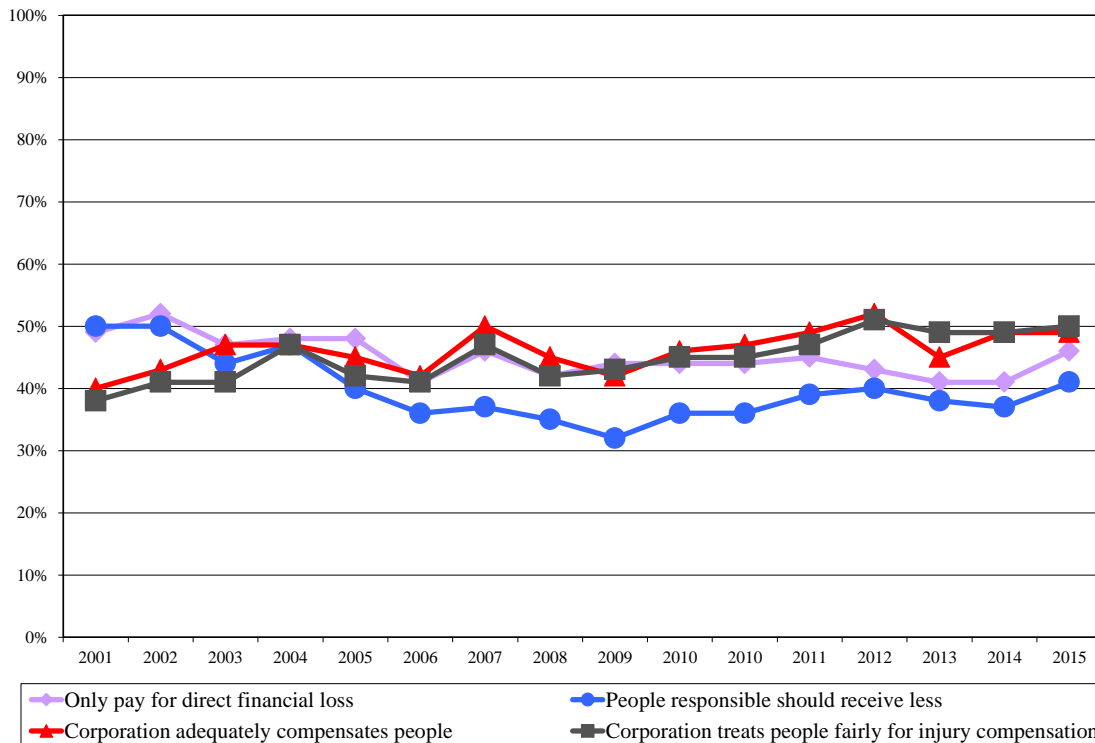


## Public views on the cornerstones of PIPP

- Consistent with past findings, about half (or less for some variables) of Manitobans say:
  - the Corporation *treats people fairly when paying injury compensation* (50%). More than one in 10 say they *don't know*, or did not respond to this question (12%). Customers who actually experience the claims process have much higher satisfaction levels. The Corporation's Claimant Satisfaction Survey shows that 81% of injury claimants say they are satisfied with respect to their recent claim.<sup>13</sup>
  - the Corporation gives *adequate compensation to people who are injured in a vehicle accident* (49%); more than one in 10 say they *don't know* or did not respond to this question (12%)
  - the Corporation should *pay only for direct financial losses* (46%). Previous focus groups show that there is poor understanding of what kinds of losses would be covered under direct financial losses (PIPP Focus Groups, conducted by PRA in June 2002).

- that *people who are responsible should receive less if they are injured in a vehicle accident* (41%). An equal proportion of Manitobans disagree that those who are responsible should receive less (43%). This shows that about four in 10 generally support the PIPP principle of equal access to benefits, regardless of fault.
- Viewing results by demographic groupings shows that young Manitobans (18-24) are most likely to agree that the Corporation *adequately compensates* people who are injured.

**Agreement with PIPP statements: 2001 - 2015**  
 (Percent 5 to 7 out of 7; where 1 is strongly disagree and 7 is strongly agree)



### Setting rates

- Almost all Manitobans say that when it comes to setting rates, it is important (5 to 7 on a 7-point scale) to consider a person’s *driving history* (94%). This is consistent with the Corporation’s current rate-setting measures. Other factors that Manitobans agree are important to consider in rate setting include:
  - *the cost of injury claims* (74%)
  - *the value of the vehicle* (70%)
  - *the age of the driver* (66%)
  - *what the vehicle is used for* (64%)
  - *the type of vehicle* (56%)
- There is less support for the following variables, as possible rate setting factors:
  - *the cost of other drivers’ accidents* (53%)
  - *the distance a vehicle is driven in a year* (47%)
  - *where a driver resides in Manitoba* (42%)

- The finding that there is limited support for the Corporation to base rates on *the distance a vehicle is driven in a year* is supported by other corporate research. In a 2013 survey, at least eight in 10 Manitobans said that drivers should pay the same for their insurance, regardless of their driving distance or the type of driving trips they make.<sup>14</sup>
- About half of Manitobans say that the Corporation is doing a good job at *explaining how their rates are set* (52%). This result is consistent with past findings.
- While the Corporation's operating expenses are well below the industry average, Manitobans consistently overestimate the amount of their premium that it spends on *administration*. On average, Manitobans think the Corporation spent 29 cents per premium dollar on *administration* and 71 cents per premium dollar on *claims*. In reality, the Corporation's 2014 Annual Report shows that for every premium dollar, it spent \$0.94 on claims costs, and 22 cents on other expenses (operating and regulatory/appeal expenses; broker commissions; premium taxes) to end the year with a 22 cent/premium dollar underwriting loss. The Corporation's investment income helps to cover any losses.<sup>15</sup> The amount returned to Manitobans in terms of claims costs is well above the industry average of 64%.<sup>16</sup>

## Endnotes

<sup>1</sup> PIPP is the acronym for the Corporation's Personal Injury Protection Plan.

<sup>2</sup> Accessed on August 27, 2015, accessed at [http://www.conferenceboard.ca/reports/icc/2015/icc\\_july2015.aspx](http://www.conferenceboard.ca/reports/icc/2015/icc_july2015.aspx).

<sup>3</sup> The next Western Province Poll will be conducted in October 2015. They are tentatively scheduled to run every second year.

<sup>4</sup> Accessed on August 19, 2015, accessed at

<http://www.edelman.com/trust/2011/uploads/trust%20executive%20summary.pdf>. Study conducted by StrategyOne as part of the 2011 Edelman Trust Barometer. The study was conducted with 'informed publics' in 23 countries. 'Informed publics' are college educated, have a household income in the top quartile (for their age and country), are between the ages of 25-64, and are informed (read/watch news media and follow public policy issues). This study found that when a company is trusted, most people<sup>4</sup> will believe positive information they hear about the company (51%), but few believe negative information they hear (25%). When a company is not trusted, most people believe negative information they hear (57%) but few believe positive information (15%).

<sup>5</sup> Proportions reported are calculated from the base of those who report they read/saw/heard something about Manitoba Public Insurance.

<sup>6</sup> 'Good impression' is a label applied to those who provide a rating of 5-7 out of 7 where 7 means *very good impression*.

<sup>7</sup> Includes those who completed a driver's license transaction alone, and those who completed a driver's license transaction in addition to another transaction/other transactions at the same visit.

<sup>8</sup> Includes those who completed a policy transaction alone, and those who completed a policy transaction in addition to another transaction/other transactions at the same visit.

<sup>9</sup> The question that these results are based on is Question 51.

<sup>10</sup> PIPP Focus Groups, conducted by PRA in June 2002.

<sup>11</sup> Accessed on August 20, 2015, released by IBC on March 5, 2008: Insurance Bureau of Canada industry study conducted by Pollara; release can be found at [http://www.ibc.ca/en/media\\_centre/news\\_releases/2008/03-05-2008.asp](http://www.ibc.ca/en/media_centre/news_releases/2008/03-05-2008.asp).

<sup>12</sup> The scale for the question is anchored with 1 being "it provides minimal coverage and benefits" and 7 being "it provides complete coverage and benefits".

<sup>13</sup> Injury Claimant Satisfaction Survey: Numerical Report: Q4, 2014/2015 reporting period. This is based on the results to Question 166B which measures overall satisfaction of injury claimants.

<sup>14</sup> Taken from the November 2013 Topical Poll on usage-based insurance.

<sup>15</sup> Taken from the MPI Annual Report for 2014/2015; page 29.

<sup>16</sup> Taken from the MPI Annual Report for 2007/2008; page 15.

**PUB (MPI) 1-2**

<b>Volume:</b>	<b>I OV.6</b>	<b>Page No.:</b>	<b>23</b>
<b>Topic:</b>	<b>Value Equation</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>New or Enhanced Basic Services</b>		

**Preamble:** The Corporation has articulated the ways in which it believes Manitobans receive value in exchange for their Basic Autopac Insurance premiums.

**Question:**

- a) Please advise of whether any new or enhanced Basic services are being developed or examined by MPI.
- b) If so, please provide the nature of the service or enhancement, and the associated cost/benefit analysis.

**Rationale for Question:**

The Board must be provided with sufficient information relative to Basic services to enable the Board to consider the necessity and prudence of the expenditure.

**RESPONSE:**

- a) Manitoba Public Insurance (MPI) is continually reviewing the Basic services and products MPI provides. The introduction of any new products is under the sole purview of the government.
- b) There are currently no recommendations with government on any new Basic products or services.

**PUB (MPI) 1-3**

<b>Volume:</b>	<b>III AI.9</b>	<b>Page No.:</b>	<b>1</b>
<b>Topic:</b>	<b>Ratemaking in Accordance with Accepted Actuarial Practice in Canada</b>		
<b>Sub Topic:</b>	<b>0% Profit Provision</b>		
<b>Issue:</b>	<b>Consistency with Break-Even Objective</b>		

**Question:**

- a) Please provide an exhibit documenting the derivation of the indicated changes in average rate level in accordance with accepted actuarial practice in Canada, by Major Classification and Overall.
- b) Please confirm that the 0% profit provision included in the indicated rates in accordance with accepted actuarial practice in Canada does not recognize the revenue contribution arising from the investment return on the assets supporting Basic Total Equity.
- c) Please provide a restated version of the derivation exhibit requested in a) above which includes a profit provision that recognizes as a premium offset the contribution of the expected investment return on the assets supporting Basic Total Equity.

**Rationale for Question:**

To assess consistency with the break-even objective.

**RESPONSE:**

- a) The derivation and discussion of the rate indications based on accepted actuarial practice is presented in *Volume III AI.9 Actuarial Standards*. Please refer to PUB (MPI) 1-3 Attachment for Volume III AI.9.2 Basic Rate Indications Determined in Accordance with Accepted Actuarial Practice in Canada; this was not included in the 2017 GRA filing. Manitoba Public Insurance (MPI) received one critical analysis on MPI's methodology from the Public Utilities Board's actuarial advisor. The response to this critical analysis is provided in *PUB (MPI) 1-4*. MPI will

continue to work with all parties, in the spirit of collaboration, to arrive at a result that is acceptable to all parties and is in the best interests of Manitoba ratepayers.

b) Confirmed.

c) The table below presents the derivation of the expected investment return on the assets supporting Basic Total Equity. The inclusion of the average investment income from equity of \$10.0 million will result in a rate decrease of approximately 1.1% i.e. the required overall rate increase would be 3.7% instead of 4.8%.

(All figures in \$000)

		2016/17	2017/18
Total Liabilities excl 'Unearned Premium and Fees' and 'Provision for Unpaid Claims'	<u>Volume II</u> <u>Pro Formas, Pg 4</u>	335,891	353,299
Total Equity	<u>Volume II</u> <u>Pro Formas, Pg 4</u>	217,128	220,488

		2017/18	2018/19
Investment Income excl such from the fixed income portfolio [a, b, c]	<u>Volume II</u> <u>Investment Income</u> <u>Page 5</u>	25,645	26,071
Investment Income from Equity [d]		10,069	10,018
Average Investment Income from Equity			10,044

Notes:

[a] Investment income is assumed to be earned on the assets as at the end of the fiscal year.

[b] Excludes interest income or gains/losses from cash/short term investments, marketable bonds and MUSH; excludes amortization of bond premium/discount

[c] Basic's portion is 84.84% and 83.91% respectively

[d] Total Equity / [Total Liabilities + Total Equity] \* Investment Income

**AI.9.2 Basic Rate Indications Determined in Accordance  
with Accepted Actuarial Practice in Canada**

**MANITOBA PUBLIC INSURANCE**  
**MAJOR CLASSIFICATION – REQUIRED RATE CHANGES**  
**Selected Overall Rate Change of 4.8%**

	<b>Overall</b>	<b>Private Pass</b>	<b>Comm</b>	<b>Public</b>	<b>Motor- Cycle</b>	<b>Trailer</b>	<b>ORV</b>
17/18 Units	1,166,000	809,600	47,000	12,700	16,200	207,200	73,300
Claims	652.48	852.12	597.26	1,618.17	664.59	53.55	6.00
Claims Expense	111.28	145.33	101.86	275.98	113.34	9.13	1.02
Road Safety	11.70	15.41	15.41	15.41	15.41	0.00	0.00
Operating Expense	72.65	95.66	95.66	95.66	95.66	0.00	0.00
Commission: Vehicle	28.18	36.78	26.34	67.63	28.14	2.48	0.24
Prem Tax: Vehicle	26.09	34.06	24.39	62.62	26.06	2.29	0.22
Comm & Prem Tax: Driver	2.88	3.80	3.80	3.80	3.80	0.00	0.00
Commission Flat Fee	5.26	6.93	6.93	6.93	6.93	0.00	0.00
Reins: Casualty	2.01	2.65	2.65	2.65	2.65	0.00	0.00
Reins: Catastrophe	8.28	8.97	8.97	8.97	0.00	8.97	0.00
Fleet Rebates	13.15	17.64	17.64	17.64	0.00	0.00	0.00
Anti-Theft Discount	2.71	3.90	0.00	0.00	0.00	0.00	0.00
Driver Prem	46.23	60.87	60.87	60.87	60.87	0.00	0.00
Service Fees	20.64	27.17	27.17	27.17	27.17	0.00	0.00
Inv Inc: Driver	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inv Inc: Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Req Rate (Raw)	869.82	1,135.18	812.84	2,087.41	868.53	76.42	7.49
Req Rate (Bal)	853.75	1,114.20	797.82	2,048.83	852.48	75.01	7.35
16/17 Average Rate	773.73	1,001.44	682.70	1,881.84	754.67	64.21	11.95
Major Class Drift	5.3%	6.7%	4.8%	1.2%	1.9%	4.1%	0.0%
17/18 Average Rate Without Rate Change	814.82	1,068.47	715.30	1,904.12	768.87	66.84	11.95
Full Cred Req Change	4.8%	4.3%	11.5%	7.6%	10.9%	12.2%	-38.5%
Applied for Change	4.8%	4.3%	11.5%	7.6%	10.9%	12.2%	-38.5%
Credibility		99.3%	88.7%	67.9%	73.0%	97.2%	92.4%
Cred Wtd Change		4.3%	10.8%	6.7%	9.2%	12.0%	-35.2%
Cred Wtd Req Rate		1,114.27	792.37	2,031.64	839.83	74.87	7.74
Cred Wtd Req Rate (Bal)	853.77	1,115.00	792.89	2,032.97	840.38	74.92	7.75
Cred Wtd Change (Bal)		4.3%	10.8%	6.8%	9.3%	12.1%	-35.2%



**MANITOBA PUBLIC INSURANCE**  
**MAJOR CLASSIFICATION – REQUIRED RATE CHANGES**

**Selected Overall Rate Change of 2.0%**

	<b>Overall</b>	<b>Private Pass</b>	<b>Comm</b>	<b>Public</b>	<b>Motor- Cycle</b>	<b>Trailer</b>	<b>ORV</b>
17/18 Units	1,166,000	809,600	47,000	12,700	16,200	207,200	73,300
Claims	652.48	852.12	597.26	1,618.17	664.59	53.55	6.00
Claims Expense	111.28	145.33	101.86	275.98	113.34	9.13	1.02
Road Safety	11.70	15.41	15.41	15.41	15.41	0.00	0.00
Operating Expense	72.65	95.66	95.66	95.66	95.66	0.00	0.00
Commission: Vehicle	28.18	36.78	26.34	67.63	28.14	2.48	0.24
Prem Tax: Vehicle	26.09	34.06	24.39	62.62	26.06	2.29	0.22
Comm & Prem Tax: Driver	2.88	3.80	3.80	3.80	3.80	0.00	0.00
Commission Flat Fee	5.26	6.93	6.93	6.93	6.93	0.00	0.00
Reins: Casualty	2.01	2.65	2.65	2.65	2.65	0.00	0.00
Reins: Catastrophe	8.28	8.97	8.97	8.97	0.00	8.97	0.00
Fleet Rebates	13.15	17.64	17.64	17.64	0.00	0.00	0.00
Anti-Theft Discount	2.71	3.90	0.00	0.00	0.00	0.00	0.00
Driver Prem	46.23	60.87	60.87	60.87	60.87	0.00	0.00
Service Fees	20.64	27.17	27.17	27.17	27.17	0.00	0.00
Inv Inc: Driver	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inv Inc: Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Req Rate (Raw)	869.82	1,135.18	812.84	2,087.41	868.53	76.42	7.49
Req Rate (Bal)	853.75	1,114.20	797.82	2,048.83	852.48	75.01	7.35
16/17 Average Rate	773.73	1,001.44	682.70	1,881.84	754.67	64.21	11.95
Major Class Drift	5.3%	6.7%	4.8%	1.2%	1.9%	4.1%	0.0%
17/18 Average Rate Without Rate Change	814.82	1,068.47	715.30	1,904.12	768.87	66.84	11.95
Full Cred Req Change	4.8%	4.3%	11.5%	7.6%	10.9%	12.2%	-38.5%
Applied for Change	2.0%	1.5%	8.6%	4.7%	7.9%	9.2%	-40.1%
Credibility		99.3%	88.7%	67.9%	73.0%	97.2%	92.4%
Cred Wtd Change		1.5%	7.8%	3.9%	6.3%	9.0%	-36.9%
Cred Wtd Req Rate		1,084.71	771.34	1,977.74	817.55	72.88	7.54
Cred Wtd Req Rate (Bal)	831.12	1,085.42	771.85	1,979.03	818.09	72.93	7.54
Cred Wtd Change (Bal)		1.6%	7.9%	3.9%	6.4%	9.1%	-36.9%

## **Claims Costs**

**Exhibit 1** presents a summary of claims costs by coverage. A detailed derivation of these claims costs is presented in *Exhibit 2*.

**Exhibit 2** presents a detailed derivation of claims costs by coverage. A discussion of the various columns is presented below.

Undiscounted Paid – Accident Year: The annual figures were a result of the claims forecast as presented in Volume II, Claims Incurred. Annual figures for the first two development years were allocated by quarters based on a review of the historical claims payout. Beyond the first two development years, annual figures were assumed to be uniformly distributed within the development year.

Undiscounted Paid – Rating Year 2017/18: Accident year figures were converted to rating year figures based on a review of the historical composition of accident year paid. We reviewed this composition, by development quarters, for the first two development years of each accident year. We also reviewed this composition for each accident year based on the paid-to-date.

An accident year is comprised of policies written over two rating years. For example, at the beginning of accident year 2017/18, all in-force policies are for rating year 2016/17. As the accident year progresses, these in-force policies expire and are renewed by policies with rating year 2017/18. At the end of accident year 2017/18, all in-force policies are for rating year 2017/18.

Similarly, claims costs in an accident year are from policies written over two rating years. The percentage of claims costs whereby the rating year is the same as the accident year increases over the accident year as more policies are renewed. For example, only a small portion of claims costs in the first quarter of accident year 2017/18 will be from policies with rating year 2017/18 since these policies represent a smaller portion of the in-force policies. As the accident year progresses, the proportion of claims costs for accident year 2017/18 from policies with rating year 2017/18 will increase.

Indexation: This is applicable only to indexed coverages i.e. Income Replacement Indemnity and Accident Benefits - Other (Indexed), and their respective PIPP Enhancements. For these coverages, payments are indexed annually. We have assumed an annual indexation of 2.00%.

Interest Rate: The interest rate used to discount future payments are based on the projected duration weighted interest rate of the Corporation's fixed income portfolio as at March 1, 2017. Per the Canadian Institute of Actuaries' Consolidated Standards of Practice, paragraph 2620.15 states that the selected interest rate is assumed to represent the "*expected investment income to be earned on assets that might be acquired with the net cash flows resulting from the revenue at the indicated rate*". Further, per paragraph 2620.16, the possible sets of such assets the actuary could consider using include "*fixed income assets of appropriate duration*".

Discount Factor: Payments were discounted from the midpoint of the development quarter/year to the end of rating year 2017/18 i.e. February 28, 2018.

Undiscounted Reported – Accident Year: The annual figures were a result of the claims forecast as presented in *Volume II Claims Incurred*. Annual figures for the first development year were allocated by quarters based on a review of historical claims reporting. Beyond the first development year, annual figures were assumed to be uniformly distributed within the development year.

Undiscounted Reported – Rating Year 2017/18: Accident year figures were converted to rating year figures based on a review of the historical composition of accident year reported. We reviewed this composition, by development quarters, for the first development year of each accident year. We also reviewed this composition for each accident year based on the reported-to-date.

In comparing the total Undiscounted Paid and Undiscounted Reported for Rating Year 2017/18, some minor differences were observed. We did not attempt to reconcile these differences, since these differences were very small and not material to the final results.

## **Claims Expenses**

**Exhibit 3** presents a detailed derivation of the claims expenses. A discussion of the various columns for Page 1 is presented below.

Total Undiscounted Claims Costs: These columns represent the aggregate claims costs by development quarter/year for all coverages excluding PIPP Enhancements. Claims costs by coverage are presented in Exhibit 2.

Undiscounted Claims Expenses: Using the traditional paid-to-paid method<sup>1</sup>, we selected a claims expense ratio of 18.30% based on a review of the corresponding ratios for fiscal years 2017/18 to 2020/21 (see Exhibit 3 Page 2). We assumed that 50% of claims expenses (i.e. 50% of 18.30%) are incurred when claims are reported and the remaining 50% when claims are paid.

## **Other Expenses and Income**

**Exhibit 4** presents a detailed derivation of the other expenses and income. A discussion of the various columns is presented below.

Road Safety/Loss Prevention: The average of the road safety/loss prevention costs for fiscal years 2017/18 and 2018/19 was allocated uniformly over development years 2017/18 and 2018/19.

<b>(\$000)</b>	<b>2017/18</b>	<b>2018/19</b>	<b>Average</b>
Road Safety/Loss Prevention	\$13,210	\$14,075	\$13,643

Source: Volume II Pro Formas

<sup>1</sup> The traditional paid-to-paid method uses the ratios of the paid claims expense to the corresponding paid claims for multiple fiscal years to determine an appropriate claims expense ratio. This ratio is then applied to claims costs to determine the claims expense.

Operating Expenses: The average of the operating expenses for fiscal years 2017/18 and 2018/19 was calculated.

<b>(\$000)</b>	<b>2017/18</b>	<b>2018/19</b>	<b>Average</b>
Operating Expense	\$78,026	\$82,306	\$80,166

Source: *Volume II, Pro Formas*

This average operating expenses was then allocated as follows:

- Front-end cost – Two-third of the operating expenses (i.e.  $2/3 * \$80,166,000$ ) was considered as front-end cost i.e. the initial cost of writing/issuing the insurance policy. This cost was allocated uniformly over development year 2017/18 based on the assumption that policies are written uniformly throughout the year.
- Maintenance and servicing of policy – The remaining one-third of the operating expenses (i.e.  $1/3 * \$80,166,000$ ) was considered as the cost to maintain and service the insurance policy. This cost was allocated based on the portion of premium earned in the development quarter (for policies with rating year 2017/18) per the table below:

<b>Development Year</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
2017/18	1/32	3/32	5/32	7/32
2018/19	7/32	5/32	3/32	1/32

Regulatory/Appeal: The average of the regulatory/appeal costs for fiscal years 2017/18 and 2018/19 was allocated uniformly over development years 2017/18 and 2018/19.

<b>(\$000)</b>	<b>2017/18</b>	<b>2018/19</b>	<b>Average</b>
Regulatory/Appeal	\$3,494	\$3,566	\$3,530

Source: *Volume II, Pro Formas*

Commission Flat Fee: The commission flat fee for fiscal year 2017/18 of \$6,025,000 was allocated uniformly over development year 2017/18.

Reinsurance Casualty and Reinsurance Catastrophe: Losses for policies with rating year 2017/18 can occur over two fiscal years i.e. 2017/18 and 2018/19. The reinsurance programs for these two fiscal years provide reinsurance coverage for these losses. The average of the reinsurance ceded written premiums for fiscal years 2017/18 and 2018/19 was allocated uniformly over development years 2017/18 and 2018/19.

<b>(\$000)</b>	<b>2017/18</b>	<b>2018/19</b>	<b>Average</b>
Reinsurance Casualty	\$2,323	\$2,369	\$2,346
Reinsurance Catastrophe	\$9,553	\$9,745	\$9,649

Source: *Volume II, Revenue, Section Rev.3*

Fleet Rebates: Fleet rebates for fiscal year 2018/19 reflect the rebates for policies with rating year 2017/18. The fleet rebates for fiscal year 2018/19 of \$15,617,000 (*Volume II Revenue Section Rev.1.3*) were allocated uniformly over development year 2018/19.

Anti-Theft Discount: The anti-theft discount for fiscal year 2017/18 of \$3,098,000 (*Volume II Revenue Section Rev.1.4*) was allocated uniformly over development year 2017/18.

Driver Premium: The written driver premium for fiscal year 2017/18 of \$52,908,000 (*Volume II Pro Formas*) was allocated uniformly over development year 2017/18.

Service Fees and Other Revenue: The average of the service fees for fiscal years 2017/18 and 2018/19 was calculated.

<b>(\$000)</b>	<b>2017/18</b>	<b>2018/19</b>	<b>Average</b>
Service Fees and Other Revenue	\$23,227	\$24,889	\$24,058

Source: *Volume II Pro Formas*

This average service fees was then allocated based on the portion of premium earned in the development quarter (for policies with rating year 2017/18) per the table below:

<b>Development Year</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
2017/18	1/32	3/32	5/32	7/32
2018/19	7/32	5/32	3/32	1/32

**PUB (MPI) 1-4**

<b>Volume:</b>	<b>III AI.9</b>	<b>Page No.:</b>	
<b>Topic:</b>	<b>Ratemaking in Accordance with Accepted Actuarial Practice in Canada</b>		
<b>Sub Topic:</b>	<b>Continuation of Collaborative Process</b>		
<b>Issue:</b>			

**Preamble:** On 29 April 2016, the following email was contributed to the inter-GRA “collaborative process” by the PUB’s actuarial advisor, which the Corporation later indicated was received too late to be given consideration in the current GRA:

“The purpose of this email is to follow-up on Paragraph 10.21 from Board Order 128/15 which directed:

“MPI work collaboratively with the Board’s actuarial advisor and the advisors of interveners (as determined by the interveners) to enhance the transparency and robustness of the analysis toward the continued development of MPI’s rate-making model to be in accordance with accepted actuarial practice in Canada.”

I apologize for the delay in getting this email completed. Earlier this year, I learned that Section 2600 of the Standards of Practice (Ratemaking: Property and Casualty Insurance) was being revised by the Part 2000 Designated Group appointed by the Canadian Institute of Actuaries. I deferred preparation of this email until I knew what these revisions entailed, in case they might impact my observations. I have now confirmed that these revisions are not substantive.

In this email I outline my initial suggestions re. areas for exploration in the current analysis (AI.9 from the 2016 GRA) with respect to improving the robustness and/or transparency in the development of rate indications in accordance with accepted actuarial practice in Canada. For the moment at least, my focus is on the overall rate indications (all vehicles combined), although the concepts often could be equally applied at the Major Classification level as well.



**Basic Methodology**

At the risk of over-simplification, the current methodology (as captured on Page 7 of AI.9) uses estimated “per vehicle” revenue and cost components of the required premium, with the underlying cash flows discounted to a common point in time (the end of the proposed rating year). The aggregate of these components is compared to the latest historical fiscal year average rate inflated by an appropriate duration drift factor (premium trend) to derive the overall required rate indication. Many of the components of the required premium (other than claims and claim expenses) rely on the GRA forecast of fiscal year component amounts and fiscal year written vehicles.

From my experience in the private sector, a more common approach would be to make provision for revenue and costs (other than claims and claim expenses) expressed as a % of premium, and separated between premium-variable components (e.g., often commissions) and exposure-variable or fixed components (e.g., often operating expenses). The rate indication is then derived as:

$$\begin{aligned} & [ \text{PLR}\% + \text{FE}\% ] / [ 1 - \text{VE}\% - \text{Pr}\% ] - 1 \text{ [Loss Ratio Method]} \\ & \text{or } \{ [ \text{PLC}\$ + \text{FE}\$ ] / [ 1 - \text{VE}\% - \text{Pr}\% ] \} / \text{PAP}\$ - 1 \text{ [Loss Cost Method]} \\ & \text{or } [ \text{PLC}\$ / \text{PAP}\$ + \text{FE}\% ] / [ 1 - \text{VE}\% - \text{Pr}\% ] - 1 \end{aligned}$$

where PLR% is a projected discounted on-level loss ratio

FE% is a discounted fixed expense provision (% of premium)

VE% is a discounted variable expense provision (% of premium)

Pr% is a discounted profit provision (% of premium)

PLC\$ is a projected discounted loss cost per vehicle

FE\$ is a projected discounted fixed expense per vehicle provision (\$)

PAP\$ is a projected on-level average written premium.

With perfectly behaved data and appropriately set assumptions, the Loss Ratio Method and Loss Cost Method are algebraically equivalent. Use of FE%, FE\$, VE% and Pr% provision assumptions by-passes the need for fiscal year forecasts (since they are typically based on recent historical ratios (adjusted, if needed, to be

appropriate for the future proposed rating year), and simplifies the analysis, improving transparency.

### **Profit Provision**

The current analysis assumes a profit provision of \$0, which fails to recognize the expected revenue contribution from investment income earned on the assets supporting Basic's Total Equity account. In response to an interrogatory (PUB(MPI) 1-61), this revenue contribution was approximated in \$s using an allocation (to Total Equity) of the GRA forecast of fiscal year investment income (ex. fixed income).

From my experience in the private sector, a more common approach would be to make provision for profit expressed as a % of premium (as noted above) estimated for the future rating year (before discounting) as:

$$\{ \text{ROE} / [ 1 - \text{Tx} ] - \text{IR} \} / \text{PSR}$$

where ROE is the target after-tax return on equity

Tx is the expected income tax rate

IR is the expected before-tax investment return rate on assets supporting Total Equity

PSR is the expected (i.e., normal) premium-to-surplus ratio.

Adapting this to Basic with its break-even objective would result in a (before discounting) "profit" provision estimated as  $-\text{IR} / \text{PSR}$ . In this instance, IR might be estimated from consideration of (a) the information used in the related interrogatory response, (b) an appropriately weighted average of the GRA financial model return assumptions by asset class, and/or (c) recent historical appropriately weighted average investment returns by asset class. PSR might be estimated from consideration of (a) ratios derived from the GRA financial model forecast and/or (b) recent historical ratios. Recognition of the expected revenue contribution from investment income earned on the assets supporting Basic's Total Equity account is necessary for compliance with accepted actuarial practice in Canada, and the suggested approach provides lots of context to setting an appropriate provision.

**Discounting**

As noted above, the current analysis discounts the underlying cash flows of the components of the required premium to a common date at the end of the proposed rating year. From my experience in the private sector, a more common approach would be to view the discounting process from the perspective of a single policyholder's premium, discounting all expected cash flows to the date the policy comes into effect. The discounting would apply to the expected premium and other revenue streams (e.g., recognizing that some policyholders elect payment plans) and the expected claims and expense payouts. The appropriate timing for discounting of the profit provision varies in the private sector, but in Basic's simplified case, discounting by one year (or the average policy term) would seem to be appropriate (i.e., recognizing the present value at policy issue of the investment income expected to be earned in this regard). Discounting all cash flows is necessary for compliance with accepted actuarial practice in Canada, and the proposed approach fits easily in with the Basic Methodology discussion from above.

**Discount Rate**

The current analysis uses a discount rate of interest "*based on the projected duration weighted interest rate of the Corporation's fixed income portfolio*" as at the start of the proposed rating year. As noted in AI.9, this is not in compliance with accepted actuarial practice in Canada, under which "*the investment return rate for calculating the present value of cash flows would reflect the expected investment income to be earned on assets that might be acquired with the net cash flows resulting from the revenue at the indicated rate.*" [2620.15] The essential difference here is that the discount rate in accordance with accepted actuarial practice in Canada is a "new money" rate expected to be earned as new investments are made starting in the proposed rating year, whereas the current analysis discount rate is substantially influenced by investments purchased in the past.

**Forecasting and Discounting Claims**

The current analysis uses weighted averages of the expected \$ payout of claims across future calendar periods forecasted for each of the two accident years contributing to the proposed rating year, derived from the accident year Claims Incurred forecast underlying the GRA financial forecast. This process is carried out

separately for each of the underlying Basic coverages. The Claims Incurred forecasts are generally built up from separate frequency and severity forecasts, reflecting consideration of fitted trends as well as the overriding judgment of those preparing the forecasts. The analysis in AI.9 has been “tainted” by the concerns raised through the GRA process with respect to transparency, despite the substantial supporting documentation provided with the Claims Forecast.

From my experience in the private sector, a more common approach would be to prepare estimates by coverage of projected on-level loss ratios or projected loss costs per vehicle using:

- a) Trend models fitted to longer term historical claims experience (incl. frequency and severity), which are then applied to
- b) Recent historical on-level loss ratios or loss costs per vehicle to project forward to the expected average accident date for the proposed rating year.

Development of the trend models goes well beyond the relatively mechanical processes of the former Exponential and Linear forecasts from earlier GRAs, seeking to discern and explain patterns in the experience with the objective of building rigour and confidence in the forecast while avoiding model over-parameterization. This might include exploring fits to different historical time periods, and the impact of introducing independent explanatory variables (an example of which might be the shifting composition of the fleet between domestic and imported vehicles, which was discussed in the last GRA). The final objective is to use the selected trend model(s) to derive projection factors for each recent historical accident year to bring it forward to the expected average accident date for the proposed rating year. The selection of accident year averaging weights can then be tailored to each coverage’s unique circumstances, to strike an appropriate balance between responsiveness and stability. MPI has the distinct advantage (compared to most private sector companies) of being able to directly link this analysis to the latest valuation of the policy liabilities, a simplification which will go a long way to improving transparency.

Discounting of forecasted, weighted average, by coverage on-level loss ratios or loss costs per vehicle can then be estimated using the claims paid emergence patterns derived in the valuation of the policy liabilities for discounting purposes, again improving transparency. It would be possible to convert accident year payout patterns into rating year or policy year payout patterns, although this is not commonly done in the private sector.

### **Discounting Claim Expenses**

The current analysis estimates the claim expenses \$ payout from the aggregated estimated \$ claim payout and the aggregated estimated \$ claim incurred emergence, following the logic *“that 50% of claims expenses ... are incurred when claims are reported and the remaining 50% when claims are paid.”* This logic is akin to the basis of derivation of the undiscounted unpaid claim expense provision (i.e., internal loss adjustment expense or ILAE) in the valuation of the policy liabilities, where a selected paid ILAE to paid claims ratio of 20% is used by applying *“one half of the selected ratio (10%) to the total unpaid claims as of valuation date”* and *“one-half of the selected ratio to total IBNR as of valuation date”*. However, in the valuation, the discounting of the unpaid claim expense provision is done in proportion to the discounting of the unpaid claims only (AI.7 Actuary Report – Feb 2015, Exhibit 7, Sheet 1). Although either approach to discounting claim expenses is intuitive, consistency between the valuation and the pricing analysis in this regard would be technically logical.

### **Cost of Reinsurance**

The current analysis incorporates a cost component in the required rate with respect to the cost of excess of loss and catastrophe reinsurance. From my experience in the private sector, it would be more common to develop rate indications Gross of reinsurance, in effect leaving aside the balance or imbalance between the cost of reinsurance vs. the savings provided by that protection. However, if the analysis is done Net of reinsurance, in addition to factoring in the cost of reinsurance, the forecasted claims should be developed to reflect the expected benefits of that reinsurance, which logically would mean developing those forecasts from historical Net claims experience. Although the impact of reinsurance is not usually that significant for Basic, it appears the accident year Claims Forecast (from the 2016

GRA) can be tied back to the Gross of reinsurance analysis in the valuation of the policy liabilities.

As a continuation of the collaborative process, I welcome feedback from you and the other GRA stakeholders with respect to these matters. Thank you.”

**Question:**

Please provide the Corporation’s response to the matters raised here.

**RESPONSE:**

Manitoba Public Insurance’s (MPI) responses to the issues raised are detailed below. MPI will continue to work with all parties, in the spirit of collaboration, to arrive at an appropriate result that is in the best interests of Manitoba ratepayers.

Basic Methodology

The methodology is based on the Loss Cost Method as described by the Public Utilities Board’s (PUB) actuarial advisor. The formula provided for the indicated rate change, based on this method, is  $\{[(PLC\$ + FE\$) / [1 - VE\% - Pr\%]] / PAP\$ - 1\}$ . The table below shows the various parts of this formula, and the corresponding figures used to determine the overall indicated rate change. These figures are taken directly from *Volume III AI.9 Actuarial Standards*. Please refer to *PUB (MPI) 1-3 (a)*.

<b>Part</b>	<b>Description</b>	<b>Figures</b>
PLC\$	Discounted loss cost per vehicle	\$763.76 (=\$652.48+\$111.28)
FE\$	Discounted fixed expense per vehicle	\$51.77 (=\$11.70+\$72.65+\$2.88+\$5.26+\$2.01+\$8.28+\$13.15+\$2.71-\$46.23-\$20.64)
VE%	Variable expense provision	6.24% (3.00% premium tax; 3.24% commission)
Pr%	Profit provision	0.00%
PAP\$	On-level average written premium	\$814.82

Based on the formula provided and the figures in the table above, the overall indicated rate change is 4.8% ( $= \{[\$763.76 + 51.77] / [1 - 6.24\% - 0.00\%] / 1.0188\} / \$814.82 - 1$ ). The 1.0188 is to recognize that premiums are received throughout the 2017/18 fiscal year, which earns investment income up to the average earned date of February 28, 2018.

#### Profit Provision

Manitoba Public Insurance (MPI) agrees that the suggested approach has merit. MPI will work with all parties as part of the collaborative process to incorporate an appropriate profit provision.

#### Discounting

The current approach discounts all cash flows to the end of rating year 2017/18, i.e. February 28, 2018. This coincides with the average earned date and average accident date of all policies issued for rating year 2017/18. The average rate determined as of this date is compared to the 2016/17 average rate, which has also been trended to February 28, 2018.

#### Discount Rate

MPI agrees that the suggested approach has merit. MPI will work with all parties as part of the collaborative process to determine an appropriate discount rate.

#### Forecasting and Discounting Claims

The Public Utilities Board has consistently approved rates based on the results of the Claims Forecast in all prior General Rate Applications (GRA). The analysis supporting the rate setting process has been, and remains, the result of a very thorough process that is based on both quantitative and qualitative reviews of the current claims costs to project future claims costs. Quantitatively, the Claims Forecast includes an analysis of severity, frequency, loss ratios and total claims costs, as well as the respective trends in these components. Qualitatively, the results incorporate discussions with claims personnel to understand any changes that could influence future claims costs.

As mentioned by the PUB's actuarial advisor, there is "*substantial supporting documentation provided with the Claims Forecast*". Further, MPI has responded to hundreds of questions in regards to the Claims Forecast, providing a better understanding of the process to the PUB and the interveners. The process is transparent and the analysis is carefully vetted.

The method suggested by the PUB's actuarial advisor is already incorporated (for the most part) into the Claims Forecast to determine future accident years' claims costs. MPI is confident in using the results of the Claims Forecast for ratemaking.

On the issue of discounting claims, please refer to the comments in the 'Discounting' section.

#### Discounting Claim Expenses

MPI will review the differences in approaches to ensure consistency between ratemaking and the valuation of policy liabilities.

#### Cost of Reinsurance

MPI will review its treatment of the cost and benefits of reinsurance, and the application of such to the rate requirement in the 2018 General Rate Application.



**PUB (MPI) 1-5**

<b>Volume:</b>	<b>I REV1.1, 1.2</b>	<b>Page No.:</b>	<b>6-11</b>
<b>Topic:</b>	<b>Motor Vehicle Premiums</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Volume and Upgrade Factors</b>		

**Question:**

- a) Please provide a restated PF.1, PF.2 and PF.3 and R.1 pages 5 and 6 "Motor Vehicle Premiums Written and Earned" to reflect a volume factor of 2.0% throughout the forecast period.
- b) Please provide a restated PF.1, PF.2 and PF.3 and R.1 pages 5 and 6 "Motor Vehicle Premiums Written and Earned" to reflect an upgrade factor of 3.07% throughout the forecast period.

**Rationale for Question:**

To test the forecast's sensitivity to changes in the volume and upgrade factors.

**RESPONSE:**

- a) Please refer to Attachment A.
- b) Please refer to Attachment B.

## PF.1

## STATEMENT OF OPERATIONS

## 2017 GRA - 2.0% Rate Change in 2017/18 &amp; 2.0% Volume Increase throughout forecast

(C\$ 000s, rounding may affect totals)

	For the Years Ended February,					
	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
Motor Vehicles	854,170	895,659	959,115	1,005,419	1,054,522	1,106,152
Drivers	46,618	50,393	52,908	55,180	57,424	59,626
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Written</b>	<b>888,365</b>	<b>934,420</b>	<b>1,000,147</b>	<b>1,048,485</b>	<b>1,099,590</b>	<b>1,153,175</b>
<b>Net Premiums Earned</b>						
Motor Vehicles	827,701	876,554	929,838	984,055	1,031,867	1,082,331
Drivers	45,787	48,478	51,645	54,039	56,298	58,521
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Earned</b>	<b>861,065</b>	<b>913,400</b>	<b>969,607</b>	<b>1,025,980</b>	<b>1,075,809</b>	<b>1,128,249</b>
Service Fees & Other Revenues	20,351	21,557	23,240	25,027	27,009	28,943
<b>Total Earned Revenues</b>	<b>881,416</b>	<b>934,957</b>	<b>992,847</b>	<b>1,051,007</b>	<b>1,102,818</b>	<b>1,157,192</b>
<b>Net Claims Incurred</b>	742,664	761,646	793,613	835,544	872,655	913,962
(a) Claims Incurred - Interest Rate Impact	(75,300)	(80,900)	(84,468)	(98,365)	(12,875)	(2,638)
<b>Total Claims Incurred</b>	<b>666,404</b>	<b>680,746</b>	<b>709,145</b>	<b>737,179</b>	<b>859,780</b>	<b>911,324</b>
Claims Expense	118,614	125,191	128,312	132,735	140,349	147,603
Road Safety/Loss Prevention	13,027	13,318	13,210	14,075	14,048	14,187
<b>Total Claims Costs</b>	<b>798,045</b>	<b>819,255</b>	<b>850,667</b>	<b>883,989</b>	<b>1,014,177</b>	<b>1,073,114</b>
<b>Expenses</b>						
Operating	71,641	76,908	78,026	82,306	83,160	87,964
Commissions	33,862	35,648	37,484	39,595	41,436	43,372
Premium Taxes	26,205	27,751	29,444	31,143	32,645	34,226
Regulatory/Appeal	3,675	3,421	3,494	3,566	3,640	3,718
<b>Total Expenses</b>	<b>135,383</b>	<b>143,728</b>	<b>148,448</b>	<b>156,610</b>	<b>160,881</b>	<b>169,280</b>
<b>Underwriting Income (Loss)</b>	<b>(52,012)</b>	<b>(28,026)</b>	<b>(6,268)</b>	<b>10,408</b>	<b>(72,240)</b>	<b>(85,202)</b>
<b>Investment Income</b>	48,477	81,517	79,670	86,041	97,348	104,945
(b) Investment Income - Interest Rate Impact	(52,515)	(64,761)	(69,956)	(80,936)	(7,678)	0
<b>Net Investment Income</b>	<b>(4,038)</b>	<b>16,756</b>	<b>9,714</b>	<b>5,105</b>	<b>89,670</b>	<b>104,945</b>
<b>Net Income (Loss) from Operations for Rate Setting</b>	<b>(71,009)</b>	<b>(17,041)</b>	<b>(5,251)</b>	<b>13,638</b>	<b>14,621</b>	<b>15,783</b>
Add: DPAC / Premium Deficiency adjustment	(14,959)	(5,771)	(8,697)	(1,875)	(2,809)	(3,960)
<b>Net Income (Loss)</b>	<b>(56,050)</b>	<b>(11,270)</b>	<b>3,446</b>	<b>15,513</b>	<b>17,430</b>	<b>19,743</b>
<b>Total net Impact due to interest rate change (b) - (a)</b>	<b>22,785</b>	<b>16,139</b>	<b>14,513</b>	<b>17,428</b>	<b>5,197</b>	<b>2,638</b>

**PF.2 STATEMENT OF FINANCIAL POSITION****2017 GRA - 2.0% Rate Change in 2017/18 & 2.0% Volume Increase throughout forecast**

(C\$ 000s, rounding may affect totals)

	<i>For the Years Ended February,</i>					
	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
<b>Assets</b>						
Cash and cash equivalents	29,114	11,087	10,922	12,249	15,574	22,689
Investments	2,083,349	2,143,086	2,144,442	2,151,717	2,243,414	2,360,065
Investment property	35,789	40,432	40,945	41,174	41,677	42,786
Due from other insurance companies	25	-	-	-	-	-
Accounts receivable	375,262	302,971	321,795	335,783	350,591	366,087
Deferred policy acquisition costs	4,782	7,977	18,500	21,708	25,930	31,375
Reinsurers' share of unearned claims	998	-	-	-	-	-
Property and equipment	88,740	86,248	88,863	90,183	90,345	91,720
Deferred development costs	65,414	70,462	77,341	79,991	81,701	64,385
	<b>2,683,473</b>	<b>2,662,263</b>	<b>2,702,808</b>	<b>2,732,805</b>	<b>2,849,232</b>	<b>2,979,107</b>
<b>Liabilities</b>						
Due to other insurance companies	152	113	113	113	113	113
Accounts payable and accrued liabilities	38,861	29,447	30,993	31,499	32,418	33,959
Financing lease obligation	3,278	2,968	2,899	2,825	2,752	2,678
Unearned premiums and fees	453,389	476,704	510,420	536,367	563,880	592,850
Provision for employee current benefits	16,871	16,527	16,880	17,244	17,616	17,999
Provision for employee future benefits	281,209	286,836	302,414	319,313	336,739	354,910
Provision for unpaid claims	1,658,713	1,630,357	1,611,863	1,574,719	1,619,121	1,671,595
	<b>2,452,473</b>	<b>2,442,952</b>	<b>2,475,582</b>	<b>2,482,080</b>	<b>2,572,639</b>	<b>2,674,104</b>
<b>Equity</b>						
Retained earnings	194,496	183,227	186,674	202,187	219,615	239,358
Basic Insurance Retained Earnings	-	-	-	-	-	-
Accumulated Other Comprehensive Income	36,504	36,084	40,552	48,538	56,978	65,645
<b>Total Equity</b>	<b>231,000</b>	<b>219,311</b>	<b>227,226</b>	<b>250,725</b>	<b>276,593</b>	<b>305,003</b>
<b>Total Liabilities &amp; Equity</b>	<b>2,683,473</b>	<b>2,662,263</b>	<b>2,702,808</b>	<b>2,732,805</b>	<b>2,849,232</b>	<b>2,979,107</b>

## PF.3

## STATEMENT OF CHANGES IN EQUITY

## 2017 GRA - 2.0% Rate Change in 2017/18 &amp; 2.0% Volume Increase throughout forecast

(C\$ 000s, rounding may affect totals)

	For the Years Ended February,					
	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
<b>Retained Earnings</b>						
Beginning Balance	177,817	194,497	183,227	186,674	202,187	219,615
Net Income (Loss) from annual operations	(56,050)	(11,269)	3,447	15,513	17,427	19,743
Premium Rebate	0	0	0	0	0	0
Transfer (to) / from Non-Basic Retained Earnings	72,729	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>194,496</b>	<b>183,227</b>	<b>186,674</b>	<b>202,187</b>	<b>219,615</b>	<b>239,358</b>
<b>Retained Earnings</b>						
Equity Reserve	194,496	183,227	186,674	202,187	219,615	239,358
Excess Retained Earnings	0	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>194,496</b>	<b>183,227</b>	<b>186,674</b>	<b>202,187</b>	<b>219,615</b>	<b>239,358</b>
<b>Total Accumulated Other Comprehensive Income</b>						
Beginning Balance	35,262	36,504	36,084	40,552	48,538	56,978
Other Comprehensive Income for the Year	1,242	(420)	4,468	7,986	8,440	8,667
<b>Total Accumulated Other Comprehensive Income</b>	<b>36,504</b>	<b>36,084</b>	<b>40,552</b>	<b>48,538</b>	<b>56,978</b>	<b>65,645</b>
<b>Total Equity Balance</b>	<b>231,000</b>	<b>219,311</b>	<b>227,226</b>	<b>250,725</b>	<b>276,593</b>	<b>305,003</b>
<b>RESERVE TARGETS</b>						
DCAT Total Equity Target	231,000	181,000	181,000	181,000	181,000	181,000
MCT Total Equity Target	366,000	404,000	404,000	404,000	404,000	404,000

**R.1 Manitoba Public Insurance  
Premiums Written and Earned****2017 GRA - 2.0% Rate Change in 2017/18 & 2.0% Volume Increase throughout forecast**

(C\$ 000s, rounding may affect totals)

	For the Years Ended February,					
	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
Volume Change	1.56%	2.00%	2.00%	2.00%	2.00%	2.00%
Upgrading & Other Changes	2.38%	2.68%	2.82%	2.71%	2.78%	2.79%
Rate Change	3.40%	0.00%	2.00%	0.00%	0.00%	0.00%
Premiums Unearned during Year	46.14%	46.14%	46.14%	46.14%	46.14%	46.14%
<b>Basic Insurance Written</b>						
Last Year Premiums Written	811,948	872,211	913,464	977,171	1,023,765	1,073,221
Volume Increase	12,666	17,444	18,269	19,543	20,475	21,464
Total Volume Written	824,614	889,655	931,733	996,715	1,044,241	1,094,686
Upgrading & Other Changes	19,626	23,809	26,278	27,051	28,980	30,583
Total With Upgrading	844,240	913,464	958,011	1,023,765	1,073,221	1,125,269
Impact of Rate Change (Excludes Volume Increases) Adjustments	28,704 (733)	0 0	19,160 0	0 0	0 0	0 0
<b>Total Premium Written Before Rebates</b>	<b>872,211</b>	<b>913,464</b>	<b>977,171</b>	<b>1,023,765</b>	<b>1,073,221</b>	<b>1,125,269</b>
Fleet Rebates	(14,087)	(14,330)	(14,959)	(15,618)	(16,301)	(17,016)
Anti Theft & Other Charges	(3,954)	(3,475)	(3,098)	(2,729)	(2,398)	(2,100)
<b>Total Premiums Written</b>	<b>854,170</b>	<b>895,659</b>	<b>959,115</b>	<b>1,005,419</b>	<b>1,054,522</b>	<b>1,106,152</b>
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Written</b>	<b>841,747</b>	<b>884,027</b>	<b>947,239</b>	<b>993,305</b>	<b>1,042,166</b>	<b>1,093,549</b>
<b>Basic Insurance Earned</b>						
Beginning Unearned Premium Balance	367,667	394,135	413,239	442,517	463,880	486,536
Premiums Written	854,170	895,659	959,115	1,005,419	1,054,522	1,106,152
Unearned Premiums during Year	394,135	413,239	442,517	463,880	486,536	510,357
<b>Premiums Earned</b>	<b>827,701</b>	<b>876,554</b>	<b>929,838</b>	<b>984,055</b>	<b>1,031,867</b>	<b>1,082,331</b>
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Earned</b>	<b>815,278</b>	<b>864,922</b>	<b>917,961</b>	<b>971,941</b>	<b>1,019,511</b>	<b>1,069,728</b>

## PF.1

## STATEMENT OF OPERATIONS

## 2017 GRA - 2.0% Rate Change in 2017/18 &amp; 3.07% Upgrade Factor Increase throughout forecast

(C\$ 000s, rounding may affect totals)

	For the Years Ended February,					
	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
Motor Vehicles	854,170	896,915	960,430	1,007,829	1,057,490	1,109,522
Drivers	46,618	50,393	52,908	55,180	57,424	59,626
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Written</b>	<b>888,365</b>	<b>935,676</b>	<b>1,001,462</b>	<b>1,050,895</b>	<b>1,102,558</b>	<b>1,156,545</b>
<b>Net Premiums Earned</b>						
Motor Vehicles	827,701	877,231	931,126	985,960	1,034,577	1,085,516
Drivers	45,787	48,478	51,645	54,039	56,298	58,521
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Earned</b>	<b>861,065</b>	<b>914,077</b>	<b>970,895</b>	<b>1,027,885</b>	<b>1,078,519</b>	<b>1,131,434</b>
Service Fees & Other Revenues	20,351	21,557	23,247	25,034	27,023	28,960
<b>Total Earned Revenues</b>	<b>881,416</b>	<b>935,634</b>	<b>994,142</b>	<b>1,052,919</b>	<b>1,105,542</b>	<b>1,160,394</b>
<b>Net Claims Incurred</b>	742,664	761,097	793,602	835,057	872,351	914,854
(a) Claims Incurred - Interest Rate Impact	(75,300)	(80,926)	(84,409)	(98,482)	(13,077)	(2,428)
<b>Total Claims Incurred</b>	<b>666,404</b>	<b>680,171</b>	<b>709,193</b>	<b>736,575</b>	<b>859,274</b>	<b>912,426</b>
Claims Expense	118,614	125,191	128,311	132,735	140,348	147,602
Road Safety/Loss Prevention	13,027	13,318	13,210	14,075	14,048	14,187
<b>Total Claims Costs</b>	<b>798,045</b>	<b>818,680</b>	<b>850,714</b>	<b>883,385</b>	<b>1,013,670</b>	<b>1,074,215</b>
<b>Expenses</b>						
Operating	71,641	76,908	78,026	82,306	83,160	87,964
Commissions	33,862	35,665	37,526	39,653	41,522	43,474
Premium Taxes	26,205	27,771	29,483	31,200	32,726	34,321
Regulatory/Appeal	3,675	3,421	3,494	3,566	3,640	3,718
<b>Total Expenses</b>	<b>135,383</b>	<b>143,765</b>	<b>148,529</b>	<b>156,725</b>	<b>161,048</b>	<b>169,477</b>
<b>Underwriting Income (Loss)</b>	<b>(52,012)</b>	<b>(26,811)</b>	<b>(5,101)</b>	<b>12,809</b>	<b>(69,176)</b>	<b>(83,298)</b>
<b>Investment Income</b>	48,477	81,510	79,623	86,179	97,600	105,265
(b) Investment Income - Interest Rate Impact	(52,515)	(64,775)	(69,971)	(81,044)	(7,694)	0
<b>Net Investment Income</b>	<b>(4,038)</b>	<b>16,735</b>	<b>9,652</b>	<b>5,135</b>	<b>89,906</b>	<b>105,265</b>
<b>Net Income (Loss) from Operations for Rate Setting</b>	<b>(71,009)</b>	<b>(16,397)</b>	<b>(4,157)</b>	<b>15,581</b>	<b>17,618</b>	<b>18,906</b>
Add: DPAC / Premium Deficiency adjustment	(14,959)	(6,321)	(8,708)	(2,363)	(3,112)	(3,061)
<b>Net Income (Loss)</b>	<b>(56,050)</b>	<b>(10,076)</b>	<b>4,551</b>	<b>17,944</b>	<b>20,730</b>	<b>21,967</b>
<b>Total net Impact due to interest rate change (b) - (a)</b>	<b>22,785</b>	<b>16,151</b>	<b>14,438</b>	<b>17,438</b>	<b>5,383</b>	<b>2,428</b>

**PF.2 STATEMENT OF FINANCIAL POSITION****2017 GRA - 2.0% Rate Change in 2017/18 & 3.07% Upgrade Factor Increase throughout forecast**

(C\$ 000s, rounding may affect totals)

For the Years Ended February,

	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
<b>Assets</b>						
Cash and cash equivalents	29,114	11,091	10,928	12,272	15,652	22,902
Investments	2,083,349	2,143,949	2,146,592	2,155,902	2,250,489	2,370,521
Investment property	35,789	40,436	40,954	41,190	41,704	42,826
Due from other insurance companies	25	-	-	-	-	-
Accounts receivable	375,262	303,295	322,135	336,405	351,357	366,957
Deferred policy acquisition costs	4,782	8,562	19,098	22,825	27,366	31,924
Reinsurers' share of unearned claims	998	-	-	-	-	-
Property and equipment	88,740	86,248	88,863	90,183	90,345	91,720
Deferred development costs	65,414	70,462	77,341	79,991	81,701	64,385
	<b>2,683,473</b>	<b>2,664,043</b>	<b>2,705,911</b>	<b>2,738,768</b>	<b>2,858,614</b>	<b>2,991,235</b>
<b>Liabilities</b>						
Due to other insurance companies	152	113	113	113	113	113
Accounts payable and accrued liabilities	38,861	29,447	30,993	31,499	32,418	33,959
Financing lease obligation	3,278	2,968	2,899	2,825	2,752	2,678
Unearned premiums and fees	453,389	477,283	511,027	537,479	565,249	594,406
Provision for employee current benefits	16,871	16,527	16,880	17,244	17,616	17,999
Provision for employee future benefits	281,209	286,836	302,414	319,313	336,739	354,910
Provision for unpaid claims	1,658,713	1,630,332	1,611,897	1,574,637	1,618,834	1,671,512
	<b>2,452,473</b>	<b>2,443,506</b>	<b>2,476,223</b>	<b>2,483,110</b>	<b>2,573,721</b>	<b>2,675,577</b>
<b>Equity</b>						
Retained earnings	194,496	184,421	188,970	206,914	227,644	249,611
Basic Insurance Retained Earnings	-	-	-	-	-	-
Accumulated Other Comprehensive Income	36,504	36,116	40,718	48,744	57,249	66,046
<b>Total Equity</b>	<b>231,000</b>	<b>220,537</b>	<b>229,688</b>	<b>255,658</b>	<b>284,893</b>	<b>315,658</b>
<b>Total Liabilities &amp; Equity</b>	<b>2,683,473</b>	<b>2,664,043</b>	<b>2,705,911</b>	<b>2,738,768</b>	<b>2,858,614</b>	<b>2,991,235</b>

## PF.3

## STATEMENT OF CHANGES IN EQUITY

## 2017 GRA - 2.0% Rate Change in 2017/18 &amp; 3.07% Upgrade Factor Increase throughout forecast

(C\$ 000s, rounding may affect totals)

	For the Years Ended February,					
	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
<b>Retained Earnings</b>						
Beginning Balance	177,817	194,497	184,419	188,970	206,914	227,644
Net Income (Loss) from annual operations	(56,050)	(10,076)	4,551	17,944	20,730	21,967
Premium Rebate	0	0	0	0	0	0
Transfer (to) / from Non-Basic Retained Earnings	72,729	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>194,496</b>	<b>184,421</b>	<b>188,970</b>	<b>206,914</b>	<b>227,644</b>	<b>249,611</b>
<b>Retained Earnings</b>						
Equity Reserve	194,496	184,421	188,970	206,914	227,644	249,611
Excess Retained Earnings	0	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>194,496</b>	<b>184,421</b>	<b>188,970</b>	<b>206,914</b>	<b>227,644</b>	<b>249,611</b>
<b>Total Accumulated Other Comprehensive Income</b>						
Beginning Balance	35,262	36,504	36,117	40,718	48,742	57,248
Other Comprehensive Income for the Year	1,242	(388)	4,601	8,026	8,507	8,798
<b>Total Accumulated Other Comprehensive Income</b>	<b>36,504</b>	<b>36,116</b>	<b>40,718</b>	<b>48,744</b>	<b>57,249</b>	<b>66,046</b>
<b>Total Equity Balance</b>	<b>231,000</b>	<b>220,537</b>	<b>229,688</b>	<b>255,658</b>	<b>284,893</b>	<b>315,658</b>
<b>RESERVE TARGETS</b>						
DCAT Total Equity Target	231,000	181,000	181,000	181,000	181,000	181,000
MCT Total Equity Target	366,000	404,000	404,000	404,000	404,000	404,000



**R.1 Manitoba Public Insurance  
 Premiums Written and Earned**

*2017 GRA - 2.0% Rate Change in 2017/18 & 3.07% Upgrade Factor Increase throughout forecast*

*(C\$ 000s, rounding may affect totals)*

	<i>For the Years Ended February,</i>					
	2016A	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>						
Volume Change	1.56%	1.75%	1.75%	1.75%	1.75%	1.75%
Upgrading & Other Changes	2.38%	3.07%	3.07%	3.07%	3.07%	3.07%
Rate Change	3.40%	0.00%	2.00%	0.00%	0.00%	0.00%
Premiums Unearned during Year	46.14%	46.14%	46.14%	46.14%	46.14%	46.14%
<b>Basic Insurance Written</b>						
Last Year Premiums Written	811,948	872,211	914,720	978,487	1,026,176	1,076,189
Volume Increase	12,666	15,264	16,008	17,124	17,958	18,833
Total Volume Written	824,614	887,475	930,728	995,610	1,044,134	1,095,022
Upgrading & Other Changes	19,626	27,245	28,573	30,565	32,055	33,617
Total With Upgrading	844,240	914,720	959,301	1,026,176	1,076,189	1,128,639
Impact of Rate Change (Excludes Volume Increases) Adjustments	28,704 (733)	0 0	19,186 0	0 0	0 0	0 0
<b>Total Premium Written Before Rebates</b>	<b>872,211</b>	<b>914,720</b>	<b>978,487</b>	<b>1,026,176</b>	<b>1,076,189</b>	<b>1,128,639</b>
Fleet Rebates	(14,087)	(14,330)	(14,959)	(15,618)	(16,301)	(17,016)
Anti Theft & Other Charges	(3,954)	(3,475)	(3,098)	(2,729)	(2,398)	(2,100)
<b>Total Premiums Written</b>	<b>854,170</b>	<b>896,915</b>	<b>960,430</b>	<b>1,007,829</b>	<b>1,057,490</b>	<b>1,109,522</b>
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Written</b>	<b>841,747</b>	<b>885,283</b>	<b>948,554</b>	<b>995,715</b>	<b>1,045,134</b>	<b>1,096,919</b>
<b>Basic Insurance Earned</b>						
Beginning Unearned Premium Balance	367,667	394,135	413,819	443,124	464,992	487,905
Premiums Written	854,170	896,915	960,430	1,007,829	1,057,490	1,109,522
Unearned Premiums during Year	394,135	413,819	443,124	464,992	487,905	511,912
<b>Premiums Earned</b>	<b>827,701</b>	<b>877,231</b>	<b>931,126</b>	<b>985,960</b>	<b>1,034,577</b>	<b>1,085,516</b>
Reinsurance Ceded	(12,423)	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Earned</b>	<b>815,278</b>	<b>865,599</b>	<b>919,249</b>	<b>973,846</b>	<b>1,022,221</b>	<b>1,072,912</b>

**PUB (MPI) 1-6**

<b>Volume:</b>	<b>I CC.2</b>	<b>Page No.:</b>	<b>7</b>
<b>Topic:</b>	<b>Cost Containment</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Expense Variances</b>		

**Preamble:** The Corporation identified \$8.5 million in savings for the 2015/16 budget, yet when compared to actual spending, there appears to be a \$7.5M unfavorable variance.

**Question:**

- a) Please provide a comparison of the 2015/16 Budget Reduction Breakdown of \$8.5 million (Cost containment – Attachment A p.2 2016 GRA) with actual experience, and explain variances from the achievement of budgeted savings.
  
- b) Please provide the following in a table in the level of detail for Expense Appendix –EXP-6 pg.14 for Corporate Normal operations:

<b>Cost component</b>	<b>2015/16 Budget</b>	<b>Targeted Expense Reduction 2016 GRA</b>	<b>Adjusted 2015/16 Budget</b>	<b>Actual 2015/16</b>	<b>Difference</b>
<hr/>					
<b>Total Expenses</b>			<b>\$258,816</b>	<b>\$265,879</b>	<b>7,063</b>

**Rationale for Question:**

To understand the Corporation's success in reducing costs.

**RESPONSE:**

- a) The budget reductions outlined in 2016 GRA Volume I Cost Containment Attachment A page 2 are imbedded in the budget and were not tracked separately. By achieving (not achieving) the budget, the savings were achieved (not achieved). Volume II Expenses Appendices Appendix 6 page 14 provides the comparison of budget to actual and the following commentary provides explanations.
- b) The “Adjusted 2015/16 Budget” identified in the preamble table does not exist. Please see the table in Volume II Expenses Appendices Appendix 6 page 14 for the detail requested.

**PUB (MPI) 1-7**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. EXP-6</b>
<b>Topic:</b>	<b>Cost Containment</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Expense Variances</b>		

**Preamble:** The Corporation states that Special Services had increased expenditures approved subsequent to the finalization of the 2015/16 budget filed at last year's GRA. The Corporation further states that this variance was absorbed by finding offsetting reductions.

**Question:**

- a) Please provide a detailed comparison by initiative for the Corporate Special Services expenditures for 2015/16, and an unfavorable budget variance of \$1.7 million (27%) from that forecast at the last GRA. Please indicate to what projects the expenditures relate.
  
- b) Please indicate to what extent the normal operations variance relates to the favorable variance of \$1.8 million from the "one time" initiatives implementation. If this is the source of the offsetting reduction, please explain how it was achieved, if budgeted "one time" implementation expenditures are required to place IT projects into service.

**Rationale for Question:**

To understand the reason(s) for the expense variance.

**RESPONSE:**

- a) The \$1.7 million variance is related to normal operations and not initiatives. For an explanation of this variance please refer to *Volume II Expenses EXP.3.2.3 Page 29*. Detail of normal operation special services expenses for 2015/16 can be found in *CAC (MPI) 1-58 (a)*.

- b) The \$1.8 million variance referred to in this question is associated to initiative-implementation expenses and there is no correlation to normal operations expenses. This is not the source for the offsetting reduction in normal operations. This variance solely relates to differing project costs from last year's GRA to this year's GRA.

**PUB (MPI) 1-8**

<b>Volume:</b>	<b>I CC.2</b>	<b>Page No.:</b>	<b>7</b>
<b>Topic:</b>	<b>Cost Containment</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Operating Expenses</b>		

**Preamble:** The table on p.7 compares the 2015/16 corporate normal operating expense budget with actual expenditures. The Corporation has stated that "Compensation was \$4.0 million over budget due to unplanned increases in pension (\$2.1M), unplanned increases to post retirement benefits (\$1.1M), legislative changes resulting in increased maternity benefits (\$0.8M) and unplanned severance expenses."

**Question:**

- a) Please refile the analysis as a comparison of total corporate operating expense.
- b) Please provide detail to show the increase of post-retirement benefits (\$1.1M).

**Rationale for Question:**

To understand changes in operating costs.

**RESPONSE:**

a)

<b>Corporate Operating Expenses</b>	<b>Annual Actual (\$000)</b>	<b>Annual Budget (\$000)</b>	<b>B/(W) (\$000)</b>
<b>Claims Expense</b>	134,511	137,290	2,779
<b>Loss Prevention and Road Safety</b>	15,316	13,032	(2,284)
<b>Operating</b>	121,821	116,766	(5,055)
<b>Regulatory/Appeal</b>	3,694	3,176	(518)
<b>TOTAL</b>	<b>275,342</b>	<b>270,264</b>	<b>(5,078)</b>

Total corporate operating expenses as at February 29, 2016 were over budget by \$5.1 million. Corporate Normal Operating Expenses were over budget by \$7.2 million as explained in the Rate Application. The positive variance relating to improvement initiatives is primarily due to expenses relating to the Information Security Strategy & Road Map project being transferred to Deferred Development as updated information on the project deemed it to meet the criteria for the project to be capitalized instead of expensed.

b)

<b>Post Retirement Benefits</b>	<b>Expense</b>	<b>Budget</b>	<b>Variance</b>
<b>Out of Scope</b>	2,168,851	1,392,000	776,851
<b>In-Scope</b>	387,447	62,250	325,197
	<b>2,556,298</b>	<b>1,454,250</b>	<b>1,102,048</b>

The budgeted figures for in scope benefits relates to payments alone, we currently do not budget for usage costs given the unpredictable nature of the in scope benefit (primary benefit is a health spending account which has a history of variability in usage).

**PUB (MPI) 1-9**

<b>Volume:</b>	<b>I OV.2</b>	<b>Page No.:</b>	<b>10</b>
<b>Topic:</b>	<b>Financial Overview</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Financial Information</b>		

**Question:**

Please file the Corporation's Board of Directors, Audit Committee, Investment Committee and the Investment Committee Working Group meeting minutes relating to:

- a) Asset Liability Management
- b) Interest Rate Forecasting Risk Factor
- c) IT Optimization/BTO Projects;
- d) CIO Scorecard and IT Infrastructure Benchmark Study
- e) RSR or Total Equity Targets
- f) Approval of Financial Statements
- g) Cost Containment; and
- h) Approval of the 2017 GRA.

**Rationale for Question:**

To understand the corporate decisions that impact Basic.

**RESPONSE:**

a) to h)

Please see Attachment A.



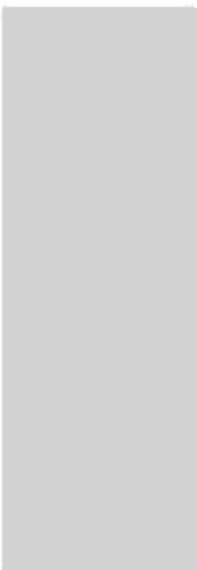
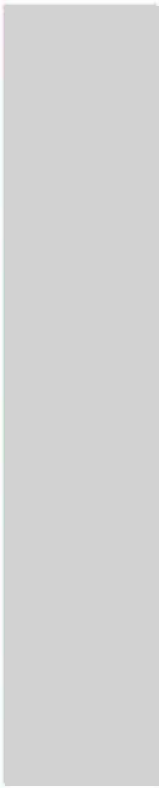
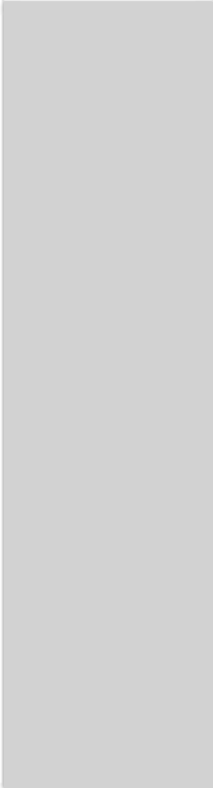
Minutes of the Four Hundred and Thirty-Second Meeting  
June 26, 2015 - Board of Directors  
Page 2

Audit,  
Finance &  
Risk  
Committee  
Report –  
Quarterly  
Financial  
Report –  
May 31,  
2015

15-127

Moved by Ms. Millis and seconded by Ms. MacKinnon that Members ratify the decision of the Audit, Finance & Risk Committee approving the May 31, 2015 Quarterly Financial Report.

CARRIED



Planning &  
Technology  
Committee  
Report –  
Mitchell  
Statement of  
Work – First  
Notice of  
Loss and  
Tableau

15-134

Moved by Mr. Saunders and seconded by Mr. Donkervoort that Members ratify the decision of the Planning & Technology Committee approving the Corporation entering into a statement of Work with Mitchell International Information Services Inc. (Mitchell), effective June 26, 2015, at a cost not to exceed \$1.5 Million (included in the total amount for the PDR project already approved in Minute 12-181), plus travel and living expenses to provide non-recurring (project) phase services to implement the software for the management of Collision Industry Analytics (Tableau) and Customer Self Serve (First Notice of Loss).

CARRIED

Minutes of the Four Hundred and Thirty-Second Meeting  
June 26, 2015 - Board of Directors  
Page 3

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

President &  
CEO's  
Report

15-137

Mr. Guimond presented Agenda Item 3.1 "President & CEO's Report" providing a report on the following items:

[Redacted]

- Initiatives Portfolio Review;

[Redacted]

- Cost Containment;

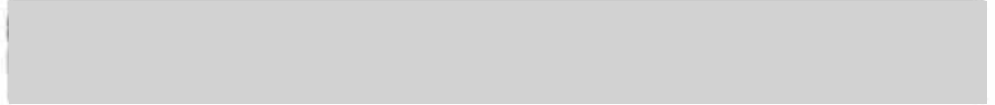
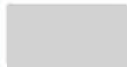
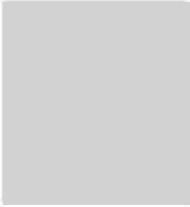
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Minutes of the Four Hundred and Thirty-Third Meeting  
October 2, 2015 - Board of Directors  
Page 2



Audit,  
Finance &  
Risk  
Committee  
Report –  
Quarterly  
Financial  
Report –  
August 31,  
2015

15-149

Moved by Ms. Millis and seconded by Mr. Prychitko that Members ratify the decision of the Audit, Finance & Risk Committee approving the August 31, 2015 Quarterly Financial Report.

CARRIED

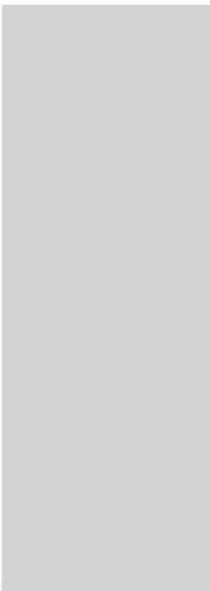
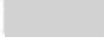
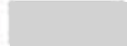
Audit,  
Finance &  
Risk  
Committee  
Report –  
Basic Rate  
Stabilization  
Reserve  
Targets

15-150

Moved by Ms. Millis and seconded by Mr. Saunders that Members ratify the decision of the Audit, Finance & Risk Committee approving:

1. A lower Total Equity RSR Target of \$231 million based on the results of the 2015 Dynamic Capital Adequacy Test Report.
2. An upper Total Equity RSR target of \$366 million based on a Minimum Capital Test ratio of 100% as of February 28, 2015.

CARRIED



Minutes of the Four Hundred and Thirty-Third Meeting  
October 2, 2015 - Board of Directors  
Page 4

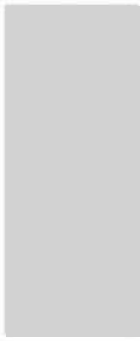
President &  
CEO's  
Report

15-163

Mr. Guimond presented Agenda Item 3.1 "President & CEO's Report" providing a report on the following items:



- Cost Containment



MINUTES OF THE FOUR HUNDRED AND THIRTY-SEVENTH MEETING OF THE DIRECTORS OF THE MANITOBA PUBLIC INSURANCE CORPORATION HELD ON THE 11<sup>TH</sup> DAY OF JANUARY, 2016 AT 4:30 P.M. IN THE MPIC BOARDROOM AT 234 DONALD STREET, WINNIPEG.

TELEPHONE CONFERENCE CALL AS PER SECTIONS 2.08 AND 2.10 OF CORPORATE BY-LAW NO. 1

Present:

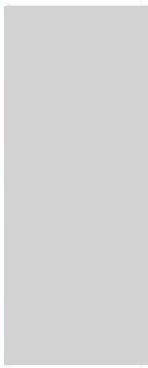
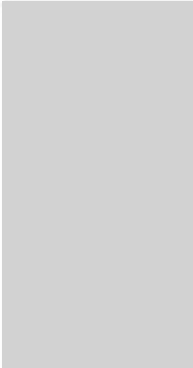
- MR. J. JANZEN, CHAIRPERSON (Via Teleconference)
- MR. M. DONKERVOORT (Via Teleconference)
- MS. D. MINTZ, VICE-CHAIRPERSON
- MS. K. MacKINNON (Via Teleconference)
- MS. J. MILLIS (Via Teleconference)
- MR. T. PRYCHITKO (Via Teleconference)
- MR. W. SAUNDERS (Via Teleconference)
- MR. D. GUIMOND

Regrets:

- MR. T. MARCELINO

Management:

- MS. H. REICHERT, VICE PRESIDENT, FINANCE AND CHIEF FINANCIAL OFFICER AND MR. M. TRIGGS, DIRECTOR, LEGAL SERVICES

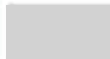


Audit, Finance & Risk Committee Report – Quarterly Financial Report – November 30, 2015

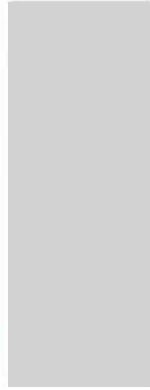
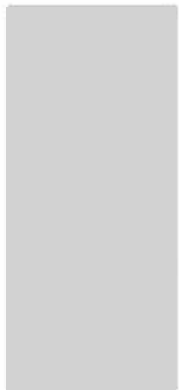
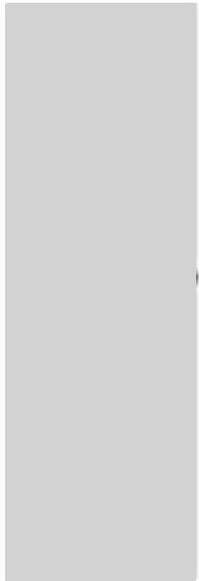
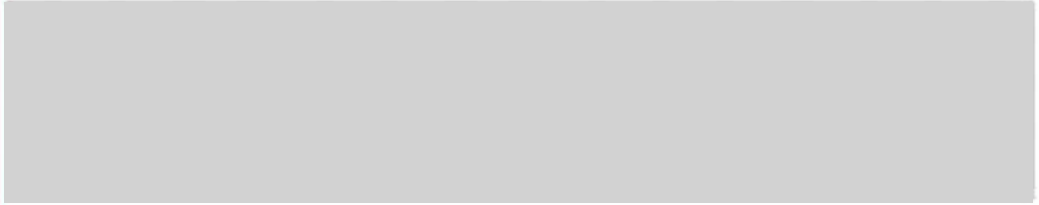
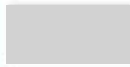
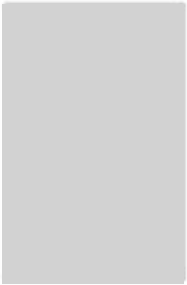
16-003

Moved by Ms. Millis and seconded by Ms. MacKinnon that the Members ratify the decision of the Audit, Finance & Risk Committee approving the November 30, 2015 Quarterly Financial Report.

CARRIED



Minutes of the Four Hundred and Thirty-Eighth Meeting  
January 28/29, 2016 - Board of Directors  
Page 3



Planning & Technology Committee Report – Technology Modernization Program

16-021

Moved by Mr. Saunders and seconded by Ms. MacKinnon that the Members ratify the decision of the Planning & Technology Committee approving:

- The Technology Modernization Program (Technology Risk Management) for 2016/17 for an amount not to exceed \$3.5 million.
- The Technology Modernization Program (Technology Innovation and Capabilities) for 2016/17 for an amount not to exceed \$2.5 million.

CARRIED

Minutes of the Four Hundred and Thirty-Eighth Meeting  
January 28/29, 2016 - Board of Directors  
Page 4

Planning & Technology Committee Report – Corporate Strategic Initiatives & Enterprise Systems Support Contracts – 2016/2017

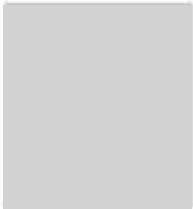
16-022

Moved by Mr. Saunders and seconded by Ms. Millis that the Members ratify the decision of the Planning & Technology Committee:

- Approving the Corporate Strategic Initiatives for 2016/17 for an amount up to \$37.71 million (the majority to be allocated to HP, IBM, Mitchell, Infor and FINEOS according to the terms of contracts. Board approval will be sought for any further services to be provided by other entities in accordance with the corporate directives).



CARRIED



Planning & Technology Committee Report – 2016/17 Fiscal Year Operating and Capital Budgets

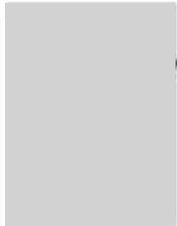
16-024

Moved by Mr. Saunders and seconded by Ms. Millis that the Members ratify the decision of the Planning & Technology Committee approving the 2016/17 Fiscal Year Operating Budget of:

	
• Improvement Initiatives (Ongoing)	\$0.4 Million
• Improvement Initiatives (Implementation)	\$12.4 Million



CARRIED



MINUTES OF THE FOUR HUNDRED AND THIRTY-NINTH MEETING OF THE DIRECTORS OF THE MANITOBA PUBLIC INSURANCE CORPORATION HELD ON THE 4<sup>TH</sup> DAY OF MARCH, 2016 AT 9:00 A.M. IN THE MPIC BOARDROOM AT 234 DONALD STREET, WINNIPEG.

Present:

MR. J. JANZEN, CHAIRPERSON  
MR. M. DONKERVOORT  
MS. K. MacKINNON  
MS. J. MILLIS  
MR. T. PRYCHITKO  
MR. D. GUIMOND

Regrets:

MS. D. MINTZ, VICE-CHAIRPERSON  
MR. T. MARCELINO  
MR. W. SAUNDERS

Management:

MR. M. TRIGGS, DIRECTOR, LEGAL SERVICES

Business Arising from Minutes: Information-Outstanding Items

16-043

Mr. Janzen presented Agenda Item 1.2 "Business Arising from Minutes: Information – Outstanding Items" which was reviewed by the Members. Mr. Guimond advised that Cost Containment previously reported in the President's Report will now be reported under the Financial Statements.



Minutes of the Four Hundred and Fortieth Meeting  
April 15, 2016 - Board of Directors  
Page 2

Audit,  
Finance &  
Risk  
Committee  
Report –  
Preliminary  
and  
Unaudited  
Quarterly  
Financial  
Report – 4<sup>th</sup>  
Quarter –  
February 29,  
2016

16-059

Moved by Ms. Millis and seconded by Mr. Prychitko that the Members ratify the decision of the Audit, Finance & Risk Committee approving a transfer of excess retained earnings from the Extension line of business to the Basic line of business of \$72.73 million. The final amount of the transfer may change subject to any audit adjustments which may arise.

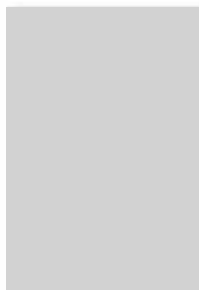
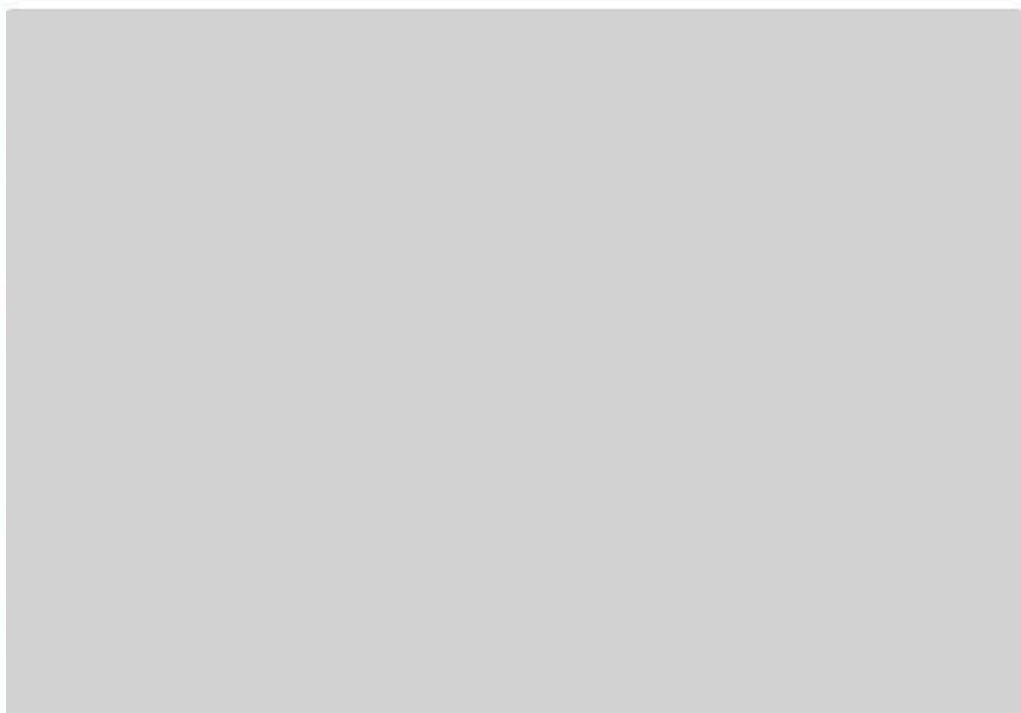
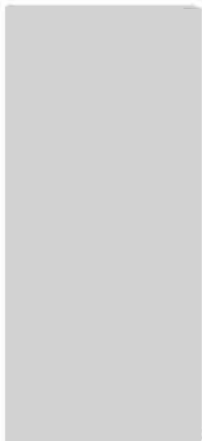
CARRIED

Audit,  
Finance &  
Risk  
Committee  
Report –  
Preliminary  
and  
Unaudited  
Quarterly  
Financial  
Report – 4<sup>th</sup>  
Quarter –  
February 29,  
2016

16-060

Moved by Ms. Millis and seconded by Mr. Saunders that the Members ratify the decision of the Audit, Finance & Risk Committee approving the February 29, 2016 Preliminary and Unaudited Quarterly Financial Report.

CARRIED



Minutes of the Four Hundred and Fortieth Meeting  
April 15, 2016 - Board of Directors  
Page 6

2017/18  
Basic  
Autopac  
Program  
and Rates

16-080

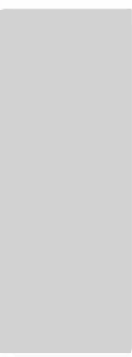
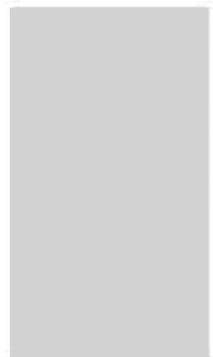
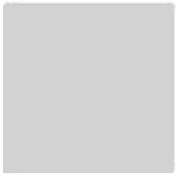
Ms. Reichert, Mr. Cerqueira and Mr. Johnston presented Agenda Item 4.1 "2017/18 Basic Autopac Program and Rates".

Moved by Mr. Prychitko and seconded by Ms. Millis that the Members approve the following:

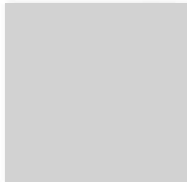
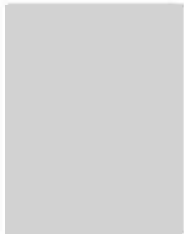
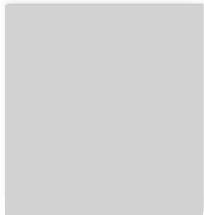
1. an overall rate indication of 2.0%;
2. direct Management to file an application that will allow for collaboration with the PUB to consider interest rate forecast risk factor;



CARRIED



Minutes of the Four Hundred and Forty-First Meeting  
May 26, 2016 - Board of Directors  
Page 2



Audit,  
Finance &  
Risk  
Committee  
Report –  
2015/2016  
Annual  
Financial  
Statements  
(including  
notes)

16-094

Moved by Mr. Grestoni and seconded by Mr. Wharton that the Members, who were appointed on May 12, 2016, replacing the previous Members, are relying in good faith on the representations of Management and their understanding of the work of the previous Members, ratify the decision of the Audit, Finance & Risk Committee approving the 2015/2016 Annual Financial Statements (including notes) recognizing that minor typographical changes may occur during the final editing process prior to releasing the statements; but that these changes will not alter the results as presented.

CARRIED

Audit,  
Finance &  
Risk  
Committee  
Report –  
2015/2016  
Universal  
Compulsory  
Automobile  
Insurance  
Annual  
Financial  
Statements

16-095

Moved by Mr. Grestoni and seconded by Mr. Bubis that the Members, who were appointed on May 12, 2016, replacing the previous Members, are relying in good faith on the representations of Management and their understanding of the work of the previous Members, ratify the decision of the Audit, Finance & Risk Committee approving the 2015/2016 Universal Compulsory Automobile Insurance Annual Financial Statements recognizing that minor typographical changes may occur during the final editing process prior to releasing the statements; but that these changes will not alter the results as presented.

CARRIED

Minutes of the Four Hundred and Forty-First Meeting  
May 26, 2016 - Board of Directors  
Page 3

2017/18  
Basic  
Autopac  
Program &  
Rates

16-098

Mr. Guimond and Mr. Johnston presented Agenda Item 4.1 "2017/18 Basic Autopac Program & Rates".

Moved by Mr. Grestoni and seconded by Mr. Bubis that the Members, who were appointed on May 12, 2016, replacing the previous Members, are relying in good faith on the representations of Management and their understanding of the work of the previous Members, approve:

**A. RATE CHANGES**

The application to the Public Utilities Board for 2017/18 rates for the Basic Autopac Program as set out below:

1. Classification and experience rate adjustments which result in an overall 2.0% increase to average rates for Basic Autopac written premiums.
2. Rates for individual risk classifications to be adjusted based on statistically determined experience indicators.
3. Classification changes to be implemented on a revenue neutral basis.

**B. CLASSIFICATION CHANGES**

The following classification changes to the Basic Autopac program as of March 1, 2017 for Vehicle Rating Factors:

1. Revisions to the relationship between rates and rate group (Rate Line) for passenger vehicles, light trucks, motor homes, motorcycles, heavy trucks, trailers (over \$2,500) and buses.
2. Adjustments to passenger vehicle and light truck rate groups based on the Canadian Loss Experience Automobile Rating (CLEAR) indicators, as provided by the Insurance Bureau of Canada (IBC). Adjustments will consist of an increase of one rate group for vehicles requiring an increase, and a decrease to the required CLEAR indicator for vehicles requiring a decrease.
3. Increase the maximum passenger vehicle and light truck rate group from 35 to 40.
4. Passenger vehicle and light truck rate group methodology changes:

Minutes of the Four Hundred and Forty-First Meeting  
May 26, 2016 - Board of Directors  
Page 4

- Revision of the CLEAR Collision/Comprehensive weighting from 83/17 to 84/16.

5. Annual adjustment to heavy truck rate tables.

CARRIED



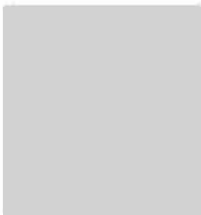
Transfer to  
Basic Rate  
Stabilization  
Reserve

16-099

Mr. Guimond presented Agenda Item 4.2 "Transfer to Basic Rate Stabilization Reserve".

Moved by Mr. Bubis and seconded by Mr. Grestoni that the Members, who were appointed on May 12, 2016, replacing the previous Members, are relying in good faith on the representations of Management and their understanding of the work of the previous Members, approve the transfer of \$72.7 million, effective February 29, 2016, from Extension Retained Earnings to the Basic Rate Stabilization Reserve to meets its minimum total equity RSR target of \$231 million.

CARRIED



# ***Board of Directors - Committee Meeting*** **AUDIT, FINANCE & RISK COMMITTEE MINUTES**

**Date:** June 25, 2015

**Page:** 2 of 5

[REDACTED]

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[REDACTED]

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[REDACTED]

[REDACTED]

**Quarterly  
Financial Report –  
May 31, 2015**

Ms. Campbell presented Agenda Item C.1 “Quarterly Financial Report – May 31, 2015”. The overall net income is \$23.0 million which is \$10.4 million worse than budget. Basic net income is \$19.8 million, Extension is \$8.2 million net income, SRE is \$2.8 million net loss, and DVA is \$2.2 million net loss. The investment loss is \$17.7 million. Net claims incurred are \$16.3 million better than forecast. The Basic total equity is \$225.7 million and total overall corporate total equity is \$434.1 million.

Moved by Ms. Mintz and seconded by Ms. Johnson that the Members approve the May 31, 2015 Quarterly Financial Report.

CARRIED

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

# ***Board of Directors - Committee Meeting*** **AUDIT, FINANCE & RISK COMMITTEE MINUTES**

**Date:** June 25, 2015

**Page:** 3 of 5

**Dynamic Capital Adequacy Test – Basic Autopac**

Ms. Reichert presented agenda Item D.1 “Dynamic Capital Adequacy Test – Basic Autopac”. The DCAT will be brought forward at the October meeting. Following discussion, Members received the report as information.

[REDACTED]

[REDACTED]

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**Board of Directors - Committee Meeting**

**AUDIT, FINANCE & RISK COMMITTEE MINUTES**

**Date:** October 1, 2015

**Page:** 2 of 5

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**Quarterly  
Financial Report –  
August 31, 2015**

Ms. Campbell presented Agenda Item B.1 “Quarterly Financial Report – August 31, 2015”. The overall net income is \$16.5 million which is \$34.5 million worse than budget. The investment loss is \$15.5 million. Basic net income is \$5.0 million. The Basic Rate Stabilization Reserve is \$182 million, as is Basic total equity and the non-Basic total equity is \$212 million, for overall corporate total equity of \$394 million. The total comprehensive loss is \$27.8 million.

Moved by Mr. Saunders and seconded by Ms. Johnson that Members approve the August 31, 2015 Quarterly Financial Report.

CARRIED



# *Board of Directors - Committee Meeting*

## **AUDIT, FINANCE & RISK COMMITTEE MINUTES**

**Date:** October 1, 2015

**Page:** 3 of 5

### **Basic Rate Stabilization Reserve Targets**

Mr. Johnston presented Agenda Item C.2 “Basic Rate Stabilization Reserve Targets”.

Moved by Mr. Prychitko and seconded by Mr. Saunders that the Members approve:

1. a lower Total Equity RSR target of \$231 million based on the results of the 2015 Dynamic Capital Adequacy Test Report.
2. an upper Total Equity RSR target of \$366 million based on a Minimum Capital Test ratio of 100% as of February 28, 2015.

CARRIED

Members received the 2015 Dynamic Capital Adequacy Test report and the 2014/15 Minimum Capital Test results as information.

[Redacted]

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***Board of Directors - Committee Meeting***

***AUDIT, FINANCE & RISK COMMITTEE MINUTES***

**Date:** January 11, 2016

**Page:** 2 of 2

**Quarterly  
Financial Report –  
November 30,  
2015**

Ms. Campbell presented the “Quarterly Financial Report – November 30, 2015”. The overall net income is \$10.9 million which is \$48.0 million worse than budget. The investment loss is \$15.0 million. Basic net loss is \$6.0 million. The Basic Rate Stabilization Reserve is \$171.8 million and the Basic total equity is \$180.5 million. Non-Basic total equity is \$218.9 million, for overall corporate total equity of \$399.4 million. The total comprehensive loss is \$21.9 million.

Moved by Ms. Mintz and seconded by Mr. Saunders that Members approve the November 30, 2015 Quarterly Financial Report.

CARRIED



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SECRETARY

# ***Board of Directors - Committee Meeting*** ***AUDIT, FINANCE & RISK COMMITTEE MINUTES***

**Date:** April 14, 2016

**Page:** 3 of 8

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**Preliminary and Unaudited Quarterly Financial Report 4<sup>th</sup> Quarter – February 29, 2016**

Ms. Campbell presented Agenda Item C.1 “Preliminary and Unaudited Quarterly Financial Report 4<sup>th</sup> Quarter – February 29, 2016”. The overall net loss is \$31.3 million which is \$69.1 million worse than budget. Basic net loss is \$56.0 million, Extension net income is \$26.6 million, SRE net income is \$4.7 million, and DVA net loss is \$6.6 million. Earned revenues are \$1.1 billion. The investment loss is \$4.7 million. Overall net claims incurred are \$770.6 million. Basic total equity before transfer is \$158.3 million. Non-Basic total equity is \$231.7 million (these amounts will be altered for year-end if the Board approves a transfer to the Basic Rate Stabilization reserve). Included in total equity is other comprehensive loss for the year of \$0.2 million bringing the accumulated other comprehensive income to \$43.2 million at February 29, 2016. Total comprehensive loss for the year is \$31.5 million.

Moved by Mr. Saunders and seconded by Mr. Prychitko that Members approve a transfer of excess retained earnings from the Extension line of business to the Basic line of business of \$72.73 million. The final amount of the transfer may change subject to any audit adjustments which may arise.

CARRIED

# ***Board of Directors - Committee Meeting*** **AUDIT, FINANCE & RISK COMMITTEE MINUTES**

**Date:** April 14, 2016

**Page:** 4 of 8

Moved by Mr. Prychitko and seconded by Mr. Saunders that Members approve the February 29, 2016 Preliminary and Unaudited Quarterly Financial Report.

CARRIED

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

# ***Board of Directors - Committee Meeting***

## **AUDIT, FINANCE & RISK COMMITTEE MINUTES**

**Date:** May 26, 2016

**Page:** 3 of 5

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**2015/2016 Annual  
Financial  
Statements  
(including notes)**

Ms. Campbell presented Agenda Item D.1 “2015/2016 Annual Financial Statements (including notes)”.

Assets are \$3.19 billion, liabilities are \$2.8 billion, and total equity is \$390 million. Investment loss is \$4.7 million. Total corporate earned revenues are \$1.3 billion. The net loss is \$31.3 million.

Moved by Mr. Bubis and seconded by Mr. Wharton that the Members, who were appointed on May 26, 2016, replacing the previous Members, are relying in good faith on the representations of Management and their understanding of the work of the previous Members, approve the 2015/2016 Annual Financial Statements (including notes) recognizing that minor typographical changes may occur during the final editing process prior to releasing the statements; but that these changes will not alter the results as presented.

# ***Board of Directors - Committee Meeting***

## **AUDIT, FINANCE & RISK COMMITTEE MINUTES**

**Date:** May 26, 2016

**Page:** 4 of 5

CARRIED

**2015/2016  
Universal  
Compulsory  
Automobile  
Insurance Annual  
Financial  
Statement**

Ms. Campbell presented Agenda Item D.2 "2015/2016 Universal Compulsory Automobile Insurance Annual Financial Statement".

Basic assets are \$2.68 billion, liabilities are \$2.45 billion, and total equity is \$231 million. A transfer of \$72.7 million from Extension to Basic occurred. Total Basic earned revenues are \$881 million, while total Basic claims costs are \$798 million with investment loss of \$4 million, resulting in a net loss of \$56 million.

Moved by Mr. Bubis and seconded by Mr. Wharton that the Members, who were appointed on May 26, 2016, replacing the previous Members, are relying in good faith on the representations of Management and their understanding of the work of the previous Members, approve the 2015/2016 Universal Compulsory Automobile Insurance Annual Financial Statement recognizing that minor typographical changes may occur during the final editing process prior to releasing the statements; but that these changes will not alter the results as presented.

CARRIED

[REDACTED]

# ***Board of Directors - Committee Meeting***

## **INVESTMENT COMMITTEE MINUTES**

**Date:** October 2, 2015

**Page:** 2 of 3

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### **Annual Review of Infrastructure Portfolio**

Mr. Bunston presented Agenda Item B.2 “Annual Review of Infrastructure Portfolio”. The allocation to infrastructure has been decreased from 7 to 5% due to the Asset Liability Management Study. Members received the report as information.

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

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[REDACTED]

**Investment Committee Working Group** - September 17, 2015

[Redacted]

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[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

**7. Quarterly Reports**

[Redacted]

[Redacted]

[Redacted]



**Investment Committee Working Group** - September 17, 2015

[REDACTED]

The Investment Department will also study the impact of a specific allocation to corporate bonds, as recommended by Aon Hewitt in the recently completed ALM study.

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

**Investment Committee Working Group** - March 23, 2016

[Redacted]

**4. Policy Review**

[Redacted]

b) Asset Liability Management Policy

[Redacted]

[Redacted]

For the Asset Liability Management Policy, the Working Group discussed revising Section IV on Dollar Matching. The Investment Department was tasked to analyze the proposed +/- \$100 million dollar bandwidth relative to the minimum and maximum fixed income allocation. Once complete, the Investment Department will provide a summary of the analysis and recommended changes to the Asset Liability Management Policy for the ICWG's approval.

[Redacted]

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**PUB (MPI) 1-10**

<b>Volume:</b>	<b>I OV.13</b>	<b>Page No.:</b>	<b>45, 46</b>
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Benchmarking Performance</b>		

**Preamble:** The study and comparison of the WCB, TRAF, and CCSB investment portfolios underscored the differences between these funds and the Corporation's investment portfolio, in terms of the funds' purpose, objectives, and composition. Adjustments were made to the asset allocations of the funds, in order to present a fair, apples-to-apples comparison for 2015.

**Question:**

- a) Please indicate the extent to which investment income would change if the returns were 3% higher with respect to underperforming asset classes, and discuss how that would impact the net income.
- b) Please indicate directionally the relative investment performance of the Corporation's portfolio for the last ten years compared to the other cited organizations if it had adjusted the asset allocations over the time horizon.
- c) Please explain in detail what adjustments were made to the asset allocation of the MPI Investment Portfolio, and how that impacted the returns on the Corporation's portfolio.
- d) Please indicate the relative return on the portfolio for 2015 without adjustments.

**Rationale for Question:**

To assess the reasonableness of the Corporation's benchmarking of its investment portfolio returns.

**RESPONSE:**

- a) 2015 calendar year investment income was \$99.4 million on a corporate basis. If the returns were 3% higher for the underperforming asset classes, investment income would have been \$111.5 million, \$12.1 million higher than actual. The underperforming asset classes were Canadian and U.S. equities, real estate and infrastructure. A 20% turnover assumption was used for the assumed additional 3% capital return for Canadian equities.
- b) This would require the performance of each asset class within each fund for each of the last 10 years, which Manitoba Public Insurance (MPI) does not have.
- c) No adjustments were made to MPI's asset allocation. The Other Funds asset allocations were adjusted to match MPI's asset allocation.
- d) MPI's return in calendar 2015 was 2.5% and the average unadjusted return for the Other Funds was 7.9% (as was disclosed in *Volume II Investment Income INV 1.4*). Therefore, the relative return was -5.4%.

**PUB (MPI) 1-11**

<b>Volume:</b>	<b>II INV.18</b>	<b>Page No.:</b>	<b>87, 88</b>
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Interest Rate Forecasts</b>		

**Question:**

- a) Please indicate which of the banks offer long-term forecasts, and the indicated cost for each.
- b) Please indicate whether such information could be provided on a confidential basis with the Board. If not, why not.
- c) Has the Corporation considered using Manitoba Hydro's economic outlook (including supporting calculations) for interest rate forecasting purposes? If not, please explain.
- d) Notwithstanding the financial models quarterly use of interest rate changes, for rate setting purposes, please explain why the Corporation cannot use Spatial Economics yearly long term forecast.

**Rationale for Question:**

To understand the Corporation's limitations for interest rate forecasting.

**RESPONSE:**

- a) All of the five banks offer long-term forecasts, however only BMO, TD and RBC provide quarterly forecasts for the five years. CIBC and Scotia provided annual averages for the forecasted years 3-5. These two forecasts are not suitable for the Corporation's forecasting requirements because end of period numbers are required.

None of the five banks charge for the interest rate forecasts. Royal Bank of Canada (RBC) and Bank of Montreal (BMO) do not want their long-term forecast to be public, however their forecasts may be aggregated with other forecasts for a consensus average.

As discussed in *Volume II Investment Income INV.18 Appendix 6*, the Corporation did not include the banks' long-term interest rate forecast for PUB Order 10:14:

- A special request for the bank's long-term forecasts is required because the forecasts are non-subscription and are not publically disclosed on their website.
  - The banks are not required to provide their long-term forecast, or provide their forecast in a timely fashion. For example, Scotia and TD did not respond to the request for a longer-term interest rate forecast for *PUB (MPI) 2-30* last year. RBC does not allow public disclosure of their long-term forecast.
- Therefore, the Corporation believes that non-subscription based and non-publically available forecasts (i.e. not on bank's website) should not be used in the consensus forecast.
- The Corporation believes that it is important to use the same consistent forecasters each year in order to remove any subjectivity and variability from the process.
  - With the 5 banks short-term forecast & Global Insight long-term forecast, the Corporation will get periodic, consistent updates to our interest rate forecast.
  - CBOC has an extremely aggressive interest rate forecast. Please see *Volume II INV.1.2.2.2* for further discussion why CBOC's

interest rate forecast and the Olympic average scenario was rejected.

- b) BMO and RBC has provided permission to provide their forecast to the PUB on a confidential basis.
- c) Manitoba Hydro uses a consensus interest rate forecast in their Economic Outlook similar to the Corporation. The timing of their consensus forecast does not coincide with the Corporation's timing requirement for a consensus forecast.
- d) Spatial economic's interest rate forecast is published only twice a year in February and August. Given the potential volatility of interest rates in a short period of time, monthly interest rate forecasts are required. The Corporation wants to use a consistent set of firms to eliminate subjectivity in the forecasted returns. If Spatial Economic's forecast is not reflective of current market conditions when an interest rate scenario is generated then it may compromise the consensus average result with a dated forecast.

**PUB (MPI) 1-12**

<b>Volume:</b>	<b>I OV.1</b>	<b>Page No.:</b>	<b>4</b>
<b>Topic:</b>	<b>Interest Rate Forecast Risk Factor</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Interest Rate Risk</b>		

**Preamble:** The International Accounting Standards Board (IASB) is undertaking Phase II of the Insurance Contracts project to develop a standard to replace the interim IFRS 4, Insurance Contracts

IFRS 4 Phase 2 proposes an alternative accounting for the impact of changes in interest rates on insurance contract liabilities. The new standard will, like other accounting standard changes, allow for entities to early adopt. A final standard is expected this Fall with implementation not expected before 2019. As with other Standard changes, early adoption will likely be allowed.

IFRS 9 has been finalized and simplifies the designation and accounting treatment of financial instruments. The standard includes introduction of a fair value through other comprehensive income (FVOCI) measurement category for simple debt instruments. In this measurement category, the Statement of Financial Position will reflect the fair value carrying amount while amortized cost information is presented in the Statement of Operations. The difference between the fair value and amortized cost information will be recognized in other comprehensive income.

This standard is effective for annual periods beginning on or after January 1, 2018. While early adoption is permitted under the standard, OSFI has indicated that early adoption is not allowed. While the Corporation is not federally regulated, it generally follows OSFI's guidance in such matters.

MPI is requesting an interest rate forecasting risk factor be included in rates that will impact 2017/18, 2018/19. It is not clear whether such a load to rates would be necessary if MPI early adopts the two new accounting standards, regardless of OSFI's guidance.



**Question:**

Please discuss the impact of such a change on the need for an IRFRF for rate setting purposes.

**Rationale for Question:**

To understand the need for an IRFRF given potential changes in accounting for Insurance Contracts and Financial Instruments.

**RESPONSE:**

Manitoba Public Insurance (MPI) does not, by practice, early adopt accounting standards.

Regardless of where a valuation change is recorded (net income or FVOCI), total equity will not be impacted which is the ultimate earnings of the corporation and the basis of the rate stabilization reserve.

As the standards are still draft and not finalized, a final analysis of the impact of these standards has not been completed (please refer to *Volume III AI.8 International Financial Reporting Standards* section for a discussion on the work done to date).

Please see also *PUB (MPI) 1-13*.

**PUB (MPI) 1-13**

<b>Volume:</b>	<b>I OV.2</b>	<b>Page No.:</b>	<b>5</b>
<b>Topic:</b>	<b>Interest Rate Forecast Risk Factor</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Interest Rate Forecasting Risk</b>		

**Question:**

Please discuss the nature and extent of any overlap between the purpose of the proposed IRFRF and the proposed revised purpose of the RSR.

**Rationale for Question:**

To understand the need for an IRFRF given the current regulatory rate construct.

**RESPONSE:**

The purpose of the Rate Stabilization Reserve (RSR) and the Interest Rate Forecast Risk Factor (IRFRF) differ. The purpose of the RSR is set out in its definition:

“The Purpose of the RSR is to protect motorists from rate increases that would otherwise have been necessary due to unexpected variances from forecasted results and due to events and losses arising from non-recurring events and factors.”

The underlying assumption for the RSR is that the forecasts are accurate best estimates and that the RSR is only used when there are variances from those reasonable forecasts because of unexpected events. The RSR is not equipped to handle systemic forecasting errors.

The IRFRF is required because the interest rate forecast methodology that MPI is required to use can reasonably be expected to yield incorrect results in the current market environment. The methodology has overstated the forecasted interest rates for the preceding years, and appears on track to do the same in the current year. As stated in *Volume I Overview OV.2* if interest rates remain unchanged during the

rating period this will create a variance from forecast of \$32.7 million which will require a rate increase of 7% overall to breakeven on Basic.

A fundamental principle of public automobile insurance is to operate on a break-even basis. Using the current interest rate forecasting methodology, without an IRFRF, MPI can expect to generate a loss for the Basic insurance business. MPI believes that allowing the current approach to continue unabated is thus contrary to this fundamental principle of public automobile insurance. Moreover, while MPI understands the potential reluctance to increase rates in the short-term, MPI believes that the long-term interests of MPI and other stakeholders are aligned in preserving the financial integrity of Basic insurance.

MPI is developing a range of options for the form of the IRFRF, with the intention to collaboratively work through these options and implications with the Public Utilities Board (PUB) and interveners. MPI intends to share these options in advance of the August 16<sup>th</sup> Technical Conference.

Please see Attachment A for a corrected version of the “Strategy on the use of Competitive Excess Equity in the Basic Insurance Line of Business”. The RSR definition therein is consistent with the Corporate Strategic Plan Strategy 1.8, and the initial filing contained an error.

### **RSR.1.3 Appendix A: Strategy on the Use of Competitive Excess Equity in the Basic Insurance Line of Business**

#### **Business Rationale for this Strategy**

One of the key objectives of Manitoba Public Insurance is to have predictable and stable rates. One mechanism used to help achieve this goal is the existence of a rate stabilization or capital reserve. A reserve of this nature can help to absorb unexpected losses without having to necessarily recover those losses through an insurance premium rate increase the next year. When the reserve itself is below the required minimum target, an RSR rebuilding fee may be necessary.

As one of the information requests in last year's GRA process, the PUB in PUB (MPI) 1-4 asked:

*"Why does the Corporation refuse to develop a transparent strategy for the disposition of excess retained earnings in the Extension and SRE lines of business, to the benefit of Basic ratepayers, when an RSR rebuilding increase is requested?"*

In response, the Corporation indicated: *"In the unusual and extreme event of a future transfer of competitive line excess retained earnings the Board of Directors will consider the sequencing of events important to determine both the amount and timing of the transfer. In any given rating year there will be numerous different circumstances, projections, financial implications, and considerations, including the amount of the actuarially indicated rate increase/decrease. Any criteria would be specific to that rating year. The Board of Directors did approve a transfer from Non-Basic excess retained earnings to the Basic RSR because the specific circumstances warranted it. The same or different circumstances may in the future warrant transfers, depending upon funds being available, but the Board of Directors will assess that at that time.*

1        *Any amount to be transferred and when is wholly within the discretion of the Board*  
2        *of Directors of Manitoba Public Insurance. Should there be an unusual and extreme*  
3        *need in the future to consider a future transfer of excess retained earnings to the*  
4        *Basic RSR, the Board (PUB) will be advised based upon the circumstances at that*  
5        *time. In the meantime, Manitoba Public Insurance remains compliant to the*  
6        *legislation on this matter."*

### 8        **Conditions underlying the decision framework**

9  
10       The Board of Directors in exercising this discretion will consider the following  
11       conditions and framework for the use of excess equity from the competitive lines of  
12       business as it pertains to the Basic insurance line of business.

13  
14       The purpose of the RSR has been modified to articulate how it has been applied since  
15       it was first introduced:

16  
17       The Purpose of the RSR is to protect motorists from rate increases that would  
18       otherwise have been necessary due to unexpected variances from forecasted results  
19       and due to events and losses arising from non-recurring events and factors.

20  
21       The Minimum RSR target will be based on the 1-in-40 year plausible adverse  
22       scenarios determined by the Dynamic Capital Adequacy test (DCAT). The DCAT  
23       must be signed off by the Chief Actuary and the Appointed (external) Actuary.

24  
25       The Maximum RSR target will be based on the 100% Minimum Capital Test  
26       calculation.

27  
28       The Rates approved by the Public Utilities Board cannot create a systemic deficiency  
29       in premiums. This means that the PUB cannot approve rates that will create a  
30       deficiency in the Basic premium thereby reducing the RSR to unacceptable levels.

1 **Guidelines for the Board of Directors in determining whether a transfer**  
2 **should occur**

3  
4 The conditions noted above will need to exist before the Board of Directors can  
5 contemplate any transfer of excess equity from competitive lines to the Basic line of  
6 business.

7  
8 The use of excess equity from the competitive lines, with regards to the Basic line of  
9 business, will only be considered in order to prevent the need for a Basic Rate  
10 Stabilization Reserve rebuilding fee.

11  
12 Clearly, the amount of transfer in any given year cannot exceed the amount  
13 available in the competitive lines excess equity and the amount and years over which  
14 the shortfall to the minimum target will be removed will be at the sole discretion of  
15 the Board of Directors.

16  
17 The Board of Directors will also consider the impact of current financial forecasts in  
18 determining the number of years over which the transfer may occur.

19  
20 As well, the amount of transfer cannot result in the Basic Rate Stabilization Reserve  
21 minimum target being exceeded at the time of transfer.

22  
23 It is also within the Board of Directors discretion to transfer any excess equity (above  
24 the maximum Basic RSR amount) from the Basic line of business back to the  
25 competitive lines of business up to the amount of the previous transfers made to the  
26 Basic line of business.

**PUB (MPI) 1-14**

<b>Volume:</b>	<b>I OV.2 II RSR.2</b>	<b>Page No.:</b>	<b>OV.2 pp. 10-12, RSR.2 pp. 38-41</b>
<b>Topic:</b>	<b>Interest Rate Forecast Risk Factor</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Interest Rate Forecasting Risk</b>		

**Question:**

- a) Please file the prospective interest rate movement probability analysis and descriptive notes.
- b) Please provide comparable statistical analysis of the probability of the flat interest rate forecast over ten quarters and provide commentary.

**Rationale for Question:**

To understand the impact of interest rate forecasting errors on rates.

**RESPONSE:**

a)

<b>Historical Changes in Interest Rates</b>				
	<b>1 Year Difference</b>	<b>2 Year Difference</b>	<b>3 Year Difference</b>	<b>4 Year Difference</b>
<b>Min</b>	-2.06%	-3.01%	<b>-3.01%</b>	-3.99%
<b>1.0%</b>	-1.79%	-2.55%	<b>-2.56%</b>	-3.43%
<b>2.5%</b>	-1.49%	-2.38%	<b>-2.39%</b>	-3.19%
<b>5.0%</b>	-1.23%	-1.91%	<b>-1.98%</b>	-2.64%
<b>10.0%</b>	-1.01%	-1.56%	<b>-1.55%</b>	-1.63%
<b>15.0%</b>	-0.79%	-1.12%	<b>-1.15%</b>	-1.26%
<b>20.0%</b>	-0.60%	-0.88%	<b>-0.92%</b>	-1.07%
<b>25.0%</b>	-0.49%	-0.68%	<b>-0.68%</b>	-0.89%
<b>50.0%</b>	-0.08%	-0.03%	<b>-0.04%</b>	-0.21%
<b>75.0%</b>	0.43%	0.58%	<b>0.59%</b>	0.65%
<b>80.0%</b>	0.53%	0.71%	<b>0.76%</b>	0.92%
<b>85.0%</b>	0.71%	0.96%	<b>1.24%</b>	1.25%
<b>90.0%</b>	0.87%	1.14%	<b>1.47%</b>	1.59%
<b>95.0%</b>	1.19%	1.56%	<b>1.85%</b>	2.17%
<b>97.5%</b>	1.49%	1.73%	<b>2.24%</b>	2.39%
<b>99.0%</b>	1.82%	1.94%	<b>2.50%</b>	2.75%
<b>Max</b>	2.55%	2.40%	<b>2.71%</b>	3.02%

<b>Standard Interest Rate Forecast</b>	<b>Beginning</b>		<b>Interest Rate Increase</b>	<b>Percentile</b>
	<b>Value</b>	<b>Ending Value</b>		
<b>Years 1-3</b>	1.19%	3.30%	2.11%	<b>96.5%</b>
<b>Rating Years</b>	1.76%	3.30%	1.54%	<b>94.4%</b>

<b>Olympic Average</b>	<b>Beginning</b>		<b>Interest Rate Increase</b>	<b>Percentile</b>
	<b>Value</b>	<b>Ending Value</b>		
<b>Years 1-3</b>	1.19%	3.78%	2.59%	<b>99.4%</b>
<b>Rating Years</b>	1.77%	3.78%	2.01%	<b>99.4%</b>

- Historical interest rates were analyzed from 1956 to the present, excluding the “Stagflation Period” from 1976 to 1985 to remain consistent with the data used in the Dynamic Capital Adequacy Test (DCAT) report.
- The first table provides the percentile breakdown of historical interest rate movements over 1, 2 and 3 years.
- The second table shows the percentile ranking of the Standard Interest Rate Forecast.



- The third table shows the percentile ranking of the Olympic Average interest rate forecast.
- b) Flat interest rates over 3 years ranked at the 52.1 percentile using the same historical data set from part (a) of this question.

	<b>3 Year Difference</b>
Min	-3.01%
1.0%	-2.56%
2.5%	-2.39%
5.0%	-1.98%
25.0%	-0.68%
50.0%	-0.04%
<b>52.1%</b>	<b>0.00%</b>
75.0%	0.59%
95.0%	1.85%
97.5%	2.24%
99.0%	2.50%
Max	2.71%

**PUB (MPI) 1-15**

<b>Volume:</b>	<b>II INV.18</b>	<b>Page No.:</b>	<b>87</b>
<b>Topic:</b>	<b>Interest Rate Forecast</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Olympic Method</b>		

**Question:**

- a) Please provide the supporting calculations for the Olympic method including indicating which forecast was excluded from the determination in each period.
- b) Please provide any commentary provided by Global Insight related to their interest rate forecast.

**Rationale for Question:**

To understand interest rate forecasting methodology.

**RESPONSE:**

- a) See the table below for the calculations.

**Olympic Average with CBOC Interest Rate Forecast**

	<i>BMO NB</i>	<i>CIBC</i>	<i>CBOC</i>	<i>Global</i>	10 Year Canada <i>RBC</i>	<i>Scotia</i>	<i>TD</i>	<i>Median</i>	<i>Average</i>	Olympic <i>Average</i>
2016 Q1	1.21%	1.25%	<b>1.18%</b>	<b>1.63%</b>	1.20%	1.35%	1.33%	1.25%	1.31%	1.27%
Q2	1.23%	1.35%	<b>1.18%</b>	<b>1.71%</b>	1.50%	1.40%	1.35%	1.35%	1.39%	1.37%
Q3	<b>1.33%</b>	1.50%	1.47%	<b>1.98%</b>	1.65%	1.55%	1.45%	1.50%	1.56%	1.52%
Q4	<b>1.43%</b>	1.60%	1.76%	<b>2.10%</b>	2.00%	1.70%	1.70%	1.70%	1.76%	1.75%
2017 Q1	<b>1.50%</b>	1.95%	2.24%	2.21%	<b>2.35%</b>	1.90%	1.80%	1.95%	1.99%	2.02%
Q2	<b>1.63%</b>	2.20%	<b>2.92%</b>	2.27%	2.60%	2.15%	2.00%	2.20%	2.25%	2.24%
Q3	<b>1.79%</b>	2.35%	<b>3.15%</b>	2.35%	2.80%	2.30%	2.10%	2.35%	2.41%	2.38%
Q4	<b>1.94%</b>	2.35%	<b>3.47%</b>	2.41%	3.05%	2.50%	2.30%	2.41%	2.57%	2.52%
2018 Q1			3.84%	2.51%				3.17%	3.17%	3.17%
Q2			4.00%	2.68%				3.34%	3.34%	3.34%
Q3			4.15%	2.98%				3.56%	3.56%	3.56%
Q4			4.27%	3.30%				3.78%	3.78%	3.78%
2019 Q1			4.31%	3.39%				3.85%	3.85%	3.85%
Q2			4.34%	3.39%				3.87%	3.87%	3.87%
Q3			4.37%	3.39%				3.88%	3.88%	3.88%
Q4			4.39%	3.39%				3.89%	3.89%	3.89%
2020 Q1			4.40%	3.39%				3.89%	3.89%	3.89%
Q2			4.41%	3.39%				3.90%	3.90%	3.90%
Q3			4.41%	3.39%				3.90%	3.90%	3.90%
Q4			4.41%	3.39%				3.90%	3.90%	3.90%

Highlighted italicized numbers represent the minimum and maximum removed from the Olympic average each quarter

**Data sources dates:**

- BMO NB as of March 11, 2016 (Average of Period)
- CIBC as of March 3, 2016 (End of Period)
- Global Insight, March 2016 (Average Period)
- RBC as of March 11, 2016 (End of Period)
- Scotiabank as of March 2, 2016 (End of Period)
- TD as of March 23, 2016 (End of Period)
- CBOC as of March 21, 2016 (End of Period)

- b) Manitoba Public Insurance (MPI) receives a Canadian Forecast Economic Summary each month, which provides a Canadian short-term economic outlook. Global Insight was contacted to determine if the full report could be provided. Global Insight declined and will only allow MPI to share the relevant commentary regarding interest rates.

The following paragraph below is the relevant excerpt of the **March 2016 Canadian Forecast Economic Summary** from Global Insight regarding interest rates.

“Although the Bank of Canada made its March Monetary Policy Announcement after the release of the Canadian short-term economic forecast, the results were exactly as we anticipated. There was no change in the overnight policy rate. Economic growth in the fourth quarter of the year was in line with expectations set in the January Monetary Policy Report. Therefore, there are no major concerns that would immediately alter the Bank of Canada’s take on the economy. Plus, inflation was running close to its forecast and remains well within the Bank’s target. So again, there is no issue here for the Bank. Third, commodity prices, namely oil prices, have rebounded from the February lows and are close to levels that were assumed in the January outlook. Finally, global markets have calmed down for the most part, but downside risks still remain. However, the Bank believes that the risks associated with the outlook remain balanced. These are the main reasons why there was no change in interest rates.”

**PUB (MPI) 1-16**

<b>Volume:</b>	<b>II INV.13.2</b>	<b>Page No.:</b>	<b>72, Table 13.2.2</b>
<b>Topic:</b>			
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Interest Rate Forecast</b>		

**Preamble:** The bank forecasts and CBOC forecasts are as of March 2014 and do not reflect the current views of forecasters. CBOC revised its 10-year bond forecast on June 14, 2016.

**Question:**

- a) Please provide an update to PUB/MPI I-5 (a) attachment (2016 GRA) including the CBOC in standard forecast and other long term forecasts as of July, and discuss the changes in interest rates from that used in application and the impact on forecast net income for the 2017/18 and 2018/19 years.
- b) Please provide an update to the Olympic calculation in the table prepared in (a).
- c) If available, please refile the Olympic forecast utilizing the Spatial Economics forecast or alternatively other long term Bank forecasts.
- d) Please refile table 1.2.2.1 reflecting the comparison between an updated standard forecast and Olympic forecast using a common set of data.

**Rationale for Question:**

To understand changes in interest rate forecast on forecast Basic net income.

**RESPONSE:**

- a) Please see attached.

## Scenario Summary Comparison

\$000,000s							Avg Net Inc. for Rating Years	Rate Change Estimate
Name		2016/17	2017/18	2018/19	2019/20	2020/21		
1. March 2016 Standard Forecast	Net Income	(18.7)	(17.9)	(7.9)	(17.9)	(22.7)	(12.9)	2.0%
	2017 GRA, 0% Rate Change	RSR	180.6	162.0	154.7	137.8		
1A. July 2016 Standard Forecast	Net Income	(32.3)	(33.1)	10.6	(22.7)	(26.1)	(11.2)	1.7%
	0% Rate Change	RSR	178.4	167.3	185.8	157.9		
2. March 2016 Olympic w CBOC	Net Income	(20.8)	(11.1)	15.7	(28.2)	(17.7)	2.3	-0.3%
	0% Rate Change	RSR	178.4	167.3	185.8	157.9		
2A. July 2016 Olympic w CBOC	Net Income	(30.4)	(31.7)	45.1	(41.4)	(18.0)	6.7	-1.0%
	0% Rate Change	RSR	165.6	132.1	183.3	143.2		

- For Q4 2016/17, the interest rate for the July 2016 Standard interest rate forecast was 1.21%, which was 0.54% lower compared to the 2017 GRA Standard interest rate forecast of 1.76% as of March 2016.
- For the end of the rating period (Q4 2018/19) the July 2016 forecast was 0.52% lower than the 2017 GRA forecast.
- The July 2016 forecast rate indication was 1.7% compared to 2.0% for the 2017 GRA forecast.
- These two rate indications are close because the forecasted interest rate increase in the July 2016 forecast (1.57%) was similar to the forecasted interest rate increase for the 2017 GRA forecast (1.55%).
- The Corporation continues to believe that the CBOC interest rate is too aggressive, and rejects this forecast. From Q4 2015/16, it increased by 2.85% to the end of the rating period (from 1.19% to 4.04%). This is an average annual increase of 0.95% a year.

b) Please see table below.

07/12/16

Olympic Average with CBOC Interest Rate Forecast

	<i>BMO NB</i>	<i>CIBC</i>	<i>CBOC</i>	<i>Global</i>	10 Year Canada			<i>Average</i>	<i>Olympic Average</i>
					<i>RBC</i>	<i>Scotia</i>	<i>TD</i>		
2016 Q2	1.29%	<b>1.08%</b>	<b>1.42%</b>	1.33%	1.31%	1.31%	1.31%	1.29%	1.31%
Q3	1.02%	1.30%	<b>1.53%</b>	1.31%	1.15%	<b>0.80%</b>	1.15%	1.18%	1.19%
Q4	1.08%	1.40%	<b>1.74%</b>	1.45%	1.25%	<b>0.90%</b>	1.20%	1.29%	1.28%
2017 Q1	1.15%	1.50%	<b>2.01%</b>	1.71%	1.40%	<b>1.00%</b>	1.30%	1.44%	1.41%
Q2	1.23%	1.60%	<b>2.69%</b>	1.87%	1.60%	<b>1.05%</b>	1.40%	1.63%	1.54%
Q3	1.30%	1.75%	<b>2.91%</b>	2.06%	1.75%	<b>1.20%</b>	1.50%	1.78%	1.67%
Q4	<b>1.38%</b>	1.90%	<b>3.23%</b>	2.20%	1.90%	1.40%	1.60%	1.94%	1.80%
2018 Q1			3.59%	2.36%				2.98%	2.98%
Q2			3.75%	2.46%				3.10%	3.10%
Q3			3.90%	2.65%				3.27%	3.27%
Q4			4.04%	2.78%				3.41%	3.41%
2019 Q1			4.08%	2.92%				3.50%	3.50%
Q2			4.11%	3.13%				3.62%	3.62%
Q3			4.14%	3.39%				3.76%	3.76%
Q4			4.15%	3.46%				3.81%	3.81%
2020 Q1			4.17%	3.46%				3.81%	3.81%
Q2			4.18%	3.46%				3.82%	3.82%
Q3			4.18%	3.46%				3.82%	3.82%
Q4			4.18%	3.46%				3.82%	3.82%

Highlighted and italicized represent the minimum and maximum removed for the Olympic Average

**Data sources dates:**

- BMO NB as of July 8, 2016 (Average of Period)
- CIBC as of July 7, 2016 (End of Period)
- Global Insight, July 2016 (Average Period)
- RBC as of July 2016 (End of Period)
- Scotiabank as of July 6, 2016 (End of Period)
- TD as of June 30, 2016 (End of Period)
- CBOC as of June 14, 2016 (End of Period)

c) Please see table below.

- CIBC and Scotia provided annual averages for 2018, 2019 and 2020 instead of quarterly forecasts. End of year numbers are required for the forecast. As a result, CIBC and Scotia Capital’s long-term forecasts were rejected.
- Similarly, Spatial’s forecast was rejected because it is an annual average, not a quarterly forecast, and further would have cost \$2,575 for a forecast that is outdated from February 2016.

- BMO and RBC's forecasts were included in the Olympic average calculation shown in the table below, however both firms requested that their forecasts are not publicly disclosed.

**Olympic Average with CBOC Interest Rate Forecast**

	<i>BMO NB</i>	<i>CIBC</i>	<i>CBOC</i>	<i>Global</i>	10 Year Canada <i>RBC</i>	<i>Scotia</i>	<i>TD</i>	<i>Average</i>	<i>Olympic Average</i>
2016 Q2	1.29%	<b>1.08%</b>	<b>1.42%</b>	1.33%	1.31%	1.31%	1.31%	1.29%	1.31%
Q3	1.02%	1.30%	<b>1.53%</b>	1.31%	1.15%	<b>0.80%</b>	1.15%	1.18%	1.19%
Q4	1.08%	1.40%	<b>1.74%</b>	1.45%	1.25%	<b>0.90%</b>	1.20%	1.29%	1.28%
2017 Q1	1.15%	1.50%	<b>2.01%</b>	1.71%	1.40%	<b>1.00%</b>	1.30%	1.44%	1.41%
Q2	1.23%	1.60%	<b>2.69%</b>	1.87%	1.60%	<b>1.05%</b>	1.40%	1.63%	1.54%
Q3	1.30%	1.75%	<b>2.91%</b>	2.06%	1.75%	<b>1.20%</b>	1.50%	1.78%	1.67%
Q4	<b>1.38%</b>	1.90%	<b>3.23%</b>	2.20%	1.90%	1.40%	1.60%	1.94%	1.80%
2018 Q1	X.XX%		<b>3.59%</b>	2.36%	X.XX%		1.70%	2.45%	2.07%
Q2	X.XX%		<b>3.75%</b>	2.46%	X.XX%		1.80%	2.59%	2.20%
Q3	X.XX%		<b>3.90%</b>	2.65%	X.XX%		1.90%	2.75%	2.37%
Q4	X.XX%		<b>4.04%</b>	2.78%	X.XX%		<b>2.00%</b>	2.89%	2.53%
2019 Q1	X.XX%		<b>4.08%</b>	2.92%	X.XX%		<b>2.10%</b>	3.00%	2.69%
Q2	X.XX%		<b>4.11%</b>	3.13%	X.XX%		<b>2.20%</b>	3.12%	2.87%
Q3	X.XX%		<b>4.14%</b>	3.39%	X.XX%		<b>2.30%</b>	3.27%	3.09%
Q4	X.XX%		<b>4.15%</b>	3.46%	X.XX%		<b>2.40%</b>	3.37%	3.24%
2020 Q1	X.XX%		<b>4.17%</b>	3.46%	X.XX%		<b>2.50%</b>	3.44%	3.34%
Q2			<b>4.18%</b>	3.46%	X.XX%		<b>2.60%</b>	3.50%	3.61%
Q3			<b>4.18%</b>	3.46%	X.XX%		<b>2.70%</b>	3.53%	3.63%
Q4			<b>4.18%</b>	3.46%	X.XX%		<b>2.75%</b>	3.56%	3.66%

Highlighted and italicized represent the minimum and maximum removed for the Olympic Average

**Data sources dates:**

- BMO NB as of July 8, 2016 (Average of Period)
- CIBC as of July 7, 2016 (End of Period)
- Global Insight, July 2016 (Average Period)
- RBC as of July 2016 (End of Period)
- Scotiabank as of July 6, 2016 (End of Period)
- TD as of June 30, 2016 (End of Period)
- CBOC as of June 14, 2016 (End of Period)

d) Please see table below.

**Update to Table 1.2.2.1  
July 2016 Interest Rate Forecasts**

		Standard	Olympic with CBOC (Part B)	Difference to Standard	Olympic with BMO, CBOC, RBC, TD (Part C)	Difference to Standard
<b>2016/17</b>	Q2	1.17%	1.31%	0.14%	1.31%	0.14%
	Q3	1.12%	1.19%	0.06%	1.19%	0.06%
	Q4	1.21%	1.28%	0.06%	1.28%	0.06%
<b>2017/18</b>	Q1	1.34%	1.41%	0.07%	1.41%	0.07%
	Q2	1.46%	1.54%	0.08%	1.54%	0.08%
	Q3	1.59%	1.67%	0.08%	1.67%	0.08%
	Q4	1.73%	1.80%	0.07%	1.80%	0.07%
<b>2018/19</b>	Q1	2.36%	2.98%	0.62%	2.07%	-0.29%
	Q2	2.46%	3.10%	0.64%	2.20%	-0.26%
	Q3	2.65%	3.27%	0.62%	2.37%	-0.28%
	Q4	2.78%	3.41%	0.63%	2.53%	-0.25%
<b>2019/20</b>	Q1	2.92%	3.50%	0.58%	2.69%	-0.23%
	Q2	3.13%	3.62%	0.49%	2.87%	-0.26%
	Q3	3.39%	3.76%	0.37%	3.09%	-0.30%
	Q4	3.46%	3.81%	0.35%	3.24%	-0.22%
<b>2020/21</b>	Q1	3.46%	3.81%	0.35%	3.34%	-0.12%
	Q2	3.46%	3.82%	0.36%	3.61%	0.15%
	Q3	3.46%	3.82%	0.36%	3.63%	0.17%
	Q4	3.46%	3.82%	0.36%	3.66%	0.20%

The Corporation provides further comment and analysis on the results of the updated Table 1.2.2.1 below.



**Scenario Summary Comparison**

							Avg Net Inc. for Rating Years	Rate Change Estimate
		2016/17	2017/18	2018/19	2019/20	2020/21		
		\$000,000s						
Name		2016/17	2017/18	2018/19	2019/20	2020/21		
3A. July 2016 Olympic w BMO, CBOC, RBC, TD (PUB 1-16 B)	Net Income	(30.4)	(31.7)	(9.9)	(19.6)	(21.0)	(20.8)	3.1%
0% Rate Change	RSR	165.6	132.1	122.5	107.2	90.4		
4A. July 2016 w BMO, CBOC, RBC, TD Long Term Forecast	Net Income	(30.2)	(27.7)	(5.4)	(20.5)	(24.5)	(16.5)	2.5%
0% Rate Change	RSR	165.9	137.5	132.6	115.4	94.4		

- If the Olympic average with BMO, CBOC, RBC and TD was used, the rate change estimate is 3.1% as shown in Scenario 3A.
- It is unclear why the Olympic average is an improvement over taking the simple average if the goal is to increase the number of long-term forecasters. The Olympic average methodology removes 2 out of the 5 long-term forecasters. The rate change estimate becomes 2.5% if the Olympic averaging methodology is not used, as shown in Scenario 4A.

**Government of Canada 10-Year Bond Rate Forecast**

Calendar Year	Calendar Quarter	Applied to MPI Fiscal Quarter	BMO NB July 2016	CIBC July 2016	CBOC June 2016	Global July 2016	RBC July 2016	Scotia July 2016	TD July 2016	July 2016 Standard Forecast	July 2016 Olympic w CBOC	2017 GRA Base March 2016 Standard Forecast	July 2016 Standard Forecast Difference to 2017 GRA Base	July 2016 Olympic w CBOC Difference to 2017 GRA Base	Actual	Sept 2015 Standard (Average)	March 2015 Standard (Used in 2015 GRA)	Difference Sept 2015 - March 2015
2015	Q1	Q1 2015/16													1.62%	1.62%	1.47%	0.15%
	Q2	Q2 2015/16													1.49%	1.49%	1.70%	-0.21%
	Q3	Q3 2015/16													1.57%	1.43%	1.87%	-0.43%
	Q4	Q4 2015/16													1.19%	1.72%	2.04%	-0.32%
2016	Q1	Q1 2016/17										1.33%			1.32%	1.91%	2.21%	-0.31%
	Q2	Q2 2016/17	1.29%	1.08%	1.42%	1.33%	1.12%	1.06%	1.12%	1.17%	1.31%	1.42%	-0.26%	-0.11%		2.05%	2.40%	-0.35%
	Q3	Q3 2016/17	1.02%	1.30%	1.53%	1.31%	1.15%	0.80%	1.15%	1.12%	1.19%	1.58%	-0.46%	-0.39%		2.22%	2.57%	-0.36%
	Q4	Q4 2016/17	1.08%	1.40%	1.74%	1.45%	1.25%	0.90%	1.20%	1.21%	1.28%	1.76%	-0.54%	-0.48%		2.41%	2.70%	-0.28%
2017	Q1	Q1 2017/18	1.15%	1.50%	2.01%	1.71%	1.40%	1.00%	1.30%	1.34%	1.41%	1.95%	-0.61%	-0.54%		2.61%	3.22%	-0.61%
	Q2	Q2 2017/18	1.23%	1.60%	2.69%	1.87%	1.60%	1.05%	1.40%	1.46%	1.54%	2.14%	-0.68%	-0.60%		2.47%	3.41%	-0.95%
	Q3	Q3 2017/18	1.30%	1.75%	2.91%	2.06%	1.75%	1.20%	1.50%	1.59%	1.67%	2.28%	-0.69%	-0.61%		2.60%	3.52%	-0.93%
	Q4	Q4 2017/18	1.38%	1.90%	3.23%	2.20%	1.90%	1.40%	1.60%	1.73%	1.80%	2.43%	-0.70%	-0.63%		2.73%	3.55%	-0.83%
2018	Q1	Q1 2018/19			3.59%	2.36%				2.36%	2.98%	2.51%	-0.15%	0.47%		2.72%	3.55%	-0.83%
	Q2	Q2 2018/19			3.75%	2.46%				2.46%	3.10%	2.68%	-0.22%	0.42%		2.93%	3.55%	-0.62%
	Q3	Q3 2018/19			3.90%	2.65%				2.65%	3.27%	2.98%	-0.33%	0.29%		3.10%	3.55%	-0.45%
	Q4	Q4 2018/19			4.04%	2.78%				2.78%	3.41%	3.30%	-0.52%	0.11%		3.20%	3.55%	-0.35%
2019	Q1	Q1 2019/20			4.08%	2.92%				2.92%	3.50%	3.39%	-0.47%	0.11%		3.24%	3.55%	-0.31%
	Q2	Q1 2019/20			4.11%	3.13%				3.13%	3.62%	3.39%	-0.26%	0.23%		3.24%	3.55%	-0.31%
	Q3	Q1 2019/20			4.14%	3.39%				3.39%	3.76%	3.39%	0.00%	0.37%		3.24%	3.55%	-0.31%
	Q4	Q1 2019/20			4.15%	3.46%				3.46%	3.81%	3.39%	0.07%	0.42%		3.24%	3.55%	-0.31%
2020	Q1	Q1 2019/20			4.17%	3.46%				3.46%	3.81%	3.39%	0.07%	0.42%				
	Q2	Q1 2019/20			4.18%	3.46%				3.46%	3.82%	3.39%	0.07%	0.43%				
	Q3	Q1 2019/20			4.18%	3.46%				3.46%	3.82%	3.39%	0.07%	0.43%				
	Q4	Q1 2019/20			4.18%	3.46%				3.46%	3.82%	3.39%	0.07%	0.43%				

**Data sources dates:**

- BMO NB as of July 8, 2016 (Average of Period)
- CIBC as of July 7, 2016 (End of Period)
- Global Insight, July 2016 (Average Period)
- RBC as of July 2016 (End of Period)
- Scotiabank as of July 6, 2016 (End of Period)
- TD as of June 30, 2016 (End of Period)
- CBOC as of June 14, 2016 (End of Period)

**PUB (MPI) 1-17**

<b>Volume:</b>	<b>II INV 1.3</b>	<b>Page No.:</b>	<b>24</b>
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>ALM Strategy</b>		

**Preamble:** The Corporation has not implemented Aon Hewitt’s recommendation to add a specific allocation to corporate bonds as the Corporation believes that non-marketable (MUSH) bonds are a reasonable substitute for corporate bonds. The Corporation engaged Aon Hewitt to study this issue further and is currently reviewing the report as it was not completed until recently.

**Question:**

Please provide the Corporation’s comments on the conclusion set out by Aon, which supports its initial recommendation.

**Rationale for Question:**

To assess the composition of the Corporation's portfolio.

**RESPONSE:**

The Corporation accepts AON’s recommendation, and in consultation with the Investment Committee Working Group and Investment Committee of the Board will determine if a specific allocation to corporate bonds will be added in its Investment Policy Statement (IPS) during the next annual review of the IPS in March 2017.

**PUB (MPI) 1-18**

<b>Volume:</b>	<b>II INV.1</b>	<b>Page No.:</b>	<b>6-15</b>
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>ALM Strategy</b>		

**Preamble:** “The Corporation has reduced its interest rate risk over the past few years. Currently, the Corporation matches the duration of the fixed income portfolio to the duration of the claims liabilities. At the Corporate level, forecasted interest rate risk has essentially been eliminated at \$3.7 million on average over the rating years. However, there is a mismatch on a Basic basis that provides a benefit to Basic net income if interest rates rise.”

Table 1.2.1.1 and 1.2.1.2 provide the actual and forecast change in interest rates impact on the Corporation and Basic respectively. To understand the level of protection being afforded by the change in portfolio composition the following information is required.

**Question:**

- a) Please provide an update to PUB/MPI I-54 and provide a comparison between the current Basic portfolio allocation and the 2015/16 portfolio composition.
- b) Please provide two tables indicating the theoretical impact of a 100 basis point increase and 100 basis point decrease in interest rates impact on the value of Basic Claims Liability and Fixed Income investments, and net income impact for the years 2011/12 through 2020/21. In each year indicate the level of duration mismatch
- c) Provide the same analysis in (b) at the Corporate level.

**Rationale for Question:**

To assess the changes in Basic’s exposure to interest rate changes with the implementation of AON’s duration matching strategy.

**RESPONSE:**

a)

	Actual Allocation (*)	AON's Base Case Allocation (**)	AON's Proposed Allocation (**)	Forecasted Allocation (***)
<b>Allocation (%)</b>				
<b>Fixed Income</b>	<b>65.7</b>	<b>60.0</b>	<b>70.0</b>	<b>69.0</b>
Bucket Approach	0.0	60.0	0.0	0.0
Duration Matching	65.7	0.0	70.0	69.0
<b>Equities</b>	<b>20.4</b>	<b>20.0</b>	<b>15.0</b>	<b>16.3</b>
Canadian Equities	13.3	15.0	10.0	10.4
U.S. Equities	7.1	5.0	5.0	5.9
<b>Alternatives</b>	<b>13.9</b>	<b>20.0</b>	<b>15.0</b>	<b>14.7</b>
Canadian Real Estate	10.5	13.0	10.0	10.7
Infrastructure****	3.3	7.0	5.0	4.0
<b>Dollar Amounts (in million \$)</b>				
<b>Fixed Income</b>	<b>1,671.2</b>	<b>1,526.2</b>	<b>1,780.5</b>	<b>1,754.8</b>
<b>Equities</b>	<b>520.0</b>	<b>508.7</b>	<b>381.5</b>	<b>414.1</b>
Canadian Equities	339.4	381.5	254.4	264.5
U.S. Equities	180.6	127.2	127.2	149.6
<b>Alternatives</b>	<b>352.4</b>	<b>508.7</b>	<b>381.5</b>	<b>375.2</b>
Canadian Real Estate	267.9	330.7	254.4	273.1
Infrastructure****	84.5	178.1	127.2	102.1

\* As of May 2016

\*\* 2014/15 Fiscal Year

\*\*\* Average allocation of quarter-end balances for 2016/17 Fiscal Year

\*\*\*\* includes venture capital

b) and c)

The response is combined into one table (see below). For each year from 2011/12 to 2020/21, the +/- 100 bps interest rate impact assumes the interest rate shock occurred on the last day of each fiscal year. The net impact shown represents interest rate risk, which is the net impact of changes in interest rates on claims and the gain/loss for marketable bonds.

## Impact of +/- 100 bps at the End of Each Fiscal Year (in million \$)

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<b>Corporate</b>										
<b>+100 bps</b>										
Marketable Bond G/L	(68.7*)	(64.0)	(67.3)	(107.2)	(120.2)	(127.4)	(115.8)	(106.9)	(93.8)	(96.7)
Claims Interest Rate Impact	(107.7)	(107.7)	(104.8)	(139.3)	(128.3)	(139.4)	(123.1)	(116.3)	(105.9)	(106.1)
<b>Net Impact</b>	<b>39.0</b>	<b>43.7</b>	<b>37.5</b>	<b>32.1</b>	<b>8.1</b>	<b>12.1</b>	<b>7.3</b>	<b>9.4</b>	<b>12.1</b>	<b>9.4</b>
<b>-100 bps</b>										
Marketable Bond G/L	68.7*	76.4	78.9	131.0	147.7	158.5	144.4	135.6	122.6	127.4
Claims Interest Rate Impact	50.9	97.0	119.6	47.6	152.3	167.2	159.1	140.4	118.4	119.2
<b>Net Impact</b>	<b>17.8</b>	<b>(20.6)</b>	<b>(40.7)</b>	<b>83.4</b>	<b>(4.6)</b>	<b>(8.7)</b>	<b>(14.7)</b>	<b>(4.8)</b>	<b>4.3</b>	<b>8.2</b>
<b>Basic</b>										
<b>+100 bps</b>										
Marketable Bond G/L	(60.2*)	(54.7)	(58.0)	(89.5)	(102.5)	(108.9)	(98.2)	(89.7)	(77.8)	(79.2)
Claims Interest Rate Impact	-105.8	-106.2	-103.0	-137.2	-126.5	-137.3	-121.1	-114.2	-103.9	-108.2
<b>Net Impact</b>	<b>45.6</b>	<b>51.5</b>	<b>45.0</b>	<b>47.7</b>	<b>24.0</b>	<b>28.4</b>	<b>22.8</b>	<b>24.5</b>	<b>26.1</b>	<b>29.0</b>
<b>-100 bps</b>										
Marketable Bond G/L	60.2*	65.2	68.0	109.3	126.0	135.5	122.5	113.8	101.7	104.3
Claims Interest Rate Impact	48.9	95.2	117.6	45.3	150.3	164.9	156.7	138.2	116.3	117.2
<b>Net Impact</b>	<b>11.3</b>	<b>(30.0)</b>	<b>(49.6)</b>	<b>64.0</b>	<b>(24.3)</b>	<b>(29.4)</b>	<b>(34.2)</b>	<b>(24.4)</b>	<b>(14.7)</b>	<b>(12.9)</b>
Historical/Forecasted Duration Gap	-2.2	1.5	-1.4	0.7	0.2	0.0	0.0	0.0	0.0	0.0

\* For 2011/12, the average impact of +/- 100 bps was used because the individual impacts for +100 bps and -100 bps were not available.

**PUB (MPI) 1-19**

<b>Volume:</b>	<b>1 OV.2</b>	<b>Page No.:</b>	<b>9</b>
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>	<b>Interest Rate Risk</b>		
<b>Issue:</b>	<b>ALM</b>		

**Question:**

Please file a complete set of pro-formas corresponding to the standard interest rate forecast under ALM (matched to Basic) for each of the following rate change scenarios:

- a) 0%;
- b) 2%; and
- c) 3.7%.

**Rationale for Question:**

To understand the impact of interest rate changes on Basic.

**RESPONSE:**

- a) Please refer to Attachment A.
- b) Please refer to Attachment B.
- c) Please refer to Attachment C.

**PF.1 STATEMENT OF OPERATIONS****2017 GRA - 0.0% Rate Change & ALM Matched to Basic**

(C\$ 000s, rounding may affect totals)

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
Motor Vehicles	893,420	935,264	977,983	1,023,201	1,070,634
Drivers	50,393	52,908	55,180	57,424	59,626
Reinsurance Ceded	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Written</b>	<b>932,181</b>	<b>976,296</b>	<b>1,021,049</b>	<b>1,068,269</b>	<b>1,117,657</b>
<b>Net Premiums Earned</b>					
Motor Vehicles	875,348	915,958	958,275	1,002,338	1,048,749
Drivers	48,478	51,645	54,039	56,298	58,521
Reinsurance Ceded	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Earned</b>	<b>912,194</b>	<b>955,727</b>	<b>1,000,200</b>	<b>1,046,280</b>	<b>1,094,667</b>
Service Fees & Other Revenues	21,557	23,227	24,889	26,846	28,754
<b>Total Earned Revenues</b>	<b>933,751</b>	<b>978,954</b>	<b>1,025,089</b>	<b>1,073,126</b>	<b>1,123,421</b>
<b>Net Claims Incurred</b>	761,967	802,397	835,939	873,499	915,069
(a) Claims Incurred - Interest Rate Impact	(94,368)	(90,057)	(104,194)	(16,026)	(3,137)
<b>Total Claims Incurred</b>	<b>667,599</b>	<b>712,340</b>	<b>731,745</b>	<b>857,473</b>	<b>911,932</b>
Claims Expense	125,191	128,190	132,610	140,222	147,473
Road Safety/Loss Prevention	13,318	13,196	14,061	14,034	14,172
<b>Total Claims Costs</b>	<b>806,108</b>	<b>853,726</b>	<b>878,416</b>	<b>1,011,729</b>	<b>1,073,577</b>
<b>Expenses</b>					
Operating	76,908	77,954	82,230	83,086	87,887
Commissions	35,616	37,110	38,773	40,494	42,300
Premium Taxes	27,715	29,028	30,369	31,759	33,218
Regulatory/Appeal	3,421	3,493	3,566	3,640	3,718
<b>Total Expenses</b>	<b>143,660</b>	<b>147,585</b>	<b>154,938</b>	<b>158,979</b>	<b>167,123</b>
<b>Underwriting Income (Loss)</b>	<b>(16,017)</b>	<b>(22,357)</b>	<b>(8,265)</b>	<b>(97,582)</b>	<b>(117,279)</b>
<b>Investment Income</b>	90,134	80,504	90,378	90,018	95,917
(b) Investment Income - Interest Rate Impact	(74,877)	(85,500)	(102,710)	(9,657)	0
<b>Net Investment Income</b>	<b>15,257</b>	<b>(4,996)</b>	<b>(12,332)</b>	<b>80,361</b>	<b>95,917</b>
<b>Net Income (Loss) from Operations for Rate Setting</b>	<b>(6,234)</b>	<b>(26,925)</b>	<b>(21,532)</b>	<b>(18,509)</b>	<b>(23,521)</b>
Add: DPAC / Premium Deficiency adjustment	(5,474)	428	(935)	(1,288)	(2,159)
<b>Net Income (Loss)</b>	<b>(760)</b>	<b>(27,353)</b>	<b>(20,597)</b>	<b>(17,221)</b>	<b>(21,362)</b>
<b>Total net Impact due to interest rate change (b) - (a)</b>	<b>19,491</b>	<b>4,557</b>	<b>1,484</b>	<b>6,368</b>	<b>3,137</b>



**PF.2 STATEMENT OF FINANCIAL POSITION****2017 GRA - 0.0% Rate Change & ALM Matched to Basic***(C\$ 000s, rounding may affect totals)*

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
<b>Assets</b>					
Cash and cash equivalents	12,239	12,355	14,307	16,011	16,877
Investments	2,126,554	2,088,016	2,038,514	2,091,136	2,170,126
Investment property	40,424	40,857	40,995	41,375	42,328
Accounts receivable	302,393	315,639	328,700	342,506	356,919
Deferred policy acquisition costs	7,615	8,391	10,555	13,145	16,668
Property and equipment	86,248	88,863	90,183	90,345	91,720
Deferred development costs	70,462	77,341	79,991	81,701	64,385
	<b>2,645,935</b>	<b>2,631,462</b>	<b>2,603,245</b>	<b>2,676,219</b>	<b>2,759,023</b>
<b>Liabilities</b>					
Due to other insurance companies	113	113	113	113	113
Accounts payable and accrued liabilities	29,447	30,993	31,499	32,418	33,959
Financing lease obligation	2,968	2,899	2,825	2,752	2,678
Unearned premiums and fees	475,671	499,416	523,709	549,429	576,463
Provision for employee current benefits	16,527	16,880	17,244	17,616	17,999
Provision for employee future benefits	286,836	302,414	319,313	336,739	354,910
Provision for unpaid claims	1,616,913	1,592,490	1,548,971	1,589,544	1,640,825
	<b>2,428,475</b>	<b>2,445,205</b>	<b>2,443,674</b>	<b>2,528,611</b>	<b>2,626,947</b>
<b>Equity</b>					
Retained earnings	193,737	166,384	145,787	128,566	107,204
Basic Insurance Retained Earnings	-	-	-	-	-
Accumulated Other Comprehensive Income	23,723	19,873	13,784	19,042	24,872
<b>Total Equity</b>	<b>217,460</b>	<b>186,257</b>	<b>159,571</b>	<b>147,608</b>	<b>132,076</b>
<b>Total Liabilities &amp; Equity</b>	<b>2,645,935</b>	<b>2,631,462</b>	<b>2,603,245</b>	<b>2,676,219</b>	<b>2,759,023</b>

**PF.3 STATEMENT OF CHANGES IN EQUITY****2017 GRA - 0.0% Rate Change & ALM Matched to Basic***(C\$ 000s, rounding may affect totals)*

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
<b>Retained Earnings</b>					
Beginning Balance	194,497	193,737	166,384	145,787	128,566
Net Income (Loss) from annual operations	(760)	(27,353)	(20,597)	(17,221)	(21,362)
Premium Rebate	0	0	0	0	0
Transfer (to) / from Non-Basic Retained Earnings	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>193,737</b>	<b>166,384</b>	<b>145,787</b>	<b>128,566</b>	<b>107,204</b>
<b>Retained Earnings</b>					
Equity Reserve	193,737	166,384	145,787	128,566	107,204
Excess Retained Earnings	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>193,737</b>	<b>166,384</b>	<b>145,787</b>	<b>128,566</b>	<b>107,204</b>
<b>Total Accumulated Other Comprehensive Income</b>					
Beginning Balance	36,504	23,723	19,873	13,784	19,042
Other Comprehensive Income for the Year	(12,781)	(3,850)	(6,088)	5,258	5,830
<b>Total Accumulated Other Comprehensive Income</b>	<b>23,723</b>	<b>19,873</b>	<b>13,784</b>	<b>19,042</b>	<b>24,872</b>
<b>Total Equity Balance</b>	<b>217,460</b>	<b>186,257</b>	<b>159,571</b>	<b>147,608</b>	<b>132,076</b>
<b>RESERVE TARGETS</b>					
DCAT Total Equity Target	181,000	181,000	181,000	181,000	181,000
MCT Total Equity Target	404,000	404,000	404,000	404,000	404,000

## PF.1

## STATEMENT OF OPERATIONS

## 2017 GRA - 2.0% Rate Change &amp; ALM Matched to Basic

(C\$ 000s, rounding may affect totals)

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
Motor Vehicles	893,420	954,331	997,909	1,044,039	1,092,429
Drivers	50,393	52,908	55,180	57,424	59,626
Reinsurance Ceded	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Written</b>	<b>932,181</b>	<b>995,363</b>	<b>1,040,975</b>	<b>1,089,107</b>	<b>1,139,452</b>
<b>Net Premiums Earned</b>					
Motor Vehicles	875,348	926,228	977,803	1,022,756	1,070,103
Drivers	48,478	51,645	54,039	56,298	58,521
Reinsurance Ceded	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Earned</b>	<b>912,194</b>	<b>965,997</b>	<b>1,019,728</b>	<b>1,066,698</b>	<b>1,116,021</b>
Service Fees & Other Revenues	21,557	23,227	24,999	26,965	28,881
<b>Total Earned Revenues</b>	<b>933,751</b>	<b>989,224</b>	<b>1,044,727</b>	<b>1,093,663</b>	<b>1,144,902</b>
<b>Net Claims Incurred</b>	761,967	794,053	835,780	872,996	914,516
(a) Claims Incurred - Interest Rate Impact	(94,368)	(90,091)	(104,082)	(16,596)	(4,434)
<b>Total Claims Incurred</b>	<b>667,599</b>	<b>703,962</b>	<b>731,698</b>	<b>856,400</b>	<b>910,082</b>
Claims Expense	125,191	128,190	132,604	140,216	147,467
Road Safety/Loss Prevention	13,318	13,196	14,061	14,034	14,172
<b>Total Claims Costs</b>	<b>806,108</b>	<b>845,348</b>	<b>878,363</b>	<b>1,010,650</b>	<b>1,071,721</b>
<b>Expenses</b>					
Operating	76,908	77,954	82,230	83,086	87,887
Commissions	35,616	37,376	39,402	41,152	42,988
Premium Taxes	27,715	29,336	30,955	32,372	33,859
Regulatory/Appeal	3,421	3,493	3,566	3,640	3,718
<b>Total Expenses</b>	<b>143,660</b>	<b>148,159</b>	<b>156,153</b>	<b>160,250</b>	<b>168,452</b>
<b>Underwriting Income (Loss)</b>	<b>(16,017)</b>	<b>(4,283)</b>	<b>10,211</b>	<b>(77,237)</b>	<b>(95,271)</b>
<b>Investment Income</b>	90,134	80,393	89,699	91,946	99,160
(b) Investment Income - Interest Rate Impact	(74,877)	(85,701)	(103,202)	(9,750)	0
<b>Net Investment Income</b>	<b>15,257</b>	<b>(5,308)</b>	<b>(13,503)</b>	<b>82,196</b>	<b>99,160</b>
<b>Net Income (Loss) from Operations for Rate Setting</b>	<b>(6,234)</b>	<b>(17,508)</b>	<b>(4,384)</b>	<b>3,166</b>	<b>1,189</b>
Add: DPAC / Premium Deficiency adjustment	(5,474)	(7,917)	(1,092)	(1,793)	(2,700)
<b>Net Income (Loss)</b>	<b>(760)</b>	<b>(9,591)</b>	<b>(3,292)</b>	<b>4,959</b>	<b>3,889</b>
<b>Total net Impact due to interest rate change (b) - (a)</b>	<b>19,491</b>	<b>4,390</b>	<b>880</b>	<b>6,846</b>	<b>4,434</b>

**PF.2 STATEMENT OF FINANCIAL POSITION****2017 GRA - 2.0% Rate Change & ALM Matched to Basic***(C\$ 000s, rounding may affect totals)*

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
<b>Assets</b>					
Cash and cash equivalents	12,239	12,414	14,417	16,339	17,418
Investments	2,126,554	2,101,082	2,070,855	2,144,857	2,247,666
Investment property	40,424	40,925	41,129	41,589	42,637
Accounts receivable	302,393	320,560	333,844	347,885	362,545
Deferred policy acquisition costs	7,615	17,284	19,630	22,750	26,842
Property and equipment	86,248	88,863	90,183	90,345	91,720
Deferred development costs	70,462	77,341	79,991	81,701	64,385
	<b>2,645,935</b>	<b>2,658,469</b>	<b>2,650,049</b>	<b>2,745,466</b>	<b>2,853,213</b>
<b>Liabilities</b>					
Due to other insurance companies	113	113	113	113	113
Accounts payable and accrued liabilities	29,447	30,993	31,499	32,418	33,959
Financing lease obligation	2,968	2,899	2,825	2,752	2,678
Unearned premiums and fees	475,671	508,213	532,903	559,044	586,519
Provision for employee current benefits	16,527	16,880	17,244	17,616	17,999
Provision for employee future benefits	286,836	302,414	319,313	336,739	354,910
Provision for unpaid claims	1,616,913	1,592,456	1,549,048	1,589,053	1,639,024
	<b>2,428,475</b>	<b>2,453,968</b>	<b>2,452,945</b>	<b>2,537,735</b>	<b>2,635,202</b>
<b>Equity</b>					
Retained earnings	193,737	184,146	180,854	185,813	189,702
Basic Insurance Retained Earnings	-	-	-	-	-
Accumulated Other Comprehensive Income	23,723	20,355	16,250	21,918	28,309
<b>Total Equity</b>	<b>217,460</b>	<b>204,501</b>	<b>197,104</b>	<b>207,731</b>	<b>218,011</b>
<b>Total Liabilities &amp; Equity</b>	<b>2,645,935</b>	<b>2,658,469</b>	<b>2,650,049</b>	<b>2,745,466</b>	<b>2,853,213</b>

**PF.3 STATEMENT OF CHANGES IN EQUITY****2017 GRA - 2.0% Rate Change & ALM Matched to Basic***(C\$ 000s, rounding may affect totals)*

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
<b>Retained Earnings</b>					
Beginning Balance	194,497	193,737	184,146	180,854	185,813
Net Income (Loss) from annual operations	(760)	(9,591)	(3,292)	4,959	3,889
Premium Rebate	0	0	0	0	0
Transfer (to) / from Non-Basic Retained Earnings	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>193,737</b>	<b>184,146</b>	<b>180,854</b>	<b>185,813</b>	<b>189,702</b>
<b>Retained Earnings</b>					
Equity Reserve	193,737	184,146	180,854	185,813	189,702
Excess Retained Earnings	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>193,737</b>	<b>184,146</b>	<b>180,854</b>	<b>185,813</b>	<b>189,702</b>
<b>Total Accumulated Other Comprehensive Income</b>					
Beginning Balance	36,504	23,723	20,355	16,250	21,918
Other Comprehensive Income for the Year	(12,781)	(3,368)	(4,105)	5,668	6,391
<b>Total Accumulated Other Comprehensive Income</b>	<b>23,723</b>	<b>20,355</b>	<b>16,250</b>	<b>21,918</b>	<b>28,309</b>
<b>Total Equity Balance</b>	<b>217,460</b>	<b>204,501</b>	<b>197,104</b>	<b>207,731</b>	<b>218,011</b>
<b>RESERVE TARGETS</b>					
DCAT Total Equity Target	181,000	181,000	181,000	181,000	181,000
MCT Total Equity Target	404,000	404,000	404,000	404,000	404,000

## PF.1

## STATEMENT OF OPERATIONS

## 2017 GRA - 3.7% Rate Change &amp; ALM Matched to Basic

(C\$ 000s, rounding may affect totals)

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
Motor Vehicles	893,420	970,537	1,014,847	1,061,751	1,110,955
Drivers	50,393	52,908	55,180	57,424	59,626
Reinsurance Ceded	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Written</b>	<b>932,181</b>	<b>1,011,569</b>	<b>1,057,913</b>	<b>1,106,819</b>	<b>1,157,978</b>
<b>Net Premiums Earned</b>					
Motor Vehicles	875,348	934,957	994,403	1,040,111	1,088,253
Drivers	48,478	51,645	54,039	56,298	58,521
Reinsurance Ceded	(11,632)	(11,876)	(12,114)	(12,356)	(12,603)
<b>Total Net Premiums Earned</b>	<b>912,194</b>	<b>974,726</b>	<b>1,036,328</b>	<b>1,084,053</b>	<b>1,134,171</b>
Service Fees & Other Revenues	21,557	23,227	25,091	27,063	28,985
<b>Total Earned Revenues</b>	<b>933,751</b>	<b>997,953</b>	<b>1,061,419</b>	<b>1,111,116</b>	<b>1,163,156</b>
<b>Net Claims Incurred</b>	761,967	786,966	835,641	872,927	917,206
(a) Claims Incurred - Interest Rate Impact	(94,368)	(90,120)	(104,328)	(16,785)	(5,466)
<b>Total Claims Incurred</b>	<b>667,599</b>	<b>696,846</b>	<b>731,313</b>	<b>856,142</b>	<b>911,740</b>
Claims Expense	125,191	128,190	132,600	140,094	147,343
Road Safety/Loss Prevention	13,318	13,196	14,061	14,019	14,157
<b>Total Claims Costs</b>	<b>806,108</b>	<b>838,232</b>	<b>877,974</b>	<b>1,010,255</b>	<b>1,073,240</b>
<b>Expenses</b>					
Operating	76,908	77,954	82,230	83,011	87,810
Commissions	35,616	37,603	39,937	41,711	43,573
Premium Taxes	27,715	29,598	31,453	32,892	34,403
Regulatory/Appeal	3,421	3,493	3,566	3,640	3,718
<b>Total Expenses</b>	<b>143,660</b>	<b>148,648</b>	<b>157,186</b>	<b>161,254</b>	<b>169,504</b>
<b>Underwriting Income (Loss)</b>	<b>(16,017)</b>	<b>11,073</b>	<b>26,259</b>	<b>(60,393)</b>	<b>(79,588)</b>
<b>Investment Income</b>	90,134	80,298	89,098	93,744	101,927
(b) Investment Income - Interest Rate Impact	(74,877)	(85,870)	(103,612)	(9,838)	0
<b>Net Investment Income</b>	<b>15,257</b>	<b>(5,572)</b>	<b>(14,514)</b>	<b>83,906</b>	<b>101,927</b>
<b>Net Income (Loss) from Operations for Rate Setting</b>	<b>(6,234)</b>	<b>(9,503)</b>	<b>10,511</b>	<b>21,660</b>	<b>22,339</b>
Add: DPAC / Premium Deficiency adjustment	(5,474)	(15,004)	(1,234)	(1,853)	-
<b>Net Income (Loss)</b>	<b>(760)</b>	<b>5,501</b>	<b>11,745</b>	<b>23,513</b>	<b>22,339</b>
<b>Total net Impact due to interest rate change (b) - (a)</b>	<b>19,491</b>	<b>4,250</b>	<b>716</b>	<b>6,947</b>	<b>5,466</b>

**PF.2 STATEMENT OF FINANCIAL POSITION****2017 GRA - 3.7% Rate Change & ALM Matched to Basic**

(C\$ 000s, rounding may affect totals)

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
<b>Assets</b>					
Cash and cash equivalents	12,239	12,462	14,508	16,614	17,880
Investments	2,126,554	2,112,189	2,098,340	2,190,890	2,314,179
Investment property	40,424	40,983	41,240	41,768	42,896
Accounts receivable	302,393	324,744	338,217	352,457	367,327
Deferred policy acquisition costs	7,615	24,838	27,347	30,550	31,965
Property and equipment	86,248	88,863	90,183	90,345	91,720
Deferred development costs	70,462	77,341	79,991	81,701	64,385
	<b>2,645,935</b>	<b>2,681,420</b>	<b>2,689,826</b>	<b>2,804,325</b>	<b>2,930,352</b>
<b>Liabilities</b>					
Due to other insurance companies	113	113	113	113	113
Accounts payable and accrued liabilities	29,447	30,993	31,499	32,418	33,959
Financing lease obligation	2,968	2,899	2,825	2,752	2,678
Unearned premiums and fees	475,671	515,690	540,717	567,216	595,067
Provision for employee current benefits	16,527	16,880	17,244	17,616	17,999
Provision for employee future benefits	286,836	302,414	319,313	336,739	354,910
Provision for unpaid claims	1,616,913	1,592,427	1,548,776	1,588,583	1,637,513
	<b>2,428,475</b>	<b>2,461,416</b>	<b>2,460,487</b>	<b>2,545,437</b>	<b>2,642,239</b>
<b>Equity</b>					
Retained earnings	193,737	199,238	210,983	234,496	256,834
Basic Insurance Retained Earnings	-	-	-	-	-
Accumulated Other Comprehensive Income	23,723	20,766	18,356	24,392	31,278
<b>Total Equity</b>	<b>217,460</b>	<b>220,004</b>	<b>229,339</b>	<b>258,888</b>	<b>288,113</b>
<b>Total Liabilities &amp; Equity</b>	<b>2,645,935</b>	<b>2,681,420</b>	<b>2,689,826</b>	<b>2,804,325</b>	<b>2,930,352</b>

## PF.3

## STATEMENT OF CHANGES IN EQUITY

## 2017 GRA - 3.7% Rate Change &amp; ALM Matched to Basic

(C\$ 000s, rounding may affect totals)

	2017B	2018F	2019F	2020F	2021F
<b>BASIC</b>					
<b>Retained Earnings</b>					
Beginning Balance	194,497	193,737	199,238	210,983	234,496
Net Income (Loss) from annual operations	(760)	5,501	11,745	23,513	22,339
Premium Rebate	0	0	0	0	0
Transfer (to) / from Non-Basic Retained Earnings	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>193,737</b>	<b>199,238</b>	<b>210,983</b>	<b>234,496</b>	<b>256,834</b>
<b>Retained Earnings</b>					
Equity Reserve	193,737	199,238	210,983	234,496	256,834
Excess Retained Earnings	0	0	0	0	0
<b>Total Retained Earnings</b>	<b>193,737</b>	<b>199,238</b>	<b>210,983</b>	<b>234,496</b>	<b>256,834</b>
<b>Total Accumulated Other Comprehensive Income</b>					
Beginning Balance	36,504	23,723	20,766	18,356	24,392
Other Comprehensive Income for the Year	(12,781)	(2,957)	(2,410)	6,036	6,886
<b>Total Accumulated Other Comprehensive Income</b>	<b>23,723</b>	<b>20,766</b>	<b>18,356</b>	<b>24,392</b>	<b>31,278</b>
<b>Total Equity Balance</b>	<b>217,460</b>	<b>220,004</b>	<b>229,339</b>	<b>258,888</b>	<b>288,112</b>
<b>RESERVE TARGETS</b>					
DCAT Total Equity Target	181,000	181,000	181,000	181,000	181,000
MCT Total Equity Target	404,000	404,000	404,000	404,000	404,000



**PUB (MPI) 1-20**

<b>Volume:</b>	<b>II INV</b>	<b>Page No.:</b>	<b>Att. J, p. 3</b>
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>AON Witness</b>		

**Question:**

- a) Please file a copy of Asset Liability Management Study Phases I and II, filed in the 2016 GRA, at Volume II Investments, Attachments B & C.
- b) Please file a copy of the Curriculum Vitae of the individual(s) from AON Hewitt who will testify at the GRA hearing.

**Rationale for Question:**

To complete the record of the within proceeding, and to afford opportunity for an advance review of expert witness qualifications.

**RESPONSE:**

- a) Please see Attachments A and B.
- b) Please find below the biography of the individual from AON Hewitt who will testify at the 2017 GRA hearing.

**Julianna Spiropoulos | MBA, CFA | Associate Partner****Position and Responsibilities**

Julianna Spiropoulos is an Associate Partner in the Calgary office. Julianna provides investment advice to private and public sector pension plans and endowments and is also responsible for coordinating and delivering risk management projects for clients based in Western Canada. She is the Investment Consulting Market Lead for Alberta.

**Areas of Specialization**

Julianna focuses on helping clients diagnose and manage their pension investment risk including asset-liability management, dynamic asset solutions, risk monitoring, de-risking and derivatives overlay strategies, liability driven investment solutions and delegated investment services.

Since joining Aon Hewitt, Julianna has worked with private and public pension plans, insurance funds, endowments and other funds on a wide variety of projects, including monitoring existing managers, leading asset-liability studies and completing investment manager searches. At her previous employer, Julianna's defined benefit responsibilities included managing two Canadian plans, one U.S. plan and several international plans. Julianna worked on multiple domestic and international investment manager searches, asset-liability studies and completed a risk management project for a mature Canadian plan, including a funding strategy review, asset de-risking plan and implementation of a liability driven investment approach. She also completed Board and Committee reporting, education and governance reviews.

**Background**

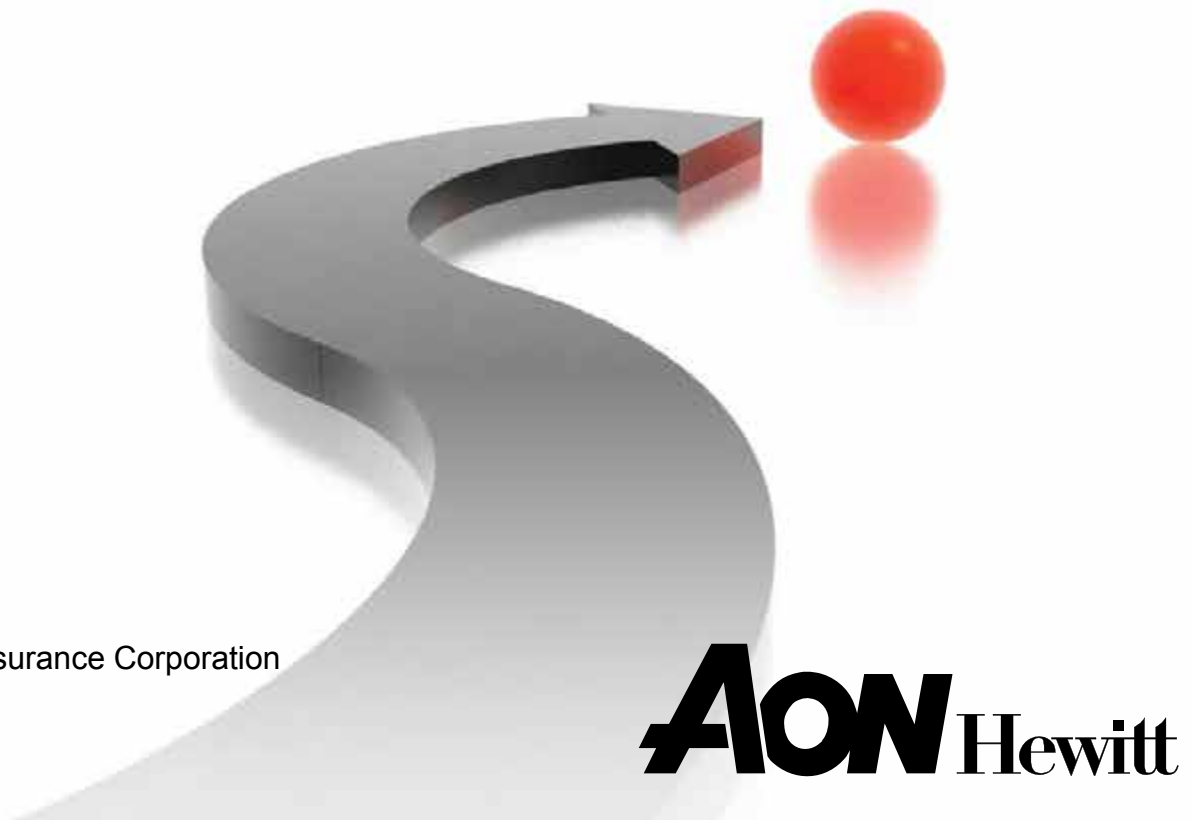
Julianna has over 22 years in the financial industry, having joined Aon Hewitt in 2011 with over 17 years of previous pension investment and corporate treasury experience. Before joining Aon Hewitt, Julianna was Manager, Pension Investments at Suncor Energy and Petro-Canada.

She holds a Bachelor of Science in Actuarial Science from the University of Calgary, an MBA from the University of Calgary and a Chartered Financial Analyst (CFA) designation.

# Manitoba Public Insurance Corporation

Asset-Liability Study

Phase I – Analysis of the Interest Rate Risk Hedging Strategy



**Prepared by Aon Hewitt**

September 2014

Presentation to The Manitoba Public Insurance Corporation

## Agenda

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Introduction	3
Review and analysis of investment policy	4
Review and analysis of liabilities	6
<b>Analysis of the interest rate risk mitigation strategy</b>	
Marketable bonds portfolio strategy	8
Implementation considerations	16
Transition and benchmarking	18
Conclusion and next steps	20
<b>Appendices</b>	
A: Discount Rate – MfAD and MUSH	24
B: Average yield calculation methodologies	28
C: Duration measures	33
D: Cash flow profiles	36
E: Additional information on hedging strategies	39
F: Benchmarking	43
G: Asset classes return and risk assumptions	45

*This report is incomplete without the accompanying discussion with your Aon Hewitt consultant*

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## Introduction

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### Mandate

Aon Hewitt was mandated by Manitoba Public Insurance Corporation (MPI) to study the existing duration matching program and recommend an appropriate interest rate risk mitigation strategy.

### Context

- MPI is required to break even rather than targeting profits.
- MPI must apply annually to the Public Utilities Board for approval of the premiums charged with respect to compulsory driver and vehicle insurance.

### Objective

MPI indicated that the short term volatility of the premium rate requirement is a primary concern.

- MPI's main concern is not one of liquidity, but one of short term relative value between assets and liabilities, which is driven by interest rate changes.
- In that context, MPI would benefit from a bond portfolio whose behavior matches that of the liabilities.
  - The analysis therefore focuses on assessing current MPI practices in building the bond portfolio, valuing liabilities and identifying opportunities to improve the asset-liability match.

## Review and analysis of investment policy

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### Observations

- MPI currently uses a strategy where it creates a bond portfolio whose Macaulay duration matches the Macaulay duration of the liabilities.
  - The tolerance band is  $\pm 1$  year.
- The bond portfolio is managed by the Government of Manitoba, through the Treasury Department.
- The value of the bond portfolio is approximately equal to the claims liabilities.
- Assets in excess of the liabilities are invested in equities and alternatives, although the portfolio is seen as one asset allocation.
- A significant portion of the bond portfolio is invested in Manitoban Municipalities, Universities, Schools and Hospitals (MUSH) bonds.
  - They constitute 25% of the total portfolio and 40% of the bond portfolio.
  - These are non-marketable amortizing bonds, generally issued for a period of 20 years and held to maturity.
  - MPI is one of the largest investors in MUSH.
    - Allows MPI to fulfill one of its roles which is to support the Manitoba economy.
  - For premium rate setting purposes, MUSH are accounted for at book value, whereas marketable bonds are accounted for at market value.

## ...Review and analysis of investment policy

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### Observations (continued)

- The marketable bond portfolio contains:
  - A large allocation (more than 70%) to provincial bonds;
  - An allocation of approximately 10% to municipal bonds;
  - An allocation of under 10% to bonds of the Government of Canada;
  - A small allocation to corporate bonds.

### Comments

- Because MUSH bonds are accounted for at book value, they add a layer of complexity.
  - It requires a special treatment to set the actuarial discount rate.
- Insurance corporations often separate assets into two distinct portfolios:
  - One to support liabilities, invested primarily in bonds.
  - One for surplus, largely invested in growth assets.
- Consistent with these insurance corporations, MPI is virtually doing this, but has not formally separated the portfolios in its investment policy. MPI might want to formalize this separation.

## Review and analysis of liabilities

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### Observations

- MPI uses the bond portfolio yield as the discount rate.
  - Market yields are used for marketable bonds.
  - MUSH yields reflect book value accounting.
  - The portfolio average yield is calculated as a mixture of market weighted average and duration weighted average.
  - A margin for adverse deviations (MfAD) of 1% is applied to the discount rate.

### Comments

- The current methodology has the disadvantage of being recursive.
  - The portfolio drives the discount rate.
  - The discount rate impacts the duration of the liabilities which has to be matched by the bond portfolio.
  - Adjusting the portfolio for the change in duration has an impact on the portfolio yield, and hence on the discount rate.
- Also, if the bond manager significantly changes the structure of the bond portfolio, it can impact the portfolio yield, even without changing the duration.
- This would trigger a change in the discount rate, hence changing the liability values, while the bond portfolio value has not changed, causing a mismatch.
- The recursivity between assets and liabilities hinders application of the hedging strategy as the target keeps moving.



## ... Review and analysis of liabilities

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### ... Comments

- Although better than pure market weighting, the mixture of market weighted average and duration weighted average yield does not provide an accurate reflection of yield curve exposure.
- By reducing the discount rate by 1% (due to the application of the MfAD), the liability duration is increased.
- A market curve approach would solve the issues of both recursivity and yield averaging.
  - Currently not allowed by the standards.
  - May be allowed in the future as this concept has been in the standards pipeline for a few years.
- At present, the only way to reduce the recursivity is to reduce the flexibility given to the manager.

### Proposed

- Amend the formulation of the MfAD to reduce or eliminate the impact on duration.
  - More details on MfAD are provided in Appendix A.
- We have suggested an improvement to the yield calculation using the duration weighting in Appendix B.

## Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

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- We compared 3 strategies commonly used by institutional investors for addressing interest rate risk.
  - A. Duration match,
  - B. Hybrid solution (duration buckets approach): matching of total duration and dollar-duration of liabilities within 4 duration buckets with provincial sub-component of the FTSE TMX Canada Bond Index(1-5 year / 5-10 year / 10-20 year / 20+ years), and
  - C. Cash flow match.
  
- These strategies are detailed on the following pages.

## ... Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

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### A. Duration Matching

- Duration matching involves the construction of a bond portfolio such that its Effective duration<sup>1</sup> equals that of the liabilities.
  - Protects against parallel shifts of the yield curve, which explains approximately 85%-90%<sup>2</sup> of interest rate risk.
- Pros
  - Allows for significant flexibility in implementation.
    - Bullet portfolio (cash flows concentrated near the desired duration);
    - Barbell portfolio (cash flows concentrated at short and long maturities); or
    - Cash flows can be spread over the entire yield curve.
  - Following a new valuation, it is easy to adjust the portfolio duration to the revised liability duration.
- Cons
  - The tracking error is the largest among the hedging strategies. This means the portfolio could significantly underperform the liabilities in the case of an unfavorable yield curve move.

<sup>1</sup> Please refer to Appendix C for a discussion of the different duration measures.

<sup>2</sup> Please refer to Appendix E.

## ... Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

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### B. Hybrid solution (duration buckets approach): matching of total duration and dollar-duration of liabilities within 4 duration buckets.

- This is an intermediate option between duration matching and cash flow matching.
  - The buckets are spread across the yield curve.
  - The dollar-duration of liabilities for each bucket (and at the portfolio level) is matched as closely as possible with provincial sub-component of the FTSE TMX CANADA universe (short term, mid term, 10-20 years, 20+)
- In terms of pros and cons, the strategy stands between cash flow matching and duration matching for:
  - Ease of implementation.
  - Cost to rebalance.
  - Flexibility to add value.
  - Tracking error.

## ... Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

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### Other hybrid strategies

- There is a spectrum of strategies that could be implemented between duration matching and cash flow matching, providing MPI with the opportunity to tailor its own strategy. We list two that would fit between cash flow matching and matching of dollar-duration within 4 duration buckets:
  1. Match the desired number of key rates: Example, match key rates for years 1, 2, 3, 4, 5, 7, 10, 15, 22.
    - As key rates are added, the strategy converges to cash flow matching.
    - Adding key rates concentrated in the short section of the curve leads to a closer match in the short term, where the investment universe is more liquid, while providing flexibility in the longer term.
  2. Match cash flows for the first 10 years and duration thereafter (horizon matching).
    - The number of years in the initial period can be adjusted according to MPI's desires.
    - The duration matching after the cash flow matching period can be further broken down to match some key rates.

## ... Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

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### ... Other hybrid strategies

#### ▪ Pros

- The advantages of using key rate durations or using horizon matching relative to cash flow matching are :
  - Reduces the difficulties in finding bonds at longer maturities to match the cash flows.
  - Expected to have lower rebalancing costs as cash flows are revised.
    - ♦ Easy to trade bonds in the short term.
    - ♦ Easy to adjust duration in longer periods.
    - ♦ Cash flow projection is expected to be more reliable in the short term than in the long term.
  - By adding key rates or extending the horizon of cash flow matching, the hedging improves relative to matching dollar-duration in 4 duration buckets.

#### ▪ Cons

- Provides less protection than cash flow matching (although still very good).
- As constraints are added,
  - The manager has less opportunity to add value.
  - The manager will need systems capable of determining that the constraints are met while maximizing return.

## ... Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

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### C. Cash Flow Matching

- Strict cash flow matching involves the precise matching of liability cash flows with asset cash flows.
  - Protects against parallel and non-parallel shifts of the yield curve (i.e. any change in the shape and level of the yield curve), removing virtually all interest rate risk.
- Pros
  - It is the tightest hedging strategy with the lowest tracking error.
- Cons
  - It can be difficult to implement perfectly, as the bonds need to be available at each liability cash flow maturity, which can be difficult at longer maturities.
  - It can be costly, as a revision in cash flows following either an experience or assumption change triggers trading at a large number of maturities.
  - If the guidelines become more restrictive as part of the move to cash flow matching, this will make it more difficult for the manager to add value when taking active positions.
  - In an upward sloping yield curve environment, imposing an allocation in the short end of the curve tends to reduce the portfolio yield.
    - The actual reduction, if any, is a function of the shape of the yield curve.

## ... Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

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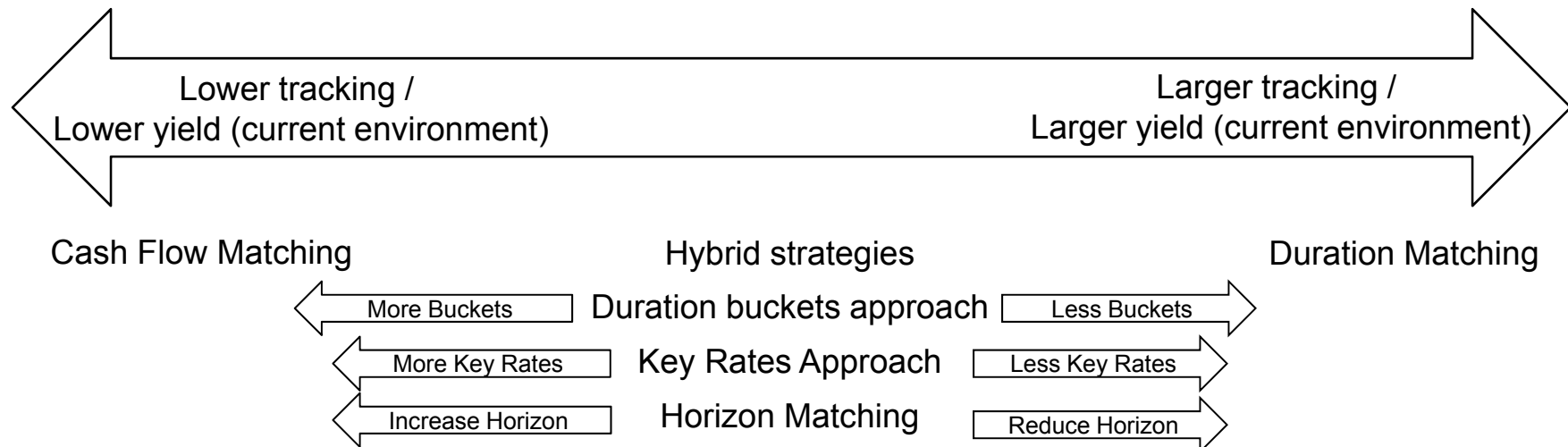
- The numbers provided hereafter are meant to give MPI a sense of the magnitude of the difference between each of the strategies.
  - They provide the full spectrum for decision making.
  - They indicate the maximum risk reduction that can be achieved.
  - They inform on the magnitude of residual risk for a diverse set of strategies.
- With these numbers and the information provided in the previous pages, MPI can determine the magnitude of tracking error desired and the general approach for the hedging strategy. MPI can then initiate discussions with its bond manager who will be responsible (given the approach chosen and the tracking requested) for designing the actual portfolio and assisting in the final refinement of the strategy.
- The estimated annual tracking error<sup>1</sup> between MPI's liabilities and fixed income portfolio for the 3 strategies are:
  - A. Duration match: 120 bps;
  - B. Hybrid solution (duration buckets approach): 60 bps;
  - C. Cash flow match: 15 bps.
- Assuming liabilities of \$1.0B, a 2 standard deviations adverse event (2.3% chance or once in 43 years) would respectively result in funding deficiencies in the range of:
  - A. Duration match: \$24M;
  - B. Hybrid solution (duration buckets approach): \$12M;
  - C. Cash flow match: \$3M.

<sup>1</sup> Figures were obtained from an outside manager. Additional information is provided in Appendix E.



## ... Analysis of the interest rate risk mitigation strategy Marketable bonds portfolio strategy

- In the current yield curve environment, it is estimated that the yield reduction to go from duration matching to cash flow matching is in the 40-50 bps range.
  - Intermediate strategy approximately in the middle.
  - Highly dependent on the shape of the yield curve.
    - A flat curve would give the same yield for all strategies.
- Notes applicable to the comparison:
  - Only the marketable bond portfolio was used (i.e. MUSH was excluded).
  - Liabilities were calculated by discounting liability cash flows with a provincial yield curve<sup>1</sup>.
  - Only provincial bonds are used in the asset portfolio.
- Summary:



<sup>1</sup> Additional information is provided in Appendix E.

## Analysis of the interest rate risk mitigation strategy Implementation considerations

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- The ability of the bond manager to manage a cash flow matching or hybrid strategy:
  - Characteristics of liability matching managers:
    - Team with experience of managing liability matching portfolios. Ideally, the team should be dedicated to matching liabilities and include in-house actuarial expertise;
    - Extensive knowledge of the Canadian fixed income market, particularly the provincial and municipal segments;
    - Ability to assess the quality of an issuer to avoid risk of default or multi-notch downgrade;
    - Structured and documented investment process to minimize risk of errors;
    - Experience in managing similar mandates.
  - Required tools:
    - Ability to source and model annual cash flows from the asset portfolio (mainly provincial bonds but also amortizing securities);
    - Ability to model and discount liabilities;
    - Optimization tool to construct an asset portfolio that matches the liabilities and maximizes yield, subject to diversification and liquidity constraints. This should include the ability to optimize based on annual cash flows or key rate durations;
    - Automated monitoring tool to allow for daily monitoring of how the asset portfolio is matching the liabilities across the term structure.

## ... Analysis of the interest rate risk mitigation strategy Implementation considerations

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- Decreased opportunity for the bond manager to maximize return.
  - Generally, the closer the strategy is to cash flow matching, the less flexibility the manager is given in managing the portfolio to add value.
- The approximate tracking errors that were displayed assume bonds are valued at market and liabilities are valued according to a market curve.
  - The consequences of using the portfolio yield is discussed in Appendix E.
- A portion of the liabilities is indexed, however:
  - Real return bonds (RRBs) are not a good inflation hedge.
    - The underlying inflation according to nominal and real return bonds do not match the inflation used to value liabilities (based on a survey of Canadian banks).
    - RRBs suffer from a limited offering.
    - Supply and demand for RRBs have a large impact on the market value.
    - Therefore, the economics of the inflation protection from RRBs do not match the financial impact to MPI on a year by year basis.
  - MPI decided to accept the short term inflation risk and has accounted for this risk through margins and reserve. The “excess portfolio” was also designed to provide some long-term protection against inflation.
    - Over the longer term, the real estate and infrastructure allocations in the “excess portfolio” are expected to provide some inflation protection.
      - ♦ The composition of the “excess portfolio” will be addressed in Phase II.

## Transition and benchmarking

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- Transition to a tighter hedging strategy
  - It will be the manager's role to develop the actual portfolio that meets the strategy's requirements.
  - The marketable bonds portfolio has a value of approximately \$1B.
    - It will take time to realign the portfolio.
  - The bond manager should develop a plan to minimize the cost of transactions.
    - Only a portion of the portfolio will need to be sold.
    - The manager should give an estimate of the cost of the transition.
  - In order to smooth the transition of the portfolio, we would suggest establishing a schedule such that the level of hedging is increased gradually. This strategy would need to be developed with the bond manager but an example of such an approach is:
    - Initially (time=t): match Macaulay duration within a  $\pm 1$  year band (current strategy).
    - At t+1 months: match 3 key rates (7, 15, 22).
    - At t+2 months: match 6 key rates (3, 5, 7, 10, 15, 22).
    - At t+3 months: match 9 key rates (1, 2, 3, 4, 5, 7, 10, 15, 22).

## ...Transition and benchmarking

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- Benchmarking:
  - Market benchmarks are not appropriate to benchmark asset-liability matching strategies because they do not represent the liabilities of MPI.
  - The recommended benchmark should be the return on the present value of cash flows over the measurement period.
    - More technical details are provided in Appendix F.
  - Frequency:
    - New cash flows should be provided to the manager annually, or more frequently if there was a significant change;
    - The main monitoring period should be annual, but interim monitoring periods (quarterly or monthly) can prove valuable.

## Conclusion and next steps

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### Summary of recommendations for Phase I

- Amend the formulation of the MfAD to reduce or eliminate the impact on duration.
- Change the calculation of the portfolio yield used for the valuation to adopt the revised duration weighted average yield methodology.
- Work with the manager to assess and align its capabilities to implement a tighter hedging strategy in light of the provided list of characteristics and tools required.

## ... Conclusion and next steps

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### Implementation of recommendations for Phase I:

- Assuming the manager's capabilities are aligned satisfactorily, we recommend adopting a tighter hedging strategy.
  - MPI's current situation (target to break even, premium rate stability objective and small level of reserves allowed) suggest a tighter hedging strategy than duration matching:
  - However, given the higher rebalancing costs and the difficulty in finding bonds at some longer maturities, we do not recommend a cash flow matching approach.
  - We favor a more flexible approach where key rates 1, 2, 3, 4, 5, 7, 10, 15, 22 are matched.
    - Tight matching in the short term, where the bonds are more liquid and rates more volatile.
    - More flexible at the longer end of the yield curve, where bonds are more difficult to find at specific maturities and where the yields tend to move together.
- The hedging strategy should hedge the liabilities that include the MfAD as this is the measure that drives the volatility in premiums.
- MPI will need to consider how much latitude, if any, it may want to provide to its bond manager to deviate from the hedged portfolio (for example, by adding credit risk or making duration calls).
  - MPI would need to determine the acceptable degree of mismatch between assets and liabilities for the opportunity to add incremental return;
  - At a plan level, as MPI tightens its hedging strategy and reduces tracking error, this will be the primary risk of the hedging portfolio (that is, as you reduce tracking error from any mismatch between assets and liabilities, the remaining risk is simply the risk you are taking by giving your bond manager latitude to add value).
    - This is magnified by calculating liabilities with portfolio yield.

## ... Conclusion and next steps

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### Next steps

- Determine the hedging strategy to be used in Phase II.
  - We will illustrate the projection with various levels of hedging, but the optimization of the excess portfolio will be carried out on a single level.
- Agree on asset classes to include in Phase II and risk / return assumptions for these asset classes.
- Proceed with Phase II.
  
- Please refer to Appendix G for return and risk assumptions.



## ... Conclusion and next steps

### Timeline

Stage	Parties	Timing
Assumptions and Objectives Meeting	MPI / AH	Mid to end July 2014
Phase I		
Review of governance, investment and liability documents	AH	August 2014
Study of interest rate risk management strategy	AH	August - September 2014
Reporting on Phase I - Conference call	MPI / AH	September 2014
Investment Committee Working Group (ICWG) Presentation	MPI / AH	September 15, 2014
Phase II		
Data request	AH	August 2014
Provide data*	MPI	September 2, 2014
Projection of key outcomes for current investment strategy	AH	October 13, 2014
Discussion of results - Conference call	MPI / AH	October 17, 2014
Testing of alternative investment strategies and analysis	AH	November 17, 2014
Discussion of results and confirmations - Conference call	MPI / AH	November 21, 2014
Final optimization report	AH	December 5, 2014
Implementation considerations		
Fixed income allocation	AH	December 5, 2014
Canadian and U.S. equity style	AH	December 5, 2014
Operational cash flow requirements	AH	December 5, 2014
Review of Investment Policy Statement	AH	December 5, 2014

\* Delays in reception of data would be reflected throughout the project in delayed dates for deliverables.



## Appendix A: Discount Rate – MfAD and MUSH

## Appendix A: Discount Rate – MfAD and MUSH

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### MfAD

- Some margins are reflected as additional cash flows, while there is also a margin of 1% on the discount rate.
- These margins increase the duration of the liabilities.
- MPI has asked if these margins should be part of the interest rate hedging strategy.
- In the case of margins as cash flows, we assume they reflect the uncertainty of cash flows.
  - In a cash flow matching exercise, our preference would be for the bonds to mature such that these cash flows are available to pay benefits if the risks materialize.
  - As such, we think that, irrespective of the actual hedging strategy, it should be applied to cash flows that include the margin.

## ... Appendix A: Discount Rate – MfAD and MUSH

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### ... MfAD

- 1% reduction of the discount rate.
  - We assume this margin covers some investment risk, but also a variety of other risks.
  - The more the portfolio moves toward a cash flow matching strategy, the less uncertain the bond portfolio return.
  - In that context, we think this margin should be reviewed.
  - MPI may want to consider basing the margins on a concept similar to the Minimum Capital Test. It would involve a listing of risks and the application of factors to elements correlated with these risks.
    - If, for example, factors are applied to equity exposure and premiums, the liability duration is not affected.
      - ♦ Even a partial application would help to reduce the magnitude of the margin's impact on duration.
      - ♦ Cash flows can also be grossed up to include the MfAD.
  - As fluctuations in liabilities including the margins would impact premium rate setting, any remaining impact of the margins on duration should be part of the interest rate hedging strategy.

## ... Appendix A: Discount Rate – MfAD and MUSH

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### MUSH

- The book value accounting of MUSH introduces an additional layer of complexity. However, we understand that:
  - They are not readily marketable;
  - They fill a secondary role for MPI of supporting the Manitoba economy;
  - There is political will to continue buying them; and
  - They provide an attractive yield and predictable cash flows.
- Given this complexity, we provide a series of options for MUSH:
  1. In whole or in part, consider them as part of the “excess portfolio”;
  2. Keep them in the liability supporting portfolio and continue to use duration weighted average yield to discount the entire liabilities.
    - ♦ However, the duration weighted average yield calculation should be revised to be applied bond per bond. More details are provided in the following Appendix B.



## Appendix B: Average yield calculation methodologies

## Appendix B: Average yield calculation methodologies

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- Using portfolio yield to discount liabilities does not appropriately reflect yield curve exposure.
  - As a corrective measure, MPI has partially implemented duration weighting for the average yield instead of only market weighting.
  - The duration weighted method is known to give more appropriate representation of yield curve exposure.
    - However, in its application, MPI calculates market weighted yields for Government bonds, corporate bonds, floating rate notes and cash, before weighting these pieces by their dollar duration.
    - We recommend that MPI considers the bond portfolio on a bond by bond basis to calculate the duration weighted average yield.
      - ♦ As an illustration, we calculated yields on the portfolio of marketable bonds as at February 28, 2014 (excluding some bonds not available on Bloomberg).
        - The calculated market weighted average yield was 2.8% - Not recommended.
        - Applying MPI's current methodology (described above) results in an average yield of 3.0% (0.2% increase) - Not recommended.
        - The duration weighted average yield calculated on individual bonds was 3.3% (0.5% increase) - Alternative recommended here.

## Appendix B: Average yield calculation methodologies

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- Why we think duration weighting provides a better averaging methodology to reflect the yield curve exposure:
  - Assume a portfolio of perfect cash flow matching is implemented, meaning the asset cash flows and liability cash flows are identical in both timing and amount.
  - We would then want the bond portfolio and the liabilities to have exactly the same value.
  - By definition, the discount rate that makes them equal is the portfolio's internal rate of return (IRR).
  - The IRR calculated from the same data as the illustration of market weighted average yield and duration weighted average yield was 3.3%, very close to the duration weighted average yield calculated on a bond by bond basis.



## ... Appendix B: Average yield calculation methodologies

The Market Value Weighted Average Yield is a calculation performed bond by bond. The Duration Weighted Average Yield should also be done bond per bond.

Bonds	Yield	Duration (D)	Market Value (MV)
A			
B			
C			
D			
E			
F			
G			
H			
I			
J			

Market value weighted average yield:

$$2.8\% = \frac{\text{Sum (MV x Yield)}}{\text{Sum (MV)}}$$

Duration weighted average yield:

$$3.3\% = \frac{\text{Sum (D x MV x Yield)}}{\text{Sum (D x MV)}}$$

## ... Appendix B: Average yield calculation methodologies

MPI's current practice is a mix of Market Value Weighted Average Yield and Duration Weighted Average Yield.

Bonds	Yield	Duration (D)	Market Value (MV)	Type	Market Weighted Average Yield (MWAY)	Group Duration (GD)	Group Market Value (GMV)	Duration Weighted Average Yield	
A				Gov	$\frac{\text{Sum (MV x Yield)}}{\text{Sum (MV)}}$	$\frac{\text{Sum (MV x D)}}{\text{Sum (MV)}}$	Sum (MV)	$\frac{\text{Sum (MWAY x GD x GMV)}}{\text{Sum (GD x MV)}} = 3.0\%$	
B			Gov						
C			Gov						
D			Gov						
<hr/>									
E				Corp	$\frac{\text{Sum (MV x Yield)}}{\text{Sum (MV)}}$	$\frac{\text{Sum (MV x D)}}{\text{Sum (MV)}}$	Sum (MV)		
F			Corp						
<hr/>									
G				Floating Rate	$\frac{\text{Sum (MV x Yield)}}{\text{Sum (MV)}}$	$\frac{\text{Sum (MV x D)}}{\text{Sum (MV)}}$	Sum (MV)		
H				Floating Rate					
<hr/>									
I				Cash	$\frac{\text{Sum (MV x Yield)}}{\text{Sum (MV)}}$	$\frac{\text{Sum (MV x D)}}{\text{Sum (MV)}}$	Sum (MV)		
J				Cash					



## Appendix C: Duration measures

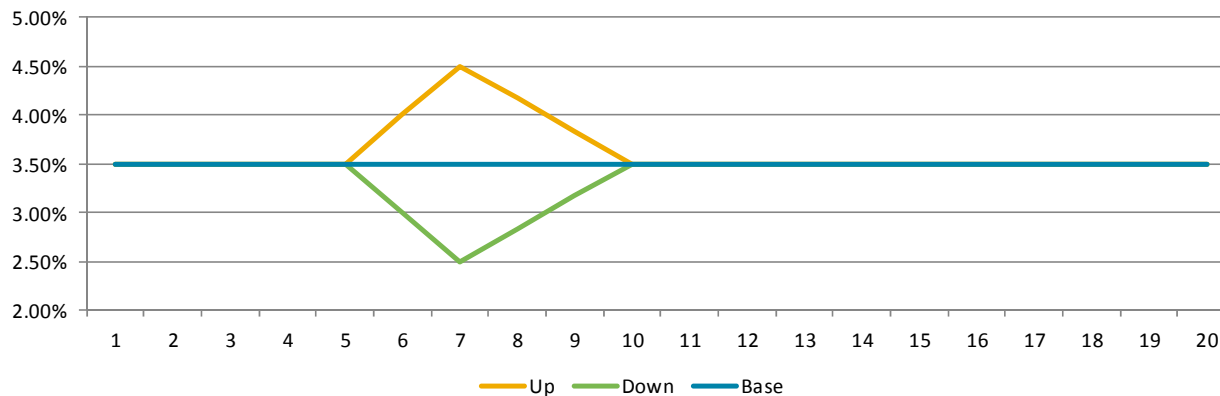
## Appendix C: Duration measures

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- Macaulay duration:
  - Average time of cash flows weighted by their present value.
  - $\sum_t [t \times CF_t \times (1+i)^{-t}] / \sum_t [CF_t \times (1+i)^{-t}]$ , where:
    - t is the time;
    - i is the interest rate;
    - $CF_t$  is the cash flow at time t.
  
- Modified duration:
  - First derivative of the price of an option-free bond relative to the interest rate.
    - That is, it measures the sensitivity of the price of an option-free bond to changes in interest rates.
  - Equal to the Macaulay duration discounted for one period.
  - $(\sum_t [t \times CF_t \times (1+i)^{-t}] / \sum_t [CF_t \times (1+i)^{-t}]) / (1+i)$
  
- Effective duration:
  - Measures the sensitivity of the price of a bond to a change in interest rates.
  - For an option-free bond, it is equal to the modified duration.
  - For bonds with options, a pricing model is required.

## ... Appendix C: Duration measures

- Effective duration (continued):
  - $[P_- - P_+] / (2 \times P_0 \times \Delta i)$ , where:
    - $P_+$  is the price after an increase in interest rate of  $\Delta i$ ;
    - $P_-$  is the price after a decrease in interest rate of  $\Delta i$ ;
    - $P_0$  is the initial price of the bond;
    - $\Delta i$  is the change in interest rate.
- Key rate duration stems from the calculation of Effective duration on specific sections of the yield curve.
  - The usual practice is to interpolate rates between key rates. As an example, assume one uses key rates 5, 7 and 10 years. In order to calculate the 7-year key rate, the spot rate for year 7 is going to be shocked by 1%. All spot rates below year 5 and above year 10 will be unchanged. The shock is interpolated linearly between years 5 and 7 and between years 7 and 10.
  - The sum of all key rate durations is equal to total Effective duration.

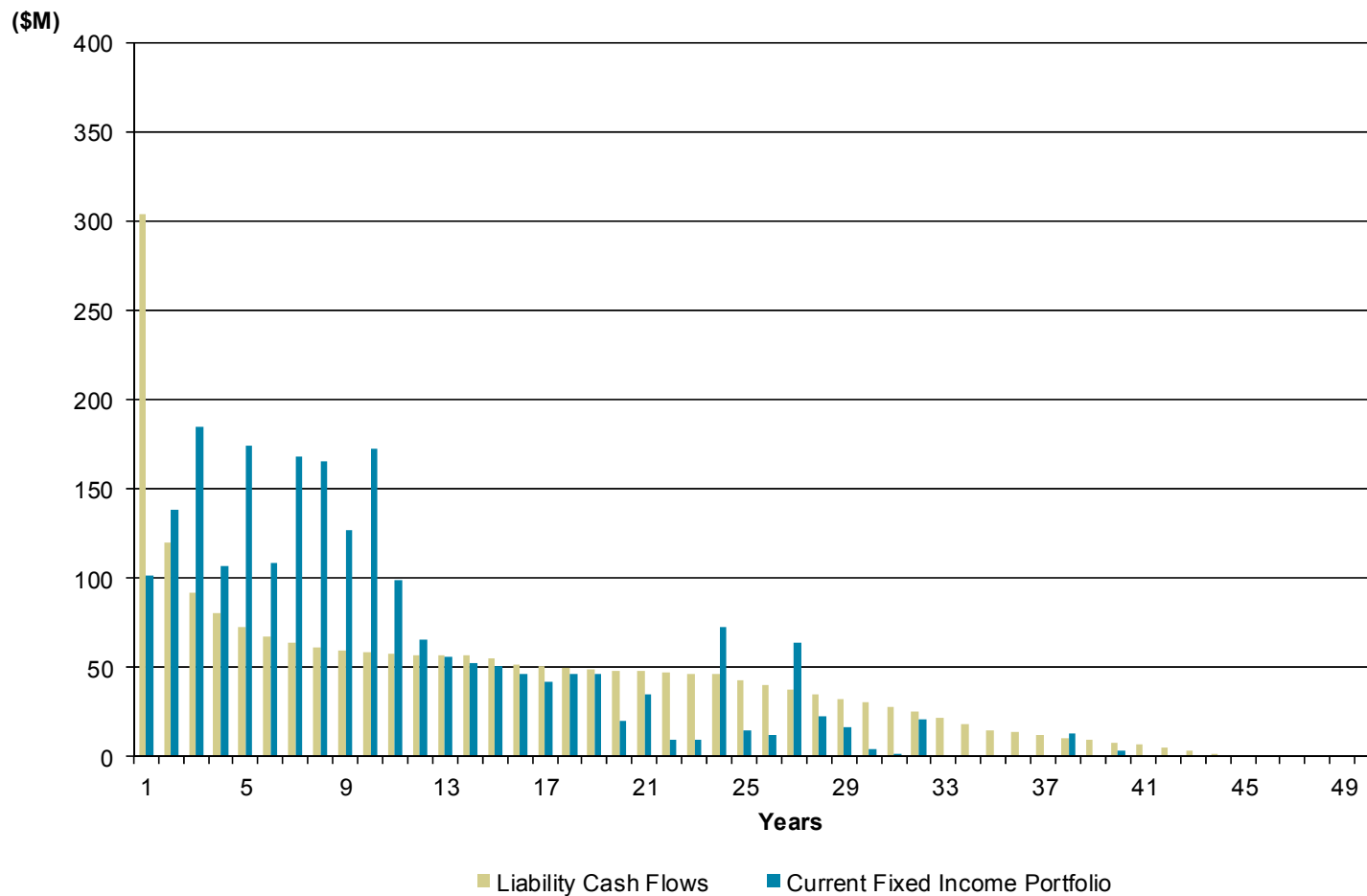




## Appendix D: Cash flow profiles

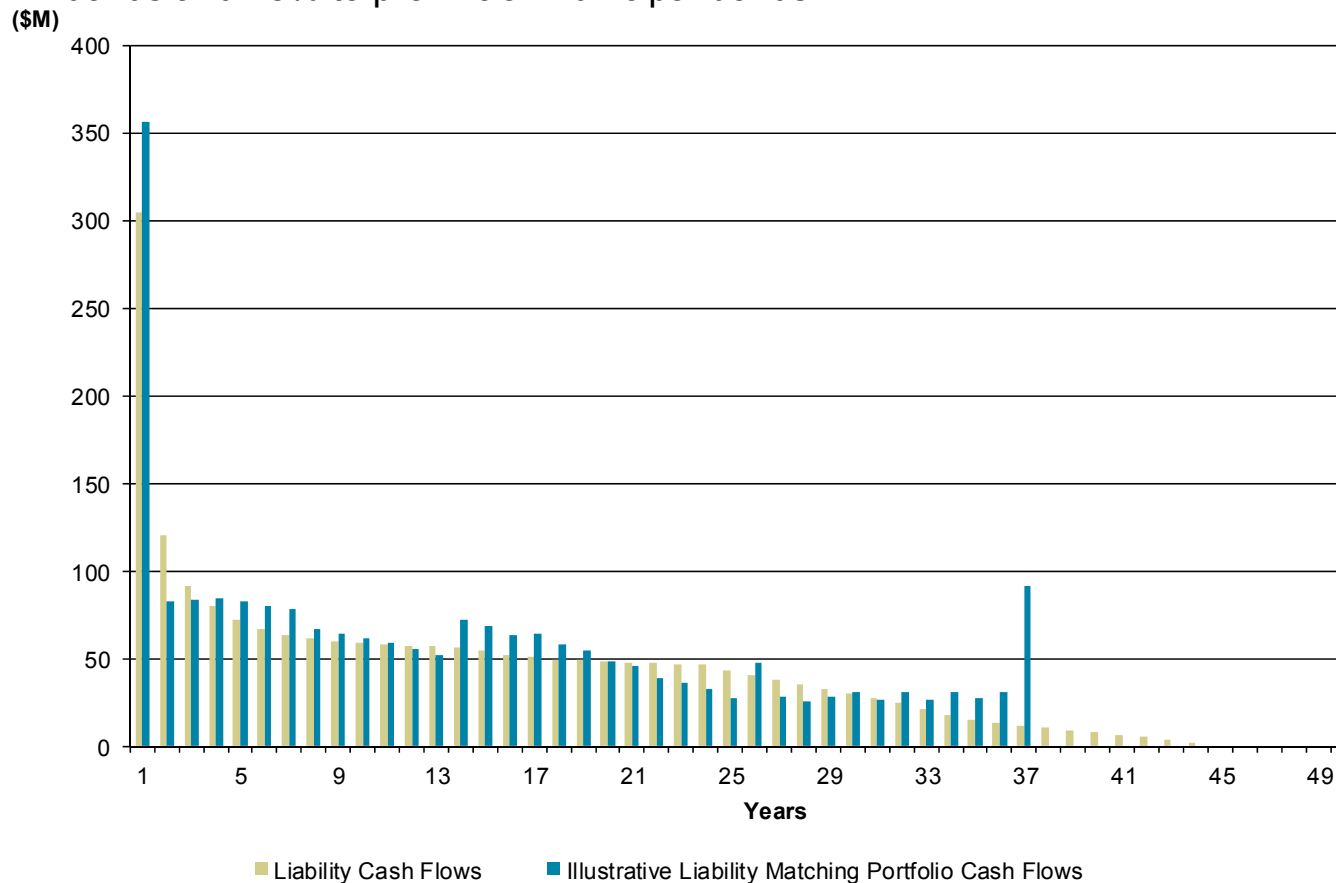
## Appendix D: Cash flow profiles

- The following graph presents the estimated cash flows of liabilities and current fixed income portfolio, including the MUSH bonds. We see that asset cash flows exceed liability cash flows in the short and mid term, while liability cash flows exceed asset cash flows in the longer term.



## ... Appendix D: Cash flow profiles

- We illustrate the cash flows of a liability matching portfolio built using a one-year bond and 4 bucket funds. Each bucket fund has approximately equal annual cash flows. The buckets are defined by the years 1-7, 8-13, 14-22 and 23-36. The first 3 funds allocate 40% to Federal bonds, 35% to provincial/municipal bonds and 25% to corporate bonds. The last fund allocates 25% to Federal bonds and 75% to provincial/municipal bonds.



- The resulting cash flow profile is much closer to that of the liabilities.





## Appendix E: Additional information on hedging strategies

## Appendix E: Additional information on hedging strategies

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### A. Duration match;

– Current strategy used by MPI, except for the following:

- While MPI sets a tolerance band of  $\pm 1$  year, our test involved exact duration matching.
- MPI uses the Macaulay duration. Since MPI's objective is to more accurately match the short term relative value between assets and liabilities (which is driven by interest rate changes), we used Effective duration instead of Macaulay duration<sup>1</sup>.

### B. Hybrid solution: matching of total duration and dollar-duration of liabilities within 4 duration buckets with provincial sub-component of the FTSE TMX Canada Bond Index (1-5 year / 5-10 year / 10-20 year / 20+ years).

– Each bucket is constructed by taking all the provincial bonds listed in the FTSE TMX Canada Universe index with maturity within the bands selected for each bucket. The allocation to each bond within a bucket is therefore driven by its market value relative to the total market value of provincial bonds.

### C. Cash flow match:

– The manager was asked to match liability cash flows as closely as possible with provincial bonds, taking into account the availability of bonds at each maturity.

- In all cases, only provincial bonds were used.
- The calculation of the tracking error was based on volatility of interest rates over the last 10 years.

<sup>1</sup> Additional information on duration is provided in Appendix C.

## ... Appendix E: Additional information on hedging strategies

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Validation of reasonability of tracking error numbers provided by outside manager:

- Volatility of the Federal type 10 –year bond over the last 10 years has been 0.92% (using December data).
- The duration is approximately 10 years.
- Parallel shifts account for about 90% of interest rate risk (see *Professional's Handbook of Financial Risk Management*, Lev Borodovsky, Marc Lore).  $0.92\% \times 10 / 90\% = 1.02\%$ , quite close to the 1.2% provided.
- Perfect cash flow match should have a tracking very close to 0, but since bonds are not available to each required maturity, there should still be some positive tracking. 0.15% makes sense.
- The hybrid option would be expected to be somewhere in the middle, 0.6% therefore also makes sense.

## ... Appendix E: Additional information on hedging strategies

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Impact of using portfolio yield instead of provincial market curve:

- At the maximum hedging end of the spectrum (minimum risk), there is cash flow matching in a buy and hold strategy. The manager has very little flexibility to change the portfolio to add value.
  - With perfect cash flow matching and the internal rate of return as the discount rate, by definition, assets equal liabilities.
  - We illustrated in Appendix B that the duration weighted average yield is close to the internal rate of return.
  - Assuming a buy and hold strategy, there is no noise in the discount rate coming from the active management of the manager.
  - Consequently, using the duration weighted average yield to discount liabilities would not change the tracking error from the 0.15% obtained using the provincial curve.
  
- At the other end of the spectrum, the duration is matched and the manager has significant flexibility in the management of the portfolio.
  - It is not clear how the discount yield methodology, excluding active management, would impact the tracking error. With parallel shifts accounting for about 90% of interest rate risk (reference on previous page), we would expect the tracking to be in the same range as if the cash flows were discounted with a market curve. It would however be safer to assume it is slightly higher.
  - The manager's activity will have a significant impact on the tracking error, larger than if the liabilities were valued with a market curve because of the link between the portfolio yield and the liability value.
    - This is true for all hedging strategies.



## Appendix F: Benchmarking

## Appendix F: Benchmarking

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- The recommended benchmark should be the return on the present value of cash flows over the measurement period.
  - $P_0$  is the present value of the cash flows provided to the manager at the beginning of the period, discounted at the then applicable actuarial valuation rate. It is the value of liabilities at the beginning of the period.
  - $P_1$  is present value of the same set of cash flows, aged for one period and discounted at the actuarial valuation rate at the end of the period.
    - Aging the cash flows means reducing the maturity of each cash flows by one period and eliminating cash flows whose maturity at the beginning of the period was less than one period.
  - CFOut is the sum of liability cash flows that expire in the period.
  - $r$ , the return for the period, is calculated as:
    - $r = [P_1 - 0.5x(-\text{CFOut})] / [P_0 + 0.5x(-\text{CFOut})] - 1.$
  - As a revised set of cash flows is not sent to the manager each time additional premiums are collected, these new inflows in the period should be excluded from the calculation.



## Appendix G: Asset classes return and risk assumptions

# Aon Hewitt Capital Market Assumptions & Methodology (Canadian Version)

*10-Year Horizon as at July 31, 2014*

*Produced August 8<sup>th</sup>, 2014*







## Table of Contents

**Section 1: Introduction..... 3**

**Section 2: Capital Market Benchmarks ..... 4**

**Section 3: Term Structure Environment..... 7**

**Section 4: Expected Returns, Yields, Standard Deviations and Correlations..... 8**

**Section 4: Expected Returns, Yields, Standard Deviations and Correlations..... 9**

**Section 5: Information and Research Sources ..... 21**

**Appendix I: Asset Class Risk/Reward Relationship ..... 22**

**Appendix II: Return Distribution by Economic State..... 23**

**Disclaimer Language ..... 24**

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## Section 1: Introduction

This document summarizes Aon Hewitt Canada's **10-year** forward-looking capital market assumptions ("CMAs") that are to be used in the determination of strategic portfolio allocations and related modeling or projection studies. The methodology described herein is also the basis of longer-term 30-yr CMAs that can be used to determine an expected long-term portfolio return for the purposes of performing an actuarial valuation.

The CMAs presented in this document represent Aon Hewitt Canada's best-estimate view of future economic conditions and are established by a national committee comprised of Investment and Risk Management practitioners. The determination of the CMAs involve a thorough analysis of all available quantitative and qualitative resources including, but not limited to, in-house analyses of historical returns, external analyses of long-term historical returns presented in published research articles, the actual state of the market and the good judgment of the national assumptions committee. Additionally, the CMAs reflect the analyses and research done by Aon Hewitt investment and risk management colleagues around the globe and are checked for global consistency.

### Notes:

1. In order to be as accurate and up-to-date as possible, the assumptions are reviewed and, if needed, adjusted, on a monthly basis.
2. The return assumptions presented in this document are for indices only and do not consider active management fees or expected value added except in the case of certain alternative asset classes (e.g. hedge funds) where the return assumptions are assumed net of fees and the added value is inherent to the asset class.

## Section 2: Capital Market Benchmarks

The following are the standard market indices used as return proxies for each asset class in the Aon Hewitt Model:

<b>Asset Class</b>	<b>Benchmark Index</b>
<b><i>Inflation</i></b>	Consumers Price Index (CPI)
<b><i>Fixed Income</i></b>	
91-day T-Bills	FTSE TMX Canada 91 Day TBill Index
182-day T-Bills	FTSE TMX Canada 182 Day TBill Index
Banker's Acceptance	Bank of Canada - V39071
Gov of Canada Benchmark 5-yr Bond	Bank of Canada - V39053
Gov of Canada Benchmark 7-yr Bond	Bank of Canada - V39054
Gov of Canada Benchmark Long-Term Bond	Bank of Canada - V39056
Gov of Canada Benchmark Long-Term RRB	Bank of Canada - V39057
Federal Real Return Bonds	FTSE TMX Canada Real Return Federal Bond Index
Overall Real Return Bonds	FTSE TMX Canada Real Return Bond Index
Short-Term Federal Bonds	FTSE TMX Canada Short Term Federal Bond Index
Short-Term Provincial Bonds	FTSE TMX Canada Short Term Provincial Bond Index
Short-Term Municipal Bonds	FTSE TMX Canada Short Term Municipal Bond Index
Short-Term Corporate AAA/AA Bonds	FTSE TMX Canada Short Term Corporate AA+ Bond Index
Short-Term Corporate A Bonds	FTSE TMX Canada Short Term Corporate A Bond Index
Short-Term Corporate BBB Bonds	FTSE TMX Canada Short Term Corporate BBB Bond Index
Short-Term Government Bonds	FTSE TMX Canada Short Term Government Bond Index
Short-Term Corporate Bonds	FTSE TMX Canada Short Term Corporate Bond Index
Mortgages	FTSE TMX Canada Short Term Corporate Bond Index
Short-Term Bonds	FTSE TMX Canada Short Term Overall Bond Index
Mid-Term Federal Bonds	FTSE TMX Canada Mid Term Federal Bond Index
Mid-Term Provincial Bonds	FTSE TMX Canada Mid Term Provincial Bond Index
Mid-Term Municipal Bonds	FTSE TMX Canada Mid Term Municipal Bond Index
Mid-Term Corporate AAA/AA Bonds	FTSE TMX Canada Mid Term Corporate AA+ Bond Index
Mid-Term Corporate A Bonds	FTSE TMX Canada Mid Term Corporate A Bond Index
Mid-Term Corporate BBB Bonds	FTSE TMX Canada Mid Term Corporate BBB Bond Index

## Section 2: Capital Market Benchmarks

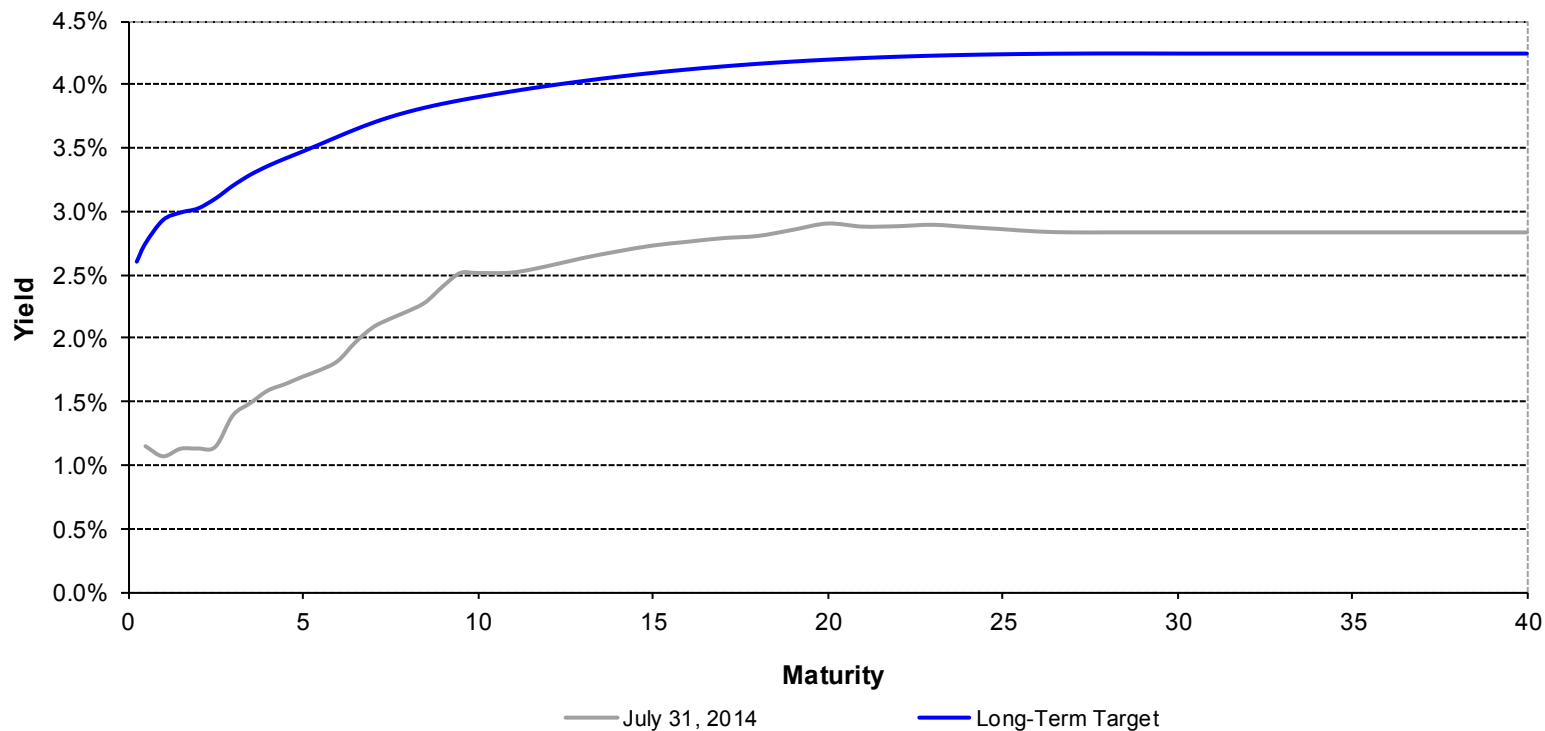
<b>Asset Class</b>	<b>Benchmark Index</b>
<b><i>Fixed Income</i></b>	
Mid-Term Government Bonds	FTSE TMX Canada Mid Term Government Bond Index
Mid-Term Corporate Bonds	FTSE TMX Canada Mid Term Corporate Bond Index
Mid-Term Bonds	FTSE TMX Canada Mid Term Overall Bond Index
Long-Term Federal Bonds	FTSE TMX Canada Long Term Federal Bond Index
Long-Term Provincial Bonds	FTSE TMX Canada Long Term Provincial Bond Index
Long-Term Municipal Bonds	FTSE TMX Canada Long Term Municipal Bond Index
Long-Term Corporate AAA/AA Bonds	FTSE TMX Canada Long Term Corporate AA+ Bond Index
Long-Term Corporate A Bonds	FTSE TMX Canada Long Term Corporate A Bond Index
Long-Term Corporate BBB Bonds	FTSE TMX Canada Long Term Corporate BBB Bond Index
Long-Term Government Bonds	FTSE TMX Canada Long Term Government Bond Index
Long-Term Corporate Bonds	FTSE TMX Canada Long Term Corporate Bond Index
Long-Term Bonds	FTSE TMX Canada Long Term Overall Bond Index
Extra Long-Term Bonds	FTSE TMX Canada 20+ Strip Bond Index
Universe Federal Bonds	FTSE TMX Canada Federal Bond Index
Universe Provincial Bonds	FTSE TMX Canada Provincial Bond Index
Universe Municipal Bonds	FTSE TMX Canada Municipal Bond Index
Universe Corporate AAA/AA Bonds	FTSE TMX Canada Corporate AA+ Bond Index
Universe Corporate A Bonds	FTSE TMX Canada Corporate A Bond Index
Universe Corporate BBB Bonds	FTSE TMX Canada Corporate BBB Bond Index
Universe Government Bonds	FTSE TMX Canada All Government Bond Index
Universe Corporate Bonds	FTSE TMX Canada All Corporate Bond Index
Universe Bonds	FTSE TMX Canada Universe Bond Index
Global Bonds	Barclays Global Aggregate (CAD)
High Yield Bonds (USD), hedged	Merrill Lynch, High Yield Master II (USD)
Bank Loans (USD), hedged	CS Leveraged Loan Index (USD)
Emerging Market Debt (USD), hedged	JPM EMBI Global Diversified (USD)

## Section 2: Capital Market Benchmarks

<b>Asset Class</b>	<b>Benchmark Index</b>
<b><i>Equities</i></b>	
Canadian Equities	S&P/TSX Capped Composite
Canadian Equities, Small Cap	BMO - Nesbitt Burns, Small Cap, weighted
Canadian Equities, Low Volatility	S&P/TSX Composite Low Volatility Index
U.S. Equities, unhedged	S&P 500 (CAD)
U.S. Equities, hedged	S&P 500 (USD)
U.S. Equities, Small/Mid Cap, unhedged	Russell 2500 (CAD)
U.S. Equities, Small Cap, unhedged	Russell 2000 (CAD)
International Equities, unhedged	MSCI - E.A.F.E. (CAD)
International Equities, hedged	MSCI - E.A.F.E. (Local Currency)
International Equities, Small Cap, unhedged	MSCI - E.A.F.E. small cap (CAD)
International Equities, Low Volatility, unhedged	S&P International Developed Low Volatility (CAD)
Global Equities, unhedged	MSCI - World (CAD)
Global Equities, hedged	MSCI - World (Local Currency)
Global Equities, Small Cap, unhedged	MSCI - World, Small Cap (CAD)
Global Equities, Small Cap, hedged	MSCI - World, Small Cap (Local Currency)
Emerging Markets, unhedged	MSCI - Emerging Markets, Free, Gross (CAD)
Emerging Markets, Low Volatility, unhedged	S&P Emerging Markets Low Volatility (CAD)
<b><i>Alternatives</i></b>	
Commodities, hedged	Goldman Sachs Light Energy Commodity Index (USD)
Canadian Real Estate (Direct)	REALpac/IPD Canada Property Index
U.S. Real Estate (Direct), hedged	NCREIF Property Index (USD)
Global Real Estate (REITS), unhedged	EPRA / NAREIT (CAD)
Infrastructure (Direct), unhedged	n/a
Infrastructure (Indirect), unhedged	UBS 50/50 Infrastructure Index (CAD)
Private Equity, hedged	Cambridge & Associates Private Equity (USD)
Farmland, hedged	NCREIF Farmland Index (USD)
Timberland, hedged	NCREIF Timberland Index (USD)
Hedge Funds - Global Macro, hedged	CSFB/Tremont Global Macro (USD)
Hedge Funds - Market Neutral, hedged	CSFB/Tremont Equity Market Neutral (USD)
Hedge Funds - Managed Futures, hedged	CISDM CTA Asset Weighted Index (USD)

### Section 3: Term Structure Environment

Government of Canada Yield Curve



## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

### 1. Long-term target yield-to-maturities for key bonds

Index	Expected Long-Term Yield	
	Assumption	Source
Inflation	2.0%	Bank of Canada target
Short Term (91-day T-Bills)	2.60%	Based on the historical spread to 10-year federal bonds
7-year federal bonds (CANSIM V122542)	3.70%	Based on the historical spread to 10-year federal bonds
10-year federal bonds (CANSIM V122543)	3.90%	Based on expected inflation (2.0%) plus target Real GDP growth (1.9%)
>10-year federal bonds (CANSIM V122544)	4.22%	Based on the historical spread to 10-year federal bonds
Federal LT RRB (CANSIM v122553)	1.98%	Based on the historical spread between Bank of Canada long-term benchmark bond yield (V122544) and federal long-term real return bond (V122553), which can be interpreted as expected inflation and a bias reflecting a cost of hedging inflation*

\* The cost of hedging reflects the fact that purchasers of real return bonds in the market are prepared to pay a price for the protection against inflation risk as part of a buy and hold strategy.



## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

### 2. Expected returns, standard deviations and downside risks

Asset Class	Expected 10-yr Annualized Return (Compound) as at July 31 <sup>st</sup> , 2014	10-yr Average Annual Std. Deviation as at July 31 <sup>st</sup> , 2014
	Source	Source
Canadian Fixed Income	Expected returns are generated by Aon Hewitt's proprietary bond model. Historical money market yields, actual yield curve and expected long term nominal and real return YTM's are used to calibrate the model that generates yield curve movements. Expected returns are then derived from the yield curve movements	Generated by the same model that generated the expected fixed income returns (tested against historical numbers for reasonability)
Global Bonds	Similar expected return to Canadian Bonds adjusted for the inter-country interest rate differential representing an unhedged investment	Estimated from historical data series (1990-2013)
High Yield Bonds	Derived from a U.S. 5-yr bond yield, plus a credit spread and net upgrade benefit, less a provision for default	Estimated from historical data series (1987-2013)
Bank Loans	Sum of the floating rate, considering floors, credit spreads and changes in price, less the net effect of defaults	Estimated from historical data series (2007-2013) <sup>1</sup>
Emerging Market Debt	Derived from a U.S. mid-term bond yield, plus a credit spread, less a provision for default	Estimated from historical data series (1997-2013)

<sup>1</sup> Historical data is available since 1992. From 1992 to 2007, the historical returns exhibit very low volatility. Beginning in 2007, volatility has significantly increased and returns on bank loans have become highly correlated with those of high-yield bonds. We have chosen to ignore the period 1992-2007.





## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	Expected 10-yr Annualized Return (Compound)	10-yr Average Annual Standard Deviations
	Source	Source
Canadian Equities	Forecast earnings are used to calculate the equity market cash flows. The forecast cash flows are then discounted and their aggregated value is equated to the current level of the equity market to arrive at an expected return	Estimated from historical data series (1987-2013)
Canadian Equities, Small cap	Annualized premium of 0.5% over large cap Canadian equities reflecting the asset class' higher volatility and higher earnings growth potential	Estimated from historical data series (1987-2013)
Canadian Equities, Low Volatility	Expected return such that the Sharpe ratio is the same as for Canadian Equities	Estimated from historical data series (1997-2013)
U.S. Equities	Simulated currency returns are applied to the local currency distribution to arrive at an estimate in CAD	Standard deviation of the simulated unhedged distribution (1987-2013)
U.S. Equities, hedged	Forecast earnings are used to calculate the equity market cash flows. The forecast cash flows are then discounted and their aggregated value is equated to the current level of the equity market to arrive at an expected return	Estimated from historical data series in local currency (1987-2013)
U.S. Equities, Mid/Small cap	Annualized premium of 0.25% over large cap U.S. equities (USD) reflecting the asset class' higher volatility and higher earnings growth potential. The return is then translated into CAD	Standard deviation of the simulated unhedged distribution (1987-2013)
U.S. Equities, Small cap	Annualized premium of 0.5% over large cap U.S. equities (USD) reflecting the asset class' higher volatility and higher earnings growth potential. The return is then translated into CAD	Standard deviation of the simulated unhedged distribution (1987-2013)
International Equities	Simulated currency returns are applied to the local currency distribution to arrive at an estimate in CAD	Standard deviation of the simulated unhedged distribution (1987-2013)



## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	Expected 10-yr Annualized Return (Compound)	10-yr Average Annual Standard Deviations
	Source	Source
International Equities, hedged	Forecast earnings are used to calculate the cash flows for the main equity markets comprising the EAFE index. The forecast cash flows are then discounted and their aggregated value is equated to the current level of the equity markets to arrive at an expected return for each of the economies. They are then combined to form the EAFE return, taking into account half of the diversification	Estimated from historical data series in local currencies (1987-2013)
International Equities, small cap	Annualized premium of 0.5% over large cap International equities (local currency) reflecting the asset class' higher volatility and higher earnings growth potential. The return is then translated into CAD	Standard deviation of the simulated unhedged distribution (1993-2013)
International Equities, Low Volatility	Expected return such that the Sharpe ratio is the same as for International Equities	Estimated from historical data series in local currencies (1991-2013)
Global Equities	Based on the return of a portfolio comprised of a 50% allocation to U.S. equities (S&P 500) and a 50% allocation to International equities (MSCI – EAFE)	Standard deviation of an unhedged portfolio comprised of 50% U.S. equities and 50% International equities
Global Equities, hedged	Based on the return of a portfolio comprised of a 50% allocation to U.S. equities (S&P 500 USD) and a 50% allocation to International equities (MSCI – EAFE Local)	Standard deviation of a hedged portfolio comprised of 50% U.S. equities and 50% International equities
Global Equities, Small Cap.	Based on the return of a portfolio comprised of a 50% allocation to U.S. equities Small Cap. (Russell 2000) and a 50% allocation to International equities Small Cap. (MSCI – EAFE, Small Cap.)	Standard deviation of an unhedged portfolio comprised of 50% U.S. equities Small Cap. and 50% International equities Small Cap.



## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	Expected 10-yr Annualized Return (Compound)	10-yr Average Annual Standard Deviations
	Source	Source
Global Equities, Small Cap., hedged	Based on the return of a portfolio comprised of a 50% allocation to U.S. equities Small Cap. (Russell 2000 USD) and a 50% allocation to International equities Small Cap. (MSCI – EAFE, Small Cap. Local)	Standard deviation of a hedged portfolio comprised of 50% U.S. equities Small Cap. and 50% International equities Small Cap.
Emerging Markets	Long term earnings growth assumptions are established for each of the main countries and combined into a composite to forecast earnings and calculate the equity market cash flows. The aggregated value of discounted forecast cash flows is equated to the current level of the equity market to arrive at an expected return	Estimated from historical data series (1988-2013)
Emerging Markets, Low Volatility	Expected return such that the difference in expected return between Emerging Markets and Emerging Markets low volatility is the same as the difference in expected return between International and International low volatility equities	Estimated from historical data series (1997-2013)
Commodities, hedged	Derived from LIBOR plus U.S. inflation	Estimated from historical data series (1987-2013)
Canadian Real Estate (Direct)	Based on an estimated income yield, real rental growth, expected inflation, and management fees	Historical standard deviation adjusted upward to reflect appraisal smoothing (1987-2013)
U.S. Real Estate (Direct), hedged	Based on an estimated income yield, real rental growth, expected inflation, and management fees	Historical standard deviation adjusted upward to reflect appraisal smoothing (1987-2013)
Global REITS, unhedged	Discount of 1% to the expected return on Global Equities reflecting the asset class' lower beta	Estimated from historical data series (1990-2013)
Infrastructure (Listed-unhedged)	Discount of 1% to the expected return on Global Equities reflecting the asset class' lower beta	Estimated from historical data series (1995-2013)

Aon Hewitt Capital Market Assumptions & Methodology (Canadian Version)  
10-Year Horizon as at July 31, 2014  
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## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	Expected 10-yr Annualized Return (Compound)	10-yr Average Annual Standard Deviations
	Source	Source
Infrastructure (Direct)	Based on current income yield, expected inflation, 40% leverage, cost of financing and management fees	Derived from the standard deviation of Real Estate, Global REITS and Listed Infrastructure. Adjusted for leverage
Private Equity	We model a diversified portfolio with allocations to leveraged buyouts, venture capital, mezzanine debt and distressed debt. Return assumptions are formulated for each strategy based on an analysis of the exposure of each strategy to various market factors with associated risk premiums	Standard deviation such that the Sharpe ratio is the same as that of U.S. equities, hedged
Farmlands	Based on current income yield, expected inflation and management fees	Historical standard deviation adjusted upward to reflect appraisal smoothing (1992-2013)
Timberlands	Based on current income yield, expected inflation and management fees	Historical standard deviation adjusted upward to reflect appraisal smoothing (1987-2013)
Equity Market Neutral, hedged	A factor benchmark is estimated via a multivariate regression on cash, fixed income and equities. An assumed excess return is then added to the factor return based on the expected manager skill (alpha) of the average manager and a provision for fees is taken	Estimated from historical data series (1994-2013), adjusted upward following the views of the CMA Committee and hedge fund research team
Global Macro, hedged	A factor benchmark is estimated via a multivariate regression on cash, fixed income and equities. An assumed excess return is then added to the factor return based on the expected manager skill (alpha) of the average manager and a provision for fees is taken	Estimated from historical data series (1994-2013)
Managed Futures, hedged	A factor benchmark is estimated via a multivariate regression on cash, fixed income and equities. An assumed excess return is then added to the factor return based on the expected manager skill (alpha) of the average manager and a provision for fees is taken	Estimated from historical data series (1987-2013)

## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

### 3. Summary Statistics

The following table summarizes all asset class expected return and risk assumptions. Due to the impact of volatility on compounding, the level annual (year-over-year) return required to achieve the assumed geometric average is higher. This is illustrated in the table below.

Asset Class	10-yr Average Annual Return	10-yr Compound Return	Average Annual Standard Deviation	Average Annual CTE 95%
Inflation	2.0%	2.0%	1.4%	-0.9%
91-day T-Bills	1.6%	1.6%	1.2%	0.2%
182-day T-Bills	1.7%	1.7%	1.2%	0.3%
Banker's Acceptance	1.9%	1.9%	1.2%	0.4%
Gov of Canada Benchmark 5-yr Bond	1.8%	1.8%	2.7%	-3.4%
Gov of Canada Benchmark 7-yr Bond	1.8%	1.8%	4.0%	-6.3%
Gov of Canada Benchmark >10-yr Bond	1.8%	1.5%	8.5%	-15.4%
Gov of Canada Benchmark Long-Term Bond	1.8%	1.3%	9.7%	-17.4%
Gov of Canada Benchmark Long-Term RRB	1.3%	0.8%	10.8%	-20.0%
Federal Real Return Bonds	1.0%	0.4%	10.6%	-20.1%
Overall Real Return Bonds	1.1%	0.6%	9.9%	-18.6%
Short-Term Federal Bonds	1.8%	1.7%	1.9%	-1.5%
Short-Term Provincial Bonds	2.1%	2.0%	2.1%	-1.6%
Short-Term Municipal Bonds	2.1%	2.1%	2.4%	-2.2%
Short-Term AAA/AA Corporate Bonds	2.3%	2.3%	2.3%	-1.7%
Short-Term A Corporate Bonds	2.4%	2.3%	2.4%	-1.8%
Short-Term BBB Corporate Bonds	2.6%	2.5%	2.6%	-2.1%
Short-Term Government Bonds	1.8%	1.8%	2.0%	-1.6%

## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	10-yr Average Annual Return	10-yr Compound Return	Average Annual Standard Deviation	Average Annual CTE 95%
Short-Term Corporate Bonds	2.4%	2.4%	2.4%	-1.8%
Mortgages	2.5%	2.4%	2.4%	-1.7%
Short-Term Bonds	2.0%	2.0%	2.1%	-1.6%
Mid-Term Federal Bonds	2.1%	2.0%	4.4%	-6.9%
Mid-Term Provincial Bonds	2.6%	2.5%	5.1%	-7.6%
Mid-Term Municipal Bonds	2.8%	2.7%	5.3%	-7.8%
Mid-Term AAA/AA Corporate Bonds	2.7%	2.5%	5.1%	-7.5%
Mid-Term A Corporate Bonds	2.8%	2.7%	5.4%	-7.8%
Mid-Term BBB Corporate Bonds	3.0%	2.8%	5.9%	-8.6%
Mid-Term Government Bonds	2.4%	2.3%	4.8%	-7.3%
Mid-Term Corporate Bonds	2.9%	2.7%	5.6%	-8.1%
Mid-Term Bonds	2.5%	2.4%	5.0%	-7.5%
Long-Term Federal Bonds	2.0%	1.6%	8.7%	-15.5%
Long-Term Provincial Bonds	3.3%	2.8%	11.0%	-18.1%
Long-Term Municipal Bonds	3.8%	3.1%	11.8%	-19.0%
Long-Term AAA/AA Corporate Bonds*	3.0%	2.7%	7.9%	-12.6%
Long-Term A Corporate Bonds	3.9%	3.1%	12.5%	-20.1%
Long-Term BBB Corporate Bonds	4.2%	3.3%	13.6%	-21.6%
Long-Term Government Bonds	2.9%	2.4%	10.2%	-17.2%
Long-Term Corporate Bonds	3.9%	3.2%	12.7%	-20.3%
Long-Term Bonds	3.1%	2.6%	10.8%	-17.8%

\*Considering the small number of long-term AAA/AA bonds, the behavior of this asset class is highly uncertain.

## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	10-yr Average Annual Return	10-yr Compound Return	Average Annual Standard Deviation	Average Annual CTE 95%
Extra Long-Term Bonds	3.8%	1.8%	20.9%	-32.9%
Universe Federal Bonds	1.9%	1.8%	3.8%	-5.6%
Universe Provincial Bonds	2.9%	2.6%	7.2%	-11.3%
Universe Municipal Bonds	2.9%	2.7%	6.6%	-9.9%
Universe AAA/AA Corporate Bonds	2.3%	2.3%	2.7%	-2.6%
Universe A Corporate Bonds	3.0%	2.8%	6.6%	-9.7%
Universe BBB Corporate Bonds	3.1%	2.9%	6.3%	-9.1%
Universe Government Bonds	2.3%	2.2%	5.4%	-8.3%
Universe Corporate Bonds	2.9%	2.7%	5.4%	-7.5%
Universe Bonds	2.5%	2.4%	5.4%	-8.0%
Global Bonds	2.4%	2.1%	8.2%	-14.6%
High Yield Bonds (USD)	3.0%	2.6%	9.7%	-16.3%
Bank Loans (USD)	3.2%	3.0%	6.6%	-11.7%
Emerging Market Debt (USD)	4.4%	3.8%	10.8%	-16.9%

## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	10-yr Average Annual Return	10-yr Compound Return	Average Annual Standard Deviation	Average Annual CTE 95%
Canadian Equities	8.0%	6.7%	17.7%	-27.0%
Canadian Equities, Small Cap	9.0%	7.2%	20.6%	-32.8%
Canadian Equities, Low Vol	7.1%	6.1%	15.3%	-21.4%
U.S. Equities	7.6%	6.4%	16.3%	-24.6%
U.S. Equities (hedged)	8.3%	6.8%	18.7%	-28.8%
U.S. Equities, Small/Mid Cap	8.5%	6.7%	20.8%	-30.2%
U.S. Equities, Small Cap	9.0%	6.9%	22.3%	-32.8%
Int'l Equities	8.2%	6.9%	17.3%	-28.6%
Int'l Equities (hedged)	8.4%	6.8%	19.1%	-32.8%
Int'l Equities, Small Cap	9.2%	7.4%	20.9%	-31.3%
Int'l Equities, Low Vol	5.7%	5.2%	10.6%	-15.9%
Global Equities	7.9%	6.9%	15.4%	-24.4%
Global Equities (hedged)	8.3%	7.0%	17.9%	-29.2%
Global Equities, Small Cap	9.1%	7.5%	19.2%	-28.4%
Global Equities, Small Cap (hedged)	9.8%	7.7%	22.5%	-34.0%
Emerging Markets	11.1%	8.2%	27.2%	-37.2%
Emerging Markets, Low Vol	7.6%	6.5%	16.1%	-23.9%



## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

Asset Class	10-yr Average Annual Return	10-yr Compound Return	Average Annual Standard Deviation	Average Annual CTE 95%
Commodities (hedged)	4.3%	3.3%	15.1%	-25.5%
Canadian Real Estate (Direct)	6.6%	5.6%	14.5%	-28.2%
U.S. Real Estate (hedged)	8.0%	7.1%	14.5%	-26.4%
Global REITS (Listed-unhedged)	7.4%	5.9%	18.9%	-28.6%
Infrastructure (Direct)	8.3%	7.0%	16.7%	-30.9%
Infrastructure (Listed-unhedged)	6.9%	5.9%	15.5%	-21.6%
Private Equity (hedged)	12.2%	9.0%	28.7%	-36.3%
Farmlands (hedged)	7.0%	5.7%	17.0%	-29.1%
Timberlands (hedged)	6.5%	5.6%	15.0%	-19.5%
Equity Market Neutral (hedged)	4.5%	4.3%	8.0%	-11.3%
Global Macro (hedged)	6.5%	6.0%	10.7%	-13.8%
Managed Futures (hedged)	7.0%	6.2%	13.7%	-17.2%



## Section 4: Expected Returns, Yields, Standard Deviations and Correlations

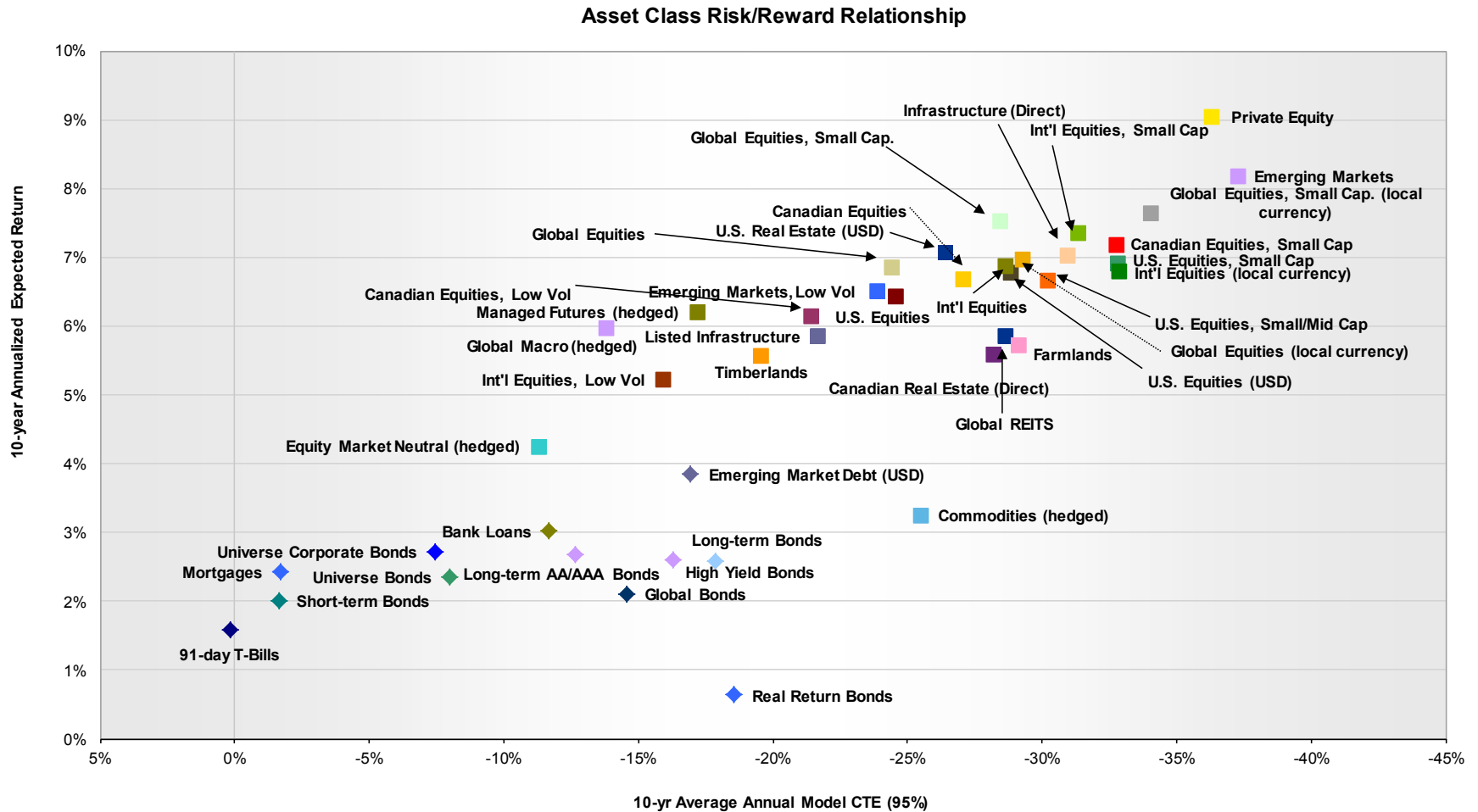
- Correlations and standard deviations (where applicable) are based on monthly (or quarterly where applicable) nominal returns of the indices and periods stated above for the periods ending December 31<sup>st</sup>, 2013.
- Infrastructure (Direct) correlations are assumed equal to U.S. Direct Real Estate correlations.
- All expected returns, standard deviations and CTEs are rounded to one decimal place.

The **Sharpe Ratio** is defined as the excess of the asset's expected return over the risk free (Short Term) expected return, divided by the asset's standard deviation.

## Section 5: Information and Research Sources

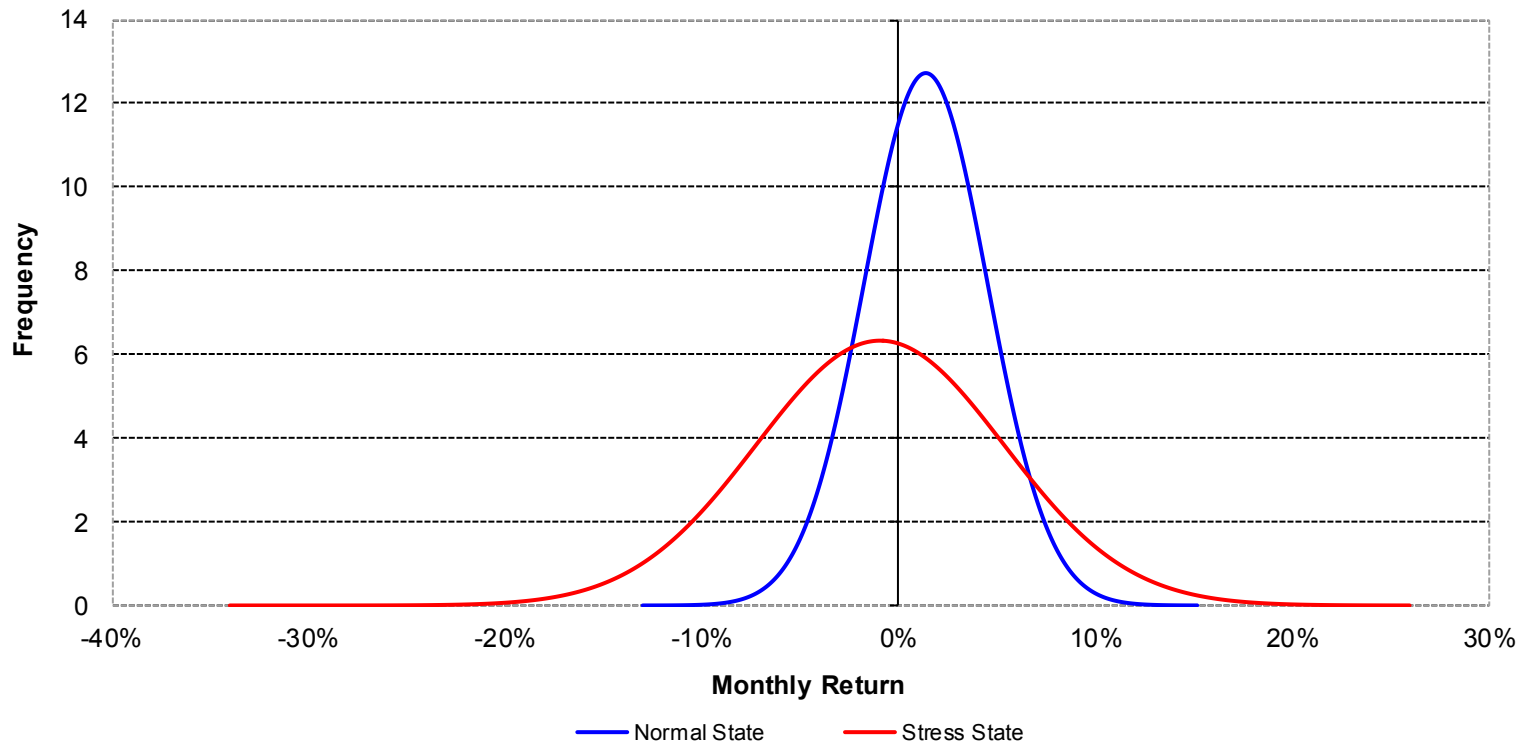
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## Appendix I: Asset Class Risk/Reward Relationship



## Appendix II: Return Distribution by Economic State

Distribution of Monthly Returns for the S&P/TSX by Economic State



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# Manitoba Public Insurance Corporation

Asset-Liability Study

Phase II – Part A – Optimization of the Investment Portfolio

Prepared by Aon Hewitt



# Table of Contents

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Introduction		3
Executive Summary		8
Risk Diagnosis		21
Optimization		32
Conclusion and Recommendations		51
Appendix A	MPI's Peers	66
Appendix B	Detailed Results – Base Case	71
Appendix C	Detailed Results – Recommended Portfolio	84
Appendix D	Assumptions and Methodologies	97
Appendix E	2.05 h)	104
Appendix F	Liquidity	115
Appendix G	Projections Under Alternative RSR Rules	122



# Introduction

# Introduction

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## Mandate

Aon Hewitt was mandated by Manitoba Public Insurance Corporation (MPI) to determine an appropriate asset allocation for MPI's investment portfolio

## Context of this report

- This report follows Phase I dated September 2014
  - The purpose of Phase I was to study the hedging strategy
    - Focus: How the value of only the bond portfolio tracks that of the liabilities
- In Phase II, the portfolio is considered in its entirety
  - As such, this analysis also includes the growth portfolio and MPI's mechanism for managing the Rate Stabilization Reserve and setting premium rates
- We separated Phase II into Part A, addressing the optimization of the portfolio, and Part B, which focuses more on implementation
  - This report is for Part A
- Since the report for Phase I was delivered, additional asset class information was provided to MPI, along with a marginal risk analysis and preliminary asset-only optimization results
  - This material helped facilitate the selection of asset classes and constraints for the optimization

## ...Introduction

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### Context under which MPI operates

- MPI's Basic compulsory program is required to break even rather than to target profits
- MPI must apply annually to the Public Utilities Board for approval of the premiums charged with respect to compulsory driver and vehicle insurance
- The Public Utilities Board (PUB) approves both the rates and the capital targets for the Basic compulsory program; therefore, the assumptions used in the report for these items could change at any time as the result of the upcoming PUB Order

### Objective

MPI has indicated that the short term volatility of the premium rate requirement is a primary concern

## ...Introduction

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### Statement of work

- The statement of work for Phase II is described in section 2.05 of the Agreement for Services dated June 13, 2014
- Instead of following the order of 2.05, we organized this report as
  - The Risk Diagnosis, which is a projection of outcomes under the base case
  - The optimization, which is separated in two steps to address
    - The liability hedging strategy
    - Composition of the growth portfolio and total allocation to the liability hedging strategy
  - Although every section includes a conclusion, they are summarized in the “Conclusion and Recommendations” section
  - Additional information was relegated to appendices when we considered it would have encumbered the flow of the report
    - Peers
    - Detailed results for base case and recommended portfolios
    - Assumptions and methodologies
    - Dynamic asset allocation and separate allocations
    - Liquidity

## ...Introduction

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### ...Statement of work

- We list thereafter where the specific items are covered
- 2.05
  - a) Risk Diagnosis and Appendices B and C
  - b) Risk Diagnosis, the Optimization and Appendices B and C
  - c) Was partly covered by the information provided between Phase I and II. The Optimization section addresses the impact of new asset classes
  - d) Risk Diagnosis and Conclusion
  - e) Risk Diagnosis, Optimization and Appendices B and C
  - f) Optimization, Conclusion and Appendix A
  - g) Conclusion
  - h) Appendix E
  - i) Optimization, Conclusion
- As indicated previously, questions more related to implementation are addressed in the Phase II, Part B report, which covers 2.05 j) to m)



# Executive Summary

# Executive Summary

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## Risk Diagnosis

- We modeled a 10-year integrated projection of key outcomes for MPI
- The Risk Diagnosis gives the “Base Case” results. This represents a status quo situation, with the following exceptions:
  - The Desired State rules apply to the Rate Stabilization Reserve (RSR)
    - The targets are 100% of the Minimum Capital Test (MCT) value for the upper bound and 65% of the MCT value for the lower bound (as a proxy to DCAT modeling methodology)
  - The Fixed Income portfolio is assumed to follow a Bucket Approach to liability matching

## Key takeaways from the Risk Diagnosis

### Returns

- The annual mean nominal return exceeds the initial liability discount rate, both in nominal (5% vs 3.68%) and real terms (3% vs 1.68%)
- In bad years, the portfolio could lose about 9% (11% real)



## ...Executive Summary

---

### ...Key takeaways from the Risk Diagnosis

#### Basic net income

- Average Basic net incomes is negative in the year ending in February 2015, before increasing gradually to reach approximately \$125M in the last 5 years of the projection
  - There is an average probability of approximately 20% that Basic Net Income will be negative
- In bad years, MPI could lose more than \$130M in basic operations

#### Retained earnings

- The risk of negative retained earnings is small, although not negligible in the first few years
- The band where there is no premium adjustment or surplus distribution has a small width as a percentage of upper RSR target compared to the volatility of the RSR

#### Net cash flows

- Net cash flows could be largely negative given surplus distributions are assumed to happen over a single year
  - Could require significant liquidity

## ...Executive Summary

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### Optimization

The optimization was conducted in multiple steps

- The first step compared the impact of 3 hedging strategies
  - As discussed in the Introduction, this analysis built on Phase I by considering the portfolio in its entirety (including both growth and liability hedging assets) and the mechanism for managing the RSR and premium rate setting
  - We concluded that the cost of more precise matching is too high for the reduction in risk
    - More precise matching has a higher cost because the portfolio yields are lower
      - ♦ Duration Matching has the highest yield, the Bucket Approach has a lower yield and Cash Flow Matching has the lowest yield
        - This occurs because, as you more closely match cash flows, the portfolio invests more in shorter-term (lower yield) bonds
    - It would be more advantageous to simply match the duration and increase the bond allocation
      - ♦ Both of these decisions reduce the expected return and therefore the net income. However, for a similar reduction in net income, the increased bond allocation results in a greater risk reduction than a tighter match of the hedging strategy

## ...Executive Summary

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### ...Optimization

- The second step explores the split between bonds and growth assets, along with the optimization of the growth assets
  - The minimum constraints imposed to allocations to Canadian equities, real estate and infrastructure leave limited room for other asset classes, especially at large levels of fixed income allocation
    - As the growth assets allocation increases, the asset classes that are favored are U.S. equities, Canadian equities, international equities and timberlands
- An additional step addresses three cases of dynamic allocations
  - The bond allocation is based on the dollar amount of specific liabilities
    - Basic provision for unpaid claims
    - Total provision for unpaid claims
    - Total provision for unpaid claims plus pension plan liabilities
  - These strategies are not beneficial when we look at the volatility of retained earnings, though the first two offer better downside protection in extreme situations
  - This analysis is included for your information in Appendix E

## ...Executive Summary

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### Peers

- While the peer comparisons in Appendix A provide interesting information, MPI should avoid over-reliance on peer practices
  - Different coverage
  - Small sample size
  - Different interest rate sensitivity
    - Wide range of liability duration
    - Various methodologies to set liability discount rate
  - Wide range of practices
    - Capital management
    - Insurance fund separated from the corporation
    - Competitive lines of business
  - There is no one-size-fits-all solution
  - As such, the focus of our conclusions is on ensuring the recommended investment strategy is consistent with our understanding of MPI's goals and objectives

## ...Executive Summary

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### Recommendations

#### Policy considerations

- Provide in the policies that surplus distributions be spread over time
  - Rationale: surplus distributions could cause liquidity issues
- Revise the RSR targets
  - Rationale: The modeled lower and upper RSR targets are in part responsible for frequent large rate adjustments
  - A larger distance between the lower and upper RSR targets would reduce the likelihood of rate adjustments
    - The distance between targets should reflect the volatility of the RSR
  - Smoothed rate adjustments could be used to reduce rate volatility
  - Further study would be required to determine the most attractive approach
    - Information regarding methods used by peers can be found in Appendix A
    - Sample results under alternative RSR targets can be found in Appendix G

## ...Executive Summary

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### ... Recommendations

#### Total portfolio composition

- Hedging strategy: use duration matching
  - Rationale: the risk reduction of more precise matching strategies (Bucket Approach and Cash Flow Matching) is too small for the reduction in reward as a result of the lower yield on the Bucket and Cash Flow Matched portfolios
  
- We perceive that MPI has a low risk tolerance resulting from
  - The mandate to break even instead of targeting profit
  - The extensive process to change targeted levels of reserve
  - The lack of control of MPI over premium rates
  
- Therefore, we recommend adopting portfolio 2 for the following reasons
  - The portfolio is at the lower end of the risk spectrum
  - It has a significant allocation to real estate and infrastructure, which is required to provide some inflation protection in the long term
  - The equity allocation it contains provides liquidity to balance the illiquid asset allocation

## ...Executive Summary

- The following tables show key projection statistics for both the recommended portfolio as well as the “Base Case” portfolio

	Recommended Portfolio (#2)	Base Case	Differences
<b>Fixed Income</b>			
Hedging Strategy - CF Matching	0	0	-
Hedging Strategy - Bucket Approach	0	60	(60)
Hedging Strategy - Duration Matching	70	0	70
<b>Equities</b>			
Canadian Equities	0	15	(15)
Canadian Equities (85% Large Cap, 15% Small Cap)	10	0	10
U.S. Equities	0	5	(5)
U.S. Equities (80% Large Cap, 20% Small Cap)	5	0	5
International Equities	0	0	-
<b>Alternatives</b>			
Canadian Direct Real Estate	10	13	(3)
Direct Infrastructure	5	7	(2)
Timberlands	0	0	-
Total Fixed Income	70	60	10
Total Equities	15	20	(5)
Total Alternatives	15	20	(5)
<b>Total</b>	<b>100</b>	<b>100</b>	<b>-</b>

# ...Executive Summary

## Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

## Average Annual Basic Retained Earnings (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	377.5	395.7	(18.2)
Volatility	105.6	123.8	(18.2)
Pessimistic Mean*	153.6	128.5	25.1
Probability {Retained Earnings < 0}	1%	4%	(2%)

## Average Annual Net Income from Basic Operations (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	81.8	88.5	(6.6)
Volatility	80.6	94.6	(14.0)
Pessimistic Mean*	-98.6	-130.7	32.2
Probability {Net Income < 0}	19%	22%	(4%)

## Average Annual Competitive Retained Earnings (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	460.4	464.5	(4.2)
Volatility	43.7	49.1	(5.3)
Pessimistic Mean*	367.0	362.0	5.0
Probability {Retained Earnings < 0}	0%	0%	-

## Average Annual Net Income from Competitive Operations (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	42.2	43.4	(1.2)
Volatility	21.8	21.6	0.2
Pessimistic Mean*	-2.0	-1.7	(0.3)
Probability {Net Income < 0}	3%	3%	0%

\* Pessimistic Mean: Average of the 50/1000 worst simulated outcomes.



## ...Executive Summary

### Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

### Average Annual Nominal Return

	Recommended Portfolio (#2)	Base Case	Differences
Mean	4.8%	5.1%	(0.3%)
Volatility	5.8%	6.2%	(0.4%)
Pessimistic Average*	-7.2%	-8.3%	1.1%
Probability Return > 0%	80%	80%	(0%)
Probability Return > 3.68%	58%	61%	(3%)

### Average Annual Real Return

	Recommended Portfolio (#2)	Base Case	Differences
Mean	2.8%	3.0%	(0.2%)
Volatility	5.8%	6.1%	(0.3%)
Pessimistic Average*	-9.3%	-10.3%	1.0%
Probability Return > 0%	69%	70%	(1%)
Probability Return > 1.68%	57%	60%	(2%)

## ...Executive Summary

### Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

### Retained Earnings (as % of Upper RSR Target)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	86.4%	79.1%	7.3%
Volatility	32.2%	34.9%	(2.7%)
Pessimistic Average*	6.0%	-9.6%	15.7%
Probability of no premium adjustment (range 65%-120%)	37%	30%	7%
Probability of being in target range (65%-100%)	22%	17%	5%
Probability of special contribution	4%	7%	(3%)
Probability of rate surcharge	33%	40%	(7%)
Probability of surplus distribution	30%	30%	0%

### Maximum Attained Rate Surcharge (% of Premiums) \*\*

	Recommended Portfolio (#2)	Base Case	Differences
Probability { Max Surcharge > 0% }	93%	100%	(7%)
Probability { Max Surcharge > 2% }	77%	93%	(16%)
Probability { Max Surcharge > 4% }	55%	73%	(18%)
Probability { Max Surcharge > 6% }	33%	46%	(14%)
Probability { Max Surcharge > 8% }	12%	22%	(11%)

\* Pessimistic Average: Average of the 50/1000 worst simulated outcomes.

\*\*Maximum Attained Rate Surcharge: highest level of rate surcharge attained in a given scenario. For example, since the yearly increase is limited to 2% and resets once the lower RSR target is attained, a surcharge of 4% implies a rate surcharge for 2 consecutive years.

## ...Executive Summary

### Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

### Average Annual Net Cash Flow (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	14.4	17.3	(2.9)
Volatility	62.1	75.1	(13.0)
Pessimistic Mean*	-106.7	-120.6	13.8
Probability {Cash Flow < 0}	25%	25%	(0%)

### Average Annual Net Cash Flow, excluding Surplus Distributions & Special Contributions (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	50.5	55.1	(4.6)
Volatility	16.5	19.1	(2.6)
Pessimistic Mean*	36.2	37.5	(1.3)
Probability {Cash Flow < 0}	0%	0%	-

\* Pessimistic Mean: Average of the 50/1000 worst simulated outcomes.



# Risk Diagnosis

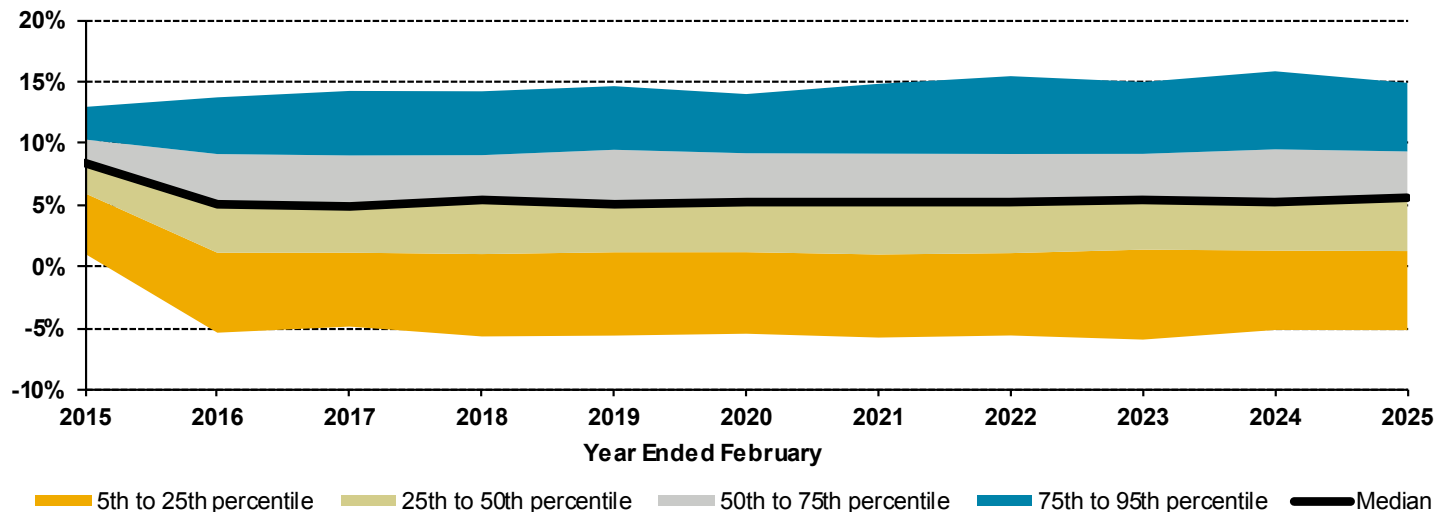
# Risk Diagnosis

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- The Risk Diagnosis gives the “Base Case” results for the Optimization phase. This represents a status quo situation, with the following exceptions:
  - The Desired State rules apply to the Rate Stabilization Reserve (RSR)
    - The targets are 100% of the Minimum Capital Test (MCT) value for the upper bound and 65% of the MCT value for the lower bound (as a proxy to DCAT modeling methodology)
  - The Fixed Income portfolio is assumed to follow a Bucket Approach to liability matching

# ...Risk Diagnosis

## Portfolio Nominal Return

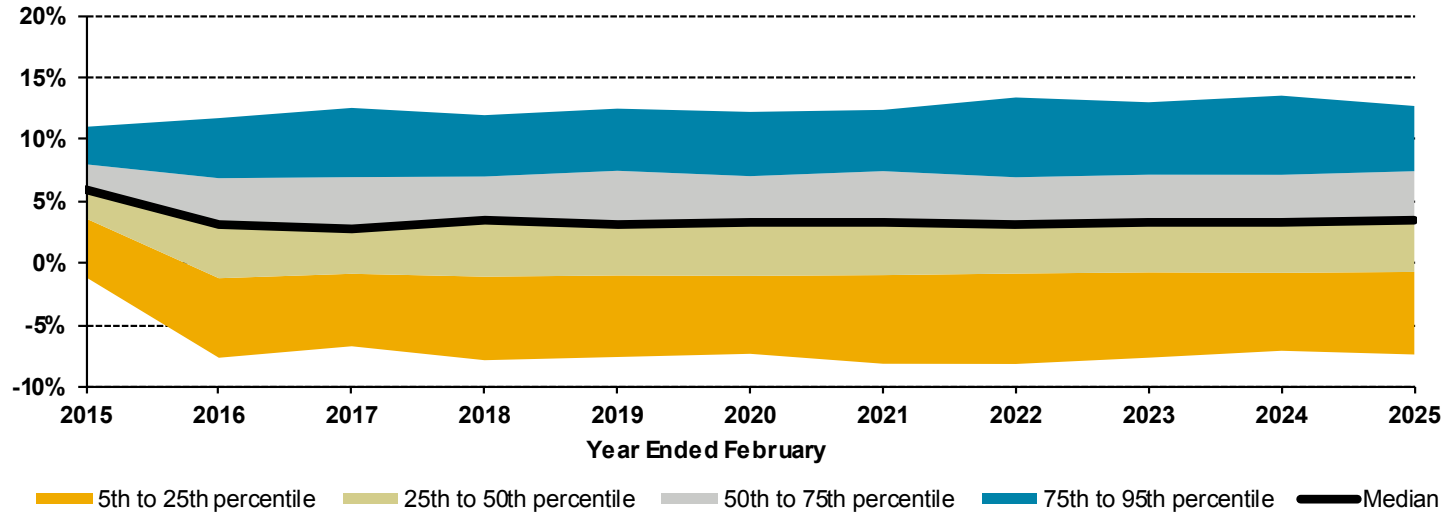


	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	13.0%	13.7%	14.3%	14.2%	14.6%	14.0%	14.8%	15.5%	15.0%	15.8%	14.9%
<b>75th percentile</b>	10.3%	9.1%	9.0%	9.0%	9.5%	9.2%	9.2%	9.1%	9.1%	9.5%	9.3%
<b>Median</b>	8.4%	5.1%	5.0%	5.3%	5.1%	5.2%	5.3%	5.3%	5.4%	5.2%	5.5%
<b>25th percentile</b>	5.9%	1.1%	1.1%	1.0%	1.2%	1.2%	1.0%	1.1%	1.4%	1.3%	1.3%
<b>5th percentile</b>	1.0%	-5.4%	-4.9%	-5.7%	-5.6%	-5.5%	-5.8%	-5.6%	-5.9%	-5.1%	-5.2%
<b>Mean</b>	7.9%	4.7%	4.9%	4.9%	5.0%	5.0%	5.1%	5.1%	5.2%	5.3%	5.3%
<b>Standard Deviation</b>	3.6%	5.8%	5.9%	6.2%	6.2%	6.0%	6.2%	6.4%	6.2%	6.3%	6.2%
<b>CTE 5% *</b>	-0.9%	-8.1%	-8.2%	-8.8%	-8.1%	-8.0%	-8.9%	-8.5%	-8.4%	-7.9%	-8.0%
<b>Prob { Return &lt; 0% }</b>	3%	20%	20%	20%	20%	20%	20%	21%	18%	19%	20%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Risk Diagnosis

## Portfolio Real Return

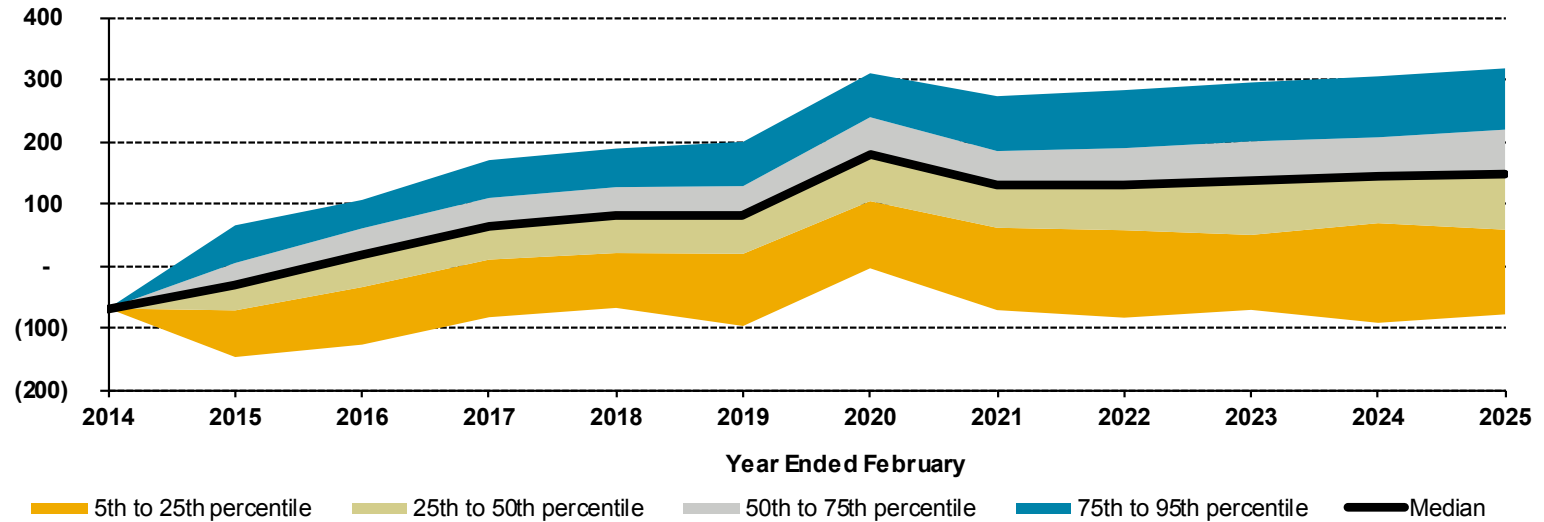


	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	11.0%	11.7%	12.5%	12.0%	12.5%	12.2%	12.4%	13.4%	13.0%	13.5%	12.7%
<b>75th percentile</b>	8.0%	6.9%	6.9%	7.0%	7.5%	7.0%	7.4%	6.9%	7.1%	7.1%	7.4%
<b>Median</b>	6.0%	3.0%	2.8%	3.4%	3.0%	3.3%	3.3%	3.1%	3.4%	3.2%	3.5%
<b>25th percentile</b>	3.6%	-1.2%	-0.9%	-1.1%	-1.0%	-1.0%	-1.0%	-0.8%	-0.7%	-0.8%	-0.7%
<b>5th percentile</b>	-1.1%	-7.6%	-6.7%	-7.8%	-7.6%	-7.3%	-8.1%	-8.1%	-7.6%	-7.1%	-7.4%
<b>Mean</b>	5.6%	2.7%	2.8%	2.9%	2.9%	3.0%	3.0%	3.0%	3.1%	3.2%	3.2%
<b>Standard Deviation</b>	3.7%	5.9%	6.0%	6.1%	6.2%	6.0%	6.2%	6.3%	6.2%	6.3%	6.2%
<b>CTE 5% *</b>	-3.2%	-10.2%	-10.0%	-10.8%	-10.3%	-10.0%	-10.8%	-10.6%	-10.2%	-9.9%	-9.8%
<b>Prob { Return &lt; 0% }</b>	9%	31%	31%	31%	31%	30%	30%	30%	28%	30%	29%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Risk Diagnosis

## Basic Net Income (\$M)



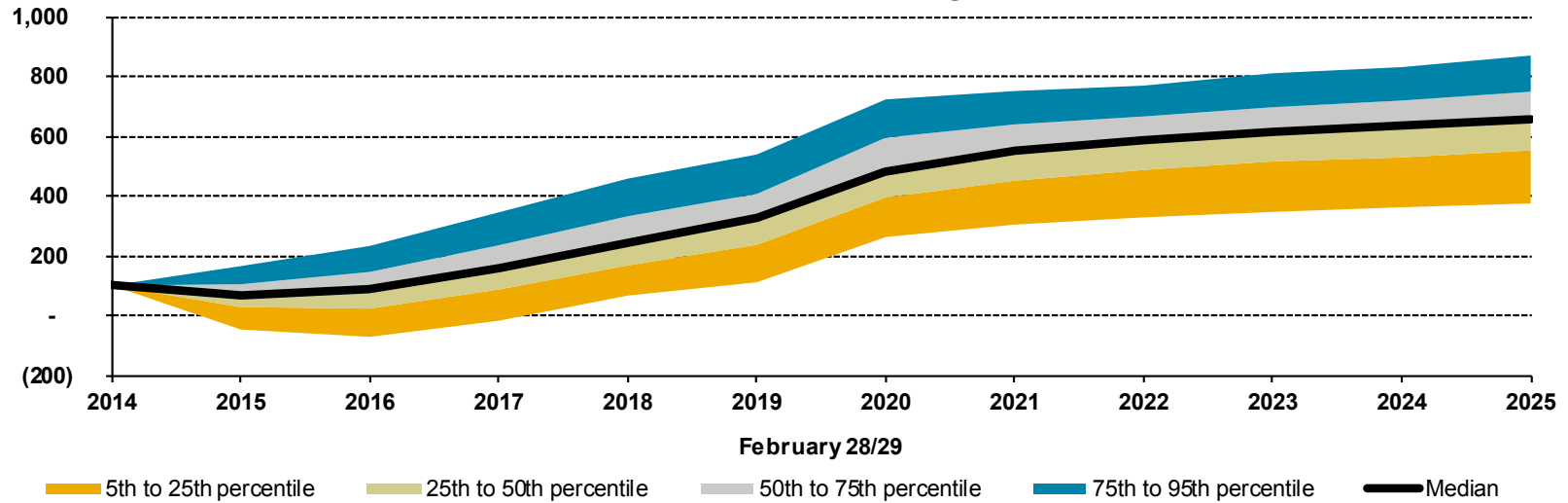
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	(69)	65	106	170	189	199	310	273	283	295	305	318
<b>75th percentile</b>	(69)	4	60	109	126	128	239	184	189	200	207	219
<b>Median</b>	(69)	(31)	17	63	82	81	179	131	129	138	145	147
<b>25th percentile</b>	(69)	(72)	(35)	10	20	19	104	61	57	49	68	58
<b>5th percentile</b>	(69)	(147)	(127)	(83)	(68)	(97)	(4)	(72)	(84)	(71)	(92)	(79)
<b>Mean</b>	(69)	(35)	8	56	73	71	169	117	120	126	133	136
<b>Standard Deviation</b>	-	63	71	76	81	88	99	104	108	114	116	123
<b>CTE 5% *</b>	(69)	(176)	(164)	(120)	(107)	(140)	(53)	(132)	(133)	(122)	(140)	(151)
<b>Prob { Net Income &lt; 0 }</b>	100%	73%	42%	22%	19%	19%	6%	14%	13%	15%	12%	13%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.



# ...Risk Diagnosis

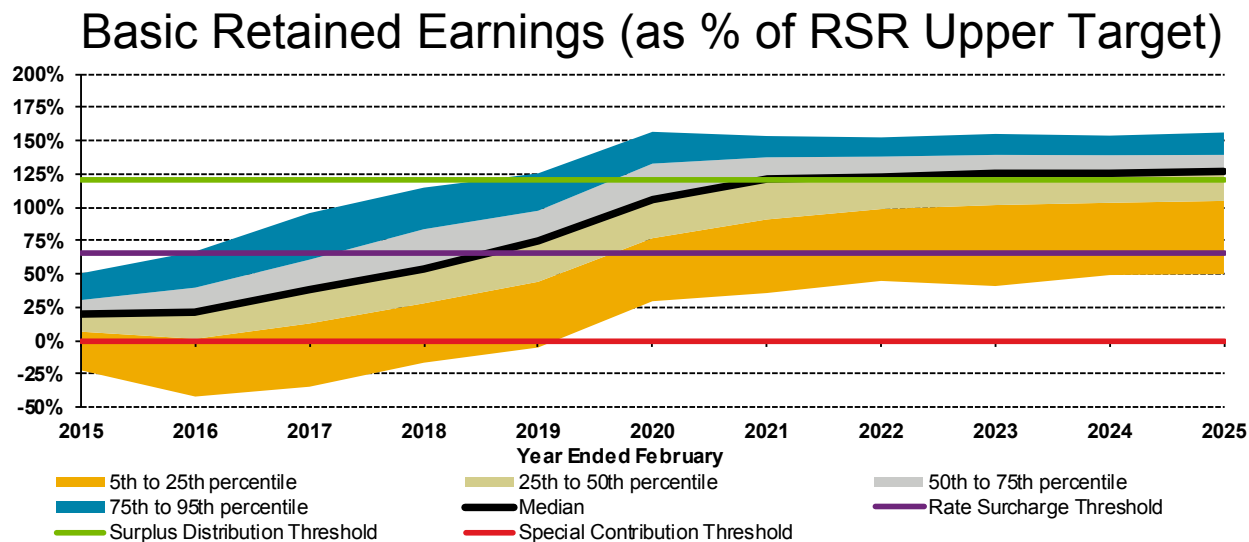
## Basic Retained Earnings (\$M)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	100	165	232	345	458	538	723	751	769	810	831	869
<b>75th percentile</b>	100	104	145	235	332	406	595	639	666	697	719	749
<b>Median</b>	100	68	84	158	245	328	479	550	586	616	635	660
<b>25th percentile</b>	100	28	23	87	167	236	394	450	487	515	528	552
<b>5th percentile</b>	100	(48)	(72)	(18)	66	111	262	304	328	346	362	375
<b>Mean</b>	100	65	83	162	250	325	489	541	572	601	622	645
<b>Standard Deviation</b>	-	63	92	109	122	130	145	136	134	142	140	150
<b>CTE 5% *</b>	100	(76)	(116)	(61)	19	58	202	236	269	271	307	303
<b>Prob { Retained Earnings &lt; 0 }</b>	0.0%	14.8%	18.4%	7.1%	1.2%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Risk Diagnosis



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	50.4%	66.9%	95.7%	114.8%	125.6%	156.7%	153.6%	152.5%	155.1%	153.9%	156.2%
<b>75th percentile</b>	30.4%	39.7%	60.8%	83.6%	97.5%	132.8%	137.6%	138.1%	139.4%	139.2%	139.4%
<b>Median</b>	19.5%	21.7%	37.8%	54.2%	74.3%	106.1%	120.9%	122.9%	125.6%	125.5%	126.7%
<b>25th percentile</b>	6.6%	1.3%	12.8%	27.9%	44.1%	76.8%	90.9%	98.7%	101.7%	103.4%	104.9%
<b>5th percentile</b>	-22.4%	-42.1%	-34.7%	-16.6%	-5.2%	29.5%	35.7%	44.8%	40.9%	49.2%	49.9%
<b>Mean</b>	17.7%	18.7%	35.5%	53.6%	68.6%	101.7%	110.8%	113.5%	116.0%	116.6%	117.5%
<b>Standard Deviation</b>	21.4%	32.5%	38.0%	40.3%	39.8%	39.6%	36.7%	35.1%	34.8%	32.7%	33.4%
<b>CTE 5%*</b>	-34.3%	-62.9%	-49.8%	-37.7%	-23.1%	8.5%	12.8%	16.3%	16.7%	28.6%	19.1%
<b>Prob { 65%-120% }</b>	0.7%	5.9%	21.1%	37.4%	50.9%	45.7%	36.6%	35.0%	31.1%	32.7%	34.1%
<b>Prob { 65%-100% }</b>	0.7%	5.8%	18.1%	28.4%	36.3%	24.0%	18.9%	14.8%	15.3%	13.5%	14.3%
<b>Prob { Below 0% }</b>	17.7%	23.6%	16.5%	9.1%	6.7%	1.0%	1.1%	0.8%	0.9%	0.8%	0.9%
<b>Prob { Below 65% }</b>	99.3%	94.1%	78.3%	58.8%	40.9%	18.7%	12.1%	11.1%	9.2%	9.2%	7.5%
<b>Prob { Over 120% }</b>	0.0%	0.0%	0.6%	3.8%	8.2%	35.6%	51.3%	53.9%	59.7%	58.1%	58.4%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Risk Diagnosis

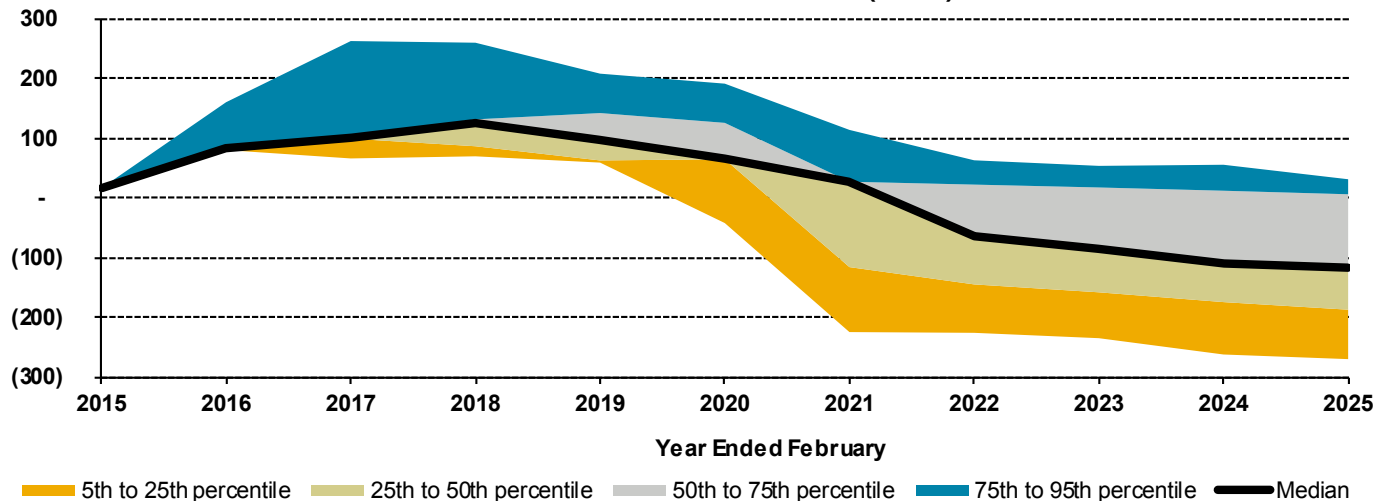
## Cumulative Rate Surcharge (% of premiums)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Prob { Surcharge &gt; 0% }</b>	99.3%	94.1%	78.3%	58.8%	40.9%	18.7%	12.1%	11.1%	9.2%	9.2%	7.5%
<b>Prob { Surcharge &gt; 2% }</b>	0.0%	90.6%	73.5%	52.6%	32.6%	13.4%	6.5%	5.9%	5.7%	3.6%	4.0%
<b>Prob { Surcharge &gt; 4% }</b>	0.0%	0.0%	68.6%	48.2%	28.3%	9.6%	3.7%	2.8%	2.9%	2.1%	1.4%
<b>Prob { Surcharge &gt; 6% }</b>	0.0%	0.0%	0.0%	42.4%	23.9%	7.2%	2.6%	1.3%	0.8%	0.6%	0.8%
<b>Prob { Surcharge &gt; 8% }</b>	0.0%	0.0%	0.0%	0.0%	20.9%	5.0%	1.8%	0.9%	0.4%	0.3%	0.1%
<b>Prob { 0% &lt; Surcharge ≤ 2% }</b>	99.3%	3.5%	4.8%	6.2%	8.3%	5.3%	5.6%	5.2%	3.5%	5.6%	3.5%
<b>Prob { 2% &lt; Surcharge ≤ 4% }</b>	0.0%	90.6%	4.9%	4.4%	4.3%	3.8%	2.8%	3.1%	2.8%	1.5%	2.6%
<b>Prob { 4% &lt; Surcharge ≤ 6% }</b>	0.0%	0.0%	68.6%	5.8%	4.4%	2.4%	1.1%	1.5%	2.1%	1.5%	0.6%
<b>Prob { 6% &lt; Surcharge ≤ 8% }</b>	0.0%	0.0%	0.0%	42.4%	3.0%	2.2%	0.8%	0.4%	0.4%	0.3%	0.7%
<b>Prob { Surcharge &gt; 8% }</b>	0.0%	0.0%	0.0%	0.0%	20.9%	5.0%	1.8%	0.9%	0.4%	0.3%	0.1%
<b>Persistence* ]0%-2%] -&gt; ]2%-4%]</b>		91.2%	140.0%	91.7%	69.4%	45.8%	52.8%	55.4%	53.8%	42.9%	46.4%
<b>Persistence* ]2%-4%] -&gt; ]4%-6%]</b>			75.7%	118.4%	100.0%	55.8%	28.9%	53.6%	67.7%	53.6%	40.0%
<b>Persistence* ]4%-6%] -&gt; ]6%-8%]</b>				61.8%	51.7%	50.0%	33.3%	36.4%	26.7%	14.3%	46.7%
<b>Persistence* ]6%-8%] -&gt; ]8%+]</b>					49.3%	166.7%	81.8%	112.5%	100.0%	75.0%	33.3%
<b>Average Persistence</b>		69.5%									

\* The first diagonal of Persistence allows to track yearly increases. Other Persistence has been greyed because being at a level can be the result of an increase from a lower level or a decrease from a higher level

# ...Risk Diagnosis

## Net Cash Flow \* (\$M)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	16	159	262	259	207	191	113	62	53	55	30
<b>75th percentile</b>	15	84	104	131	141	125	26	22	17	11	5
<b>Median</b>	15	82	101	126	95	66	25	(67)	(86)	(109)	(118)
<b>25th percentile</b>	15	81	98	86	62	64	(117)	(146)	(159)	(175)	(188)
<b>5th percentile</b>	15	79	65	69	58	(43)	(225)	(227)	(236)	(263)	(271)
<b>Mean</b>	15	91	119	127	104	88	(28)	(60)	(73)	(93)	(101)
<b>Standard Deviation</b>	0	30	59	61	68	71	109	105	104	109	110
<b>CTE 5% **</b>	15	76	63	57	(32)	(84)	(271)	(261)	(275)	(307)	(308)
<b>Prob { Cash Flow &lt; 0 }</b>	0%	0%	0%	1%	4%	8%	36%	51%	54%	60%	58%

\* Net Cash Flow includes the cash flow from Insurance Operations, including any rate surcharge, surplus distribution, special contribution as well as the cash flow from the pension plan

\*\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

## ...Risk Diagnosis

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### Returns

- The annual mean nominal return is around 5% (3% real)
  - This compares to an initial liability discount rate of 3.68% (1.68% real)
- In bad years, the portfolio could lose about 9% (11% real)

### Basic net income

- Average Basic net income is negative in the year ending in February 2015, before increasing gradually to reach approximately \$125M in the last 5 years of the projection
  - There is an average probability of approximately 20% that Basic Net Income will be negative
- In bad years, MPI could lose more than \$130M in basic operations

### Net cash flows

- Net cash flows could be largely negative given surplus distributions are assumed to happen over a single year
  - Could require significant liquidity

## ...Risk Diagnosis

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### Retained earnings

- Retained earnings have an upward trend
  - Consistent with MPI's decision to model the Desired State rules for the RSR
- The risk of negative retained earnings is small, although not negligible in the first few years
- The band where there is no premium adjustment or surplus distribution has a width of  $120\% - 65\% = 55\%$  of upper RSR target
- The volatility of the RSR as a percentage of the upper RSR target is approximately 35%

### Rate surcharge persistency

- The probability of a rate surcharge decreases over time
- When there is a surcharge, there is on average a 70% chance the surcharge will increase in the next period, although this probability decreases as the surcharge increases
  - At the time there is a surcharge, there is no buffer to protect from further degradation of the funded status
  - In cases where an increase by more than 2% would be required, the rules limit the increase at 2%. It is then expected further increase will be required



# Optimization

# Optimization

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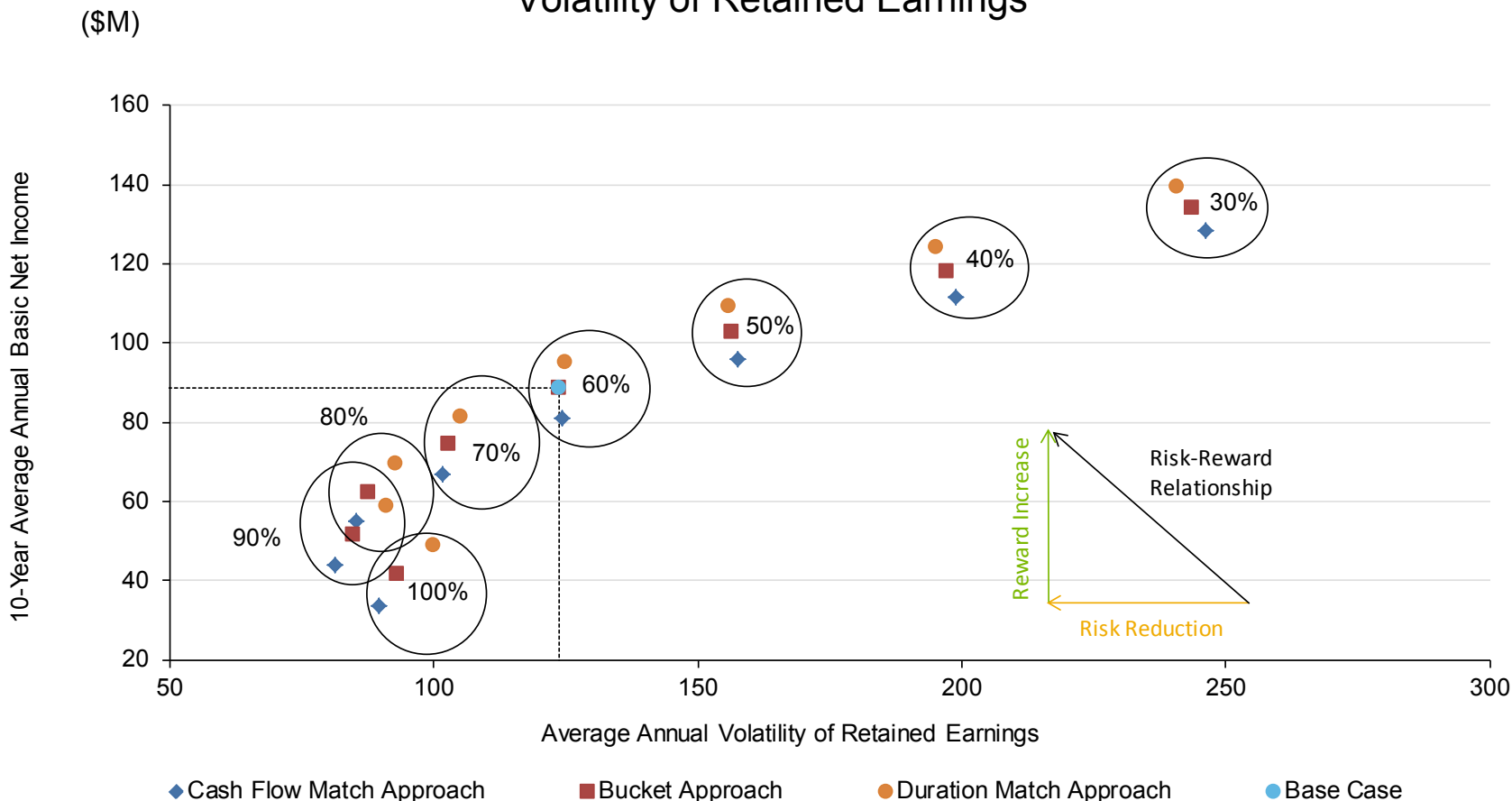
- The optimization process involves several steps
  - Step 1: looks at the impact of using Duration Matching / Bucket Approach / Cash Flow Matching for various levels of liability matching assets in the total portfolio
    - The composition of the growth component is kept unchanged at this stage
  - Step 2: optimizes the composition of the growth component for various allocations to the liability matching component
  - A last step looks at adjusting the fixed income allocation according to the level of various liability targets
    - For this step, the composition of both the liability matching component and the growth component is kept unchanged
    - This analysis is included for your information in Appendix E
- For all of these steps, the variables used to compare strategies are
  - Risk: average annual volatility of retained earnings
    - This variable was chosen because the level of retained earnings will determine the premium adjustments
  - Reward: average annual basic net income



# ... Optimization

## Step 1 – Hedging Strategy

### Risk-Reward Relationship of Average Annual Basic Net Income and Average Annual Volatility of Retained Earnings



- The percentages represent the allocations to the hedging strategy, the balance of assets is invested in the current growth component on a pro-rata basis

## ...Optimization

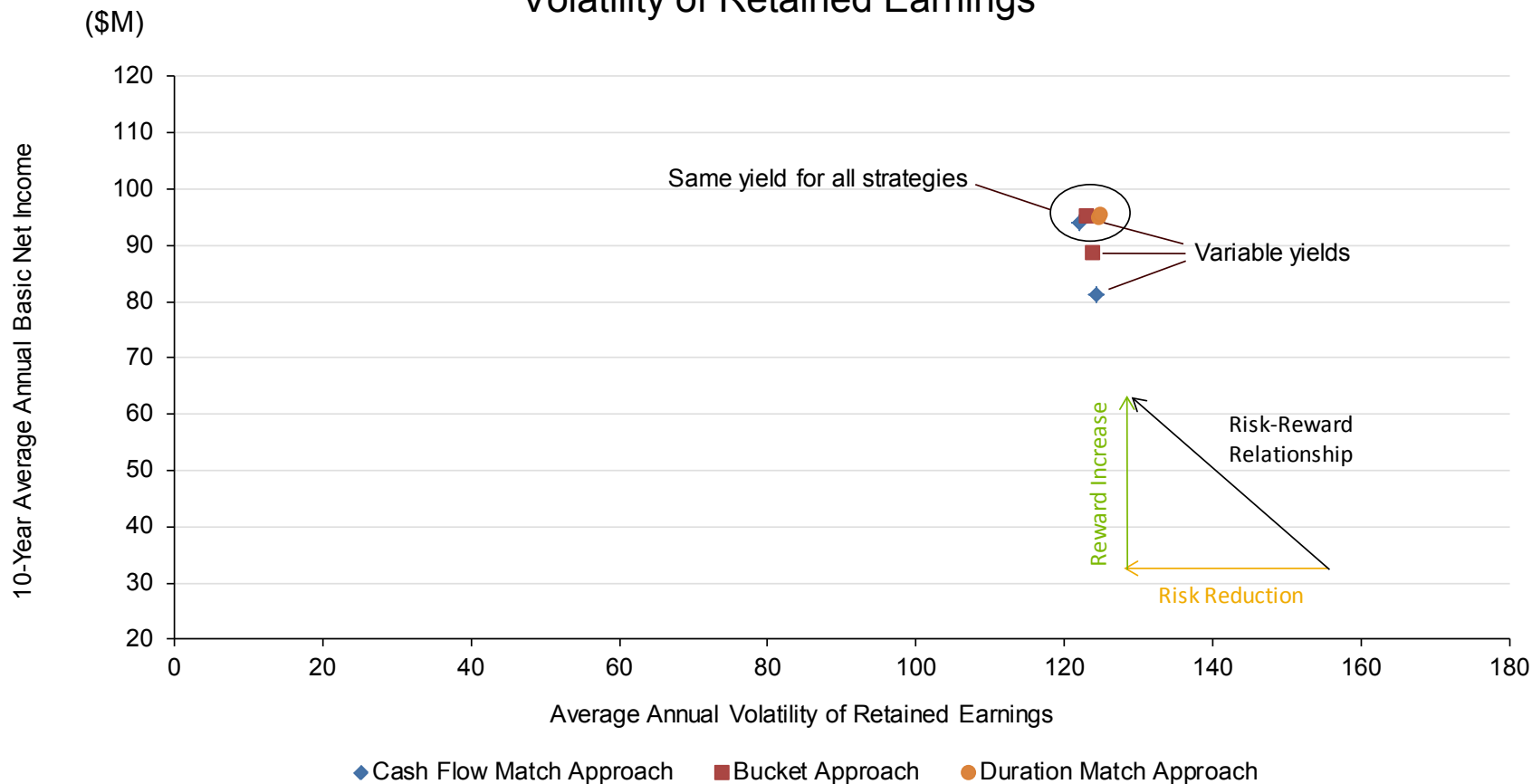
### ...Step 1 – Hedging Strategy

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- For allocations to fixed income from 30% to 70%, the best hedging strategy is Duration Matching
  - The additional tracking error does not significantly impact the volatility of retained earnings, but the additional yield increases net income materially
- For allocations to fixed income of 80%, all strategies are efficient, while the duration strategy is not efficient with 90% fixed income
- Allocations of 100% to the hedging strategies are sub-optimal
- The lack of trade-off among the hedging strategies for the fixed income allocations from 30% to 60% is counter-intuitive. In order to understand which elements have an impact on the results, we next perform additional tests in which we change one element of the modeling at a time with everything else remaining the same
  - These stress tests are meant to illustrate the impact of key variables on the results and are not suggested changes to the asset-liability study assumptions or the environment in which MPI operates. For the same purpose, alternate RSR rules have been modeled. The results are in Appendix G
- The tests are:
  - All hedging strategies have the same yield (tested for a 60% allocation to the hedging strategy)
  - No RSR targets are modeled instead of the Desired State rules (tested for a 60% and 70% allocation to the hedging strategy)

# ... Optimization ... Step 1 – Hedging Strategy

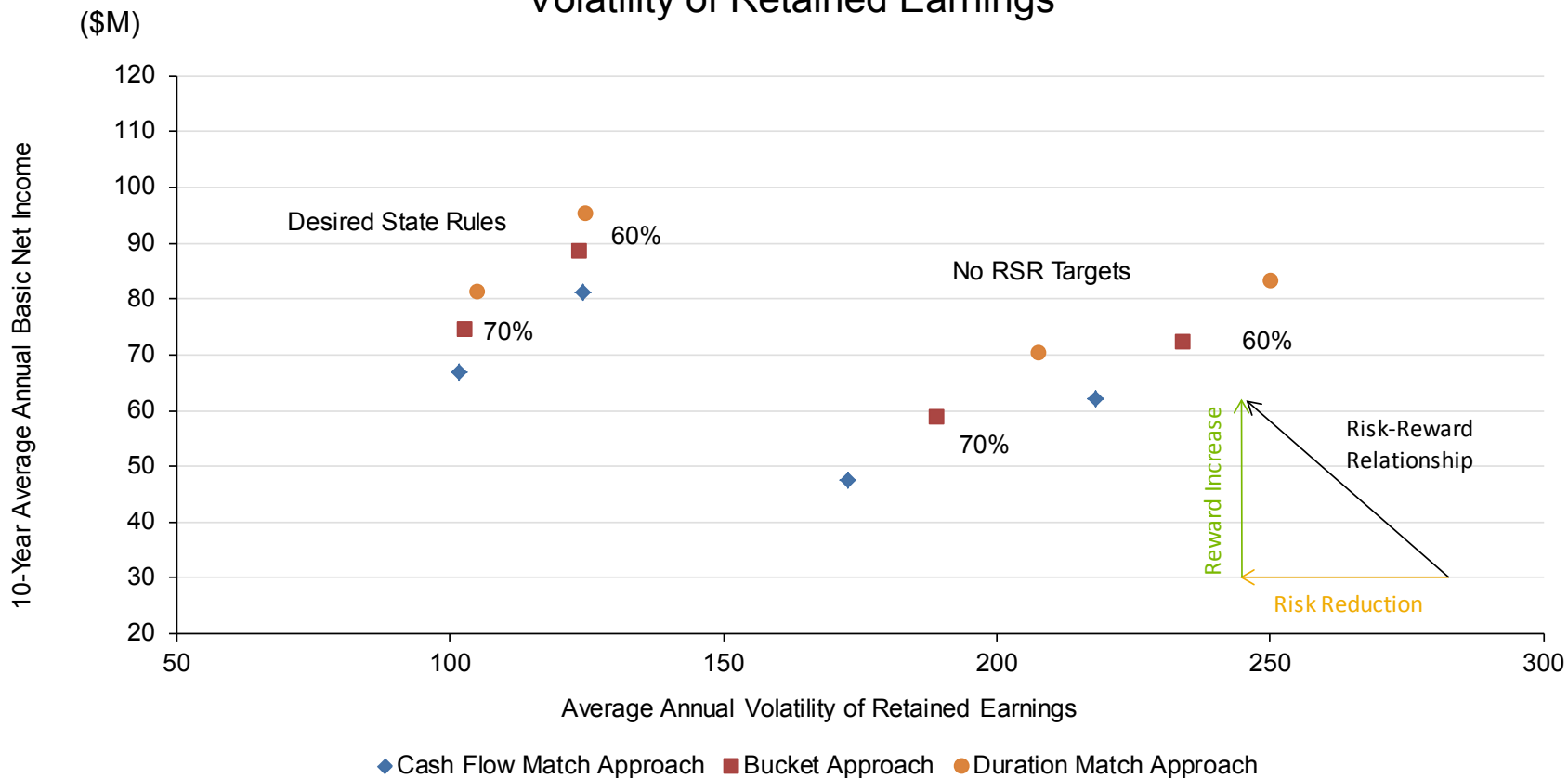
## Risk-Reward Relationship of Average Annual Basic Net Income and Average Annual Volatility of Retained Earnings



# ... Optimization

## ... Step 1 – Hedging Strategy

### Risk-Reward Relationship of Average Annual Basic Net Income and Average Annual Volatility of Retained Earnings



# ... Optimization

## ... Step 1 – Hedging Strategy

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### 1. Same yield for all hedging strategies

- The average yield is the main driver between the differences in the different hedging strategies
- The different tracking errors have very marginal impact on both average net income as well as the volatility of retained earnings
  - The differences in tracking errors due to the liability hedging portfolio are buried under the much larger volatility of growth assets and the inflation volatility

# ...Optimization

## ...Step 1 – Hedging Strategy

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### 2. Desired State rules vs. no RSR targets

- Removing the RSR targets (and consequently all rate surcharges, special contributions and surplus distributions) causes the relationship between all 3 hedging strategies to revert to what would be expected with regards to volatility of retained earnings
- The RSR targets mechanism causes a riskier, better yielding strategy to have a lower volatility of retained earnings than the tighter-matched strategies
  - The RSR volatility results from the interaction of several variables. We think the most significant source for the observed phenomenon is that RSR under the better yielding strategies, for relatively similar risk levels, tends to be closer to the upper target on average, where the rebates compress the RSR, thus making it more stable
- However, even without the RSR targets and given the assumed difference in yield of 0.2% between the hedging strategies, the better option would still be the Duration Matching approach as more effective risk reduction can be achieved by increasing the bond allocation instead of implementing tighter matching with the bond portfolio
  - This is demonstrated in the graph on Page 37 where, in the “No RSR Target” framework, the duration matching approach with a 70% fixed income allocation dominates (i.e. better reward for less risk) the cash flow matching approach with a 60% fixed income allocation

# ...Optimization

## ...Step 1 – Hedging Strategy

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### Step 1 conclusion

- The best hedging strategy for allocations of up to 70% is the Duration Matching approach
  - This is highly dependent on the assumed yield gain from using this approach over both the Bucket Approach and the Cash Flow Matching approach
  - If a better matching could be achieved with a similar yield, that option would win over the Duration Matching
- Reductions in the volatility of retained earnings are achieved through a higher allocation to the hedging strategy, but not through a tighter matching of the hedging strategy
- Therefore, the Duration Matching approach is retained for the next optimization steps

# ... Optimization

## Step 2 – Optimization of the Total Portfolio

### Step 2

- In this step, we perform an optimization of the growth assets in combination with the Duration Matching hedging strategy
- This is done using the following constraints:

Illiquid	Inflation Sensitive	Asset Class	Minimum	Maximum
		<b>Liability Matching Portfolio</b>	<b>55.0%</b>	<b>75.0%</b>
✓		Mortgages	0.0%	10.0%
		<b>Total Growth Component Fixed Income</b>	<b>0.0%</b>	<b>10.0%</b>
		Canadian Equities (85% Large Cap, 15% Small Cap)	10.0%	15.0%
		U.S. Equities (80% Large Cap, 20% Small Cap)	0.0%	10.0%
		International Equities	0.0%	10.0%
		<b>Total Equities</b>	<b>10.0%</b>	<b>25.0%</b>
	✓	Commodities	0.0%	5.0%
✓	✓	Canadian Direct Real Estate	10.0%	15.0%
✓	✓	Direct Infrastructure	5.0%	7.0%
✓	✓	Timberlands	0.0%	5.0%
		<b>Total Alternatives</b>	<b>15.0%</b>	<b>30.0%</b>
		<b>Total Illiquid Asset Classes (as % of growth assets)</b>	<b>0.0%</b>	<b>50.0%</b>

#### Other considerations

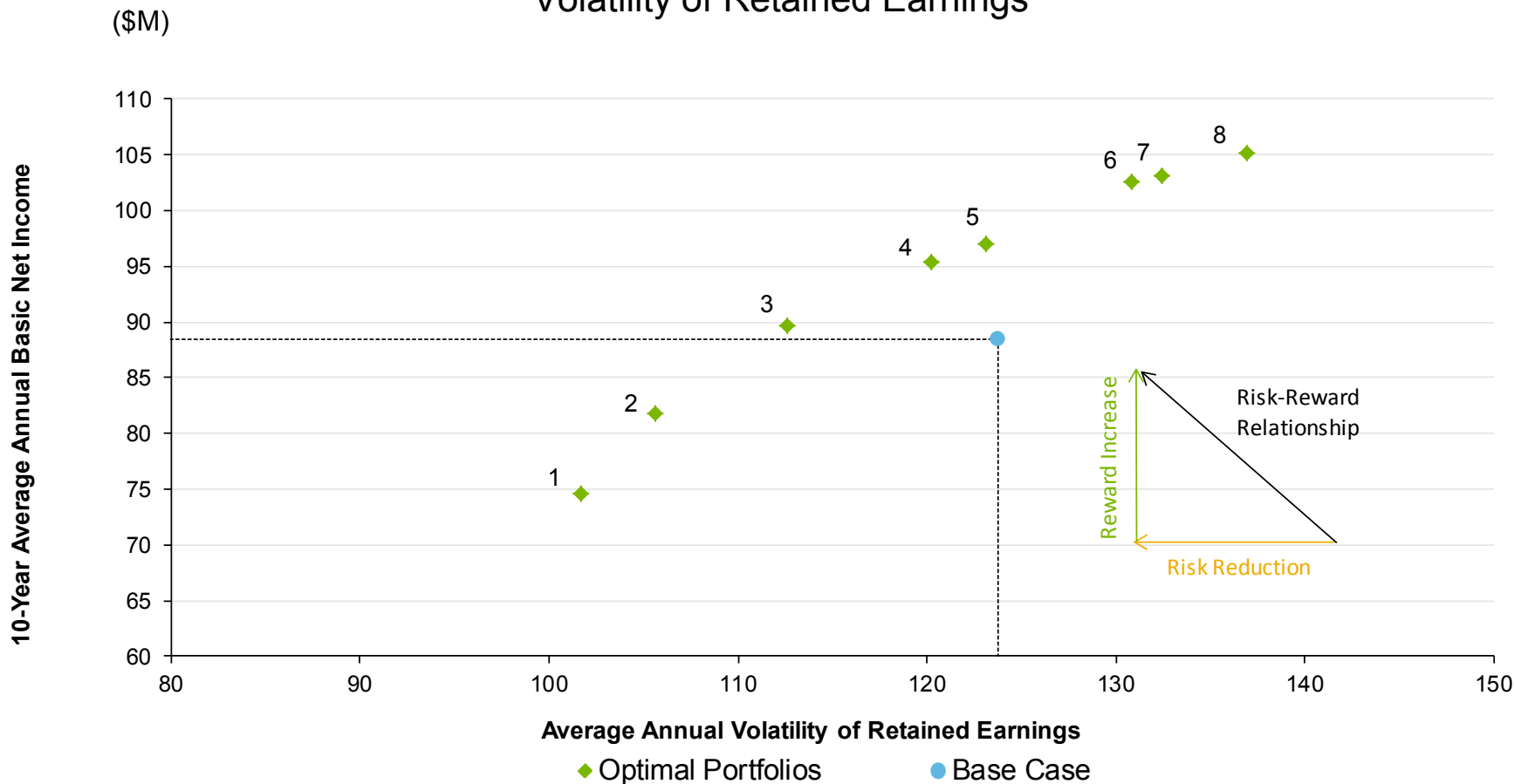
- Should target about 15% to 30% Inflation Sensitive assets, but it may not be feasible while respecting the other constraints if the allocation to the Liability Matching portfolio is very large.
- Any positive allocation should be at least 5% of the total portfolio (steps of 5% will be used)



# ... Optimization

## ... Step 2 – Optimization of the Total Portfolio

### Risk-Reward Relationship of Average Annual Basic Net Income and Average Annual Volatility of Retained Earnings



## ... Optimization

## ... Step 2 – Optimization of the Total Portfolio

## Asset Allocation of Optimal Portfolios

	1	2	3	4	5	6	7	8	Base Case
<b>Fixed Income</b>									
Hedging Strategy - CF Matching	0	0	0	0	0	0	0	0	0
Hedging Strategy - Bucket Approach	0	0	0	0	0	0	0	0	60
Hedging Strategy - Duration Matching	75	70	65	60	60	55	55	55	0
<b>Equities</b>									
Canadian Equities	0	0	0	0	0	0	0	0	15
Canadian Equities (85% Large Cap, 15% Small Cap)	10	10	10	10	15	15	10	10	0
U.S. Equities	0	0	0	0	0	0	0	0	5
U.S. Equities (80% Large Cap, 20% Small Cap)	0	5	10	10	10	5	10	10	0
International Equities	0	0	0	0	0	5	5	10	0
<b>Alternatives</b>									
Canadian Direct Real Estate	10	10	10	10	10	10	10	10	13
Direct Infrastructure	5	5	5	5	5	5	5	5	7
Timberlands	0	0	0	5	0	5	5	0	0
<b>Total Fixed Income</b>	<b>75</b>	<b>70</b>	<b>65</b>	<b>60</b>	<b>60</b>	<b>55</b>	<b>55</b>	<b>55</b>	<b>60</b>
<b>Total Equities</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>20</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>30</b>	<b>20</b>
<b>Total Alternatives</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>20</b>	<b>15</b>	<b>20</b>	<b>20</b>	<b>15</b>	<b>20</b>
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

## ... Optimization

## ... Step 2 – Optimization of the Total Portfolio

## Fixed Income Allocation

	1	2	3	4	5	6	7	8	Base Case
Total Fixed Income	75	70	65	60	60	55	55	55	60

## Risk-Reward Relationship of the Average Annual Basic Retained Earnings (\$M)

	1	2	3	4	5	6	7	8	Base Case
Mean	350.4	377.5	407.4	422.5	431.3	449.0	455.2	470.2	395.7
Volatility	101.7	105.6	112.6	120.2	123.1	130.8	132.5	136.9	123.8
Pessimistic Mean*	133.9	153.6	170.6	167.1	175.9	171.1	176.0	187.3	128.5
Probability {Retained Earnings < 0}	1%	1%	2%	2%	2%	2%	2%	2%	4%

## Risk-Reward Relationship of the Average Annual Net Income from Basic Operations (\$M)

	1	2	3	4	5	6	7	8	Base Case
Mean	74.6	81.8	89.7	95.3	97.0	102.6	103.1	105.2	88.5
Volatility	80.1	80.6	83.3	90.1	89.2	95.5	95.7	94.4	94.6
Pessimistic Mean*	-103.8	-98.6	-96.1	-105.2	-99.5	-109.4	-107.7	-100.4	-130.7
Probability {Net Income < 0}	21%	19%	18%	18%	18%	18%	18%	17%	22%

## Risk-Reward Relationship of the Average Annual Competitive Retained Earnings (\$M)

	1	2	3	4	5	6	7	8	Base Case
Mean	456.4	460.4	464.5	468.5	467.8	471.7	472.0	471.3	464.5
Volatility	42.6	43.7	45.7	47.0	49.5	50.3	50.1	51.9	49.1
Pessimistic Mean*	364.3	367.0	368.2	369.9	364.9	366.2	367.8	364.5	362.0
Probability {Retained Earnings < 0}	0%	0%	0%	0%	0%	0%	0%	0%	0%

## Risk-Reward Relationship of the Average Annual Net Income from Competitive Operations (\$M)

	1	2	3	4	5	6	7	8	Base Case
Mean	41.2	42.2	43.2	44.0	44.1	44.9	45.0	45.1	43.4
Volatility	22.5	21.8	21.2	20.9	21.1	20.8	20.7	20.8	21.6
Pessimistic Mean*	-4.5	-2.0	0.2	1.2	1.5	2.4	2.5	2.9	-1.7
Probability {Net Income < 0}	4%	3%	2%	2%	2%	2%	2%	2%	3%

\* Pessimistic Mean: Average of the 50/1000 worst simulated outcomes.

## ... Optimization

## ... Step 2 – Optimization of the Total Portfolio

## Fixed Income Allocation

	1	2	3	4	5	6	7	8	Base Case
Total Fixed Income	75	70	65	60	60	55	55	55	60

## Risk-Reward Relationship of the Average Annual Nominal Return

	1	2	3	4	5	6	7	8	Base Case
Mean	4.6%	4.8%	5.0%	5.2%	5.2%	5.4%	5.4%	5.5%	5.1%
Volatility	5.7%	5.8%	6.0%	5.9%	6.4%	6.3%	6.2%	6.6%	6.2%
Pessimistic Average*	-7.1%	-7.2%	-7.5%	-7.5%	-8.3%	-8.3%	-8.0%	-8.7%	-8.3%
Probability Return > 0%	79%	80%	81%	82%	80%	81%	81%	80%	80%
Probability Return > 3.68%	56%	58%	60%	61%	61%	62%	62%	62%	61%

## Risk-Reward Relationship of the Average Annual Real Return

	1	2	3	4	5	6	7	8	Base Case
Mean	2.5%	2.8%	3.0%	3.1%	3.2%	3.3%	3.3%	3.4%	3.0%
Volatility	5.8%	5.8%	6.0%	6.0%	6.4%	6.3%	6.3%	6.6%	6.1%
Pessimistic Average*	-9.2%	-9.3%	-9.6%	-9.5%	-10.3%	-10.3%	-10.1%	-10.7%	-10.3%
Probability Return > 0%	67%	69%	69%	71%	70%	71%	71%	71%	70%
Probability Return > 1.68%	56%	57%	59%	60%	60%	61%	62%	62%	60%

\* Pessimistic Average: Average of the 50/1000 worst simulated outcomes.

## ... Optimization

## ... Step 2 – Optimization of the Total Portfolio

## Fixed Income Allocation

	1	2	3	4	5	6	7	8	Base Case
Total Fixed Income	75	70	65	60	60	55	55	55	60

## Risk-Reward Relationship of the Retained Earnings (as % of Upper RSR Target)

	1	2	3	4	5	6	7	8	Base Case
Mean	87.7%	86.4%	84.5%	84.8%	83.1%	82.9%	82.2%	80.0%	79.1%
Volatility	33.1%	32.2%	32.1%	33.2%	33.2%	33.8%	32.9%	32.1%	34.9%
Pessimistic Average*	7.4%	6.0%	2.4%	1.0%	-2.9%	-3.5%	-1.1%	-3.2%	-9.6%
Probability of no premium adjustment (range 65%-120%)	40%	37%	35%	33%	32%	31%	31%	31%	30%
Probability of being in target range (65%-100%)	24%	22%	20%	19%	18%	18%	19%	19%	17%
Probability of special contribution	4%	4%	5%	5%	5%	5%	5%	5%	7%
Probability of rate surcharge	31%	33%	35%	36%	37%	38%	38%	39%	40%
Probability of surplus distribution	30%	30%	30%	32%	31%	31%	30%	29%	30%

## Risk-Reward Relationship of the Maximum Attained Rate Surcharge (% of Premiums)

	1	2	3	4	5	6	7	8	Base Case
Probability { Max Surcharge > 0% }	88%	93%	97%	98%	99%	99%	100%	100%	100%
Probability { Max Surcharge > 2% }	71%	77%	85%	86%	89%	91%	91%	94%	93%
Probability { Max Surcharge > 4% }	53%	55%	60%	60%	66%	67%	67%	72%	73%
Probability { Max Surcharge > 6% }	31%	33%	36%	38%	41%	42%	44%	48%	46%
Probability { Max Surcharge > 8% }	10%	12%	14%	17%	18%	20%	21%	22%	22%

\* Pessimistic Average: Average of the 50/1000 worst simulated outcomes.

\*\*Maximum Attained Rate Surcharge: highest level of rate surcharge attained in a given scenario. For example, since the yearly increase is limited to 2% and resets once the lower RSR target is attained, a surcharge of 4% implies a rate surcharge for 2 consecutive years.

## ... Optimization

## ... Step 2 – Optimization of the Total Portfolio

## Fixed Income Allocation

	1	2	3	4	5	6	7	8	Base Case
Total Fixed Income	75	70	65	60	60	55	55	55	60

## Risk-Reward Relationship of the Average Annual Net Cash Flow (\$M)

	1	2	3	4	5	6	7	8	Base Case
Mean	16.1	14.4	12.9	9.7	11.1	8.4	9.6	12.3	17.3
Volatility	58.7	62.1	67.0	71.7	73.8	78.7	77.5	78.5	75.1
Pessimistic Mean*	-102.6	-106.7	-116.1	-129.2	-128.7	-141.2	-138.5	-135.0	-120.6
Probability {Cash Flow < 0}	24%	25%	25%	26%	25%	26%	25%	24%	25%

Risk-Reward Relationship of the Average Annual Net Cash Flow,  
excluding Surplus Distributions & Special Contributions (\$M)

	1	2	3	4	5	6	7	8	Base Case
Mean	49.5	50.5	51.9	52.6	53.5	54.0	54.3	55.4	55.1
Volatility	15.7	16.5	17.4	18.2	18.9	19.4	19.3	19.6	19.1
Pessimistic Mean*	36.2	36.2	36.3	36.6	36.7	37.2	37.3	37.6	37.5
Probability {Cash Flow < 0}	0%	0%	0%	0%	0%	0%	0%	0%	0%

\* Pessimistic Mean: Average of the 50/1000 worst simulated outcomes.

## ...Optimization

### ...Step 2 – Optimization of the Total Portfolio

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- Note that the minimum of 5% for a positive allocation was relaxed to make room to test 7% allocations to infrastructure
- The 5% steps constraint was otherwise respected
  - Had smaller steps been used, there would have been a larger number of optimal portfolios
    - Interpolating between adjacent optimal portfolios would provide a decent proxy of the portfolios that would appear in-between them on the risk-reward chart

### Step 2 conclusion

- The minimum constraints imposed to allocations to Canadian equities, real estate and infrastructure leave limited room for other asset classes, especially at large levels of fixed income allocation
- The allocation to Canadian equities exceeds the minimum constraint only in the portfolios where the risk is greater than or equal to the base case's risk
- Allocations to real estate and infrastructure never exceed the minimum constraints
- Except in the riskiest portfolios, the illiquid asset classes are present in the optimal portfolios at or near their maximum allowed by the constraints
- As the growth assets allocation increases, the asset classes that are favored are U.S. equities, Canadian equities, international equities and timberlands

## ...Optimization

### ...Step 2 – Optimization of the Total Portfolio

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#### ...Step 2 conclusion

- The base case portfolio's reward stands between portfolios 2 to 4 for most variables
- The risk of the base case portfolio generally exceeds significantly the risk of portfolios with similar reward



## ...Optimization

### ...Step 2 – Optimization of the Total Portfolio

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#### ...Step 2 conclusion

- The retained earnings as a percentage of the upper RSR target present an interesting case
  - When looking at volatility, only portfolios 1 to 3 are optimal
  - When looking at pessimistic average, the least risky portfolio presents the largest reward and therefore dominates all the others
  - The large fixed income allocation results in
    - ♦ Small volatility
    - ♦ Small capital requirement (i.e. smaller upper RSR target)
  - Even with these low risk portfolios, the average annual probability of no adjustment remains at or below 40%
- Portfolios 1 and 2 respectively have probabilities of 29% and 23% that the surcharge will not exceed 2% over the 10 year period
  - This probability drops drastically as portfolios get riskier; reaching 6% at the riskier end of the frontier



## Conclusion and recommendations

# Conclusion and recommendations

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## Conclusion

### Risk Diagnosis (Base Case Portfolio)

#### Returns

- The annual mean nominal return exceeds the initial liability discount rate, both in nominal and real terms
- In bad years, the portfolio could lose about 9% (11% real)

#### Basic net income

- Average Basic net incomes is negative in the year ending in February 2015, before increasing gradually to reach approximately \$125M in the last 5 years of the projection
  - There is an average probability of approximately 20% that Basic Net Income will be negative
- In bad years, MPI could lose more than \$130M in basic operations

## ...Conclusion and recommendations

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### ...Risk Diagnosis (Base Case Portfolio)

#### Retained earnings

- The risk of negative retained earnings is small
- The band where there is no premium adjustment or surplus distribution has a small width as a percentage of upper RSR target compared to the volatility of the RSR

#### Rate surcharge persistency

- The probability of a rate surcharge decreases over time
- When there is a surcharge, there is on average a 70% chance the surcharge will increase in the next period, although this probability decreases as the surcharge increases
  - At the time there is a surcharge, there is no buffer to protect from further degradation of the funded status
  - In cases where an increase by more than 2% would be required, the rules limit the increase at 2%. It is then expected further increase will be required

#### Net cash flows

- Net cash flows could be largely negative given surplus distributions are assumed to happen over a single year
  - Could require significant liquidity

## ...Conclusion and recommendations

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### Optimization

#### Step 1

- The best hedging strategy is Duration Matching
  - The additional tracking error does not significantly impact the volatility of retained earnings, but the additional yield increases net income materially
    - More precise matching has a higher cost because the portfolio yields are lower
      - ♦ Duration Matching has the highest yield, the Bucket Approach has a lower yield and Cash Flow Matching has the lowest yield
        - This occurs because, as you more closely match cash flows, the portfolio invests more in shorter-term (lower yield) bonds
  - In order to reduce risk, it is more efficient to increase the bond allocation than to improve the fit of the hedging strategy
    - Both of these decisions reduce the expected return and therefore the net income. However, for a similar reduction in net income, the increased bond allocation results in a greater risk reduction than a tighter match of the hedging strategy

## ...Conclusion and recommendations

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### ...Optimization

#### Step 2 conclusion

- The allocation to Canadian equities exceeds the minimum constraint only in the portfolios where the risk is greater than or equal to the base case's risk
- Allocations to real estate and infrastructure never exceed the minimum constraints
- The total allocation to illiquid asset classes is generally at or near the maximum allowed in optimal portfolios
- As the growth assets allocation increases, the asset classes that are favored are U.S. equities, Canadian equities, international equities and timberlands
- Retained earnings as a percentage of the upper RSR target present an interesting case
  - When looking at volatility, only portfolios 1 to 3 are optimal
  - When looking at pessimistic average, the least risky portfolio presents the largest reward and therefore dominates all the others
  - The large fixed income allocation results in
    - Small volatility
    - Small capital requirement (i.e. smaller upper RSR target)
  - Even with these low risk portfolios, the average annual probability of no adjustment remains at or below 40%

## ...Conclusion and recommendations

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### ...Optimization

#### Additional step

- Some dynamic allocations can reduce the risk of low levels of retained earnings in extreme situations, but are ineffective in reducing the volatility of retained earnings
  - This analysis can be found in Appendix E

## ...Conclusion and recommendations

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### Peers

- While the peer comparisons in Appendix A provide interesting information, MPI should avoid over-reliance on peer practices
  - Different coverage
  - Small sample size
  - Different interest rate sensitivity
    - Wide range of liability duration
    - Various methodologies to set liability discount rate
  - Wide range of practices
    - Capital management
    - Insurance fund separated from the corporation
    - Competitive lines of business
  - There is no one-size-fits-all solution
  - As such, the focus of our conclusions is on ensuring the recommended investment strategy is consistent with our understanding of MPI's goals and objectives



## ...Conclusion and recommendations

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### Recommendations

#### Policy considerations

- Provide in the policies that surplus distributions be spread over time
  - Rationale: surplus distributions could cause liquidity issues
- Revise the RSR targets
  - Rationale: The modeled lower and upper RSR targets are in part responsible for frequent large rate adjustments
  - A larger distance between the lower and upper RSR targets would reduce the likelihood of rate adjustments
    - The distance between targets should reflect the volatility of the RSR
  - Smoothed rate adjustments could be used to reduce rate volatility
  - Further study would be required to determine the most attractive approach
    - Information regarding methods used by peers can be found in Appendix A
    - Sample results under alternative RSR targets can be found in Appendix G

## ...Conclusion and recommendations

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### ...Recommendations

- We perceive that MPI has a low risk tolerance resulting from
  - The mandate to break even instead of targeting profit
  - The extensive process to change targeted levels of reserve
  - The lack of control of MPI over premium rates
  
- Therefore, we recommend adopting portfolio 2 for the following reasons
  - The portfolio is at the lower end of the risk spectrum
  - It has a significant allocation to real estate and infrastructure, which is required to provide some inflation protection in the long term
  - The equity allocation it contains provides liquidity to balance the illiquid asset allocation

## ...Conclusion and recommendations

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### ...Recommendations

- The retained earnings as a percentage of RSR upper target would suggest that the best portfolio is portfolio 1 (mean vs. pessimistic mean)
  - However, we do not recommend this portfolio because it has a larger allocation to illiquid assets than to equities
    - More difficult to remain near the growth / fixed income target allocation
- Portfolio 2 exceeds MPI's objective of breaking even
  - Portfolios 3 through 8 offer increasing amounts of average basic net income
  - This comes at the cost of greater retained earnings volatility
  - Since MPI's objective is not to generate larger profits, we do not see a justification to take further risk
    - Therefore, we do not recommend portfolios 3 through 8, unless MPI wants to generate profits and is willing to accept the corresponding risk

## ...Conclusion and recommendations

- The following tables show key projection statistics for both the recommended portfolio as well as the “Base Case” portfolio

	Recommended Portfolio (#2)	Base Case	Differences
<b>Fixed Income</b>			
Hedging Strategy - CF Matching	0	0	-
Hedging Strategy - Bucket Approach	0	60	(60)
Hedging Strategy - Duration Matching	70	0	70
<b>Equities</b>			
Canadian Equities	0	15	(15)
Canadian Equities (85% Large Cap, 15% Small Cap)	10	0	10
U.S. Equities	0	5	(5)
U.S. Equities (80% Large Cap, 20% Small Cap)	5	0	5
International Equities	0	0	-
<b>Alternatives</b>			
Canadian Direct Real Estate	10	13	(3)
Direct Infrastructure	5	7	(2)
Timberlands	0	0	-
Total Fixed Income	70	60	10
Total Equities	15	20	(5)
Total Alternatives	15	20	(5)
<b>Total</b>	<b>100</b>	<b>100</b>	<b>-</b>

## ...Conclusion and recommendations

### Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

### Average Annual Basic Retained Earnings (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	377.5	395.7	(18.2)
Volatility	105.6	123.8	(18.2)
Pessimistic Mean*	153.6	128.5	25.1
Probability {Retained Earnings < 0}	1%	4%	(2%)

### Average Annual Net Income from Basic Operations (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	81.8	88.5	(6.6)
Volatility	80.6	94.6	(14.0)
Pessimistic Mean*	-98.6	-130.7	32.2
Probability {Net Income < 0}	19%	22%	(4%)

### Average Annual Competitive Retained Earnings (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	460.4	464.5	(4.2)
Volatility	43.7	49.1	(5.3)
Pessimistic Mean*	367.0	362.0	5.0
Probability {Retained Earnings < 0}	0%	0%	-

### Average Annual Net Income from Competitive Operations (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	42.2	43.4	(1.2)
Volatility	21.8	21.6	0.2
Pessimistic Mean*	-2.0	-1.7	(0.3)
Probability {Net Income < 0}	3%	3%	0%

\* Pessimistic Mean: Average of the 50/1000 worst simulated outcomes.

## ...Conclusion and recommendations

### Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

### Average Annual Nominal Return

	Recommended Portfolio (#2)	Base Case	Differences
Mean	4.8%	5.1%	(0.3%)
Volatility	5.8%	6.2%	(0.4%)
Pessimistic Average*	-7.2%	-8.3%	1.1%
Probability Return > 0%	80%	80%	(0%)
Probability Return > 3.68%	58%	61%	(3%)

### Average Annual Real Return

	Recommended Portfolio (#2)	Base Case	Differences
Mean	2.8%	3.0%	(0.2%)
Volatility	5.8%	6.1%	(0.3%)
Pessimistic Average*	-9.3%	-10.3%	1.0%
Probability Return > 0%	69%	70%	(1%)
Probability Return > 1.68%	57%	60%	(2%)

\* Pessimistic Average: Average of the 50/1000 worst simulated outcomes.

## ...Conclusion and recommendations

### Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

### Retained Earnings (as % of Upper RSR Target)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	86.4%	79.1%	7.3%
Volatility	32.2%	34.9%	(2.7%)
Pessimistic Average*	6.0%	-9.6%	15.7%
Probability of no premium adjustment (range 65%-120%)	37%	30%	7%
Probability of being in target range (65%-100%)	22%	17%	5%
Probability of special contribution	4%	7%	(3%)
Probability of rate surcharge	33%	40%	(7%)
Probability of surplus distribution	30%	30%	0%

### Maximum Attained Rate Surcharge (% of Premiums) \*\*

	Recommended Portfolio (#2)	Base Case	Differences
Probability { Max Surcharge > 0% }	93%	100%	(7%)
Probability { Max Surcharge > 2% }	77%	93%	(16%)
Probability { Max Surcharge > 4% }	55%	73%	(18%)
Probability { Max Surcharge > 6% }	33%	46%	(14%)
Probability { Max Surcharge > 8% }	12%	22%	(11%)

\* Pessimistic Average: Average of the 50/1000 worst simulated outcomes.

\*\*Maximum Attained Rate Surcharge: highest level of rate surcharge attained in a given scenario. For example, since the yearly increase is limited to 2% and resets once the lower RSR target is attained, a surcharge of 4% implies a rate surcharge for 2 consecutive years.

## ...Conclusion and recommendations

### Fixed Income Allocation

	Recommended Portfolio (#2)	Base Case	Differences
Total Fixed Income	70	60	10

### Average Annual Net Cash Flow (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	14.4	17.3	(2.9)
Volatility	62.1	75.1	(13.0)
Pessimistic Mean*	-106.7	-120.6	13.8
Probability {Cash Flow < 0}	25%	25%	(0%)

### Average Annual Net Cash Flow, excluding Surplus Distributions & Special Contributions (\$M)

	Recommended Portfolio (#2)	Base Case	Differences
Mean	50.5	55.1	(4.6)
Volatility	16.5	19.1	(2.6)
Pessimistic Mean*	36.2	37.5	(1.3)
Probability {Cash Flow < 0}	0%	0%	-

\* Pessimistic Mean: Average of the 50/1000 worst simulated outcomes.





# Appendix A

## MPI's Peers

# Appendix A

## MPI's Peers

- The following table shows a comparison of the main characteristics pertaining to other provincial crown corporations dealing with automobile insurance

	FAAQ <sup>1</sup>	SGI Auto Fund	ICBC	MPI
<b>Insurance Liabilities</b>				
<b>Valuation Rate</b>	5.6%	4.9%	3.5%	3.7%
<b>Valuation Rate Methodology</b>	Total portfolio expected return	Yield of the bond portfolio that replicates liabilities cash flows	Total portfolio expected return	Bond portfolio expected return
<b>Liabilities Duration</b>	10	4	2	10
<b>% of Bonds within Invested Assets</b>	41%	64%	64%	67%
<b>Bonds vs. Insurance Liabilities</b>	47%	61%	88%	72%
<b>Capital Target</b>	n.a.	100% MCT	100%-175% MCT <sup>2</sup>	65%-100% MCT <sup>3</sup>

<sup>1</sup> FAAQ: in fact the SAAQ's insurance business is entirely separated into the Fonds d'Assurance Automobile du Québec (FAAQ - shown here)

<sup>2</sup> ICBC's management target is 175% MCT. They are in the process of requesting a change to increase the capital target to 190% MCT.

<sup>3</sup> Per Desired State rules. Current rules result in much lower capital targets.

# ...Appendix A

## ...MPI's Peers

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### Comments

- MPI has a similar discount rate for their liabilities to ICBC, whereas both SGI and the SAAQ use much more aggressive discount rates
- The SAAQ and MPI have similarly high liability durations, whereas SGI and ICBC have much shorter durations
  - This suggests a need for more interest rate protection
- The SAAQ is much more aggressive than all others in their investment mix with a significantly lower allocation to bonds
- The capital targets of SGI and ICBC are both much higher than the current and desired state targets for MPI

# ...Appendix A

## ...MPI's Peers

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### Capital management

- SGI recently revised its RSR target
  - Former target range was 75%-150% MCT
- SGI now has a RSR target of 100% of MCT. At each rate program, they apply an amount to either recover one-fifth of the capital below 100% MCT or release one-fifth of the capital above 100% MCT into the basic insurance rate
- ICBC is in the process of revising their capital management
  - The revision is subject to BCUC approval
    - Rates are broken down into a base rate and an adjustment
    - Rate adjustment is limited to a 1.5% deviation from previous year and may not result in a lowering of base rates
    - There can be a surplus distribution, subject to commission approval
      - ♦ Limited to excess capital (capital above 175% MCT)
      - ♦ Commission will require that rates remain stable and predictable despite surplus distribution

# ...Appendix A

## ...MPI's Peers

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### Sources

- FAAQ:

<http://www.saaq.gouv.qc.ca/publications/nous/rapportgestion2013/rapportgestion2013.pdf>

- SGI:

[http://www.sgi.sk.ca/pdf/annualreports/SGI\\_2013\\_Annual\\_Full.pdf](http://www.sgi.sk.ca/pdf/annualreports/SGI_2013_Annual_Full.pdf)

[http://www.sgicanada.ca/sk/pdf/annualreports/2013\\_full\\_report.pdf](http://www.sgicanada.ca/sk/pdf/annualreports/2013_full_report.pdf)

- ICBC:

<http://www.icbc.com/about-icbc/company-info/Documents/ar13.pdf>



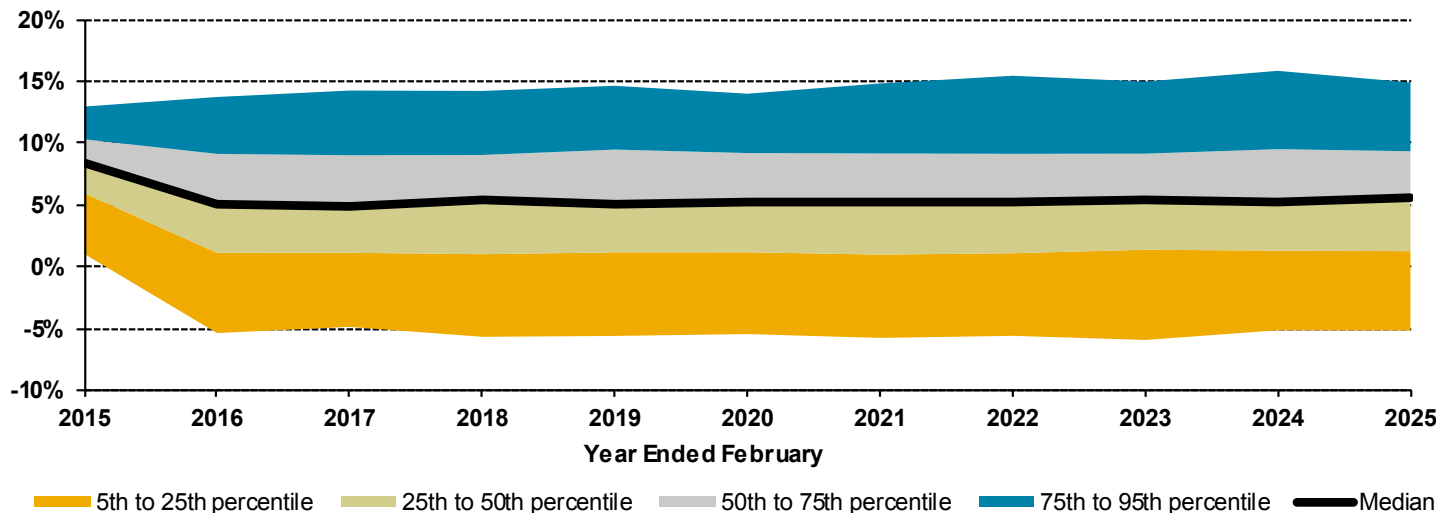
# Appendix B

## Detailed Results – Base Case

# Appendix B

## Detailed Results – Base Case

### Portfolio Nominal Return



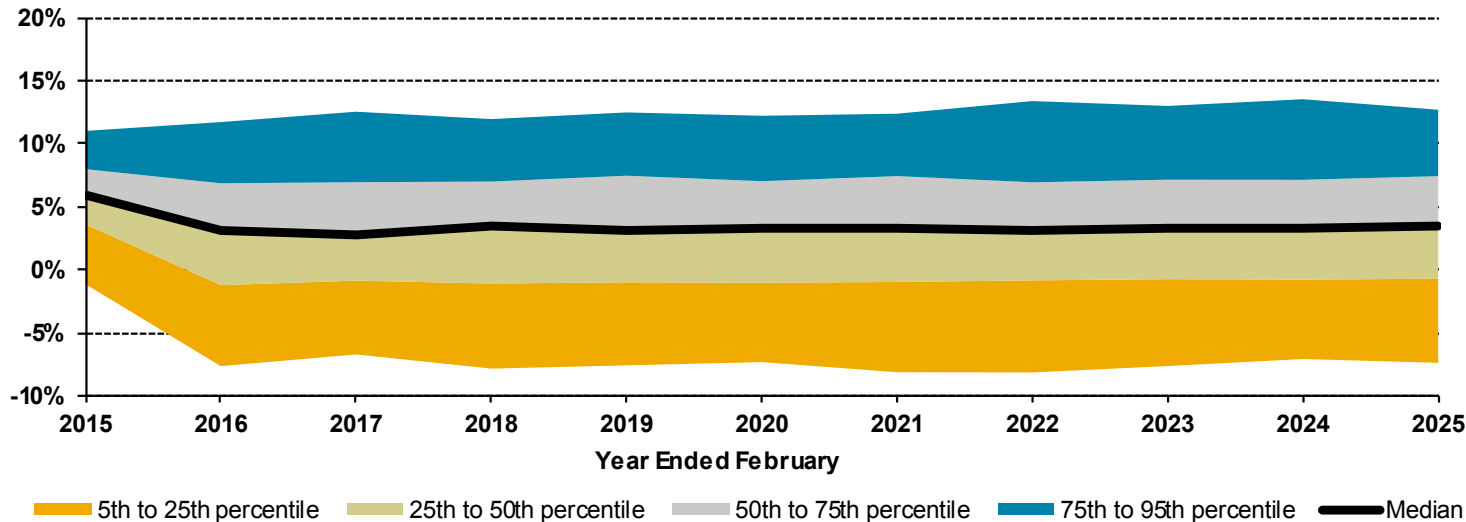
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	13.0%	13.7%	14.3%	14.2%	14.6%	14.0%	14.8%	15.5%	15.0%	15.8%	14.9%
<b>75th percentile</b>	10.3%	9.1%	9.0%	9.0%	9.5%	9.2%	9.2%	9.1%	9.1%	9.5%	9.3%
<b>Median</b>	8.4%	5.1%	5.0%	5.3%	5.1%	5.2%	5.3%	5.3%	5.4%	5.2%	5.5%
<b>25th percentile</b>	5.9%	1.1%	1.1%	1.0%	1.2%	1.2%	1.0%	1.1%	1.4%	1.3%	1.3%
<b>5th percentile</b>	1.0%	-5.4%	-4.9%	-5.7%	-5.6%	-5.5%	-5.8%	-5.6%	-5.9%	-5.1%	-5.2%
<b>Mean</b>	7.9%	4.7%	4.9%	4.9%	5.0%	5.0%	5.1%	5.1%	5.2%	5.3%	5.3%
<b>Standard Deviation</b>	3.6%	5.8%	5.9%	6.2%	6.2%	6.0%	6.2%	6.4%	6.2%	6.3%	6.2%
<b>CTE 5% *</b>	-0.9%	-8.1%	-8.2%	-8.8%	-8.1%	-8.0%	-8.9%	-8.5%	-8.4%	-7.9%	-8.0%
<b>Prob { Return &lt; 0% }</b>	3%	20%	20%	20%	20%	20%	20%	21%	18%	19%	20%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Portfolio Real Return



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	11.0%	11.7%	12.5%	12.0%	12.5%	12.2%	12.4%	13.4%	13.0%	13.5%	12.7%
<b>75th percentile</b>	8.0%	6.9%	6.9%	7.0%	7.5%	7.0%	7.4%	6.9%	7.1%	7.1%	7.4%
<b>Median</b>	6.0%	3.0%	2.8%	3.4%	3.0%	3.3%	3.3%	3.1%	3.4%	3.2%	3.5%
<b>25th percentile</b>	3.6%	-1.2%	-0.9%	-1.1%	-1.0%	-1.0%	-1.0%	-0.8%	-0.7%	-0.8%	-0.7%
<b>5th percentile</b>	-1.1%	-7.6%	-6.7%	-7.8%	-7.6%	-7.3%	-8.1%	-8.1%	-7.6%	-7.1%	-7.4%
<b>Mean</b>	5.6%	2.7%	2.8%	2.9%	2.9%	3.0%	3.0%	3.0%	3.1%	3.2%	3.2%
<b>Standard Deviation</b>	3.7%	5.9%	6.0%	6.1%	6.2%	6.0%	6.2%	6.3%	6.2%	6.3%	6.2%
<b>CTE 5% *</b>	-3.2%	-10.2%	-10.0%	-10.8%	-10.3%	-10.0%	-10.8%	-10.6%	-10.2%	-9.9%	-9.8%
<b>Prob { Return &lt; 0% }</b>	9%	31%	31%	31%	31%	30%	30%	30%	28%	30%	29%

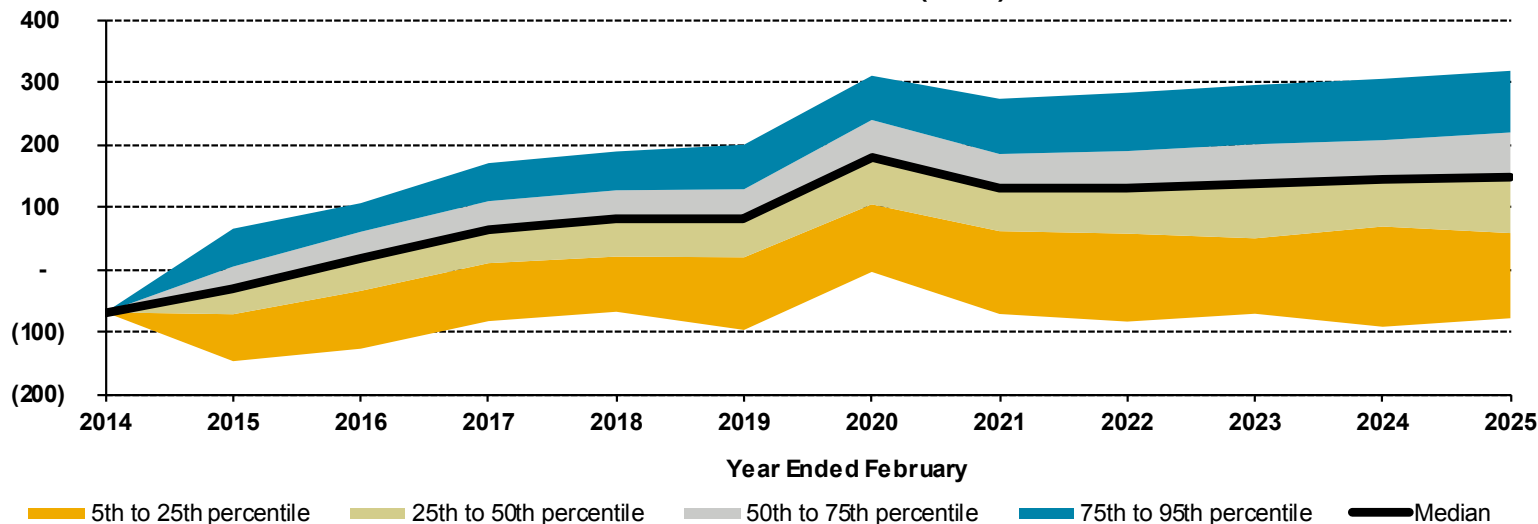
\* CTE 5%: Average of the 50/1000 worst simulated outcomes.



# ...Appendix B

## ...Detailed Results – Base Case

### Basic Net Income (\$M)



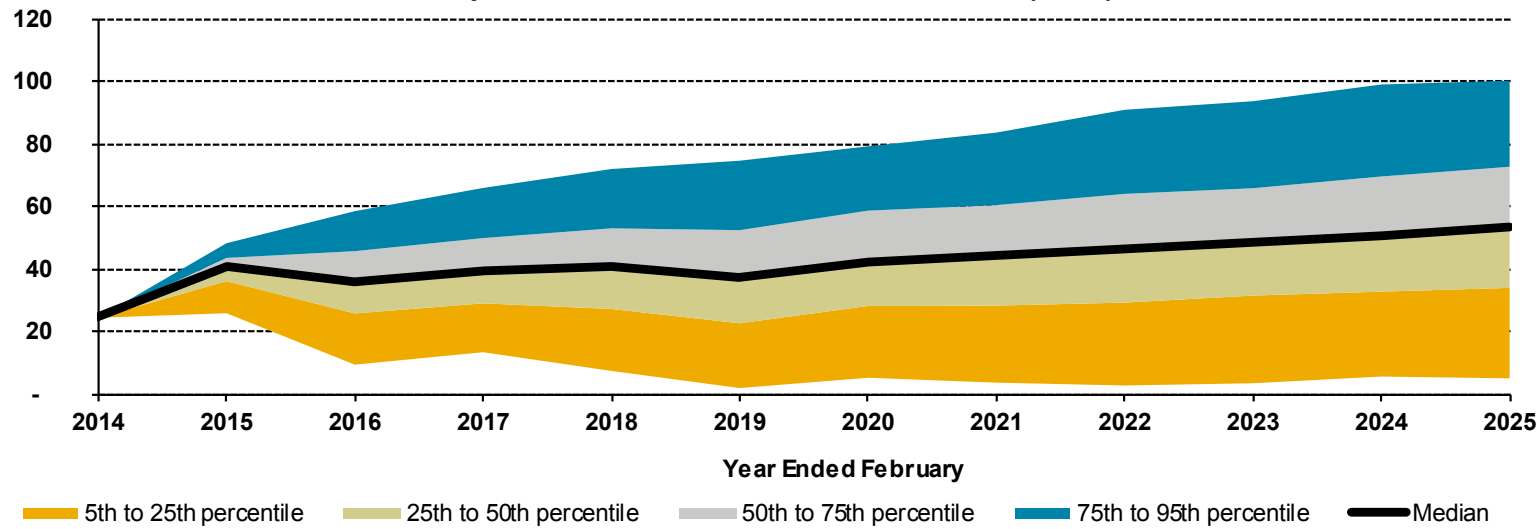
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	(69)	65	106	170	189	199	310	273	283	295	305	318
<b>75th percentile</b>	(69)	4	60	109	126	128	239	184	189	200	207	219
<b>Median</b>	(69)	(31)	17	63	82	81	179	131	129	138	145	147
<b>25th percentile</b>	(69)	(72)	(35)	10	20	19	104	61	57	49	68	58
<b>5th percentile</b>	(69)	(147)	(127)	(83)	(68)	(97)	(4)	(72)	(84)	(71)	(92)	(79)
<b>Mean</b>	(69)	(35)	8	56	73	71	169	117	120	126	133	136
<b>Standard Deviation</b>	-	63	71	76	81	88	99	104	108	114	116	123
<b>CTE 5% *</b>	(69)	(176)	(164)	(120)	(107)	(140)	(53)	(132)	(133)	(122)	(140)	(151)
<b>Prob { Net Income &lt; 0 }</b>	100%	73%	42%	22%	19%	19%	6%	14%	13%	15%	12%	13%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Competitive Lines Net Income (\$M)



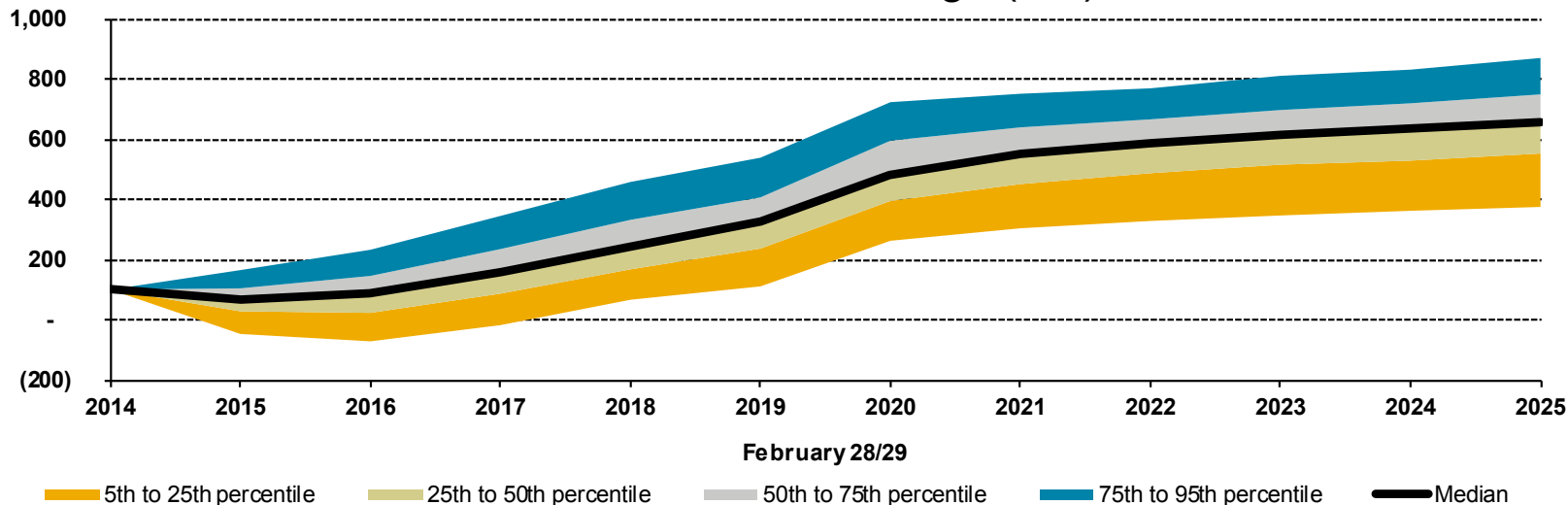
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	24	48	58	66	72	75	79	84	91	94	99	100
<b>75th percentile</b>	24	43	46	50	53	52	59	60	64	66	69	73
<b>Median</b>	24	41	36	39	41	37	42	44	46	49	50	53
<b>25th percentile</b>	24	36	26	29	27	23	28	28	29	31	33	34
<b>5th percentile</b>	24	26	9	13	7	2	5	4	3	3	5	5
<b>Mean</b>	24	39	35	39	40	38	43	44	46	49	51	53
<b>Standard Deviation</b>	-	7	15	16	20	22	23	24	26	27	28	29
<b>CTE 5% *</b>	24	22	3	5	(1)	(5)	(5)	(7)	(8)	(8)	(8)	(5)
<b>Prob { Net Income &lt; 0 }</b>	0%	0%	1%	1%	2%	4%	4%	4%	5%	4%	4%	3%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Basic Retained Earnings (\$M)



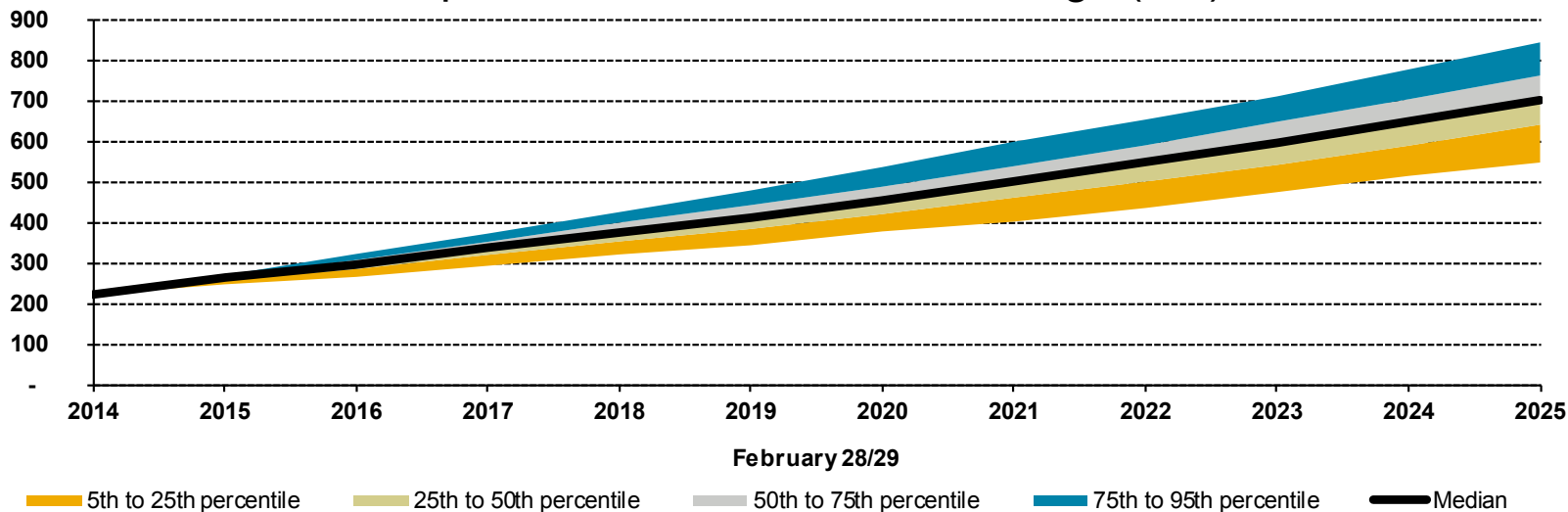
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	100	165	232	345	458	538	723	751	769	810	831	869
<b>75th percentile</b>	100	104	145	235	332	406	595	639	666	697	719	749
<b>Median</b>	100	68	84	158	245	328	479	550	586	616	635	660
<b>25th percentile</b>	100	28	23	87	167	236	394	450	487	515	528	552
<b>5th percentile</b>	100	(48)	(72)	(18)	66	111	262	304	328	346	362	375
<b>Mean</b>	100	65	83	162	250	325	489	541	572	601	622	645
<b>Standard Deviation</b>	-	63	92	109	122	130	145	136	134	142	140	150
<b>CTE 5% *</b>	100	(76)	(116)	(61)	19	58	202	236	269	271	307	303
<b>Prob { Retained Earnings &lt; 0 }</b>	0.0%	14.8%	18.4%	7.1%	1.2%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Competitive Lines Retained Earnings (\$M)



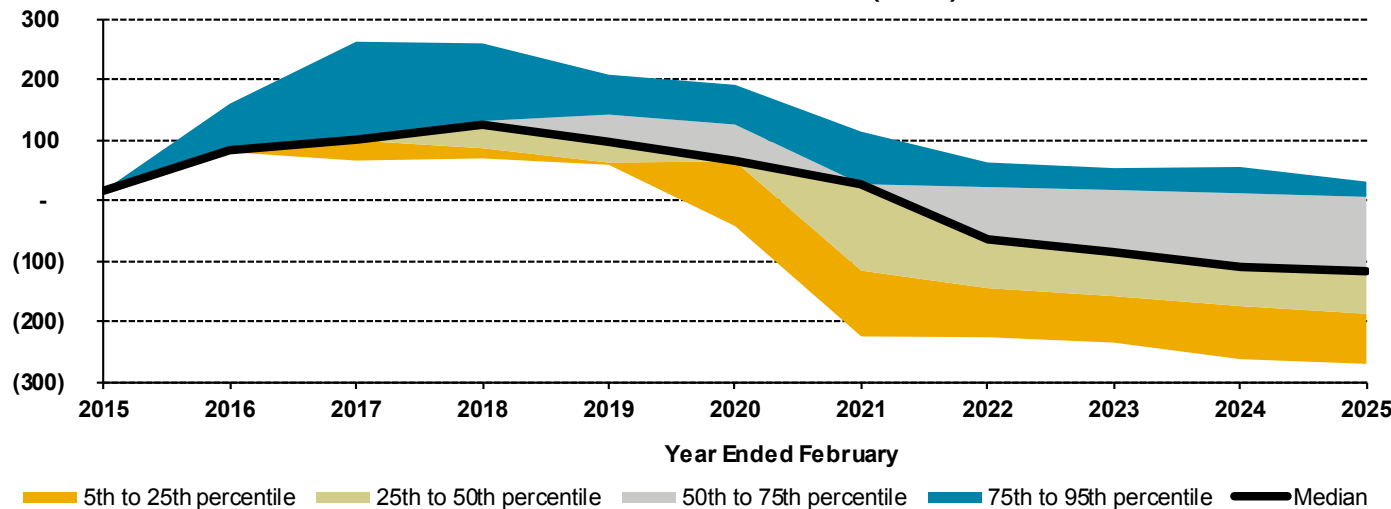
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	221	269	321	371	424	478	535	598	652	709	776	842
<b>75th percentile</b>	221	264	306	351	398	442	487	537	589	647	702	761
<b>Median</b>	221	261	296	335	374	413	454	499	547	596	645	698
<b>25th percentile</b>	221	257	284	319	352	383	419	460	499	540	588	640
<b>5th percentile</b>	221	246	265	292	320	343	377	401	434	473	513	546
<b>Mean</b>	221	260	295	334	374	412	455	499	545	594	645	698
<b>Standard Deviation</b>	-	7	17	24	33	42	50	58	67	74	81	88
<b>CTE 5% *</b>	221	242	257	281	303	326	354	379	407	444	476	513
<b>Prob { Retained Earnings &lt; 0 }</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Net Cash Flow \* (\$M)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	16	159	262	259	207	191	113	62	53	55	30
<b>75th percentile</b>	15	84	104	131	141	125	26	22	17	11	5
<b>Median</b>	15	82	101	126	95	66	25	(67)	(86)	(109)	(118)
<b>25th percentile</b>	15	81	98	86	62	64	(117)	(146)	(159)	(175)	(188)
<b>5th percentile</b>	15	79	65	69	58	(43)	(225)	(227)	(236)	(263)	(271)
<b>Mean</b>	15	91	119	127	104	88	(28)	(60)	(73)	(93)	(101)
<b>Standard Deviation</b>	0	30	59	61	68	71	109	105	104	109	110
<b>CTE 5% **</b>	15	76	63	57	(32)	(84)	(271)	(261)	(275)	(307)	(308)
<b>Prob { Cash Flow &lt; 0 }</b>	0%	0%	0%	1%	4%	8%	36%	51%	54%	60%	58%

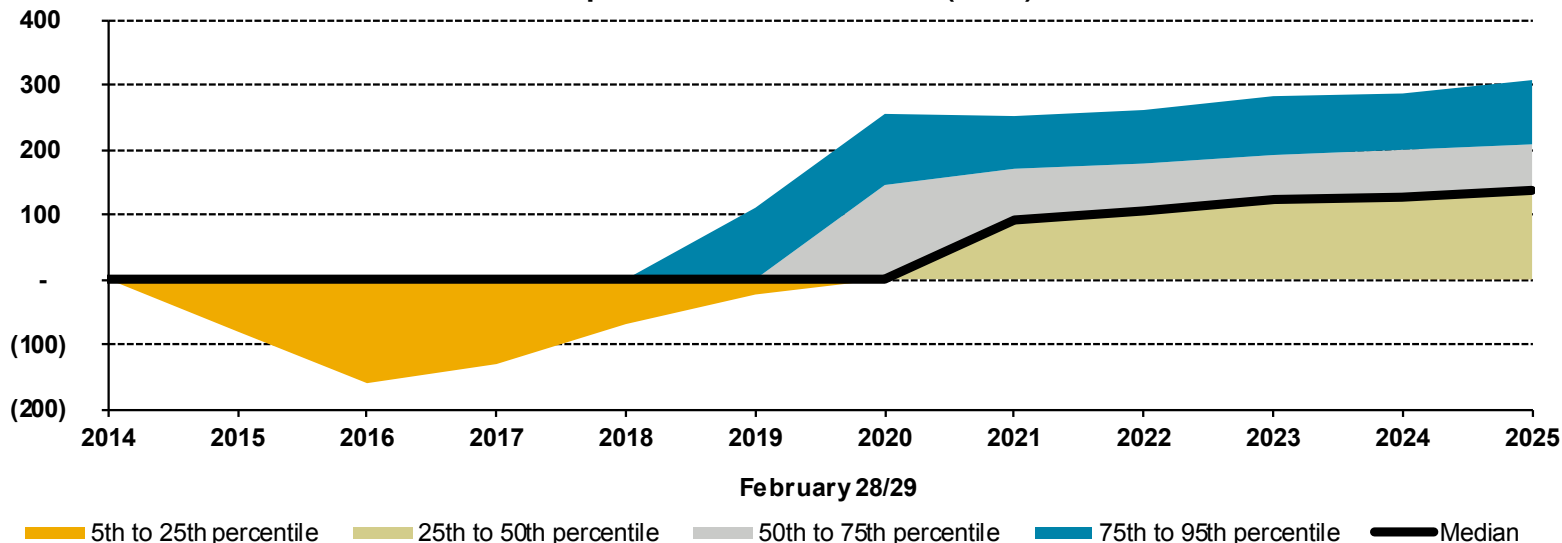
\* Net Cash Flow includes the CF from Insurance Operations, including any rate surcharge, surplus distribution, special contribution as well as the cash flow from the pension plan

\*\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Surplus Distribution (\$M)



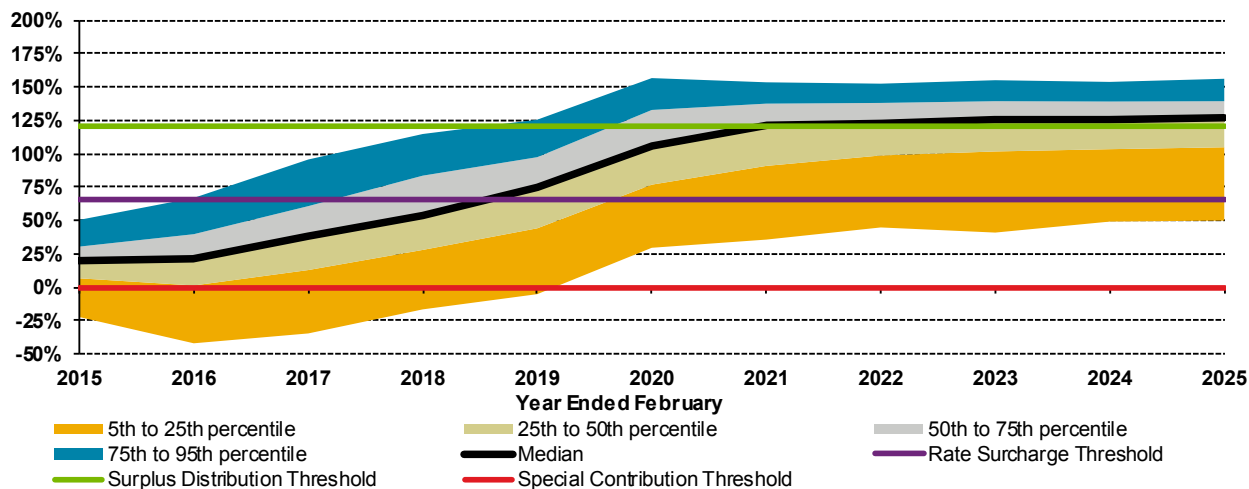
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	-	-	-	-	-	110	255	251	261	282	286	307
<b>75th percentile</b>	-	-	-	-	-	-	145	170	178	191	199	208
<b>Median</b>	-	-	-	-	-	-	-	90	107	123	127	137
<b>25th percentile</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>5th percentile</b>	-	(81)	(160)	(131)	(69)	(24)	-	-	-	-	-	-
<b>Mean</b>	-	(10)	(22)	(16)	(4)	5	65	89	97	112	113	119
<b>Standard Deviation</b>	-	30	58	50	47	46	99	99	101	106	108	115
<b>CTE 5% *</b>	-	-	-	1	5	152	300	288	299	323	321	347

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Basic Retained Earnings (as % of RSR Upper Target)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	50.4%	66.9%	95.7%	114.8%	125.6%	156.7%	153.6%	152.5%	155.1%	153.9%	156.2%
<b>75th percentile</b>	30.4%	39.7%	60.8%	83.6%	97.5%	132.8%	137.6%	138.1%	139.4%	139.2%	139.4%
<b>Median</b>	19.5%	21.7%	37.8%	54.2%	74.3%	106.1%	120.9%	122.9%	125.6%	125.5%	126.7%
<b>25th percentile</b>	6.6%	1.3%	12.8%	27.9%	44.1%	76.8%	90.9%	98.7%	101.7%	103.4%	104.9%
<b>5th percentile</b>	-22.4%	-42.1%	-34.7%	-16.6%	-5.2%	29.5%	35.7%	44.8%	40.9%	49.2%	49.9%
<b>Mean</b>	17.7%	18.7%	35.5%	53.6%	68.6%	101.7%	110.8%	113.5%	116.0%	116.6%	117.5%
<b>Standard Deviation</b>	21.4%	32.5%	38.0%	40.3%	39.8%	39.6%	36.7%	35.1%	34.8%	32.7%	33.4%
<b>CTE 5%*</b>	-34.3%	-62.9%	-49.8%	-37.7%	-23.1%	8.5%	12.8%	16.3%	16.7%	28.6%	19.1%
<b>Prob { 65%-120% }</b>	0.7%	5.9%	21.1%	37.4%	50.9%	45.7%	36.6%	35.0%	31.1%	32.7%	34.1%
<b>Prob { 65%-100% }</b>	0.7%	5.8%	18.1%	28.4%	36.3%	24.0%	18.9%	14.8%	15.3%	13.5%	14.3%
<b>Prob { Below 0% }</b>	17.7%	23.6%	16.5%	9.1%	6.7%	1.0%	1.1%	0.8%	0.9%	0.8%	0.9%
<b>Prob { Below 65% }</b>	99.3%	94.1%	78.3%	58.8%	40.9%	18.7%	12.1%	11.1%	9.2%	9.2%	7.5%
<b>Prob { Over 120% }</b>	0.0%	0.0%	0.6%	3.8%	8.2%	35.6%	51.3%	53.9%	59.7%	58.1%	58.4%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Cumulative Rate Surcharge (% of premiums)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Prob { Surcharge &gt; 0% }</b>	99.3%	94.1%	78.3%	58.8%	40.9%	18.7%	12.1%	11.1%	9.2%	9.2%	7.5%
<b>Prob { Surcharge &gt; 2% }</b>	0.0%	90.6%	73.5%	52.6%	32.6%	13.4%	6.5%	5.9%	5.7%	3.6%	4.0%
<b>Prob { Surcharge &gt; 4% }</b>	0.0%	0.0%	68.6%	48.2%	28.3%	9.6%	3.7%	2.8%	2.9%	2.1%	1.4%
<b>Prob { Surcharge &gt; 6% }</b>	0.0%	0.0%	0.0%	42.4%	23.9%	7.2%	2.6%	1.3%	0.8%	0.6%	0.8%
<b>Prob { Surcharge &gt; 8% }</b>	0.0%	0.0%	0.0%	0.0%	20.9%	5.0%	1.8%	0.9%	0.4%	0.3%	0.1%
<b>Prob { 0% &lt; Surcharge ≤ 2% }</b>	99.3%	3.5%	4.8%	6.2%	8.3%	5.3%	5.6%	5.2%	3.5%	5.6%	3.5%
<b>Prob { 2% &lt; Surcharge ≤ 4% }</b>	0.0%	90.6%	4.9%	4.4%	4.3%	3.8%	2.8%	3.1%	2.8%	1.5%	2.6%
<b>Prob { 4% &lt; Surcharge ≤ 6% }</b>	0.0%	0.0%	68.6%	5.8%	4.4%	2.4%	1.1%	1.5%	2.1%	1.5%	0.6%
<b>Prob { 6% &lt; Surcharge ≤ 8% }</b>	0.0%	0.0%	0.0%	42.4%	3.0%	2.2%	0.8%	0.4%	0.4%	0.3%	0.7%
<b>Prob { Surcharge &gt; 8% }</b>	0.0%	0.0%	0.0%	0.0%	20.9%	5.0%	1.8%	0.9%	0.4%	0.3%	0.1%
<b>Persistency* ]0%-2%] -&gt; ]2%-4%]</b>		91.2%	140.0%	91.7%	69.4%	45.8%	52.8%	55.4%	53.8%	42.9%	46.4%
<b>Persistency* ]2%-4%] -&gt; ]4%-6%]</b>			75.7%	118.4%	100.0%	55.8%	28.9%	53.6%	67.7%	53.6%	40.0%
<b>Persistency* ]4%-6%] -&gt; ]6%-8%]</b>				61.8%	51.7%	50.0%	33.3%	36.4%	26.7%	14.3%	46.7%
<b>Persistency* ]6%-8%] -&gt; ]8%+]</b>					49.3%	166.7%	81.8%	112.5%	100.0%	75.0%	33.3%

**Average Persistency** 69.5%

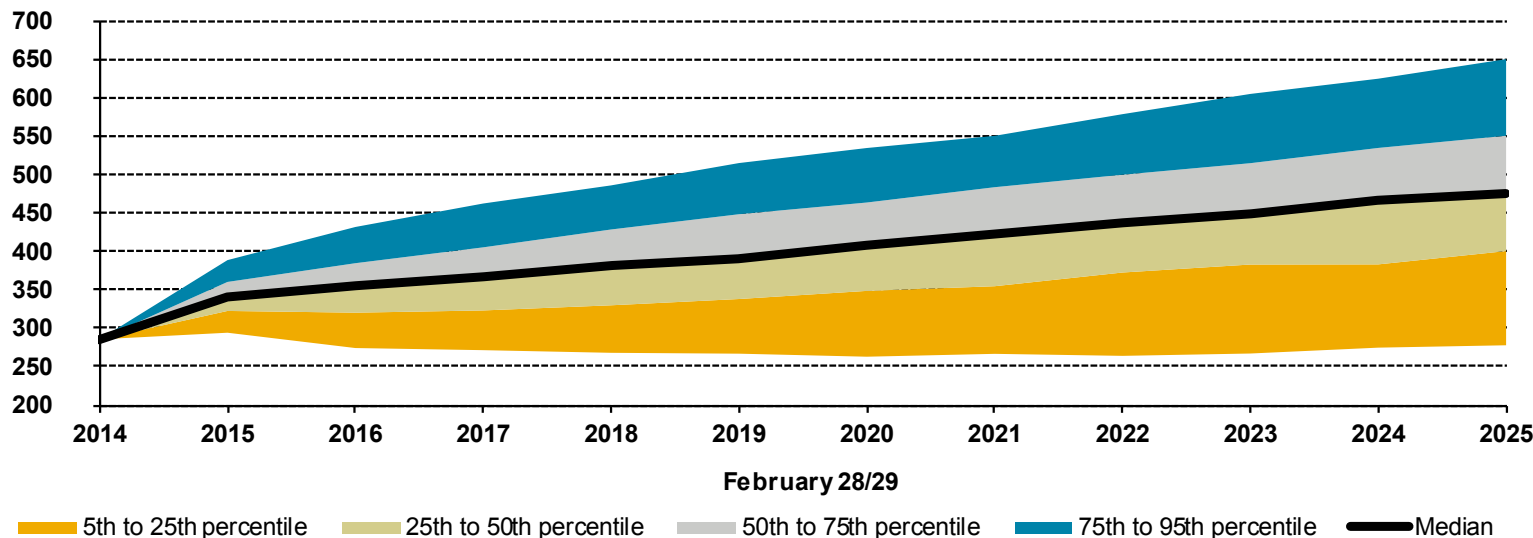
\* The first diagonal of Persistency allows to track yearly increases. Other Persistency has been greyed because being at a level can be the result of an increase from a lower level or a decrease from a higher level



# ...Appendix B

## ...Detailed Results – Base Case

### Pension Plan Liabilities (\$M)



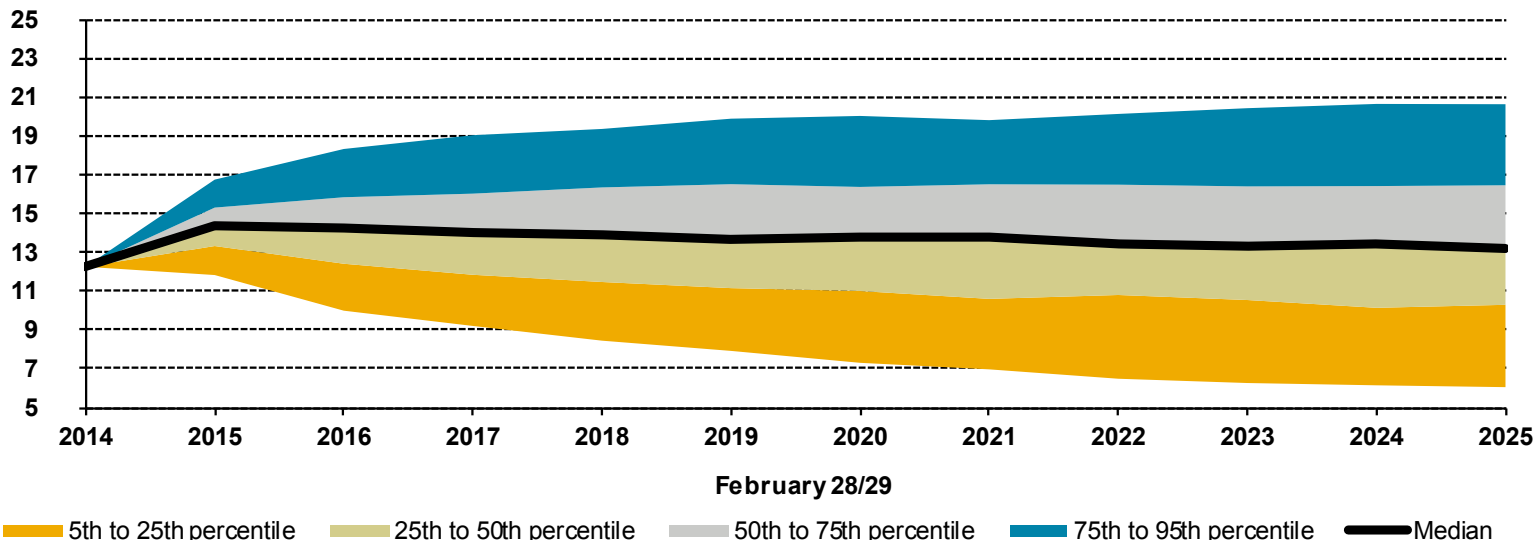
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	285	388	431	462	485	514	534	550	578	604	624	650
<b>75th percentile</b>	285	360	384	405	428	448	463	483	499	514	534	550
<b>Median</b>	285	341	355	367	381	391	407	423	436	448	465	474
<b>25th percentile</b>	285	322	320	323	330	338	348	354	372	383	383	400
<b>5th percentile</b>	285	294	274	271	268	267	263	266	264	267	275	278
<b>Mean</b>	285	341	353	366	378	391	404	417	431	444	458	471
<b>Standard Deviation</b>	-	29	47	58	67	76	82	88	94	100	106	112
<b>CTE 5%*</b>	285	401	450	481	505	534	557	574	603	631	653	680

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix B

## ...Detailed Results – Base Case

### Pension Plan Current Service Cost (\$M)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	12.2	16.7	18.3	19.0	19.3	19.9	20.0	19.8	20.1	20.4	20.6	20.6
<b>75th percentile</b>	12.2	15.3	15.8	16.0	16.3	16.5	16.4	16.5	16.5	16.4	16.4	16.4
<b>Median</b>	12.2	14.3	14.2	14.0	13.9	13.7	13.8	13.7	13.5	13.3	13.4	13.2
<b>25th percentile</b>	12.2	13.3	12.4	11.8	11.5	11.1	11.0	10.6	10.8	10.5	10.1	10.3
<b>5th percentile</b>	12.2	11.8	10.0	9.2	8.4	7.9	7.3	7.0	6.5	6.3	6.1	6.0
<b>Mean</b>	12.2	14.3	14.2	14.0	13.9	13.8	13.7	13.6	13.5	13.4	13.3	13.3
<b>Standard Deviation</b>	-	1.5	2.5	3.0	3.3	3.7	3.8	3.9	4.1	4.2	4.3	4.4
<b>CTE 5% *</b>	12.2	17.4	19.3	20.1	20.4	20.9	21.1	20.9	21.3	21.7	21.8	22.0

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.



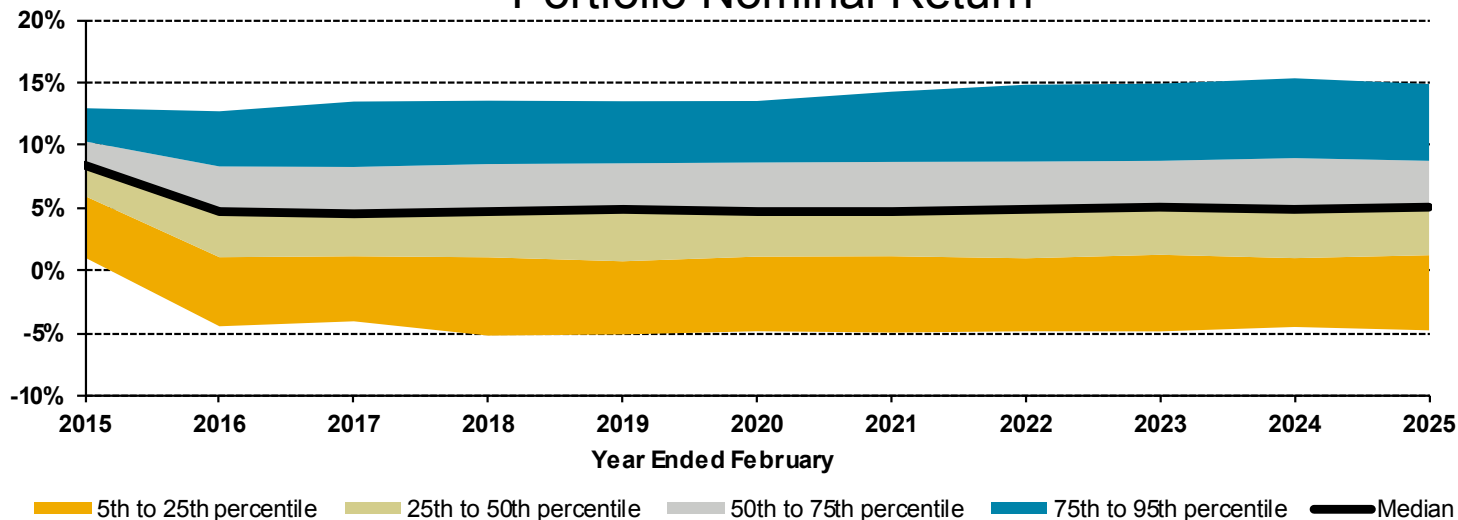
# Appendix C

## Detailed Results – Recommended Portfolio

# Appendix C

## Detailed Results – Recommended Portfolio

### Portfolio Nominal Return



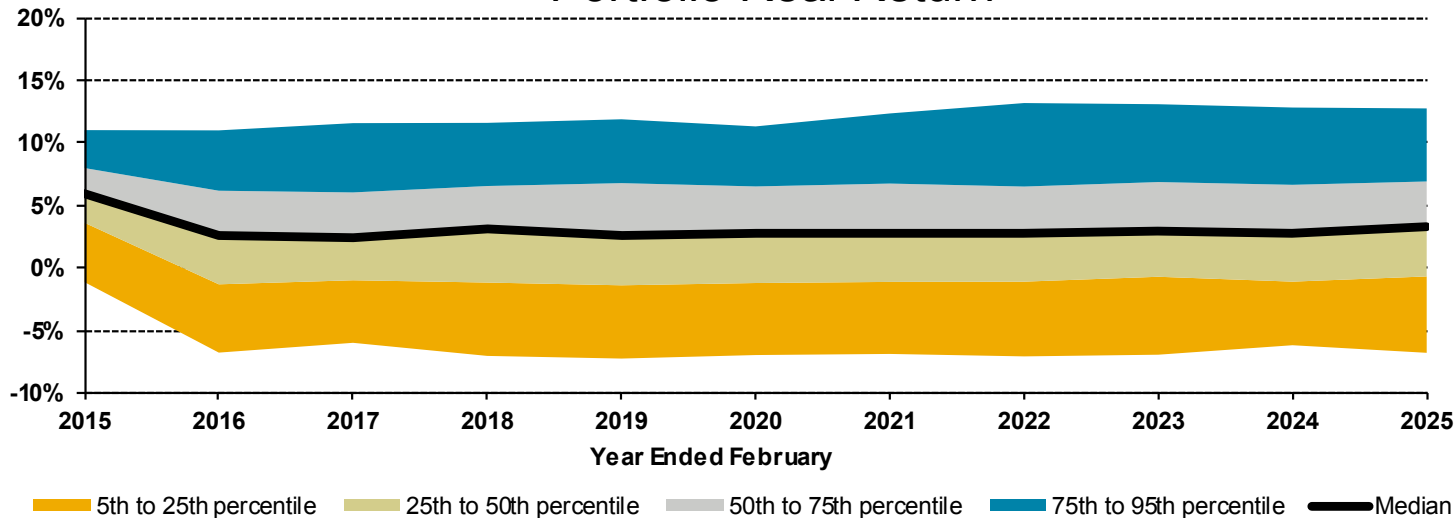
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	13.0%	12.7%	13.5%	13.6%	13.5%	13.5%	14.3%	14.8%	14.9%	15.3%	14.9%
<b>75th percentile</b>	10.3%	8.3%	8.3%	8.5%	8.6%	8.6%	8.7%	8.7%	8.8%	9.0%	8.8%
<b>Median</b>	8.4%	4.6%	4.6%	4.8%	4.8%	4.7%	4.8%	4.8%	5.1%	4.8%	5.1%
<b>25th percentile</b>	5.9%	1.1%	1.1%	1.1%	0.7%	1.1%	1.1%	1.0%	1.3%	1.0%	1.2%
<b>5th percentile</b>	1.0%	-4.5%	-4.1%	-5.2%	-5.1%	-4.9%	-5.0%	-4.9%	-4.9%	-4.5%	-4.8%
<b>Mean</b>	7.9%	4.4%	4.6%	4.7%	4.7%	4.7%	4.8%	4.8%	5.0%	5.1%	5.1%
<b>Standard Deviation</b>	3.6%	5.3%	5.4%	5.8%	5.8%	5.7%	5.8%	6.1%	6.0%	6.1%	5.9%
<b>CTE 5% *</b>	-0.9%	-7.1%	-6.9%	-7.7%	-7.0%	-7.0%	-7.5%	-7.5%	-7.4%	-7.0%	-7.1%
<b>Prob { Return &lt; 0% }</b>	3%	20%	19%	20%	21%	20%	20%	21%	19%	20%	18%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Portfolio Real Return



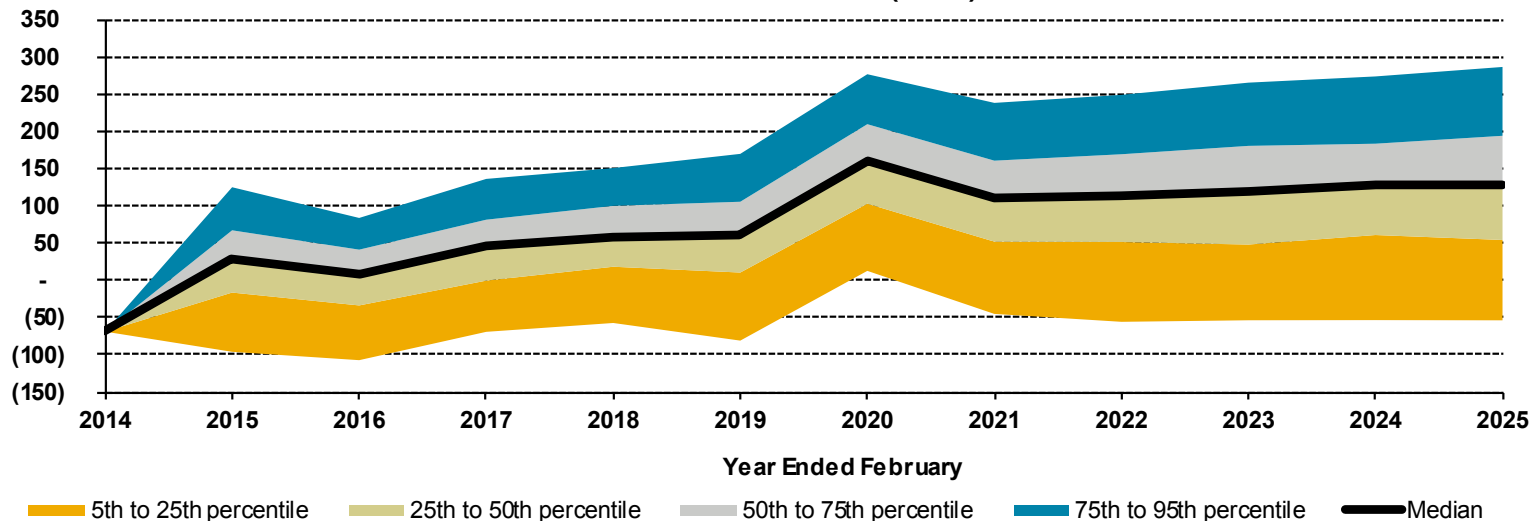
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	11.0%	11.0%	11.6%	11.6%	11.9%	11.3%	12.3%	13.2%	13.1%	12.8%	12.8%
<b>75th percentile</b>	8.0%	6.2%	6.0%	6.5%	6.8%	6.5%	6.7%	6.5%	6.9%	6.6%	6.9%
<b>Median</b>	6.0%	2.5%	2.4%	3.1%	2.7%	2.8%	2.7%	2.7%	2.9%	2.7%	3.3%
<b>25th percentile</b>	3.6%	-1.3%	-1.0%	-1.2%	-1.4%	-1.2%	-1.1%	-1.1%	-0.7%	-1.1%	-0.7%
<b>5th percentile</b>	-1.1%	-6.8%	-6.0%	-7.0%	-7.3%	-7.0%	-6.9%	-7.1%	-6.9%	-6.2%	-6.8%
<b>Mean</b>	5.6%	2.4%	2.6%	2.6%	2.7%	2.7%	2.8%	2.8%	2.9%	3.0%	3.0%
<b>Standard Deviation</b>	3.7%	5.4%	5.5%	5.8%	5.9%	5.7%	5.8%	6.1%	6.0%	6.1%	5.9%
<b>CTE 5% *</b>	-3.2%	-9.0%	-8.8%	-9.9%	-9.2%	-9.1%	-9.5%	-9.7%	-9.3%	-9.1%	-9.0%
<b>Prob { Return &lt; 0% }</b>	9%	33%	32%	31%	32%	32%	30%	31%	29%	31%	30%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Basic Net Income (\$M)



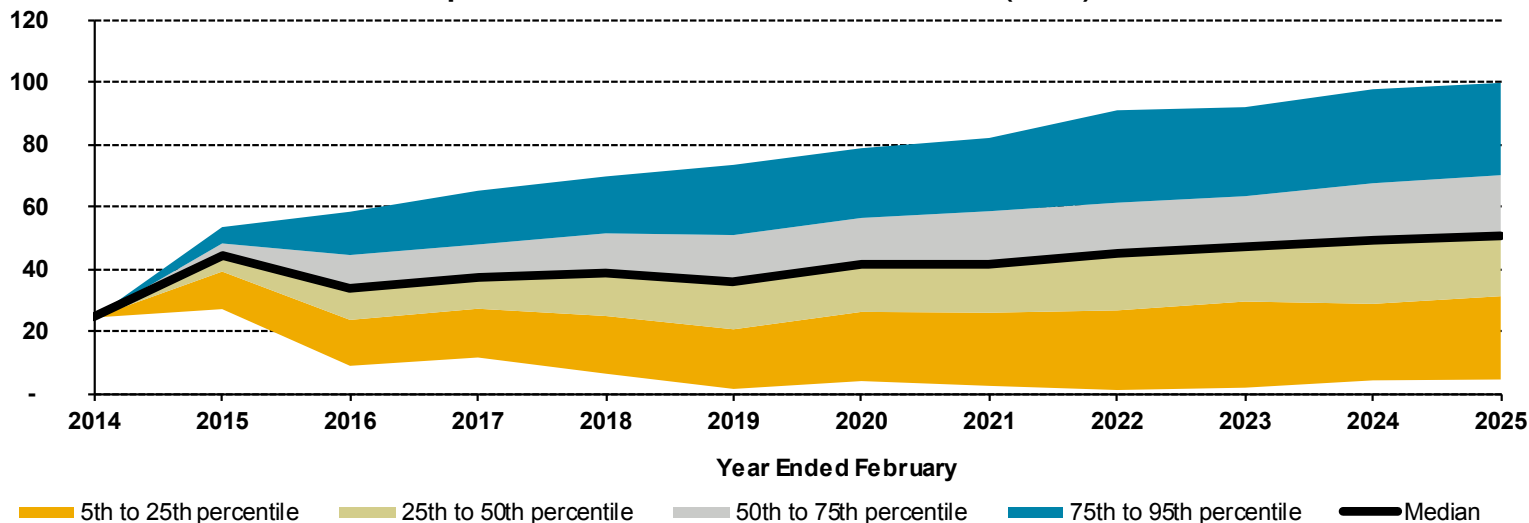
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	(69)	125	83	136	150	169	276	238	249	265	273	286
<b>75th percentile</b>	(69)	67	41	81	100	105	209	160	169	180	183	194
<b>Median</b>	(69)	28	8	46	59	61	159	109	113	118	126	128
<b>25th percentile</b>	(69)	(17)	(34)	(1)	18	10	103	52	51	48	60	54
<b>5th percentile</b>	(69)	(96)	(107)	(69)	(58)	(81)	12	(45)	(56)	(54)	(54)	(54)
<b>Mean</b>	(69)	23	1	41	55	56	155	104	108	114	120	123
<b>Standard Deviation</b>	-	66	57	62	66	75	81	86	92	98	99	105
<b>CTE 5% *</b>	(69)	(128)	(135)	(98)	(93)	(113)	(25)	(92)	(99)	(91)	(101)	(108)
<b>Prob { Net Income &lt; 0 }</b>	100%	32%	46%	26%	19%	21%	3%	12%	11%	12%	11%	12%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Competitive Lines Net Income (\$M)



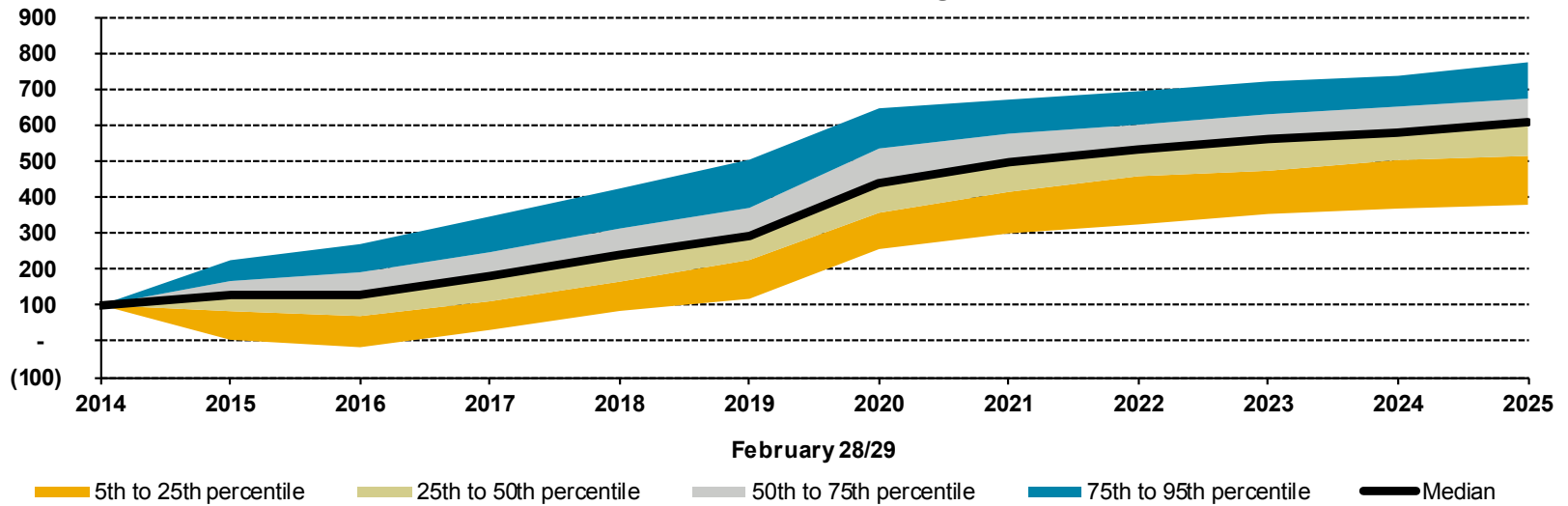
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	24	53	58	65	70	73	79	82	91	92	98	100
<b>75th percentile</b>	24	48	44	48	51	51	56	58	61	63	67	70
<b>Median</b>	24	45	34	37	39	36	41	42	45	47	49	51
<b>25th percentile</b>	24	39	24	27	25	21	26	26	27	29	29	31
<b>5th percentile</b>	24	27	9	11	6	1	4	2	1	2	4	4
<b>Mean</b>	24	43	34	37	38	36	41	42	44	47	49	51
<b>Standard Deviation</b>	-	8	15	16	20	22	23	24	26	27	29	29
<b>CTE 5% *</b>	24	23	2	4	(2)	(5)	(5)	(6)	(9)	(8)	(7)	(6)
<b>Prob { Net Income &lt; 0 }</b>	0%	0%	2%	1%	2%	4%	4%	4%	5%	4%	4%	4%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Basic Retained Earnings (\$M)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	100	224	269	346	423	503	646	670	693	721	736	774
<b>75th percentile</b>	100	167	191	247	312	370	535	576	601	630	651	673
<b>Median</b>	100	128	130	180	239	292	440	499	534	560	580	606
<b>25th percentile</b>	100	83	70	111	165	225	356	414	458	473	503	514
<b>5th percentile</b>	100	4	(17)	31	84	117	255	299	324	353	368	378
<b>Mean</b>	100	123	128	180	242	299	446	494	525	552	571	592
<b>Standard Deviation</b>	-	66	87	98	106	113	123	112	110	116	113	119
<b>CTE 5% *</b>	100	(28)	(54)	(13)	50	75	208	246	278	288	312	327
<b>Prob { Retained Earnings &lt; 0 }</b>	0.0%	4.5%	7.3%	3.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

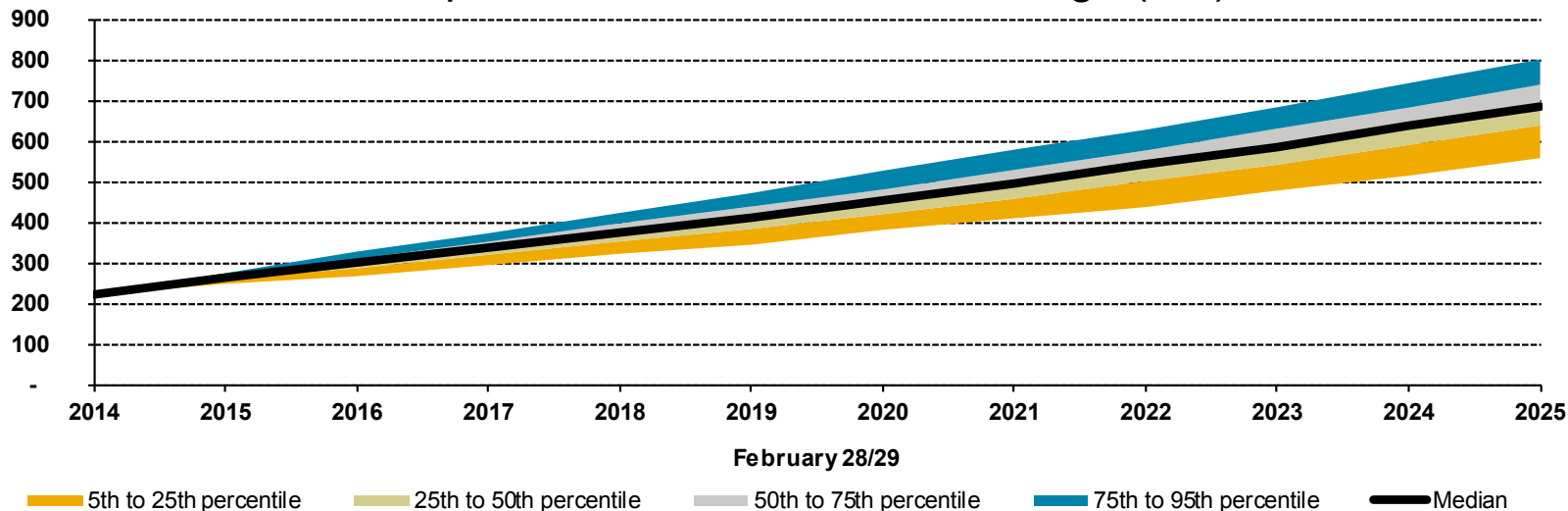
\* CTE 5%: Average of the 50/1000 worst simulated outcomes.



# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Competitive Lines Retained Earnings (\$M)

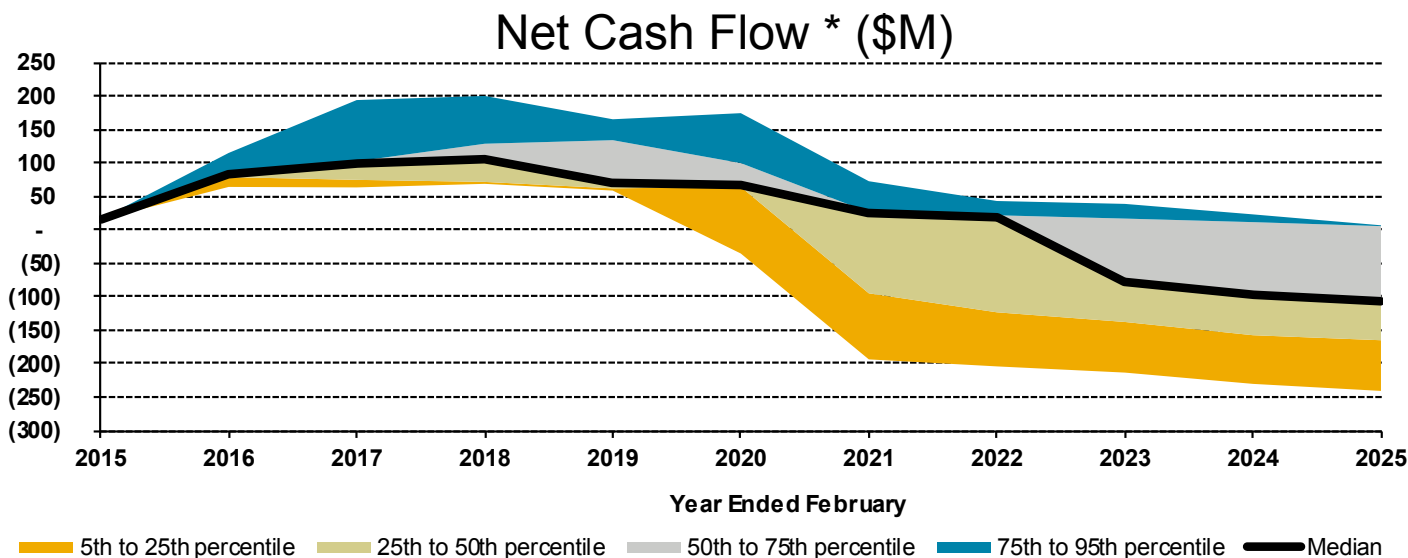


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	221	274	327	372	422	471	526	578	627	683	742	800
<b>75th percentile</b>	221	269	309	351	397	438	480	528	576	630	682	738
<b>Median</b>	221	265	298	336	373	410	453	495	542	586	635	686
<b>25th percentile</b>	221	260	286	319	352	383	419	457	501	541	590	638
<b>5th percentile</b>	221	248	266	294	322	344	381	409	436	477	514	557
<b>Mean</b>	221	264	298	335	373	410	451	493	538	584	634	685
<b>Standard Deviation</b>	-	8	18	24	32	39	45	51	58	63	69	74
<b>CTE 5% *</b>	221	243	259	282	305	330	360	386	412	451	483	525
<b>Prob { Retained Earnings &lt; 0 }</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	16	115	194	200	165	174	72	43	38	23	6
<b>75th percentile</b>	15	83	102	128	134	99	26	21	17	11	5
<b>Median</b>	15	81	99	107	71	66	25	19	(78)	(98)	(106)
<b>25th percentile</b>	15	78	74	71	62	64	(95)	(124)	(138)	(158)	(165)
<b>5th percentile</b>	15	64	63	68	58	(36)	(194)	(204)	(214)	(230)	(241)
<b>Mean</b>	15	82	100	108	92	80	(25)	(51)	(66)	(84)	(93)
<b>Standard Deviation</b>	0	21	43	48	54	58	91	89	90	95	94
<b>CTE 5% **</b>	15	63	62	42	(24)	(74)	(234)	(231)	(248)	(267)	(279)
<b>Prob { Cash Flow &lt; 0 }</b>	0%	0%	0%	1%	4%	8%	35%	49%	55%	59%	60%

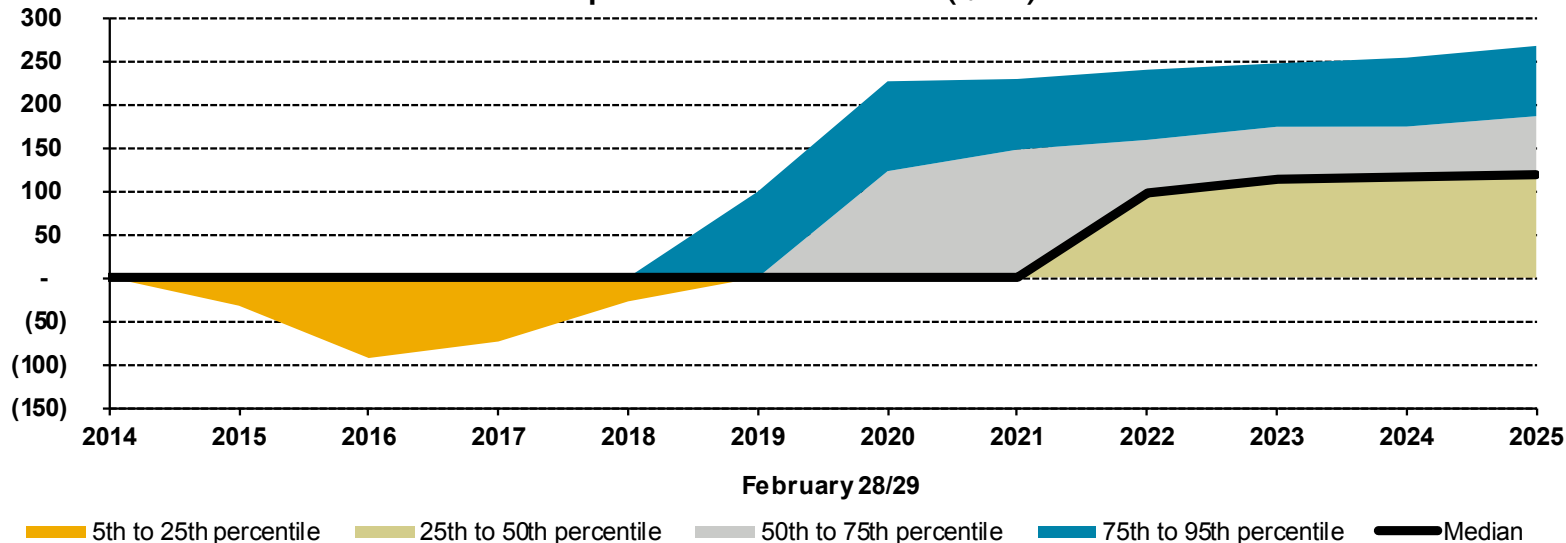
\* Net Cash Flow includes the CF from Insurance Operations, including any rate surcharge, surplus distribution, special contribution as well as the cash flow from the pension plan

\*\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Surplus Distribution (\$M)

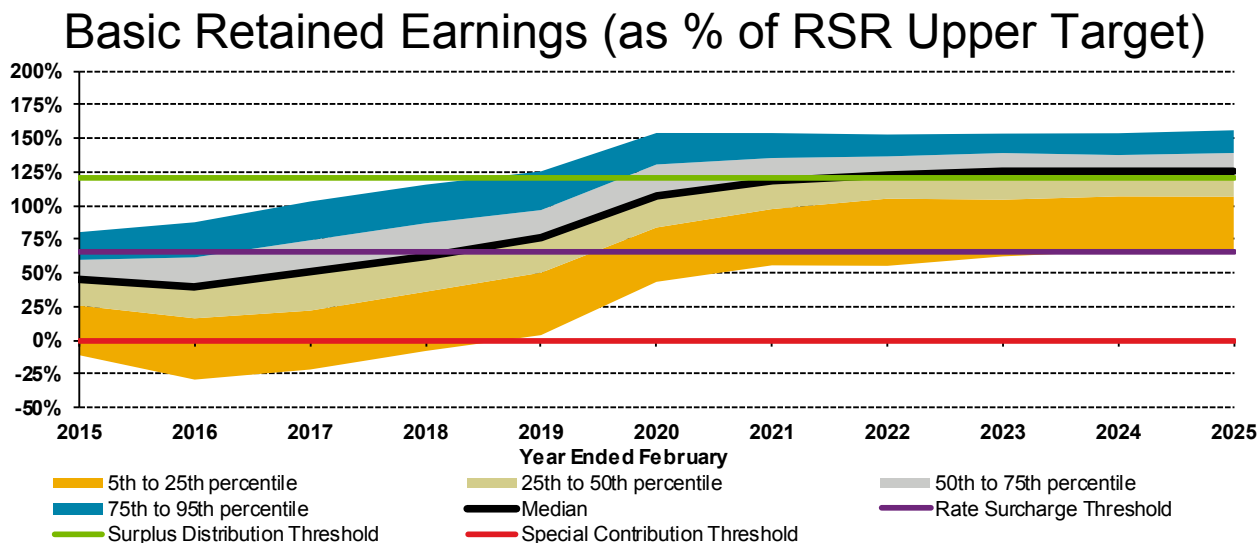


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	-	-	-	-	-	99	226	229	239	247	253	267
<b>75th percentile</b>	-	-	-	-	-	-	123	147	159	174	174	186
<b>Median</b>	-	-	-	-	-	-	-	-	97	112	116	119
<b>25th percentile</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>5th percentile</b>	-	(33)	(93)	(74)	(28)	-	-	-	-	-	-	-
<b>Mean</b>	-	(5)	(11)	(7)	(0)	7	57	77	87	100	103	109
<b>Standard Deviation</b>	-	19	37	34	33	37	86	87	89	94	94	100
<b>CTE 5%*</b>	-	-	-	2	5	141	264	257	272	284	291	304

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	80.3%	87.7%	103.1%	115.6%	125.5%	154.0%	154.0%	152.9%	153.6%	153.8%	156.1%
<b>75th percentile</b>	59.7%	61.6%	74.3%	86.9%	96.7%	130.6%	135.4%	136.6%	139.1%	137.6%	139.2%
<b>Median</b>	44.6%	40.1%	51.0%	62.6%	75.6%	107.2%	119.1%	123.1%	125.9%	125.8%	125.9%
<b>25th percentile</b>	25.7%	16.2%	22.0%	36.0%	50.2%	83.8%	97.5%	105.2%	104.5%	106.9%	106.7%
<b>5th percentile</b>	-11.2%	-29.3%	-21.8%	-8.0%	3.8%	43.4%	55.6%	55.3%	62.3%	66.1%	65.4%
<b>Mean</b>	41.1%	36.6%	47.0%	60.0%	71.5%	104.5%	113.4%	116.7%	119.1%	119.8%	120.5%
<b>Standard Deviation</b>	27.6%	34.9%	37.7%	37.6%	36.5%	34.8%	31.3%	29.8%	29.5%	27.2%	27.9%
<b>CTE 5% *</b>	-26.5%	-49.2%	-38.5%	-25.0%	-13.5%	22.7%	31.5%	35.2%	38.3%	47.8%	43.5%
<b>Prob { 65%-120% }</b>	18.7%	21.2%	32.8%	43.2%	55.6%	51.4%	42.4%	38.1%	34.9%	35.3%	35.0%
<b>Prob { 65%-100% }</b>	18.3%	19.8%	28.3%	32.6%	41.1%	28.1%	19.3%	14.7%	15.5%	15.2%	13.2%
<b>Prob { Below 0% }</b>	9.1%	14.1%	11.9%	6.6%	4.5%	0.5%	0.3%	0.1%	0.4%	0.1%	0.2%
<b>Prob { Below 65% }</b>	81.3%	78.8%	65.8%	53.0%	36.9%	13.6%	8.2%	7.2%	6.0%	4.6%	4.9%
<b>Prob { Over 120% }</b>	0.0%	0.0%	1.4%	3.8%	7.5%	35.0%	49.4%	54.7%	59.1%	60.1%	60.1%

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Cumulative Rate Surcharge (% of premiums)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Prob { Surcharge &gt; 0% }</b>	81.3%	78.8%	65.8%	53.0%	36.9%	13.6%	8.2%	7.2%	6.0%	4.6%	4.9%
<b>Prob { Surcharge &gt; 2% }</b>	0.0%	67.3%	56.5%	43.8%	27.7%	9.5%	3.4%	3.2%	3.0%	1.8%	1.2%
<b>Prob { Surcharge &gt; 4% }</b>	0.0%	0.0%	47.0%	35.9%	20.9%	5.5%	2.0%	1.1%	1.1%	1.0%	0.6%
<b>Prob { Surcharge &gt; 6% }</b>	0.0%	0.0%	0.0%	28.9%	15.3%	3.0%	1.0%	0.5%	0.1%	0.2%	0.3%
<b>Prob { Surcharge &gt; 8% }</b>	0.0%	0.0%	0.0%	0.0%	11.3%	1.6%	0.7%	0.1%	0.0%	0.1%	0.0%
<b>Prob { 0% &lt; Surcharge ≤ 2% }</b>	81.3%	11.5%	9.3%	9.2%	9.2%	4.1%	4.8%	4.0%	3.0%	2.8%	3.7%
<b>Prob { 2% &lt; Surcharge ≤ 4% }</b>	0.0%	67.3%	9.5%	7.9%	6.8%	4.0%	1.4%	2.1%	1.9%	0.8%	0.6%
<b>Prob { 4% &lt; Surcharge ≤ 6% }</b>	0.0%	0.0%	47.0%	7.0%	5.6%	2.5%	1.0%	0.6%	1.0%	0.8%	0.3%
<b>Prob { 6% &lt; Surcharge ≤ 8% }</b>	0.0%	0.0%	0.0%	28.9%	4.0%	1.4%	0.3%	0.4%	0.1%	0.1%	0.3%
<b>Prob { Surcharge &gt; 8% }</b>	0.0%	0.0%	0.0%	0.0%	11.3%	1.6%	0.7%	0.1%	0.0%	0.1%	0.0%
<b>Persistency* ]0%-2%] -&gt; ]2%-4%]</b>		82.8%	82.6%	84.9%	73.9%	43.5%	34.1%	43.8%	47.5%	26.7%	21.4%
<b>Persistency* ]2%-4%] -&gt; ]4%-6%]</b>			69.8%	73.7%	70.9%	36.8%	25.0%	42.9%	47.6%	42.1%	37.5%
<b>Persistency* ]4%-6%] -&gt; ]6%-8%]</b>				61.5%	57.1%	25.0%	12.0%	40.0%	16.7%	10.0%	37.5%
<b>Persistency* ]6%-8%] -&gt; ]8%+]</b>					39.1%	40.0%	50.0%	33.3%	0.0%	100.0%	0.0%

Average Persistency 63.3%

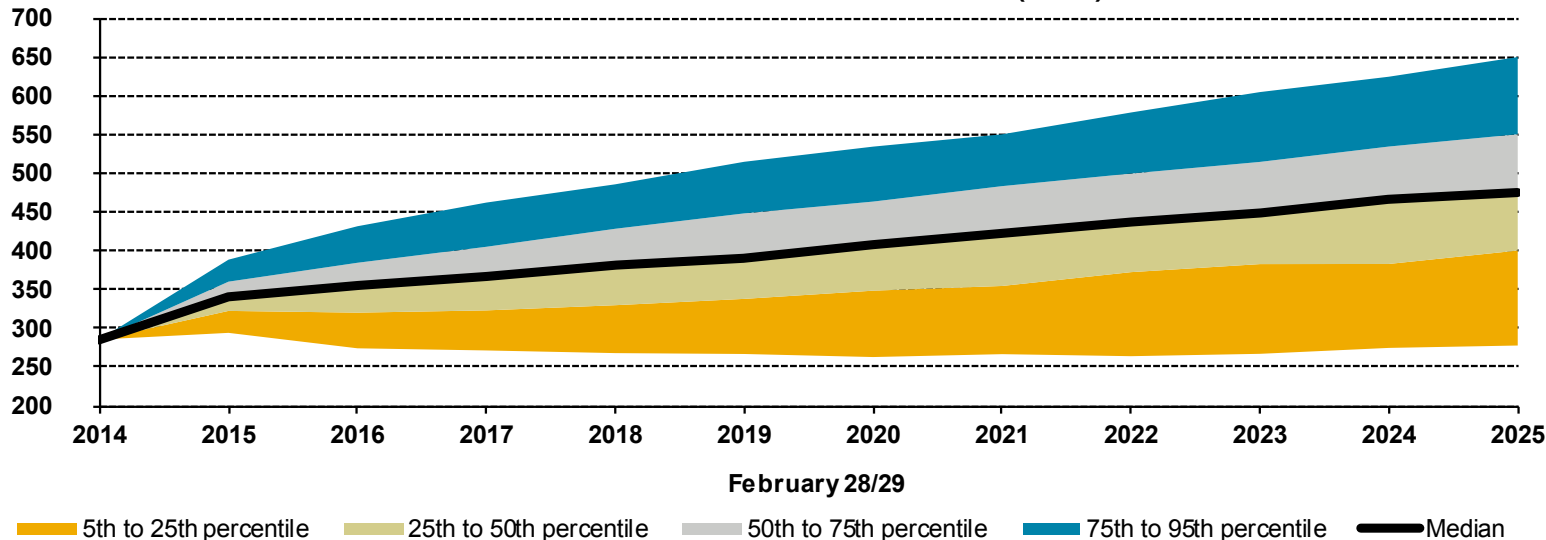
- Persistency of rate surcharges is lower than with the Base Case, which implies that unfavorable situations last for shorter amounts of time

\* The first diagonal of Persistency allows to track yearly increases. Other Persistency has been greyed because being at a level can be the result of an increase from a lower level or a decrease from a higher level

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Pension Plan Liabilities (\$M)



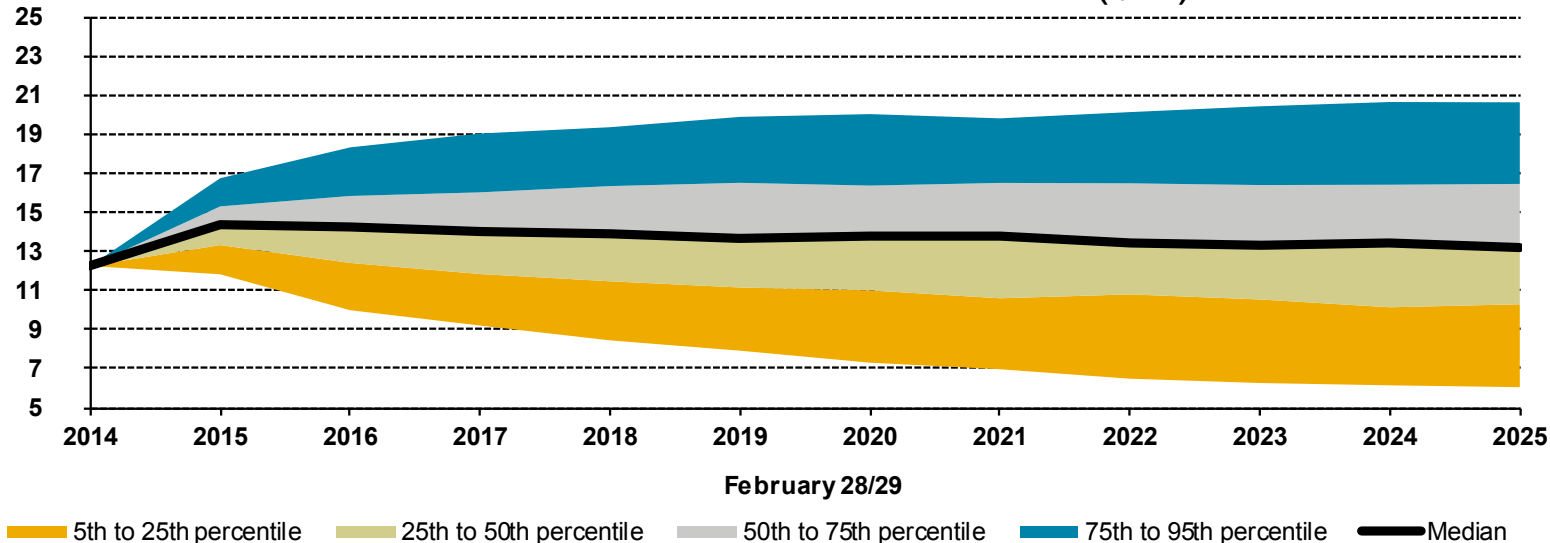
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	285	388	431	462	485	514	534	550	578	604	624	650
<b>75th percentile</b>	285	360	384	405	428	448	463	483	499	514	534	550
<b>Median</b>	285	341	355	367	381	391	407	423	436	448	465	474
<b>25th percentile</b>	285	322	320	323	330	338	348	354	372	383	383	400
<b>5th percentile</b>	285	294	274	271	268	267	263	266	264	267	275	278
<b>Mean</b>	285	341	353	366	378	391	404	417	431	444	458	471
<b>Standard Deviation</b>	-	29	47	58	67	76	82	88	94	100	106	112
<b>CTE 5% *</b>	285	401	450	481	505	534	557	574	603	631	653	680

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

# ...Appendix C

## ...Detailed Results – Recommended Portfolio

### Pension Plan Current Service Cost (\$M)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	12.2	16.7	18.3	19.0	19.3	19.9	20.0	19.8	20.1	20.4	20.6	20.6
<b>75th percentile</b>	12.2	15.3	15.8	16.0	16.3	16.5	16.4	16.5	16.5	16.4	16.4	16.4
<b>Median</b>	12.2	14.3	14.2	14.0	13.9	13.7	13.8	13.7	13.5	13.3	13.4	13.2
<b>25th percentile</b>	12.2	13.3	12.4	11.8	11.5	11.1	11.0	10.6	10.8	10.5	10.1	10.3
<b>5th percentile</b>	12.2	11.8	10.0	9.2	8.4	7.9	7.3	7.0	6.5	6.3	6.1	6.0
<b>Mean</b>	12.2	14.3	14.2	14.0	13.9	13.8	13.7	13.6	13.5	13.4	13.3	13.3
<b>Standard Deviation</b>	-	1.5	2.5	3.0	3.3	3.7	3.8	3.9	4.1	4.2	4.3	4.4
<b>CTE 5% *</b>	12.2	17.4	19.3	20.1	20.4	20.9	21.1	20.9	21.3	21.7	21.8	22.0

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.



# Appendix D

## Assumptions and Methodologies



# Appendix D

## Assumptions and Methodologies

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### *Insurance-specific liability methodology:*

- Projection of written premiums, earned premiums, provision for unpaid claims, expenses and claims incurred were provided by MPI on a deterministic basis, along with sensitivities to changes in interest rates
  - These items were then adjusted per scenario each year according to simulated yields and inflation
- No change in benefits during the projection
- Starting point for the projection is the last valuation (February 28, 2014). We assume annual valuations thereafter
  
- Future valuations in accordance with the demographic and economic assumptions consistent with the current methodology used by the actuary
  - Future inflation and interest rates stochastically projected during the projection period
  - Liability discount rate based on bond portfolio yield, with a margin of 1%
    - Portfolio yield changes according to the bond strategy, the year and the scenario

## ...Appendix D

### ...Assumptions and Methodologies

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#### ...*Insurance-specific liability methodology:*

- RSR targets modeled according to Desired State
  - The minimum RSR level is modeled as 65% of MCT (as a proxy of DCAT)
  - When the RSR is in excess of 120% MCT, the rebate in the following year is the entirety of the excess over the maximum RSR level of 100% MCT
  - When the RSR is below the minimum RSR level:
    - If the RSR is negative, a one year special premium (without cap) is assumed to bring the RSR to zero, in addition to the other premium adjustment to get back to the minimum level
    - If the difference between the RSR and the minimum RSR level is less than 2% of premiums, it is paid in a year
    - Otherwise, the premium rate is increased by 2% per year until the minimum RSR level is reached, at which point the cumulative rate surcharge is eliminated
  - All Surcharges / Rebates are effective in the year following the valuation
- MCT is calculated according to OSFI guidelines effective January 1, 2015

# ...Appendix D

## ...Assumptions and Methodologies

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### *Pension-specific liability methodology:*

- The plan is funded on a pay-as-you-go basis
- No change in pension benefits during the projection period
- Starting point for valuation projection is the last valuation date
  - Annual valuations thereafter
- Future valuations in accordance with the demographic and economic assumptions consistent with the current methodology used by the actuary
  - Discount rate based on LT AA corporate bond yields
- Future inflation, salary increases and interest rates stochastically projected during the projection period
- Number of active members in the pension plan expected to remain constant during the projection period
- Demographic projection according to valuation assumptions

# ...Appendix D

## ...Assumptions and Methodologies

- 1,000 scenarios were generated using Aon Hewitt proprietary Economic Scenario Generator
- The starting point of the projection is February 28, 2014
  - Known returns were used for the period March 1, 2014 to August 31, 2014
- Thereafter, the following capital market assumptions as at August 31, 2014 were used

Asset Class	10-yr Average Annual Return	10-yr Compound Return	Average Annual Standard Deviation	Average Annual CTE 95%
Inflation	2.0%	2.0%	1.4%	-0.9%
Mortgages	2.4%	2.4%	2.4%	-1.7%
Canadian Equities	8.0%	6.7%	17.7%	-27.0%
Canadian Equities, Small Cap	9.0%	7.2%	20.6%	-32.8%
U.S. Equities	7.6%	6.4%	16.3%	-24.6%
U.S. Equities, Small Cap	9.0%	6.9%	22.3%	-32.8%
Int'l Equities	8.2%	6.9%	17.3%	-28.6%
Commodities (hedged)	4.3%	3.3%	15.1%	-25.5%
Canadian Real Estate (Direct)	6.6%	5.6%	14.5%	-28.2%
Infrastructure (Direct)	8.3%	7.0%	16.7%	-30.9%
Timberlands (hedged)	6.5%	5.6%	15.0%	-19.5%

# ...Appendix D

## ...Assumptions and Methodologies

	<b>Mortgages</b>	<b>Canadian Equities</b>	<b>Canadian Equities, Small Cap</b>	<b>U.S. Equities</b>	<b>U.S. Equities, Small Cap</b>	<b>Int'l Equities</b>	<b>Commodities (hedged)</b>	<b>Canadian Real Estate (Direct)</b>	<b>Infrastructure (Direct)</b>	<b>Timberlands</b>	<b>Inflation</b>
<b>Mortgages</b>	1.0										
<b>Canadian Equities</b>	0.1	1.0									
<b>Canadian Equities, Small Cap</b>	0.0	0.9	1.0								
<b>U.S. Equities</b>	0.0	0.7	0.5	1.0							
<b>U.S. Equities, Small Cap</b>	0.0	0.7	0.7	0.8	1.0						
<b>Int'l Equities</b>	0.0	0.6	0.5	0.6	0.6	1.0					
<b>Commodities (hedged)</b>	(0.0)	0.4	0.5	0.0	0.1	0.2	1.0				
<b>Canadian Real Estate (Direct)</b>	(0.1)	0.2	0.3	0.1	0.1	0.0	0.3	1.0			
<b>Infrastructure (Direct)</b>	(0.2)	0.3	0.3	0.1	0.1	0.1	0.4	0.3	1.0		
<b>Timberlands</b>	0.0	(0.0)	(0.1)	0.0	(0.0)	0.1	(0.0)	0.0	(0.1)	1.0	
<b>Inflation</b>	0.0	0.1	0.1	(0.0)	(0.0)	(0.0)	0.2	0.0	0.2	(0.1)	1.0

# ...Appendix D

## ...Assumptions and Methodologies

### Optimization constraints

Illiquid	Inflation Sensitive	Asset Class	Minimum	Maximum
		<b>Liability Matching Portfolio</b>	<b>55.0%</b>	<b>75.0%</b>
✓		Mortgages	0.0%	10.0%
		<b>Total Growth Component Fixed Income</b>	<b>0.0%</b>	<b>10.0%</b>
		Canadian Equities (85% Large Cap, 15% Small Cap)	10.0%	15.0%
		U.S. Equities (80% Large Cap, 20% Small Cap)	0.0%	10.0%
		International Equities	0.0%	10.0%
		<b>Total Equities</b>	<b>10.0%</b>	<b>25.0%</b>
	✓	Commodities	0.0%	5.0%
✓	✓	Canadian Direct Real Estate	10.0%	15.0%
✓	✓	Direct Infrastructure	5.0%	7.0%
✓	✓	Timberlands	0.0%	5.0%
		<b>Total Alternatives</b>	<b>15.0%</b>	<b>30.0%</b>
		<b>Total Illiquid Asset Classes (as % of growth assets)</b>	<b>0.0%</b>	<b>50.0%</b>

#### Other considerations

- Should target about 15% to 30% Inflation Sensitive assets, but it may not be feasible while respecting the other constraints if the allocation to the Liability Matching portfolio is very large.
- Any positive allocation should be at least 5% of the total portfolio (steps of 5% will be used)



# Appendix E

2.05 h)

# Appendix E

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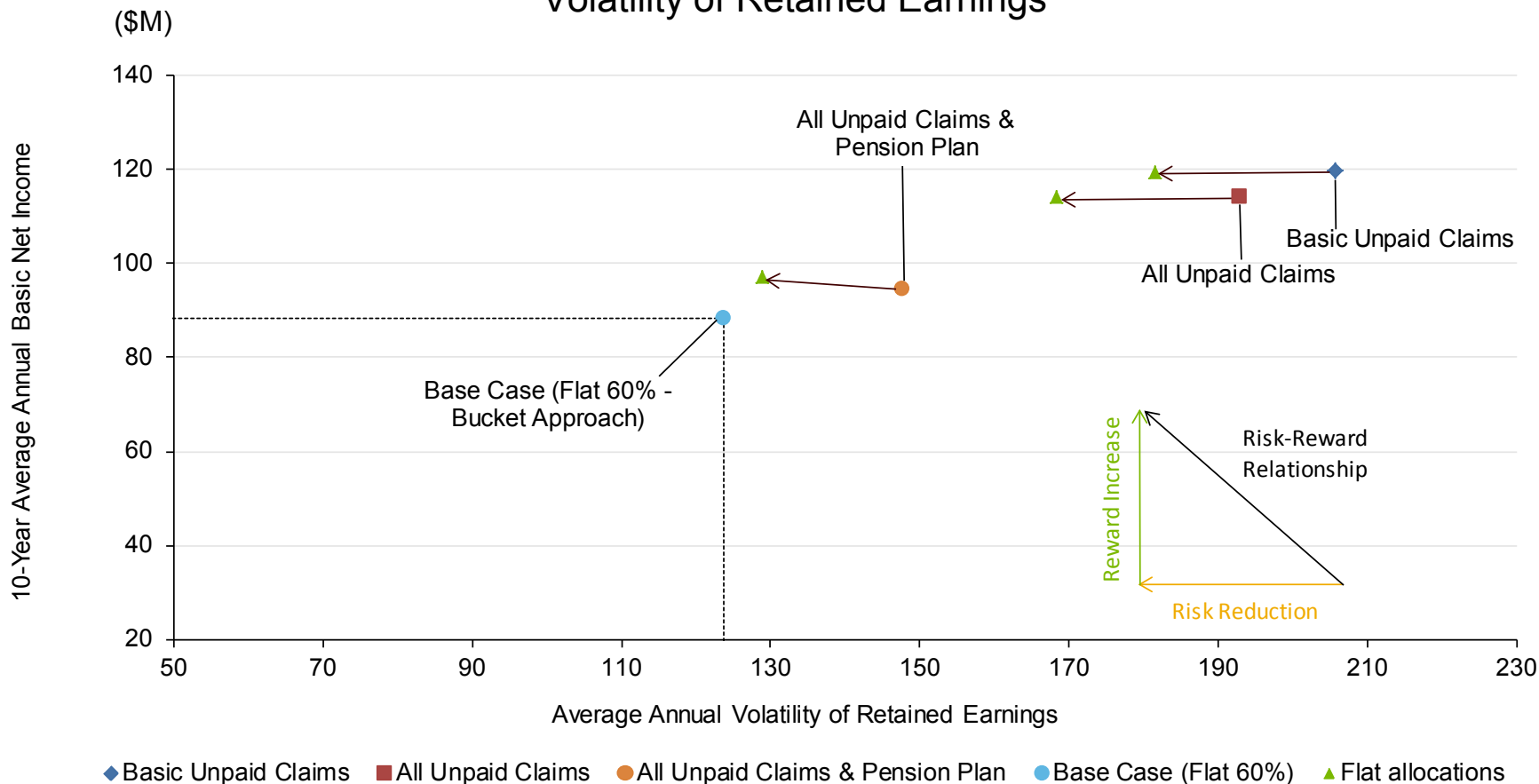
### Dynamic asset allocation

- In this step, we investigate the possibility of targeting various potential levels of liabilities as a dollar amount allocation to the hedging strategy
- According to the dynamic strategies, the portfolios are rebalanced each year such that the total bond allocation is equal to the dollar amount of specific liabilities:
  - Basic unpaid claims
  - All unpaid claims
  - All unpaid claims plus pension liabilities
- To determine if dynamic strategies are appealing, we compare them to static allocations
  - The static allocations are such that the bond allocations are equal to the average bond allocations of the dynamic strategies
  - The corresponding dynamic and static allocations are linked by an arrow on the graphs
- The first graph shows the same statistics as the optimization graph from Step 1, i.e. the average annual basic net income vs. average annual volatility of retained earnings
- The second graph shows a different risk statistic, namely the average annual CTE 5% of retained earnings
  - This statistic captures the more extreme risks, i.e. the risk of retained earnings falling to very low levels



...Appendix E  
...2.05 h)

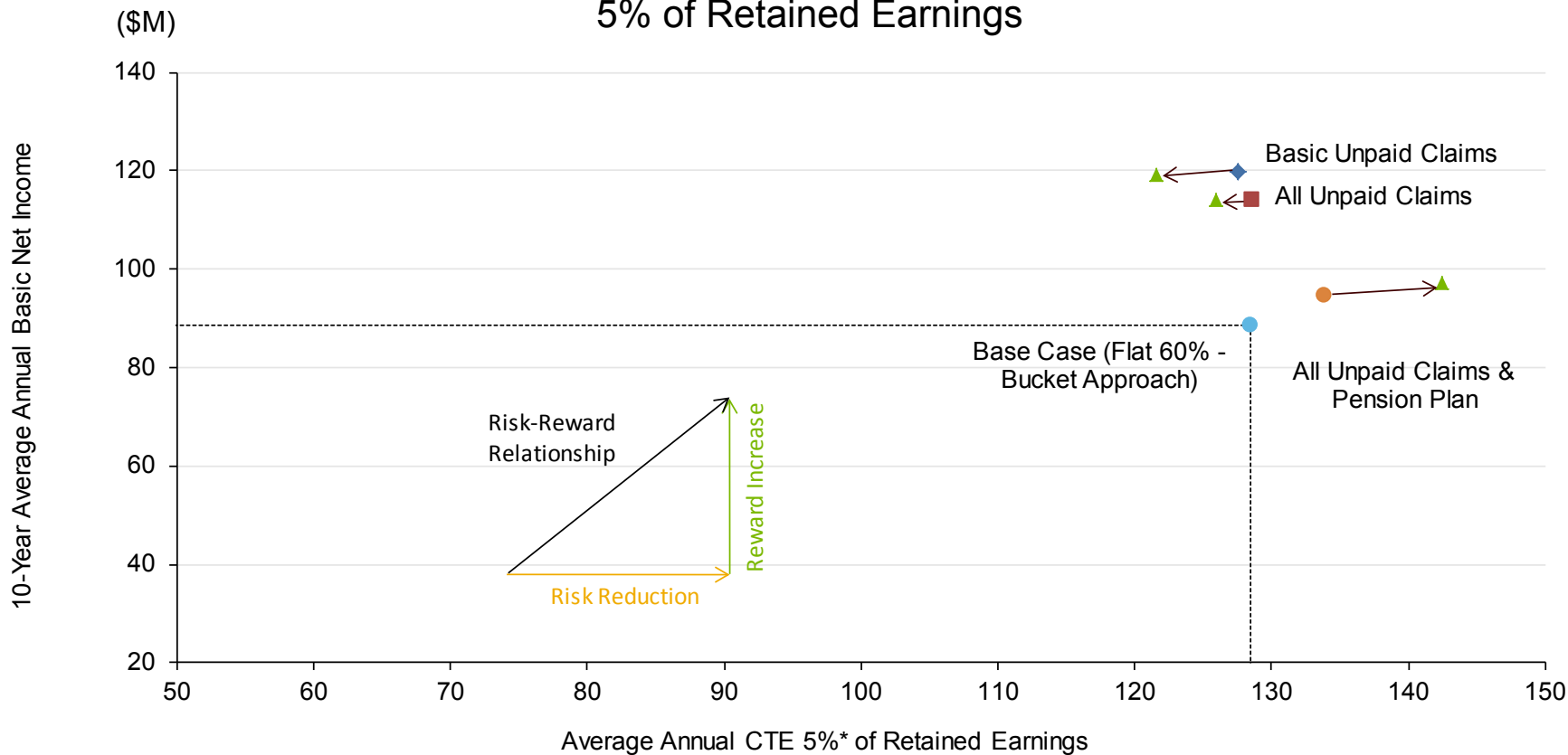
### Risk-Reward Relationship of Average Annual Basic Net Income and Average Annual Volatility of Retained Earnings



- The « Flat allocations » are static strategies where the allocation to the hedging strategy is kept constant at the average allocation resulting from the corresponding dynamic strategy

...Appendix E  
...2.05 h)

Risk-Reward Relationship of Average Annual Basic Net Income and Average Annual CTE  
5% of Retained Earnings



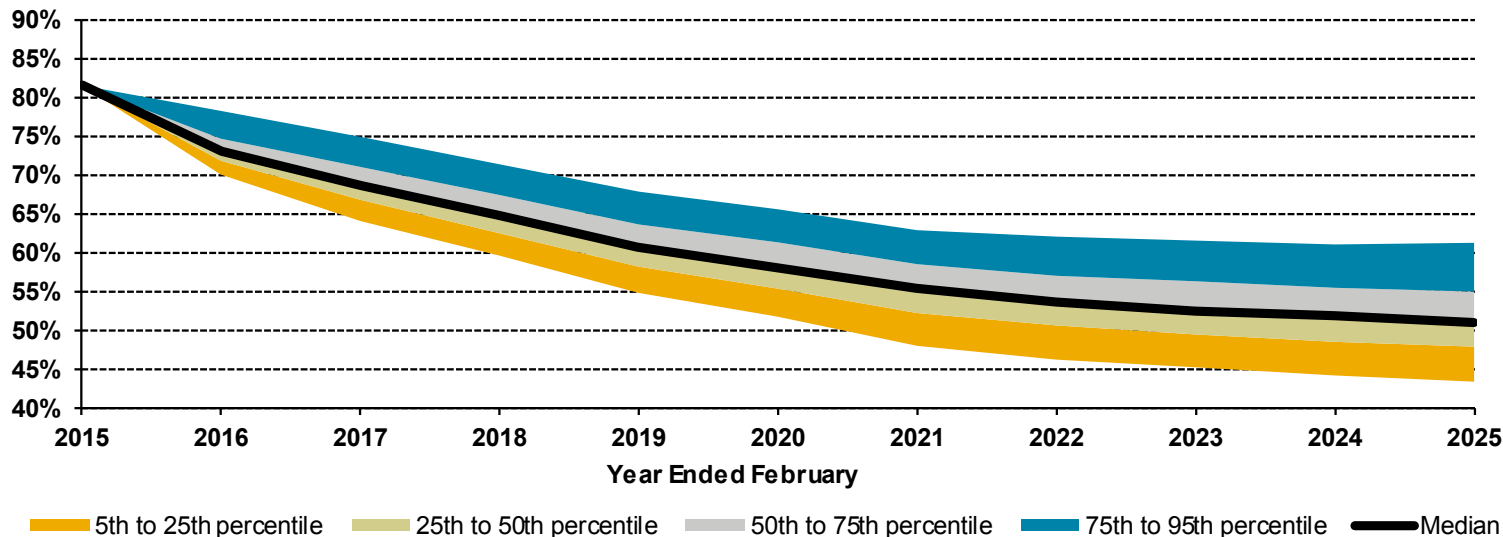
◆ Basic Unpaid Claims    ■ All Unpaid Claims    ● All Unpaid Claims & Pension Plan    ● Base Case (Flat 60%)    ▲ Flat allocations

- The « Flat allocations » are static strategies where the allocation to the hedging strategy is kept constant at the average allocation resulting from the corresponding dynamic strategy

\* CTE 5%: Average of the 50/1000 worst simulated outcomes.

...Appendix E  
...2.05 h)

Allocation to the Hedging Strategy When Targeting All Unpaid Claims + Pension Plan



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>95th percentile</b>	81.5%	78.2%	74.9%	71.4%	67.8%	65.6%	62.9%	62.0%	61.5%	61.0%	61.3%
<b>75th percentile</b>	81.5%	74.6%	71.0%	67.4%	63.6%	61.3%	58.5%	57.0%	56.3%	55.5%	55.0%
<b>Median</b>	81.5%	73.1%	68.7%	64.9%	60.7%	58.0%	55.3%	53.8%	52.5%	51.9%	51.1%
<b>25th percentile</b>	81.5%	71.8%	66.8%	62.5%	58.2%	55.4%	52.2%	50.6%	49.5%	48.5%	47.9%
<b>5th percentile</b>	81.5%	70.0%	64.1%	59.6%	54.8%	51.7%	48.0%	46.2%	45.2%	44.2%	43.4%
<b>Mean</b>	81.5%	73.4%	69.0%	65.1%	60.9%	58.3%	55.4%	53.9%	52.9%	52.2%	51.6%
<b>Standard Deviation</b>	0.0%	2.5%	3.3%	3.7%	4.0%	4.3%	4.5%	4.8%	5.0%	5.2%	5.4%
<b>CTE 5% *</b>	81.5%	69.0%	63.0%	58.3%	53.2%	50.0%	46.4%	44.6%	43.3%	42.2%	41.9%

# ...Appendix E

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### Comments

- Volatility measures overall dispersion of all results
- On the volatility graph, one would like to be in the upper left corner (minimize volatility)
  - Static allocations are more to the left than dynamic allocations
    - So when looking at volatility, static allocations are better than dynamic allocations
- CTE 5% measures the risk in extreme situations
- On the CTE 5% graph, one would like to be in the upper right corner (maximize retained earnings even in bad circumstances)
  - Some dynamic allocations are more to the right than static allocations
    - So when looking at extreme situations, some dynamic allocations are better than static allocations
- In both cases, average net income did not change materially

### Conclusion

- Dynamic allocations slightly reduce the risk of low levels of retained earnings in the Basic Unpaid Claims and All Unpaid Claims targets
  - They increase the risk when targeting all unpaid claims and pension plan liabilities
- However, they are ineffective in reducing the volatility of retained earnings in all cases
- Dynamic allocations do not have a significant impact on the average net income

# ...Appendix E

## ...2.05 h)

### Commentary on the considerations of adopting a separate Investment Policy Statement (IPS) for the pension plan

#### Current situation

- Pension assets are comingled with insurance assets
  - The portfolio is structured such that the fixed income assets (bonds) match the duration of the insurance liabilities and the remaining assets are invested in growth assets (real assets and equities)
  - As the bond portfolio covers the insurance liabilities, the pension plan liabilities are backed by the growth assets

#### Opportunity

- A separate pension plan IPS would allow MPI to develop an investment policy that considers the risk and return characteristics of the assets specific to the pension plan liabilities
- This approach would be consistent with other public and private sector organizations that generally have separate funds for pension plan assets

# ...Appendix E

## ...2.05 h)

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### Potential approaches

- An investment policy for the pension plan would likely include bonds and growth assets, which would result in a higher allocation to bonds than the current portfolio (where the pension plan is supported by only growth assets)
  
- This could be accomplished in three ways:
  1. Increase the current bond portfolio, which is matched to the duration of the insurance liabilities
    - Advantages:
      - ◆ Straightforward approach that is easy to implement as it simply requires building on the current bond strategy
      - ◆ Does not require a separation of the pension and insurance assets
    - Disadvantages:
      - ◆ Bond portfolio would match the duration of the insurance liabilities, not the pension liabilities

# ...Appendix E

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### ... Potential approaches

2. Create a separate bond strategy to match the pension liability duration
  - Advantages:
    - ♦ Matching the duration of pension liabilities (rather than the insurance liabilities) would provide better interest rate protection
  - Disadvantages:
    - ♦ Would require a separation of the pension and insurance assets (more detail provided on next page)
3. Create a separate bond strategy for the pension plan that includes corporate bonds
  - Advantages:
    - ♦ Provides better matching of assets and liabilities than duration alone because both duration and credit would be matched (as pension liabilities are based on the AA corporate yield curve)
      - Given the limited number of issues of AA long term corporate bonds, the AA corporate yield curve used to determine pension accounting liability is highly theoretical, making the match difficult
  - Disadvantages:
    - ♦ Would require a separation of the pension and insurance assets (more detail provided on next page)

# ...Appendix E

## ...2.05 h)

### Commentary on separating the pension and insurance assets

- If the pension plan has a different bond strategy than the insurance assets, a separation of the pension and insurance assets is required
  - Otherwise, the discount rate of the insurance liabilities will be impacted by the pension plan investment policy (since the insurance liabilities are valued based on the yield of the bond portfolio)
- May be accomplished informally (i.e., on paper) or through a separate account/trust
  - Need to ensure the actuary can identify which portfolio is attributable to the pension plan and which is attributable to the insurance business
- If a separate trust is established, this will increase administrative and other costs. In addition, trust and funding rules would apply
- Even if the separation is informal (i.e., on paper), the structure will be more complex for monitoring and reporting

### Conclusion

- Having a separate pension plan IPS presents the opportunity to reduce the risk of the pension plan
- However, in order to invest in bonds in the pension plan's IPS, it is critical to separate the portfolio in a way that won't impact the insurance liability discount rate
  - MPI must determine if the additional complexity is worth the effort



# ...Appendix E

## ...2.05 h)

### Multiple asset allocations

- We talked previously about the additional complexity and merits of separating assets for the pension plan and about using dynamic asset allocations
- Separating asset allocations for competitive lines of business would result in similar complexity and share the same issues with regards to the capacity of the actuary to formally identify the yield on each bond portfolio
  - Given the relative small size of the competitive lines of business vs. basic insurance, it is not worth the trouble
- Retained Earnings are composed of RSR and AOCI
  - AOCI is a temporary accounting item created to smooth gains and losses over time
  - Since the AOCI is not comprised of invested assets per se, it is not clear how one would go about implementing a separate investment policy for the AOCI vs. RSR

### Conclusion

- A separate IPS for the competitive lines introduces the same complexity as discussed for the pension plan and has the same requirement of ensuring the discount rate for basic insurance is not impacted
  - Given the smaller size of competitive lines, MPI must determine if the added complexity is worthwhile



# Appendix F

## Liquidity

# Appendix F

## Liquidity

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- We performed a series of stress tests to determine the impact of not being able to readily sell real estate, infrastructure and MUSH bonds following various significant events
  - I. Equity return of -50%
  - II. Surplus distribution of 10% of assets
  - III. Interest rates increase by 200 bps
    - For simplicity, we assumed a duration of 10 on both liabilities and the bond portfolio
  - IV. Combination of II and III
  
- The following slide shows the impact on the asset allocation immediately following such an event, as well as the subsequently rebalanced portfolio's allocations
  - Assuming no selling of the illiquid assets
  - This would reflect the short term impact on the asset allocation

# ...Appendix F

## ...Liquidity

	Equity return of -50%		Surplus distribution of 10%		Yields increase by 200 bps		Surplus distribution of 10% and Yields increase by 200 bps	
<b>Initial values</b>								
Real estate and infrastructure	15.0	20.0	15.0	20.0	15.0	20.0	15.0	20.0
Equities	15.0	10.0	15.0	10.0	15.0	10.0	15.0	10.0
MUSH	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Marketable bonds	<u>50.0</u>	<u>50.0</u>	<u>50.0</u>	<u>50.0</u>	<u>50.0</u>	<u>50.0</u>	<u>50.0</u>	<u>50.0</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Growth	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Fixed Income	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Illiquid assets in growth	50.0%	66.7%	50.0%	66.7%	50.0%	66.7%	50.0%	66.7%
Illiquid assets in fixed income	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%
<b>After events, before rebalancing</b>								
<b>Market values after events</b>								
Real estate and infrastructure	15.0	20.0	15.0	20.0	15.0	20.0	15.0	20.0
Equities	7.5	5.0	12.0	7.0	15.0	10.0	7.8	2.8
MUSH	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Marketable bonds	<u>50.0</u>	<u>50.0</u>	<u>43.0</u>	<u>43.0</u>	<u>36.0</u>	<u>36.0</u>	<u>33.2</u>	<u>33.2</u>
Total	92.5	95.0	90.0	90.0	86.0	86.0	76.0	76.0
<b>Asset allocations after events (%)</b>								
Real estate and infrastructure	16.2	21.1	16.7	22.2	17.4	23.3	19.7	26.3
Equities	8.1	5.3	13.3	7.8	17.4	11.6	10.3	3.7
MUSH	21.6	21.1	22.2	22.2	23.3	23.3	26.3	26.3
Marketable bonds	<u>54.1</u>	<u>52.6</u>	<u>47.8</u>	<u>47.8</u>	<u>41.9</u>	<u>41.9</u>	<u>43.7</u>	<u>43.7</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Growth	24.3	26.3	30.0	30.0	34.9	34.9	30.0	30.0
Fixed Income	75.7	73.7	70.0	70.0	65.1	65.1	70.0	70.0
Illiquid assets in growth	66.7%	80.0%	55.6%	74.1%	50.0%	66.7%	65.8%	87.7%
Illiquid assets in fixed income	28.6%	28.6%	31.7%	31.7%	35.7%	35.7%	37.6%	37.6%

# ...Appendix F

## ...Liquidity

	Equity return of -50%		Surplus distribution of 10%		Yields increase by 200 bps		Surplus distribution of 10% and Yields increase by 200 bps	
<b>After rebalancing (assuming illiquid assets cannot be sold)</b>								
<b>Values after rebalancing</b>								
Real estate and infrastructure	15.0	20.0	15.0	20.0	15.0	20.0	15.0	20.0
Equities	12.8	8.5	12.0	7.0	10.8	5.8	7.8	2.8
MUSH	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Marketable bonds	<u>44.8</u>	<u>46.5</u>	<u>43.0</u>	<u>43.0</u>	<u>40.2</u>	<u>40.2</u>	<u>33.2</u>	<u>33.2</u>
Total	92.5	95.0	90.0	90.0	86.0	86.0	76.0	76.0
<b>Allocation after rebalancing (%)</b>								
Real estate and infrastructure	16.2	21.1	16.7	22.2	17.4	23.3	19.7	26.3
Equities	13.8	8.9	13.3	7.8	12.6	6.7	10.3	3.7
MUSH	21.6	21.1	22.2	22.2	23.3	23.3	26.3	26.3
Marketable bonds	<u>48.4</u>	<u>48.9</u>	<u>47.8</u>	<u>47.8</u>	<u>46.7</u>	<u>46.7</u>	<u>43.7</u>	<u>43.7</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Growth	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Fixed Income	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Illiquid assets in growth	54.1%	70.2%	55.6%	74.1%	58.1%	77.5%	65.8%	87.7%
Illiquid assets in fixed income	30.9%	30.1%	31.7%	31.7%	33.2%	33.2%	37.6%	37.6%

# ...Appendix F

## ...Liquidity

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### Comments

- As real estate, infrastructure and MUSH are difficult or impossible to trade, equities and marketable bonds must be used to provide liquidity for outflows and rebalancing
- Portfolios with 67% illiquid assets as a proportion of growth assets are able to withstand a single significant liquidity event
  - In the case of a succession of events, the portfolio ends up significantly unbalanced
    - Rebalancing to target would be a lengthy process and, as such, the portfolio risk profile would be impacted
- One significant liquidity event does not dramatically impact the bond portfolio, but two makes the MUSH allocation grow significantly as a proportion of total bonds
  - Could make it difficult to respect the liability hedging requirements (either matching duration, bucket approach or cash flow matching), while still using bond cash flows to pay benefits

# ...Appendix F

## ...Liquidity

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### Conclusion

- Exceeding the 50% threshold for illiquid assets as a proportion of growth assets could result in a significantly unbalanced portfolio. Given a 30% allocation to growth assets we recommend a combined target allocation of 15% to illiquid growth assets
- Given a 70% allocation to fixed income, we recommend to not exceed a 20% target allocation to illiquid MUSH bonds
- Therefore, the total recommended target allocation to illiquid asset classes would not exceed 35%, i.e., 15% illiquid assets from the growth component plus the maximum allocation of 20% to MUSH bonds

# ...Appendix F

## ...Liquidity

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### ...Conclusion

- Successive liquidity events would increase the proportion of MUSH, which could hamper the hedging strategy
  - The bond manager has to construct the portfolio given a certain set of constraints
    - MUSH allocation
    - Investable universe (availability of bonds)
      - ♦ Targeted allocations to federal, provincial, municipal, corporate bonds
    - Targeted tracking error
    - Short term cash flow requirements
  - The higher the MUSH allocation, the less flexibility the manager has to respect the other constraints
  - Before adopting a specific target allocation to MUSH, MPI should validate directly with the bond manager the maximum level at which the MUSH allocation would become too restrictive to implement the desired hedging strategy
    - The targeted MUSH allocation should be below the maximum level identified by the manager, such that there is sufficient buffer to withstand successive liquidity events





# Appendix G

## Projections Under Alternative RSR Rules

# Appendix G

## Projections Under Alternative RSR Rules

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- The main section of the report shows results under the “Desired State” rules. This appendix shows sample results under alternative RSR rules:
  - Current State
    - Target range 10%-20% of written premiums
    - Surcharge when below 10%
      - ♦ Premium rate is increased by 2% per year until the minimum RSR level is reached
    - Special contribution to bring level back to 0% if RSR becomes negative
    - Surplus distribution triggered if RSR reaches 25% of written premiums
  - No RSR Targets
    - No adjustments, special contributions or surplus distributions
    - Included purely for comparison purposes; not a realistic approach
  - SGI rules
    - RSR target of 100% of MCT
      - ♦ At each rate program, an amount is calculated on top of the basic insurance rate to either recover one-fifth of the capital below 100% MCT or release one-fifth of the capital above 100% MCT

## ...Appendix G

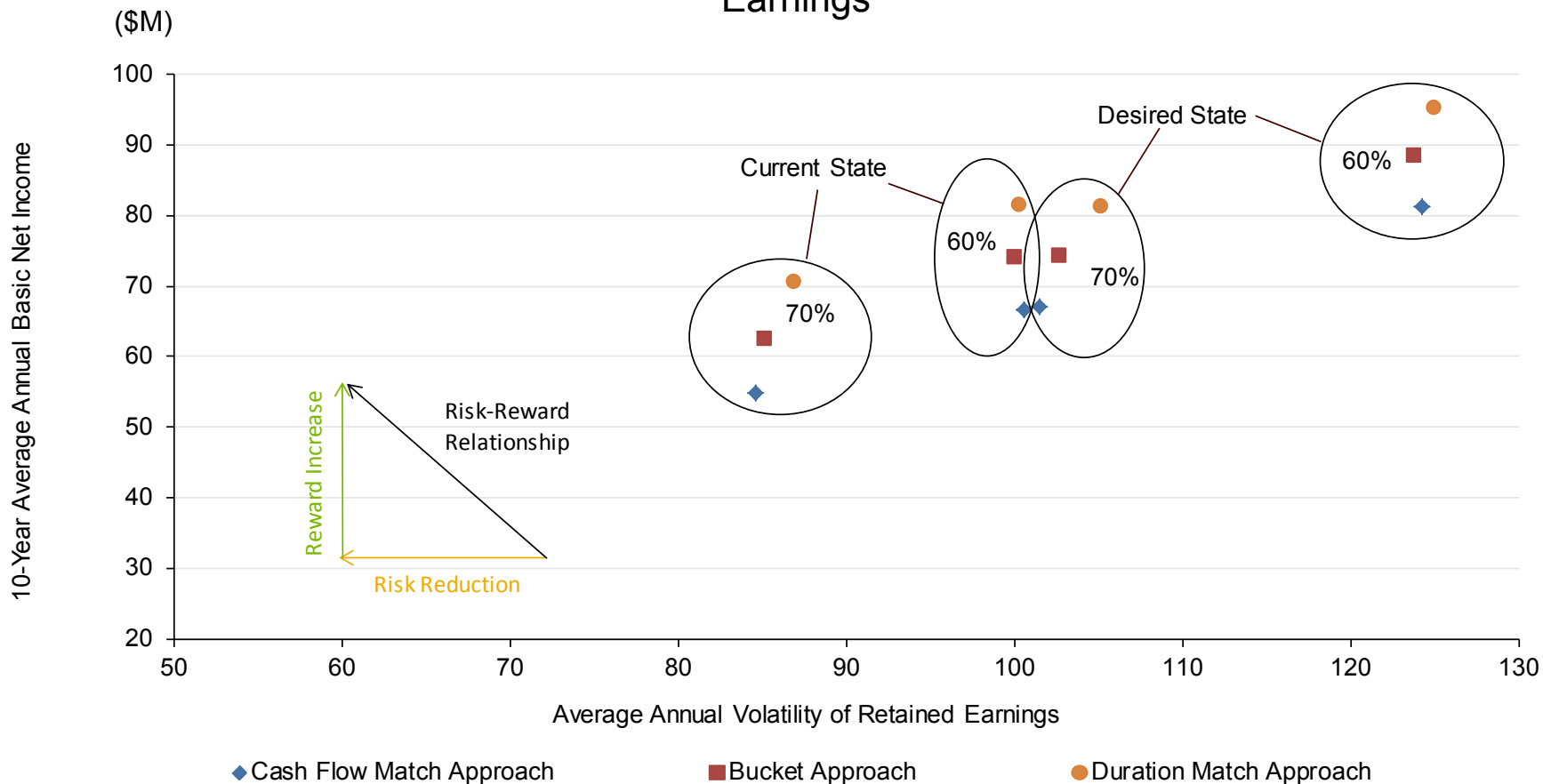
### ...Projections Under Alternative RSR Rules

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- ICBC rules (loose interpretation, given the subjectivity and the lack of clarity surrounding their RSR rules)
  - Target range 100%-175% MCT
  - Below 0%: special contribution to bring level back to 0%
  - Below 100%: surcharge subject to ICBC restrictions, i.e. surcharge cannot deviate by more than 1.5% from previous year rate surcharge
  - Between 100%-175%: no surcharge, unless there is an existing surcharge greater than 1.5%, in which case reduce surcharge by 1.5% until extinguished or until RSR gets out of target range again
  - Over 175% : eliminate any existing surcharge, distribute any excess over 175%

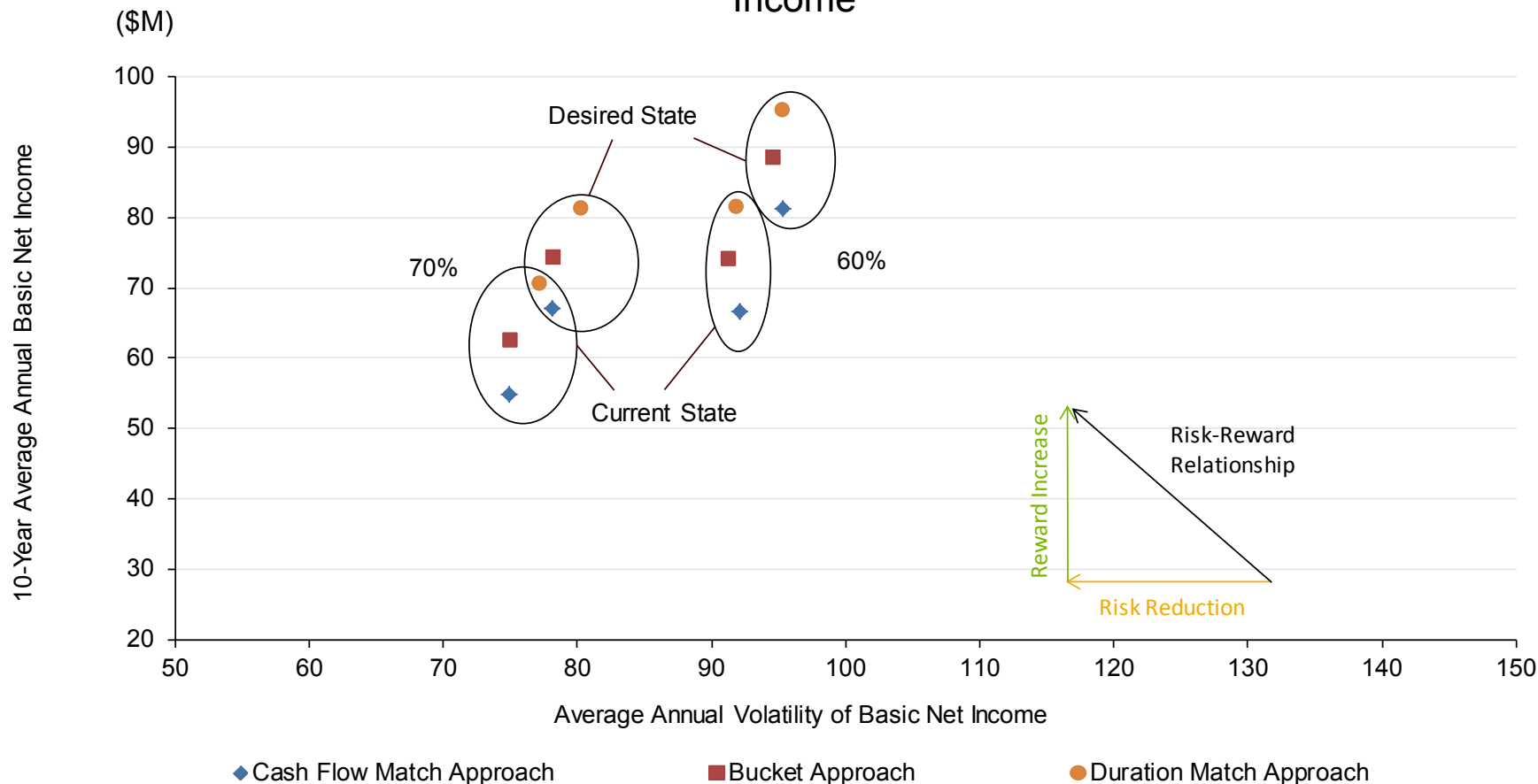
# ...Appendix G ...Projections Under Alternative RSR Rules

## Current State: Average Annual Basic Net Income vs. Average Annual Volatility of Retained Earnings



# ...Appendix G ...Projections Under Alternative RSR Rules

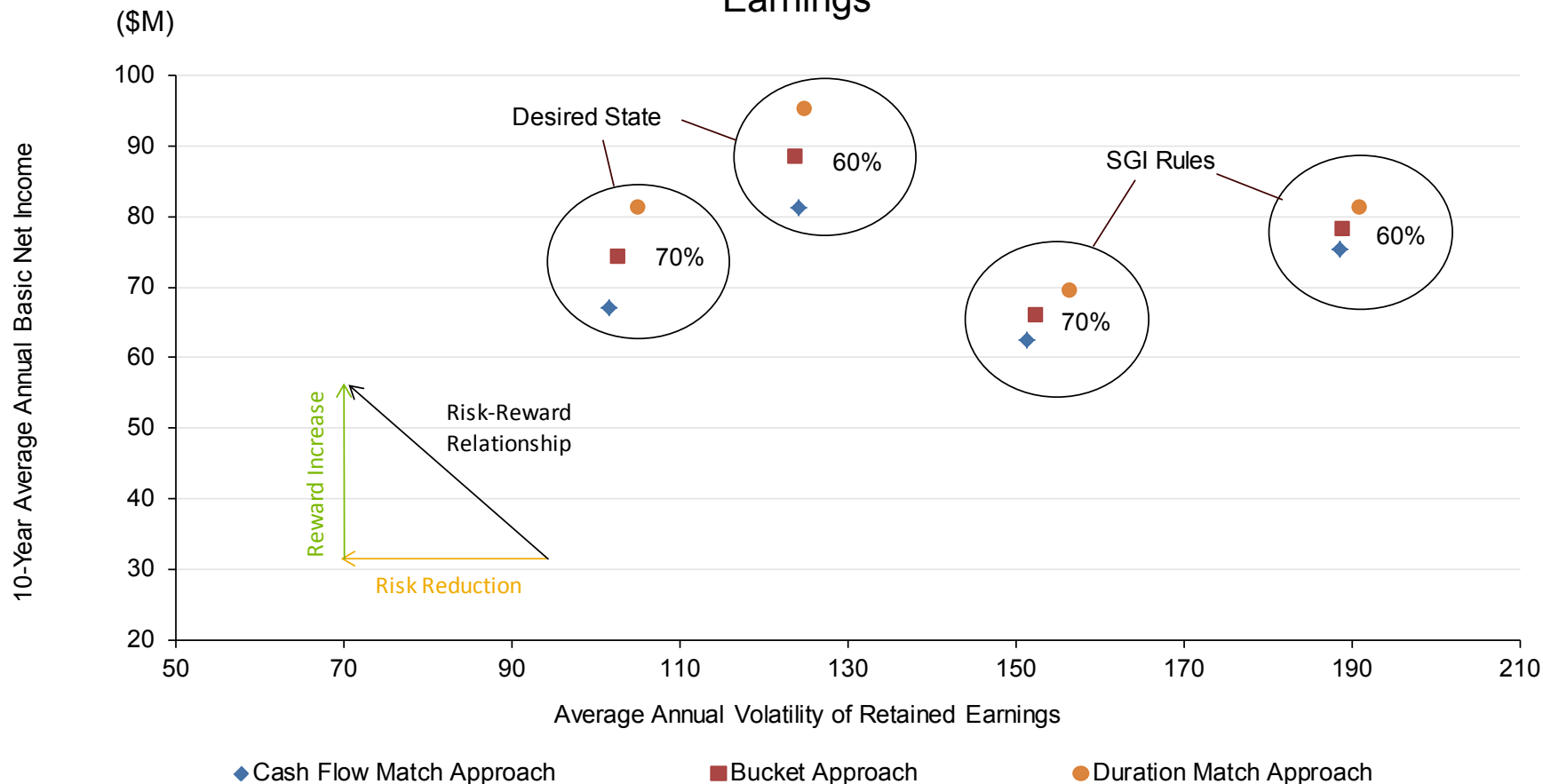
## Current State: Average Annual Basic Net Income vs. Average Annual Volatility of Basic Net Income



# ...Appendix G

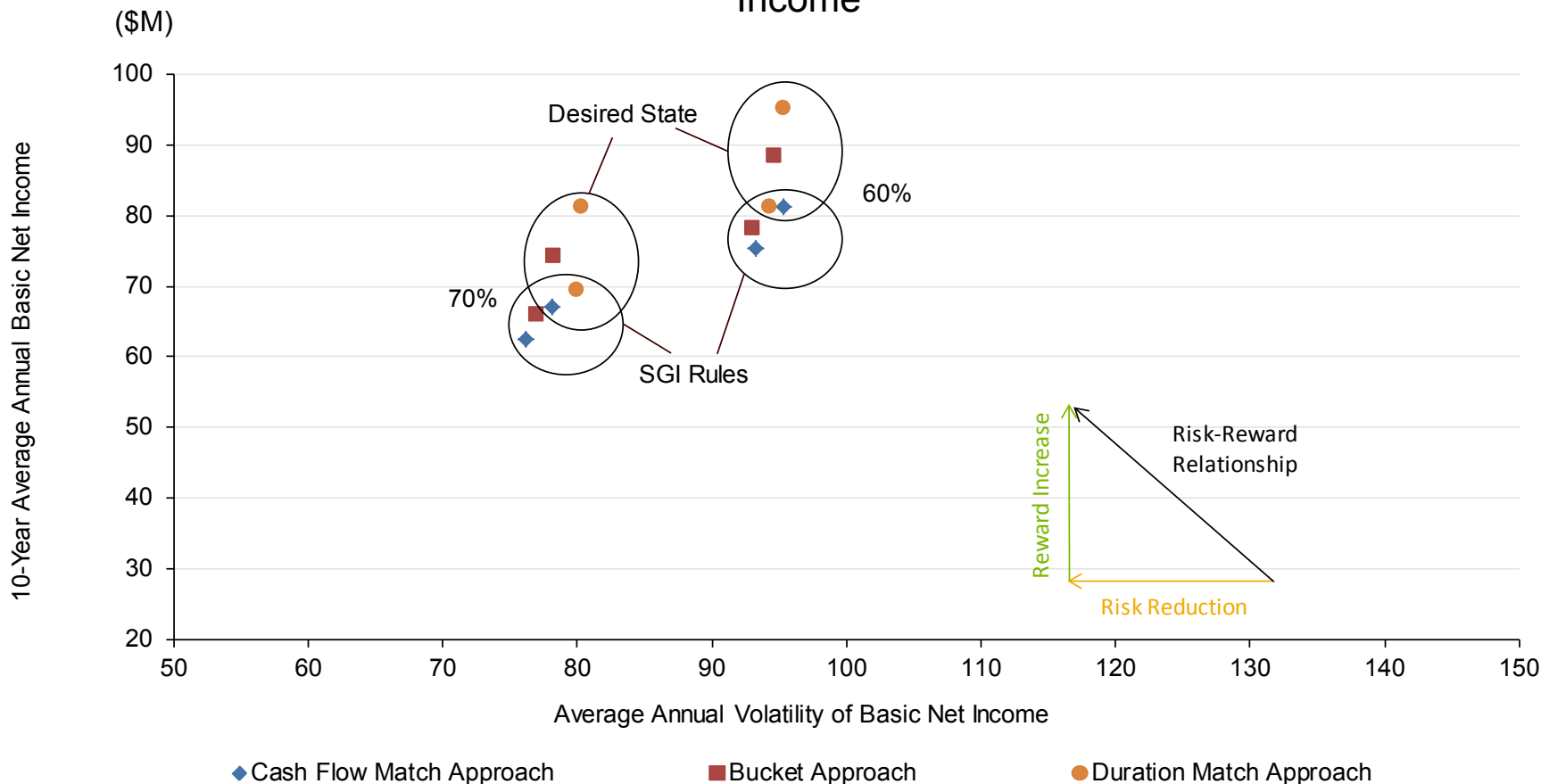
## ...Projections Under Alternative RSR Rules

SGI Rules: Average Annual Basic Net Income vs. Average Annual Volatility of Retained Earnings



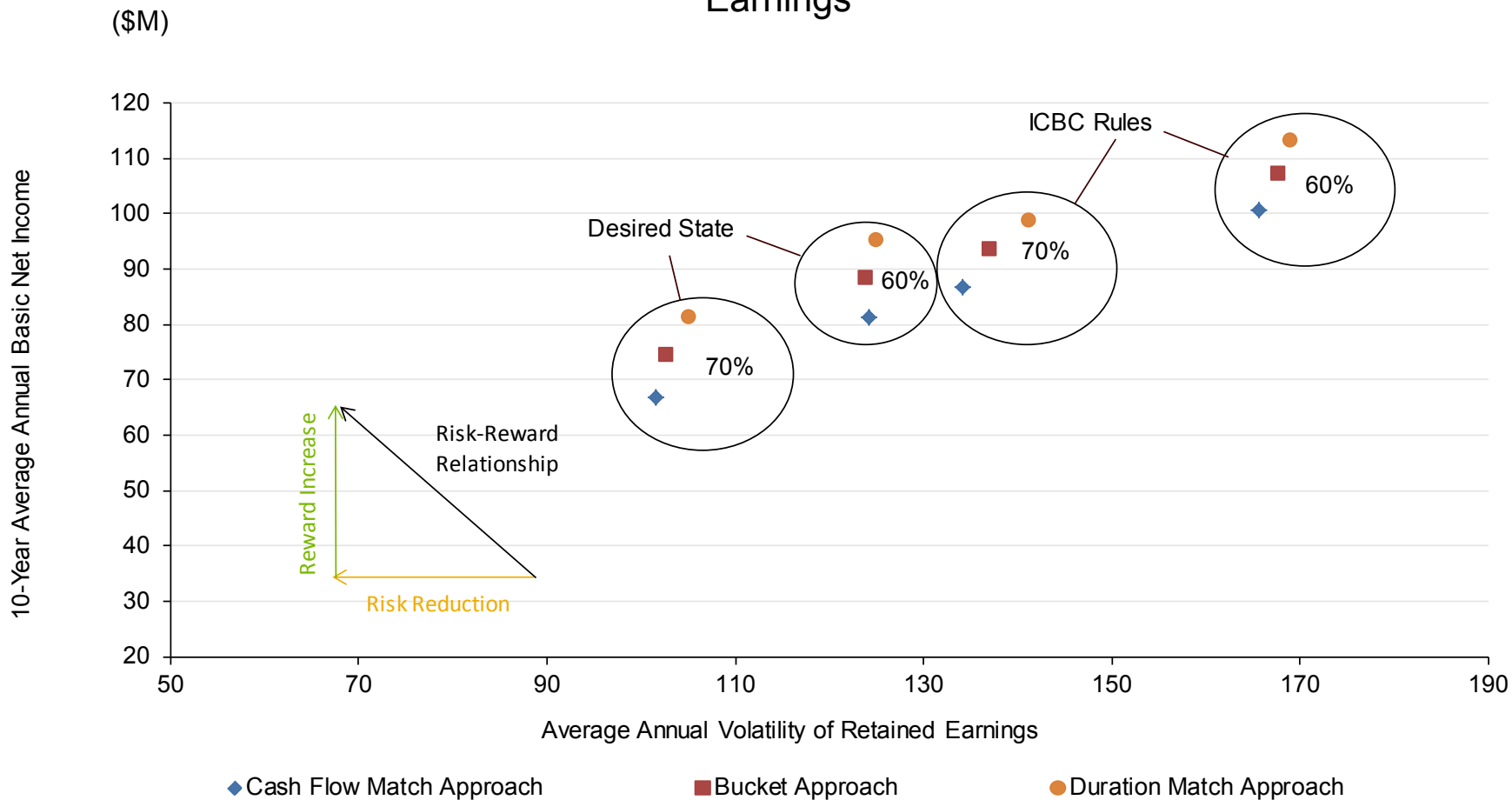
# ...Appendix G ...Projections Under Alternative RSR Rules

## SGI Rules: Average Annual Basic Net Income vs. Average Annual Volatility of Basic Net Income



# ...Appendix G ...Projections Under Alternative RSR Rules

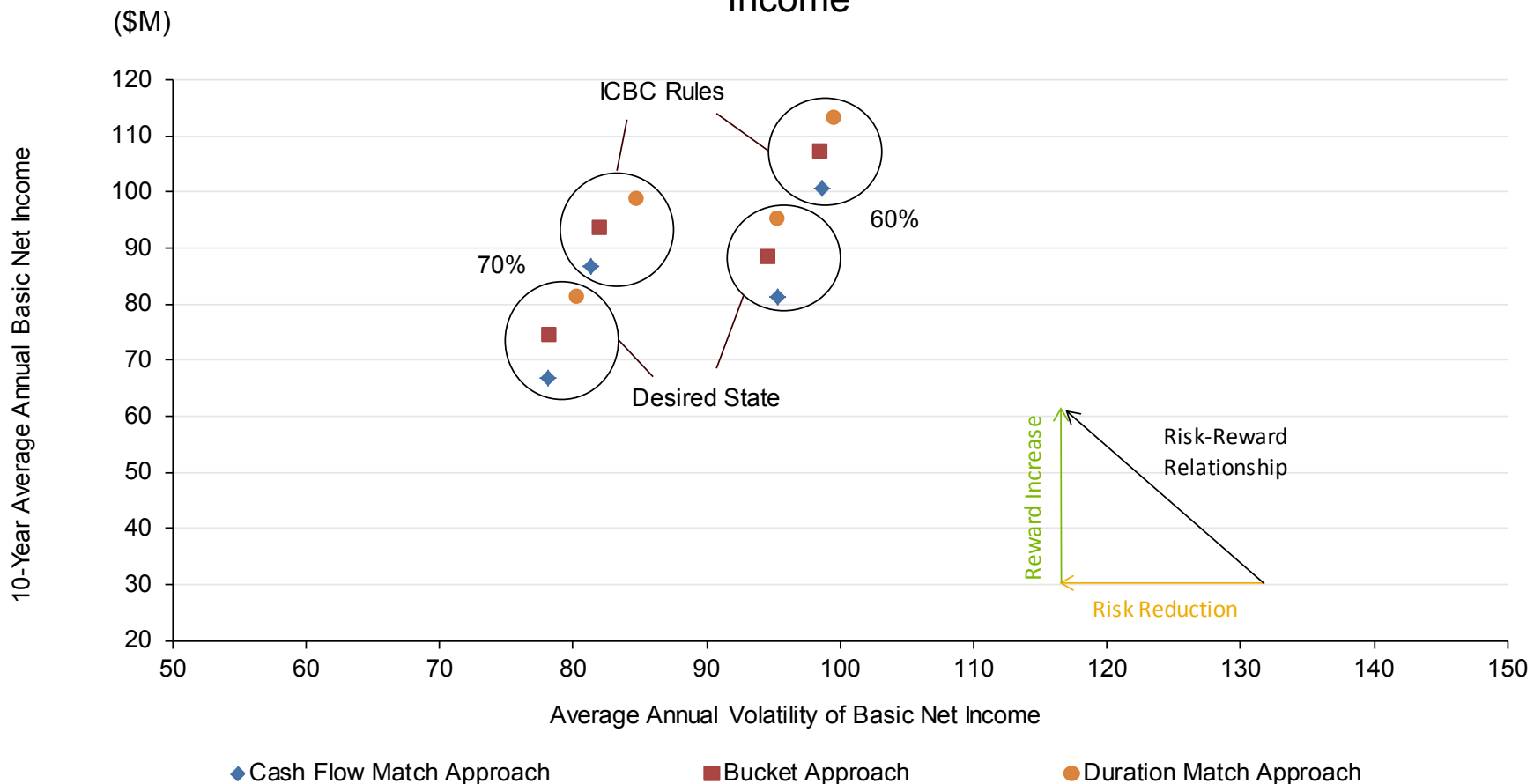
## ICBC Rules: Average Annual Basic Net Income vs. Average Annual Volatility of Retained Earnings





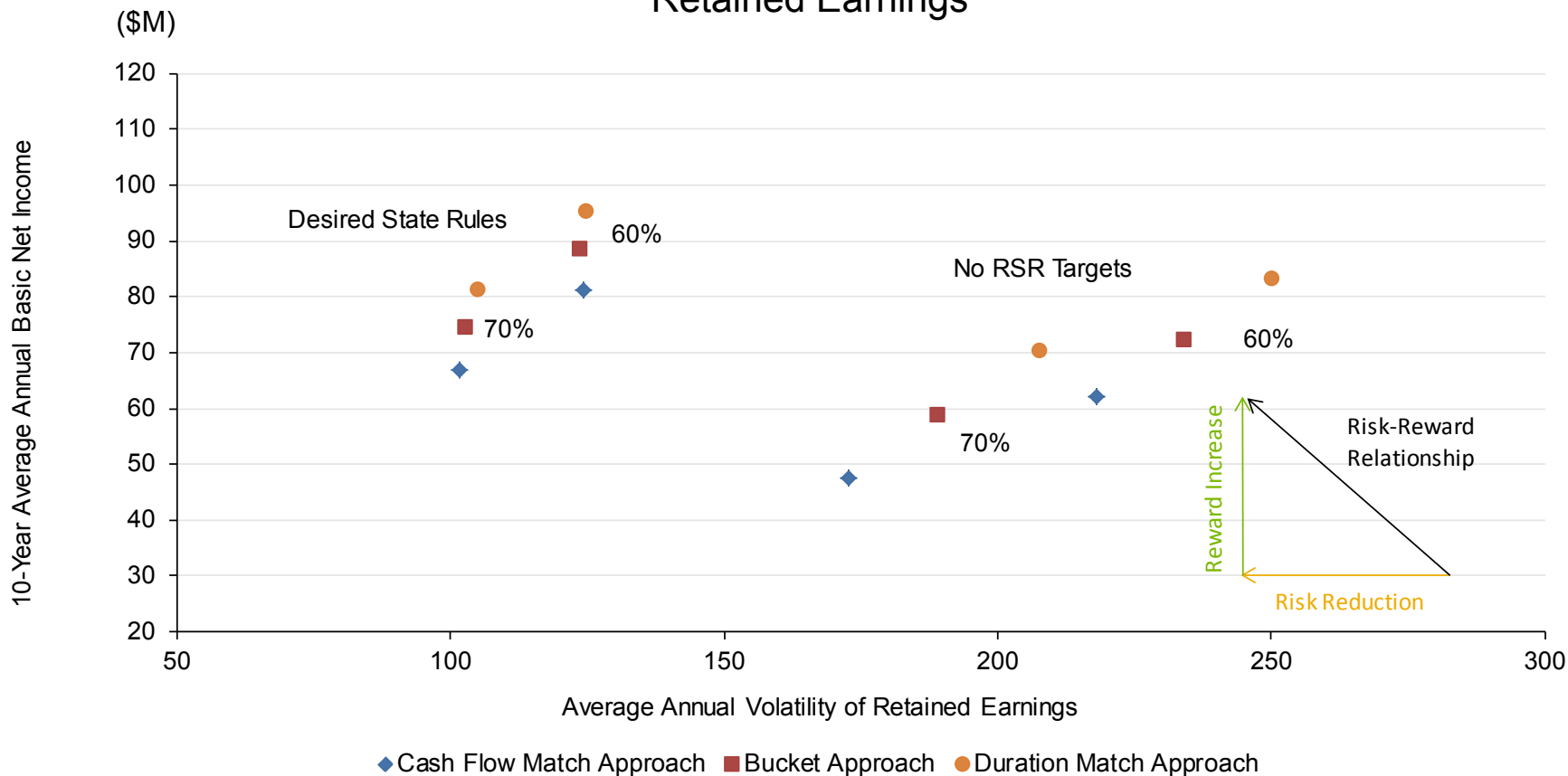
# ...Appendix G ...Projections Under Alternative RSR Rules

## ICBC Rules: Average Annual Basic Net Income vs. Average Annual Volatility of Basic Net Income



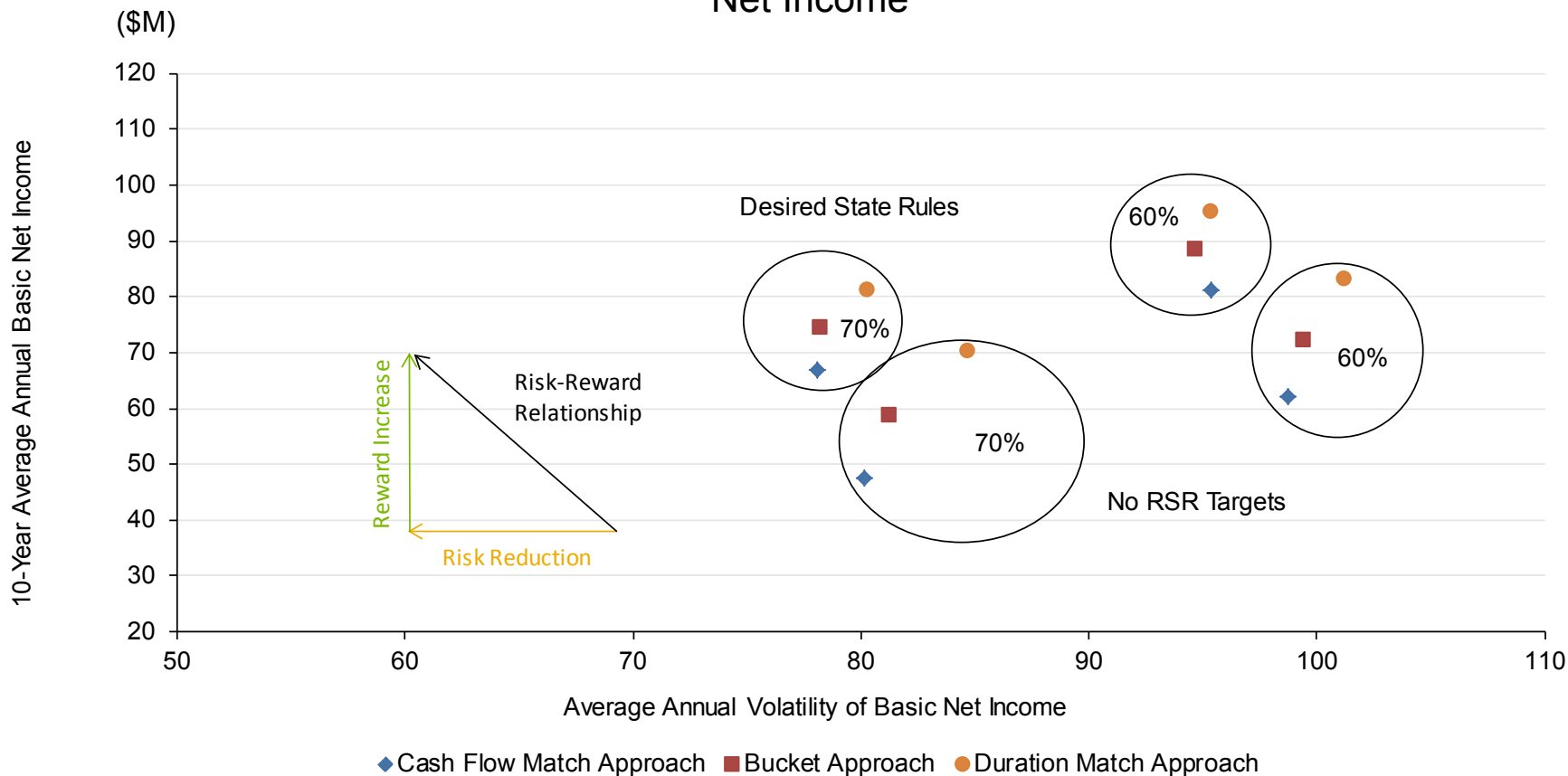
# ...Appendix G ...Projections Under Alternative RSR Rules

## No RSR Targets: Average Annual Basic Net Income vs. Average Annual Volatility of Retained Earnings



# ...Appendix G ...Projections Under Alternative RSR Rules

## No RSR Targets: Average Annual Basic Net Income vs. Average Annual Volatility of Basic Net Income



# ...Appendix G

## ...Projections Under Alternative RSR Rules

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### Comments

- This supplemental material was provided upon request by MPI
  - For the reasons indicated in the Conclusion and Recommendations section of this report, we advise against over-reliance on peer practices
  - A more comprehensive study would provide analysis required to form a conclusion
    - We believe this would be relevant for MPI but is outside the scope of this current mandate

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**PUB (MPI) 1-21**

<b>Volume:</b>	<b>I PUB.10.12</b>	<b>Page No.:</b>	<b>12</b>
<b>Topic:</b>	<b>AON ALM Study from 2016 GRA</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Questions for AON Expert Witness</b>		

**Question:**

- a) From Pages 6 and 7 of Investment Income Attachment B (Volume 2 of the 2016 GRA), please clarify if the asset – liability matching being discussed here addresses only claim liabilities, or if it also includes premium liabilities? If premium liabilities are not included, why not?
- b) From Page 14 of Investment Income Attachment B (Volume 2 of the 2016 GRA), please define, and provide an illustrative calculation of “tracking error”.
- c) From Pages 22 to 31 of Investment Income Attachment C (Volume 2 of the 2016 GRA), please discuss the importance to the findings of the ALM study of the significant differences between the “base case” forecast used in the study vs. the corresponding GRA forecast.
- d) From Page 33 of Investment Income Attachment C (Volume 2 of the 2016 GRA), please provide a detailed rationale for why “average annual volatility of retained earnings” and “average annual basic net income” were selected as the measures of “risk” and “reward”, respectively.

**Rationale for Question:**

To improve understanding of the AON ALM Study.

**RESPONSE:**

- a) The premium liabilities have a duration of less than 3 years. Therefore, the premium liabilities are not subject to significant interest rate risk. In the Asset Liability Management (ALM) study full matching of the fixed income portfolio to

claims and premium liabilities was seen to be an unnecessary constraint as this would likely reduce portfolio returns with minimal reduction in risk.

- b) Tracking error measures the volatility of the difference between the portfolio’s return and the return of the benchmark. The common formula shown below calculates the standard deviation of the difference in the portfolio and benchmark returns over time. The formula is as follows:

$$TE = \sqrt{\frac{\sum_{i=1}^n (R_p - R_B)^2}{N-1}}$$

Where:

- TE = Tracking Error
- R<sub>p</sub> = Return of Manager or Fund
- R<sub>B</sub> = Return of Benchmark
- N = Number of Return Periods

The table below is an example of tracking error calculation:

Date	Manager Return	Benchmark Return	Manager - Benchmark Return
31-Jul-14	1.6%	1.4%	0.2%
31-Aug-14	3.6%	2.1%	1.6%
30-Sep-14	-4.5%	-4.0%	-0.5%
31-Oct-14	-1.5%	-2.1%	0.6%
30-Nov-14	-1.3%	1.1%	-2.4%
31-Dec-14	-0.8%	-0.4%	-0.4%
31-Jan-15	-1.1%	0.5%	-1.6%
28-Feb-15	2.9%	3.7%	-0.8%
31-Mar-15	-2.7%	-1.9%	-0.8%
30-Apr-15	3.4%	2.4%	0.9%
31-May-15	-3.2%	-1.2%	-2.0%
30-Jun-15	-2.4%	-2.8%	0.4%
Annual Tracking Error			4.2%

- c) The output of Aon’s stochastic modeling process is an approximation of the output of Manitoba Public Insurance’s (MPI) detailed financial model. The differences have limited impact on the outcome of the asset-liability study.
- d) Aon Hewitt responded to this question as follows:
- The stated risk and reward measures were selected together with MPI. The objective was to reflect MPI’s goals and objectives and select measures that measure how MPI views risk.
  - Average annual basic net income reflects that, all things being equal, having a higher basic net income is desirable. It is a more direct measure of success than average invested asset return which only incorporates one element of net income.
  - Average annual volatility of retained earnings reflects that excess variability in retained earnings can lead to rate adjustments. It is therefore desirable to understand the volatility of retained earnings to identify the likelihood of rate adjustments, both negative and positive.
  - Some subjectivity always exists in selecting risk and reward variables. The most important factor is to select variables that are meaningful to the organization and can present a trade-off between normal, undesirable and desirable circumstances.



**PUB (MPI) 1-22**

<b>Volume:</b>	<b>II INV-G/ AI.6</b>	<b>Page No.:</b>	
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Impaired Investments</b>		

**Preamble:**

The Corporation recorded a \$33.3 million impairment loss in 2015/16 primarily in Canadian Equity Investments.

**Question:**

- a) Please provide the details, by issuer, of the write-down of investments of \$33.3 million in 2015/16.
- b) Please file a copy of the most recent Investment Write-Down policy. Also, please provide a copy of the investment write-down criteria and process followed by the Corporation.
- c) Please provide any commentary provided by the External Auditor in the Management Letter or other correspondence related to this write down, in confidence if necessary.
- d) Please indicate the current position of each of the investments where a write down was taken in 2015/16 as at June 30, 2016.

**Rationale for Question:**

To understand the level of reported investment income.

**RESPONSE:**

- a) Please see Attachment A.
- b) Please see Attachment B.

c) Please see Attachment C.

d) Please see Attachment A.

**Manitoba Public Insurance  
Write Down of Impaired Investments**

	Units at February 29/16	Original Book Value	Book Value at February 29/16	Impairment at February 29/16	Units at June 30/16	Book Value at June 30/16	Market Value at June 30/16
<b>Canadian Equities:</b>							
AKITA DRILLING LTD-CLASS A NON VTG SHS	109,500	\$1,472,767.15	\$658,095.00	\$814,672.15	109,500	\$658,095.00	\$897,900.00
BAYTEX ENERGY CORP COMMON	252,000	\$9,214,251.69	\$776,160.02	\$8,438,091.67	No Holdings	No Holdings	No Holdings
BLACK DIAMOND GROUP LTD COMMON	102,850	\$1,411,896.95	\$411,400.00	\$1,000,496.95	102,850	\$411,400.00	\$554,361.49
CANADIAN WESTERN BANK	134,750	\$3,660,614.47	\$2,682,872.48	\$977,741.99	141,700	\$2,843,997.83	\$3,487,237.01
CANFOR CORPORATION COMMON NEW	120,498	\$2,888,144.45	\$1,674,922.20	\$1,213,222.25	169,302	\$2,400,412.44	\$2,207,698.08
CENOVUS ENERGY INC COMMON	420,000	\$11,195,615.32	\$6,451,199.96	\$4,744,415.36	350,000	\$5,376,000.01	\$6,247,500.06
CERVUS EQUIPMENT CORP COMMON	29,800	\$591,164.96	\$349,852.00	\$241,312.96	29,800	\$349,852.00	\$332,567.99
CORUS ENTERTAINMENT INC CLASS B NV	97,776	\$1,629,628.82	\$1,047,180.97	\$582,447.85	127,098	\$1,311,078.96	\$1,690,403.39
ENSIGN ENERGY SERVICES INC COMMON	271,506	\$3,781,207.18	\$1,349,384.84	\$2,431,822.34	271,506	\$1,349,384.82	\$1,965,703.46
HUSKY ENERGY INC COM	163,266	\$4,401,656.75	\$2,398,377.54	\$2,003,279.21	206,774	\$3,056,418.30	\$3,256,690.52
LUMENPULSE INC COMMON	38,675	\$672,294.66	\$621,120.50	\$51,174.16	38,675	\$621,120.50	\$623,441.00
MAJOR DRILLING GROUP INTL INC COMMON	127,675	\$1,168,035.63	\$803,075.73	\$364,959.90	127,675	\$803,075.75	\$993,311.45
MELCOR DEVS LTD	88,050	\$1,625,931.04	\$1,197,480.00	\$428,451.04	88,050	\$1,197,480.00	\$1,267,039.50
MULLEN GROUP LTD COMMON	53,375	\$851,639.81	\$771,802.49	\$79,837.32	100,725	\$1,447,832.47	\$1,417,200.75
PRECISION DRILLING CORP COMMON 2010	264,724	\$2,345,462.54	\$1,143,607.67	\$1,201,854.87	264,724	\$1,143,607.68	\$1,813,359.43
SECURE ENERGY SERVICES INC COMMON	217,383	\$2,510,469.11	\$1,597,765.03	\$912,704.08	217,383	\$1,597,765.05	\$1,915,144.24
SHERRITT INTL CORPORATION COMMON	457,945	\$1,396,732.25	\$343,458.75	\$1,053,273.50	457,945	\$343,458.75	\$361,776.55
TECK RESOURCES LTD CL B SUB VTG	331,048	\$5,497,242.88	\$2,585,484.87	\$2,911,758.01	222,842	\$1,740,396.07	\$3,788,314.00
VERMILION ENERGY INC COMMON	143,000	\$8,555,504.92	\$5,233,800.01	\$3,321,704.91	108,000	\$3,952,800.00	\$4,426,920.00
YELLOW PAGES LIMITED COMMON NEW	66,975	\$1,454,177.49	\$1,253,102.25	\$201,075.24	66,975	\$1,253,102.25	\$1,220,284.50
	3,490,796	\$66,324,438.07	\$33,350,142.31	\$32,974,295.76	3,201,524	\$31,857,277.88	\$38,466,853.42
<b>Venture Capital:</b>							
CENTRESTONE VENTURES LTD	586.86	\$608,987.56	\$313,935.00	\$295,052.56	586.86	\$313,935.00	\$313,935.00
	586.86	\$608,987.56	\$313,935.00	\$295,052.56	586.86	\$313,935.00	\$313,935.00
<b>Private Equity:</b>							
RFG2: STRAD ENERGY SERVICES LTD	38,353.99	\$163,549.14	\$57,685.00	\$105,864.14	38,353.99	\$57,685.00	\$57,685.00
	38,353.99	\$163,549.14	\$57,685.00	\$105,864.14	38,353.99	\$57,685.00	\$57,685.00
<b>Total of Write-Down of Impaired Investments</b>				<b>\$33,375,212.46</b>			

## Manitoba Public Insurance Policy for Writing Down Investments

### Procedure

Management will perform an annual review at corporate year end of all individual corporate investments with a market value below book value or cost by \$150,000 or by 20% or more to assess whether there has been a loss in value that is other than a temporary decline in the value of the investment. Any other individual holdings identified in a non-specific manner as having a potential impairment will also be subject to review. The annual review will be on a per security basis, not on a per investment counsel basis and will only be deemed impaired if the impairment is significant or prolonged.

### Definitions

#### Significance:

##### \$2.5 million per security

With over \$2.5 billion in investments, a movement of \$150,000 is not significant (this is the threshold for review only). A 1% movement in the total investment portfolio would equate to \$25 million. Significance on a portfolio basis would be \$25 million. Significance on an individual security would be a portion of the portfolio significance. Ten percent of the portfolio movement would be \$2.5 million and this would be considered significant on an individual security.

##### 20% decline where decline is over \$500 thousand

A 20% decline is significant so long as there is still a material dollar movement in the security. A 20% decline in an equity security also needs to be more than 20% of the overall significance of an individual security which is \$500 thousand (20% of \$2.5 million).

#### Prolonged:

A prolonged decline is any decline that has occurred for more than one year.

### Considerations

A loss in value of an investment is other than temporary when any one of the following three items occur in isolation or together: a significant decline in the market value below book value or cost; a prolonged decline; or significant changes with an adverse effect that has taken place in the technological, market, economic or legal environment in which the issuer operates and indicates that the cost of the investment may not be recovered.

The following guidelines, to satisfy International Accounting Standard 39 – Financial Instruments: Recognition and Measurement, will be used in evaluating whether other than temporary impairment in value of an investment may have occurred for consideration under the third requirement noted above.

- Has the issuer experienced severe market value losses in the current year or current and prior years?
- Have financial losses by the issuer existed for a period of years?

- Is the issuer experiencing depressed and declining earnings in relation to competition, erosion of market share, and deteriorating financial position?
- Has the trading of the security been suspended?
- Has the active market for this security disappeared?
- Does the issuer have going concern or liquidity concerns?
- Is the appraised value of the investment below the carrying value?
- What is the expected period of time required for any anticipated recovery in market value?
- Is there an expectation of, or actual default/delay, interest or principal payments for a fixed income security?

### **Write-Down of Impaired Investments**

Once a decline in fair value of a corporate investment is considered other than temporary, it is deemed impaired. The accounting treatment of an impaired asset depends on its classification: 1. Assets measured at amortized cost (Held to Maturity) or 2. Assets measured at fair value (Available for Sale or Fair Value through Profit or Loss) and type (Equity or Fixed income).

#### **1. Assets Measured at Amortized Cost**

- **Held To Maturity**

The amount of the impairment loss is the difference between the carrying value and the present value of estimated future cash flows discounted at the financial asset's original effective interest rate (effective interest rate computed at initial recognition) and recognized in profit/loss for the period.

#### **2. Assets Measured at Fair Value**

- **Available for Sale**

Where a decline in fair value has been recognized in other comprehensive income, a cumulative loss is reclassified from accumulated other comprehensive income to profit/loss. The cumulative loss reclassified to profit/loss is the difference between book value (amortized cost) or cost and fair value less any impairment losses previously recognized.

- **Fair Value through Profit or Loss**

The decline in fair value is recognized in profit/loss for the period with no impact on accumulated other comprehensive income.

A write-down of an impaired Available for Sale **equity** investment to reflect a decrease in value that is other than temporary will not be reversed through profit/loss if there is a subsequent increase in value of that investment. Any increase in fair value subsequent to an impairment loss is recognized in other comprehensive income.

A write-down of an impaired Available for Sale **fixed income** investment to reflect a decrease in value that is other than temporary must be reversed through profit/loss if there

is a subsequent increase in value of that investment and this increase can be related to a specific event after the loss was recognized.

When the fair value of an investment within a portfolio is significantly less than the book value or cost and no write-down has been taken, disclosure to the Audit, Finance & Risk Committee will be made of:

- the cost, book value, carrying value and the fair value of the investment; and,
- the reasons for not reducing the carrying amount, including the nature of the evidence that provides the basis for management's belief that the decrease in value will be recovered.

### **Fair Value**

Determination of fair value starts with the identification of the current value as indicated by a quoted price (bid or last trade) in active markets, reasonably close to the date of assessment.

When quoted market prices are not available, estimates of fair value are based on the best information available, including prices for similar investments and the results of other acceptable valuation techniques.

### **IFRS Standard Changes**

It should be noted that on July 24, 2014, IASB replaced IAS 39 with IFRS 9 Financial Instruments: Recognition and Measurement as a complete standard. The standard currently is scheduled to come into effect for reporting periods beginning January 1, 2018 or later; meaning the corporation would adopt it for the fiscal year beginning March 1, 2018 (ending February 28, 2019).

**Valuation and existence of investments**

**Basic Corporation \$2,083 million (2015 - \$2,061 million)  
 \$2,456 million (2015 - \$2,491 million)**

**Background information**

Investments represent a substantial portion of the assets and their valuation is subject to significant estimate and judgment by management. Financial markets and economic conditions continue to present challenges and therefore may result in significant market value swings.

Management has the following processes in place to address this risk:

- fair value estimates are obtained primarily from third-party pricing service and its custodian;
- management performs a detailed portfolio review and analysis for impaired investments; and
- regular review of the compliance of investment policies and goals.

During the year, MPI recorded an impairment charge of \$33.4 million (2015 - \$nil) and \$28.5 million (2015 - \$nil) on available-for-sale investments on the Corporation and Basic financial statements respectively.

**Subjective estimates / areas of judgment by management**

Management relies on third-party pricing service and custodian on the fair value estimates.

Determining if an investment is impaired is a matter of judgment and takes into account several factors including historical performance of the investment in the market (prolonged criteria per MPI’s impairment policy), analysts’ expectations and industry developments (significant criteria per MPI’s impairment policy).

**PwC’s views**

We have considered management’s estimates and judgments made, and performed the following auditing procedures:

- confirmed security positions with the investment custodians;
- reviewed management’s assessment and conclusions for impairments on available-for-sale investments;
- tested detailed tests of transactions over realized and unrealized gains and losses; and
- reviewed classification of fair value measurements.

We independently tested the pricing for the bonds and equities portfolios, using a market source which was different than the one used by management. We were able to obtain independent pricing for all but one security. We analyzed the prices obtained, if they were outside of an acceptable range from the fair value used by management, and have found them to be reasonable.

We have assessed the estimated pricing for the real estate pooled funds and have found them to be reasonable.

We performed confirmations to validate the existence of the investments and noted no issue to report.

**Valuation and existence of investments**

<b>Basic</b>	<b>\$2,083 million (2015 - \$2,061 million)</b>
<b>Corporation</b>	<b>\$2,456 million (2015 - \$2,491 million)</b>

We have assessed management’s impairment analysis and concurred with their assessment. We noted that \$9.2 million should have been recognized in prior year retained earnings based on our prior year impairment assessment. Furthermore, we noted the shares of Canadian Oil Sands were converted to shares of Suncor during the year. Management did not record any accounting adjustments for this conversion. Under IFRS, this transaction should have been recorded as a non-monetary transaction and recorded as a deemed disposition at the time of conversion. The proper treatment of this transaction would have resulted in the Corporation recognizing a realized loss of \$1.4 million in the statement of operations at the date of conversion. To correct of this error in fiscal 2016, the Corporation will have to record an adjustment to remove the \$1.4 million unrealized loss from AOCI to retained earnings. We have included the adjustment in our summary of unadjusted misstatement.

Based on the procedures above, we have concluded that management’s estimates and realized impairments are reasonable.



**PUB (MPI) 1-23**

<b>Volume:</b>	<b>II INV.7B</b>	<b>Page No.:</b>	<b>52</b>
<b>Topic:</b>	<b>Investment Income</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Investment Properties (Cityplace)</b>		

**Preamble:** The market value of Investment Property through the forecast period has increased materially from the 2016 application. The Corporation cites in its annual report (AI.6 Part 2 p.10) adding value for Manitobans with financially sound investment decisions including the Corporation's investment in True North Square by way of sale of corporate-owned property.

**Question:**

- a) Please refile the schedule in table 8.1 on the same basis as in the 2016 GRA.
- b) Please explain the major increase in market value of the Cityplace.
- c) Please provide the details of the arrangement with True North related to the development of True North Square and the sale of corporate owned property.
- d) Please indicate how the Corporation has accounted for the sale, including where the proceeds are recorded in the Investment Income schedule.

**Rationale for Question:**

To understand the impact of the sale of Corporate property on investment returns and rates.

**RESPONSE:**

a)

**Table 8.1 Investment Properties (Cityplace)**

	2016/17	2017/18	2018/19	2019/20	2020/21
<i>(C \$000s unless otherwise indicated)</i>					
	<b>Forecast (End of Period)</b>				
<b>Ending Market Value</b>	47,293	48,244	49,026	50,214	52,165
<b>% of Portfolio</b>	1.9%	1.9	1.9	1.8	1.8
<b>Funding Amounts</b>	0	0	0	0	0
<b>Distribution Return</b>	7.3%	4.5%	10.1%	9.7%	9.1%
<b>Investment Property Income</b>	3,431	2,149	4,952	4,873	4,771

- b) The change in market value is due to a change in valuation of CityPlace (which includes the parkade at 266 Hargrave Street and the surface parking lot at 172 Donald Street but excludes the surface parking lot at 225 Carlton Street). The increased valuation accounts for forecasted building improvements, such as upgrades to the elevator systems, plaza renovations and HVAC upgrades.
- c) Manitoba Public Insurance (MPI) transferred the parking lots at 225 Carlton Street to the True North Development Group in exchange for cash and a limited partnership interest in True North Square. The value of the land transferred was agreed to at \$6.84 million, in addition \$1.11 million in foregone parking revenue during construction for a total value of \$7.95 million, of which \$3.30 million of the total value was paid in cash with the remaining \$4.65 million provided in the form of secured partnership units.
- d) The proceeds are recorded in the Investment Income schedule in Gain on sale of investment property.

**PUB (MPI) 1-24**

<b>Volume:</b>	<b>II RSR.1.2.3</b>	<b>Page No.:</b>	<b>RSR.1.2.3</b>
<b>Topic:</b>	<b>100% MCT Upper Basic Total Equity Target</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Likelihood of Outcomes to Exhaust this Level of Total Equity</b>		

**Question:**

Given the Corporation's proposed 100% MCT upper Basic Total Equity target of \$404 million, please provide modeling (with supporting narrative) of the most significant risk (or risks), including estimated probability levels, to exhaust this level of Basic Total Equity.

**Rationale for Question:**

To assess the quantitative reasonableness of the Corporation's proposed upper Basic Total Equity target.

**RESPONSE:**

Without management action, the following 4-year scenario will deplete the Basic Total Equity upper target of \$404 million. This occurs at the 1-in-172 probability level or at the 99.4<sup>th</sup> percentile level.

- Ultimate claims cost are over budget by a cumulative \$119 million (or an average of \$30 million over budget per year).
- The four-year (cumulative) Total Equity return is 1.7% relative to the four-year base forecast return of 32.6%.
- The Government of Canada 10-year bond rates are assumed to be as follows at each year-end:
  - 2016/17: 1.76% (base forecast)
  - 2017/18: 1.39%

- 2018/19: 1.19%
- 2019/20: 1.19%
- 2020/21: 1.19%

Out of the 5,000 scenarios simulated, none will deplete the Basic Total Equity upper target of \$404 million if management action is applied.

The question appears to be implying that the Dynamic Capital Adequacy Test (DCAT) should equate to the 100% Minimal Capital Test (MCT) at a given probability level. Although Manitoba Public Insurance agrees that there is a strong correlation between MPI's risk level as measured by the DCAT and the MCT, this relationship was not MPI's main reason for applying for use of the 100% MCT as the upper Rate Stabilization Reserve (RSR) target.

The MCT is used by OSFI (the Office of the Superintendent of Financial Institutions (OSFI) and by all federally regulated property and casualty insurers in Canada. The information available to OSFI in the development of the risk loads for the MCT is far greater than that available to MPI. The MCT also includes risk loads for items that are not easily quantified by the MPI DCAT, such as policy liability risk and operational risk. The MCT was selected for the upper target because it was an objective, externally developed, industry standard that could be used to appropriately benchmark the risks of MPI relative to the internal DCAT and to other insurers.

**PUB (MPI) 1-25**

<b>Volume:</b>	<b>II RSR.2</b>	<b>Page No.:</b>	<b>7, 11</b>
<b>Topic:</b>	<b>Analysis of Proposed Lower Basic Total Equity Target</b>		
<b>Sub Topic:</b>	<b>Continuation of Collaborative Process</b>		
<b>Issue:</b>			

**Preamble:** The “*minimum Total Equity balance such that all of Combined Scenarios after assumed management action remain above zero is \$181 million.*”

**Question:**

- a) By iterative adjustment, please create and provide details of a modified lower limit base scenario under which (i) the Total Equity balance as at 28 February 2016 is adjusted to the proposed lower Basic Total Equity target of \$181 million (adjusting Basic investment assets proportionately), and (ii) the Total Equity balance after 28 February 2016 is adjusted such that the resulting modified forecasted MCT ratio as at 28 February 2016 is forecasted to remain unchanged throughout the forecast period.
- b) For each of a 95<sup>th</sup> and 97.5<sup>th</sup> percentile outcome level, create and provide details of a modified lower limit worst case adverse scenario (i.e., combined scenario after management action) by applying the DCAT’s worst case adverse scenario to the modified lower limit base scenario from a) above.
- c) By iterative adjustment, for each of a 95<sup>th</sup> and 97.5<sup>th</sup> percentile outcome level and for each of a 2 and 4 year time horizon, repeat a) and b) above adjusting the proposed lower Basic Total Equity target until the forecasted Total Equity balance under the modified lower limit worst case adverse scenario approximates \$0 at the lowest point over the selected time horizon within the forecast period.

**Rationale for Question:**

To continue the collaborative process.

**RESPONSE:**

a) b) and c)

The Corporation has provided a response based on its interpretation of the information requested. However, the purpose of this question, along with the potential use of the figures provided in the response to this question, are unclear to the Corporation.

The Corporation set the Total Equity balance to \$181 million as of February 28, 2017 which resulted in an MCT ratio of 33.4%. The Total Equity balance was then adjusted such that the MCT ratio remained at 33.4% throughout the forecast period.

**Modified Base Scenario (in millions)**

	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>
<b>Earned Revenues</b>	\$934	\$989	\$1,045	\$1,094	\$1,145
<b>Total Claims Costs</b>	\$820	\$852	\$886	\$1,016	\$1,074
<b>Expenses</b>	\$144	\$148	\$156	\$160	\$169
<b>Investment Income</b>	\$17	\$10	\$5	\$89	\$103
<b>Net Income</b>	(\$13)	(\$1)	\$8	\$6	\$6
<b>Retained Earnings</b>	\$145	\$151	\$150	\$149	\$129
<b>Total Equity</b>	\$181	\$191	\$197	\$206	\$194
<b>MCT Ratio</b>	33.4%	33.4%	33.4%	33.4%	33.4%

The Corporation then applied each of the 1-in-20 and 1-in-40 year scenarios of the 2 year and 4 year Combined model with management action to the new modified base scenario. The output from this process is shown below.

**2-year, 1-in-20 Combined Scenario including Management Action with Modified Base (in millions)**

	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>
<b>Rate Changes</b>	0.0%	2.0%	2.0%	0.0%	0.0%
<b>Add'l RSR Rebuilding Fee</b>	0.0%	0.0%	2.0%	0.0%	0.0%
<b>Earned Revenues</b>	\$934	\$989	\$1,067	\$1,136	\$1,189
<b>Total Claims Costs</b>	\$820	\$1,034	\$1,041	\$1,022	\$1,088
<b>Expenses</b>	\$144	\$148	\$158	\$164	\$172
<b>Investment Income</b>	\$17	\$102	\$104	\$61	\$72
<b>Net Income</b>	(\$13)	(\$90)	(\$29)	\$11	\$1
<b>Retained Earnings</b>	\$145	\$62	\$23	\$29	\$4
<b>Total Equity</b>	\$181	\$88	\$33	\$42	\$52
<b>MCT Ratio</b>	33.4%	2.8%	-12.6%	-10.6%	-3.2%

**2-year, 1-in-40 Combined Scenario including Management Action with Modified Base (in millions)**

	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>
<b>Rate Changes</b>	0.0%	2.0%	2.0%	0.0%	0.0%
<b>Add'l RSR Rebuilding Fee</b>	0.0%	0.0%	2.0%	0.0%	0.0%
<b>Earned Revenues</b>	\$934	\$989	\$1,067	\$1,136	\$1,189
<b>Total Claims Costs</b>	\$820	\$1,077	\$990	\$1,039	\$1,086
<b>Expenses</b>	\$144	\$148	\$158	\$164	\$172
<b>Investment Income</b>	\$17	\$130	\$61	\$59	\$67
<b>Net Income</b>	(\$13)	(\$105)	(\$20)	(\$8)	(\$2)
<b>Retained Earnings</b>	\$145	\$47	\$17	\$3	(\$26)
<b>Total Equity</b>	\$181	\$56	(\$2)	(\$6)	(\$1)
<b>MCT Ratio</b>	33.4%	-5.6%	-23.5%	-23.7%	-16.8%

**4-year, 1-in-20 Combined Scenario including Management Action with Modified Base  
(in millions)**

	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>
<b>Rate Changes</b>	0.0%	2.0%	0.0%	3.0%	3.0%
<b>Add'l RSR Rebuilding Fee</b>	0.0%	0.0%	0.0%	2.0%	2.0%
<b>Earned Revenues</b>	\$934	\$989	\$1,045	\$1,123	\$1,232
<b>Total Claims Costs</b>	\$820	\$1,050	\$1,017	\$1,042	\$1,072
<b>Expenses</b>	\$144	\$148	\$157	\$163	\$175
<b>Investment Income</b>	\$17	\$134	\$79	\$65	\$61
<b>Net Income</b>	(\$13)	(\$75)	(\$50)	(\$18)	\$46
<b>Retained Earnings</b>	\$145	\$77	\$17	(\$7)	\$14
<b>Total Equity</b>	\$181	\$107	\$27	(\$3)	\$11
<b>MCT Ratio</b>	33.4%	7.7%	-14.6%	-22.6%	-13.5%

**4-year, 1-in-40 Combined Scenario including Management Action with Modified Base  
(in millions)**

	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>
<b>Rate Changes</b>	0.0%	2.0%	0.0%	3.0%	3.0%
<b>Add'l RSR Rebuilding Fee</b>	0.0%	0.0%	0.0%	2.0%	2.0%
<b>Earned Revenues</b>	\$934	\$989	\$1,045	\$1,123	\$1,232
<b>Total Claims Costs</b>	\$820	\$965	\$1,062	\$1,054	\$1,100
<b>Expenses</b>	\$144	\$148	\$157	\$163	\$175
<b>Investment Income</b>	\$17	\$115	\$89	\$65	\$38
<b>Net Income</b>	(\$13)	(\$9)	(\$85)	(\$29)	(\$4)
<b>Retained Earnings</b>	\$145	\$143	\$48	\$13	(\$17)
<b>Total Equity</b>	\$181	\$166	\$54	\$5	(\$26)
<b>MCT Ratio</b>	33.4%	23.9%	-7.0%	-20.4%	-23.2%

The Corporation adjusted the starting Total Equity balance for February 28, 2017 such that the forecasted Total Equity balance approximates \$0 at the lowest point over the forecast period. The resulting Total Equity balance are as follows.



**Minimum Total Equity Balance as of the end of Fiscal 2016/17  
Combined Scenario Basic Total Equity *after* Management Action (in millions)**

<b>Combined Scenarios</b>	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>
2 year 1-in-20	\$148	\$55	<b>\$0</b>	\$9	\$18
2 year 1-in-40	\$183	\$58	<b>\$0</b>	(\$4)	\$1
4 year 1-in-20	\$183	\$110	\$30	<b>\$0</b>	\$14
4 year 1-in-40	\$207	\$192	\$80	\$32	<b>\$0</b>

**PUB (MPI) 1-26**

<b>Volume:</b>	<b>II RSR.3.3, RSR.1.2.3</b>	<b>Page No.:</b>	
<b>Topic:</b>	<b>MCT Changes</b>		
<b>Sub Topic:</b>	<b>Impact on Proposed Upper Basic Total Equity Target</b>		
<b>Issue:</b>			

**Preamble:** From Appendices 1 to 6, the modeled impact of the change in MCT ratio resulting from adopting the 2015 MCT Guideline (vs. the 2014 MCT Guideline) are decreases ranging from 2.53 percentage points to 5.08 percentage points, varying by fiscal year.

**Question:**

- a) If a 100% MCT ratio was considered appropriate as an upper Basic Total Equity target under the 2014 MCT Guideline, why does a 100% MCT ratio continue to be appropriate under the 2015 MCT Guideline, given the Guideline change has consistently reduced the Basic MCT ratio?
- b) On 30 November 2015, the Office of the Superintendent of Financial Institutions Canada released its 2016 MCT Guideline. Given the Corporation is “committed to proactively modeling the MCT”, please summarize the Corporation’s findings with respect to the expected impact of the 2016 MCT Guideline, providing comparative calculations similar to Appendices 1 to 6 from RSR.3.3.
- c) Please confirm the Corporation’s proposed upper Basic Total Equity target of \$404 million is based on the 2015 MCT Guideline.

**Rationale for Question:**

To assess the reasonableness of the Corporation’s proposed upper Basic Total Equity target.

**RESPONSE:**

- a) Annual improvements or revisions made by the Office of the Superintendent of Financial Institutions (OSFI) to the Minimum Capital Test (MCT) do not change Manitoba Public Insurance's (MPI) rationale for using the test as upper capital target.
  
- b) The 2016 MCT guideline changes were mainly on the treatment of equity derivatives, which MPI does not forecast to hold. As such, there is no expected impact from the 2016 MCT Guideline when compared to the 2015 Guideline. Based on the timing of distribution, the Corporation anticipates to use the 2017 OSFI MCT guideline in next year's GRA. A comparative of 2017 MCT vs. 2016 MCT can be provided at that time.
  
- c) Confirmed.

**PUB (MPI) 1-27**

<b>Volume:</b>	<b>I IT</b>	<b>Page No.:</b>	<b>PUB/MPI I-22 (2016 GRA)</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>IT Expenses</b>		

**Preamble:** At the 2015 GRA, the Corporation indicated that it had 332 FTEs (Corporate and contractor) working on IT. At last year's GRA the Corporation indicated that it had 329 FTEs working on IT. The Corporation has committed to bringing 27 FTE positions internally, currently filled by consultants.

**Question:**

- a) Please provide a schedule similar to PUB/MPI 2-18 (2016 GRA) for the last five years and through each of the years of the forecast including 2018/19, indicating the number of FTEs which have worked and are forecasted to work on IT. Please break down between Corporate Staff and Contractors.
- b) Please provide the forecasted internal IT payroll and external total consulting costs for each of the years related to the staff deployment in the continuity schedule in (a).

**Rationale for Question:**

To understand the trend in the use of external consultants versus internal IT resources and to demonstrate and assess the forecast operational expense impact of MPI's pledge to internalize certain IT resources.

**RESPONSE:**

a) Please see table below.

Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
<b>Internal FTE</b>	215	227	212	210	223	235.7	248.7	250.7
<b>Consultants</b>	98	129	120	110	114	116	107	91
<b>Total</b>	<b>313</b>	<b>356</b>	<b>332</b>	<b>320</b>	<b>336</b>	<b>351.7</b>	<b>355.7</b>	<b>341.7</b>

b) Please see table below.

Year	2016/17	2017/18	2018/19
<b>*Internal FTE Costs (\$)</b>	20,321	21,582	22,627
<b>**Consultant Costs (\$)</b>	16,835	15,529	13,207
<b>Total</b>	<b>37,156</b>	<b>37,111</b>	<b>35,834</b>

*(C\$ 000s, except where noted)*

\* Approximated based on forecasted compensation avg per corporate FTE

\*\*Approximated based 2015/16 internal consultant FTE expense

**PUB (MPI) 1-28**

<b>Volume:</b>	<b>III AI.12-5</b>	<b>Page No.:</b>	<b>Appx., p.64</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>IT Expenses</b>		

**Preamble:** Gartner concludes that MPI has improved over 2011, especially in Cost Containment, but improvement opportunities remain. Business Process Management had the greatest improvement but is still very low. Increasing Maturity in those areas will improve the efficiency and effectiveness of both IT and MPI overall.

**Question:**

Please describe the Corporation's actions in improving Business Process Management and discuss the cost implications related to those efforts.

**Rationale for Question:**

To understand the Corporation's management of IT costs.

**RESPONSE:**

Manitoba Public Insurance (MPI) Management has evaluated our current scoring with respect to Business Process Management. In comparison to other peer organizations, our scoring is not lagging at a level significant enough to warrant it to be high priority action item at this time in comparison to other corporate priorities and action items.

**PUB (MPI) 1-29**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 14, p.49</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>IT Expenses</b>		

**Question:**

- a) Please explain the major increase forecast for the IBM Data Centre for 2017/18 (\$7,276K in 2015/16 vs. & \$9,192K in 2017/18).
- b) Please provide a comparison of total IBM Data Centre costs presented in this application (including IBM Data Centre (in data processing) and Ongoing IBM Data Centre expense) and that presented at last year's GRA and explain the difference.
- c) Please summarize the current contracts/relationships with IBM and HP including the total amount spent under each of the contracts in the last five years and forecast through 2019/20.

**Rationale for Question:**

To understand the reliance on external consultants related to the Corporation's service delivery.

**RESPONSE:**

- a) There are two main factors that account for the IBM Data Centre growth from \$7.276k in 2015/16 to \$9.192k in 2017/18.
  - i. The first factor is growth from Improvement Initiatives which completed at the end of the 2015/16 fiscal year. The growth is due to the transfer from the Improvement Initiatives-Ongoing Costs to Normal Operations. Those initiatives included High Availability, Legal Management, Predictive Analytics and Data Masking. The growth from the transfer from the

Improvement Initiatives-Ongoing Costs to Normal Operations accounts for \$1.404k in operational growth starting in 2016/17.

- ii. The second factor is Economic Change Adjustment (ECA). As per the DCO contract IBM uses the annual Compensation Planning Outlook report by the Conference Board of Canada to apply actual inflation to the contractual services that IBM delivers to Manitoba Public Insurance (MPI). On May 1<sup>st</sup> of each year the ECA factor is applied to the then current charges to give effect to the compounding effect of inflation. Projected impact from ECA is \$0.258k in 2016/17 and \$0.220k in 2017/18 for a total ECA impact of \$0.478k over the next two years.

b)

Fiscal Year	2017 GRA Forecast	2016 GRA Forecast	Variance - 2017 vs 2016	% Change
2015/16	9,084	9,436	-352	-3.73%
2016/17	10,188	9,677	511	5.28%
2017/18	9,388	10,152	-764	-7.53%
2018/19	11,867	10,313	1,554	15.07%
2019/20	12,185	10,226	1,959	19.16%

(C\$000s, except where noted)

The difference in IBM Data Centre costs are due to the following:

- The 2015/16 decrease is due to operational efficiencies and overall capacity management of the data centre environment.
- The 2016/17 increase is due to the increase in operational impact from various Strategic Initiatives that completed in 2015/16, mainly High Availability.
- The forecasted decrease in 2017/18 is from planned operational efficiencies and reductions in storage and tape backup footprint.



- The forecasted increases in 2018/19 and 2019/20 are operational impact from strategic initiatives that are projected to be completed leading up to and within this two year period.
- c) Manitoba Public Insurance (MPI) has Master Service Agreements in place with both HP and IBM. These agreements set out the terms and conditions that apply to any Statement of Work entered into with these parties or any resources brought in under these agreements.

The following is a summary of the annual spend under the IBM Master Service Agreement including data centre costs:

<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>	<b>2015/16</b>
\$8.92	\$16.71	\$13.40	\$12.68

*(In \$000,000)*

*Note: the current Master Services Agreement with IBM was entered into in 2012 and therefore there has not been 5 years of spend.*

The following is a summary of the annual spend under the HP Master Services Agreement for the previous 5 years:

<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>	<b>2015/16</b>
\$14.50	\$19.50	\$25.08	\$23.18	\$24.61

*(In \$000,000)*

Forecasts are not available at this time for future spend apart from those provided in b) above. Projected expenses are included in the submission (*Volume II Expenses Appendices, Appendix 14 Page 49*) but are not allocated to each individual vendor. That level of detail is established as each project is initiated.

**PUB (MPI) 1-30**

<b>Volume:</b>	<b>III AI.12-5</b>	<b>Page No.:</b>	<b>Appx., p.66</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>IT Expenses</b>		

**Preamble:** It appears that Gartner may have used MPI-provided information on its revenues and IT spending.

**Question:**

Please update the financial tables on page 66 of the Gartner report incorporating 2015/16 actual results, and forecast for 2016/17 and 2017/18. Please comment on the relative trend in the Corporation's IT spend, excluding Peer Spending and variance to Peer spending.

**Rationale for Question:**

To understand trend in IT spending.

**RESPONSE:**

The financial table on page 66 is created by Gartner based off of the information provided by the Corporation as part of our annual Information Technology (IT) benchmarking activities. The report contained in the rate application was completed in the fall of 2015 and is the most current version of the report available. The Corporation will not have an updated report until late fall 2016 and this information will form part of the 2018 rate application.

The report shows that the Corporation has decreased IT spending over the previous year while increasing maturity of IT processes. This demonstrates successful efforts to contain costs while investing in improvements to business processes and customer service.

**PUB (MPI) 1-31**

<b>Volume:</b>	<b>I IT.1</b>	<b>Page No.:</b>	<b>3</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>	<b>IT Expenses</b>		
<b>Issue:</b>	<b>External Labour</b>		

**Preamble:**

The Corporation has identified 27 external IT consulting positions as being viable for internal placements. It has indicated that none of the forecast additional IT positions have been incorporated in the forecast for 2017/18 and 2018/19, due to the timing of the completion of the IT review.

**Question:**

- a) Please file a copy of any review report prepared related to the optimization of IT staffing.
- b) Please indicate to what extent the current financial forecast for 2017/18 and 2018/19 would change based on the targeted hires.

**Rationale for Question:**

To assess the reasonableness of the forecast savings on transitioning IT consultants to internal positions over the next three years.

**RESPONSE:**

- a) The materials provided contain all information from the report except for the roles and individuals identified for replacement. Our communication with the impacted individuals will occur over time. Disclosing details on roles or individuals will negatively impact our ability to execute the transition.

- b) Please refer to *Volume I Information Technology page 12*. The hiring of additional staff in various Information Technology (IT) positions to replace external consultants is expected to realize \$2.4 million in savings on a cash basis. This is comprised of 11 hires to occur in 2016/17; 14 hires to occur in 2017/18 and 2 hires to occur in 2018/19. Due to timing associated with transitioning the positions from external consultants to internal staff, the full \$2.4 million in cash savings would be realized in 2019/20; made up of \$1.2 million from the 2016/17 hires, \$1.1 million from the 2017/18 hire and \$0.1 million from the 2018/19 hires. Please note that the savings will occur in both deferred development and expenses as many of the external consultants are currently working on projects that are capitalized. The expense savings associated with project resources will occur once the projects are completed and being amortized.

**PUB (MPI) 1-32**

<b>Volume:</b>	<b>I IT.2</b>	<b>Page No.:</b>	<b>16</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>	<b>IT Expenses</b>		
<b>Issue:</b>	<b>Technology Modernization</b>		

**Question:**

- a) Please indicate the extent to which the forecasted IT modernization spending is capitalized versus proposed to be expensed in the planned spend year.
- b) Please confirm that the budgeted expense includes all implementation costs.

**Rationale for Question:**

To understand the impact of IT modernization upon rates.

**RESPONSE:**

- a) 83.3% of the 2016/17 IT Modernization project budget is deferred development and 16.7% is expensed.
- b) The program financials include all implementation costs which include both deferred development and expenses.

**PUB (MPI) 1-33**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 13, p.47</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Deferred Development Costs</b>		

**Question:**

Please update the schedule, adding columns on the left indicating the total cost for each of the respective projects.

**Rationale for Question:**

To assess the IT project expenditures.

**RESPONSE:**

Please see attached.

(C\$ 000s)	Total Project Deferred Development	Actual					Forecast				
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<b>BASIC</b>											
Projects that impact Basic											
New Call Management	2,864	532	87	-	-	-	-	-	-	-	-
IT Optimization	9,398	2,107	4,501	1,967	-	-	-	-	-	-	-
Disaster Recovery	13,237	365	2,946	9,202	-	-	-	-	-	-	-
HR Management System Phase 1 & 2	9,575	2,440	4,309	2,261	(210)	-	-	-	-	-	-
HR Management System Phase 3 & 4	1,555	-	-	110	84	-	-	-	1,361	-	-
BI3 / Fineos Upgrade 2016	3,571	-	-	257	1,462	1,852	-	-	-	-	-
BI3 / Fineos Upgrade 2020	1,930	-	-	-	-	-	-	-	1,080	850	-
Enterprise Data Masking	2,333	-	-	507	950	876	-	-	-	-	-
High School Driver Education - Phase 2	4,058	-	-	-	271	287	1,750	1,750	-	-	-
Infor/Lawson Upgrade	2,266	-	-	-	138	796	1,332	-	-	-	-
Legal Management Project	2,117	-	-	-	868	1,249	-	-	-	-	-
Predictive Analytics	1,748	-	-	-	1,260	488	-	-	-	-	-
ITO - High Availability	6,303	-	-	-	2,332	3,971	-	-	-	-	-
Physical Damage Re-Engineering Main/Phase 3	36,378	-	3,108	10,272	(4,111)	4,354	6,509	9,540	6,706	-	-
Physical Damage Re-Engineering Phase 1 & 2	1,528	-	-	-	1,528	-	-	-	-	-	-
PDR Opt Repair - Collaborative Estimating & JSST	9,192	-	-	-	8,834	358	-	-	-	-	-
PDR Opt Repair - Out of Prov Estimating	595	-	-	-	-	-	-	-	595	-	-
PDR Opt Repair - Remote Estimating	1,386	-	-	-	1	39	-	347	999	-	-
PDR Opt Repair - Distributed Estimating	3,975	-	-	-	1,183	1,474	1,318	-	-	-	-
Technology Innovation & Capabilities	15,504	-	-	-	-	10	1,631	3,262	4,485	6,116	-
Technology Risk Management	13,862	-	-	-	-	-	2,446	3,262	3,669	4,485	-
Financial Re-engineering Initiative	9,887	-	-	-	-	-	2,050	4,719	3,118	-	-
Information Security Strategy and Road Map	5,046	-	-	-	-	1,330	2,085	1,631	-	-	-
Physical Damage - Centre of Excellence	681	-	-	-	-	471	210	-	-	-	-
Corporate Learning Management	1,496	-	-	-	210	-	1,286	-	-	-	-
Provision for Projects	22,832	-	-	-	-	-	-	-	-	11,416	11,416
<b>Total Deferred Development Costs</b>	<b>183,317</b>	<b>5,444</b>	<b>14,951</b>	<b>24,576</b>	<b>14,800</b>	<b>17,555</b>	<b>20,617</b>	<b>24,511</b>	<b>22,013</b>	<b>22,867</b>	<b>11,416</b>

(C\$ 000s)	Actual					Forecast					
	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	
<b>BASIC</b>											
Driver Safety Rating	1,389	1,389	1,389	1,389	-	-	-	-	-	-	
Streamlined Renewal	1,020	1,020	1,020	850	-	-	-	-	-	-	
PIPP Infrastructure Phase	4,589	4,590	4,154	4,191	2,123	-	-	-	-	-	
Enterprise Data Warehouse	340	340	442	447	114	-	-	-	-	-	
Enterprise Architecture-Portal	366	201	280	284	96	-	-	-	-	-	
New Call Management	-	691	533	540	550	550	-	-	-	-	
IT Optimization	-	-	-	1,850	1,884	1,888	1,888	1,888	-	-	
Disaster Recovery	-	-	-	2,609	2,657	2,657	2,657	2,657	-	-	
HR Management System - Phase 1 & 2	-	-	-	1,884	1,919	1,924	1,924	1,924	-	-	
HR Management System Phase 3 & 4	-	-	-	-	-	-	-	-	312	312	
BI3 / Fineos Upgrade 2016	-	-	-	-	-	826	868	868	868	-	
BI3 / Fineos Upgrade 2020	-	-	-	-	-	-	-	-	-	483	
Enterprise Data Masking	-	-	-	-	-	460	476	476	476	492	
High School Driver Education - Phase 2	-	-	-	-	-	-	-	818	818	818	
Infor/Lawson Upgrade	-	-	-	-	-	-	620	620	620	620	
Legal Management Project	-	-	-	-	-	415	428	428	428	440	
Predictive Analytics	-	-	-	-	-	364	355	355	355	346	
ITO - High Availability	-	-	-	-	-	1,387	1,382	1,382	1,382	1,378	
Physical Damage Re-Engineering Main/Phase 3	-	-	-	-	-	-	-	-	7,353	7,353	
Physical Damage Re-Engineering Phase 1 & 2	-	-	-	-	310	309	309	309	309	-	
PDR Opt Repair - Collaborative Estimating & JSST	-	-	-	-	-	1,886	1,868	1,868	1,868	1,849	
PDR Opt Repair - Out of Prov Estimating	-	-	-	-	-	-	-	-	119	119	
PDR Opt Repair - Remote Estimating	-	-	-	-	-	-	-	-	277	277	
PDR Opt Repair - Distributed Estimating	-	-	-	-	-	-	899	899	899	899	
Technology Innovation & Capabilities	-	-	-	-	-	-	-	-	-	3,099	
Technology Risk Management	-	-	-	-	-	-	-	-	-	2,772	
Financial Re-engineering Initiative	-	-	-	-	-	-	-	-	2,072	2,072	
Information Security Strategy and Road Map	-	-	-	-	-	-	-	1,091	1,091	1,091	
Physical Damage - Centre of Excellence	-	-	-	-	-	-	115	115	115	115	
Corporate Learning Management	-	-	-	-	-	-	300	300	300	300	
Provision for Projects	-	-	-	-	-	-	-	-	-	2,283	
<b>Total Amortization Costs</b>	-	<b>7,704</b>	<b>8,231</b>	<b>7,818</b>	<b>14,044</b>	<b>9,653</b>	<b>12,666</b>	<b>14,089</b>	<b>15,998</b>	<b>19,662</b>	<b>27,118</b>

Note: The amortization numbers include allocated Program Management.



**PUB (MPI) 1-34**

<b>Volume:</b>	<b>II IT.2</b>	<b>Page No.:</b>	<b>14</b>
<b>Topic:</b>	<b>IT Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Deferred Development Costs</b>		

**Preamble:** In last year's GRA, PUB/MPI 2-20 requested the business charter supporting the \$33.3 million provision for Technology Modernization Initiative. The Corporation indicated at that time that it was under development and would be provided when completed. The Corporation has now filed a general description of the IT modernization efforts.

**Question:**

Please file the Business Charter for the project.

**Rationale for Question:**

To assess the reasonableness of budgeted capital expenses.

**RESPONSE:**

The Business Charter is currently in the approval process, and it will be filed once it is approved and signed.

**PUB (MPI) 1-35**

<b>Volume:</b>	<b>II EXP.3.1.1</b>	<b>Page No.:</b>	<b>19</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Staffing Levels</b>		

**Question:**

- a) Please provide an update to the staff turnover in PUB/MPI I-23 (b) (2016 GRA).
- b) Please indicate how many positions became vacant in that last three years, and the postings for job positions made and filled externally.
- c) Please file a copy of the statistics with respect to retirement over the previous five years, and forecast the level of attrition related to retirements through the outlook period.
- d) Please indicate the current number of staff eligible for retirement and the assumption around retirement take-up for the next five years.

**Rationale for Question:**

To understand the forecast of staffing levels through the test years and outlook.

**RESPONSE:**

- a) Period of February 29, 2016 – June 30, 2016

Voluntary Turnover	Involuntary Turnover	Retirements	Total	
16	2	24	42	
0.9%	0.1%	1.3%	2.3%	Percentage of overall permanent employee headcount (including active and leave employees); used previous 12 month rolling average to determine percentage

The total overall turnover (%) is consistent with turnover experienced in the previous three years.

b)

	<u>2014/15</u>	<u>2015/16</u>	<u>16/17 (as of June 30,2016)</u>
Total number of separations resulting in position vacancies	129	96	42

The above chart outlines the number of permanent position vacancies (excludes term positions).

**External Posting Information (Approximate Numbers)**

	<u>2014</u>	<u>2015</u>	<u>2016 (to date)</u>
Number of external postings	56	45	42
Number of positions covered through the above postings	102	71	60
Number of positions filled through the external postings	83	42	13

c) Retirements over the past five fiscal years:

- 2011/12: 58
- 2012/13: 63
- 2013/14: 60
- 2014/15: 58
- 2015/16: 44

The level of attrition related to retirements throughout the outlook period is not forecasted.

d) There are presently 138 employees (including active and inactive employees) who are eligible to retire.

**PUB (MPI) 1-36**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 7.1, p. 28</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Staffing Levels</b>		

**Question:**

- a) Please provide a continuity schedule of Corporate Staffing Levels, an update to PUB/MPI 2-25(c).
- b) Please provide a schedule that compares total staffing levels for 2015/16 this year with last year (PUB/MPI 2-25 (d)), and explain any differences.
- c) Please provide the detail of the staffing budget for 2016/17.
- d) Please indicate the level of staffing savings, if any, for the 2016/17 year.

**Rationale for Question:**

To understand the changes in staffing levels and impact on cost containment

**RESPONSE:**

- a) Please refer to the Attachment A which provides updated 2015/16 fiscal year staffing levels.
- b) Please refer to Volume II Expenses Appendix 7.1 Page 28 for 2015/16 Normal Operations Staffing, and Part (a) for 2015/16 Corporate Total Staffing comparative between budget and actual FTE with explanation of variance.
- c) Please see Attachment B.

- d) Staff savings are discussed through the 2017 GRA, and commence in 2017/18 and throughout the forecast. Please see *Volume I Cost Containment Page 9* and *Volume II Expenses Page 19* for a discussion on FTE cost savings.

**CORPORATE STAFFING LEVELS****AVERAGE ACTUAL STAFF IN 2015/2016****2015/16 Total Staff Actuals (FTE)**

CATEGORY	2015/16 Total Staff Actuals (FTE)							Total
	Customer Service	Business Development & Communications	Human Resources	Finance	Management, Internal Audit & Regulatory	General Counsel	IT & BT	
Management	67.6	20.1	16.6	23.2	10.2	2.0	25.5	165.2
Supervisory	125.7	6.7	-	1.4	-	1.7	5.6	141.1
Technical/Professional	534.4	102.2	66.9	90.1	10.7	20.7	196.0	1,021.0
Clerical	459.0	38.6	7.2	32.5	1.0	5.5	11.5	555.2
<b>Total</b>	<b>1,186.7</b>	<b>167.6</b>	<b>90.6</b>	<b>147.2</b>	<b>21.8</b>	<b>29.9</b>	<b>238.6</b>	<b>1,882.4</b>

**STAFFING BUDGET IN 2015/2016****2015/16 Total Budget (FTE)**

CATEGORY	2015/16 Total Budget (FTE)							Total
	Customer Service	Business Development & Communications	Human Resources	Finance	Management, Internal Audit & Regulatory	General Counsel	IT & BT	
Management	62.0	27.0	6.0	23.0	10.0	2.0	31.0	161.0
Supervisory	118.0	9.0	-	1.0	-	1.0	3.0	132.0
Technical/Professional	484.4	145.0	35.4	95.0	10.0	18.8	236.7	1,025.3
Clerical	477.7	55.9	3.0	37.8	1.0	4.0	13.5	592.9
<b>Total</b>	<b>1,142.1</b>	<b>236.9</b>	<b>44.4</b>	<b>156.8</b>	<b>21.0</b>	<b>25.8</b>	<b>284.2</b>	<b>1,911.2</b>

**COMPARISON ACTUAL VS. BUDGET 2015/2016****2015/16 variance from budget to actuals (FTE)**

CATEGORY	2015/16 variance from budget to actuals (FTE)							Total
	Customer Service	Business Development & Communications	Human Resources	Finance	Management, Internal Audit & Regulatory	General Counsel	IT & BT	
Management	5.6	(6.9)	10.6	0.1	0.2	-	(5.5)	4.2
Supervisory	7.7	(2.3)	-	0.4	-	0.7	2.6	9.1
Technical/Professional	50.0	(42.8)	31.5	(4.9)	0.7	1.9	(40.7)	(4.3)
Clerical	(18.7)	(17.4)	4.2	(5.3)	-	1.5	(2.0)	(37.7)
<b>Total</b>	<b>44.6</b>	<b>(69.3)</b>	<b>46.2</b>	<b>(9.6)</b>	<b>0.8</b>	<b>4.1</b>	<b>(45.6)</b>	<b>(28.8)</b>

**Explanation of variance:** Actual FTE counts were less than budget due to active management of vacancies to control costs.

Variance for Business Development & Communications due to partial restructure mid year that saw movement to both Customer Service, Human Resources, and IT&BT.

**STAFFING BUDGET IN 2016/17**

**NORMAL OPERATIONS STAFFING LEVELS**

2016/17 Total Budget (FTE)

CATEGORY	Business							IT & BT	Total
	Customer Service	Development & Communications	Human Resources	Finance	Executive & Internal Audit	General Counsel			
Management	69.00	23.00	16.00	27.00	10.00	2.00	27.00	174.00	
Supervisory	122.00	6.00	-	2.00	-	1.00	3.00	134.00	
Technical/Professional	534.20	109.00	80.40	104.55	10.00	20.80	196.70	1,055.65	
Clerical	476.50	35.00	4.00	34.30	1.00	4.00	9.00	563.80	
<b>Total</b>	<b>1,201.70</b>	<b>173.00</b>	<b>100.40</b>	<b>167.85</b>	<b>21.00</b>	<b>27.80</b>	<b>235.70</b>	<b>1,927.45</b>	

**IMPROVEMENT INITIATIVE STAFFING LEVELS**

2016/17 Total Budget (FTE)

CATEGORY	Business							IT & BT	Total
	Customer Service	Development & Communications	Human Resources	Finance	Executive & Internal Audit	General Counsel			
Management	-	-	-	-	-	-	-	-	
Supervisory	-	-	-	-	-	-	-	-	
Technical/Professional	-	-	-	-	-	-	28.70	28.70	
Clerical	-	-	-	-	-	-	-	-	
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>28.70</b>	<b>28.70</b>	

**CORPORATE STAFFING LEVELS**

2016/17 Total Budget (FTE)

CATEGORY	Business							IT & BT	Total
	Customer Service	Development & Communications	Human Resources	Finance	Executive & Internal Audit	General Counsel			
Management	69.00	23.00	16.00	27.00	10.00	2.00	27.00	174.00	
Supervisory	122.00	6.00	-	2.00	-	1.00	3.00	134.00	
Technical/Professional	534.20	109.00	80.40	104.55	10.00	20.80	225.40	1,084.35	
Clerical	476.50	35.00	4.00	34.30	1.00	4.00	9.00	563.80	
<b>Total</b>	<b>1,201.70</b>	<b>173.00</b>	<b>100.40</b>	<b>167.85</b>	<b>21.00</b>	<b>27.80</b>	<b>264.40</b>	<b>1,956.15</b>	

**PUB (MPI) 1-37**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>30, Table 3.2.4.1</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Building Operating Expense</b>		

**Preamble:** It has been determined that the building leases on Ellice Avenue will not be renewed in 2017/18. In last year's GRA, the Corporation expected to realize savings of approximately \$800K.

The 2017 GRA shows \$12,942K forecast for 2016/17 for building operating expense and \$13,006K for 2017/18. The forecasted savings discussed at the last GRA are not evident.

**Question:**

Please provide the detail of building operating expense for 2016/17 and 2017/18 to demonstrate the realized savings from the Ellice Avenue facilities closing.

**Rationale for Question:**

To understand the savings from the expiry of the Ellice Avenue lease.

**RESPONSE:**

The Ellice Avenue lease expires part way through 2017/18 and therefore, savings are not fully recognized until 2018/19. The savings recognized in the building expense category are \$598K with the remaining savings coming in depreciation and grants in lieu of taxes of \$213K. At the time of vacating the Ellice Avenue property, there will be a one-time write-off of any remaining depreciation on leasehold improvements. The Ellice Avenue savings are anticipated to be largely offset by inflationary increases in other building expenses.



**PUB (MPI) 1-38**

<b>Volume:</b>	<b>I IT.1, II EXP Appx. 7.2</b>	<b>Page No.:</b>	<b>IT.1, p.3 EXP Appx. 7.2., p.31</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>External Labour</b>		

**Preamble:** The proposed approach to transition up to 27 positions from external to internal over the next three years is expected to achieve the identified \$2.4 million annual, recurring costs savings in 2019/20.

**Question:**

- a) Please provide detail of breakdown to show the annual savings of \$2.4M.
- b) For Appendix 7.2 Schedule Corporate Compensation Analysis – Corporate please expand the schedule and revise to reflect that changes for a forecast of 27 FTE IT in sourcing.

**Rationale for Question:**

To understand how external labour impacts upon compensation.

**RESPONSE:**

- a) Please refer to PUB (MPI) 1-31 (b).
- b) Please see table below.

**Corporate Compensation Analysis – Corporate Total**

	2016A	2017B	Change.	%	2018F	Change	%	2019F	Change
Total Compensation	167,741	175,974	8,232		183,193	7,219		186,142	2,949
Vacancy Allowance	(5,445)	(6,213)	(768)		(6,430)	(217)		(6,656)	(225)
<b>Total Net Compensation</b>	<b>162,297</b>	<b>169,761</b>	<b>7,464</b>	<b>4.60%</b>	<b>176,763</b>	<b>7,002</b>	<b>4.12%</b>	<b>179,487</b>	<b>2,724</b> 1.54%

**TOTAL COMPENSATION INCREASE ANALYSIS**

	2017B	Change	2018F	Change	2019F	Change
Prior Year Balance less prior year Initiatives		166,631		172,921		179,857
FTE Reduction (15 FTE @ \$75k)				(1,125)		-
FTE Reduction (5 FTE @ \$65k)				-		(325)
FTE Reduction (25 FTE @ \$80.0k)				-		(2,000)
IT Chg Ext to Int FTE (14 FTE @ \$100k)				1,439		-
IT Chg Ext to Int FTE (2 FTE @ \$87k)				-		175
Economic - Normal Operations	2.38%	2,996	1.75%	2,296	1.75%	2,356
Steps in scale – Normal Operations	1.75%	2,207	1.75%	2,296	1.75%	2,356
Other Salary Acct adjustments		(63)		542		96
Overtime		141		70		73
Benefits		977		1,331		413
H & E Tax		158		99		72
Initiative Salaries		3,053		3,336		3,079
Other / Rounding		(126)		(11)		(10)
<b>Total</b>		<b>175,974</b>		<b>183,193</b>		<b>186,142</b>

(C\$000s, except where noted)

NOTE: The remaining 11 internal FTE into normal operations occurs in 2016/17.

**PUB (MPI) 1-39**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 11, p.43</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Basic Capital Expenses</b>		

**Preamble:**

In the 2015/16 variance explanation, Land and Building were \$3,313K lower than prior GRA due mainly to the Physical Damage Centre of Excellence project spending and deferral, along with lower spending than anticipated for various Service Centre buildings.

**Question:**

- a) Please refile Appendix 11 to include 2017/18 comparison with explanations for major differences.
- b) Please explain the reasons for the reduction in the Physical Damage Centre of Excellence project.
- c) Has the Physical Damage Centre of Excellence project been revised? If so, please explain the revisions to the original project concept and the cost consequences of the change.

**Rationale for Question:**

To understand the changes to the Capital Expenditure forecast.

**RESPONSE:**

- a) Please see Attachment.
- b) The reduction in the Physical Damage Centre of Excellence project was for actual spend in 2015/16 compared to the original budget. This is a timing issue only as the expected cost of the project has not been reduced.

- c) The original project anticipated building a separate facility however, it has been determined that a change to the existing buildings at Plessis Road would enable the Physical Damage Centre of Excellence to be established within the existing infrastructure. There is no material change to the cost of the project.

**Manitoba Public Insurance**  
**Basic Capital Expenditures**  
 (C \$000s)

Expenditure Type	2015/16			2016/17			2017/18		
	2017 GRA	2016 GRA	Difference (2017 GRA-2016 GRA)	2017 GRA	2016 GRA	Difference (2017 GRA-2016 GRA)	2017 GRA	2016 GRA	Difference (2017 GRA-2016 GRA)
Land and Building	2,212	5,525	(3,313)	7,213	6,903	310	4,078	3,060	1,018
Automobiles	413	627	(214)	953	1,334	(381)	1,062	1,019	43
Office Equipment / Systems Furniture	409	762	(353)	605	211	394	556	203	353
Data Processing Equipment	507	1,016	(509)	438	1,051	(613)	1,729	1,639	90
Deferred Development	17,555	16,557	998	20,617	22,032	(1,415)	24,510	24,304	206
	<b>21,096</b>	<b>24,487</b>	<b>(3,391)</b>	<b>29,826</b>	<b>31,531</b>	<b>(1,705)</b>	<b>31,935</b>	<b>30,225</b>	<b>1,710</b>
Implementation Expense	2,418	6,010	(3,592)	6,083	8,385	(2,302)	4,994	5,670	(676)
Other Initiatives	758	789	(31)	-	789	(789)	-	-	-
<b>Total</b>	<b>24,272</b>	<b>31,286</b>	<b>(7,014)</b>	<b>35,909</b>	<b>40,705</b>	<b>(4,796)</b>	<b>36,929</b>	<b>35,895</b>	<b>1,034</b>

NOTE: Basic % of capital estimated

**2015/16**

**Land and Building**

Less than expected spending for 2015/16 due mainly to the Physical Damage Centre of Excellence project reduced spending and deferral along with lower spending than anticipated for various Service Centre buildings.

**Automobiles**

Replacement of a number of vehicles forecasted to require replacement was deferred.

**Data Processing Equipment**

Data Processing equipment costs are lower in comparison to the 2016 GRA mainly due to the removal of the capital Provision for Future Projects and some IT division spending was deferred.

**Deferred Development**

Deferred Development forecast is higher in comparison to the 2016 GRA submission mainly due to an increase in spending relating to BI3 Fineos, Information Security Strategy and Road Map, Legal Management and Enterprise Data Masking offset by reductions in Physical Damage Re-Engineering projects being postponed to future years.

**Implementation Expense**

Implementation Expenses were lower than the 2016 GRA forecast mainly due to a reduction in Information Security Strategy and Road Map and Physical Damage Re-Engineering projects.

**2016/17**

**Land and Building**

Increase in expected spending for 2016/17 due mainly to the Physical Damage - Centre of Excellence project offset slightly by decrease in spending for various buildings.

**Automobiles**

Replacement of a number of vehicles forecasted to require replacement was deferred.

**Data Processing Equipment**

Data Processing equipment costs are lower in comparison to the 2016 GRA mainly due to the removal of the capital Provision for Future Projects and some IT division spending was deferred.

**Deferred Development**

Deferred Development forecast is lower in comparison to the 2016 GRA submission mainly due to reductions in Technology Innovation & Capabilities, HRMS - Phase 3&4 project and Provision for Future Projects offset by increases in Physical Damage Re-Engineering, Technology Risk Management, Financial Re-Engineering, Infor/Lawson Upgrade and Information Security Strategy and Road Map.

**Implementation Expense**

Implementation Expenses were lower than the 2016 GRA forecast mainly due to changing the Information Security Strategy and Road Map from being expensed to deferred development.

2017/18

Land and Building

Increase in expected spending for 2017/18 due mainly to the renovations in the Pembina Service Centre and Brandon building along with other anticipated offsetting minor increases/decreases in spending for various other buildings.

Automobiles

The anticipated requirement to replace some specialty vehicles increased the forecasted cost.

Data Processing Equipment

Data Processing equipment costs are higher in comparison to the 2016 GRA mainly due to an anticipated increase due to the network equipment refresh cycle required to reduce maintenance cost for older hardware and reduce IT risk offset by the removal of the capital Provision for Future Projects.

Deferred Development

Deferred Development forecast is higher in comparison to the 2016 GRA submission mainly due to increases in Physical Damage Re-Engineering due to timing issue since completion date changed to 2018/19 from 2019/20 but no expected overall cost change, Technology Risk Management due to project costs reallocated from Technology Innovation & Capabilities Project, Financial Re-Engineering is new and previously not forecasted in 2016 GRA and Information Security Strategy and Road Map changed from expense to deferred development based on the project meeting capitalization criteria offset by reductions in Technology Innovation & Capabilities reallocated portion to the Technology Risk Management project, B13 Fineos moved from 2017/18 to 2018/19 and Provision for Future Projects was removed.

Implementation Expense

Implementation Expenses were lower than the 2016 GRA forecast mainly due to changing PIPP Mediation from Initiatives to Normal Operations and Information Security Strategy and Road Map changed from expense to deferred development based on the project meeting capitalization criteria.

**PUB (MPI) 1-40**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>26, Table 3.2.1.1</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Compensation - Benefits</b>		

**Preamble:** Pension/superannuation contributions are \$2.1 million higher than budget in 2015/16 due to a higher employer contribution rate as identified by the Corporation's external actuary.

**Question:**

Please provide the external actuary report regarding the higher required pension contribution.

**Rationale for Question:**

To understand the benefits variance.

**RESPONSE:**

The two previous years' actuarial reports show the support for the increase in the pension contributions. Please refer to the 2015 GRA PUB (MPI) 1-28 Attachment Page 8 for the December 31, 2013 contribution rate recommendation of 141.0%. Please refer to the 2016 GRA CAC (MPI) 1-28 (b) Attachment A page 8 for the December 31, 2014 contribution rate recommendation of 152.2%. The difference in these contribution rates was the key driver behind the \$2.1 million increase.

**PUB (MPI) 1-41**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 3, p.8</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Compounded Annual Growth Rates – Basic Total Expenses</b>		

**Question:**

- a) Please explain the 5.1% compounded annual growth rates for 3 years from 2016/17 to 2018/19 for Compensation-Overtime.
- b) Please explain the 78.3% compounded annual growth rates for 3 years from 2016/17 to 2018/19 for Furniture & Equipment.
- c) Please explain the variability of growth in Travel & Vehicle Expenses.

**Rationale for Question:**

To understand growth in the Corporation's expenses.

**RESPONSE:**

- a) The primary reason for the 5.1% growth in compensation – overtime expense category is due to the slight increase of approximately \$130 thousand from the 2015/16 actual to the 2016/17 budgeted amount. Also contributing to this increase is the fact, overtime growth rates are based on steps in scale and economic increases which is approximately 3.75% per annum.
- b) The primary contributor to the 78.3% average growth in the Furniture and Equipment expense category is due to the expected corporate desktop and monitor refresh Manitoba Public Insurance (MPI) expects to undertake during 2018/19.
- c) The Travel and Vehicle expense category from a dollar perspective is approximately \$1 million per annum so small fluctuations will trigger variability.



The 2.4% average reduction from 2012/13 to 2015/16 is primarily due to cost containment measures whereby Travel and Expense was reduced to \$979 thousand in 2015/16 from \$1.07 million in 2014/15. The subsequent increase for the years 2016/17 through to 2018/19 is based on a slight increase expected or a normalization of expenses to occur in 2016/17 which is only \$1.11 million.

**PUB (MPI) 1-42**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 7.2, p.31</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Corporate Compensation</b>		

**Question:**

Please update Corporate Compensation/Payroll Costs-Corporate Total, to include the years 2016/17 through 2019/20.

**Rationale for Question:**

To understand the forecast trend in total Corporate compensation and average compensation per FTE.

**RESPONSE:**

Please see table below.

**Corporate Compensation/Payroll Costs – Corporate Total**

Year	Payroll Costs	Change from prior year	% Change	Average Actual / Budget – (B) FTE	Average Comp per FTE (\$)	% Change
2011/12	155,061	11,709	8.17%	1,878.30	82.55	7.77%
2012/13	152,389	-2,672	-1.72%	1,911.80	79.71	-3.45%
2013/14	153,741	1,352	0.89%	1,908.50	80.56	1.06%
2014/15	155,761	2,020	1.31%	1,886.60	82.56	2.49%
2015/16	162,297	6,536	4.20%	1,882.40	86.22	4.43%
2016/17	169,761	7,464	4.60%	1,956.20 B	86.78	0.65%
2017/18	175,324	5,563	3.28%	1,942.50 F	90.26	4.01%
2018/19	177,873	2,549	1.45%	1,910.50 F	93.10	3.15%
2019/20	182,123	4,251	2.39%	1,910.50 F	95.33	2.39%

(C\$000s, except where noted)

**PUB (MPI) 1-43**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>21, Table 3.1.1.3</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Corporate Salary Analysis – Normal Operation</b>		

**Question:**

Please provide detail of the vacancy allowance for 2016/17, 2017/18 and 2018/19, including assumed number of FTEs for vacant positions and average salary for those positions.

**Rationale for Question:**

To understand forecast changes in compensation expense.

**RESPONSE:**

The Vacancy provision is set based on a targeted amount of dollars and not specifically based on certain positions and salaries as the positions and salaries vary year over year. Manitoba Public Insurance aims to obtain savings from vacancies of approximately \$6 million per year, which was the budgeted amount for 2015/16. This amount is then grown based on expected economic and steps in scale salary increases which results in the \$6.2 million, \$6.4 million, \$6.7 million in the years 2016/17, 2017/18, and 2018/19 respectively.

**PUB (MPI) 1-44**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>16,19,25</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Compensation - Salaries and Benefits</b>		

**Question:**

- a) Please refile Table 3.1.1 and Table 3.1.1.2 based on total Corporate.
  
- b) Please refile Table 3.2.1 based on total Corporate compensation.

**Rationale for Question:**

To understand the impact of total operations on Basic.

**RESPONSE:**

- a) Please refer to Volume II Expenses EXP.2 Table 2.1.1 page 12 for Total Corporate Operating Expenses.

Please see below for Total Corporate Staffing

**Total Corporate Staffing**

<b>Fiscal Year</b>	<b>Actual</b>	<b>Budget</b>	<b>Over (under) Variance</b>
<b>2010/11</b>	1,871.4	1,931.7	(60.3)
<b>2011/12</b>	1,878.3	1,952.7	(74.4)
<b>2012/13</b>	1,911.8	1,971.8	(60.0)
<b>2013/14</b>	1,905.3	1,951.2	(45.9)
<b>2014/15</b>	1,885.4	1,944.2	(58.8)
<b>2015/16</b>	1,882.4	1,911.2	(28.8)
<b>2016/17</b>	-	1,956.2	-
<b>2017/18</b>	-	1,942.5	-
<b>2018/19</b>	-	1,910.5	-
<b>2019/20</b>	-	1,910.5	-
<b>2020/21</b>	-	1,910.5	-

- b) Please see table below

**Total Corporate Compensation variance**

<b>Fiscal Year</b>	<b>2017 GRA Forecast</b>	<b>2016 GRA Forecast</b>	<b>Variance – 2017 vs 2016</b>	<b>% Change</b>
2015/16	162,293 (a)	157,776	4,517	2.86%
2016/17	169,760	163,770	5,990	3.66%
2017/18	175,321	169,441	5,880	3.47%
2018/19	177,871	175,468	2,403	1.37%

(C\$000s, except where noted)

For more detailed explanations on the variances between the 2016 GRA vs. 2017 GRA please see Volume II Expense Appendix 6– EXP-6, pages 15, 18, 21, and 24.

**PUB (MPI) 1-45**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 7.2, p.31</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Corporate Compensation Analysis</b>		

**Question:**

- a) In Schedule Corporate Compensation Analysis – Corporate Total, please revise the table to indicate the average salary representative from the 25 FTE reduction forecast for 2018/19 representing \$2 million savings.
- b) Please provide the respective FTE count for initiative salaries, including detail of staff count and average salary by level, to support the \$3 million in annual salary cost related to initiative salaries.

**Rationale for Question:**

To understand forecast changes in compensation expense.

**RESPONSE:**

- a) Manitoba Public Insurance (MPI) believes this request has already been captured within *Volume II Expenses Appendices Appendix 7.2 Page 31*. There is a line which indicates a Full-time Equivalent (FTE) reduction of 25 FTE in the amount of \$2 million which is reflected in 2018/19, and the calculation of \$2 million divided by 25 FTE is \$80,000, which would be the average salary. If MPI has misunderstood this request, it will be happy to provide further explanation during second round information requests.
- b) Please refer to *PUB (MPI) 1-44 (a)* for initiative FTE counts.

**PUB (MPI) 1-46**

<b>Volume:</b>	<b>II EXP</b>	<b>Page No.:</b>	<b>Appx. 10, p.41</b>
<b>Topic:</b>	<b>Expenses</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Road Safety Program Costs</b>		

**Preamble:** Notable increases relate to impaired driving strategies throughout the forecast; especially the road watch program, impaired driving production and media.

In last year's GRA, the Corporation forecasted auto theft suppression (approx. \$790K) to end in 2016/17. The Corporation has now extended this strategy throughout the forecast for the 2017 GRA.

**Question:**

- a) Please break out details of activities in Impaired Driving Prevention Strategies for 2016/17 compared to what was forecast at the 2016 GRA.
- b) Please explain why the Corporation continues the auto theft suppression which supposed to end in 2016/17 per last year's GRA. Please provide an overview of the continued financial support.
- c) Please explain the increase in the Other account from \$88K in 2017/18 to \$908K in 2018/19.

**Rationale for Question:**

To understand increases in road safety expenditures.

**RESPONSE:**

- a) Impaired Driving Prevention Strategies include production and media costs for advertising, programming activities relating to impaired driving, enhanced enforcement funding and evaluation.

For 2016/17, the Corporation plans to spend \$658,000 for impaired driving advertising, compared to \$359,354 forecast for 2016/17 in the 2016 GRA. This increase includes plans for expansion of the Report Impaired Drivers program in Manitoba, production and promotion of a virtual reality experience featuring drug impaired driving, the “Bright Future” impaired driving campaign, which was developed in partnership with the Creative Communications program at Red River College, and a much stronger focus on drug impaired driving awareness materials in light of pending federal legislation to legalize the recreational use of cannabis.

In 2016/17, the Corporation plans to spend \$363,000 on impaired driving and road safety messaging at events within Manitoba, as compared to \$43,265 forecast in the 2016 GRA, representing a transfer of funding previously allocated to corporate sponsorships. An additional \$88,000 will support the roadside survey on the prevalence of drugs and alcohol in Manitoba Drivers in 2016/17.

The Corporation plans to spend \$1,181,000 for enhanced enforcement in 2016/17, up from \$977,280 forecast in the 2016 GRA.

There is a \$3,058 decrease in the 2016/17 forecast for impaired driving evaluation from 2016 GRA.

- b) The current agreement for funding of the Winnipeg Auto Theft Suppression Strategy (WATSS) concludes on March 31, 2017. A decision will be made on funding beyond this date prior to the end of the current term. The forecast has been amended to include a continuation of funding strictly as a precaution.
- c) The increase in the Other account is for implementation of Phase II of the High School Driver Education Redevelopment project.



**PUB (MPI) 1-47**

<b>Volume:</b>	<b>II RSR.1.3</b>	<b>Page No.:</b>	<b>Appx.A, p. 20</b>
<b>Topic:</b>	<b>Excess retained earnings</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Transfers from Basic to competitive lines</b>		

**Preamble:** The Corporation has stated that "It is also within the Board of Directors discretion to transfer any excess equity (above the maximum Basic RSR amount) from the Basic line of business back to the competitive lines of business up to the amount of previous transfers made to the Basic line of business." Historically, there have been multiple transfers from the competitive lines of business to the Basic line of business.

**Question:**

- a) Under what authority would the Corporation's Board of Directors transfer excess equity from the Basic line of business to the competitive lines of business?
- b) Under what rationale would such a transfer be preferred over a rebate to Basic ratepayers?
- c) On what basis and over what timeframe would the "amount of the previous transfers" be calculated?
- d) Is it the Corporation's position that the previous transfers to Basic constitute accounts receivable owing by the Basic line of business to the competitive lines of business?
- e) If so, how have those accounts receivable been accounted for by the Corporation to date?

**Rationale for Question:**

Within its mandate relative to Basic rate-setting, the Board must determine the appropriate level of the Basic RSR, including whether ratepayers are required to pay an RSR rebuilding increase or should receive an RSR rebate.

**RESPONSE:**

- a) *The Manitoba Public Insurance Corporation (MPI) Act* provides MPI with the authority to carry out its legislated mandate. Included in this authority is the power to establish reserves to meet all the payments as may become payable under the Act and regulation; inherent to this authority is the ability to transfer money from one reserve to another.
  
- b) Past transfers of excess equity from competitive lines to the Basic line of business (Transfers) have been made to maintain the satisfactory financial condition of Basic, and limit possible rateshock from a rebuilding fee that would otherwise be necessary.

MPI acknowledges that cross subsidies are sometimes present in regulated ratemaking, and at times necessary to achieve desirable outcomes, such as limiting rate shock. However, MPI's position is that cross subsidies between lines of business are not a substitute for appropriate Basic ratemaking. Basic rates must still be set to recover the expected costs of Basic business and cross-subsidies should be remedied where reasonable means exist to do so.

MPI anticipates that transfers of excess equity from Basic back to competitive lines (Return Transfers) would only occur if the Rate Stabilization Reserve (RSR) maximum was exceeded soon after the transfer was made to Basic. In other words, if a Transfer was made from the competitive lines to Basic in order to avoid a potential rate shock and shortly thereafter the financial condition of Basic positively rebounded so that Basic had reserves in excess of the maximum RSR, then it may be appropriate to consider a Return Transfer.

The RSR maximum sets the upper limit of the range needed to protect motorists, which implies funds in excess of the maximum are not needed to protect motorists. If those excess funds are the result of a Transfer, then the cross-subsidy persists beyond its intended purpose. The cross-subsidy can be remedied by a Return Transfer, with no impact on Basic rates or the satisfactory financial condition of Basic.

This approach achieves the objectives of maintaining the satisfactory financial condition of Basic, avoiding an RSR rebuilding fee, and limiting rate shock at the time of the Transfer, while at the same time respecting the established distinction between the competitive and Basic lines of business.

- c) Return Transfers are effectively hypothetical. MPI views that circumstances warranting a Return Transfer are likely to be exceptionally rare. In order for a Return Transfer to be considered there will have to be a strong temporal and factual connection between the initial Transfer and the significant positive change in the financial condition of Basic whereby it has reserves in excess of the maximum RSR.
- d) No. A receivable owing generally requires some certainty of receipt of the amounts owing. As stated above, a Return Transfer is anticipated to be rare.
- e) Please refer to d) above.

**PUB (MPI) 1-48**

<b>Volume:</b>	<b>III AI.12-6</b>	<b>Page No.:</b>	<b>60-74</b>
<b>Topic:</b>	<b>IT Benchmarking</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>			

**Preamble:** The Corporation has provided an update on the status of the Corporation's responses to Gartner Group, and in some cases the status of the project and rationale has changed from last year.

**Question:**

- a) For completeness of the record, please file an update to PUB/MPI I-21 from the 2016 GRA, and explain all differences between the status of projects presented last year, with this application.
- b) Please discuss whether recommendation 2.06 is linked to and supports the Corporation's goal to bring more IT staff internal to the organization.
- c) Please file a copy of any Gartner reports or correspondence which relates to the new recommendations made indicated in Appendix AI.12-6.

**Rationale for Question:**

To understand the Corporation's response to Gartner recommendations.

**RESPONSE:**

- a) An updated table is provided in Attachment A.
- b) Recommendation 2.06 is in regard to using tools to map Information Technology assets to the business processes they support. It does not relate to staffing.

- c) The recommendations provided are received as part of the annual benchmarking process with Gartner. The remainder of the report can be found in *Volume III Benchmarking Appendices Appendix AI.12-5.*

		2017 Application Status	2016 Application status	Comments
<b>1. In order for Manitoba Public Insurance (MPI) to better support running the business, MPI should consider:</b>				
1.04	Benchmark Applications Development and Support to identify additional optimization opportunities.	Rejected	In Progress	Further work on this recommendation has found there is little value in proceeding at this time.
1.08	Establish operating level agreements (OLAs) for all defined service processes and track performance over time	Complete / Operational	In Progress Target Timeframe February, 2016	This is now operational
1.10	Implement automated failover triggers and processes for most critical systems.	Completed	Project in Progress Target Timeframe for Critical Systems by February, 2016	Work has been completed
1.17	Develop a standard operating environment for all IT services	Completed / Operational	In Progress	This is now operational
1.18	Initiate a project to rationalize MPIs printer fleet across the enterprise.	Completed / Operational	In Progress Target Timeframe November, 2015	This is now operational

		2017 Application Status	2016 Application status	Comments
1.20	Explore use of public/hybrid Cloud for back-up.	In Progress (Q4 - 2016/17)	Under Evaluation	Please refer to <i>Volume I Information Technology IT.2 Technology Modernization</i> . Cloud Strategy and Pilot
1.21	Formalize process improvement programs.	Completed / Operational	In Progress	This is now operational
1.22	Create specific guidelines and qualifications for employees to telework.	Rejected	To Be Evaluated	After review it was determined that the current MGEU Collective Agreement does not address telework and therefore this recommendation cannot proceed.

		2017 Application Status	2016 Application status	Comments
<b>2. In order for Manitoba Public Insurance (MPI) to better support growing the business, MPI should consider:</b>				
2.01	Begin to gather data on budgets and spending patterns by application. This requires that time reporting be granular enough to identify projects as well as support by application. Concentrate on the links between business processes and the software that supports it.	Rejected	To Be Evaluated	Rejected because this is a significant undertaking, and is not a current priority.
2.04	Ensure key processes are streamlined and used consistently to function within geographically separate teams. Focus on automated/seamless handoffs which accommodate, but are transparent to, geographic or functional area.	Complete / Operational	On hold	This is in line with operational processes.
2.06	Consider the acquisition and deployment of dependency mapping tools that connect the relationships between applications and infrastructure resources to business processes in order to ensure appropriate IT resources to support growth.	Deferred	To Be Evaluated	Based upon the resources required, there is insufficient capacity to perform this activity at this time.



		2017 Application Status	2016 Application status	Comments
<b>3. In order for Manitoba Public Insurance (MPI) to better support transforming the business, MPI should consider:</b>				
3.02	Increase the span of EA’s influence throughout business areas by ensuring that governance processes exist and their importance is clearly communicated such that they are not circumvented. Often this involves building up stakeholder support.	Reworded by Gartner see 3.05	Under Evaluation	
3.03	Clearly communicate the value of enterprise architecture, or its content, to the key stakeholders in terms that relate to their issues and proactively address their opportunities. This includes business management, key business stakeholders, key IT stakeholders and the overall enterprise architecture community. Look to build business outcome oriented deliverables and communicate success to drive ongoing support for EA.	Reworded by Gartner see 3.06	Under Evaluation	
3.04	Ensure that a culturally appropriate future state architecture exists, that a baseline of your current state exists, and a gap analysis is performed.	Reworded by Gartner see 3.07	Under Evaluation	

		2017 Application Status	2016 Application status	Comments
<b>4. In order for Manitoba Public Insurance (MPI) to be more effective and innovative, MPI should consider:</b>				
4.03	Develop, document and implement an information strategy (2014 - This may or may not include hiring of a Chief Data Officer)	Deferred	On hold	Based upon the resources required, there is insufficient capacity to perform this activity at this time.
4.08	Assess the impact of deferred application maintenance and/or retirement of application on the portfolio in terms of cost of additional non-value added activities; increased time-to-market for IT dependent product enhancements or customer service improvements; additional time to test changes to functionality; etc. – collectively these items are known as “technical debt”	In Progress (Q4 - 2016/17)	To Be Evaluated	Please refer to <i>Volume I Information Technology IT.2 Technology Modernization.</i>
4.09	Communicate technical debt to IT and business leadership and develop a long-term program to remove it from the MPI environment (e.g. through increased adherence to technology standards and application re-use) and track the success of those efforts	In Progress (Q4 - 2016/17)	To Be Evaluated	Please refer to <i>Volume I Information Technology IT.2 Technology Modernization.</i>
4.10	Develop 3 year staffing model to ensure key skills are available in-house to reduce reliance on contractors and consultants	In Progress (Q4 - 2016/17)	To Be Evaluated	Please refer to <i>Volume I Information Technology IT.2 Technology Modernization.</i>

		<b>2017 Application Status</b>	<b>2016 Application status</b>	<b>Comments</b>
4.11	Consider conducting an IT Customer Satisfaction benchmark to assess business unit satisfaction with IT and uncover suggestions from internal customers/end users for value added improvements.	Completed / Operational	In Progress Target Timeframe August, 2015	This is in line with operational processes.
4.12	Review compensation strategies to ensure that MPI is competitive with market rates and can attract the talent it needs to deliver on its mission.	In Progress (Q3 - 2017/18)	In progress	A comprehensive review is planned, in partnership with MGEU within the outlined timeframe.
1.24*	Formalize process around piloting new infrastructure technologies with the business	To Be Evaluated (Q4-2016/17)	N/A	
1.25*	Fine tune specific guidelines and qualifications for remote access support	To Be Evaluated (Q4-2016/17)	N/A	
1.26*	Benchmark service catalog to enhance transparency to the business and drive better IT Economics	To Be Evaluated (Q4-2016/17)	N/A	
3.05*	Plan the future state architecture to support MPI's goals of access and support for existing and new services.	To Be Evaluated (Q4-2016/17)	N/A	
3.06*	Perform a baseline of the current, and perform gap analyses as the architecture is implemented.	To Be Evaluated (Q4-2016/17)	N/A	

		2017 Application Status	2016 Application status	Comments
3.07*	Continue to increase the span of EA's influence throughout business areas by ensuring that governance processes exist (as measured by process maturity) and their importance is clearly communicated such that they are not circumvented. Often this involves building up stakeholder support and requires clear communications regarding EA's value to the business.	To Be Evaluated (Q4-2016/17)	N/A	

**PUB (MPI) 1-49**

<b>Volume:</b>	<b>I BMK.7.1</b>	<b>Page No.:</b>	<b>20</b>
<b>Topic:</b>	<b>Benchmarking</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Operational Benchmarking</b>		

**Preamble:** The Corporation has provided benchmarking information that appears to be excerpts from a Ward Group report.

**Question:**

- a) Please file the report prepared to Ward Group in support of the analysis included in the application.
- b) Please indicate the primary author of the Benchmarking BMK.7.1 section of this application.
- c) Please file as a document in this proceeding, the Ward Group Benchmarking information filed May 24, 2013.

**Rationale for Question:**

To assess the Corporation's benchmarking results.

**RESPONSE:**

- a) The Corporation's Professional Services Agreement with the Ward Group precludes disclosure of the report prepared by Ward Group in support of the Benchmarking analysis in the 2017 GRA. The original Professional Services Agreement was filed as Undertaking 7 in the 2014 GRA, and is still in force today. Please see Attachment A: Undertaking 7 from the 2014 GRA. At that time, in light of the terms stipulated by Ward Group, the Board did not pursue production of the analysis.

The value that the Ward Group provides to its clients is the sharing of confidential client information amongst them on the contractual requirement that none of the clients will disclose the confidential information of other clients. The request to disclose the entire report is broad and does not address specific concerns related to assessing benchmarking results. Disclosing the report would violate the Corporation's contractual obligations and also disclose the confidential business information of third parties.

- b) The author of the Volume I Benchmarking BMK.7.1 is Manitoba Public Insurance staff.
  
- c) It is our understanding that this request is referring to the Ward Group Benchmarking information filed with the 2014 GRA, filed on June 14, 2013. The Ward Group Benchmarking report dated May 24, 2013, but originally filed June 14, 2013, is below. Please note that many of the metrics provided in the May 24<sup>th</sup>, 2013 report, are updated and reported on in Volume I Benchmarking, and Volume III AI.12 Benchmarking Appendices.

## Appendix 1



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May 24, 2013

Mr. Dan Guimond  
Vice President, Strategy and Innovation and Chief Information Officer  
Manitoba Public Insurance  
970-234 Donald  
Box 6300  
Winnipeg, Manitoba R3C 4A4

Dear Mr. Guimond,

Ward Group has been commissioned by Manitoba Public Insurance to provide benchmark data relative to our Canadian Auto Group Benchmark Group.  
Below, please find the fiscal year 2011/12 benchmark data for the requested measurements:

	<b>MPI*</b>	<b>Canadian Auto Group**</b>
<b>Premiums written per FTE</b>	\$658,410	\$884,929
<b>Total Operating Expenses</b>		
As a percentage of premiums written	32.13%	36.59%
Per policy in force	\$306	\$371
<b>Adjusting and Appraising</b>		
Expense per reported claim	\$186	\$362
FTEs per 1,000 reported claims	2.08	2.49
<b>Support Expenses (expressed as a % of premiums written)</b>		
Finance	0.42%	0.37%
Sales	8.00%	13.63%
Marketing	0.39%	0.58%
Personal Underwriting	0.01%	1.00%
Broker Management	0.34%	0.42%
Human Resources	0.51%	0.43%
Actuarial	0.12%	0.21%
Information Technology	5.05%	3.43%
<b>Information Technology (IT)</b>		
Expense as a % of GPW	5.05%	3.43%
Expense as a % of total gross expenses	15.71%	9.38%
Total personnel expense per IT FTE	\$95,337	\$99,645
Personnel expense as a % of GPW	1.76%	1.53%

FACT-BASED ADVICE FOR INSURERS

Mr. Dan Guimond  
 May 24, 2013  
 Page 2



	<b>MPI*</b>	<b>Canadian Auto Group**</b>
<b>Information Technology (IT) (continued)</b>		
Expense per policy in force	\$48	\$35
Expense per IT FTE	\$273,429	\$223,046
Expense per total FTE	\$33,220	\$30,380
Equipment and other expenses as a % of GPW	2.22%	1.12%
Voice communications expense per total FTE	\$2,038	\$1,472

\* Fiscal Year March 2011 to February 2012

\*\* The Canadian Auto Benchmark Group includes the average of:

- Alberta Motor Association
- Aviva Canada
- CAA Insurance Company (Ontario)
- Economical – Personal Division
- Gore Mutual Insurance Company – Personal Lines Division
- Insurance Corporation of British Columbia
- Intact Insurance – Personal Lines Division
- RSA – Personal Lines Division
- SGI Canada

Please see Attachment A for more detail regarding definitions for the above measurements.



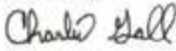
Mr. Dan Guimond  
 May 24, 2013  
 Page 3



**ATTACHMENT A**

<b>GPW per FTE:</b>	Gross premiums written divided by Full-time equivalents (FTEs)
<b>Operating Expenses:</b>	Operating expenses include all underwriting, loss adjusting and investment expenses. Excludes reserve change for loss adjusting expenses
<b>Policy In Force:</b>	Average of beginning and end of fiscal year policies in force.
<b>Reported Claim:</b>	Number of fiscal year claims reported. Claims are evaluated at the occurrence level.
<b>Adjusting and Appraising:</b>	<p><b>Responsibilities include efforts for the following functions:</b></p> <ul style="list-style-type: none"> <li>Verify policy coverages and limits</li> <li>Set and maintain reserves</li> <li>Review vendor estimates</li> <li>Negotiate and settle claims</li> <li>Pay claims</li> </ul>
<b>Information Systems:</b>	<p><b>Responsibilities include efforts for the following functions:</b></p> <ul style="list-style-type: none"> <li>Operate hardware</li> <li>Maintain current applications systems</li> <li>Define required changes to application programs</li> <li>Test application program changes</li> <li>Maintain hardware</li> <li>Develop new systems</li> <li>Design new systems</li> <li>Administer disaster recovery plan</li> <li>Enhance current systems</li> <li>Maintain phone systems</li> <li>Project Management Office (except business only projects)</li> </ul> <p>Note: Includes data communication and software package maintenance fees/amortization costs. Normally would include Local Area Network costs.                      Note: Includes business analysts and requirements gathering. Subject matter experts and user acceptance testing activities remain in the business function.</p>

I hope these measurements are helpful. If you have any questions, please contact me at (513) 746-2406.

Sincerely,  
  
 Charlie Gall  
 Associate Partner

## Undertaking # 7

MPI to determine if the Ward Group produced any other documents to MPI, other than what has been provided.

### **RESPONSE:**

In 2011, the Corporation entered into a three year contract with the Ward Group. The Ward Group does not allow their full report to be released to the public. The Corporation had the Ward Group prepare the document filed at SM.5.3 for public release in these proceedings at no additional cost.

Please see the attached Professional Services Agreement and Statement of Work which form the contract with the Ward Group.



## PROFESSIONAL SERVICES AGREEMENT

COPY

This PROFESSIONAL SERVICES AGREEMENT ("**PSA**") is entered into as of August 5, 2011, is by and between **The Manitoba Public Insurance Corporation ("MPI")** and Ward Financial Group, Inc. ("**Ward**") and provides the terms and conditions pursuant to which Ward agrees to provide to MPI services (the "**Services**") described in the statement of work ("**SOW**") that is attached hereto as **Exhibit A** and incorporated by reference herein.

**1.0 TERM AND TERMINATION.** Ward shall begin providing Services to MPI pursuant to this PSA on the date set forth in the SOW. This PSA and the SOW will terminate on December 31, 2013. Thereafter, this agreement shall automatically renew for an additional one year term (and at the end of each term thereafter shall automatically renew for an unlimited number of additional one year terms upon the expiration of each such one year renewal term) unless MPI or Ward provides written notice of an intention to non-renew at least thirty (30) days prior to the expiration of any term.

**2.0 DELIVERABLES.** Ward shall deliver, in accordance with the terms and conditions of this PSA and the SOW, all those goods or services specified as deliverables under the SOW.

### **3.0 FEES AND INVOICING.**

3.1 **Fees:** The fees for the Services performed under this PSA and the SOW are set forth in the SOW.

3.2 **Invoices.** Ward shall submit invoices of charges based on the rates set forth in the SOW. MPI will pay all invoices to Ward within thirty (30) days of receipt thereof. MPI is GST and HST exempt.

**4.0 INDEMNIFICATION.** Ward either owns, or has obtained the permission of those parties who own the software, information, and/ or methods used in Ward's performance of the Services. Ward hereby releases and agrees to defend and hold harmless MPI, its officers, agents and employees from and against all damages, loss, costs and reasonable attorney's fees for infringement, or any claimed infringement, of any property rights of third parties, that may arise directly or indirectly out of or in connection with Ward's performance of the Services, provided that MPI shall promptly give written notice of any such claim, demand or action to Ward.

### **5.0 CONFIDENTIAL INFORMATION.**

5.1 **Definition Confidential Information.** As used in this Agreement, the term "**Confidential Information**" means the confidential, secret or proprietary information of one party (the "**Disclosing Party**"), including, without limitation, financial and business information such as, without limitation, financial and business plans, financial statements, marketing plans, business processes, business ideas and strategies, clients, customers, and contracts, and technical information such as, without limitation, information and ideas concerning software. In addition, software includes system design, workflow, program functionality and output formats that are unique to the Disclosing Party, hardware, products and technology of the Disclosing Party which has been or may hereafter be disclosed, directly or indirectly to the other party hereunder (the "**Recipient**"), either orally, in writing or in any other material form, or delivered to the Recipient.

5.2 **Confidential Information Covered.** The obligations of the Recipient under this Agreement shall apply to all Confidential Information of the Disclosing Party which has been or may hereafter be disclosed, directly or indirectly, to the Recipient, either orally, in writing or in any other material form, or delivered to the Recipient.

5.3 **Non-Disclosure Obligations.** The Recipient shall not directly or indirectly disclose, communicate or in any way divulge to any other person or entity any Confidential Information. The Recipient shall use the same degree of care, but no less than a reasonable degree of care, to prevent the disclosure of Confidential Information to others as it uses to prevent the disclosure of its own confidential or Confidential Information.

5.4 **Limitations.** Notwithstanding Section 5.7, the Recipient may use or disclose Confidential Information to the extent that the Recipient can show that such Confidential Information: (a) at the time of disclosure or acquisition is generally available to the public (however Confidential Information does not include information that is available to the public due to an unauthorized disclosure of such information by a third party); (b) is rightfully in the Recipient's possession prior to the time of disclosure or acquisition; (c) is rightfully made available to the Recipient by others; or (d) the disclosure is made in order to comply with the requirements of applicable law or an order of a court or tribunal, provided that the Recipient makes best efforts to give the Disclosing Party prior written notice of such disclosure and takes reasonable actions to avoid such disclosure or minimize its extent.

October 3, 2013

Undertaking #7 Attachment



5.5 Obligations of Confidentiality. The Recipient's obligations of confidentiality under this Agreement shall survive indefinitely. The Recipient's obligations of confidentiality shall also survive any expiration, termination, if at all, of any other agreement with the other party.

5.6 Violation of Agreement. The Recipient agrees that its obligations hereunder are necessary and reasonable to protect the Disclosing Party, and expressly agrees that monetary damages would be inadequate to compensate the Disclosing Party for any breach of any covenant or agreement set forth herein. The Recipient agrees and acknowledges that any such violation or threatened violation would cause irreparable injury to the Disclosing Party and that, in addition to any other remedies that may be available, in law, in equity or otherwise, the Disclosing Party shall be entitled to obtain injunctive relief against any threatened breach of this Agreement or the continuation of any such breach, without the necessity of proving actual damages.

5.7 Use of Information. As part of the services provided to MPI by Ward, MPI acknowledges that Ward stores and uses Confidential Information about MPI that Ward may obtain directly from MPI or receive from a third party ("**Source Information**"). Subject to any confidentiality obligation set forth in this PSA, MPI grants Ward a non-exclusive, royalty-free, unrestricted, world-wide, irrevocable, and fully sublicensable right and license to access, use, reproduce, modify, adapt, publish, translate, create derivative works from, distribute, perform and display Source Information, either in whole or part, for Ward's business activities. This license includes the rights to incorporate any of the Source Information into other works that may be created in any form or media, including electronic forms or media, or by using any technology that is now known or later developed. MPI represents and warrants that any of the Source Information it provides to Ward is either original to MPI or that MPI has all necessary rights to submit, send or otherwise make this Source Information available to Ward. MPI also represents and warrants that it has the full ability to grant this license to Ward.

5.8 Use of Name and Identifying Information. As part of its benchmarking activities, Ward may refer to specific companies, including MPI, by name, trade name, trademark, or service mark ("**Name**"). MPI grants to Ward a non-exclusive, royalty-free, unrestricted, world-wide, irrevocable, and fully sublicensable right and license to use MPI's Name in connection with Ward's benchmarking and business activities. Ward acknowledges that nothing in this PSA grants Ward any ownership interest in MPI's Name. MPI acknowledges that nothing in this PSA is intended to or actually does affect any rights of fair use that Ward may have or limit Ward's ability to use any Name in any manner that does not create a likelihood of confusion as to the source of MPI's goods or services. Ward will not disclose Confidential Information that specifically identifies MPI within Ward's benchmarking program. Ward will present information at the benchmark group level only. Ward will not attribute any of MPI's Source Information specifically to MPI in any of its publications. Only Names of the companies included in the benchmark groups will be provided.

5.9 Benchmarking Information. MPI acknowledges that all benchmarking information provided by Ward is proprietary and confidential and is intended for the internal use of MPI only. No part of any reports or analysis provided by Ward may be circulated to parties other than employees, directors, investment managers and shareholders of MPI, without prior approval from Ward, nor can such materials be reproduced without the prior written approval of Ward. Each Party agrees to take reasonable security precautions, at least as great as the precautions it takes to protect its own Confidential Information of a similar nature and at a level no less than a reasonable level of care, to keep confidential the Confidential Information of the other Party. The obligation of confidentiality under this agreement shall survive indefinitely. Both Parties agree that the confidentiality obligations are necessary and reasonable to protect the other Party, and expressly agree that monetary damages would be inadequate to compensate for any breach of any covenant or agreement set forth herein. Both Parties agree and acknowledge that any such violation or threatened violation would cause irreparable injury to the other party and that, in addition to any other remedies that may be available, in law, in equity or otherwise, the disclosing party shall be entitled to obtain injunctive relief against any threatened breach of the confidentiality obligation or the continuation of any such breach, without the necessity of proving actual damages. Notwithstanding any term of this PSA, Ward acknowledges that *The Freedom of Information and Protection of Privacy Act (Manitoba)* ("**FIPPA**") and *The Personal Health Information Act (Manitoba)* ("**PHIA**") each impose obligations on MPI to collect, use or disclose "personal information" and "personal health information", as those terms are defined in FIPPA and PHIA (collectively called "**Personal Information**"), in the strictest of confidence, and in accordance with those Acts. Ward shall collect, use or disclose all Personal Information received from MPI in accordance with FIPPA and PHIA.

## 6.0 ACCESS TO WARD SYSTEMS AND DOCUMENTS

6.1 Grant of Authority and Use. Ward hereby grants MPI a non-exclusive, non-transferable, non-sub licensable, revocable license to use any system designed for sharing electronic data or any information which is propriety to the Ward or a third party, whether paper, electronic, internet based, or otherwise, which is provided by Ward for the sole purpose of conducting business with Ward ("**Systems**"), and subject to the following provisions:



- 6.1.1 MPI is responsible for ensuring that only current, authorized personnel access the Systems.
  - 6.1.2 MPI is responsible for maintaining the confidentiality of the Systems.
  - 6.1.3 MPI is responsible for maintaining the logon and/or operator identification codes issued to MPI's present and past officers and employees. MPI must actively manage log-on privileges and revoke access immediately upon termination of MPI personnel. MPI personnel must be instructed to keep their credentials confidential, and not share their passwords with any other party.
- 6.2 Ward retains title and ownership to the Systems, regardless of the form or media, in or on which it may exist. MPI may not sell, transfer or assign their privileges to its use and any attempt to do so will be null and void.
- 6.2.1 Ward does not warrant that the Systems are suitable for MPI requirements or that it is suitable for use with hardware or software combinations selected by MPI.
  - 6.2.2 Both parties agree to have a sense of urgency and use diligence in repairing missing or incorrect information when discovered.
  - 6.2.3 MPI agrees that the information obtained from the Systems shall be used only for the business purpose for which it was originally collected or obtained.
- 6.3 In addition to the provisions of Section 4.0. herein, Ward shall indemnify and hold MPI harmless from:
- 6.3.1 Damages to MPI caused by Ward's error in design, maintenance, or operation of the Systems, except to the extent the MPI caused or contributed to the damages.
  - 6.3.2 Third party copyright or patent infringement claims arising from the use of the unmodified Systems.
- 6.4 MPI shall indemnify and hold Ward harmless from:
- 6.4.1 Damages which may result from MPI's breach of confidentiality of the Systems.
  - 6.4.2 Damages which may result from the improper use of logon and/or operator identification codes issued to MPI's present and past officers and employees.
- 6.5 Ward reserves the right to terminate access to the Systems or any portion of the Systems thereof upon termination of this agreement as set forth in Section 1.0.
- 6.6 MPI acknowledges that access to the Systems is confidential and constitutes proprietary information of Ward. MPI shall not disclose to any third party any such information without the prior written consent of Ward. MPI agrees to treat all such confidential and proprietary information with the same degree of care exercised with respect to confidential and proprietary information owned by MPI.

## 7.0 MISCELLANEOUS.

7.1 Entire Agreement; Waiver; Interpretation. This PSA, and the documents and agreements listed in this PSA to be incorporated into this PSA, set forth the entire agreement of the parties with respect to the subject matter of this PSA, and supersede any and all prior proposals, agreements, understandings, and contemporaneous discussions, whether oral or written, between the parties with respect to the subject matter of this PSA. No waiver of any of the provisions of this PSA will constitute a waiver of any other provision (whether or not similar) nor will such waiver constitute a continuing waiver unless otherwise expressly provided. This PSA may be executed in two or more counterparts, each of which will be deemed an original, but all of which, when taken together, will constitute one and the same instrument. Whenever terms such as "include" or "including" are used in this PSA, they shall mean "include" or "including," as the case may be, without limiting the generality of any description or word preceding such term. Any provision in this PSA that is prohibited, invalid or unenforceable in any jurisdiction will, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions or affecting the validity or enforceability of such provision in any other jurisdiction. If any provision in the main body of this PSA conflicts with any provision in an attached exhibit such as an SOW, the provision in the main body of this PSA will control.

7.2 Governing Law; Jurisdiction and Venue. All questions concerning the validity, interpretation and performance of this PSA will be governed by and decided in accordance with the laws of the State of Ohio, without regard to its conflicts of laws and principles.

7.3 Notices. Any notice, demand or other communication required or permitted to be given under this PSA will be in writing and will be deemed delivered to a Party: (i) when delivered by hand or nationally recognized overnight courier; or (ii) six (6) days after the date of mailing if mailed by United States certified mail, return receipt requested,



postage prepaid, in each case to the address of such Party set forth underneath the signatures below (or at such other address as the Party may from time to time specify by notice delivered in the foregoing manner).

7.4 Security. In the event that Ward or its representatives use any of MPI's premises, Ward and such representatives shall comply with all of MPI's premises' security regulations in effect from time to time.

7.5 Independent Contractor. Ward is an independent contractor, and this Agreement does not create the relationship of employer and employee, of principal and agent, of joint venture, or of partnership between MPI and Ward or between MPI and any representatives of Ward.

IN WITNESS WHEREOF, the undersigned have caused this PSA to be effective as of the Effective Date.

**WARD FINANCIAL GROUP, INC.**

By: 

Name: Quin Netzel

Date: August 5, 2011

Title: Director

Notice Address: Ward Group  
11500 Northlake Drive  
Suite 305  
Cincinnati, OH, 45249-1662

**THE MANITOBA PUBLIC INSURANCE CORPORATION**

By: 

Marilyn McLaren  
President & CEO

Date: AUG 12 2011

Title: \_\_\_\_\_

By: 

Dan Guimond, VP  
Strategy & Innovation, and  
Chief Information Officer (CIO)

Date: AUG 12 2011

Title: \_\_\_\_\_

Notice Address: The Manitoba Public Insurance Corporation  
234 Donald Street  
P.O. Box 6300  
Winnipeg, MB  
R3C 4A4  
Canada

**EXHIBIT A**  
**STATEMENT OF WORK**  
**(See Attached)**





**Statement of Work for:**  
**Manitoba Public Insurance**

Ward Group  
11500 Northlake Drive, Suite 305  
Cincinnati, OH 45249-1662

THIS STATEMENT OF WORK ("**SOW**") is made and entered into by The Manitoba Public Insurance Corporation ("**MPI**"), and Ward Group, ("**Ward**") on August 5, 2011 (the "**SOW Effective Date**"), and is attached to, incorporated in and made a part of that certain Professional Services Agreement, dated August 5, 2011 (the "**Agreement**") by and between MPI and Ward. Capitalized terms not otherwise defined in this SOW will have the meanings ascribed to them in the Agreement.

In consideration of the mutual agreements and covenants set forth below and in the Agreement, MPI and Ward agree as follows:

Ward agrees to perform for MPI the services described in this SOW ("**Services**") in connection with Ward's Property & Casualty (P&C) Benchmarking Programs ("**Project**") and, provided they are performed pursuant to the terms and conditions of the Agreement and this SOW, MPI agrees to pay for such Services at the rates set forth below.

This SOW is intended to supplement the Agreement and is subject in all respects to the terms of the Agreement. In the event of any direct conflict between the terms of this SOW and the Agreement, the terms of the Agreement will govern unless the conflicting term in the SOW is specifically identified as superseding the related term of the Agreement in which case the conflicting term set forth in this SOW will govern.

**Term.** The term of this SOW shall commence on the SOW Effective Date and terminate on December 31, 2013 ("**Term**"). Thereafter, this agreement shall automatically renew for an additional one year term (and at the end of each term thereafter shall automatically renew for an unlimited number of additional one year terms upon the expiration of each such one year renewal term) unless MPI or Ward provides written notice of an intention to non-renew at least thirty (30) days prior to the expiration of any term.

## 1. PROJECT OVERVIEW

### I. PROJECT DESCRIPTION

#### A. P&C Core Enterprise Operations (CEO) Benchmarking Program

1. The main objective of the P&C CEO Benchmarking Program is to provide a staffing and expense benchmark for the major corporate functions to be modeled after Ward functional definitions. The program will provide MPI an objective and comprehensive analysis of the cost structure of MPI and can be used as an analytical tool to identify potential differences in resources as compared to the benchmark. Ward will provide statistical benchmarking information in report form detailing MPI results and benchmark group results in electronic form and hard copy form.
2. The program will examine seven major processes as follows: Acquisition, Processing, Occupancy, General, Investments, Loss Adjustment Expense and Taxes/Assessments.
3. The program will examine twenty-eight functional areas as follows: Sales, Marketing, Underwriting-Personal Lines, Underwriting-Commercial Lines, Premium Audit, Loss Control, Agency Management, Claims Service, Claims Legal, General Support, Financial, Human Resources, Public Relations, General Counsel, Actuarial, Auditing, Executive, Portfolio Management, Policy Processing-Personal Lines, Policy Processing-Commercial Lines, Billing and Collections, Information Technology, Rent/Depreciation, Maintenance/Security, Real Estate Taxes, Income and Other Taxes, Premium Taxes, Assessments.
4. MPI agrees to participate in the P&C CEO Benchmarking Program for a minimum of three (3) consecutive years, beginning with the 2011-2013 cycle (based on 2010 data).

**B. WARD Research Center** – WARD periodically conducts studies (approximately 6-8 per year) on operating practices in various topics. This information is available through WARD's web-enabled database. Access to the WARD Research Center is included as part of the benchmarking services during the term of this SOW.

**II. Ward Process**

- A. Establish Benchmarking Framework for MPI
- B. Develop Apples-to-Apples Comparisons – This process begins with an electronic submission to Ward of MPI’s accounting and headcount information. The Ward benchmarking software then directs MPI personnel through the remainder of the data collection, statistical requirements and normalization process.
- C. Conduct On-site Best Practices Analysis – Ward will spend time at MPI to understand business practices, operating philosophies and corporate culture. This work for MPI will be scheduled at a time convenient to MPI and is generally conducted in the March – June timeframe each year.
- D. Review the Results – Ward on-site meeting with MPI management to review customized results developed specifically for MPI. This review meeting for MPI will be scheduled at a time convenient to MPI and is generally conducted in the July – October timeframe each year.
- E. Monitor the Results – After the second year of collecting information, a trend analysis report will be prepared to help MPI management monitor year to year performance improvement.

**2. COMPENSATION**

a. Deliverable Payments

<b>Costs</b>	<b>2011 Amount</b>	<b>2012 Amount</b>	<b>2013 Amount</b>
P&C CEO Benchmarking	\$42,500	\$42,500	\$42,500
<b>TOTAL:</b>	<b>\$42,500</b>	<b>\$42,500</b>	<b>\$42,500</b>

The annual fee was arrived at assuming a long term involvement by MPI. There are substantial start-up expenses that Ward incurs that are absorbed as an investment towards developing a long-term relationship.

b. Reimbursable Expenses

MPI will reimburse Ward for reasonable and pre-approved out-of-pocket expenses related to report production, travel and subsistence. Expense estimates are as follows:

<b>Reimbursable Estimates</b>	<b>2011 Amount</b>	<b>2012 Amount</b>	<b>2013 Amount</b>
P&C CEO Benchmarking	\$5,000 -7,500	\$5,000 -7,500	\$5,000 -7,500

c. Invoicing Schedule

Ward submits a progress invoice of fifty percent (50%) of the annual fee at the start of each annual study period, which is typically in the March timeframe each year, and the remainder after the final review meeting to present the results.

Invoices shall be payable thirty days from MPI’s receipt of invoice. MPI is GST and HST exempt.

IN WITNESS WHEREOF, the undersigned have caused this SOW to be effective as of the SOW Effective Date.

**WARD GROUP**

By: 

Name: Quin Netzel

Date: August 5, 2011

Title: Director

**The Manitoba Public Insurance Corporation**

By: 

Marilyn McLaren  
President & CEO

Date: AUG 12 2011

Title: \_\_\_\_\_

By: 

Dan Guimond, VP  
Strategy & Innovation, and  
Chief Information Officer (CIO)

Date: AUG 12 2011

Title: \_\_\_\_\_

**PUB (MPI) 1-50**

<b>Volume:</b>	<b>III AI.6 Part 3</b>	<b>Page No.:</b>	<b>11</b>
<b>Topic:</b>	<b>Claims Incurred</b>		
<b>Sub Topic:</b>	<b>PIPP</b>		
<b>Issue:</b>	<b>BI.3 Benchmarks</b>		

**Question:**

Please file an update to PUB/MPI I-17 from the 2016 GRA, including any indication of the development of additional benchmarks related to BI.3

**Rationale for Question:**

To understand the claims containment results related to BI.3.

**RESPONSE:**

Manitoba Public Insurance (MPI) previously reported on two benchmarks related to claims duration; claims retention and claims reduction. Actual post-BI<sup>3</sup> claims data is not fully developed. Pre-BI<sup>3</sup> claims data continues to develop (relapses, re-opened claims, etc.). Recent factors that impact the comparison to historical claims trends include:

- Enhanced customer service delivery model
- In excess of 30 coverage enhancements
- In excess of 15 significant policy changes to the benefit of the claimant
- Legal precedent decisions increasing scope of coverage (local and national)

The final impact of these factors has not fully developed so we continue to monitor to determine if any adjustments to the benchmarks may be required.

**Claim Retention**

One of the key benchmarks MPI monitors is claims retention. An objective of MPI is to assist claimants with returning to their pre-accident status in a timely manner. The table below shows the number and percentage of income replacement claims

where payments have been made during various stages of development (i.e. actual) relative to historical pre-BI<sup>3</sup> trends based on June 2016 data. The Corporation continues to work towards pre-BI<sup>3</sup> trends in recent loss years, while reviewing if changes will require a benchmark adjustment.

Date of Loss	Benchmark		Actual		Actual - Benchmark	
	Active Claims	Percentage of Total	Active Claims	Percentage of Total	Active Claims	Percentage of Total
<b>2015/16</b>	301	17.07%	350	19.85%	49	2.78%
<b>2014/15</b>	120	7.28%	131	7.92%	11	0.64%
<b>2013/14</b>	99	5.23%	143	7.55%	44	2.32%
<b>2012/13</b>	82	4.04%	128	6.32%	46	2.29%
<b>2011/12</b>	61	3.34%	98	5.34%	37	2.00%
<b>2010/11</b>	54	2.79%	97	5.03%	43	2.24%
<b>2009/10</b>	48	2.58%	73	3.89%	25	1.31%
<b>2008/09</b>			86	4.56%		
<b>2007/08</b>			75	3.65%		
<b>2006/07</b>			92	4.38%		
<b>2005/06</b>			62	3.19%		
<b>2004/05</b>			50	2.45%		
<b>2003/04</b>			60	2.84%		
<b>2002/03</b>			54	2.46%		
<b>2001/02</b>			45	2.03%		
<b>2000/01</b>			48	2.06%		
<b>2000 and Prior</b>			278			

#### Claim Retention Reduced by Residual Capacity Determination or Canada Pension Plan Disability Benefits

Though one of MPI's key objectives is to assist claimants with returning to their pre-accident status in a timely manner, there are claimants who are unable to attain their pre-accident health, and are permanently disabled. We manage these retained claims by completing residual capacity determinations or reducing exposure by pursuing Canada Pension Plan (CPP) Disability Benefits for those claimants that qualify.

MPI has established a benchmark where 50% of Income Replacement Indemnity claims 5 years or more in duration will have a reduction applied.

The table below shows the number of income replacement claims where payments have been made and the percentage with reduced entitlement.

#### IRI Claims 2010/11 and Prior Open Status

Dept.	Bench mark	As at February 28, 2014		As of June 30, 2015		As of June 30, 2016	
		Active IRI Claims	Active Claims with Reduced Entitlement	Active IRI Claims	Active Claims with Reduced Entitlement	Active IRI Claims	Active Claims with Reduced Entitlement
Rehab. Mgmt.	*50%	669	51%	607	49%	196	39%
Serious and Long Term Care	*50%	177	36%	168	36%	658	63%

\*Departmental claims distribution changed since last report (June 2015), resulting in reallocation of long term claims from Rehabilitation Management to Serious and Long Term Care. The reallocation resulted in a review of the benchmarks with resultant changes in Rehabilitation Management from 58% to 50% and in Serious and Long Term Care from 43% to 50%.

**PUB (MPI) 1-51**

<b>Volume:</b>	<b>II PF.1 &amp; PF.2, CI.8.5 III AI.6</b>	<b>Page No.:</b>	<b>AI.6, p.26, Note 6</b>
<b>Topic:</b>	<b>Claims Incurred</b>		
<b>Sub Topic:</b>			
<b>Issue:</b>	<b>Deferred Policy Acquisition Cost (DPAC)</b>		

**Question:**

- a) Please provide the continuity schedule for the Deferred Policy Acquisition Cost (DPAC) through 2021F.
- b) Given the evident interest rate sensitivity of the forecasted DPAC write-down, is the Corporation giving consideration to expanding its ALM duration matching practices to encompass the premium liabilities as well as the claim liabilities?

**Rationale for Question:**

To understand the changes in balance of the deferred policy acquisition cost forecast by the Corporation.

**RESPONSE:**

- a) Refer to Volume II Rate Stabilization Reserve RSR.2 DCAT Base Scenario Exhibit 1f.
- b) The Corporation is currently not considering expanding its Asset Liability Management (ALM) duration matching to encompass the premium liabilities. Please see also 2016 GRA Volume II Investment Income Attachment B Pages 6 and 7.



**PUB (MPI) 1-52**

<b>Volume:</b>	<b>I LP.3</b>	<b>Page No.:</b>	<b>18</b>
<b>Topic:</b>	<b>Road Safety and Loss Prevention</b>		
<b>Sub Topic:</b>	<b>Stakeholder Engagement</b>		
<b>Issue:</b>	<b>Progress of External Stakeholder Committee</b>		

**Preamble:** The Corporation states that the External Stakeholder Committee on Loss Prevention ("the Committee") has made progress in its intended purpose, goals and objectives, which were shared with the Board during the 2016 GRA.

**Question:**

Please advise as to how the Committee has made progress in its intended purpose, goals or objectives since the 2016 GRA, with reference to, for example, any initiatives or projects planned or undertaken.

**Rationale for Question:**

Road Safety and Loss Prevention costs are incurred with a view to reducing collisions, and in turn claims costs, and have a dual impact upon Basic Rates; as both expenditures and a potential savings mechanism. The Board must be provided with sufficient information relative to those initiatives to enable the Board to consider necessity and prudence of the expenditures and potential savings.

**RESPONSE:**

The External Stakeholder Committee has met quarterly since its creation in 2015. Within the first year, Manitoba Public Insurance (MPI) provided members with overviews of all loss prevention and loss cost reduction activities to enable a greater understanding of the scope and range of efforts undertaken by MPI. Additional presentations provided in-depth information about specific programs. For example, members received detailed information on the Operational Plan for Road Safety including the frameworks for priority setting, program evaluation and program development, including activities currently underway and those planned for the future. In addition, the Committee received and validated the 2016/17 road safety

priorities and concepts for program development for fiscal year 2017/18. Other examples include the establishment of the Centre of Excellence and benefits to the repair industry and Driver Fitness program interventions that are mandated by provincial legislation.

The Committee is an opportunity for members to advance their own concerns and ideas for loss prevention that are, in turn, given consideration by MPI. It has provided an opportunity for stakeholders to pose questions and make inquiries on behalf of their organizations in a collaborative atmosphere that has led to a higher level of engagement and cooperation outside of the General Rate Application process.

Specific initiatives that are currently under development, review, or implemented as a direct result of the Committee and the platform that it provides include:

- Development of a renewed cycling safety campaign that, when launched in 2017/18, will include revised messaging and creative concepts that are in alignment with ideas and concerns brought to the Committee by Bike Winnipeg.
- Redesign and launch of the Manitoba Public Insurance rebate program for the *Gearing Up* motorcycle education course, delivered by Safety Services Manitoba, an additional education and awareness campaign for motorcyclist safety in the month of August and enhanced advertising efforts to address specific driver actions that endanger motorcyclists. These issues and initiatives were advanced by members of the Coalition of Manitoba Motorcycle Groups (CMMG).
- The planned development of a new line of safety initiatives for the trucking industry and the general public (safety around trucks). A strategic approach will be developed in the fall of 2016 in collaboration with the Manitoba Trucking Association which has identified several opportunities to improve safety and prevent loss, which they have directed to MPI via the Committee.

- An internal review of data collection and reporting practices that will result in better information for external decision makers who rely upon collision data and information. This initiative is, in part, a product of communication between the City of Winnipeg Public Works and MPI which was facilitated by the Committee.

**PUB (MPI) 1-53**

<b>Volume:</b>	<b>I LP.3</b>	<b>Page No.:</b>	<b>18</b>
<b>Topic:</b>	<b>Road Safety and Loss Prevention</b>		
<b>Sub Topic:</b>	<b>Stakeholder Engagement</b>		
<b>Issue:</b>	<b>Progress of External Stakeholder Committee</b>		

**Preamble:** The Corporation states that the Committee has convened on a quarterly basis since July 2015.

**Question:**

Please produce the minutes of the quarterly meetings held to date.

**Rationale for Question:**

Road Safety and Loss Prevention costs are incurred with a view to reducing collisions, and in turn claims costs, and have a dual impact upon Basic Rates; as both expenditures and a potential savings mechanism. The Board must be provided with sufficient information relative to those initiatives to enable the Board to consider necessity and prudence of the expenditures and potential savings.

**RESPONSE:**

Please refer to attachments for minutes from External Stakeholder Committee on Loss Prevention meetings held on:

Attachment A: July 9, 2015

Attachment B: October 8, 2015

Attachment C: January 15, 2016

Attachment D: April 29, 2016



## External Stakeholder Committee on Loss Prevention

<b>Scheduled Date:</b>	July 9, 2015	<b>Location:</b>	Manitoba Public Insurance Board Room
<b>Scheduled Time:</b>	<b>Start:</b> 9:00 am	<b>End:</b>	10:30 am

	Attendees		Attendees
x	Amanda Lieverse, MIT	x	Stephen Chapman, City of Winnipeg
x	Brian Segal, CMMG	x	Terry Shaw, MTA
x	Doug Houghton, CMMG	x	Theresa Jachnycky, ATA
a	Geoff Sine, MMDA	x	Ward Keith, MPI
x	Gloria Desorcy, CAC Manitoba	x	Doug Overwater, MPI
x	Jeremy Hull, Bike Winnipeg	x	Shayon Mitra, MPI
x	Judy Murphy, SSM	x	Shannon Bunkowsky, MPI
x	Liz Kulyk , CAA Manitoba	x	Karl Krueger, MPI
x	Rob Riffel, (on behalf of Mark Hodgson) MACP		

Topic #	Topics to be Discussed
1	<p><b><u>Introductions</u></b> Roundtable introductions occurred and a brief overview of the meeting agenda was provided by Ward Keith, Vice President, Business Development, Communications &amp; CPO (committee chair)</p>
2	<p><b><u>Overview of Loss Prevention Strategy and Framework</u></b> Ward Keith provided a powerpoint presentation of the MPI loss prevention and strategy framework and highlighted current programs, program measurement and evaluation objectives, and new program considerations</p> <p>It was suggested that the social impacts of loss prevention programs be considered from more than a financial perspective, and included as part of program evaluation</p>
3	<p><b><u>Review Committee Terms of Reference</u></b> Terms of reference were updated and redistributed to include City of Winnipeg representation. The purpose, goals and objectives for the committee were reviewed.</p>
4	<p><b><u>Future Meetings – Frequency/Dates</u></b> Future meetings will be scheduled on a quarterly basis with the next meeting taking place in September. MPI will provide a more detailed overview of current loss prevention programs at the next meeting. Committee representatives are invited to provide feedback and suggestions on behalf of their organizations before the next meeting – attention Sheri McKinnon.</p>
5	<p><b><u>Wrap Up and Next Meeting</u></b> With no further business the meeting was adjourned at 10:15am. The next meeting will be scheduled via email.</p>



## External Stakeholder Committee on Loss Prevention

<b>Scheduled Date:</b>	Oct 8, 2015	<b>Location:</b>	Manitoba Public Insurance Board Room
<b>Scheduled Time:</b>	<b>Start:</b> 9:00 am	<b>End:</b>	10:45 am

Attendees		Attendees	
x	Amanda Lieverse, MIT	x	Stephen Chapman, City of Winnipeg
x	Brian Segal, CMMG	x	Terry Shaw, MTA
	Doug Houghton, CMMG	x	Theresa Jachnycky, ATA
x	Geoff Sine, MMDA	x	Ward Keith, MPI
x	Gloria Desorcy, CAC Manitoba	x	Doug Overwater, MPI
x	Jeremy Hull, Bike Winnipeg	x	Shayon Mitra, MPI
x	Judy Murphy, SSM	x	Shannon Bunkowsky, MPI
x	Liz Kulyk, CAA Manitoba	x	Karl Krueger, MPI
	Mark Hodgson, MACP		

Topic #	Meeting Minutes
1	<p><b>Introductions</b></p> <p>The Chair of the Committee provided a brief welcome and introduction of the MPI Executive Directors and Directors (loss prevention program business owners) who would be presenting on their respective programs.</p>
2	<p><b>Review of Action Items from Previous Meeting</b></p> <p>MPI acknowledged feedback and suggestions on current loss prevention programs received from MTA, CMMG and Bike Winnipeg. These comments have been forwarded to the respective loss prevention program owners for review and consideration.</p>
3	<p><b>Overview of Current MPI Loss Prevention Programs</b></p> <p>As was committed at the July 2015 meeting, MPI loss prevention program business owners provided the Committee with an overview of each of the current programs that make up the loss prevention portfolio:</p> <ul style="list-style-type: none"> <li>• Auto theft prevention</li> <li>• Road safety programming</li> <li>• Driver education and training</li> <li>• Driver improvement and control</li> <li>• Medical compliance and assessments</li> <li>• Special Risk Extension fleet safety and loss prevention</li> <li>• Special Risk Extension entry level professional truck driver training</li> <li>• Winter tire program</li> <li>• Driver safety rating program</li> </ul>

	<ul style="list-style-type: none"> <li>• Physical Damage research and training</li> <li>• Vehicle standards and inspections</li> <li>• Special accounts and subrogation</li> <li>• Special investigations unit</li> <li>• Driver testing policy and evaluation</li> <li>• Basic Autopac fleet program</li> <li>• Salvage operations</li> </ul> <p>Each of the program areas generated good discussions and several questions were responded to by MPI program owners.</p> <p>A copy of the presentation will be circulated with the meeting minutes.</p>
4	<p><b>Discussion about Priority Focus Areas</b></p> <p>It was agreed that MPI would provide more detailed information about current road safety programming, priority setting, research, and evaluation/monitoring frameworks at the next meet Committee meeting.</p> <p>MPI also committed to send all members a link to the 2014 Traffic Collision Statistics Report, which was published on October 1, 2015.</p>
5	<p><b>Wrap Up and Next Meeting</b></p> <p>The meeting was adjourned at 10:45am. The next meeting will be scheduled via email.</p>



## External Stakeholder Committee on Loss Prevention

<b>Scheduled Date:</b>	January 15, 2016	<b>Location:</b>	Manitoba Public Insurance Board Room
<b>Scheduled Time:</b>	<b>Start:</b> 9:00 am	<b>End:</b>	10:30 am

	Attendees		Attendees
x	Amanda Lieverse, MIT	x	Stephen Chapman, City of Winnipeg
a	Brian Segal, CMMG	x	Terry Shaw, MTA
x	Doug Houghton, CMMG	x	Theresa Jachnycky, ATA
a	Geoff Sine, MMDA	a	Ward Keith, MPI
a	Gloria Desorcy, CAC Manitoba	x	Doug Overwater, MPI
x	Jeremy Hull, Bike Winnipeg	x	Shayon Mitra, MPI
a	Judy Murphy, SSM	x	Shannon Bunkowsky, MPI
x	Mike Mager, CAA Manitoba	x	Karl Krueger, MPI
x	Gord Friesen, MACP		

Topic #	Topics to be Discussed
1	<p><b><u>Introductions</u></b> Shannon Bunkowsky, Manager of Road Safety chaired the meeting and introductions took place.</p>
2	<p><b><u>Review of Action items/Minutes from previous meeting</u></b> Minutes from the October meeting were reviewed and no changes were made.</p>
3	<p><b><u>Overview of current MPI Framework and Interventions for Road Safety</u></b> The Committee received a presentation on the new Road Safety Operational Plan and Frameworks for Program Development and Evaluation, which formalizes the processes and methodologies for road safety priority setting, the allocation of programming expenditures, and the development and evaluation of programs that the Corporation delivers or supports in the community.</p> <p>Priorities established for 2015/16 and associated new program initiatives launching in 2016/17 were reviewed. A copy of the 2016/17 MACP integrated calendar was circulated and members were invited to provide suggestions and feedback.</p> <ul style="list-style-type: none"> <li>CMMG suggested additional Motorcycle Safety programming in the month of August and requested that programming in June be moved to May to coincide with Motorcycle Safety Month.</li> </ul> <p>Preliminary priorities for program development activities in 2016/17 were also presented to the group. Members were advised of the MPI program development time line:</p> <ul style="list-style-type: none"> <li>January - 2016/17 Priorities Established</li> <li>March - Concept Ideation</li> <li>July - Business Case Development</li> <li>September - Planning and Budgeting</li> <li>Program implementation – 2017/18 fiscal year.</li> </ul> <p>Members were asked to consider the priorities presented and provide their ideas for potential</p>



	<p>program development to MPI via the Committee. Ideas can be presented directly via email to Shannon Bunkowsky: <a href="mailto:sbunkowsky@mpi.mb.ca">sbunkowsky@mpi.mb.ca</a> or presented in person at the next meeting of the Committee. Road Safety Programming will feed Committee suggestions into the program development timeline for review, consideration, and potential business case development.</p> <ul style="list-style-type: none"> <li>• MTA suggested targeted programming for the commercial trucking industry and committed to provide follow up suggestions and questions for MPI consideration.</li> </ul> <p>Committee members provided general support for the frameworks, priorities and programming, subject to questions that were addressed in the follow on discussion. Questions included how MPI measures road safety progress against other jurisdictions (comparative rate-based statistics, behavioural surveys, conviction rates, etc. from across Canada and internationally) and the availability of collision data to organizations outside of Manitoba (any information that MPI can share is made available upon request).</p>
4	<p><b><u>Next Steps</u></b>                  Road safety program concept ideas will be added as an agenda item for the next meeting.</p>
	<p><b><u>Next Meeting</u></b>                  The meeting was adjourned at 10:20am. The next meeting will be scheduled via email.</p>



## External Stakeholder Committee on Loss Prevention

<b>Scheduled Date:</b>	April 29, 2016	<b>Location:</b>	Manitoba Public Insurance Board Room
<b>Scheduled Time:</b>	<b>Start:</b> 9:00 am	<b>End:</b>	10:30 am

	Attendees		Attendees
x	Amanda Lieverse, MIT	x	Stephen Chapman, City of Winnipeg
a	Brian Segal, CMMG	x	Terry Shaw, MTA
a	Doug Houghton, CMMG	x	Theresa Jachnycky, ATA
a	Geoff Sine, MMDA	x	Ward Keith, MPI
x	Gloria Desorcy, CAC Manitoba	x	Doug Overwater, MPI
x	Jeremy Hull, Bike Winnipeg	x	Shayon Mitra, MPI
x	Judy Murphy, SSM	x	Shannon Bunkowsky, MPI
a	Mike Mager, CAA Manitoba	x	Karl Krueger, MPI
x	Gord Friesen, MACP		

Topic #	Topics to be Discussed
1	<p><b><u>Introductions</u></b></p> <p>Committee members were introduced. Mr. Segal, Mr. Houghton, Mr. Sine and Mr. Mager sent their regrets.</p>
2	<p><b><u>Review of Action items/Minutes from previous meeting</u></b></p> <p>Minutes from the January 2016 meeting were reviewed and no changes or additions were made.</p>
3	<p><b><u>Road Safety Programming Concepts for 2017/18</u></b></p> <p>As a follow on to the meeting in January 2016 which was focused on road safety priority setting and programming, Ms. Bunkowsky delivered a presentation on road safety programming concepts for the 2017/18 fiscal year. Programming concepts are directly linked to the Road Safety Priorities presented to, and discussed by the Committee at the January 2016 meeting; and were generated through internal research and analysis as well as collaboration with external stakeholder members.</p> <p>It was noted that several collaborative programming concepts have been submitted by and/or require joint commitment from external stakeholders which are advancing through the program development process including:</p> <ul style="list-style-type: none"> <li>• Bike It! Commuter Cycling Pilot (Bike Winnipeg/MPI partnership)</li> <li>• Cycling in Schools pilot project (Bike Winnipeg)</li> <li>• Manitoba Trucking Road Safety Strategy (MTA)</li> <li>• Review and enhancement of Driver Improvement &amp; Control mandated courses (SSM)</li> <li>• Research into expansion of automated speed enforcement outside of Winnipeg (MACP and MIT)</li> </ul>

	<ul style="list-style-type: none"> <li>• Motorcycle safety awareness in August and changes to the 21-hour motorcycle training course (CMMG and SSM)</li> <li>• Data consistency analysis for claims location reporting (City of Winnipeg)</li> </ul> <p>MPI will continue to consult with external stakeholders as the concepts are advanced into business cases for the budget planning cycle. Mr. Keith invited Committee members to submit additional programming concepts if warranted, to address the stated road safety priorities. The development of business cases for proposed road safety programming concepts will be complete by midsummer with implementation of most concepts targeted for 2017/18 fiscal year.</p> <p>The Chair opened discussion on the concepts. Highlights included:</p> <ul style="list-style-type: none"> <li>• Policy issues can have road safety implications. MPI may not establish policy, but can be an important influence in policy decisions. Examples discussed included dumping of grain resulting in a roadside attractant for wildlife; automated enforcement for speed outside of Winnipeg.</li> <li>• There was support for the shift to focus on behaviour change with discussion about the need to reallocate resources and the importance of managing expectations by focusing on an overall return on investment for the whole portfolio of loss prevention initiatives. There is no desire to position one approach against another, but to rather take a multi-faceted and layered approach to loss prevention issues.</li> <li>• Lagging versus leading indicators are critical for measuring progress on many road safety issues. MPI uses a variety of indicators including collision data, public polling, and direct surveys of participants in programming to gather information about behaviour change on loss prevention issues.</li> </ul>
<p>4</p>	<p><b><u>Overview of the Physical Damage Centre of Excellence in Automotive Research and Training</u></b></p> <p>Mr. Mitra delivered a presentation on the Physical Damage Centre of Excellence in Automotive Research and Training. The business drivers supporting this new initiative include the fact that proper, safe repairs in the automotive sector are increasingly complex, the required skills and knowledge to complete repairs are becoming very broad, and a more hands-on approach is needed to ensure repairs are safe and reliable.</p> <p>Significant investment is critical in sustaining a healthy and robust industry. The Centre is focused on four foundation pillars that use economies of scale to reduce risk on the road:</p> <ul style="list-style-type: none"> <li>• <b>Sustainable trades development</b></li> <li>• <b>Standards and Estimatics</b></li> <li>• <b>Quality Assurance</b></li> <li>• <b>Research and Development</b></li> </ul> <p>Open discussion about the business drivers behind the Centre of Excellence followed. The presentation was received by the Committee for information.</p>
<p>5</p>	<p><b>Bright Future – Impaired Driving Campaign</b></p> <p>Launching in May, MPI's new impaired driving campaign was developed by two Red River College Communications students. Members received a preview of the new advertisement.</p>

6	<p><b><u>Next Meeting</u></b></p> <p>With no further business, the meeting was adjourned at 10:30am. The next meeting will be scheduled via email. There was agreement to schedule for the end of July to maintain the quarterly meeting schedule, but if there is insufficient availability the meeting may be deferred until September, 2016.</p>
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**PUB (MPI) 1-54**

<b>Volume:</b>	<b>I LF.3</b>	<b>Page No.:</b>	<b>20</b>
<b>Topic:</b>	<b>Road Safety and Loss Prevention</b>		
<b>Sub Topic:</b>	<b>Provincial Road Safety Committee</b>		
<b>Issue:</b>	<b>Terms of Reference and Road Safety Plan</b>		

**Preamble:** The Corporation states that Terms of Reference and a roadmap for the development of a Road Safety Plan are under review by the leadership of the Provincial Road Safety Committee ("the Road Safety Committee").

**Question:**

Please produce the draft Terms of Reference and roadmap for the Road Safety plan.

**Rationale for Question:**

Road Safety and Loss Prevention costs are incurred with a view to reducing collisions, and in turn claims costs, and have a dual impact upon Basic Rates; as both expenditures and a potential savings mechanism. The Board must be provided with sufficient information relative to those initiatives to enable the Board to consider necessity and prudence of the expenditures and potential savings.

**RESPONSE:**

For the Provincial Road Safety Terms of Reference, please see Attachment A: 2016 GRA Undertaking 12.

The roadmap for the Road Safety Plan is currently pending approval by the current provincial administration. The intent of the Plan is to establish a guiding strategy under which Provincial Road Safety Committee activities will be undertaken over the next three years. It will identify priorities and goals of the Committee and identify key actions that help to progressively address road safety issues.

Road safety priorities will be used to develop a long term approach to road safety, validate and/or assign resources, and keep the Committee on track to ensure its

activities align with the strategic objectives of the Province of Manitoba and Manitoba Public Insurance.

Three year goals may highlight primary objectives and identify key activities to be undertaken by the Committee and any established working groups. These goals may or may not be associated with targets.

Progress may be measured by the achievement of milestone activities. Outcomes may be measured by following the Canadian Council of Motor Transport Administrators *Road Safety Strategy 2025* model, which aims to accelerate current downward trending in the rate-based number of fatalities and serious injuries on provincial and municipal roads. Overall performance may be measured in annual fatalities and serious injuries per billion kilometers travelled, per vehicles registered, and per population or licensed drivers. Progress may also be measured through other indicators, to be determined through the RSP development process

Pending approval of the Province, a public launch of the RSP is possible in 2016, with renewal planned for 2019. The Provincial Road Safety Committee will communicate recommendations to Government or other external stakeholders. Governing bodies will have ultimate authority and responsibility for legislative, infrastructure, enforcement, and programming responses and actions resulting from the Plan.

October 19, 2015

2016 General Rate Application  
Undertaking #12 Attachment

## TERMS OF REFERENCE PROVINCIAL ROAD SAFETY COMMITTEE September 2015

### 1.0 INTRODUCTION

In the November 2014 Throne Speech, Government committed to the creation of a Road Safety Committee to “ensure that principles of road safety are integrated in all aspects of transportation policy”.

Manitoba will benefit from a strategic and holistic approach to road safety through the establishment of a Provincial Road Safety Committee. This will facilitate prioritization of road safety issues, foster greater cooperation and collaboration among stakeholders, and focus resources to maximize results.

#### 1.1 Issue

Motor vehicle-related fatalities and serious injuries on public roadways have declined significantly in Manitoba over the last two decades. These road safety improvements have been achieved despite increases in the overall population count, number of registered vehicles, and licensed drivers on Manitoba roadways over the same period.

Despite clear declines in motor vehicle-related casualties, the personal and societal costs of collisions, injuries and fatalities continue to be significant. Collisions have various cost components, including property damage, emergency response services, medical services, legal services, travel delay, workplace productivity losses, etc.

The societal costs of collisions in Manitoba are estimated at \$6.4 million per fatality and \$133,000 per injury. When these costs are applied to the number of fatalities/injuries, the societal costs of traffic fatalities/injuries were over \$2 billion in 2013 (\$2.038), approximately three percent of Manitoba’s gross domestic product. In 2014, there were 41,819 collisions in Manitoba resulting in 11,234 victims and 85 fatalities.

### 2.0 OBJECTIVES

The objective of the Provincial Road Safety Committee is to enhance road safety and reduce the number and severity of collisions as well as the number of collision injuries and fatalities in Manitoba by:

- Synthesizing efforts in:
  - Engineering and infrastructure
  - Roadway operations
  - Enforcement and legal systems
  - Education and awareness
  - Vehicle safety

October 19, 2015

2016 General Rate Application  
Undertaking #12 Attachment

- Fostering coordination and collaboration between the various departments and agencies involved in road safety
- Promoting road safety in a strategic, concerted way
- Ensuring road safety issues are identified and prioritized
- Better allocating limited resources to those areas in greatest need of intervention

The purpose of the Committee is not to redefine legislative mandates for participating organizations and logical areas of accountability stemming from those mandates. Rather, the Committee will guide a more strategic and holistic approach to addressing road safety issues in Manitoba through stakeholder engagement, cooperation, and collaboration.

### 3.0 DELIVERABLES

The Provincial Road Safety Committee's primary deliverable will be a comprehensive Road Safety Plan for Manitoba. The Road Safety Plan will establish a guiding framework through which road safety activities will be undertaken and priorities, targets, and timelines identified.

Manitoba's Road Safety Plan will follow the national Road Safety Strategy 2015 model, and will seek to accelerate current downward trending in the rate-based number of fatalities and serious injuries on provincial and municipal roadways. Overall performance will be measured in annual fatalities and serious injuries per billion kilometres traveled, per vehicles registered and per population or licenced drivers. Most of these metrics are already tracked via the annual *Traffic Collision Statistics Report* prepared by Manitoba Public Insurance.

### 4.0 COMMITTEE STRUCTURE

Road safety issues are complex in nature and involve a variety of stakeholders from a wide cross-section of organizations and agencies. The Provincial Road Safety Committee will act as an umbrella organization to focus the expertise and resources of participating organizations and agencies to achieve mutually agreed upon goals. Over the long-term, these activities will form the basis of a well-integrated and comprehensive road safety plan for Manitoba, while respecting the individual mandates and accountabilities of participating agencies.

#### 4.1 Committee Leadership

The Provincial Road Safety Committee will be co-chaired by Manitoba Infrastructure and Transportation (MIT) and Manitoba Public Insurance, both of which have joint and complementary legislative mandates to pursue road safety improvements.



October 19, 2015

2016 General Rate Application  
Undertaking #12 Attachment

MIT's mandate extends to overall responsibility for Manitoba's *Highway Traffic Act*, engineering and infrastructure, and roadway operations, as well as overall transportation policy and regulatory oversight of Manitoba's commercial motor carriers. Manitoba Public Insurance's road safety mandate is addressed under Sections 6(1) and 6(2) of *The Manitoba Public Insurance Corporation Act* and as Administrator of *The Drivers and Vehicles Act*.

## 4.2 Committee Levels

The Provincial Road Safety Committee will be structured in a way that ensures its ability to develop guiding policy, identify key priorities, and provide strategic direction, while maintaining the ability to conduct research and analysis to inform the development of interventions and programming by participating agencies.

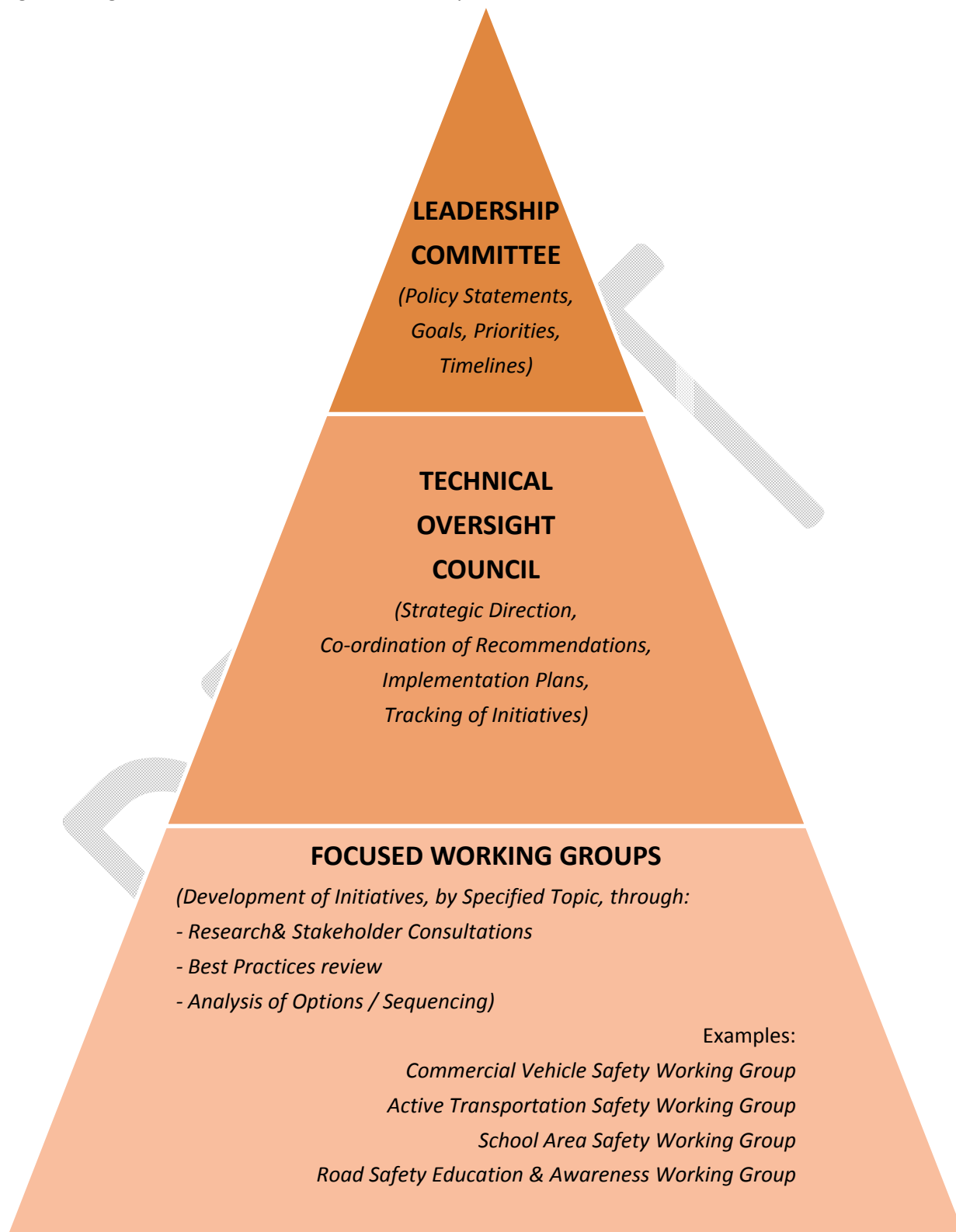
To achieve this outcome, the Committee will be organized with a three-tiered structure featuring:

1. Road Safety Leadership Committee to provide strategic direction and establish priorities.
2. Technical Oversight Council to coordinate efforts, manage deliverables, provide direction and support to working groups, etc.<sup>1</sup>
3. Issue specific Working Groups to conduct research, identify options, and develop suggestions for interventions and programming to address key priorities.

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<sup>1</sup> The Technical Oversight Council will require its own Terms of Reference to guide its activities, establish reporting requirements, identify members, etc.

Figure 1: organizational model for the Road Safety Committee



October 19, 2015

2016 General Rate Application  
Undertaking #12 Attachment**MEMBERSHIP**

Members of the **Road Safety Leadership Committee** will be as follows:

<b>Organization</b>	<b>Representative</b>
Manitoba Infrastructure and Transportation	(Co-Chair) Assistant Deputy Minister, Motor Carrier and Transportation Policy Divisions
	Assistant Deputy Minister, Engineering and Operations
Manitoba Public Insurance	(Co-Chair) Vice President, Business Development and Communications and Chief Product Officer
Manitoba Justice	Executive Director, Policy Development and Analysis
Manitoba Health, Healthy Living and Seniors	Assistant Deputy Minister, Healthy Living and Seniors
Manitoba Association of Chiefs of Police	Representative
Manitoba Education and Advanced Learning	Director, Education Administration Services

Manitoba Infrastructure and Transportation will provide a secretary to the Road Safety Leadership Committee to coordinate and support the Committee's activities, prepare reporting documents for government, act as a liaison between the Committee and the Technical Oversight Council, etc.

Members of the **Technical Oversight Council** may include senior representatives from the following government departments and organizations:

- Manitoba Infrastructure and Transportation
- Manitoba Public Insurance
- Manitoba Justice
- Manitoba Health, Healthy Living and Seniors
- CAA Manitoba
- Association of Manitoba Municipalities
- Royal Canadian Mounted Police
- Winnipeg Police Service
- Public Works representatives from selected Manitoba cities, including Winnipeg
- University of Manitoba Transport Institute or Faculty of Civil Engineering
- SAFE Roads Manitoba

October 19, 2015

2016 General Rate Application  
Undertaking #12 Attachment

Committee-sponsored **Working Groups** will comprise a variety of other road safety agencies, stakeholders, and interest groups that are established to examine specific road safety issues and priorities as directed by the Technical Oversight Council. Road safety stakeholders may include, but are not necessarily limited to:

- Government departments and Crown Corporations
- Law Enforcement Agencies
- Regional Health Authorities
- Municipal Authorities
- Assembly of Manitoba Chiefs
- Manitoba Metis Federation
- MADD Canada
- Bike Winnipeg
- IMPACT
- Manitoba Trucking Association
- Manitoba Heavy Construction Association
- Manitoba Association of School Superintendents
- Universities and Colleges
- Research Institutes

## 5.0 RESOURCES

Participating organizations/agencies will provide in-kind contributions to support activities of the Provincial Road Safety Committee. Examples of in-kind contributions include expertise, person hours, meeting space, and administrative support.

## 6.0 ROLES AND RESPONSIBILITIES

The Road Safety Leadership Committee will provide overall direction and oversight to the Technical Oversight Council. The Leadership Committee will also be responsible for liaising with government, reporting on activities and achievements of the Provincial Road Safety Committee, and securing government support for, and approval of the Committees' overall strategic approach, priorities, targets and timelines.

**PUB (MPI) 1-55**

<b>Volume:</b>	<b>I LF.3</b>	<b>Page No.:</b>	<b>21</b>
<b>Topic:</b>	<b>Road Safety and Loss Prevention</b>		
<b>Sub Topic:</b>	<b>Provincial Road Safety Committee</b>		
<b>Issue:</b>	<b>Distracted Driving and Impaired Driving Summit</b>		

**Preamble:** The Corporation states that the Road Safety Committee hosted a Distracted Driving and Impaired Driving Summit in December 2015, which produced consensus on key approaches.

**Question:**

Please advise as to:

- a) The key approaches that were agreed upon as a result of the Summit;
- b) What additional analysis and consideration on the key approaches is required from the Corporation's perspective; and
- c) The intended outcome of the Summit and the additional analysis and consideration.

**Rationale for Question:**

Road Safety and Loss Prevention costs are incurred with a view to reducing collisions, and in turn claims costs, and have a dual impact upon Basic Rates; as both expenditures and a potential savings mechanism. The Board must be provided with sufficient information relative to those initiatives to enable the Board to consider necessity and prudence of the expenditures and potential savings.

**RESPONSE:**

- a) The full ranges of countermeasures discussed at the Summit on Impaired and Distracted Driving are contained within the Consultation Guide documents, provided to participant stakeholders. Refer to the documents in Attachment A (Impaired Driving) and Attachment B (Distracted Driving).

Outcomes of the Summit with respect to legislative countermeasures have been transmitted as advice to Ministers by the Provincial Road Safety Committee.

Priority research areas identified included the need to collect data on the prevalence of drug use on Manitoba roadways. It was agreed that surveys need to be conducted, specifically using the roadside model that has been utilized in other jurisdictions and supported by the Canadian Council of Motor Transport Administrators (CCMTA).

- b) The Corporation is currently pursuing a roadside survey to better understand the prevalence of drugs and alcohol in Manitoba drivers and to establish a useful and accurate benchmark against which to measure changes in attitude and behaviour that may result from anticipated amendments to federal legislation that will legalize the recreational use of cannabis. This data will help to shape corporate understanding of the magnitude of the problem and will be useful in program development targeting impaired driving associated with alcohol and drugs, and more specifically cannabis.

Conducting additional roadside surveys in various jurisdictions across Canada is a key component of the CCMTA Drugs and Driving Framework (2012) and Manitoba's efforts in this regard will also help to inform a national approach to the issue. Similar surveys have been conducted in BC in 2012 and in Ontario in 2014. Outside of Manitoba and these two provinces, no other jurisdictions have indicated plans to conduct similar surveys, highlighting the lack of data, specifically from the prairie region, which might inform programming.

- c) The Province is currently engaged in the additional analysis associated with legislative countermeasures that were advanced in the advice to Ministers.



**Manitoba  
Public Insurance**



# **PROVINCIAL ROAD SAFETY COMMITTEE**

## **IMPAIRED DRIVING FOCUS SESSION**

### **CONSULTATION GUIDE**

**DECEMBER 3, 2015**

**Introduction**

The Provincial Road Safety Committee values your input at the December 3, 2015 focus session on legislative countermeasures against impaired driving. While Manitoba is a leader among provinces in addressing these issues, they continue to present a serious road safety risk. In 2014 alone, impaired driving was the second leading contributing factor of serious injuries and fatalities in Manitoba.

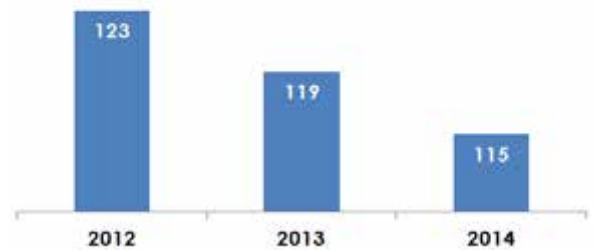
The Government of Manitoba established the Provincial Road Safety Committee to guide a more strategic and holistic approach to ensuring that the principles of road safety are integrated into all aspects of transportation policy in Manitoba. A key deliverable will be a comprehensive Road Safety Plan for Manitoba that will establish a framework through which road safety measures may be pursued.

This focus session is intended to engage representatives from key stakeholder groups to examine options to strengthen legislative countermeasures to stop impaired driving. The purpose of this discussion paper is to provide background information and topics for consideration to guide stakeholder engagement and discussion. The outcomes from this focus session will help inform the development of Manitoba's Road Safety Plan.

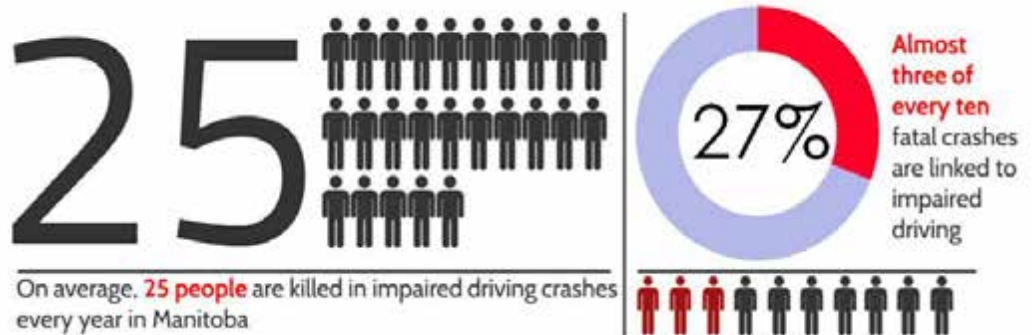
**Current Scope of Impaired Driving in Manitoba**

Manitoba has been a leader in implementing strong countermeasures and initiatives to address impaired driving and has made significant progress over the last couple of decades. Despite this, impaired driving continues to be a leading cause of motor vehicle fatalities in Manitoba. In Manitoba, there were 115 impaired driving traffic collisions in 2014. An average of 25 people were killed each year between 2009 and 2013 and 27 per cent of fatal collisions were linked to impaired driving. All of these deaths were preventable.

Total Impaired Driving Collisions in Manitoba: 2012-2014 (Three Years)



Impaired Driving Fatalities in Manitoba: 2009-2013 Average





## Legislative Context and Sanctions under the *Highway Traffic Act (HTA)*

In Manitoba, as with all provinces, there are two sets of laws that apply to impaired drivers: the federal *Criminal Code* and the provincial HTA. Only the federal government has the power to make changes to the *Criminal Code* for driving impaired, driving with a blood alcohol concentration (BAC) over .08 per cent and refusing to provide a breath or blood sample or refusing to comply with police instructions to perform tests.

The Government of Manitoba has jurisdiction to impose administrative sanctions for impaired driving under the HTA. Many HTA impaired driving offences are triggered by *Criminal Code* convictions. All sanctions for impaired drivers under the HTA can be applied to drivers impaired by alcohol or drugs.

To support the enforcement of alcohol and drug impaired driving offences, police are authorized to:

- use breath screening devices to detect BAC levels when there is reason to suspect that a driver has consumed alcohol,
- conduct a physical coordination test (PCT), require breath and/or blood samples when there is reasonable grounds to believe that drivers are under the influence of alcohol or drugs, and
- use Drug Recognition Evaluation (DRE) tests, as part of the Drug Evaluation and Classification (DEC) program which uses specially trained and certified police Drug Recognition Evaluators (DREs) to assess drivers for drug impairment.

The HTA prescribes a series of sanctions for impaired driving, including immediate roadside short-term administrative licence suspensions (ALS), immediate vehicle impoundment, longer term ALS and vehicle forfeiture upon conviction of impaired driving under the *Criminal Code* (post-conviction sanctions), and additional requirements to use an ignition interlock device, once the licence suspension period has been served. All of these sanctions vary in length, with progressively longer licence suspension periods for additional offences occurring within a ten year period.<sup>1</sup> The table below provides an overview of legislative sanctions for impaired driving under provincial jurisdiction.

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<sup>1</sup> In Manitoba, persons with suspended driver's licences may apply to the Licence Suspension Appeal Board (LSAB) for a restricted licence, on the grounds that they are experiencing hardship.

Overview of Legislative Sanctions for Impaired Driving in Manitoba under the HTA		
Type of Licence Suspension	Reason for Licence Suspension	Length of Suspension / Penalties
<b>Roadside Sanctions – Short-Term Tiered Administrative Licence Suspensions</b>		
First time violation	Persons who operate a vehicle with a BAC of .05% to .08% or are found to be unsafe to drive after a PCT or DRE	24 hours* *Bill 34 would make it 3 days or 7 days if there is a child passenger.
Second time violation within 10 years		15 days
Third time violation within 10 years		30 days
Fourth or subsequent violations within 10 years		60 days
Immediate 3 month licence suspension and vehicle impoundment	Persons who operate a vehicle with a BAC over .08% or refuse to comply with police instructions to provide a blood or breath sample or perform a PCT or DRE test	3 months Vehicle is impounded for at least 30 days
<b>Post-Conviction Sanctions – Tiered Administrative Licence Suspensions</b>		
First offence within 10 years	Manitobans who are charged and convicted under the <i>Criminal Code</i> of impaired driving over .08%	1 year
Second offence within 10 years		5 year
Third offence within 10 years		10 years
Four or more offences within 10 years		Lifetime
First offence within 10 years	Manitobans charged and convicted under the <i>Criminal Code</i> with refusal to provide a blood or breath sample or comply with police instructions to perform a PCT or DRE test	2 years
Second offence within 10 years		7 years Repeat offenders could have their vehicle forfeited to the Crown
Third offence within 10 years		10 years Repeat offenders could have their vehicle forfeited to the Crown

Type of Licence Suspension	Reason for Licence Suspension	Length of Suspension / Penalties
Fourth or subsequent offences within 10 years		Lifetime Repeat offenders could have their vehicles forfeited to the Crown
First offence within 10 years	Manitobans charged and convicted of more serious offences under the <i>Criminal Code</i> causing bodily harm or death	5 years Offenders could have their vehicles forfeited to the Crown
Second offence within 10 years		10 years Offenders could have their vehicles forfeited to the Crown
Third or subsequent offences within 10 years		Lifetime Offenders could have their vehicles forfeited to the Crown
<b>Post-Suspension Sanctions – Mandatory Ignition Interlock</b>		
First or second offence	Manitobans who had their driver's licence suspended due to an impaired driving conviction under the <i>Criminal Code</i>	1 year
Third offence		3 years Further remedial action will be taken for failed tests or tampering with interlock ignition device including extension of mandatory ignition interlock
Fourth offence		Lifetime

Graduated Driver Licensing Program (GDL) in Manitoba

Under the GDL, a zero BAC is mandated for the first five years of driving. Novice drivers who violate the zero BAC restriction may be subject to any of the following sanctions:

- immediate minimum 24 hour roadside suspension,
- attend a Show Cause Hearing with Driver improvement and Control to determine further sanctions, and/or
- driver's licence reinstatement charge of \$50.

Addictions Foundation of Manitoba (AFM) Assessment and Treatment Programs

In Manitoba, persons are required to attend a mandatory impaired driver's assessment at their own expense (including an examination of driving records) if they have any of the following:

- a three-month suspension,
- two or more tiered ALS,
- a tiered ALS and one or more prior three month suspensions in a 10 year period, or
- a conditional driver's licence is granted from the LSAB on the grounds of hardship.

The AFM assessment identifies the most appropriate intervention and treatment program for individuals. The cost of the assessment is \$625. Clients can be referred to a one day educational workshop, a risk reduction program or a community based or residential treatment program.

#### Drug Impaired Driving

Although HTA offences can be applied to drivers impaired by alcohol and drugs, Canada's knowledge about the effectiveness of administrative laws and emerging best practices on reducing drug impaired driving is still in its infancy. Drug impaired driving is more complex than alcohol impaired driving as there are many different psychoactive drugs that could impact driving (ex: illicit, prescription and over the counter). Further research is needed on the magnitude and nature of the drugs and driving problem to strengthen the legislative and enforcement framework, especially if per se legal limits for drug use while driving are to be established in legislation.

To ensure objective evaluation at the roadside by police, there may be a need for additional drug tests such as point-of-contact immunoassay tests of oral fluid, and more special training for DREs and police on drug detection. The relationship between drug use and collision involvement needs to be more clearly defined and established. In addition, provincial road side surveys and public opinion surveys could provide a better understanding of Manitoban's experience, perception and knowledge of drug-impaired driving.

#### Safer Roads Act

Manitoba continues to review and amend impaired driving legislation to reflect and align with best practices elsewhere. In November 2015, Manitoba passed the *Safer Roads Act* (SRA). When the SRA comes into force, it will amend the HTA and the *Drivers and Vehicles Act* (DVA) to increase immediate road side suspensions for first-time low-blood BAC (.05 to .08) offences from 24 hours to three days. The first-time suspension will increase to seven days if a person under the age of 16 is in the vehicle at the time of the offence. Participation in the Ignition Interlock Program will be mandatory for all convicted impaired drivers and be effective on the date of driver's licence reinstatement. This eliminates the option for impaired drivers to avoid an ignition interlock by delaying licensing once the suspension has been served. These amendments address two major concerns outlined in the Mothers Against Drunk Driving (MADD) Canada June 2015 report card for Manitoba.

The SRA also amends the DVA to require police to notify the Registrar of Motor Vehicles (Registrar) when a driver has been charged with a serious driver offence and empowers the Registrar to rapidly invoke driver improvement actions, such as ALS.

### Best Practices and Strategies to Combat Impaired Driving

Manitoba's current road safety strategies align well with the main components of nationally and internationally recognized best practices including those published by MADD, the Canadian Council of Motor Transport Administrators, the Global Road Safety Partnership, headed by the World Health Organization and a working group headed by the American Association of Motor Vehicle Administrators. For further information, please see Appendix A.

### **Impaired Driving Consultation Guide – Questions and Areas for Future Consideration**

As a framework for discussion, the focus session on impaired driving is separated into four main themes: (1) reduce alcohol impaired driving, (2) reduce drug impaired driving, (3) expand impaired driving assessment and intervention and (4) expand vehicle-based sanctions.

#### **Theme1: Reduce Alcohol Impaired Driving**

This theme requests your consideration on random breath testing, increasing sanctions for alcohol impaired drivers and driver alcohol detection systems in vehicles.

#### Questions

1. Should Manitoba consider implementing BC's immediate Roadside Prohibition (IRP) program, in which police can use immediate roadside sanctions for impaired drivers rather than pursuing criminal charges?
2. Is there support to allow police to conduct random breath testing?
3. Should Manitoba consider changing the number of prior convictions required before an impaired driver is eligible for a lifetime license suspension or increase the length of the other suspensions for repeat offenders?
4. Could greater police enforcement measures be implemented where police roadblocks are set up to detect both alcohol and drug impaired drivers (ex: Reduced Impaired Driving Everywhere (RIDE) type programs)?
5. Should vehicle impoundment be considered as a sanction for driving with BAC between .05 and .08 per cent or failing a PCT?
6. Should Manitoba consider the Alberta's approach of suspending persons charged with impaired driving until their charges are dealt with in criminal court?
7. Should Manitoba engage in advocacy with vehicle manufacturers to encourage more driver alcohol detection safety systems in vehicles?
8. What other countermeasures could be considered for alcohol impaired driving?

### Random Breath Testing

- According to current laws, police must rely on behavioural clues and observations and the concern is that drivers who display no obvious signs of impairment can slip through undetected.
- A large body of research from countries that have adopted random breath testing policies such as Australia, New Zealand and the European Union suggest that it reduces impaired driving collisions.
- Random breath testing is not random stopping as police already have legal authority to stop vehicles to check for impaired drivers.
- Random breath testing proposals that have been raised in Canada suggest that it should only be available where a police officer has a roadside breath screening device at the scene or there has been a collision resulting in serious injury or death.
- There may be concerns among the public that random breath testing without just cause breaches human rights, but MADD has presented evidence from legal scholars, arguing that screening would withstand Charter of Rights challenges on the grounds of protecting public safety.
- Random breath testing does not result directly in charges, but is just a screening test that can trigger a demand for a breathalyser test, which requires that the driver be provided with the right to consult legal counsel.

### Increasing Sanctions for Alcohol Impaired Drivers

- Consider that repeat offenders are dangerous drivers, having established clear patterns that pose serious road safety risks to the general population.
- Consider fairness to families, friends and colleagues who have lost loved ones, along with societal and health care costs resulting from permitting repeat offenders to drive despite three or more impaired driving offences causing serious bodily harm or death.
- Consider that BC's IRP Program increases the amount of time that police can be on the road to detect impaired drivers and has resulted in significant decreases in the number of impaired driving related fatalities.
- Consider that suspending persons charged with impaired driving until there is a court decision in their case means that drivers may be suspended for longer than the current suspension for a conviction and the suspension lengths may vary depending on when the accused impaired driver can get a trial date.
- Consider that Manitoba already has some of the highest sanctions for impaired driving in Canada.

#### Driver Alcohol Detection Systems in Vehicles

- Consider the need for Manitoba to increase advocacy efforts with vehicle manufacturers, in collaboration with Canada and other provincial/territorial governments, to include safety measures such as passive interlock devices or other bio-detection technologies (ex: the driver alcohol detection system for safety promoted by the National Highway Safety Traffic Administration).
- Consider that these vehicle technologies could assist drivers in monitoring their own BAC levels and ultimately, provide drivers with tools to make better road safety decisions prior to driving.

### **Theme 2: Reduce Drug Impaired Driving**

This theme requests your consideration of zero tolerance for GDL, future changes to administrative laws, enhancing enforcement in the long term through DRE training, implementing more objective drug tests and enhancing knowledge through identifying research priorities for drug impaired driving.

#### Questions

1. Could Manitoba strengthen GDL laws by implementing zero tolerance for the presence of illicit psychoactive drugs?
2. Could Manitoba consider authorizing police to use oral fluid testing to detect drivers who are under the influence of drugs in order to impose roadside sanctions?
3. Could a model (or models) of administrative legislation/regulation for drugs and driving be developed by Manitoba?
4. Should more be done to ensure that more front line police officers and DREs are being trained on the most advanced drug detection techniques in Manitoba?
5. What priority research areas could be identified to provide a stronger legislative and enforcement framework to reduce drug impaired driving over the long-term in Manitoba?

#### Areas for Future Consideration

##### Zero Tolerance for GDL

- Consider creating a prohibition on the presence of illicit psychoactive drugs (affecting mind or mental processes) for all new and young drivers that reflects the current zero BAC requirements in the GDL program.

##### Future Changes to Administrative Laws

- There is a need to evaluate administrative laws addressing drug impaired driving to determine their effectiveness in reducing such activity.

- In the longer term, federal, provincial/territorial governments could work toward establishing per se limits for drugs and driving to be considered for adoption within the *Criminal Code* and provincial/territorial transportation legislation, provided research leads to appropriate per se limits.

#### Future Development of More Accurate Drug Tests

- There is a lack of standards for bodily fluid testing for drugs and different drugs have different effects on driving performance.
- The development of more accurate point-off-contact immunoassay tests of oral fluid for the detection of specific drugs could provide objective evaluation at the roadside by police officers.

#### Implementing more DRE Training

- Consider the need for more special training for DREs and front line police officers.
- Consider the feasibility of Manitoba and Manitoba enforcement agencies undertaking discussions with the Canadian Association of Chiefs of Police regarding how more front line police officers and DREs could be trained and their skills maintained and upgraded in Manitoba.

#### Increase Knowledge of Drug Impaired Driving by Identifying Research Priorities

- There is limited data available in Manitoba that can provide a clear picture of drug use and driving. If future federal legislation is introduced to decriminalize or legalize the recreational use of marijuana, what are the implications for road safety? Roadside surveys on the prevalence of drugs and driving have been completed in Ontario and British Columbia. Similar data collection in Manitoba would enable greater understanding of the current issue and the implications of a change in legislation.

### **Theme 3: Expand Impaired Driving Assessment and Intervention**

#### Questions

1. What can be done to better understand the prevalence of drug use among drivers, specifically cannabis use by drivers?
2. Are there any new measures or changes in the rehabilitation and treatment for impaired drivers that could be considered by Manitoba?
3. Drug impaired driving is complex. What should the immediate priority be (recreational use of cannabis and driving, prescription medications and driving, other illicit drug use and driving, etc)?



Areas for Future Consideration

- Consider the implications of potential changes to the law, at the federal level, regarding recreational cannabis use.
- Consider the effectiveness of requiring more drivers subject to short-term and post-conviction ALS to be required to undertake mandatory assessment and treatment.
- Consider the merits of working with alcohol and drug addiction and transportation policy agencies (ex: AFM, Canadian Centre on Substance Abuse and Canadian Council of Motor Transport Administrators, etc) to develop best practices for the assessment and treatment of drivers convicted of alcohol and drug impaired driving.

**Theme 4: Vehicle-Based Sanctions for Impaired Drivers**Questions

1. Could Manitoba consider additional vehicle-based sanctions (ex: impoundment) for impaired drivers?
2. If yes, in what circumstances?

Future Areas for Consideration

- Consider short-term administrative vehicle impoundments for situations where the driver fails a PCT, is driving with a BAC of .05 to .08 per cent or is subject to general impaired driving charges.
- Consider short-term administrative vehicle impoundments for situations where police have reasonable grounds to suspect the driver is impaired by drugs.
- These impoundments would complement existing ALS and would work to immediately remove impaired drivers, and their vehicles from the road. This could reduce the risk that these individuals would drive (their own vehicles at least) during the ALS period.

Appendix A: Best Practices for Combating Impaired Driving					
Strategy	Road Safety Strategy 2015	Toward Zero Deaths: A National Strategy on Highway Safety (US)	MADD	World Health Organization	MPI/MB
High Visibility Checkpoints		✓	✓	✓	✓
Joint Police Services Operations	✓	✓			✓
Random Breath Testing	✓		✓	✓	
Ignition Interlock Program	✓	✓	✓	✓	✓
Reduced Suspensions with Participation in Interlock Programs	✓		✓		
Appropriate Penalties and DUI Courts		✓		✓	✓
Develop Detection and Enforcement Strategies for Drugged Driving		✓			✓
Immediate Administrative License Revocation	✓		✓		✓
Target Lower BAC Drivers (less than .05)	✓		✓		
Child Endangerment Law	✓		✓		✓
BAC Restrictions for Novice Drivers	✓		✓	✓	✓
911 Program to Report Impaired Drivers	✓		✓		✓
Public Messaging, Especially to Young Drivers	✓	✓	✓	✓	✓
Mandatory Assessment/Treatment Program for all Impaired Drivers	✓				✓
Assessment/treatment for Repeat Offenders	✓			✓	✓
Vehicle Impoundment	✓				✓
Selective Traffic Enforcement Programs	✓			✓	✓

Strategy	Road Safety Strategy 2015	Toward Zero Deaths: A National Strategy on Highway Safety (US)	MADD	World Health Organization	MPI/MB
No-Refusal Laws			✓	✓	✓
Designated Driver and Ride Service Programs				✓	✓
Set BAC Limits	✓		✓	✓	✓
Responsible Alcohol Server Programs & Coordination with Alcohol-Serving Establishments		✓		✓	✓
Zero BAC for Employees/Commercial Drivers				✓	
Improve Alcohol and Drug Detection Technology		✓		✓	



**Manitoba  
Public Insurance**



# **PROVINCIAL ROAD SAFETY COMMITTEE**

**DISTRACTED DRIVING  
FOCUS SESSION**

**CONSULTATION GUIDE**

**DECEMBER 3, 2015**

**Introduction**

The Provincial Road Safety Committee values your input at the December 3, 2015 focus session on legislative countermeasures against distracted driving. While Manitoba is a leader among provinces in addressing this issue, it continues to present a serious road safety risk. In 2014 alone, distracted driving was the lead contributing factor of serious injuries and fatalities in Manitoba.

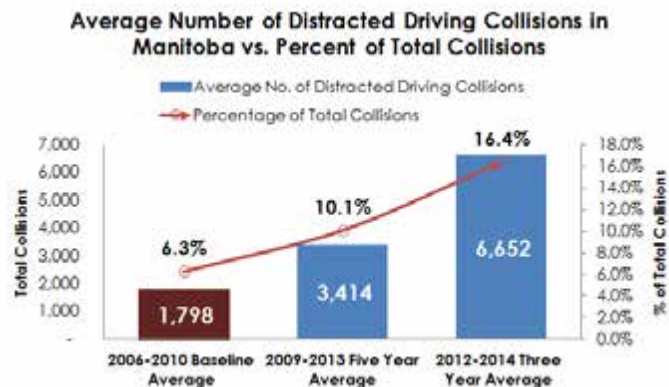
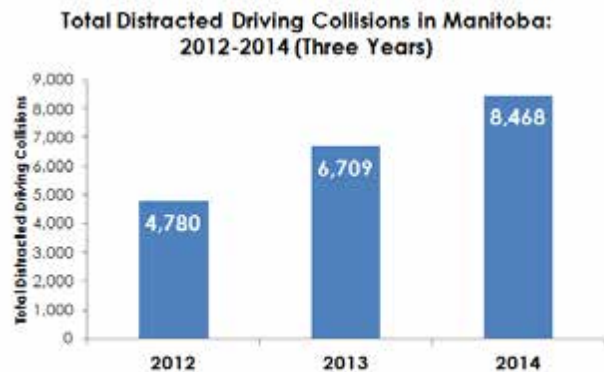
The Government of Manitoba established the Provincial Road Safety Committee to guide a more strategic and holistic approach to ensuring that the principles of road safety are integrated into all aspects of transportation policy in Manitoba. A key deliverable will be a comprehensive Road Safety Plan for Manitoba that will establish a framework through which road safety measures may be pursued.

This focus session is intended to engage representatives from key stakeholder groups to examine options to strengthen legislative countermeasures to stop distracted driving. The purpose of this discussion paper is to provide background information and topics for consideration to guide stakeholder engagement and discussion. The outcomes from this focus session will help inform the development of Manitoba's Road Safety Plan.

**A Dangerous Emerging Issue**

Distracted driving is any activity that diverts a driver's attention from the road. The distraction reduces awareness, impedes decision-making and leads to an increased risk of driver error. There are three main types of distraction: (1) visual, whereby a driver takes their eyes off the road, (2) manual, when a driver takes their hands off the wheel, and (3) cognitive, when a driver's mind is not on the driving task.

Distractions such as talking and texting on electronic communication devices (ECD), eating, drinking, grooming and other driver involvements have been shown to decrease driving performance and significantly increase crash risk. The rise in ECD ownership, the development of new "in-vehicle"



communication technologies (ex: Siri, talk-to-text technology) and the continued presence of multiple other forms of distraction suggests this problem will persist and likely escalate in the future.

**Current Scope of Distracted Driving in Manitoba**

In 2013 and 2014, distracted driving was linked to more total vehicle collisions in Manitoba than any other recorded factor. In the last three years, distracted driving has surpassed impaired driving and speed as the leading contributor in collisions where people were killed or seriously injured.

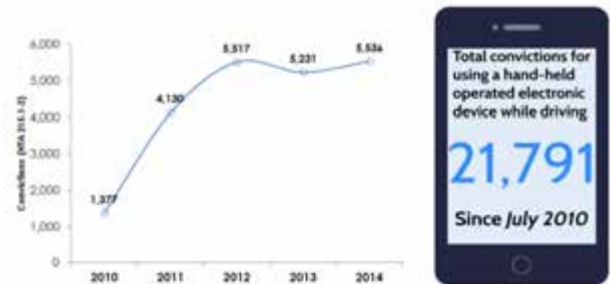
**Distracted Driving Fatalities in Manitoba: 2009-2013 Average**



If someone on a Manitoba roadway dies or is seriously injured there is a high probability that distraction played a role. These collisions are similar to impaired driving in the sense that vast majority of them are preventable.

In 2014, 5,536 people were convicted of distracted driving in Manitoba. In 2013 the numbers were slightly better, with 5,231 drivers caught phoning or texting while driving.

**Convictions to date for HTA s. 215.1-2 Using a hand-held operated electronic device while driving**



**Manitoba’s Existing Law**

In July 2010, amendments to the Highway Traffic Act (HTA) came into force to prohibit the use of a hand-operated electronic device (HOED) while driving. A HOED includes any electronic device that is either (1) normally held in the user’s hand during use, or (2) requires the use of the user’s hand to operate the device’s functions, and (1) includes a telephone function, or (2) is capable of sending or receiving e-mail or other text-based messages. “Use” includes holding a HOED, operating any of its functions, communicating on the device, and looking at its displays.

Use of an HOED’s telephone function is permitted while driving, provided the device is used in a hands-free manner whereby only one touch is required to initiate, receive, or end a call. The HOED must also be secured to the interior of the vehicle, or placed in a holder that is secured in the vehicle, and be within easy reach of the driver. A driver

may also use a non-communication function of a HOED in a hands-free manner (ex: play music).

Manitoba's prohibition includes exemptions for two-way radios (ex: ham radios) and mobile data terminals that are not hand-held and used for dispatch or other business purposes. The HTA authorizes government to make regulations prescribing additional electronic devices as HOEDs, and to expand the definition of "use" by prescribing additional actions in relation to a HOED that are prohibited while driving.

**Laws in Other Jurisdictions**

Below is an overview of distracted driving laws in other Canadian jurisdictions.

Province/Territory	Legislation Date	Legislation
<b>British Columbia</b>	January, 2010	Prohibits 'hand-operated electronic devices' that 'include a telephone function, or are capable of transmitting or receiving email or other text-based messages. Also bans hands-free devices for novice drivers in the Graduated License Program.
<b>Alberta</b>	September, 2011	Prohibits hand-held phones and other communication devices, operating display screens (tv, computer, etc) visible to the driver and operating GPS units (must be mounted and programmed before driving). Also prohibits reading print material, writing or sketching, and personal grooming.
<b>Saskatchewan</b>	January, 2010	Prohibits 'hand-held electronic communications equipment' from being used to make phone calls, text, talk, email, access the internet, or any other prescribed purpose. Ban also applies to hands-free devices for new drivers. Also bans TV and computer screens within view of driver unless they are used solely to assist the driver.
<b>Manitoba</b>	July, 2010	Prohibits 'hand-operated electronic devices' that 'include a telephone function, or are capable of transmitting or receiving email or other text-based messages'. Television sets are also not permitted to be in view of driver.
<b>Ontario</b>	October, 2009	Prohibits viewing screens (TV, computer, etc), and hand-held entertainment devices (not just communication devices).

Province/Territory	Legislation Date	Legislation
<b>Quebec</b>	April, 2008	Prohibits driving while using (including simply holding) a 'hand-held device that includes a telephone function'. Also prohibits driving with a television set or display screen placed so that the broadcast image is directly or indirectly visible to the driver.
<b>New Brunswick</b>	June, 2011	Prohibits driving while holding or using any 'hand-operated electronic devices', which includes cell phones, two-way radios, GPS devices, portable entertainment devices, and any other devices that have a telephone function or are able to transmit email or other text-based messages. Also prohibits display screens that are visible to the driver if they are not used in the operation of the vehicle.
<b>Nova Scotia</b>	April, 2008	Prohibits using a hand-held cell phone or text messaging on any communications device while operating a vehicle on a highway.
<b>Prince Edward Island</b>	January, 2010	Prohibits holding or using a wireless communication device that is capable of receiving or transmitting telephone communications, electronic data, email, or text messages.
<b>Newfoundland</b>	April, 2013	Prohibits driving while holding, or using a hand-held wireless communication device or other prescribed device that is capable of receiving or transmitting telephone communications, electronic data, email or text messages.
<b>Northwest Territories</b>	January, 2012	Prohibits use of hand-held portable electronic devices, which includes cell phones, devices used for sending and receiving data, playing audio or video recordings, and handheld global positioning systems.
<b>Yukon</b>	April, 2011	Prohibits using a cell phone other device that includes a telephone function or a device that is capable of transmitting or receiving electronic mail or other text-based messages. Also applies to hand-held devices for drivers in the GDL program.
<b>Nunavut</b>	N/A	NA



**Sanctions**

Manitoba's total fine for using an HOED while driving is \$200. The fine has not increased since the prohibition came into force in July, 2010. However, under the Manitoba Public Insurance Corporation Act (Driver Safety Rating Regulation), a driver convicted of using an HOED while driving falls five levels on the Driver Safety Rating (DSR) Scale (effective July 1, 2015). A driver with a poor DSR pays more for annual licencing and vehicle insurance than a driver with a good DSR. The ability to surcharge drivers through insurance premium on their driver's licence is unique in Manitoba. It is important to note that levels on the DSR Scale are not equivalent to demerits in other jurisdictions.

A drop of five levels on the DSR can have a significant impact on the cost of a driver's licence and entitlement to vehicle insurance discounts over the five years it takes to return to a pre-conviction placement. Financial sanctions will range from about \$300 for the very best drivers to \$3,000 or more for drivers with already poor driving records. Manitoba Public Insurance's Driver Safety Rating system is designed to encourage safe driving. Motorists who drive safely move up the scale and receive larger discounts on their driver's licence and vehicle insurance premiums. High-risk drivers, including those who are convicted of talking or texting while driving, move down the scale, which increases the cost of their driver's licence and affects their entitlement to vehicle insurance discounts.

Province/Territory	Fines	Demerits	Effect Date
Prince Edward Island	\$500 - \$1200	5	Summer 2015
Ontario	\$300 - \$1000	3	September 2015
Nova Scotia	\$233.95 first offence	4	February 2015
	\$348.95 second offence		
	\$578.95 subsequent offences		
Newfoundland and Labrador	\$100 - \$400 currently (\$45 - \$180 originally)	4	April 2003
Northwest Territories	\$322	3	January 2012
Saskatchewan	\$280	4	June 2014
Yukon	\$250	3	April 2011
Alberta	\$287	3	2015 (still in progress)
<b>Manitoba</b>	<b>\$200</b>	<b>5 (see above)</b>	<b>July 2015</b>
New Brunswick	\$172.50	3	June 2011
British Columbia	\$167	3	February 2010
Quebec	\$115 - \$145	4	April 2015
Nunavut	Nothing at this time		

Other jurisdictions, recognizing the significant risk posed by distracted driving, are also acting. In September 2015, Ontario increased its tiered fines for using a hand-held entertainment device while driving from \$60 - \$500, to \$300 – \$1000. In June 2014, Saskatchewan made regulatory amendments authorizing vehicle seizure and impoundment for drivers convicted of using electronic communication equipment while driving twice in the previous 12 month period. Below is an overview of the fines and demerit points assessed for distracted driving in all Canadian jurisdictions.

### **Distracted Driving Consultation Guide – Questions and Areas for Future Consideration**

As a framework for discussion, the focus session on distracted driving has four main themes: (1) expand the definition of HOED, (2) expand the scope of prohibited distracting activities while driving, (3) increase fines and/or apply vehicle-based sanctions for distracted driving, and (4) create zero tolerance laws for specific target groups.

#### **Theme 1: Expand HOED Definition**

This theme requests your consideration on changes to the definition of HOED.

##### Questions

1. Is there merit in including additional types of HOEDs in the prohibition (ex: GPS, gaming devices)?
2. Is there a need to address emerging technologies in definition of HOED (ex: smartwatch)?

##### Areas for Future Consideration

- Some other jurisdictions (ex: Alberta, New Brunswick) prohibit the use of GPS while driving unless it is mounted and programmed before driving. Other jurisdictions (ex: New Brunswick) prohibit the use of two-way radios while driving.
- Manitoba's current law does not capture the use of a smartwatch while driving. This is because a smartwatch is not independently capable of being used as a telephone or text-messaging as per the definition of HOED.

#### **Theme 2: Prohibit Additional Driver Distractions**

This theme requests your consideration of changes to include additional activities that distract a driver's attention.

##### Questions

1. Is there merit to expanding the scope of activities prohibited while driving in Manitoba (ex: grooming, eating, reading, writing, etc.)?
2. What specific distracting activities could be targeted and successfully enforced?

### Areas for Future Consideration

- Consider Alberta's approach whereby the law prescribes a number of prohibited activities (ex: reading, grooming, etc.), in addition to electronic devices.

### **Theme 3: Increase Penalties for Distracted Driving**

This theme requests your consideration on increasing the fine, demerit points, and possibly other sanctions for distracted driving.

### Questions

1. Do increased fines for using prohibited devices while driving deter this behaviour?
2. Should there be tiered fines for distracted driving, ex: \$200 for the first offence, \$300 for the second offence, etc. within a prescribed time period, ex: 10 years?
3. Should Manitoba consider vehicle seizure and impoundment as a sanction for using a HOED while driving?

### Areas for Future Consideration

- Consider increasing fines for people convicted of distracted driving related offences to align more closely with penalties in other Canadian jurisdictions (see chart below for comparisons).
- Consider Saskatchewan's law that allows vehicle impounded for drivers convicted of using a prohibited device while driving twice in a 12 month period.

### **Theme 4: Zero Tolerance for Specific Target Groups**

This theme requests your consideration of prohibiting both hand-held and hands-free HOED for specific target groups.

### Questions

1. Could Manitoba strengthen Graduated Driver Licencing (GDL) laws by implementing zero tolerance for both hand-held and hands-free use of ECDs while driving for novice drivers?
2. Are there other groups that could be targeted to enhance safety for all road users (ex: prohibit the use of both hand-held and hands-free HOEDs for repeat offenders)?

### Areas for Future Consideration

- British Columbia and Saskatchewan prohibit novice/new drivers from using electronic devices, even in a hands-free manner.

- Consider a zero tolerance policy on use of both hand-held and hands-free HOEDs for all drivers enrolled in the GDL program similar to that of the zero BAC policy for alcohol to strengthen measures to address distracted driving among young drivers

**PUB (MPI) 1-56**

<b>Volume:</b>	<b>I LF.3</b>	<b>Page No.:</b>	<b>21</b>
<b>Topic:</b>	<b>Road Safety and Loss Prevention</b>		
<b>Sub Topic:</b>	<b>Provincial Road Safety Committee</b>		
<b>Issue:</b>	<b>Outcome of Distracted Driving and Impaired Driving Summit</b>		

**Preamble:** The Corporation states that the Summit established the need for data on the prevalence of drug use by drivers, in order to establish a benchmark prior to the anticipated federal legislative change legalizing recreational use of marijuana. In direct response, the Corporation is planning a drug and alcohol roadside survey for the fall of 2016.

**Question:**

Please provide:

- a) A copy of the survey if available; if not, please advise as to the specific information the Corporation intends to obtain from the survey;
- b) The expected timeframe for the survey period;
- c) The targeted locations of the survey; and
- d) The targeted number of survey respondents.

**Rationale for Question:**

Road Safety and Loss Prevention costs are incurred with a view to reducing collisions, and in turn claims costs, and have a dual impact upon Basic Rates; as both expenditures and a potential savings mechanism. The Board must be provided with sufficient information relative to those initiatives to enable the Board to consider necessity and prudence of the expenditures and potential savings.

**RESPONSE:**

- a) The survey/questionnaire is currently under development.

The survey will ask drivers about their current trip, their self-reported alcohol and drug usage rates, their opinions and attitudes towards alcohol and drug usage while driving, and their opinions on the likelihood of drivers who have used drugs or alcohol being stopped by police.

The roadside questionnaire and interview concludes with the driver voluntarily providing a breath sample to test for presence of alcohol and/or an oral fluid sample to test for presence of drugs, following *A Roadside Survey Protocol for Determining the Prevalence of Alcohol and Drug Use by Drivers*, developed by Transport Canada for the Canadian Council of Motor Transport Administrators.

All survey information collected is confidential and anonymous.

- b) The survey is planned for September of 2016.
- c) The survey will include Manitoba drivers present in Winnipeg, Brandon, Steinbach, Portage la Prairie, and Thompson.
- d) The targeted number of survey completes is 1,200, which is sufficient to produce a margin of error of approximately plus or minus 2.8 per cent, 19 times out of 20.

**PUB (MPI) 1-57**

<b>Volume:</b>	<b>I LP.4.13.1</b>	<b>Page No.:</b>	<b>58</b>
<b>Topic:</b>	<b>Road Safety and Loss Prevention</b>		
<b>Sub Topic:</b>	<b>Fatal Collisions and Fatalities</b>		
<b>Issue:</b>	<b>Statistics</b>		

**Preamble:** The Corporation states that 2014 was a year of record lows for both fatal collisions and fatalities, and preliminary data suggest an increase in fatalities in 2015.

**Question:**

- a) Please advise as to any information that the Corporation has regarding the factors that contributed to the record-low number of fatalities and fatal collisions in 2014.
- b) Please advise as to any information that the Corporation has to explain the suggested increase in fatalities in 2015.

**Rationale for Question:**

To understand the factors influencing recent collision rates and in turn, claims costs.

**RESPONSE:**

- a) As has been previously stated, it is not possible to connect specific factors or initiatives to overall reductions in fatal collisions and fatalities. Generally however, improvements in road safety over time both in Manitoba and in Canada overall can be attributed to the following factors:

- Legislative countermeasures;;
- Advances in vehicle design, construction and vehicle safety technologies;
- Enhanced enforcement of traffic laws;
- Education and awareness;
- Enhanced medical treatment for victims of road crash trauma;

- Changes in driving behaviour
- b) Preliminary analysis of 2015 fatalities suggests that the increase can be attributed primarily to the number of multiple fatality crashes. In 2014, no single crash had more than two people killed; only four had two while the rest had one. In 2015, six multiple fatality crashes occurred, including two with three or more people killed in each.