Memo

To: / Location:	Patrick Green / Winnipeg
From: / Location:	Denise Cheung / Toronto
Date:	May 21, 2021
Subject:	Actuarial Support for Manitoba Public Insurance Corporation (MPIC) – Basic

1. Background

MPIC was incorporated as a Crown Corporation in 1970 under the Automobile Insurance Act. In 1974, the Automobile Insurance Act was revised and became the Manitoba Public Insurance Corporation Act. Under the provisions of this Act, MPIC operates an automobile insurance division and a discounted general insurance division.

On March 1, 1994, the province of Manitoba introduced the Personal Injury Protection Plan (PIPP). This plan eliminated bodily injury tort actions involving Manitoba drivers within Manitoba and increased payments under no-fault accident benefits coverage.

The Automobile Insurance division provides Universal Compulsory Automobile Insurance (Basic Insurance), Special Risk Extension (SRE) Insurance and Extension Insurance coverages. The Basic Insurance package includes third party liability with a $200,000 limit, no-fault accident benefits and all perils coverage with a $500 deductible. In addition, MPIC writes optional coverage, for example increased liability limits and deductible buy-down coverage in competition with private insurers. This optional coverage is known as Extension Insurance. Other vehicle insurance coverages not offered by Basic Insurance or Extension Insurance are provided by Special Risk Extension Insurance (SRE Insurance).

On November 1, 1991, SRE Insurance was transferred from the General Insurance division to the Automobile Insurance division. The remaining portions of the General Insurance division have been in orderly run-off since 1990. All remaining portions of the General Insurance division were transferred to the Automobile Insurance division under SRE in 2004.

This report is limited to Basic Insurance only

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1.1 Objective and Scope

We have been asked to provide actuarial support to the audit engagement team of MPIC as at March 31, 2021 for statutory reporting purposes to the Office of the Superintendent of Financial Institutions (OSFI). The objective of our work is to provide reasonable assurance that the policy liabilities reported by MPIC as at March 31, 2021 are fairly stated. The scope of our work relates to the examinations of the policy liabilities, namely claim liabilities, premium liabilities, and other policy liabilities of the company on both a discounted and undiscounted basis.

Joe Cheng, a Fellow in good standing of the Canadian Institute of Actuaries (CIA), prepared the policy liabilities of the Company. Our examination of the methods, procedures and assumptions used to evaluate the policy liabilities as at March 31, 2021 is based on the draft actuarial report as of March 31, 2021 as well as the final report as of October 31, 2020 for Basic Insurance from Joe Cheng. The actuary's opinion is unqualified.

1.2 Professional Standards

For the purpose of this review, generally accepted actuarial principles and the Standards of the CIA were used to evaluate the policy liabilities calculated by the actuary of the Company, subject to any additional regulatory requirements.

These standards require a *best estimate approach* to the derivation of policy liabilities.

The Standards of Practice of the CIA require that policy liabilities be reported on a discounted value with appropriate provision for adverse deviations. Similarly, the current regulatory requirement is that policy liabilities must be discounted and include provisions for adverse deviations.

2. *Valuation Results*

Policy Liabilities ('000)	Annual Return	Actuary's Estimate
Claim Liabilities		
Direct		2,045,999
Assumed		0
Gross		2,045,999
Ceded		2,173
Other Amounts to recover		0
Other Net Liabilities		0
Net		2,043,826
Premium Liabilities		
Gross Policy Liabilities		459,939
Net Policy Liabilities		467,291
Gross Unearned Premiums		571,607
Net Unearned Premiums		571,607
Premium Deficiency		0
Other Net Liabilities		0
DPAC		37,245
Maximum Allowable DPAC		104,316
Unearned Commissions + Ceded Deferred Premium Taxes + Ceded Deferred Insurance Operations Expenses		

3. *Claim Liabilities*

We reviewed the derivation of the claim liabilities of the company for the year ending March 31, 2021. The report of the actuary answers the requirements of OSFI and the valuation adheres to Accepted Actuarial Practice of the CIA.

We have independently re-performed 7 lines of business. These 7 lines of business (including the associated ULAE reserve) represent approximately 91.3% of the total undiscounted unpaid on a net basis.

We have performed a thorough review of Key Actuarial Indicators for 1 line of business. This line of business was selected based on the potential variability in the IBNR reserves and represents approximately 5.8% of the total undiscounted unpaid on a net basis. The review focused on both the reasonability of the key indicators, as well as consistency with the previous valuation. The findings are attached as an appendix to this memo. We are satisfied the provision for these lines of business is reasonable and appropriate for the company.

The remaining unpaid claim liabilities were not reviewed in detail; however, nothing has come to our attention that would lead us to believe that the IBNR is not reasonable. Specifically, there was no significant variability in the IBNR reserves for these lines of business. The un-reviewed portion represents approximately 2.9% of the total undiscounted unpaid on a net basis.

Based on our review, we are comfortable that the difference between PwC, AA and booked reserves are within the range of reasonable best estimates. According to the PwC Audit Guide, our range of reasonable estimates is between -5% and +10% of PwC's point estimate.

3.1 Internal Loss Adjustment Expense (ILAE)

We have reviewed the derivation of the provision for ILAE associated with the settlement of unpaid losses. The appointed actuary reviewed the past ratios of paid ILAE to paid loss and loss adjustment expenses. The ILAE was derived by applying the paid-to-paid ratio to 50% of total case reserve and 100% of total IBNR. The selected paid to paid ratio of 18.8% for Basic, the same as used in the prior valuation.

We are satisfied the provision is reasonable and appropriate for the Company.

3.2 Discount Rate

We reviewed the actuary's selection of the interest rate used to discount the policy liabilities. The discount rate used is 2.88%, compared to 3.09% in last year's evaluation. For the lines which are inflation indexed, AB Weekly Indemnity and AB Other – Indexed, a rate of 0.86% was used which is an adjusted discounted rate with assumed inflation of 2%. We believe the approach used by the actuary to be reasonable.

We derived a discount rate using the duration and market value weighted yield on the underlying assets. The discount rate that we came up with is 2.93% (net of a 0.07% investment expense reduction). Similarly,

we adjusted the discount rate using the same approach by the actuary for a real adjusted yield of 0.91%. We are satisfied that the actuary's selection of discount rate is reasonable and appropriate for the Company.

3.3 Margins for Adverse Deviations (MFADs)

In Exhibit 7 of the report, the actuary presents the margins for adverse deviations (MfADs) for each line of business. The MFADs used per line of business are listed below:

Line of Business	Claims Development MFAD	Interest MFAD	Reinsurance MFAD
Bodily Injury – Basic	15.00%	0.50%	0.00%
Pre-PIPP	12.50%	0.50%	0.00%
Accident Benefits:			
Weekly Indemnity (2019 & After)	15.00%	0.50%	5.00%
Weekly Indemnity (prior to 2019)	10.00%	0.50%	5.00%
Pre-PIPP	5.00%	0.50%	0.00%
Other (Indexed) (2011 & after)	15.00%	0.50%	5.00%
Other (Indexed) (Prior to 2011)	10.00%	0.50%	5.00%
Other (Non-Indexed)	10.00%	0.50%	0.00%
Pre-PIPP	5.00%	0.50%	0.00%
Collision – Basic	7.50%	0.50%	0.00%
Comprehensive – Basic	7.50%	0.50%	2.50%
Property Damage - Basic	5.00%	0.50%	0.00%

We have reviewed the actuary's selection of interest rate, claims development and reinsurance recovery MFADs and deem them to be reasonable.

3.4 Variability in Estimates

As of March 31, 2021, the Company experienced unfavourable run-off of $0.6 million on a gross basis and $2.3 million on net basis.

Line of Business	Gross Redundancy/(Deficiency) ($000)	Net Redundancy/(Deficiency) ($000)
Bodily Injury	160	160
Property Damage	1,370	1,370
Collision	(7,710)	(7,710)
Comprehensive	(556)	(1,885)
AB – Weekly Indemnity	5,460	14,031
AB – Other (Indexed)	(13,000)	(21,920)
AB – Other (Non-indexed)	13,629	13,629
Total	**(648)**	**(2,325)**

We consider the actuary's resulting redundancies and deficiencies to be reasonable.

3.5 Additional commentary on significant or material changes

Use of October 31, 2020 Report (Basic)

On page 5 of the Basic report, the actuary states the following:

"This letter, opinion, and attached exhibits provide an update to our Appointed Actuary Report as of October 31, 2020 using data as of March 31, 2021 for Manitoba Public Insurance – Universal Compulsory Automobile Insurance. All comments, caveats, limitations, and explanations contained in our October 31, 2020 report continue to apply unless noted in this letter.

This update to our previous report adds five additional months experience. We compared the methodologies and assumptions used in our October 31, 2020 report. For claims liabilities, our discount rate has changed from 2.48% to 2.88% (0.47% to 0.86% for indexed benefits). For premium liabilities, our discount rate has changed from 2.24% to 2.84% (0.24% to 0.82% for indexed benefits). These changes were made to reflect the changes in the portfolio yield from October 31, 2020 to March 31, 2021.

In this valuation, all historical insurance years are restated as periods from April 01, current year to March 31, subsequent year except for the PIPP enhancement part. The ultimate losses for all insurance years are estimated by using the restated triangles. The selected loss development factors are the same as those

selected in October under the restated triangles.

All other previous methodologies and assumptions used to estimate the policy liabilities remain appropriate."

COVID-19

As stated on page 10 of the October Report (Basic), Covid-19 has minor impact on MPIC's policy liabilities in the sense the Company doesn't offer general liability or property-business interruption coverage. On the other hand, Covid-19's secondary impact is a reduction of collision claims due to reduced exposure as a result of the provincial lockdown. For collision coverage, the reduction in frequency was accounted for in the reserve analysis, hence, the AA didn't make any explicit Covid-19 adjustments.

As stated on page 6 of the March Report (Basic), to recognize significant claims reduction due to Covid-19, the AA adjusted the weight applied toward the projected ultimate loss ratio in BF methods from 25% in October to 75% in 2020 for both Accident Benefit - Weekly Indemnity and Other (Indexed). The impact of this change on the net actuarial present value is reduction of $14.1 million on Accident Benefit - Weekly Indemnity, $9.7 million on Accident Benefit - Other (Indexed) and $4.4 million on internal loss adjustment expenses (total impact = $28.3 million). We believe the approach used by the actuary to be reasonable.

MPI also returned a portion of your premiums to its policyholders through rebates to compensate them for the lower than expected claims costs due to COVID-19. The two rebates were issued in May 2020 and November 2020, which totalled approximately $180 million. The rebates were treated as an expense item ("Surplus Distribution") in the profit and loss statement and are expected to be treated in the same way should MPI decide to issue further rebates in the future. Hence, the rebates do not have any impact on the actuarial projections discussed in this memo, including premium liabilities.

3.6 Audit Reliance

We rely on the auditor to provide assurance on the following:

1. Actuarial Database – The reconciliation in Appendix H is appropriate and balances the financial statements of the company.
2. Reinsurance – All amounts owed by reinsurers are valid and collectible, or an appropriate provision for uncollectible amounts exist in the financial statements.

4. Premium Liabilities

We have performed a thorough methodology and assumption review of the AA's premium liabilities. The review focused on both the reasonability of selections and approach used by the AA, as well as consistency with the previous valuation. A completed methodology and assumption review checklist is attached as an appendix to this memo. We are satisfied that the AA's premium liabilities are reasonable and appropriate for the Company.

5. Materiality

We have used the following materiality amounts to conduct our work with respect to the Financial Statements:

- Overall Materiality: $16,000,000
- Performance Materiality: $ 14,400,000
- De Minimis Level: $ 800,000

6. Conclusion

The valuation, as performed by Joe Cheng for Manitoba Public Insurance Corporation as at March 31, 2021, provides reasonable estimates of the policy liabilities of the Company with the proviso that we rely on the auditor to verify the statements presented above.

PricewaterhouseCoopers LLP

Denise Cheung, FCAS FCIA
Actuarial Services

Appendix A - Actuarial Checklist

The actuarial team will ensure the following items from the Appointed Actuary's Report are reviewed and any significant or material changes, if applicable, will be communicated to the audit team in this memo:

- ✓ There were no significant changes to the actuarial database, and the actuary has stated that the data has been reviewed.
- ✓ There were no significant changes to the reserving methodology, except for these points mentioned in the section 3.5.
- ✓ There were no significant changes to the reinsurance structure.
- ✓ The actuary indicated that there are no significant disputes or issues with reinsurers, or that none of the company's reinsurance is considered uncollectible.
- ✓ The entity did not have any financial reinsurance agreements where there is not significant risk transfer between the entity and the reinsurer.
- ✓ The entity does not have any material exposure to environmental or mass tort claims.

Appendix B – Key Indicator Testing and Methodology & Assumption Review

Key Indicator Testing

PIPP Enhancement: Quality of Life Enhancements

Diagnostic	Guidance	Findings	Questions for Client	Client Response
Background	Provide a brief description of the class, including: - A description of the type of business. - Whether there have been any changes to the book in recent years. - A brief summary of methodologies selected for this class.	Combination (Death benefits, change to vehicle policy etc) long-tail line		
Overview of results	Consider: - How premiums move across cohort years to determine whether the business is growing, shrinking or stable. - On which cohort years the majority of the reserves and IBNR lie. This can give an idea of how long tailed the class is and where to focus review work. It is worth looking further into older years with significant IBNR. - Years with particularly high or low ULRs. - Increasing or decreasing ULRs.	Stable, increasing premiums Increasing IBNR for more recent years, as expected ULR is already very low, with highest ULR at 2006 (1.41%) and lowest at year 2013 (0.45%)		
Movement in ultimates	Comment on the ultimate claim releases and deteriorations at an overall level, especially where there have been significant deteriorations or releases. Comment on movement in ultimate claims against the client's Actual Versus Expected analysis.	A decrease in ultimate loss observed in year 2018, and slight increase for more recent years.		
Assess paid:incurred ratios	Consider whether there are any trends in the paid to incurred ratios.	Stable paid to incurred ratios, long-tailed		
Assess paid and incurred development pattern	- Comment on the incurred and paid development	long-tail, very slow development paid and incurred developing as expected		
Assess IBNR:Incurred and IBNR:OS	Comment on IBNR to Incurred / Outstanding ratios.	Large increase in IBNR to Incurred/ Outstanding ratios observed for year 2020.		
Assess Net:Gross ratios	Compare the IBNR net to gross ratios with other key net to gross ratios. For example, we would expect: - IBNR net to gross ratios to be close to incurred net to gross ratios on older cohort years. - IBNR net to gross ratios to be close to the premium net to gross ratios on the more recent cohort years.	N/A		
Assess the reasonableness of the ULR	Comment on ULR from last 5 years	ULR is very low and stable		
Sources of uncertainty	Identify key areas of uncertainty for the class, such as: * changes to the business * changes in the claims handling * uncertainty in the tail	Minimal uncertainty		

Conclusion

The provisions set for the unpaid claims for this line of business is reasonable.

Assumption and Methodology Review Checklist
Manitoba Public Insurance Corporation (Basic)

ULAE	Reasonability of selections/ methodology used (Y-N-N/A)	Consistency with previous years (Y-N-N/A)	Comments
Methodology used (provide details)	Y	Y	Paid-to-paid ratio selected based on traditional and Kittel's method
Paid-to-paid selection	Y	Y	Basic 18.8% Lst Yr: Basic 18.8%
Portion of IBNR considered pure	Y	Y	100%
Portion of expenses to open claim vs. maintain claim	Y	Y	50%
Other adjustments (provide details)			
Other comments			

Discount Rate	Reasonability of selections/ methodology used (Y-N-N/A)	Consistency with previous years (Y-N-N/A)	Comments
Overall approach (provide details)	Y	Y	MV wtd yield on fair value
Portfolio used (total vs. carve-out, breakdown by asset type, cash and receivables included, non-vested included, accrued interest included, etc.)	Y	Y	Govt Bonds, Corporate Bonds, Non-Market Bonds and Floating Rate Note Basic: $2,108M as of Oct 31, 2020
Size of asset portfolio compared to liabilities (premium + claims)	Y	Y	Total Policy Liab as of March 31, 2021 Basic: $2,044M
Investment expense selection	Y	Y	0.07%
Asset default risk (subtracted from discount rate or added to interest rate PFAD)			
Final discount rate selection	Y	N	Basic Non-indexed: 2.88% vs last year 3.09% Basic Non-indexed: 0.86% vs last year 1.07%
Spot check calculations (yield, duration, etc.)			
Other comments			

PFADs	Reasonability of selections/ methodology used (Y-N-N/A)	Consistency with previous years (Y-N-N/A)	Comments
Development PFAD selections	Y	Y	BI 15%, PD 5%, COLL/COMP 7.5%, AB 10%
Interest rate PFAD selections	Y	Y	0.50%
Reinsurance PFAD selections	Y	Y	Liab 5%, Comp 2.5%
Other comments			

Premium Liabilities ***(will need to re-perform if booked DPAC is close to maximum allowable)***	Reasonability of selections/ methodology used (Y-N-N/A)	Consistency with previous years (Y-N-N/A)	Comments
ELR selections	Y	N	Calculated based on past 5 years claim loss ratio, adjusted for Trend/Rate Change. Selected Total Net Undisc LR: Basic: 61.54% vs last year 71.77% Covid-19 has a favorable impact on claim freq for 2020, hence, selected LRs are lower than last year's.
ELR selections compared claim liability ELR and PwC claims re-performance where applicable	N/A	N/A	
ELR sources if not based on company experience			
ELR methodology (on level factors, trends, reform factors, other adjustments)			
Discount factor selections	Y	N	Basic Non-indexed: 2.84% vs last year 0.63% Basic Indexed: 0.82% vs last year 1.07%
Discount factor methodology	Y	N	This year, the assets suppoting prem liab are made of both prepaid prem and the balance in installment prem (receivables): Prepaid Prem - invested in short term investments (low yield with more flexibility) Prem receivable - assumed MPI would invest tha cash resources in the same fashion as the assets for claim liab (higher yield) Hence the discount rate for prem liab is much higher than last year's, since last year there was only prepaid prem that invested in short term investments
Higher development PFADs compared to claims liabilities	Y	Y	Same as Clm Liab
ULAE approach	Y	Y	Same as Clm Liab
Excess reinsurance costs approach	Y	Y	Subtracted from Net UPR
Investment income approach	N/A	N/A	
Policy maintenance expenses approach	Y	N	Basic: 2.53% vs last year 2.81%
Contingent commission approach	N/A	N/A	
Other adjustments (provide details)			
Spot check calculations (discounted ELR, maximum allowable DPAC)			
Other comments	N/A	N/A	