Memo

To: / Location:	Patrick Green / Winnipeg
From: / Location:	Andrea Sherry / Winnipeg
Date:	June 15, 2022
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

1.1 Objective and Scope

We have been asked to provide actuarial support as experts to the audit engagement team of MPIC as at

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March 31, 2022 for statutory reporting purposes. The objective of our work is to provide reasonable assurance that the policy liabilities reported by MPIC as at March 31, 2022 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, 2022 is based on the draft actuarial report as of March 31, 2022 as well as the final report as of October 31, 2021 for Basic Insurance from Joe Cheng. The actuary's opinion is unqualified.

~~We rely on the audit team to ensure that a signed version of the Appointed Actuary's report is received prior to audit sign-off.~~

1.2 Professional Standards

For the purpose of the procedures completed, 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

Claim Liabilities		
Direct		2,103,790
Assumed		0
Gross		2,103,790
Ceded		2,458
Other Amounts to recover		0
Other Net Liabilities		0
Net		2,101,332
Premium Liabilities		
Gross Policy Liabilities		476,959
Net Policy Liabilities		481,109
Gross Unearned Premiums		567,038
Net Unearned Premiums		567,038
Premium Deficiency		0
Other Net Liabilities		0
DPAC		38,758
Maximum Allowable DPAC		85,929
Unearned Commissions + Ceded		
Deferred Premium Taxes + Ceded		
Deferred Insurance Operations Expenses		

3. Claim Liabilities

We completed the following procedures regarding the derivation of the claim liabilities of the company for the year ending March 31, 2022. The report of the actuary answers the valuation adheres to Accepted Actuarial Practice of the CIA.

We have independently re-performed 7 lines of business totaling to 91.7% of the undiscounted unpaid on a net basis. In addition, we rely on the audit team to test the case reserves for all lines of business. The claim liabilities tested (including total case reserves and ULAE reserves) represent approximately 95.9% of the total undiscounted unpaid on a net basis. We have also reviewed the Appointed Actuary's report to ensure reasonability and consistency with the previous valuation. Please refer to Appendix A for the AA review checklist.

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 6.9% 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 Appendix B to this memo. We are satisfied the provision for these lines of business is reasonable and appropriate for the company.

The nature and extent of the procedures detailed above, as performed in accordance with the standards of the Canadian Institute of Actuaries, are sufficient to conclude on the reasonability of the entire Claim Liabilities balance.

Based on the results of our procedures 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 5206.8, our range of reasonable estimates is between -5% and +10% of PwC's point estimate.

3.1 Internal Loss Adjustment Expense (ILAE)

We have reperformed 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 19.0% for Basic, increased from 18.8% in the prior valuation.

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

3.2 Discount Rate

We reperformed the actuary's selection of the interest rate used to discount the policy liabilities.

The discount rate used is 3.54%, compared to 2.88% in last year's evaluation. For the lines which are inflation indexed, AB Weekly Indemnity and AB Other – Indexed, variable rates of 0.23%/(0.63%)/1.11%/1.21%/1.51% were used which is an adjusted discounted rate with assumed variable inflation of 3.30%/4.20%/2.40%/2.30%/2.20% for year 2023/2024/2025/2026/2027+. We believe the approach used by the actuary to be reasonable.

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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 3.75% (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 0.44%/0.00%/1.32%/1.42%/1.72%. 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. There are no changes to the MfAD compared to last year.

3.4 Variability in Estimates

As of March 31, 2022, the Company experienced favourable run-off on a gross basis of $25.1 million and on a net basis of $25.5 million.

In particular, the following lines of business have the following significant redundancy / deficiency:

Line of Business	Gross Redundancy/(Deficiency) ($000)	Net Redundancy/(Deficiency) ($000)
Bodily Injury	1,542	1,542
Property Damage	3,769	3,769
Collision	2,266	2,266
Comprehensive	(373)	(647)
AB – Weekly Indemnity	15,511	15,828
AB – Other (Indexed)	(1,923)	(1,551)
AB – Other (Non-indexed)	4,330	4,330
Total	**25,123**	**25,537**

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, 2021 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, 2021 using data as of March 31, 2022 for Manitoba Public Insurance – Universal Compulsory Automobile Insurance. All comments, caveats, limitations, and explanations contained in our October 31, 2021 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, The discount rate has changed from 3.00% to 3.54% for claims liabilities and 2.91% to 3.26% for premium liabilities. For the claims and premium liabilities of indexed benefits, the discount rates were further adjusted by inflation estimates (flat 2% in October changed to a variable estimate in March). The inflation and discounting rates changes are: 0.23%/(0.63%)/1.11%/1.21%/1.51% with assumed variable inflation of 3.30%/4.20%/2.40%/2.30%/2.20% for year 2023/2024/2025/2026/2027+.

We revised the loss development factors to reflect more recent experience. Specifically for Accident

Benefits-Other Indexed, there was significant development in reported losses during the 7-12 period; the first two LDFs were revised.

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

COVID-19

As stated on page 9 of the October Report (Basic),

"There was a reduction of collisions due to reduced exposure (less cars on the road) as a result of lockdowns. For collision coverage, the reduction in frequency is accounted for in the IBNR selection methodology. The other changes in IBNR selection are: indexed coverages for the current 2 loss years received a 75% weight from the recent loss experience versus 25% for other coverages."

We believe the approach used by the actuary to be reasonable.

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 reconciles to 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. Conclusion

The valuation, as performed by Joe Cheng for Manitoba Public Insurance Corporation as at March 31, 2022, 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.

DocuSigned by:
Andrea Sherry
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Andrea Sherry, FCAS FCIA
Actuarial Services

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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.
- ❏ 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 2007 (1.35%) and lowest at year 2014 (0.40%)		
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 2021.		
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 three most recent observed ratios and the indicated 3-year weighted avg
Paid-to-paid selection	Y	Y	Basic 19.0% 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: $2,088M as of Oct 31, 2021
Size of asset portfolio compared to liabilities (premium + claims)	Y	Y	Total Policy Liab as of March 31, 2022 Basic: $2,582M
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	3.54% for Non-Indexed coverages, variable discount rate of 0.23%/(0.63%)/1.11%/1.21%/1.51% for Indexed coverages for year 2023/2024/2025/2026/2027+. Lst Yr: 2.88% for Non-Indexed coverage, 0.86% for indexed coverage
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-post March 1, 1994 15% (BI-Pre-PIPP = 12.5%), PD 5%, COLL/COMP 7.5%, AB 5%-15%
Interest rate PFAD selections	Y	Y	0.50%
Reinsurance PFAD selections	Y	Y	AB 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: 63.72% vs last year 63.14% Calculation of net Undisc LR excluded covid years.
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: 3.26% vs last year 2.84% Basic Indexed: -0.04%/-0.9%/0.84%/0.94%/1.24% for year 2023/2024/2025/2026/2027+ vs last year 0.82%
Discount factor methodology	Y	N	There is no change to previous methodologies and assumptions used to estimate the policy liabilities: 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)
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	N/A	N/A	
Investment income approach	N/A	N/A	
Policy maintenance expenses approach	Y	N	Basic: 2.73% vs last year 2.83%
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	