

**IN THE MATTER OF:**

**An Application by The Manitoba Public Insurance Corporation to The Public Utilities Board of Manitoba for review and approval of its rate bases and premiums charged with respect to compulsory driver and vehicle insurance effective March 1, 2019.**

---

**AFFIDAVIT OF GLENN BUNSTON**

**SWORN: AUGUST 20, 2018**

---

**MANITOBA PUBLIC INSURANCE**

Legal Services  
702 – 234 Donald Street  
Winnipeg, MB R3C 4A4

(Steve Scarfone/Anthony Lafontaine Guerra)

(Telephone No. 204-985-8770)

(Facsimile No. 204-942-2217)

**IN THE MATTER OF:**            **An Application by The Manitoba Public Insurance Corporation to The Public Utilities Board of Manitoba for review and approval of its rate bases and premiums charged with respect to compulsory driver and vehicle insurance effective March 1, 2019.**

**AFFIDAVIT OF GLENN BUNSTON**

**SWORN: AUGUST 20, 2018**

I, **GLENN BUNSTON**, of the City of Winnipeg, in the Province of Manitoba, Manager of Investments, for the applicant, The Manitoba Public Insurance Corporation ("MPI" or the "Corporation") MAKE OATH AND SAY THAT:

- 1)            I have personal knowledge of the facts and matters hereinafter deposed to by me, except where same is stated to be based upon information and belief, in which case I have stated the source of my information and do verily believe same to be true.
  
- 2)            I am the Manager of Investments with MPI, and have held this position for 12 years. I have 20 years of relevant experience in institutional fund management, and hold a Chartered Financial Analyst designation. I also hold a Chartered Alternative Investment Analyst designation.
  
- 3)            On June 15, 2018, MPI filed its Application for approval by The Public Utilities Board of Manitoba of its rates for service, effective March 1, 2019.
  
- 4)            On or about July 11, 2018, MPI received a number of Information Requests ("IR") from the Consumers' Association of Canada (Manitoba) Inc. ("CAC"), many of which

were investment related and forwarded to my department for review and response. Included among the IRs CAC (MPI) 1-84 and CAC (MPI) 1-85 (the "Subject IRs"), which each asked (specifically CAC(MPI) 1-84(f) and CAC(MPI) 1-85(g)) MPI to conduct further analyses in connection with the Asset Liability Management ("ALM") Study performed by Mercer Canada in late 2017 and early 2018.

5) I am aware and do verily believe that counsel for MPI sought clarification from counsel for the CAC on July 19, 2018 concerning the Subject IRs. More specifically, counsel for MPI confirmed with counsel for the CAC that the Subject IRs seek to have Mercer re-run portions of the ALM Study using different assumptions, variables and risk tolerances (input factors), which MPI was not agreeable to. Attached to my Affidavit and marked as **Exhibit "A"** is a copy of the email exchange between counsel for MPI and the CAC, beginning July 19, 2018 and ending July 30, 2018.

6) The requests made by CAC in the Subject IRs require Mercer to run new "efficient frontiers". The efficient frontier, derived from modern portfolio theory, is a set of investment portfolios that occupy the 'efficient' parts of the risk-return spectrum. Put another way, the efficient frontier is the set of optimal portfolios that offer the highest expected return for a defined level of risk or, conversely, the lowest level of risk for a given level of expected return. Portfolios below the efficient frontier are sub-optimal because they do not provide a maximum expected return on investment for the defined level of risk.

7) The efficient frontier proposed in the ALM Study factored in inflation using Mercer's standard assumption of 2.0% (with a standard deviation of 2.6%). I am not

aware of the existence of an alternative inflation forecast that would refute or call into question the accuracy of the inflation assumption used by Mercer in the ALM Study.

8) Real return bonds (RRBs) are an investment vehicle often used where the expectation is that inflation rates will rise. Given Mercer's low and stable inflation forecast, MPI considered the purchase of RRBs to be sub-optimal and ultimately did not select them for purchase.

9) Notwithstanding its inflationary assumption, Mercer did model inflation and RRBs in its ALM Study. Mercer used a real liability benchmark as a proxy for the liabilities (also known as a Minimum Risk Portfolio), which included the following allocations: 66% to RRBs, 26% to Treasury bills and 8% to short-term Provincial bonds. Based on this liability benchmark an efficient frontier was developed; Mercer then identified several investment portfolio options along the efficient frontier. The only portfolio that provided the interest rate protection desired by MPI and its Board of Directors (i.e. a portfolio with a 100% hedge ratio or 100% protection against interest rate risk) was the Minimum Risk Portfolio identified in the ALM Study.

10) Although the Minimum Risk Portfolio (based upon a real liability benchmark) identified an investment portfolio containing RRBs with the desired 100% hedge ratio, the portfolio had a significantly lower return (1.9%) and a much higher risk (3.0%) than the portfolio ultimately selected by MPI for its Basic Claims Liabilities (3.12% return and 1.32% risk). The difference in return is largely the result of making an allocation to RRBs. That is, the allocation to RRBs would result in MPI having to accept returns of 1.9%. MPI

and its Board of Directors therefore rejected the Minimum Risk Portfolio in favour of a portfolio that provided higher returns at a lower risk.

11) Mercer first provided its analysis to MPI of the available efficient frontier portfolios (based upon the real liability benchmark) in a presentation entitled "Preliminary Efficient Frontier Analysis for Basic Insurance Component" (the "Mercer Presentation"). Attached to my Affidavit and marked as **Exhibit "B"** is copy of Slide 26 from the Mercer Presentation showing the portfolios and the spectrum of risk and return for each, including the portfolio with the requisite 100% hedge ratio that did not generate satisfactory expected returns.

12) At Exhibit "B", the right hand side of the slide details the results of the modelling presented in the table. Five portfolios were generated along the efficient frontier (shown as the curved line), and were compared against the existing MPI portfolio (labelled on the table as "Current"). The five portfolios on the efficient frontier are labelled across the top of the table as follows:

- A. **Real LB:** the Real Liability Benchmark
- B. **Same Return:** a portfolio offering the same return (and less risk) as the "Current" portfolio
- C. **Same Risk:** a portfolio offering the same risk (and more return) as the "Current" Portfolio
- D. **More Risk:** a portfolio offering more risk (and more return) as the "Current" Portfolio
- E. **85% HR:** a portfolio providing 85% Hedge Ratio

13) I have prepared an annotated copy of Slide 26 of the Mercer Presentation in order to provide a better understanding of Exhibit "B" hereto. Attached to my Affidavit and marked as **Exhibit "C"** is an annotated copy of Slide 26 highlighting certain relevant parts:

- a. "Box 1" contains the Hedge Ratios for each portfolio, which show the degree to which each portfolio is protected against interest rate risk. MPI only considered portfolios with a 100% hedge ratio as appropriate for the portfolio supporting Basic Claims Liabilities.
- b. "Box 2", hedge ratios of less than 100% disqualified all portfolios except for the Real Liability Benchmark (A) portfolio.
- c. "Box 3" highlights the absence of MUSH bonds in the Real Liability Benchmark portfolio (A), which disqualified it from consideration given the "Current" portfolio contained 20% allocation to illiquid MUSH bonds. Mush bonds cannot be sold in meaningful quantities and, as a result, any new portfolio must include a significant allocation to these bonds.
- d. "Box 4" shows the return (Expected 10-Year Return) of the Real Liability Benchmark portfolio (A) at 1.9% and the risk (Anticipated Surplus Volatility) at 3.0%. As indicated, MPI also disqualified the Real Liability Benchmark portfolio given the risk and return rates as compared against the portfolio it ultimately selected.

- 14) The Real Liability Benchmark portfolio (A) delivered a third less return at over twice the risk compared to the selected portfolio, which used a nominal liability benchmark (not adjusted for inflation).
- 15) MPI based its decision to use a nominal liability benchmark portfolio on Mercer's inflation forecast, which is supported by historical data, the internal forecasts of the major chartered banks and the Bank of Canada's inflation target. The inflation assumption made by MPI is a best estimate that resulted in the selection of a Basic Claims Liabilities portfolio with higher returns and lower risk than the Minimum Risk Portfolio based on the real liability benchmark.
- 16) The portfolio selected by MPI is identified as "Basic.3" and presented on slide 21 of the ALM Phase 2 Summary Report (GRA Investments Chapter, Appendix 17, Attachment B). The return and risk characteristics are presented in the first and third lines of the table, while the hedge ratio is presented in the ninth line of the table. The composition of "Basic.3" includes a 20% allocation to MUSH bonds, as presented in slide 20 of the same document. Attached to my Affidavit and marked as **Exhibit "D"** are slides 20 and 21 of the ALM Phase 2 Summary Report.
- 17) Based on the deficiencies in the portfolios generated by the Real Liability Benchmark modelling, and the reasonableness of the inflation forecast, MPI decided against further modelling and examination of high inflation scenarios or other portfolios based upon the real liability benchmark.
- 18) I contacted Angelo DiNoto of Mercer to determine the cost of having the Subject IRs answered in the manner proposed by the CAC. Mr. DiNoto informed me that

he estimated it would take Mercer 40+ hours to prepare answers to the Subject IRs at a cost of approximately \$50,000. Attached to my Affidavit and marked as **Exhibit "E"** is an e-mail from Mercer dated August 20, 2018 concerning the time and costs associated with answering the Subject IRs. This is a revised cost estimate from that provided in the initial response to the Subject IRs.

**I MAKE THIS AFFIDAVIT BONA FIDE IN RESPONSE TO THE MOTION TO COMPEL ANSWERS TO INTERROGATORIES AND FOR NO IMPROPER PURPOSE.**

SWORN BEFORE ME at the City of )  
Winnipeg, in the Province of )  
Manitoba, this 20<sup>th</sup> day of August, )  
2018. )  
)  
)  
)  
)  
)  
)

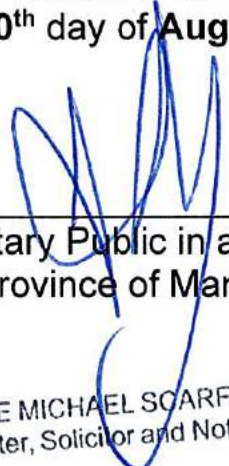
\_\_\_\_\_  
A Notary Public in and for the  
Province of Manitoba



\_\_\_\_\_  
**GLENN BUNSTON**



This is **Exhibit "A"** to the Affidavit  
of **Glenn Bunston** sworn before me  
this **20<sup>th</sup>** day of **August, 2018**.



---

A Notary Public in and for the  
Province of Manitoba.

STEVE MICHAEL SCARFONE  
Barrister, Solicitor and Notary Public

## Scarfone, Steve

---

**From:** Byron Williams <bywil@legalaid.mb.ca>  
**Sent:** Monday, July 30, 2018 8:23 AM  
**To:** Triggs, Mike; Scarfone, Steve  
**Cc:** kadil@pilc.mb.ca  
**Subject:** Re: Response regarding CAC MB information requests 84 and 85

Thanks Mike. It looks like we will agree to disagree.

We will await your response to the irs. Assuming that you do provide the information requested, we will consider our options then.

BW

On 27/07/18 04:29 PM, [MTriggs@mpi.mb.ca](mailto:MTriggs@mpi.mb.ca) wrote:

Hi Byron,

Thank you for your email, it is good that we hash out and clarify issues and concerns. Even though we might not end up agreeing, we need to focus in on what the true areas of dispute are and see if we can achieve a solution. To address the points you raise:

- Although PUB Order 82-18 states that the ALM Study will be considered in more detail at the 2019 GRA, MPI does not believe that this consideration necessarily requires an analysis of the issues raised by the CAC in IRs CAC 1-85(g) and 1-84(f).
- Through IRs CAC 1-85(g) and 1-84(f), the CAC seeks to determine whether Mercer modeled liabilities as accurately as possible (in this case being the potential impact of high inflation on the liabilities) and whether it properly excluded Real Return Bonds (RRBs) from consideration as an asset class (RRBs are generally an attractive option to protect against inflation and inflation was not considered as a material risk). In MPI's view, the issue comes down to whether Mercer's assumption regarding inflation is wrong to a sufficient degree to bring the results of the ALM Study into question.
- MPI considered the risk of high inflation with Mercer early on and concluded that the risk was low enough that it did not make sense financially to assess the appropriateness of using portfolios that protect against its effects (RRBs). Essentially, unless inflation materially exceeds the rate assumed therein (i.e. 2.0%), the outcome of the ALM Study would be the same.
- As noted in the ALM Study, the DCAT does not include a high inflation scenario as a significant risk. This is because the dataset used in the interest rate decline scenario is the historical long-term bond yield series from the Bank of Canada from 1956 to April 2018, excluding the period between 1976 and 1985 known as the "stagflation period". Based on prior year's discussions at the PUB hearings and the DCAT collaborative process, it was

generally viewed as appropriate to exclude this period. Dr. Simpson has also opined that this period should not be included in the DCAT. As this dataset does not support an high inflation scenario as a significant risk, this further supports MPI belief that the inflation assumption contained in the ALM Study is appropriate.

While MPI is open to reconsidering its position, given the anticipated cost, it is not prepared to engage Mercer to conduct the assessments requested IRs CAC 1-85(g) and 1-84(f) unless it is satisfied that there is a real possibility that Mercer's inflation forecast is incorrect. Accordingly, we invite the CAC to provide any evidence it has to support its present contention to that effect.

I look forward to hearing from you further on this.

Cheers,

Mike

---

**From:** Byron Williams [mailto:bywil@legalaid.mb.ca]  
**Sent:** Thursday, July 26, 2018 10:58 AM  
**To:** Triggs, Mike <MTriggs@mpi.mb.ca>; Scarfone, Steve <SScarfone@mpi.mb.ca>  
**Cc:** kadil@pilc.mb.ca  
**Subject:** Response regarding CAC MB information requests 84 and 85

Good morning Mike,

Thank you for bringing forward the concerns of MPI regarding IRs CAC 1-85(g) and 1-84(f). We appreciate the opportunity to share our views with you.

At the outset, we note that CAC Manitoba remains of the view that Mercer's answers to these Information Requests would assist the Public Utilities Board in its assessment of Issue 21 (page 25 of PUB Order 82-18), "Asset Liability Management Study, including **review of all aspects of the Study recommendations** and implementation thereof, the basis for and evaluation of risk and return, **alternative portfolio compositions, proposed portfolio segregation and recommended composition of the investment portfolio(s)**, forecast investment performance and changes to the Investment Policy Statement." (emphasis added)

The purpose of the questions posed is to test the decisions made regarding key assumptions on which the ALM study is based. If the qualitative rationale to support a key decision (such as liability characteristics) is flawed, the value of the ALM study may come into question. In this case, based on our review of the material, the ALM study is potentially vulnerable given the simplifying assumption about the nature of the liabilities (nominal vs real). Given this reality, it is important to understand the implications of that assumption.

The liability modeling "simplification" does not just impact the apparent attractiveness of RRBs as an asset class. It also impacts the return/risk relationships for all assets, and therefore the relative attractiveness of all asset classes - with particularly notable impacts on other real assets (i.e. real estate and infrastructure). Given the liability assumptions used in the ALM study, it appears that the model will "prefer" nominal bonds, and will tend to not prefer RRBs, real estate and infrastructure. That is a material outcome related to three asset classes. If different liability assumptions were used, it is possible that alternative portfolio compositions would have been recommended. This is central to Issue 21 being examined by the PUB.

We note that CAC Manitoba and its consultants could do the analysis, using the first method of single period optimization to get efficient frontiers, for less than \$10,000 by downloading an Excel optimization model from the web and using Mercer's capital market assumptions as inputs to the model. However, there are two difficulties with this option that would likely make it more efficient for MPI/Mercer's to conduct the analysis:

1. MPI and the PUB would likely want to check our calculations, and it is possible that Mercer's would decide to do the analysis themselves directly and compare the results; and
2. We cannot replicate the second method (multi-period scenarios), at least not without a lot more work/cost, and assumptions could differ from those that were actually used by Mercer under the Nominal approach. Based on our review of the material, the second method was likely the basis for the final decision (the first method being "preliminary" to start eliminating some asset classes and adding others to the study).

As noted above, IRs CAC 1-85(g) and 1-84(f), along with the other sub-parts to those IRs, are attempting to test whether the assumptions and constraints imposed in the Mercer's ALM study were appropriate. Specifically:

- Were liabilities modeled as accurately as possible (by including RRBs in the liability benchmark portfolio)? If not, this can make RRBs (as an asset class) look inferior to nominal bonds, which means the model will not like RRBs as much as nominal bonds. A more subtle but important point is that the liability modeling assumption makes other real asset classes (like real estate and infrastructure) look less attractive too, not just RRBs. The liability benchmark portfolio definition is fundamental to the whole analysis and the discussion should not revolve around RRBs per se (as an asset class to invest in).
- Were RRBs (as an asset class) inappropriately excluded from consideration as an asset class to consider (constrained weight = 0%)? If so, this can bring into question the results of the ALM study.

Regarding some of the specific points made in your email:

- "fairly flat inflation assumption in MPI's projection models": we note that inflation is not completely flat (some volatility), and time horizon may be too short (5 years versus decades). However, this was not modeled, and models are very sensitive to assumptions.

- “inflation in the real return bonds being different from the inflation in the MPI liabilities”: we note that in the long-term, these are likely to be correlated “enough” to impact the relative attractiveness of different asset classes.
- “to a certain degree the RRBs were considered expensive”: we note that BEIR, forecasts in GRA, and Mercer’s comments suggest otherwise, and this should be judged on a total portfolio basis (return/risk), not as individual “silos” (RRBs vs nominal bonds in isolation).

Finally, we note the finding of the PUB in last year's General Rate Application at page 67 which held that the responsibility for the investment fund resides with MPI not the Province. This factual finding which was not challenged by MPI via a review and vary order reinforces the jurisdiction of the PUB to consider (within the rate setting context) both the reasonableness and prudence of the decisions made with regard to the investment portfolio as well as their impact on the overall health of the ratepayers as it may affect current and future ratepayers.

Please do not hesitate to contact us if you have any questions.

--

Byron Williams, Director  
Public Interest Law Centre  
of Legal Aid Manitoba  
200 - 393 Portage Avenue  
Winnipeg, MB R3B 3H6

Direct Phone: (204) 985-8533  
General office Phone: (204) 985-8540  
Fax: (204) 985-8544

Confidentiality Notice:

This email message, including any attachments, is confidential and may also be privileged. All rights of privilege are expressly claimed and not waived. Any use, distribution, copying or disclosure of this message and any attachments, in whole or in part, by anyone other than the intended recipient is strictly prohibited.

--

Byron Williams, Director  
Public Interest Law Centre  
of Legal Aid Manitoba  
200 - 393 Portage Avenue  
Winnipeg, MB R3B 3H6

Direct Phone: (204) 985-8533  
General office Phone: (204) 985-8540  
Fax: (204) 985-8544

Confidentiality Notice:

This email message, including any attachments, is confidential and may also be privileged. All rights of privilege are expressly claimed and not waived. Any use, distribution, copying or disclosure of this message and any attachments, in whole or in part, by anyone other than the intended recipient is strictly prohibited.

## Scarfone, Steve

---

**From:** Triggs, Mike  
**Sent:** Thursday, July 19, 2018 10:05 AM  
**To:** Crozier, Jeff; Scarfone, Steve; Guerra, Anthony  
**Subject:** FW: CAC 1-85(g)

**Importance:** High

FYI

---

**From:** Triggs, Mike  
**Sent:** Thursday, July 19, 2018 10:05 AM  
**To:** 'Byron Williams' <bywil@legalaid.mb.ca>; kadir@pilc.mb.ca  
**Subject:** CAC 1-85(g)  
**Importance:** High

Hi Byron/Katrine,

I would like to be proactive in addressing concerns we have with answering this question from Valter.

The rationale in the IR is stated as:

While MPI and/or Mercer have responded to CAC's 18 Recommendations, CAC respectfully disagrees that certain responses have been "completed in full", as suggested by MPI. Accordingly, CAC has clarifying/additional questions.

Model optimizations are very sensitive to constraints (established in 2017 GRA).

In the preamble to the IR the following is stated:

The minimum/maximum and other constraints imposed on the portfolio (e.g., when asset-liability studies are conducted) should be reviewed and relaxed, to avoid costly constraints (lower risk-adjusted returns).

**The rationale for imposing any such constraints should be made explicit.** [emphasis is in the IR]

CAC 1-85(g) is not asking for the rationale rather it is essentially asking Mercer to rerun the ALM study using a different risk-free portfolio and a real liability benchmark. It is estimated that it will cost at **least** \$10,000 to run this new ALM study. I have serious concerns about spending \$10,000 to create a new ALM study based upon factors that management/Board of Directors did not consider appropriate. It is of course legitimate to ask why these factors were not considered but it is not appropriate to spend ratepayers money to rerun the ALM using different factors because it is not believed that the rationale for the constraints used were sufficiently explained.

The high level rationale for not pursuing the ALM model that Valter is asking about is that developing the efficient frontier based upon on a Real Liability Benchmark would produce materially different portfolio recommendations. The Real Liability Benchmark and the fact that the BASIC portfolio is all bonds would lead to a portfolio with a large allocation to real return bonds. The decision to not use the Real Liability Benchmark was analysed and discussed thoroughly during the project. Essentially, it came down to acknowledging a fairly flat inflation assumption in MPI's

projection models, inflation in the real return bonds being different from the inflation in the MPI liabilities, and to a certain degree the RRBs were considered expensive.

As stated I do not wish to proceed with spending \$10,000 on this, please let me know your thoughts on the matter.

Cheers,

Mike

**Michael Triggs**

General Counsel & Corporate Secretary

Manitoba Public Insurance

contact | [mtriggs@mpi.mb.ca](mailto:mtriggs@mpi.mb.ca) ☎ 204.985.8770 ext. 8263 📠 204.942.2217

**DON'T TEXT AND DRIVE. Here's why.**

This is **Exhibit "B"** to the Affidavit  
of **Glenn Bunston** sworn before me  
this **20<sup>th</sup>** day of **August, 2018**.



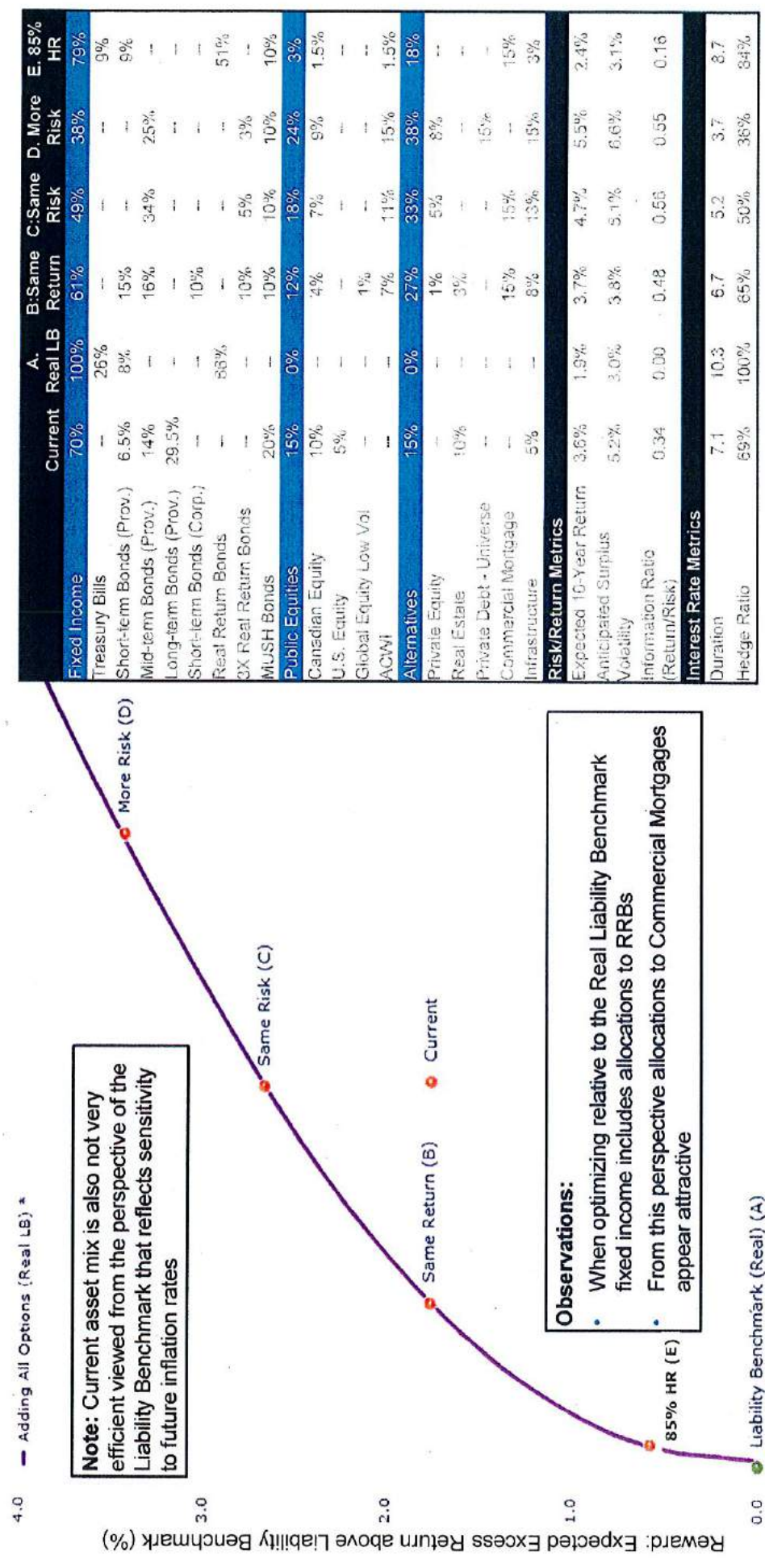
---

A Notary Public in and for the  
Province of Manitoba.

STEVE MICHAEL SCARFONE  
Barrister, Solicitor and Notary Public

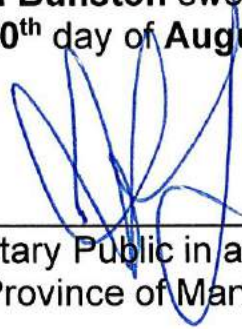


# EFFICIENT FRONTIERS (MINIMALLY CONSTRAINED) REAL LIABILITY BENCHMARK



	Current	Real LB	A. Return	B: Same	C: Same	D. More	E. 85%
	70%	100%	61%	49%	38%	38%	79%
Fixed Income	70%	100%	61%	49%	38%	38%	79%
Treasury Bills	—	26%	—	—	—	—	9%
Short-term Bonds (Prov.)	6.5%	8%	15%	—	—	—	9%
Mid-term Bonds (Prov.)	14%	—	16%	34%	25%	—	—
Long-term Bonds (Prov.)	29.5%	—	—	—	—	—	—
Short-term Bonds (Corp.)	—	—	10%	—	—	—	—
Real Return Bonds	—	88%	—	—	—	—	51%
3X Real Return Bonds	—	—	10%	5%	3%	—	—
MUSH Bonds	20%	—	10%	10%	10%	10%	10%
Public Equities	15%	0%	12%	18%	24%	3%	3%
Canadian Equity	10%	—	4%	7%	9%	—	1.5%
U.S. Equity	5%	—	—	—	—	—	—
Global Equity Low Vol	—	—	1%	—	—	—	—
ACWI	—	—	7%	11%	15%	—	1.5%
Alternatives	15%	0%	27%	33%	38%	18%	18%
Private Equity	—	—	1%	5%	8%	—	—
Real Estate	10%	—	3%	—	—	—	—
Private Debt - Universe	—	—	—	—	15%	—	—
Commercial Mortgage	—	—	15%	15%	—	—	15%
Infrastructure	5%	—	8%	13%	15%	—	3%
<b>Risk/Return Metrics</b>							
Expected 10-Year Return	3.6%	1.9%	3.7%	4.7%	5.5%	5.5%	2.4%
Anticipated Surplus	5.2%	3.0%	3.8%	5.1%	6.6%	6.6%	3.1%
Volatility	—	—	—	—	—	—	—
Information Ratio (Return/Risk)	0.34	0.00	0.48	0.58	0.55	0.55	0.16
<b>Interest Rate Metrics</b>							
Duration	7.1	10.3	6.7	5.2	3.7	3.7	8.7
Hedge Ratio	69%	100%	65%	50%	36%	36%	84%

This is **Exhibit "C"** to the Affidavit  
of **Glenn Bunston** sworn before me  
this **20<sup>th</sup>** day of **August, 2018**.

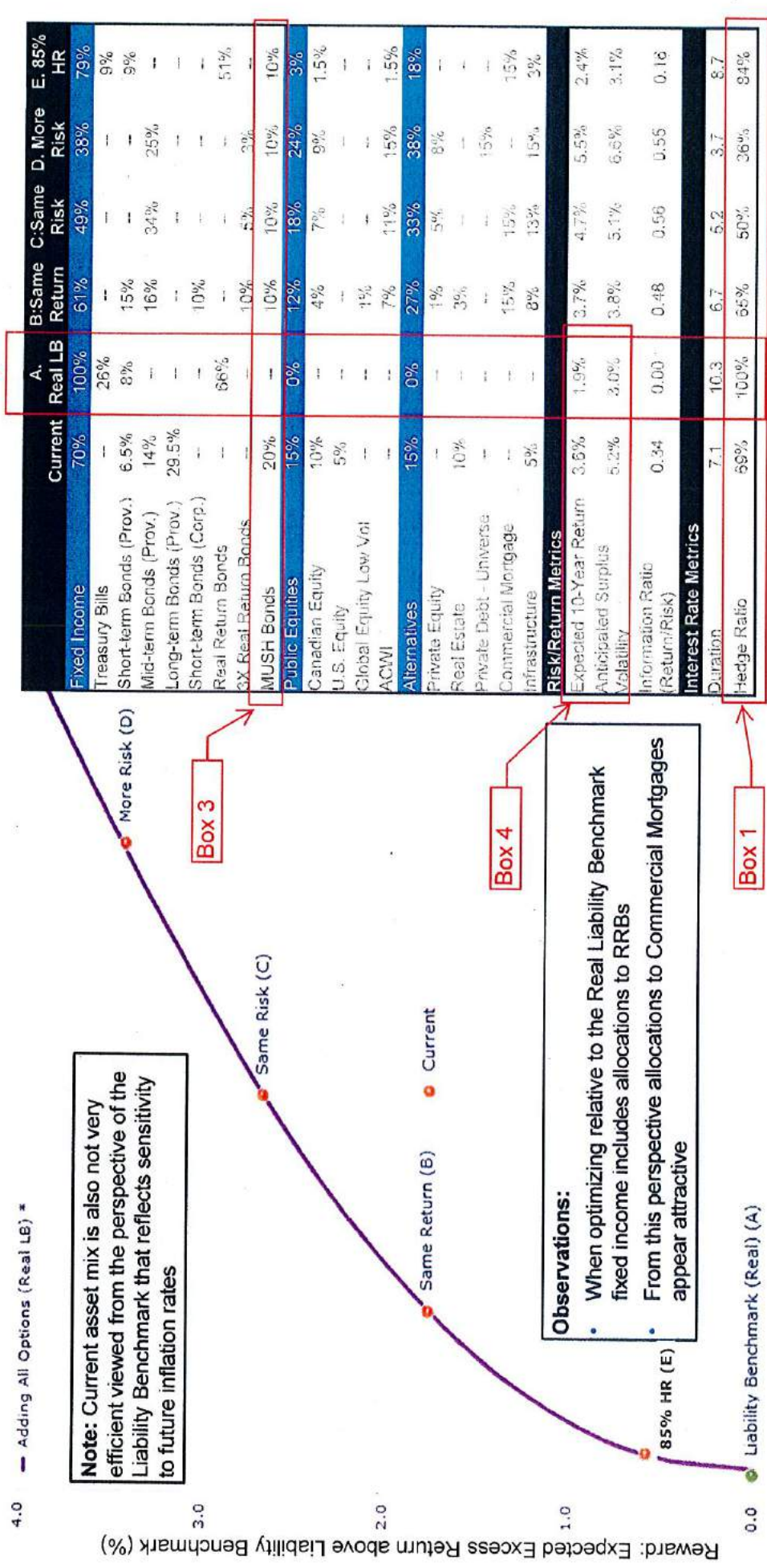
A handwritten signature in blue ink, consisting of several overlapping loops and a vertical stroke, positioned above a horizontal line.

---

A Notary Public in and for the  
Province of Manitoba.

STEVE MICHAEL SCARFONE  
Barrister, Solicitor and Notary Public

# EFFICIENT FRONTIERS (MINIMALLY CONSTRAINED) REAL LIABILITY BENCHMARK



This is **Exhibit "D"** to the Affidavit  
of **Glenn Bunston** sworn before me  
this **20<sup>th</sup>** day of **August, 2018**.



---

A Notary Public in and for the  
Province of Manitoba.

STEVE MICHAEL SCARFONE  
Barrister, Solicitor and Notary Public

**ASSET MIX ANALYSIS - SUMMARY RESULTS**  
**BASIC.3 OPTIMIZES RETURN, BUT WITH HIGHER RISK**  
**BASIC.4 BALANCES RETURN IMPROVEMENT WITH DOWNSIDE PROTECTION**

	Current Mix	Alternative Asset Mixes			
		Basic.1	Basic.2	Basic.3	Basic.4
		No MUSH	Add MUSH	Add Corps	Add PD
Expected return	4.29%	2.80%	2.93%	3.12%	3.09%
Excess return over liability benchmark	1.49%	0.00%	0.13%	0.32%	0.29%
1-Year Surplus volatility	4.06%	0.00%	0.90%	1.32%	0.90%
Excess return/Surplus volatility	0.37	N/A	0.15	0.24	0.32
1-year Median Surplus	\$27.1 M	0.0 M	2.0 M	6.4 M	5.9 M
1-year 90th Percentile VaR	-95 M	0 M	-19 M	-30 M	-20 M
1-year 95th Percentile VaR	-\$122 M	0 M	-24 M	-38 M	-25 M
1-year 97.5th Percentile VaR	-\$147 M	0 M	-28 M	-45 M	-30 M
Interest Rate Risk Hedge Ratio	85%	100%	100%	100%	100%
Median Surplus in 5 years	\$152 M	0 M	11 M	32 M	30 M
5-Year Surplus volatility	10.35%	0.00%	2.39%	3.42%	2.38%
Prob. of Surplus in 5 years	79%	50%	61%	71%	77%
Prob. of 5-year positive real return	83%	60%	61%	64%	63%
Non-MUSH Yield	2.75%	2.55%	2.71%	2.92%	2.91%

Return Metrics

Risk Metrics

# ASSET MIX OPTIONS BASIC

	Current	Basic.1	Basic.2	Basic.3	Basic.4
	Commingled	Min. Risk Portfolio (No MUSH)	80% Provis, 20% MUSH	60% Provis, 20% Corps, 20% MUSH	60% Provis, 10% Corps, 20% MUSH, 10% Prv Dbt
Fixed Income	70%	100%	100%	100%	100%
Short-term Bonds (Prov.)	6.5%	28%	0%	0%	0.0%
Mid-term Bonds (Prov.)	12.0%	18%	40%	28%	28%
Long-term Bonds (Prov.)	29.5%	54%	40%	32%	32%
Short-term Bonds (Corp.)	0.0%	0%	0%	0%	0%
Mid-term Bonds (Corp.)	0.0%	0%	0%	9%	0%
Long-term Bonds (Corp.)	2.0%	0%	0%	11%	10%
MUSH Bonds	20.0%	0%	20%	20%	20%
Private Debt - Universe	0%	0%	0%	0%	10%
Public Equities	15%	0%	0%	0%	0%
Alternatives	15%	0%	0%	0%	0%

100% Fixed Income to fully match interest rate risk.

All options match Basic liability duration (i.e. minimal nominal interest rate risk).

No Growth Assets proposed to Basic

This is **Exhibit "E"** to the Affidavit  
of **Glenn Bunston** sworn before me  
this **20<sup>th</sup>** day of **August, 2018**.



---

A Notary Public in and for the  
Province of Manitoba.

STEVE MICHAEL SCARFONE  
Solicitor and Notary Public

## Bunston, Glenn

---

**From:** DiNoto, Angelo <Angelo.DiNoto@mercercan.com>  
**Sent:** Monday, August 20, 2018 10:31 AM  
**To:** Bunston, Glenn  
**Cc:** Sprenger, Wes; Piesowicz, Pawel; Makarchuk Dave  
**Subject:** CAC 1-84f and CAC 1-85g - Anticipated hours and cost to prepare full response

Hi Glenn,

As requested in your July 19, 2018 email, below we provide the anticipated hours and cost to prepare full responses to the items listed below:

### **CAC 84-f**

Anticipate that this will take 20 hours for each of BASIC and Pension. Based on my hourly estimates and using the team's billing rates or about \$23,000 for both BASIC and Pension. Once approved, this work would take us a week to complete.

### **CAC 84-g**

Anticipate that this will take over 20 hours. Based on my hourly estimates and using the team's billing rates we anticipate the associated fee to be over \$23,000. Once approved, this work would take us a week to complete.

This response was provided in an earlier email, but was included in an email that contained other information that isn't relevant to the costs and preparation time.

Kind regards,

Angelo DiNoto, Principal  
Mercer | 120 Bremner Boulevard, Suite 800, Toronto, ON M5J 0A8, Canada  
+1 416 868 2366 | Fax +1 416 868 2131 | [angelo.dinoto@mercercan.com](mailto:angelo.dinoto@mercercan.com)  
Assistant: Connie Melo | +1 416-868-2722  
[www.mercercan.com](http://www.mercercan.com) | Mercer (Canada) Limited

 **MAKE TOMORROW, TODAY**

---

This email and any attachments may be confidential or proprietary. Any review, use, disclosure, distribution or copying of this email is prohibited except by or on behalf of the intended recipient. If you received this message in error or are not the intended recipient, please delete or destroy the email message and any attachments or copies and notify the sender of the erroneous delivery by return email. To the extent that this message or its attachments were sent without encryption, we cannot guarantee that the contents have not been changed or tampered with. Any advice expressed in this message is being delivered to you solely for your use in connection with the matters addressed herein and may not be used for any other purpose without our prior written consent.

Le présent courriel et toute pièce jointe peuvent contenir des renseignements confidentiels ou en propriété exclusive. Toute consultation, utilisation, divulgation, distribution ou copie de ce courriel est interdite, sauf par les destinataires visés ou les personnes autorisées à agir en leur nom. Si vous recevez ce courriel par erreur ou si vous n'êtes pas le destinataire visé, cliquez sur le bouton Répondre pour aviser l'expéditeur qu'il vous a transmis ce courriel par erreur, puis supprimez le courriel original ainsi que toute pièce jointe et copie électronique. Dans la mesure où ce courriel ou toute pièce jointe n'est pas crypté, nous ne pouvons pas garantir que son contenu initial n'a pas été modifié ou falsifié. Tout conseil formulé dans le présent courriel vous est uniquement adressé eu égard aux sujets qui y sont abordés et ne peut servir à toute autre fin sans que nous l'ayons autorisé par écrit au préalable.

---



Important notices: References to Mercer shall be construed to include Mercer LLC and/or its associated companies. © 2014 Mercer LLC. All rights reserved. This contains confidential and proprietary information of Mercer and is intended for the exclusive use of the parties to whom it was provided by Mercer. Its content may not be modified, sold or otherwise provided, in whole or in part, to any other person or entity, without Mercer's prior written permission. The findings, ratings and/or opinions expressed herein are the intellectual property of Mercer and are subject to change without notice. They are not intended to convey any guarantees as to the future performance of the investment products, asset classes or capital markets discussed. Past performance does not guarantee future results. Mercer's ratings do not constitute individualized investment advice. Information contained herein has been obtained from a range of third party sources. While the information is believed to be reliable, Mercer has not sought to verify it independently. As such, Mercer makes no representations or warranties as to the accuracy of the information presented and takes no responsibility or liability (including for indirect, consequential or incidental damages), for any error, omission or inaccuracy in the data supplied by any third party. This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities and/or any other financial instruments or products or constitute a solicitation on behalf of any of the investment managers, their affiliates, products or strategies that Mercer may evaluate or recommend. For the most recent approved ratings of an investment strategy, and a fuller explanation of their meanings, contact your Mercer representative. For Mercer's conflict of interest disclosures, contact your Mercer representative or see [www.mercer.com/conflictsofinterest](http://www.mercer.com/conflictsofinterest).

Avis importants : Toute référence à Mercer inclut Mercer LLC et/ou ses sociétés associées. © 2014 Mercer LLC. Tous droits réservés