ECKLER

Actuarial Report on

The Brandon University Retirement Plan

Actuarial Valuation as at
December 31, 2022

CRA Reg. No. 0206078

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Going concern assets	$233,826,000	$224,966,000
Going concern liabilities	$209,804,000	$203,065,000
Going concern surplus/(unfunded liability)	$24,022,000	$21,901,000
Going concern funded ratio	1.114	1.108
Windup Financial Position		
Market value of assets net of provision for wind-up expenses	$212,460,000	$249,642,000
Windup liability	$211,119,000	$251,406,000
Windup excess/(deficiency)	$1,341,000	($1,764,000)
Solvency Financial Position		
Solvency assets net of provision for wind-up expenses	$233,376,000	$224,646,000
Solvency liabilities	$211,119,000	$251,406,000
Solvency excess/(deficiency)	$22,257,000	($26,760,000)
Solvency ratio	1.105	0.894
Minimum Contributions in Year Following Valuation		
Estimated employer's current service cost	$3,407,000	$3,337,000
Portion of Available Actuarial Surplus that can be used to reduce employer's current service cost	($20,000)	$0
Minimum special payments	$0	$0
Total minimum required contributions	$3,387,000	$3,337,000

SECTION 1. EXECUTIVE SUMMARY

We are pleased to present this report which was prepared at the request of the Pension Trustees of the Brandon University Retirement Plan ("Pension Trustees") for the following purposes:

PURPOSE

1. To report on the financial position of the Brandon University Retirement Plan ("Plan") as at December 31, 2022 on a going concern basis;
2. To determine the actuarial cost of benefits expected to accrue under the Plan for service of the employees for the period following the valuation date and up to the date of the next actuarial valuation. The effective date of the next valuation must be no later than December 31, 2025;
3. To determine the financial position of the Plan as at December 31, 2022 on solvency and hypothetical wind-up bases;
4. To establish the minimum and maximum contributions required for the period from December 31, 2022 until the date of the next actuarial valuation for compliance with the applicable pension legislation and the terms of the Plan;
5. To provide the actuarial certifications required under the Pension Benefits Act of Manitoba and the Income Tax Act of Canada.

The intended users of this report are the Pension Trustees, Brandon University, the Office of the Superintendent - Pension Commission (Manitoba), and Canada Revenue Agency. This report is not intended or necessarily suitable for purposes other than those listed above. Any party reviewing this report for other purposes should have their own actuary or other qualified professional assist in their review to ensure that the party understands the assumptions, results and uncertainties inherent in our estimates. This report and any opinions within may not be modified or otherwise provided, in whole or in part, to any other person or entity without the express written permission of Eckler Ltd (unless required by applicable legislation). Eckler takes no responsibility for the consequences of any other use of this report .

TERMS OF ENGAGEMENT

For the purposes of this actuarial valuation report, the significant terms of engagement with the Company are:

- For the going concern and solvency valuations we have been directed to use the actuarial value of the assets over a four-year period. The actuarial value of assets may be no less than 90% and no greater than 110% of the market value.
- A margin for adverse deviations has been included in the economic assumptions, as requested by the Company,
- The terms of our engagement are in accordance with applicable pension regulations and accepted actuarial practice in Canada.

A summary of the key valuation results is provided below.

1. Using the projected unit credit accrued benefit funding method the Plan has a going concern surplus equal to $24,022,000 at December 31, 2022. There are no special payments required.

2. There is a solvency excess of $22,257,000. The solvency ratio is 1.105.

   This Plan is subject to the funding requirements of the Pension Benefits Act of Manitoba. As such, a solvency valuation must be prepared and normally any solvency deficiency would require funding over a five-year period. However, the University is eligible and has made an election to be exempt from certain solvency funding and other requirements in accordance with the *Solvency Exemption for Public Sector Pension Plans Regulation*. As a result of the election, the University is exempt from making special payments for solvency deficiencies. The election was filed with the Office of the Superintendent – Pension Commission (Manitoba) on January 19, 2009.

3. If the Plan was wound-up on the valuation date the assets would exceed liabilities by $1,341,000.

4. Available Actuarial Surplus under the Pension Benefits Regulations is calculated to be $13,532,000 as at December 31, 2022.

5. The University current service cost exceeds the University contribution required by the Plan. The University may apply the Available Actuarial Surplus to fund the difference between the University current service cost and the minimum University contribution required to be made in accordance with the provisions of the Plan.

6. Based on the projected unit credit accrued benefit funding method, the University's current service cost is 8.80% of pensionable earnings for the period from January 1, 2023 to the date of the next valuation.

   The table below summarizes the University's estimated current service contribution for the three years commencing January 1, 2023, after applying the Available Actuarial Surplus, and assuming the 2023 estimated pensionable earnings of $38,720,000 increase by 3.0% for 2024 and 2025.The actual dollar amount of the current service contribution may be higher or lower than the amount indicated below if the actual pensionable earnings are different than estimated.

			Estimated University Service Cost			
Year	**Amount as a percent of pensionable payroll**	**Estimated Members' Pensionable Earnings**	**Prior to Applying Available Actuarial Surplus**	**Use of Available Actuarial Surplus**	**After Applying Available Actuarial Surplus**	**Adjusted Amount as a percent of pensionable payroll**
2023	8.80%	$38,720,000	$3,407,000	$20,000	$3,387,000	8.75%
2024	8.80%	$39,882,000	$3,510,000	$20,000	$3,490,000	8.75%
2025	8.80%	$41,078,000	$3,615,000	$21,000	$3,594,000	8.75%

University contributions recommended in this report are eligible contributions under the Income Tax Act.

7. Since the solvency ratio of the Plan is greater than 0.85, the Pension Benefits Regulations of Manitoba requires that the next valuation be performed no later than December 31, 2025.

8. Based on the Plan's investment experience from 2019 to 2022, retired and deferred members are eligible for a supplementary pension increase effective July 1, 2023. The amount of the increase, capped by the increase in the Consumer Price Index, is 1.17%. This has been reflected in the going concern valuation results at December 31, 2022.

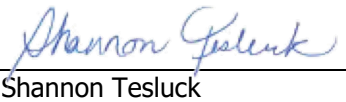
9. This report should be filed with the Office of the Superintendent – Pension Commission (Manitoba), to meet the filing requirements of the Pension Benefits Regulations of Manitoba, and with Canada Revenue Agency, in order to ensure that contributions recommended in the report will qualify as eligible contributions for purposes of the Income Tax Act. The next actuarial valuation of the Plan should be performed no later than December 31, 2025.

This report has been prepared and our opinions given in accordance with accepted actuarial practice.

Respectfully submitted,

ECKLER Ltd.

Andrew Kulyk
Fellow of the Canadian Institute of Actuaries



Shannon Tesluck
Fellow of the Canadian Institute of Actuaries

SECTION 2. INTRODUCTION

The Brandon University Retirement Plan (hereinafter referred to as the "Plan") was amended and restated January 1, 1992. There have been no amendments to Plan since the date of the previous valuation that would have a material effect on the results of our valuation.

Based on the Plan's investment experience from 2019 to 2022, retired and deferred members are eligible for a supplementary pension increase in 2023 effective July 1 equal to 1.17%. The amount of any increase is capped by the increase in the Consumer Price Index. This increase has been reflected in our going concern valuation.

CHANGES SINCE THE PREVIOUS VALUATION

The last valuation of the Plan was prepared as at December 31, 2021. The Plan has been amended since the date of the valuation to provide Members with the option to cease required contributions to the Plan and thereby stop accruing additional benefits after reaching Normal Pension Commencement Date. The amendment did not have a material effect on the results of our valuation.

The going concern actuarial assumptions at December 31, 2022 are the same as those used at the previous valuation date with the exception of the mortality assumption which was updated to use the Club Vita Canada 2021 VitaCurves with improvement scale CPM-B.

See Appendix B for details of the assumptions used in this valuation and the rationale employed in setting these assumptions. See Section 4 for the impact of the changes in assumptions on the valuation results.

The solvency economic and demographic assumptions were changed to reflect market conditions as at the valuation date, and the CIA's Educational Note on Assumptions for Hypothetical Wind-up and Solvency Valuations. These assumptions are summarized in Appendix B.

SUBSEQUENT EVENTS

We are not aware of any events that occurred between the valuation date and the date this report was completed that would have a material impact on the results of this valuation.

VALUATIONS INCLUDED IN THIS REPORT

In this report, we describe the results of three different valuations of the Plan:

- A "going concern valuation" which is used to estimate the funded position of the Plan, assuming the Plan is continued indefinitely, and to estimate the contributions currently required to be made to the Plan's fund, both to fund the cost of any benefits being earned by members for current service and, in the event there is a funding deficiency, to liquidate the amount of the funding deficiency.

- A "wind-up valuation", which is intended to reflect the status of the Plan as if it had been wound up on the valuation date and the Plan members had been provided with the benefits specified by the Plan and the Pension Benefits Act of Manitoba. The purpose of this valuation is to show the degree of benefit security provided for all of the Plan members' accrued benefit by the current assets of the pension fund. The wind-up valuation is not used to determine the required contributions to the Plan. It is, however, used to determine the maximum contributions permitted by the Canada Revenue Agency.

- A "solvency valuation", which is required by the Regulations under the Pension Benefits Act of Manitoba. This valuation is similar to a wind-up valuation, except that certain adjustments may be made to the assets. The solvency valuation is required to be performed but does not affect the required contributions to the Plan as the University has made an election under the *Solvency Exemption for Public Sector Pension Plans Regulation*.

The difference between the wind-up and solvency valuations for this Plan relates to the value of assets that are included in the valuation. For the wind-up valuation, the only assets taken into account are the invested assets of the Plan, which are taken at their market values net of provision for wind-up expenses plus in-transit accrued amounts. For the solvency valuation, Plan assets also take into account the present value of special payments that are scheduled to be made for the next five years from the valuation date and an adjustment to smooth the market value over a period which cannot exceed five years. For purposes of the solvency valuation the assets have been smoothed over four years. Please note that due to the going concern surplus position of the Plan as at December 31, 2022, special payments are not required and therefore no present value of special payments is included in the solvency assets.

FILING REQUIREMENTS

The last filed actuarial report was effective December 31, 2021. This report outlines the movements of the Plan's financial position since the previous valuation and is to be filed with the Office of the Superintendent – Pension Commission (Manitoba) and Canada Revenue Agency. It is to be used by the University to determine its funding requirements for the period following the valuation date. The next actuarial valuation of the Plan should be performed no later than December 31, 2025.

SECTION 3. DATA

The valuation was based on data as of the valuation date, December 31, 2022, supplied to us by Brandon University. This data is summarized in Appendix C.

We subjected the data to a number of tests of reasonableness and consistency, including the following:

- a member's (and partner's as applicable) age is within a reasonable range;
- all dates remained unchanged from the data used in the previous actuarial valuation of the Plan;
- accrued pensions changed by a reasonable amount;
- the form of pension payment did not change (other than resulting from the death of a retired member); and
- we examined the additions to, and deletions from, each of the data files (i.e., the files for active employees, pensioners and terminated members entitled to a deferred vested pension) since the previous valuation to determine whether all Plan members were accounted for in this valuation, to check for duplicate records and to confirm pension amounts.

Data was corrected as appropriate. The results of our tests were satisfactory.

Assets of the Plan are held in trust with CIBC Mellon. The funds are invested in a number of pooled funds operated by Connor, Clark & Lunn Investment Management Limited. We have relied on the financial statements for the fund prepared by Brandon University for the December 31, 2022 year-end.

SECTION 5. GOING CONCERN VALUATION

VALUATION BALANCE SHEET

The following is the going concern valuation balance sheet as at December 31, 2022 based on:

- the Plan provisions (summarized in Appendix A);
- the going concern valuation assumptions (described in Appendix B);
- the membership data (summarized in Appendix C);
- the actuarial value of assets (summarized in Appendix D), and

Going Concern Valuation	12.31.2022	12.31.2021
Going Concern Assets		
Actuarial value of Plan assets	$233,826,000	$224,966,000
Going Concern Liabilities		
Retired members and survivors	$125,822,000	$120,253,000
Terminated vested members	$6,681,000	$4,825,000
Active members – Academic and non-union members	$64,467,000	$63,648,000
Active members – Non-Academic union members	$12,345,000	$13,529,000
Other benefits outstanding	$361,000	$670,000
Additional voluntary contributions	$128,000	$140,000
Total going concern liabilities	$209,804,000	$203,065,000
Surplus / (unfunded liability)	$24,022,000	$21,901,000
Funded Ratio	1.114	1.108

The liability as at December 31, 2022 for other benefits outstanding includes:

- $180,000 for sessional employees with no pensionable earnings in 2022;
- $181,000 for benefit payouts to terminated members that are pending settlements.

There is a going concern surplus of $24,022,000 as at December 31, 2022, therefore no unfunded liability special payments are required.

EXPERIENCE GAIN AND LOSS

The Plan has a going concern surplus of $24,022,000 at December 31, 2022. Our previous valuation of the Plan showed the Plan had a going concern surplus of $21,901,000. The approximate derivation of the going concern surplus at December 31, 2022 is as follows:

Going concern surplus (unfunded liability) at Dec. 31, 2021		$21,901,000
Interest on surplus (unfunded liability), special payments and transfers in for 2022 at 5.50%		$1,205,000
Expected surplus (unfunded liability) at Dec. 31, 2022		$23,106,000
Plus actuarial gains(losses) due to experience differing from the actuarial assumptions in 2022:		
▪ Gain/(loss) on terminations other than assumed	($24,000)	
▪ Gain/(loss) on active and deferred member retirements other than assumed	($374,000)	
▪ Gain/(loss) on mortality other than assumed	($232,000)	
▪ Gain/(loss) on salaries and the YMPE increasing at different rates than assumed	$39,000	
▪ Gain/(loss) attributable to net investment experience	$2,395,000	
▪ Gain/(loss) attributable to service accrued different than expected	$161,000	
Net actuarial experience gain/(loss)		$1,965,000
Gain/ (loss) due to data corrections		$232,000
Gain/ (loss) due to change in mortality assumption		($1,317,000)
Other experience resulted in a net gain/(loss) of approximately		$36,000
Going concern surplus (unfunded liability) at Dec. 31, 2022		**$24,022,000**

The following summarizes the largest sources of gains and losses to the Plan since the previous valuation:

- The actual net investment return earned by the Plan in 2022, based on smoothed asset values, was 6.58% compared to an expected return of 5.50% per year resulting in a gain of $2,395,000.
- The mortality assumption was revised to use Club Vita Canada, resulting in a loss of $1,317,000.

INTEREST RATE SENSITIVITY OF THE GOING CONCERN LIABILITY

The effect of decreasing the interest rate used to determine the going concern liability by 1% from 5.50% to 4.50% is an increase in the total going concern liability of $25,245,000.

CURRENT SERVICE COST

Employees are required to contribute 8.0% of pensionable earnings less 1.8% of pensionable earnings for which Canada Pension Plan (CPP) contributions are required. Pensionable earnings for this purpose are subject to an annual limit related to the maximum benefit accrual in a year. For 2023, the Yearly Maximum Contributory Earnings (YMCE) is $118,730.

Based on the assumptions and membership data described herein, we estimate that the University's current service cost from December 31, 2022, until the effective date of the next valuation, is 8.80% of pensionable earnings. Unlike member contributions, pensionable earnings for this purpose are not limited to the YMCE. The current service cost determined as at December 31, 2021 was 8.75% of pensionable earnings.

In accordance with the Plan provisions, the University shall pay additional contributions equal to the normal actuarial cost of the benefit improvements effective November 10, 2008 and April 1, 2009.

2023	Dollar	% of Earnings
Estimated 2023 pensionable earnings	$38,720,000	
Current service cost		
Total current service cost	$5,847,000	15.10%
Estimated employee contributions	($2,440,000)	(6.30%)
Employer current service cost (A)	$3,407,000	8.80%
Total special payments (B)	$0	0.00%
Total minimum contribution required by the Act and Regulations	**$3,407,000**	**8.80%**
Plan Provision Contribution		
Employer formula contribution	$2,670,000	6.90%
Additional current service cost	$717,000	1.85%
Total minimum contribution required by the Plan provisions (C)	**$3,387,000**	**8.75%**
Employer current service cost (A)	$3,407,000	8.80%
Total special payments (B)	$0	0.00%
Employer additional contribution (C - A – B, min $0)	$0	0.00%
Total Employer required contribution	**$3,407,000**	**8.80%**

The table below summarizes the University's estimated current service contribution for the three years commencing January 1, 2023, assuming 2023 estimated pensionable earnings of $38,720,000 increase by 3.0% for 2024 and 2025. The actual dollar amount of the current service contribution may be higher or lower than the amount indicated below if the actual pensionable earnings are different than estimated. These amounts are presented before adjustment for use of Available Actuarial Surplus to reduce the contribution requirements. The adjusted contribution requirements are summarized in Section 9. Eligible Contributions.

		Estimated University Service Cost	
Year	**Amount as a percent of pensionable payroll**	**Estimated Members' Pensionable Earnings**	**Estimated University Current Service Cost**
2023	8.80%	$38,720,000	$3,407,000
2024	8.80%	$39,882,000	$3,510,000
2025	8.80%	$41,078,000	$3,615,000

INTEREST RATE SENSITIVITY OF THE CURRENT SERVICE COST

The effect of decreasing the interest rate used to determine the regular current service cost by 1% from 5.50% to 4.50% increases the total current service cost from $5,847,000 to $6,912,000, an increase of $1,065,000. This represents an increase in the 2023 employer current service cost as a percent of pensionable earnings from 8.80% to 11.55%.

SECTION 6. HYPOTHETICAL WIND-UP VALUATION

The purpose of the hypothetical wind-up valuation is to determine the financial position of the Plan if it were wound up on the valuation date. The circumstances in which the plan wind-up occurs is that both Brandon University and the Plan wind-up, giving rise to termination benefits to members not eligible for retirement on the wind-up date and retirement benefits to all other members. There are no benefits on plan wind-up that were excluded from our valuation. The liability for all active members with 15 years or more of service on the valuation date includes the value of the early retirement subsidy as provided by the Plan.

Accordingly, the following approach was used:

1. The Plan assets were valued at market value.

2. The benefits valued are those which members would be entitled to under applicable legislation if the Plan were wound up on the valuation date. All Plan members become fully vested on Plan wind-up, regardless of age or service.

3. In the hypothetical wind-up valuation, we assumed immediate pension commencement for members eligible to retire. For members assumed to elect the lump sum option, it was assumed with a probability of 50% that the pension would start at the earliest age at which the member will be entitled to an unreduced lifetime pension and with a probability of 50% the pension would start at the age which produced the highest present value of the pension.

4. The actuarial assumptions are developed in accordance with the Canadian Institute of Actuaries' (CIA's) Standard of Practice for determining Pension Commuted Values and the CIA Educational Note – *Assumptions for Hypothetical Wind-up and Solvency Valuations with Effective Dates on or after December 31, 2022 and no later than June 29, 2024* dated March 2023. These assumptions are described in detail in Appendix B.

5. In accordance with the CIA Educational Note, the spread above the unadjusted CANSIM series V39062 was determined to be 160 basis points based on a duration of 9.1 for the portion of the liability assumed to be settled through the purchase of annuities. Accordingly, the discount rate assumed for the purchase of non-indexed annuities is 4.91%.

Based on the Plan provisions in effect on December 31, 2022, the wind-up valuation assumptions and the membership data supplied by the University, the following is the wind-up position of the Plan as at December 31, 2022:

Hypothetical Wind-up Valuation	12.31.2022	12.31.2021
Wind-up Assets		
Market value of Plan assets	$212,910,000	$249,962,000
Allowance for wind-up expenses	($450,000)	($320,000)
Total wind-up assets	$212,460,000	$249,642,000
Wind-up Liabilities		
Retired members and survivors	$120,667,000	$136,360,000
Terminated vested members	$6,566,000	$6,111,000
Active members – Academic and non-union members	$70,651,000	$90,089,000
Active members – Non-Academic union members	$12,746,000	$18,036,000
Other benefits outstanding	$361,000	$670,000
Additional voluntary contributions	$128,000	$140,000
Total wind-up liabilities	$211,119,000	$251,406,000
Wind-up excess/ (shortfall)	$1,341,000	($1,764,000)

As shown above, if the Plan had been wound-up as at December 31, 2022, the wind-up assets would have exceeded the wind-up liabilities by $1,341,000.

SECTION 7. SOLVENCY VALUATION

The table below shows the solvency position of the Plan as at December 31, 2022. The circumstances in which the plan wind-up occurs is that both Brandon University and the Plan wind-up giving rise to termination benefits to members not eligible for retirement on the wind-up date and retirement benefits to all other members. There are no benefits on Plan wind-up that were excluded from our valuation. The liability for all active members with 15 years or more of service on the valuation date includes the value of the early retirement subsidy as provided by the Plan.

The calculations are based on the Plan provisions in effect on the valuation date, the solvency valuation assumptions described in Appendix B, and the membership data supplied by the University.

Solvency Valuation	12.31.2022	12.31.2021
Solvency Assets		
Actuarial value of Plan assets (A)	$233,826,000	$224,966,000
Allowance for wind-up expenses (B)	($450,000)	($320,000)
Total solvency assets	$233,376,000	$224,646,000
Solvency Liabilities		
Retired members and survivors	$120,667,000	$136,360,000
Terminated vested members	$6,566,000	$6,111,000
Active members – Academic and non-union members	$70,651,000	$90,089,000
Active members – Non-Academic union members	$12,746,000	$18,036,000
Other benefits outstanding	$361,000	$670,000
Additional voluntary contributions	$128,000	$140,000
Total solvency liabilities (C)	$211,119,000	$251,406,000
Solvency excess/ (shortfall)	$22,257,000	($26,760,000)
Solvency ratio [(A + B) ÷ C]	1.105	0.894

INTEREST RATE SENSITIVITY OF THE SOLVENCY LIABILITY

The effect of decreasing the interest rates used to determine the solvency liability by 1%, i.e. reducing the annuity purchase rate from 4.91% p.a. to 3.91% and a corresponding decrease in the commuted value rates, is an increase in the liability of approximately $24,509,000.

SOLVENCY INCREMENTAL COST

The incremental cost represents the present value on the valuation date of the expected aggregate change in the solvency liability between valuations, adjusted upward for expected benefit payments between the valuation dates.

The total estimated incremental cost between the valuation date, December 31, 2022 and the date of the next valuation, December 31, 2025, is $20,254,000.

SPECIAL PAYMENTS

This plan is subject to the funding requirements of the Pension Benefits Act of Manitoba. As such, it is required that a solvency valuation is prepared and any solvency deficiency is required to be funded over a five-year period. However, the University is eligible and has made an election to be exempt from certain solvency funding and other requirements in accordance with the *Solvency Exemption for Public Sector Pension Plans Regulation* ("Solvency Exemption"). As a result of the election, the University is exempt from making special payments for solvency deficiencies. The election was filed with the Office of the Superintendent – Pension Commission (Manitoba) on January 19, 2009.

The Plan has a solvency excess of $22,257,000 as at December 31, 2022. In the absence of the Solvency Exemption, no solvency special payments would be required.

SECTION 8. CONTRIBUTION ADEQUACY

The following is table provides the valuation results as at December 31, 2022 based on the aggregate actuarial cost method. The aggregate method considers future benefits and contributions and should be considered to ensure that the contributions recommended in this report are sufficient to pay for future expected benefits.

Aggregate Valuation	12.31.2022
Assets	
Accrued actuarial value of Plan assets	$233,826,000
Present value of future employee contributions – Academic and non-union members	$14,417,000
Present value of future employee contributions – Non-Academic union members	$3,866,000
Present value of future University contributions – Academic and non-union members	$19,272,000
Present value of future University contributions – Non-Academic union members	$3,922,000
Total aggregate assets	$275,303,000
Liabilities	
Accrued liabilities	$209,804,000
Present value of future service – Academic and non-union active members	$38,085,000
Present value future service – Non-Academic union active members	$9,576,000
Total aggregate liabilities	$257,465,000
Aggregate surplus / (deficit)	$17,838,000

On an aggregate basis, there is a surplus of $17,838,000 as at December 31, 2022. This means that the actuarial value of assets plus the value of future contributions exceeds the value of benefits accrued to date plus the value of benefits to be earned in the future. Therefore, the contributions recommended in Section 9 of this report are appropriate and adequate to cover the cost of benefits.

SECTION 9. ELIGIBLE CONTRIBUTIONS

AVAILABLE ACTUARIAL SURPLUS - SOLVENCY EXEMPT PLAN

Available Actuarial Surplus, if any, may be used to increase benefits; applied to reduce employer contributions, unless expressly prohibited by the terms of the plan; applied to reduce member contributions, if expressly permitted by the terms of the plan; or with the consent of the commission on application by the employer, paid to the employer. Due to the Solvency Exemption, the calculation of the available actuarial surplus is as follows:

Available Actuarial Surplus (AAS)	
Going Concern	
Going Concern Assets (A)	$233,826,000
Going Concern Liabilities	$209,804,000
Going Concern liabilities x 105% (B)	$220,294,000
Going Concern AAS (greater of zero and A minus B)	$13,532,000
Solvency	
Solvency Assets (C)	$233,376,000
Solvency Liabilities (D)	$211,119,000
Solvency AAS (greater of zero and C minus D)	$22,257,000
AAS (lesser of solvency AAS and going concern AAS)	$13,532,000

Since the Plan has Available Actuarial Surplus under the Pension Benefits Regulations, the Available Actuarial Surplus may be applied to reduce the University contribution for current service cost.

MINIMUM CONTRIBUTIONS

Members and the University are each required to contribute at the rate of 8.0% of salary up to the Year's Basic Earnings (YBE) under the Canada Pension Plan, 6.2% between the YBE and the Year's Maximum Pensionable Earnings (YMPE) and 8.0% in excess of the YMPE ("Plan Formula Contributions"). Members contribute only on the amount earned up to the Year's Maximum Contributory Earnings (YMCE).

Notwithstanding, the University may be required to make additional contributions in excess of the Plan Formula Contributions in order to satisfy the negotiated funding of certain benefit improvements or requirements of the Pension Benefits Act of Manitoba and Regulations.

For the period following this valuation, the University contribution for current service cost, equal to 8.80% of pensionable earnings for the period from January 1, 2023 to the effective date of the next valuation, may be reduced by applying the Available Actuarial Surplus to an amount that is not less than the Plan Formula Contributions.

The minimum required University contributions are therefore 8.75% of pensionable earnings.

The table below summarizes the University's estimated current service contribution for the three years commencing January 1, 2023, after applying the Available Actuarial Surplus. The actual dollar amount of the current service contribution may be higher or lower than the amount indicated below if the actual pensionable earnings are different than estimated.

			Estimated University Service Cost			
Year	**Amount as a percent of pensionable payroll**	**Estimated Members' Pensionable Earnings**	**Prior to Applying Available Actuarial Surplus**	**Use of Available Actuarial Surplus**	**After Applying Available Actuarial Surplus**	**Adjusted Amount as a percent of pensionable payroll**
2023	8.80%	$38,720,000	$3,407,000	$20,000	$3,387,000	8.75%
2024	8.80%	$39,882,000	$3,510,000	$20,000	$3,490,000	8.75%
2025	8.80%	$41,078,000	$3,615,000	$21,000	$3,594,000	8.75%

MAXIMUM CONTRIBUTIONS

Since the Plan is in going concern surplus and wind-up excess positions, the maximum permitted contribution the University could make is equal to the University's current service cost of 8.80% of pensionable earnings.

In accordance with the Pension Benefits Act of Manitoba, all contributions due to the Plan must be remitted monthly. Employee and Employer contributions are due within 30 days following the end of the month to which they apply.

SECTION 10. ACTUARIAL OPINION

With respect to the Brandon University Retirement Plan forming part of the actuarial report on a valuation of the Plan at December 31, 2022:

The recommendations for funding are in accordance with an agreement regarding the University's funding obligations by the signatories to the collective agreement between the University and BUFA that provides for the funding of certain benefit improvements.

We hereby certify that,

a. The purpose of this report is to provide actuarial estimates of the funding payments required to be made by Brandon University for the period from December 31, 2022 to the date of the next valuation. The effective date of the next valuation must be no later than December 31, 2025 in order to comply with applicable legislation.

b. Based on the projected unit credit accrued benefit funding method the Plan has a going concern surplus of $24,022,000.

c. There are no special payments to be made.

d. Available Actuarial Surplus calculated in accordance with the Regulations is $13,532,000.

e. The University current service cost exceeds the University contribution required by the Plan. The University may apply the Available Actuarial Surplus to fund the difference between the University current service cost and the minimum University contribution required to be made in accordance with the provisions of the Plan.

f. Based on the projected unit credit accrued benefit funding method, the University's current service cost is 8.80% of pensionable earnings for the period from January 1, 2023 to the date of the next valuation.

The table below summarizes the University's estimated current service contribution for the three years commencing January 1, 2023, after applying the Available Actuarial Surplus, and assuming the 2023 estimated pensionable earnings of $38,720,000 increase by 3.0% for 2024 and 2025.The actual dollar amount of the current service contribution may be higher or lower than the amount indicated below if the actual pensionable earnings are different than estimated.

			Estimated University Service Cost			
Year	Amount as a percent of pensionable payroll	Estimated Members' Pensionable Earnings	Prior to Applying Available Actuarial Surplus	Use of Available Actuarial Surplus	After Applying Available Actuarial Surplus	Adjusted Amount as a percent of pensionable payroll
2023	8.80%	$38,720,000	$3,407,000	$20,000	$3,387,000	8.75%
2024	8.80%	$39,882,000	$3,510,000	$20,000	$3,490,000	8.75%
2025	8.80%	$41,078,000	$3,615,000	$21,000	$3,594,000	8.75%

University contributions recommended in this report are eligible contributions under the Income Tax Act.

g. In our opinion, the value of the Plan assets would be more than the actuarial liabilities if the Plan were to be wound up as at December 31, 2022. The estimated excess would be approximately $1,341,000.

h. The Plan has a solvency surplus at December 31, 2022 of $22,257,000 and the solvency ratio is 1.105.

Notwithstanding the foregoing opinion, emerging experience differing from the assumptions will result in gains or losses which will be revealed in future valuations.

In our opinion,

a. the membership data on which the valuation is based are sufficient and reliable, for the purposes of the valuation,

b. the assumptions used are appropriate for the purposes of the valuation, and

c. the methods employed in the valuation are appropriate for the purposes of the valuation.

This report has been prepared and this opinion given in accordance with accepted actuarial practice in Canada.

Andrew Kulyk
Fellow of the Canadian Institute of Actuaries

June 8, 2023
Date

Shannon Tesluck
Fellow of the Canadian Institute of Actuaries

June 8, 2023
Date

Appendix A. SUMMARY OF PLAN PROVISIONS

The Plan has been amended since the date of the valuation to provide Members with the option to cease required contributions to the Plan and thereby stop accruing additional benefits after reaching their normal retirement date. The amendment did not have a material effect on the results of our valuation.

ELIGIBILITY
New staff must join the Plan when employed.

MEMBER CONTRIBUTIONS
Members are required to contribute at the rate of 8.0% of salary up to the YBE, 6.2% between the YBE and the YMPE, and 8% in excess of the YMPE. Members contribute only on the amount earned up to the YMCE.

The YMCE is the sum of $86,111 prior to April 1, 2009 or $98,750 thereafter, and 30% of the YMPE for the year.

Members who reach their normal retirement date may elect to stop making required contributions to the Plan, thereby stopping the accrual of additional benefits.

UNIVERSITY CONTRIBUTIONS
Basic Contributions
The University is required to contribute at the rate of 8.0% up to the YBE, 6.2% between the YBE and the YMPE and 8.0% in excess of the YMPE with no salary limitation applied, plus any special payments required under the Pension Benefits Act of Manitoba.

Additional Contributions
As a result of amendments to improve benefits effective November 10, 2008 and April 1, 2009 and the collective bargaining agreement between the University and BUFA, the provision for University contributions was amended for additional contributions. The University shall pay additional contributions equal to the normal actuarial cost of the benefit improvements made effective on the above dates but excluding the effect of the increase in the member contribution rate effective April 1, 2009.

Further, additional University contributions of 1.15% of salary effective November 10, 2008, increasing to 2.25% of salary effective April 1, 2009, are required for members who joined the Plan prior to January 1, 2008 with an Initial Amount, as defined in amendment 10/01, having a present value as at December 31, 2007 of $5,107,000. Additional contributions under this provision shall cease when the outstanding balance on the Initial Amount is reduced to zero by any University contributions that are in excess of the University's portion of the normal actuarial cost of current service. The requirement under this provision had been fully satisfied previous to the date of this valuation.

Contributions Required to Satisfy Requirements of the Pension Benefits Act

The University is required to contribute the amounts required to satisfy the Pension Benefits Act of Manitoba and Regulations ("Act and Regulations"). If the University contributions required to satisfy the Act and Regulations exceed those amounts above (Basic and Additional), the University is required to make additional contributions to satisfy those requirements.

NORMAL RETIREMENT

The normal retirement date of all members is the first of the month following their 65th birthday.

EARLY RETIREMENT

A member may retire on the first day of any month within the ten-year period prior to his normal retirement date. If the member is age 60 or over and his age plus years of service equals 85 or more, there is no reduction on early pension commencement, otherwise the reduction is 1/3% for each month by which his early retirement date precedes the first date that he would have satisfied the "rule of 85, minimum age 60", had employment continued, but not later than age 65.

LATE RETIREMENT

A member who continues in employment after his normal retirement date continues to make contributions to the Plan and his pension does not commence until his actual retirement date or the end of the year in which the member attains age 71, if earlier.

PENSION

At retirement, the member is entitled to an annual pension equal to 2% of his final average earnings multiplied by the member's years of credited service less 0.6% of his CPP average earnings multiplied by the member's years of service since January 1, 1990. Final average earnings are the average of the best 5 years earnings in the last 12 prior to retirement. CPP average earnings are the member's average earnings up to the YMPE in the 5 years prior to retirement. For members who retired prior to April 1, 2009, the maximum annual pension was $1,722.22 per year of credited service. Effective April 1, 2009, the maximum was increased to $1,975.00 per year of credited service for members who retired on or after April 1, 2009.

FORMS OF PENSION

For members who retired prior to November 10, 2008, the normal form of pension at retirement was payable for life with a guarantee of 5 years' payments. Effective November 10, 2008, members retiring with a spouse at retirement receive a pension in the form of joint and survivor with 2/3 continuing to the surviving spouse. Other options are available on an actuarially equivalent basis.

PENSION INCREASES

For increases provided prior to December 31, 2013, pensions in payment and deferred pensions are increased automatically on July 1 by the same percentage as the investment return on the fund in the previous year, based on actuarial values, exceeds 6%, subject to a maximum increase of the CPI in that year. If the increase in any year is limited by the CPI increase and there was a previous year, or years, when the increase was less than the CPI, the University, on the advice of

the Plan trustees, may provide a higher increase so that some or the entire shortfall may be made up.

The Plan was amended for increases provided after December 31, 2013 to revise the method of calculating supplemental pension increases. The amendment changes the calculation of the excess fund return to be the excess over 6% of the previous four-year geometric average rather than the excess over 6% of the actuarial return of smoothed assets in the previous year.

DEATH BENEFITS PRIOR TO RETIREMENT

The death benefit is the commuted value of the pension earned to the date of death.

BENEFITS ON TERMINATION OF EMPLOYMENT

A member who terminates employment is entitled to a deferred pension payable from normal retirement date.

50% of the deferred pension in respect of service after January 1, 1985 must be paid for by University contributions.

Members not eligible to commence an immediate pension upon termination of employment may transfer the commuted value of their accrued pension to a locked-in retirement account.

GREAT-WEST LIFE PENSIONERS

Those members who retired prior to May 1989 had their pensions provided by an annuity purchased from Great-West Life. Each year additional amounts of annuities had been purchased to provide pension increases but beginning in 1999 any additional pensions for these members are paid from the fund.

Appendix B. ACTUARIAL ASSUMPTIONS AND METHODS

Going Concern Valuation

These assumptions are the same as those used at the previous valuation, except where noted.

Interest:

In order to determine the expected investment return on the investments of the Plan our model determined expected long-term capital market returns, standard deviations and correlations for each major asset class noted in Appendix E (universe bonds, Canadian equities, global equities, etc.) by using historic returns, current yields and forecasts. We then stochastically generated projected asset class returns for 5,000 paths over 30 years to create expected returns for each asset class. The simulated going concern discount rate was the return at the median of each asset class weighted by the asset mix percentages of the benchmark fund in the Managed Account Agreement between Connor, Clark and Lunn and the Pension Trustees.

We have assumed that there will be no added-value returns from the active management strategy employed in excess of the associated additional investment management fees.

Based on the methodology described above, the going concern discount rate assumption was developed as follows:

	Expected Return
Simulated gross investment return before margin and expenses	6.85%
Assumed active management value added	0.20%
Provision for investment management and administration expenses	(0.50%)
Provision for adverse deviations	(1.05%)
Going concern discount rate	5.50%

Expenses:

The interest rate assumption includes an implicit provision for investment and administration expenses paid from the Plan based on recent experience in the Plan.

Inflation:

We have assumed increases in the Consumer Price Index for Canada ("CPI") equal to 3.5% for 2023, 2.0% per year thereafter. We have based our assumed inflation on our estimate of future inflation considering anticipated high levels of inflation increases in the short term, as well Bank of Canada's long-term inflation target of 1% to 3% per annum. Our chosen rate is consistent with the implied market rate based on long term Government of Canada nominal bonds and long-term Government of Canada real return bonds.

Salary Increases:
Salaries are assumed to increase from 2022 levels as follows:

i. General – 4.5% per year for one year, 3.0% per year thereafter. This rate is based on an allowance for market implied inflation at December 31, 2022 of 3.5% per year for one year, 2.0% per year thereafter plus real salary increases of 1.0% per year which is consistent with historical increases in the Canadian economy.

ii. Promotional & Merit - Academic and non-union members – we have used a promotional and merit scale, extracts of which are shown below:

Age	Average Annual Increase over next 5 years	Average Annual Increase to age 65
30	3.3%	2.3%
35	2.8%	2.2%
40	2.5%	2.0%
45	2.2%	1.9%
50	2.0%	1.8%
55	1.8%	1.7%
60	1.7%	1.7%

Scheduled rate increases according to collective bargaining agreements are reflected in our valuation. A summary of the annual increases are as follows:

Year	Academic and non-union members	Non-Academic union members
2019	0.00%	3.50%
2020	0.00%	1.00%
2021	0.75%	1.00%
2022	1.00%	1.75%
2023	*	2.00%

** increase rates as per our assumption above*

Mortality
We assumed that baseline mortality will be in accordance with Club Vita Canada's 2021 VitaCurves, which vary by plan member, with generational projection using the CPM-B improvement scale. Improvements in mortality from 2018 to the calendar year of determination are projected based on each member's year of birth.

VitaCurves are baseline mortality rates that vary by member based on their individual longevity characteristics and have been developed using a generalized linear modelling framework. (More details on the methodology can be found in the Canadian Institute of Actuaries member's paper: Key Factors for Explaining Differences in Canadian Pensioner Baseline Mortality.) The CV21 VitaCurves have been calibrated based on Club Vita Canada's longevity dataset for the years 2017-2019. Club Vita Canada's longevity dataset is composed of a subset of Canadian registered pension plans across Canada, and includes plans covering a range of industries in both the private and public sector. Club Vita Canada's CV21 VitaCurves have been developed based on longevity experience consisting of 2.4 million exposure years and 62 thousand deaths over 2017-2019, and vary by the following longevity factors:

- Gender;
- Pensioner type – pensioner or surviving spouse;
- Disability status at retirement for pensioners – disabled or non-disabled pensioner;
- Postal code-based lifestyle/longevity group – five groups for each of males and females;
- Affluence as measured by pension amount or earnings – there are four pension bands for males, three earnings bands for females and four earnings bands for males and females;
- Occupation type – currently or formerly employed in a manual or non-manual occupation; and
- Pension form at retirement for pensioners – single life or joint life.

Given that the availability of longevity factors varies by plan, and also by members within a plan, the CV21 VitaCurves are calibrated based on different combinations of the factors outlined above, resulting in over 500 baseline mortality tables. The best VitaCurve is assigned to each individual Plan member based on the longevity factors available for that member.

Specifically for this Plan, all longevity factors as described above, with the exception of disability status at retirement for pensioners, were used to assign VitaCurves to individual Plan members.

For the purpose of determining commuted values for those assumed to elect a lump sum at retirement, the CPM Combined Table with improvement scale CPM-B was used.

In the previous valuation, CV20 VitaCurves were used.

Termination:

Considering the size of the Plan, there is not adequate termination experience data appropriate for developing a table of termination probabilities. We have continued to assume termination probabilities in accordance with three times the probabilities from the Ontario Light Table, with zero probability for ages greater than or equal to 55. Sample rates are as follows:

Age	Probability of Termination
30	16.8%
35	9.6%
40	6.6%
45	5.1%
50	3.6%
55	0%

We have assumed that 75% of members terminating prior to becoming eligible for retirement will elect to receive their pension as a lump sum commuted value. The commuted values are calculated using an assumed rate of 4.0% per year. The remaining terminating members are assumed to receive a deferred pension from the Plan.

Retirement:
The retirement age of members has a financial impact on the Plan. A retirement study was performed in April 2021 and the results of that study were used to develop the following table based on 10 years of retirement experience in the Plan from 2011 to 2020. This table will be re-evaluated as more experience is revealed and updated as appropriate when future valuations are performed.

Age	Probability of Retirement
55 - 56	3.0%
57 - 58	4.0%
59 - 64	10.0%
65	30.0%
66 - 69	15.0%
70+	100.0%

Deferred plan members are assumed to retire at age 55.

Year's Maximum Pensionable Earnings:
We have assumed that the CPP Year's Maximum Pensionable Earnings (YMPE) will increase annually based on average general increases in wages in Canada. For this valuation we have assumed that the YMPE will increase from its 2023 level of $66,600 by 4.5% per year for one year, 3.0% per year thereafter. This is consistent with the general salary increase assumption.

For the previous valuation it was assumed that the YMPE would increase from its 2022 level of $64,900 by 4.5% per year for two years, 3.0% per year thereafter.

Future Pension Increases:
Pensions in pay and deferred pensions are increased annually by an amount equal to the excess of the four-year average investment return of the fund over a base rate of 6.0%, limited by the increase in the Consumer Price Index for Canada. Despite assuming that the fund will earn 5.50% per year on average over the long term, based on the asset mix of the fund we expect that there will be years where the fund return will exceed 6.0% and increases in pensions will be granted. We have assumed that pensions will increase by 1.00% per year on average.[1]

Future increases in respect of pensions paid by Great-West Life:
We have assumed pensions will increase by 1.00% per year on average. We have included in our valuation a provision for the full amount of pension increases to be paid out of the Plan with respect to pensions paid by Great-West Life.[2]

Actuarial value of assets:
For this valuation, we have continued to use an actuarial value of assets that smooths excess investment returns over a four-year period relative to the assumed investment return. The assumed investment return is the rate applicable from the prior actuarial valuation for each year during the smoothing period. The applicable assumed investment returns are shown below:

Year	Assumed Investment Return
2019	5.55%
2020	5.30%
2021	5.25%
2022	5.50%

We further restrict the actuarial value of assets to be within 10% of the market value of assets, if required.

Family composition:
Because members who are married at the time of retirement receive a joint and survivor pension with 2/3rds of the pension continuing to the spouse and single members receive a lifetime pension guaranteed for five years, the marital status at retirement can have a financial impact on the Plan. Reliable data on family composition at retirement is unavailable for this Plan. We have assumed that 85% of male members and 70% of female members have a spouse at retirement and the male spouse is three years older than the female spouse which is typical for pension plans in general.

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[1] We have reflected the actual pension increase effective July 1, 2023 equal to 1.17% in our going concern valuation.
[2] We have reflected the actual pension increase effective July 1, 2023 equal to 1.17% in our going concern valuation.

GOING-CONCERN VALUATION METHOD

We have used a projected unit credit actuarial cost method. This values the benefits for accrued service to the valuation date by projecting salaries to retirement, determining the pension at retirement and discounting the value back to the valuation date. We compare the value of the liabilities in respect of service after 1984 to the contributions plus interest in respect of the same period to determine if the 50% test is applicable. If it is, we make the appropriate adjustment to the liability. Ancillary benefits on death or termination of employment are valued in a similar manner.

The liability for sessional employees who had no pensionable earnings in 2022 is determined to be two times their accumulated contributions with interest as at December 31, 2022.

The University's current service cost under this method is the excess of the cost of benefits which will arise in the year following the valuation over the member's contributions in that year.

Solvency and Wind-up Valuation

The following summarizes the actuarial assumptions used for the Solvency and Wind-up Valuations:

Actuarial value of assets:	Solvency: Smoothed value based on four-year smoothing relative to an expected return of: • 2019: 5.55% • 2020: 5.30% • 2021: 5.25% • 2022: 5.50% Wind-up: Market value
Interest:	4.91% per year for annuity purchase[3] 4.10% per year for 10 years and 4.50% per year thereafter for lump sum transfer.
Future increases in Pensionable Earnings:	None
Mortality:	

[3] In accordance with the CIA Educational Note, the spread above the unadjusted CANSIM series V39062 was determined to be 160 basis points based on a duration of 9.1 for the portion of the liability assumed to be settled through the purchase of annuities. Accordingly, the discount rate assumed for the purchase of non-indexed annuities is 4.91%.

	CPM2014 (Combined) Mortality Table with mortality improvement projected generationally in accordance with Scale CPM-B.
Marital Status	85% of male members are married, 70% of female members are married, with male spouse 3 years older than female spouse.
Proportion electing annuity purchase	100% of retirees and 100% of active and deferred members age 55 & older. All others elect a lump sum transfer of the commuted value.
Allowance for wind-up expenses:	$450,000 (approximately $50,000 plus $400 per member). Excludes costs related to surplus/deficit distribution issues on plan wind-up. Assumes all expenses will be paid from the Plan in the event of wind-up.
Pension Increase	We have made no allowance for any assumed future pension increases.

The liability for sessional employees who had no pensionable earnings in 2022 is determined to be two times their accumulated contributions with interest as at December 31, 2022.

Incremental Cost

The incremental cost is the present value, at the valuation date, of the expected aggregate change in the hypothetical wind-up or solvency liability between the valuation date and the next valuation date. It also reflects expected benefit payments between the valuation date and the calculation date.

In our report we have determined the incremental cost under the solvency basis. The incremental cost was determined as the sum of (a) and (b) minus (c)

(a) the projected solvency liability at the next valuation date for those members at the current valuation date, allowing for expected decrements and change in membership status, service accrual and increase in earnings between the current valuation date and the next valuation date. An adjustment was made for new entrants between the two valuation dates. The demographics and earnings of the new entrants are consistent with the new entrants hired over the past year. An adjustment was also made for the cost of living increase to be granted to retired and deferred members prior to the end of the year, if any. The resulting projected solvency liability was then discounted with interest to the current valuation date;

(b) the present value of the benefit payments expected to be paid between current valuation date and the next valuation date, discounted with interest to the current valuation date;

(c) the solvency liability as at the current valuation date.

For purposes of calculating the solvency incremental cost, the expected decrements, as well as the expected benefit payments between the current valuation date and the next, were determined using the going concern demographic assumptions. The projected solvency liability at the next valuation date was determined using the same method and assumptions as disclosed in this Appendix. In particular, we have assumed that the discount rates will remain the same throughout the projection period and the Standards of Practice for determining commuted value rates in effect at the valuation date will remain unchanged, as will the current educational guidance on the estimation of annuity purchase costs.

Appendix C. MEMBERSHIP DATA

This section provides a summary of membership data used in the valuation. Eckler provides membership record keeping and administration services for the Plan, updated based on an annual report provided by the University. The data was compiled from our records as at December 31, 2022. We have reconciled the data with that used in the previous valuation and are satisfied that the data are sufficient and reliable for the purposes of the valuation.

Active Members[4]	**12.31.2022**	**12.31.2021**
Number of Members	468	465
Average Pensionable Earnings[3]	$80,695	$79,790
Average Credited Service	9.9	10.1
Average Age	48.9	48.9
Total Required Contributions with Interest	$25,530,612	$24,999,211
Total Additional Voluntary Contributions with Interest	$127,881	$139,610
Deferred Pensioners	**12.31.2022**	**12.31.2021**
Number of Members	68	64
Average Age	55.5	54.6
Average Annual Deferred Pension Payable at 65	$8,593	$6,817
Pensioners and Survivors	**12.31.2022**	**12.31.2021**
Number of Lifetime Pensions	387	374
Average Age (Lifetime Pensions)	75.3	74.8
Average Annual Lifetime Pension	$27,636	$26,441
Number of Certain Only Pensions	0	1
Average Annual Certain Only Pension	0	*
Number of Great-West Life Pensions	4	4
Average Age (Great-West Life Pensions)	95.0	94.0
Average Annual Great-West Life Pension	$13,204	$13,204

[4] Active Members includes sessional employees with earnings in the calendar year prior to the valuation date.

[3] Earnings shown represent the actual earnings in the year prior to the valuation date. Earnings for new entrants have been annualized.

Sessional Employees[4]	12.31.2022	12.31.2021
Number of Members	45	42
Total Required Contributions with Interest	$89,821	$82,510

[4] Sessional Members includes sessional employees that did not have any pensionable earnings in the calendar year prior to the valuation date.

Distribution of Active Membership

The following tables summarize the distribution of active membership by age and credited service. We have included the count of members in each group and shown their average pensionable earnings for 2022.

Academic and Non-Union Members

Age Group	Credited Service								Total
	0 - 4	5 - 9	10 - 14	15 – 19	20 – 24	25 - 29	30 - 34	35+	
25 - 29	2								2
	*								*
30 - 34	18	3							21
	42,824	67,081							46,289
35 - 39	24	15	2						41
	50,959	99,354	*						72,113
40 - 44	29	20	3	4					56
	61,215	100,884	86,535	101,491					79,616
45 - 49	14	22	4	4	1				45
	66,932	101,890	116,856	99,122	*				92,122
50 - 54	15	10	5	12	9				51
	38,535	101,055	102,567	122,969	124,238				92,062
55 - 59	11	7	9	10	8	4			49
	41,518	93,108	124,600	135,846	124,989	120,824			103,501
60 - 64	13	4	1	9	11	3	2		43
	63,312	115,883	*	120,810	137,434	162,890	*		113,287
65 - 69	4	2	3	6	7	4	1	2	29
	21,908	*	127,113	137,626	137,674	159,354	*	*	123,909
70 - 74	1								1
	*								*
Total	**131**	**83**	**27**	**45**	**36**	**11**	**3**	**2**	**338**
	51,622	**100,608**	**115,001**	**123,324**	**130,458**	**146,308**	**178,854**	*	**91,346**

**Earnings in cells with fewer than three members have been suppressed.*

Non-Academic Union Members

Age Group	Credited Service								Total
	0 - 4	5 - 9	10 – 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
20 - 24	1								1
	*								*
25 - 29	3								3
	33,670								33,670
30 - 34	3	2	1						6
	22,866	*	*						41,854
35 - 39	10	12	3	1					26
	48,953	61,083	91,765	*					59,576
40 - 44	9	7	6		2				24
	36,245	53,251	64,393		*				51,163
45 - 49	11	4	5	4	1				25
	35,548	50,096	56,660	62,442	*				47,386
50 - 54	4	1	2	2	4	1			14
	50,171	*	*	*	56,472	*			59,000
55 - 59	2	4	2	1		3	1		13
	*	54,392	*	*		54,448	*		54,568
60 - 64	2	1	2	2	4	1	1	2	15
	*	*	*	*	50,062	*	*	*	55,272
65 - 69				1		1	1		3
				*		*	*		61,591
Total	**45**	**31**	**21**	**11**	**11**	**6**	**3**	**2**	**130**
	39,589	**56,271**	**65,251**	**62,328**	**57,173**	**59,950**	**61,483**	*	**53,001**

**Earnings in cells with fewer than three members have been suppressed.*

The following table summarizes the distribution of inactive members by age.

Pensioner and Survivor Lifetime Pensions			Deferred Pensioners		
Age	**Count**	**Average Annual Lifetime Pension**	**Age**	**Count**	**Average Annual Deferred Pension Payable at 65**
45 - 49	1	*	35 - 39	4	$7,091
50 - 54	-	-	40 - 44	5	4,956
55 - 59	9	13,042	45 - 49	11	7,061
60 - 64	26	21,420	50 - 54	12	11,391
65 - 69	68	24,331	55 - 59	8	7,041
70 - 74	89	30,054	60 - 64	15	5,619
75 - 79	71	36,729	65 - 69	8	6,069
80 - 84	64	25,892	70+	5	25,530
85 - 89	35	26,963			
90 - 94	15	18,965			
95+	9	16,639			
Total	**387**	**$27,636**	**Total**	**68**	**$8,593**

The following table summarizes the changes in membership since the previous valuation.

Reconciliation of Membership

	Active[5]					
	Academic and non-union members	**Non-Academic union members**	**Pensioner**	**Deferred**	**Sessional[6]**	**Total**
At December 31, 2021	340	125	375	64	42	946
Data adjustments	1			1		2
New entrants	38	18				56
Sessional to active	1				(1)	-
Active to sessional	(13)				13	-
Terminations						
- Deferred	(4)			4		-
- Paid out	(13)	(5)			(3)	(21)
- Small Benefit	(4)	(1)			(5)	(10)
Retirements						
- Pension	(7)	(8)	16	(1)		-
Death			(4)		(1)	(5)
At December 31, 2022	339	129	387	68	45	968

[5] Includes sessional employees with earnings in the year prior to the valuation date.

[6] Sessional employees with no earnings in the year prior to the valuation date.

Appendix D. PLAN ASSETS

Assets of the Plan are held in trust with CIBC Mellon. The funds are invested in a number of pooled funds operated by Connor, Clark, & Lunn. We have relied on the draft financial statements for the fund prepared by Brandon University for the December 31, 2022 year-end, as well as information provided by CIBC Mellon to determine the assets of the Plan.

The Board of Trustees invests the assets in accordance with the Statement of Investment Policies & Procedures.

The following summarizes the asset mix policy of the Plan as outlined in the Statement of Investment Policies & Procedures adopted February 24, 2022.

Asset Mix Policy

	Benchmark
Canadian Equity	15.0%
U.S. Equity	18.5%
International Equity	18.5%
Emerging Markets Equity	8.0%
Long Bond Fund	20.0%
Infrastructure	10.0%
Real Estate	10.0%
Cash and Equivalents	0%
Total	100.0%

FINANCIAL STATEMENTS

A summary of the change in assets since January 1, 2020, provided by the University, is summarized below:

	2020	2021	2022
Balance at January 1	203,861,060	225,643,712	249,961,883
Member Contributions	2,349,475	2,508,046	2,438,583
University Contributions	3,356,543	3,430,427	3,250,202
Transfers	167,299	7,365	268,593
Investment Income	6,000,786	5,874,650	8,008,525
Realized Gains + Losses	16,309,964	22,825,770	5,558,616
Change in Market Values	5,840,528	1,336,778	(43,675,994)
Other income	43	37	0
Pensions Paid	(9,194,105)	(9,580,069)	(10,202,213)
Termination Payments	(1,409,139)	(1,012,839)	(745,593)
Death Payments	(657,677)	0	(766,177)
Expenses	(981,065)	(1,071,994)	(1,186,520)
Balance at December 31	225,643,712	249,961,883	212,909,905

The market value of assets as at December 31, 2022 shown above is equal to the invested assets of $212,254,012 plus contributions receivable equal to $952,329 minus payables equal to $296,436.

ACTUARIAL VALUE OF ASSETS

To place a value on the assets for actuarial valuation purposes, we have used an approach which smooths out the volatility of the market valuation by amortizing excess investment earnings net of expenses over the assumed investment earnings for the same period based on the actuarial valuation in effect at the time. Specifically, net investment earnings in excess of the following assumed rates are amortized over a four-year period. We further restrict the actuarial value of assets to be within 10% of the market value, if required.

Year	Assumed Investment Return		Actual Net Investment Return	Excess Net Investment Return
2019	5.55%	9,686,892	31,057,506	21,370,614
2020	5.30%	10,661,865	27,170,213	16,508,348
2021	5.25%	11,724,309	28,965,205	17,240,895
2022	5.50%	13,589,597	(31,295,373)	(44,884,970)

In practical terms, the actuarial asset value includes 100% of the excess investment earnings from 2019, 75% from 2020, 50% from 2021 and 25% from 2022.

The actuarial asset value is derived as follows:

Market value at Dec. 31, 2022				212,909,905
- 75% of 2022 excess investment earnings	0.75 x	(44,884,970)	=	33,663,727
- 50% of 2021 excess investment earnings	0.50 x	17,240,895	=	(8,620,447)
- 25% of 2020 excess investment earnings	0.25 x	16,508,348	=	(4,127,087)
- 0% of 2019 excess investment earnings	0.00 x	21,370,614	=	0
Actuarial value at Dec. 31, 2022				233,826,098
Actuarial value as a percent of market value				109.82%

The actuarial value of assets must be within 10% of the market value of assets. As shown above, the actuarial value is within 10% of the market value.

INVESTMENT RETURN

Assuming that all cash flows occurred in the middle of the year, the pension fund earned a rate net of return of expenses of -12.67% based on the market value of assets and 6.58% based on the actuarial value of assets in 2022.

Appendix E. PLAUSIBLE ADVERSE SCENARIOS

A plausible adverse scenario is considered to be one that will occur in the short term (immediately to one year) with a likelihood of occurring between 1 in 10 and 1 in 20 based on the opinion of the actuary. The purpose of the following scenarios is to illustrate the impact on the Plan's financial position of the following adverse but plausible assumptions relative to the best estimate assumptions selected for the Plan's going concern valuation. The purpose of disclosing these results is to demonstrate the sensitivity of the funded status and annual current service cost between the current and the next valuation date to certain key risk factors affecting the Plan. The results of the scenarios selected are shown in the table below, with a description of each scenario following.

	Going Concern Results at 12.31.2022	Plausible Adverse Scenario Results at 12.31.2022		
		Interest Rate Risk	Deterioration of Asset Values	Longevity Risk
Total going concern assets	$233,826,000	$235,130,000	$199,094,000	$233,826,000
Total going concern liabilities	$209,804,000	$215,909,000	$209,804,000	$214,267,000
Going concern excess (unfunded liability)	$24,022,000	$19,221,000	($10,710,000)	$19,559,000
Employer current service cost	$3,407,000	$3,679,000	$3,407,000	$3,524,000
Employer current service cost as % of earnings*	8.80%	9.50%	8.80%	9.10%
Discount rate	5.50%	5.24%	5.50%	5.50%
Adjusted market value of assets	$212,910,000	$218,127,000	$180,995,000	$212,910,000

** this is based on estimated earnings of $38,720,000*

INTEREST RATE RISK

This scenario illustrates the sensitivity of the funded status of the Plan and current service cost to an immediate change in the market interest rates underlying fixed income investments.

In order to assess the impact of a decrease in interest rates of a magnitude consistent with a 1 in 10 likelihood of occurring, we have used the same stochastic model that is used to determine the going concern discount rate (see Appendix B). The stochastic model is based on 5,000 simulations of projected financial variables, including long term yields on fixed income investments and asset class returns. Our long-term best estimates for these variables, and the going concern discount rate are based on the median values over these 5,000 simulations.

To determine the sensitivity to interest rate risk, and the resulting impact on Plan assets and liabilities, we have:

- considered the hypothetical going concern discount rate over the 500 trials where fixed income yields are lowest at the one-year horizon,
- determined the decrease in median long-term fixed income yields over the 500 trials where fixed income yields are the lowest at the one-year horizon.

As such, under the interest rate risk scenario, the going concern discount rate is decreased by 26 basis points as of December 31, 2022.

With respect to the impact on fixed income assets, the scenario results in a decrease in long term yields on fixed income investments of 0.78%.

Based on the estimated duration of the Plan assets, liabilities and the current service cost, we have then determined the estimated change to the Plan's funded status under the interest rate risk scenario.

DETERIORATION OF ASSET VALUES

This scenario illustrates the sensitivity of the funded status of the Plan to short-term shock which causes a reduction in the market value of assets, with no change to the liabilities of the Plan. This scenario is assumed not to impact the current expectation of the long-term rate of return, and consequently, the going concern discount rate.

In order to assess the impact of a decrease in asset values of a magnitude consistent with a 1 in 10 likelihood of occurring, we have used the same stochastic model that is used to determine the going concern discount rate (see Appendix B). The stochastic model is based on 5,000 simulations of projected financial variables, including long term yields on fixed income investments and asset class returns.

To determine the sensitivity to a deterioration in asset values, based on the Plan's target asset mix, we have determined the decrease in median investment returns over the 500 trials where investment returns are the lowest at the one-year horizon.

As such, under the deterioration of asset values scenario, the market value of assets is decreased by 14.99% as of December 31, 2022.

LONGEVITY RISK

This scenario illustrates the sensitivity of the funded status of the Plan to pension plan members living longer than expected. The impact of this scenario was determined using more conservative mortality assumption than currently employed, resulting in a one-year increase to the average life expectancy of the Plan as of December 31, 2022.

Appendix F. CERTIFICATE OF TRUSTEES

With regards to the December 31, 2022 actuarial report for the Brandon University Retirement Plan, we hereby certify that, to the best of our knowledge and belief:

- A copy of the official Plan document and all amendments made to December 31, 2022 were provided to the actuary;
- The membership data provided to the actuary includes a complete and accurate description of every person who is entitled to benefits under the terms of the Plan for service up to December 31, 2022; and
- All events subsequent to December 31, 2022 that may have an impact on the valuation have been communicated to the actuary.
- The valuation reflects the terms of the engagement with the actuary, in particular the use of a 5.50% valuation interest rate.

David Taylor	J Lamont
Signature	Signature
Chair	Trustee
Title	Title
7 June 2023	June 7/23.
Date	Date