

**PENSION PLAN FOR THE EMPLOYEES OF
THE UNIVERSITY OF PRINCE EDWARD ISLAND**

**REPORT ON THE ACTUARIAL VALUATION
AS AT APRIL 30, 2022**

(REGISTRATION No. 0520635)

SEPTEMBER 2022

PREPARED BY:

ECKLER

**1969 UPPER WATER STREET, SUITE 503
HALIFAX, NOVA SCOTIA
B3J 3R7**

TABLE OF CONTENTS

SECTION	PAGE
SUMMARY OF RESULTS	
I	INTRODUCTION AND PURPOSE OF VALUATION1
II	PLAN CHANGES AND SUBSEQUENT EVENTS2
III	FINANCIAL POSITION OF THE PLAN.....4
	A. GOING CONCERN BASIS: FINANCIAL POSITION AS AT APRIL 30, 20224
	B. HYPOTHETICAL WIND-UP BASIS: FINANCIAL POSITION AS AT APRIL 30, 20227
IV	FUNDING REQUIREMENTS9
	A. CURRENT SERVICE COSTS9
	B. DEFICIT AMORTIZATION9
	C. MEMBER CONTRIBUTION RATES.....10
V	ACTUARIAL OPINION11
APPENDIX	
A	PLAN ASSETS13
B	ACTUARIAL METHODS AND ASSUMPTIONS.....15
	A. VALUATION OF ASSETS15
	B. GOING CONCERN VALUATION16
	C. HYPOTHETICAL WIND-UP VALUATION.....20
	D. INCREMENTAL COST22
C	MEMBERSHIP DATA23
D	SUMMARY OF PLAN PROVISIONS26
E	EMPLOYER CERTIFICATION.....31

SUMMARY OF RESULTS

(All financial figures in \$000's)	
Membership Data	April 30, 2022
Active members	672
Terminated non-vested members	10
Deferred vested members	71
Pensioners (including survivor pensions)	465
Total membership	1,218

Going Concern Financial Position	April 30, 2022
Going concern value of assets	\$328,887
Going concern actuarial liability	(327,027)
Going concern excess / (unfunded liability)	\$1,860
Funded Ratio for purposes of Funding Agreement	102.7%

Hypothetical Wind-Up Financial Position	April 30, 2022
Total wind-up assets	\$335,203
Total wind-up actuarial liabilities	(354,451)
Wind-up excess/(deficiency)	(\$19,248)

Funding Requirements (annualized)	2022 / 2023	
	% of payroll	\$000s
Estimated pensionable payroll for year beginning April 30, 2022		\$63,216
Total annual current service cost	17.60%	\$11,128
Member current service contributions	(8.80%)	(5,564)
Employer current service contributions	8.80%	\$5,564
Member Special Contributions	0.88%	\$556
Employer Contributions Towards Initial Deficit	1.00%	\$632
Total member contribution requirement	9.68%	\$6,120
Total employer contribution requirement	9.80%	6,196
Total plan contribution requirement	19.48%	\$12,315

SECTION I INTRODUCTION AND PURPOSE OF VALUATION

At the request of the Trustees of the *Pension Plan for the Employees of the University of Prince Edward Island* (the “Plan”), we have completed an actuarial valuation of the Plan as at April 30, 2022. The last valuation was conducted as at April 30, 2019.

The purposes of this actuarial valuation are as follows:

- to determine the financial position of the Plan on going concern and hypothetical wind-up bases;
- to determine the Plan's ongoing funding requirements, so that assets can be accumulated to provide for benefits under the Plan in advance of the time they are actually required to be paid;
- to determine the Plan's Funded Ratio in accordance with the Funding Agreement; and
- to meet the statutory filing requirements under the *Income Tax Act*.

In this report, we provide the valuation results, along with an actuarial opinion with recommended funding levels for use until the next valuation. The data, actuarial assumptions and methodology used in valuing both the assets and the liabilities of this pension plan is provided by way of appendices for ease of reference.

The intended users of this report are the Board of Trustees, the Sponsor Board, and the 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.

The next valuation of the Plan must be completed as at a date no later than April 30, 2025.

Reliance

We have relied on the asset information detailed in the financial statements provided by the fund custodian. We have also relied on the Plan administrator to provide all relevant data and to confirm the pertinent Plan terms.

SECTION II PLAN CHANGES AND SUBSEQUENT EVENTS

The *Pension Plan for the Employees of the University of Prince Edward Island* is one which may be described as a "best average salary" defined benefit Plan. This means that each member's retirement pension is calculated as a specified percentage of his or her average salary during the best three years of membership in the Plan.

Where death occurs before retirement, the Plan also provides for the payment of a pension to the surviving spouse of a deceased member. Subject to minimum service requirements, there is also provision for a waiver of employee contributions during periods of disability.

The Funding Agreement sets out the funding requirements of the Plan. The Funding Agreement defines the Plan's "Initial Deficit" as the assets of the Plan plus the present value of the Member Special Contributions (0.88% of active members' pensionable pay until June 30, 2025) less the liabilities as at September 30, 2016. As such, the September 30, 2016 actuarial valuation report set out this Initial Deficit, which is to be funded by the University. The Initial Deficit was calculated to be \$6,475,000 at September 30, 2016 and it is being funded with University contributions of 1.00% of pensionable payroll until September 30, 2031.

The Funding Agreement also stipulates that the Plan's current service cost beginning with the September 30, 2016 actuarial valuation and any emerging deficits subsequent to that actuarial valuation will be shared equally by the University and the members.

There have been no changes to the Plan since the actuarial valuation as at April 30, 2019.

A more detailed description of the Plan is contained in Appendix D, and full detail is contained in the above mentioned documents.

Actuarial Assumptions

The Sponsor Board has chosen to reduce the going concern discount rate from 5.75% down to 5.50% with this valuation. This change has the impact of increasing going concern liabilities by \$9,270,000 and increasing the cost of new benefits by \$462,000 or 0.73% of payroll. There have been no other changes to the going concern assumptions since the last valuation.

The hypothetical wind-up economic and demographic assumptions have been changed to reflect market conditions as at the valuation date in accordance with the CIA's Standards of Practice and the CIA's Educational Note on Assumptions for Hypothetical Wind-Up and Solvency Valuations.

The details of the actuarial assumptions used in the valuation and the rationale employed in setting these assumptions are provided in Appendix B.

Subsequent Events

The Actuarial Standards Board (ASB) has published an amendment to the complete Practice-Specific Standards of Practice for Pension Plans (Part 3000) on June 27, 2022 with an effective date of December 1, 2022. Earlier implementation is not permitted for this change. The effect, if any, of the revised Standards of Practice have not been incorporated into this valuation.

The impact on the market value of assets, underlying assumptions and any other effects related to the Russia-Ukraine crisis have not been reflected in the valuation results and as such, the plan financial position shown in this report may be materially different if those factors were incorporated in our valuation. These effects will be revealed in future valuations.

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

SECTION III FINANCIAL POSITION OF THE PLAN

A. Going Concern Basis: Financial Position as at April 30, 2022

The following is the going concern valuation balance sheet as at April 30, 2022 based on:

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

with comparative figures from the valuation as at April 30, 2019.

FINANCIAL POSITION – GOING CONCERN BASIS (ALL FIGURES IN \$000s)

	April 30, 2019	April 30, 2022
Going concern assets		
Market value of assets	\$285,888	\$335,914
Net contributions / expenses in-transit	(266)	(311)
Smoothing adjustment	(5,941)	(6,716)
Total going concern assets	\$279,681	\$328,887
Going concern liabilities		
Active members	\$132,528	\$156,143
Pensioners and survivors	140,600	166,221
Deferred members (including non-vested)	5,019	4,625
Additional voluntary contributions	21	38
Total going concern liabilities	\$278,168	\$327,027
Going concern excess / (unfunded liability)	\$1,513	\$1,860
Present Value of Member Special Contributions	2,842	1,682
Present Value of Employer Contributions Towards Initial Deficit	6,093	5,357
Going concern excess / (Emerging Deficit)	\$10,448	\$8,899
Funded Ratio for purposes of Funding Agreement	103.8%	102.7%

As shown above, the April 30, 2022 actuarial valuation has revealed a going concern excess in the amount of \$1,860,000 prior to accounting for the *Present Value of Member Special Contributions* and the *Present Value of Employer Contributions Towards Initial Deficit*. This compares to an excess at the previous valuation of \$1,513,000.

After accounting for the *Present Value of Member Special Contributions* and the *Present Value of Employer Contributions Towards Initial Deficit*, the Plan has a going concern excess of \$8,899,000. In accordance with the Plan's Funding Agreement, no new Emerging Deficit Contributions are required, and there are no Emerging Deficit Contribution schedules established in the past to be reduced at this time.

Sensitivity Analysis

Below we show the impact on the going concern actuarial liability as at April 30, 2022 of a one percentage point drop in the discount rate assumption (i.e., from 5.50% per annum to 4.50% per annum). All other assumptions were kept unchanged.

GOING CONCERN SENSITIVITY

	Impact 1% Drop
Total going concern actuarial liability	\$369,121,000

The change in the actuarial liability would have the impact of increasing the liability by \$42,094,000 or 12.9% as at April 30, 2022.

Reconciliation of Going Concern Financial Position

The reconciliation provides an independent cross-check of the calculations performed, and also determines the chief reasons leading to the changes in the going concern financial position that have occurred since the previous valuation date.

Although a complete analysis down to the final dollar can be made, such an analysis requires the processing of a considerable amount of detailed data relating to the Plan, the expense of which would not normally be justified unless there were special circumstances.

However, it is possible to make an approximate analysis along broader lines, and under normal circumstances this type of analysis will produce meaningful results.

The table below summarizes the results of our reconciliation of change in financial position over the past three years under consideration.

RECONCILIATION OF GOING CONCERN FINANCIAL POSITION
(ALL FIGURES IN \$000s)

Going concern unfunded liability as at April 30, 2019:		\$1,513
	Remove smoothing adjustment	5,941
Going concern unfunded liability as at April 30, 2019 (market value basis):		\$7,454
Add:	▪ Investment earnings greater than expected	9,076
	▪ Special contributions plus interest	3,828
	▪ Retirement experience	2,152
	▪ Mortality experience	1,416
	▪ Interest on market value surplus for three years	1,361
	▪ Miscellaneous gain/(loss)	1,157
	▪ Salary increases lower than expected under actuarial assumptions	191
Deduct:	▪ Impact of change in discount rate	(9,270)
	▪ Cost of pensioner indexing	(8,554)
	▪ Maximum pension / YMPE increases lower than expected	(235)
Going concern excess as at April 30, 2022 (market value basis):		\$8,576
	Smoothing adjustment	(6,716)
Going concern excess as at April 30, 2022:		\$1,860

B. Hypothetical Wind-Up Basis: Financial Position as at April 30, 2022

The financial position of the Plan on a hypothetical wind-up basis as of April 30, 2022 is as follows:

FINANCIAL POSITION – HYPOTHETICAL WIND-UP BASIS (ALL FIGURES IN \$000s)

	April 30, 2019	April 30, 2022
Wind-up assets		
Market value of assets	\$285,888	\$335,914
Net contributions / expenses in-transit	(266)	(311)
Estimated wind-up expenses	(350)	(400)
Total wind-up assets	\$285,272	\$335,203
Wind-up liabilities		
Active members	\$170,111	\$164,538
Pensioners and survivors	179,984	184,534
Deferred members (including non-vested)	6,941	5,341
Additional voluntary contributions	21	38
Total member liabilities	\$357,057	\$354,451
Wind-up excess / (deficiency)	(\$71,785)	(\$19,248)

As shown above, on a wind-up basis there is a deficiency of \$19,248,000 in the Plan after providing for settlement of all accrued benefit entitlements as at April 30, 2022.

Sensitivity Analysis

Below we show the impact on the wind-up liability as at April 30, 2022 of a one percentage point drop in the discount rate assumption. All other assumptions were kept unchanged.

WIND-UP SENSITIVITY

	Impact 1% Drop
Total Wind-up Liability	\$400,686,000

The change in the discount rate would have the impact of increasing the wind-up liability by \$46,235,000 or 13.0% as at April 30, 2022.

Incremental Cost

In accordance with the Canadian Institute of Actuaries' Standard of Practice, we have estimated the incremental cost of the hypothetical wind-up liability as at April 30, 2022. This is the expected aggregate change in hypothetical wind-up liability between April 30, 2022 and April 30, 2025. The incremental cost is the present value, at the valuation date, of the expected aggregate change in the hypothetical wind-up liability between the valuation date and the next valuation date. It also reflects expected benefit payments between the valuation date and the next valuation date.

	3 year
Incremental Cost	\$32,338,000

The Actuarial Standards Board (ASB) published amendments to the complete Practice-Specific Standards of Practice for Pension Plans (Part 3000) on June 27, 2022 with an effective date of December 1, 2022 with earlier implementation not permitted. The effect, if any, of this new Standard of Practice has not been reflected in this calculation.

The estimated incremental cost does not impact the funding requirements of the Plan and is for information purposes only.

SECTION IV FUNDING REQUIREMENTS

A. Current Service Costs

The Plan's current service cost is the value of the benefits accruing to members in the year following the valuation determined on a going concern basis.

The table below summarizes the Plan's current service cost for the 12-month period from April 30, 2022 and the comparison with the required employee contributions over this period. In accordance with Section 2(1) of the Funding Agreement, contribution requirements to fund the current service cost are to be shared equally between the Members and the Employer.

	% of payroll	\$ 000s
Estimated pensionable payroll for year beginning April 30, 2022		\$63,216
Total annual current service cost	17.60%	11,128
Member current service contributions	(8.80%)	(5,564)
Employer current service contributions	8.80%	\$5,564

Sensitivity Analysis

Below we show the impact on the current service cost as at April 30, 2022 of a one percentage point drop in the discount rate assumption. All other assumptions were kept unchanged.

CURRENT SERVICE COST SENSITIVITY

	Impact 1% Drop
Total Current Service Cost	\$13,306,000

The change in the discount rate would have the impact of increasing the current service cost by \$2,178,000 or 19.6% as at April 30, 2022.

B. Deficit Amortization

As outlined in Section III, due to the financial position of the Plan, no new Emerging Deficit Contributions have been established. Therefore, the University's minimum funding obligation is 9.80% of pay (8.80% for current service plus 1.00% for amortization of the Initial Deficit). The Members' total contribution rate is therefore 9.68% of pay (8.80% for current service plus 0.88% in Member Special Contributions).

C. Member Contribution Rates

The following table sets forth the recommended Member contribution rates. The recommendation results in a 0.48% of payroll increase in contribution rates over the rates set out in the April 30, 2019 valuation report.

	Basic Contribution in Respect of Current Service Cost		Member Special Contribution Rate		Recommended Member Contribution Rate
On earnings up to the YBE (\$3,500 in 2022)	9.88%	+	0.88%	=	10.76%
On earnings between the YBE and the YMPE (\$64,900 in 2022)	8.08%	+	0.88%	=	8.96%
On earnings in excess of the YMPE	9.88%	+	0.88%	=	10.76%

Note that this contribution structure will generate the required overall 9.68% of earnings needed to fund the current service cost, plus the 0.88% Member Special Contribution Rate.

SECTION V ACTUARIAL OPINION

The following represent our primary conclusions as a result of our actuarial valuation as at April 30, 2022:

1. As at the valuation date there exists a going concern excess of \$1,860,000. In accordance with Section 2 of the Funding Agreement, Member Special Contributions of 0.88% of pay will remain in place until June 30, 2025, and the Employer Contributions Towards the Initial Deficit of 1.00% of pay will remain in place until September 30, 2031. Because the Plan's Funded Ratio exceeds 100%, no new Emerging Deficit Contributions are required.
2. The cost of the benefits to be earned on account of service in the year commencing April 30, 2022 amounts to \$11,128,000 or 17.60% of pensionable payroll. In accordance with Section 2(1) of the Funding Agreement, contribution requirements to fund the current service cost are to be shared equally between the Members and the University, resulting in required current service contributions of \$5,564,000 or 8.80% of pensionable payroll for each.
3. In accordance with the *Income Tax Act*, we have determined there to be no excess surplus as at April 30, 2022. Furthermore, we believe the University's contributions, if made in accordance with this report's recommendations, meet the requirements of an "eligible contribution" as defined in the *Income Tax Act*.
4. The University's minimum contribution in accordance with the Plan rules, is 9.80% of payroll (8.80% plus 1.00%), or \$6.20 million based on the estimated payroll in the year immediately following the valuation. The adequacy and appropriateness of the funding levels identified in this valuation should be reviewed at the next actuarial valuation of this Plan, which should take place no later than April 30, 2025.
5. If the Plan were to be wound up on the valuation date, the value of Plan assets would be less than actuarial liabilities by an amount of \$19,248,000.
6. We are not aware of any events that occurred between the valuation date and the date this report was completed that have not already been addressed that would have a material impact on the results of this valuation. Any investment experience occurring between the valuation date and the report date, which differs from the assumption made, is not reported on in this valuation report and will be reported on in a future valuation.

7. In our opinion:
- a. the data on which the valuation is based are sufficient and reliable for the purposes of the valuation as described in Section I;
 - b. the assumptions described herein 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 our opinions given, in accordance with accepted actuarial practice.

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

Respectfully submitted,

Jeff Turnbull, FSA, FCIA

Colleen Glenn, FSA, FCIA, CERA

G:\UPE\REPORTS\2022\Report\April 30 2022 Valuation Report (final).docx

APPENDIX A PLAN ASSETS

The Plan's assets are currently managed in such a way as to allow for a balanced mix of equity, fixed income, and real asset investments. Several independent fund managers, who are at arm's length from the University, manage the assets; the assets are held in custody by CIBC Mellon.

At April 30, 2022, the market value of the fund amounted to \$335,914,000 plus net contributions/expenses in transit of -\$311,000. At the last valuation, the market value of assets was \$285,888,000.

Reconciliation of Plan Assets

A summary of pension fund transactions for the period since the last valuation at April 30, 2019 to April 30, 2022 is summarized below:

RECONCILIATION OF PLAN ASSETS (ALL FIGURES IN \$000s)

Period:	30-Apr-19 to 30-Apr-20	30-Apr-20 to 30-Apr-21	30-Apr-21 to 30-Apr-22
Market value (beginning of period)	\$285,888	\$285,223	\$325,228
Employee contributions	5,180	5,535	5,512
Employer contributions	5,296	5,716	5,673
Past / transferred service contributions	293	65	32
Employer other contributions	0	0	0
Investment income, gains and losses	4,356	45,408	16,895
Pension payments	(13,062)	(13,839)	(14,378)
Termination and death benefit payments	(928)	(724)	(742)
Plan expenses	(1,800)	(2,156)	(2,306)
Market value (end of period)	\$285,223	\$325,228	\$335,914

Performance of Plan Assets

The rates of return on the pension fund's assets over the past two years and five months is shown below:

RATES OF RETURN

Period	Gross Rate of Return	Net of Expenses Rate of Return
April 30, 2019 to April 30, 2020	1.5%	0.9%
April 30, 2020 to April 30, 2021	16.1%	15.3%
April 30, 2021 to April 30, 2022	5.2%	4.5%
3 year average (annualized)	7.4%	6.7%

The average rate of return since the last valuation was 7.4% per year, or 6.7% net of expenses. This rate was greater than the rate used to discount actuarial liabilities and resulted in an investment experience gain.

APPENDIX B ACTUARIAL METHODS AND ASSUMPTIONS

A. Valuation of Assets

For purposes of the going concern valuation, we have employed an asset valuation method that contains a smoothing of asset values, but still relates them to their market values. This smoothing approach amortizes the difference between actual and expected investment returns over a three-year period (the current and two subsequent years).

The following table traces the development of the Plan's assets from the last valuation to this one, and shows in detail the mechanics of the smoothing approach:

SMOOTHED VALUE OF ASSETS (ALL FIGURES IN \$000s)

Year Ending April 30th	2020	2021	2022
Market value (BoY)	285,888	285,223	325,228
Market value (EoY)	285,223	325,228	335,914
Contributions	10,769	11,316	11,217
Benefits	13,990	14,564	15,120
Expenses	(1,800)	(2,156)	(2,306)
Interest rate	5.75%	5.75%	5.75%
Expected interest	16,004	16,634	17,826
Actual interest (net of expenses)	2,557	43,252	14,590
Difference	(13,447)	26,618	(3,236)
Amortization	(4,482)	8,873	(1,079)
Fund (BoY)	279,947	290,905	311,964
Add: Contributions net of benefits	(3,221)	(3,248)	(3,903)
Expected interest	16,004	16,634	17,826
Amortization (current year)	(4,482)	8,873	(1,079)
Amortization (last year)	3,283	(4,482)	8,873
Amortization (2 years ago)	(626)	3,283	(4,482)
Fund (EoY)	290,905	311,965	329,199
Remaining amortizations:			
This year	(8,965)	17,746	(2,157)
Last year	3,283	(4,482)	8,873
Smoothing adjustment:			6,716
Smoothing adjustment as a percentage of market value			(2.00%)
Smoothing adjustment constrained to 5% of market value of assets			6,716

The smoothing method results in an actuarial value of assets which is 2.00% lower than the market value of assets.

B. Going Concern Valuation

Actuarial Assumptions

For the purposes of a going concern valuation, we select actuarial assumptions with a long-term focus. That is, we anticipate that the Plan will continue indefinitely into the future. Actuarial assumptions are selected considering historical trends, future expectations and Plan specific experience, where possible. The assumptions chosen are expected to produce a stable pattern of funding and meet the Plan sponsor's desire to minimize potential for significant shortfalls or deficits in the future.

The purpose of this part of our analysis is to determine an appropriate method and series of assumptions to make proper allowance for the Plan's future liabilities by way of payment of pensions and other benefits. In making these calculations, assumptions must be made:

- (1) as to the probability that a particular payment will be made at a certain time (for example, depending upon whether or not the individual concerned survives to that date); and
- (2) the expected amount of each such payment.

In order to do this, we must make a series of assumptions in connection with the many factors which will have a bearing upon the future financial operation of the Plan. These include the following:

- (a) future rates of mortality (and the corresponding life expectancies of the Plan members and their spouses);
- (b) future rates of salary increase for members of the Plan;
- (c) the rate of increase in the maximum pension (as mandated by the *Income Tax Act*) that the Plan is allowed to pay;
- (d) future rates of employee turnover (withdrawal from the Plan);
- (e) the age at which retirement occurs; and
- (f) the proportion of those Plan members who are married (and in respect of whom a survivor's pension would be payable to that individual's surviving spouse in the event of the member's death prior to retirement).

Finally, the actuary must consider the rate of interest that will be earned on the assets of the pension fund in future years.

As part of our process of analysis, all of these factors have received consideration. Where applicable, we have taken into account the actual experience of this pension plan. However, it should be noted that from a statistical point of view, actual experience data developed from a pension plan with relatively few members has limited validity. Therefore, it becomes necessary to take into account statistics developed from many other larger pension plans.

The assumptions we have adopted, as well as a brief commentary where appropriate, are described below:

Economic Assumptions

Going Concern Discount Rate

The discount rate assumption, net of expenses, has been decreased since the last valuation, from 5.75% to 5.50% per annum. The selection of the discount rate for this valuation was based on reasonable expectations for the relationships between key economic variables over the long term, as well as the expected impact of those economic variables on the investment performance of the pension fund given the fund's investment policy.

We have taken a "best estimate" approach to the determination of the discount rate, based on the expected future investment return on the assets of the pension plan, and considering the fund's investment policy. In particular, our approach consists of:

- determining the best estimate of long-term, expected future investment returns for the various asset classes in which the Plan invests;
- combining these best estimate long-term, expected future investment returns to reflect the Plan's investment policy, thereby creating an "expected" fund return that is a weighted average of the asset class returns;
- including an allowance for additional return due to active versus passive management, and the impact of rebalancing and diversification, which we have considered appropriate in the circumstance as a result of stochastic modelling specific to the Plan's target asset mix;
- making appropriate provision for expenses; and
- making a provision for adverse deviation to take into account the effect of uncertainty of the best estimate assumptions used in the calculation.

The result of our analysis is depicted in the following table:

DISCOUNT RATE

	Discount Rate
Unadjusted "best estimate" return reflecting the Plan's investment policy	6.05%
Less provision for Plan expenses	(0.80%)
Plus value added return from active management	0.45%
Plus "rebalancing and diversification effect"	0.50%
Less provision for adverse deviation	(0.70%)
Going concern discount rate assumption	5.50%

The post-retirement interest assumption is influenced by the method used to index pensions in payment. The Plan uses an "excess interest method" of indexing, such that indexing takes place only if the fund earns a return in excess of a threshold rate. The post-retirement interest assumption has been set equal to this threshold rate (i.e., 5.50% per annum).

Salary Scale

Pensions from the UPEI Plan are predicated on the average of an employee's best 3 years' earnings. Since wage levels typically increase over time, an employee's best 3 years of earnings usually occur towards the end of their career. In conducting our valuation, it is prudent to project each employee's accrued pension to the time of their retirement by projecting their earnings level, and this is accomplished through the use of a salary scale.

For this valuation we have maintained an assumption of 3.50% per annum for future salary increase expectations.

Canada Pension Plan YMPE Increases

For this valuation, we have maintained an assumption of 2.50% per annum for the increase rate of the Yearly Maximum Pensionable Earnings (YMPE) under the Canada Pension Plan.

Maximum Pension

Pensions are capped by regulation at \$3,420.00 per year of service for retirements occurring in 2022. Thereafter, the maximum is expected to be increased in accordance with an increase in the average wage index. For this valuation, we have maintained an assumption of 2.50% per annum for the increase in the average wage index.

Demographic Assumptions

Mortality

For this valuation, we have continued to use the CPM 2014 Public Sector Mortality Table (CPM2014Publ), and we have assumed mortality improvements in accordance with CPM Improvement Scale B (CPM-B). The CPM 2014 Public table represents the best available information to date on the mortality patterns of Canadians participating in, or retired from, defined benefit pension plans in the public sector.

We expect to review the mortality assumption from time to time, both to reflect trends in mortality, as well as the development of new actuarial tables and standards.

Retirement Age

The retirement age assumption has been maintained for this valuation. We currently assume retirement rates of 50% at Rule of 85 (min age 55), or age 60 if earlier, 60% of those remaining at age 65, 25% at each age between ages 66 and 70, with everyone remaining retiring at age 71.

Future experience should be monitored over time to review the ongoing validity of this assumption.

Withdrawal Rates

The scale of withdrawal rates, varying by age and sex, from the last valuation has been maintained for this valuation. Examples of the rates used are:

WITHDRAWAL RATES

At Age	Male	Female
20	0.075	0.249
30	0.035	0.099
40	0.015	0.049
50	0.004	0.019
60	Nil	Nil

Proportion Married and Spouse's Age

Ninety percent of active members were assumed to have a spouse at the time of their death, according to the last valuation. While we have not precisely tested this assumption, which influences the liability associated with pre-retirement death benefits, any change that would be made is likely to be small, with a relatively insignificant effect on the overall results. We have therefore continued to assume that 90% of members have a spouse at the time of their death.

Male spouses are assumed to be 3 years older than their female counterparts.

Cost Method

The actuarial cost method used in conducting the going concern valuation is the projected unit credit method. This is the same method as was used in the previous valuation.

In using this method, as a first step, a calculation is made of the liability in respect of all benefits that have accrued to members on account of service up to and including the valuation date based on projected final average earnings. This represents the "accrued liability".

As a separate process, the current year cost has been calculated (using the same actuarial assumptions). This represents the cost of providing the benefits that will accrue in respect of the 12-month period following the valuation date. This is compared with the amount of required employee contributions over that period. The difference represents the minimum required employer contribution necessary in order for these benefits to be properly funded.

Under this funding method, the cost of a dollar per year of deferred pension commencing at retirement age increases with the age of an employee. Thus, the dollar cost rises steadily over an individual's working life. However, for the group as a whole, if the average age remains relatively stable (which can occur through the retirement of older members and the addition of new, younger members) the recommended contribution rate as a percentage of payroll will remain relatively stable. If the Plan's average age increases on the other hand, the current year cost will also increase. Such increases would be revealed in future valuations.

The following table details the actuarial assumptions that have been used in the going concern valuation (including, in each case, the source of the statistics used for this purpose).

GOING CONCERN VALUATION ACTUARIAL ASSUMPTIONS

Interest:	5.50% per annum 3.75% per annum for termination commuted values															
Salary scale:	3.50% per annum															
Increases in YMPE/YBE:	2.50% per annum															
Maximum pension:	\$3,420.00 in 2022, with increases thereafter at 2.50% per annum.															
Mortality:	CPM2014 Public Mortality tables with improvement scale CPM-B (pre-retirement and post-retirement)															
Retirement age:	50% at Rule of 85 (min age 55), or age 60 if earlier, 60% of remaining at age 65, 25% at each age between ages 66 and 70, with everyone remaining retiring at age 71															
Withdrawals:	Examples of rates by Age: <table border="1" data-bbox="631 919 1464 1119"> <thead> <tr> <th>Age</th> <th>Males</th> <th>Females</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>0.075</td> <td>0.249</td> </tr> <tr> <td>30</td> <td>0.035</td> <td>0.099</td> </tr> <tr> <td>40</td> <td>0.015</td> <td>0.049</td> </tr> <tr> <td>50</td> <td>0.004</td> <td>0.019</td> </tr> </tbody> </table>	Age	Males	Females	20	0.075	0.249	30	0.035	0.099	40	0.015	0.049	50	0.004	0.019
Age	Males	Females														
20	0.075	0.249														
30	0.035	0.099														
40	0.015	0.049														
50	0.004	0.019														
Proportion married:	90%															
Age of spouse	Male spouses are assumed to be three years older than their female counterparts															
Cost method:	Projected unit credit method															

C. Hypothetical Wind-Up Valuation

The Canadian Institute of Actuaries' Standards mandate a hypothetical wind-up valuation. This valuation allows the sponsor to assess the funded status of the Plan should it terminate or wind-up effective on the valuation date. That is, an assessment is made as to whether the assets of the pension fund would be sufficient if no further benefits were provided and all members were paid their entitlements as an annuity, a deferred annuity, or as a commuted value.

Active members not eligible for immediate retirement are assumed to elect to receive the commuted value of their benefits as a lump sum transfer. The interest rate used for calculating those commuted values was 3.40% per annum for 10 years and 3.70% per annum thereafter. Implicit in these rates is an assumption that the excess interest indexing provision will provide for no (0%) indexing. This indexing assumption represents no change from the previous valuation. The 2014 Canadian Pensioners' Mortality Table (CPM2014) projected generationally with CPM Improvement Scale B (CPM-B) was used as the mortality assumption for calculating the pension commuted values. This basis is in accordance with Section 3500 of the *Canadian Institute of Actuaries' (CIA) Standards of Practice* in effect for the month of April 2022.

Retired members, deferred vested members and active members eligible for immediate retirement are assumed to elect to have their pensions purchased as an annuity from an insurance company. The discount rate used to estimate the cost of purchasing annuities as at the valuation date was 4.24% per annum for the pre-retirement period as well as for the post-retirement period. The 2014 Canadian Pensioners' Mortality Table (CPM2014) projected generationally with CPM Improvement Scale B (CPM-B) was used as the mortality assumption for all members assumed to be settled through the purchase of annuities. These assumptions were determined in accordance with the *Educational Note – Assumptions for Hypothetical Wind-Up and Solvency Valuations with Effective Dates on or after December 31, 2021 and no later than December 30, 2022*.

Note that the wind-up valuation does not make any assumptions about future pay increases or future terminations of employment since all members are assumed to terminate on the valuation date. The actuarial assumptions for the hypothetical wind-up valuation are described in the following table:

HYPOTHETICAL WIND-UP VALUATION ACTUARIAL ASSUMPTIONS

Interest:	4.24% per annum for deferred vested members, pensioners and active members eligible for retirement benefits. 3.40% per annum for 10 years and 3.70% per annum thereafter for active members not eligible for retirement benefits.
Salary scale:	Nil
Maximum pension:	\$3,420.00 per year of service
Mortality:	2014 Canadian Pensioners' Mortality Table (CPM2014) projected generationally with CPM Improvement Scale B (CPM-B)
Retirement age:	Immediate for active members eligible for unreduced retirement benefits. Age 65 for deferred vested members and active members not eligible for unreduced retirement benefits.
Withdrawals:	None
Wind-up expenses:	\$400,000
Actuarial cost method:	Termination method

D. Incremental Cost

In our report, we have determined the incremental cost on a hypothetical wind-up basis. The incremental cost was determined as the sum of (a) and (b) minus (c):

- a) the projected hypothetical wind-up 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. No adjustment was made for new entrants between the two valuation dates. The resulting projected hypothetical wind-up liability was then discounted 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 to the current valuation date; and
- c) the hypothetical wind-up 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 valuation date, were determined using the going concern demographic assumptions. The projected hypothetical wind-up liability at the next valuation date was determined using the same methods and assumptions as disclosed in Appendix B of this report. In particular, we have assumed that the discount rates will remain the same throughout the projection period and the Standards of Practice for determining Pension Commuted Values 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

Records were submitted to us by the Human Resources Department of the University of Prince Edward Island.

We have reviewed the data for accuracy and reasonableness. By comparing the data to that provided in previous years and examining the level of membership cessation over the previous years, we are satisfied that the data are complete. In addition, we performed various checks of reasonableness on dates of employment, plan membership, and birth. We also compared lists of active members with lists of inactive and retired members to check for duplicates. In all cases, we found the data to be sufficient and reliable for the purposes of the valuations.

Appendix E contains a confirmation by the University of Prince Edward Island as to the accuracy and completeness of the data provided.

Table C1 summarizes the changes that have occurred in all membership categories since the previous valuation.

Table C2 provides a brief statistical profile of the active group. Brief statistical profiles of pensioners, deferred vested members, and terminated non-vested members are provided in tables C3, C4 and C5 respectively.

TABLE C1
RECONCILIATION OF MEMBERSHIP

	Active	Terminated Non-vested	Deferred Vested	Pensioners and Survivors	Total
Number as at April 30, 2019	665	7	80	417	1,169
New entrants	144	-	-	-	144
Retirements	(70)	-	(5)	75	-
Terminations fully settled	(44)	(5)	(14)	-	(63)
Terminations deferred or pending	(20)	8	12	-	-
Deaths fully settled	(1)	-	-	(30)	(31)
Deaths with survivor	(2)	-	-	(15)	(17)
New survivors				17	17
Record (consolidation) / split	-	-	(2)	1	(1)
Number as at April 30, 2022	672	10	71	465	1,218

**TABLE C2
ACTIVE MEMBERS AT APRIL 30, 2022**

	Number	Average Age	Average Credited Service	Average Expected Pensionable Salary, Year Following April 30, 2022*	Average Accumulated Contributions
Males	280	51.3	14.1	\$109,111	\$107,116
Females	392	48.7	10.4	\$88,628	\$65,042
Total	672	49.8	11.9	\$97,264	\$82,572

* The average shown here excludes 15 individuals who are not currently accruing pensionable service due to being on leave of absence or LTD. For those who are part-time, the average includes an annualized salary, as though the individual were working full time.

APRIL 30, 2019 TABLES FOR COMPARISON

Total	665	49.7	11.9	\$89,414	\$73,359
--------------	------------	-------------	-------------	-----------------	-----------------

**TABLE C3
PENSIONERS AT APRIL 30, 2022**

	Number	Average Age	Average Annual Pension
Males	220	74.1	\$38,448
Females	245	70.9	\$26,459
Total	465	72.4	\$32,131

APRIL 30, 2019 TABLES FOR COMPARISON

Total	417	72.0	\$30,411
--------------	------------	-------------	-----------------

**TABLE C4
DEFERRED VESTED MEMBERS AT APRIL 30, 2022**

	Number	Average Age	Average Annual Deferred Pension
Males	27	50.1	\$6,267
Females	44	52.8	\$7,480
Total	71	51.7	\$7,019

APRIL 30, 2019 TABLES FOR COMPARISON

Total	80	52.0	\$6,538
--------------	-----------	-------------	----------------

**TABLE C5
TERMINATED NON-VESTED MEMBERS AT APRIL 30, 2022**

	Number	Average Age	Average Contributions with Interest
Males	1	*	*
Females	9	*	*
Total	10	47.9	\$3,794

* Data is not shown for privacy reasons.

APRIL 30, 2019 TABLES FOR COMPARISON

Total	7	38.9	\$2,416
--------------	----------	-------------	----------------

APPENDIX D SUMMARY OF PLAN PROVISIONS

Effective Date:

July 1, 1967

Eligibility:

Employees employed on a full-time or part-time basis (subject to working a minimum of 13.5 hours per week, where the position has been designated regular) with the University shall become Members of the Plan coincident with their commencement of employment.

Normal Retirement Date:

The Normal Retirement Date of each Member whose date of birth is between January 1st and June 30th shall be the July 1st nearest to their attainment of age 65. The Normal Retirement date of each Member whose date of birth is between July 1st and December 31st shall be the January 1st nearest to their attainment of age 65.

Normal Retirement Pension:

For any Member who retires prior to July 1, 2010, the monthly normal retirement pension payable to the Member shall be one-twelfth of the total of (a) plus (b) as follows:

- (a) in respect of Pensionable Service prior to January 1, 1990, the product of (1) times (2), where
 - (1) is 2% of the Best Average Salary (i.e., the average of the Employee's best 3 years of annual pensionable salary); and
 - (2) is the number of years and fractional years of Pensionable Service prior to January 1, 1990 attributed to the Member at his date of retirement; plus

- (b) in respect of Pensionable Service after December 31, 1989, the product of (1) times (2) times (3), where
 - (1) is 2% of the Best Average Salary;
 - (2) is the number of years and fractional years of Pensionable Service attributed to the Member at their date of retirement; and
 - (3) is the Integration Ratio.

For any Member who retires on or after July 1, 2010, the monthly normal retirement pension payable to the Member shall be one-twelfth of the total of (a) plus (b) plus (c) as follows:

- (a) in respect of Pensionable Service prior to January 1, 1999, the product of (1) times (2), where
 - (1) is 2% of the Best Average Salary; and
 - (2) is the number of years and fractional years of Pensionable Service prior to January 1, 1999 attributed to the Member at their date of retirement; plus

- (b) in respect of Pensionable Service between January 1, 1999 and July 1, 2010, the product of (1) times (2) times (3), where
 - (1) is 2% of the Best Average Salary;
 - (2) is the number of years and fractional years of Pensionable Service attributed to the Member at their date of retirement;
 - (3) is the Integration Ratio; plus

- (c) in respect of Pensionable Service on or after July 1, 2010, the product of (1) times (2), where
 - (1) is the sum of (A) plus (B) plus (C), where
 - (A) 2% of the average of the Employee's best 3 years of annual pensionable salary up to the average YBE for the same 3 years;
 - (B) 1.5% of the same average pensionable salary in excess of the same average YBE and up to the average YMPE for the same 3 years; plus
 - (C) 2% of the same average pensionable salary in excess of the same average YMPE;
 - (2) is the number of years and fractional years of Pensionable Service attributed to the Member at his date of retirement.

Where the Integration Ratio is the minimum of:

- i) 1; and
- ii) the fraction equal to the aggregate of the Member's Required Contributions between January 1, 1990 and June 30, 2010, divided by the aggregate of 6% of the Earnings between January 1, 1990 and June 30, 2010 upon which the Member has made Required Contributions.

In no event shall the pension payable from the Plan exceed the maximum pension restrictions imposed by the Income Tax Act.

Normal Form of Pension:

The normal form of pension is a monthly pension payable for the lifetime of the pensioner with payment guaranteed for 10 years.

Early Retirement:

A Member may retire ten years prior to the Normal Retirement Date. The amount of pension payable is the actuarial equivalent of the pension payable at the Normal Retirement Date. Member's whose age plus service total 85 (subject to a minimum age 55), or have reached age 60, may elect to retire with an unreduced pension.

Delayed Retirement:

Members who continue employment past their Normal Retirement Date may continue to contribute to and accrue benefits under the Plan.

Death Benefits After Retirement:

Members Receiving the Normal Form of Pension:

Monthly pension payments will be continued to the Member's beneficiary until a total of 120 monthly payments have been made to the member and beneficiary.

Members Receiving Optional Forms of Benefits:

Death benefits will be payable in accordance with the optional form of pension elected.

Death Benefits Before Retirement:

In the case of a Member who dies and leaves a spouse and dependent child(ren), the survivor(s) will receive a pension equal to 75% of the pension earned to the date of the member's death. In cases where there is only one survivor, the benefit in respect of service after December 31, 1991 will normally be reduced to 66 ²/₃% of the corresponding portion of the member's pension. The pension payable to the survivor shall continue to the later of the death of the spouse or the date the youngest child turns age 18. In the absence of a surviving spouse or dependent child(ren), a Member's beneficiary is entitled to receive the total amount of the member's contributions accumulated with interest.

Termination Benefits:

Before two years of membership in the Plan:

If a Member's service is terminated prior to death or retirement, the Member is entitled to an amount equal to the sum of:

- (a) Member required contributions with interest;
- (b) Transferred contributions with interest (if any); and
- (c) Additional voluntary contributions with interest (if any).

After two years of membership in the Plan:

If a Member's service is terminated prior to death or retirement, the Member is entitled to one of the following options:

- (a) Deferred pension commencing on the member's Normal Retirement Date in an amount equal to the pension accrued to the date of termination; or
- (b) Transfer to a registered retirement savings plan (RRSP) an amount equal to the Commuted Value of the pension benefit to which the Member is entitled (a) above.

Where the Member's Required Contributions accumulated with Interest (excluding Transferred Contributions and Additional Voluntary Contributions) exceeds one-half the Commuted Value of the Member's pension in respect of Pensionable Service accrued while the Member was employed by the University, the Member is entitled to a refund of any such excess.

Disability Benefits:

If a Member becomes disabled prior to the Normal Retirement Date, but after having been a member of the plan for ten years, the member will continue to accumulate pensionable service until:

- (a) the member is no longer disabled;
- (b) the member becomes eligible for a Normal Retirement Pension; or
- (c) the member dies.

During the period of disability, if the member continues to receive benefits from a University sponsored program, the University shall make contributions on behalf of the member.

Employee Contributions:

In accordance with the Funding Agreement, Members are required to contribute at a rate which covers:

- half of the current service cost, currently 8.80% of pay, plus
- Member Special Contributions of 0.88% of pay until June 30, 2025, plus
- half of any emerging deficit funding requirements after this actuarial valuation.

The current total Member contribution rate is 9.68% of pay. This aggregate contribution requirement will be achieved through Member contributions at rates of 10.76% on non-CPP earnings and 8.96% on CPP earnings.

Employer Contributions:

Effective with this actuarial valuation and in accordance with the Funding Agreement, the Employer is required to contribute at a rate which covers:

- half of the current service cost, currently 8.80% of pay, plus
- Initial Deficit contributions of 1.00% of pay until September 30, 2031, plus
- half of any emerging deficit funding requirements after this actuarial valuation.

The current total Employer contribution rate is 9.80% of pay.

Employer contribution levels are determined based on actuarial advice, and subject in any event to certain limitations under the Income Tax Act which prohibit a plan sponsor from making contributions in any situation where the plan's actuarial surplus exceeds the limits prescribed under the Income Tax Act.

Cost of Living Adjustments:

Increases to pensions in payment are subject to the investment performance of the pension fund.

APPENDIX E EMPLOYER CERTIFICATION

On behalf of the University of Prince Edward Island, I hereby certify the data provided to Eckler Ltd. for the purposes of the actuarial valuation of the *Pension Plan for the Employees of the University of Prince Edward Island* as at April 30, 2022, are accurate and complete as recorded on the records of the Administrator.

Name

Signature

Title

Date