

**MEMBERS OF THE HOUSE OF ASSEMBLY RETIRING
ALLOWANCES ACT – REGISTERED PENSION PLAN**

**REPORT ON THE ACTUARIAL VALUATION
AS AT DECEMBER 31, 2021**

CRA REGISTRATION NO. 0285940

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PREPARED BY:

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SUMMARY OF RESULTS

Going Concern Financial Position	December 31, 2021	December 31, 2018
Going concern value of assets	\$41,977,000	\$24,999,000
Going concern liability	32,428,000	28,457,000
Going concern excess / (unfunded liability)	\$9,549,000	(\$3,458,000)

Solvency Financial Position and Hypothetical Wind-Up Financial Position	December 31, 2021	December 31, 2018
Solvency assets	\$41,797,000	\$24,819,000
Solvency liabilities	45,725,000	40,487,000
Solvency excess / (deficit)	(\$3,928,000)	(\$15,668,000)

Funding Requirements (Annualized)	Year Following December 31, 2021	
	% of Payroll	\$
Estimated contributory payroll		4,012,000
Estimated total current service cost	19.4	780,000
Estimated member required contributions	9.0	361,000
Estimated Government's current service cost	10.4	419,000
Maximum eligible Government contribution		3,928,000

SECTION I INTRODUCTION AND PURPOSE OF VALUATION

At the request of the Government of Newfoundland and Labrador (the “Government”), we have completed an actuarial valuation of the *Members of the House of Assembly Retiring Allowances Act* – Registered Pension Plan (the “Plan”) as of December 31, 2021.

The purposes of this actuarial valuation are as follows:

- to determine the financial position of the Plan on going concern, solvency, and hypothetical wind-up bases;
- to establish the minimum and maximum contributions to the Plan until the next valuation; and
- to meet the statutory filing requirements under the Newfoundland and Labrador *Pension Benefits Act, 1997* and the *Income Tax Act*.

The *Members of the House of Assembly Retiring Allowances Act* consists of a registered pension plan under the *Income Tax Act* and a supplementary plan (“SERP”), which provides benefits that may exceed the restrictions under the *Income Tax Act*. This report focuses only on the registered pension plan (“RPP”). It does not include the liabilities regarding the SERP.

In this report, we provide the valuation results, along with an actuarial opinion with 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 Government of Newfoundland and Labrador, the Newfoundland and Labrador Office of the Superintendent of Pensions 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 December 31, 2024.

Reliance

We have relied on the asset information as provided in the Plan’s financial statements provided by the Treasury Board Secretariat. 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 current pension plan for the Members of the House of Assembly has been in effect since 1976 and was established for individuals who have been elected to the House of Assembly of the province of Newfoundland and Labrador.

There were no Plan changes since the last valuation as at December 31, 2018. A summary of the Plan provisions is provided in Appendix E, at the end of this report.

Actuarial Assumptions

There have been changes to the going concern assumptions since the last valuation. The going concern discount rate has changed from 6.15% per annum to 5.75% per annum. The salary increase assumption has changed from assuming salaries will increase by 3.00% per annum beginning in 2023 to assuming salaries will increase by 2.50% per annum starting in 2025 (4 years after the most recent election).

The change in the going concern discount rate has increased going concern liabilities by \$1,427,000 and increased the current service cost by \$53,000. The change in the salary assumption has decreased the going concern liabilities by \$130,000 and decreased the current service cost by \$38,000.

There have been no other changes to the going concern assumptions since the last valuation.

The solvency assumptions have been changed to reflect market conditions at the valuation date.

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 two amendments to the Standards of Practice. Revisions to Section 3500 of the Practice-Specific Standards for Pension Plans - Pension Commuted Values were published on September 14, 2021 with an effective date of February 1, 2022 and changes to the complete Practice-Specific Standards for Pension Plans (Part 3000) were published June 27, 2022 with an effective date of December 1, 2022. Earlier implementation is not permitted for either 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 occurred between the valuation date and the report date 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 December 31, 2021

The following is the going concern valuation balance sheet as at December 31, 2021 based on:

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

with comparative figures from the valuation at December 31, 2018.

FINANCIAL POSITION – GOING CONCERN BASIS

	December 31, 2021	December 31, 2018
Going concern assets		
Market value of assets	\$41,977,000	\$24,041,000
Receivables / (payables)	0	958,000
Total going concern assets	\$41,977,000	\$24,999,000
Going concern liabilities		
Actives	\$5,948,000	\$4,821,000
Retirees and survivors	20,730,000	18,669,000
Deferred vested members	5,691,000	4,826,000
Non-vested terminated members	59,000	141,000
Total going concern liabilities	\$32,428,000	\$28,457,000
Going concern excess / (unfunded liability)	\$9,549,000	(\$3,458,000)
Going concern funding ratio	129.4%	87.8%

As shown above, the December 31, 2021 actuarial valuation has revealed a going concern excess of \$9,549,000. This compares to an unfunded liability at the previous valuation of \$3,458,000. The Plan has a going concern funded ratio of 129.4%.

Sensitivity Analysis

Below we show the impact on the going concern actuarial liability as at December 31, 2021 of a one percentage point drop in the discount rate assumption (i.e., from 5.75% per annum to 4.75% per annum). All other assumptions were kept unchanged.

GOING CONCERN SENSITIVITY

	Impact 1% Drop
Total Going Concern Actuarial Liability	\$36,492,000

The change in the actuarial liability would have the impact of increasing the liability by \$4,064,000 or 12.5% as at December 31, 2021.

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 change in the surplus and/or unfunded liabilities (deficiencies) 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 since the previous valuation.

RECONCILIATION OF GOING CONCERN FINANCIAL POSITION

Going concern excess / (unfunded liability) as at December 31, 2018	(\$3,458,000)
Interest on unfunded liability at 6.15%	(678,000)
Contributions less than benefits accrued	(54,000)
Investment experience	14,484,000
Termination experience	300,000
Retirement experience	89,000
Mortality experience	66,000
Salary increases different than expected	5,000
Data corrections	57,000
Change in discount rate assumption	(1,427,000)
Change in salary increase assumption	130,000
Other gain and loss items	35,000
Going concern excess / (unfunded liability) as at December 31, 2021	\$9,549,000

B. Solvency Basis: Financial Position as at December 31, 2021

The “solvency basis” is a hypothetical construct intended to portray the funded status of the Plan had it terminated or wound-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 are provided and all members were paid their entitlements as an annuity, a deferred annuity, or as a commuted value.

The financial position of the Plan on a solvency basis as at December 31, 2021 and as at December 31, 2018 for comparison purposes is as follows:

FINANCIAL POSITION – SOLVENCY BASIS

	December 31, 2021	December 31, 2018
Solvency assets		
Market value of assets	\$41,977,000	\$24,041,000
Receivables / (payables)	0	958,000
Termination expense provision	(180,000)	(180,000)
Total solvency assets	\$41,797,000	\$24,819,000
Solvency liabilities		
Active members	\$9,251,000	\$7,793,000
Retirees and survivors	27,160,000	24,687,000
Deferred vested members	9,255,000	7,866,000
Terminated members – pending payment	59,000	141,000
Total solvency liabilities	\$45,725,000	\$40,487,000
Solvency excess / (deficiency)	(\$3,928,000)	(\$15,668,000)
Solvency ratio	91.4%	61.3%

As shown above, the solvency valuation has revealed a solvency deficiency of \$3,928,000 as at December 31, 2021. This compares to a solvency deficiency of \$15,668,000 as at the previous valuation.

Funding of this deficit is not required as the Plan is exempt from the funding requirements of the Newfoundland and Labrador *Pension Benefits Act, 1997*.

Sensitivity Analysis

Below we show the impact on the solvency actuarial liability as at December 31, 2021 of a one percentage point drop in the discount rate assumption. All other assumptions were kept unchanged.

SOLVENCY SENSITIVITY

	Impact 1% Drop
Total Solvency Actuarial Liability	\$52,891,000

The change in the actuarial liability would have the impact of increasing the liability by \$7,166,000 or 15.7% as at December 31, 2021.

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 next valuation date.

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

- 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. No adjustment was made for new entrants between the two valuation dates. The resulting projected solvency liability was then discounted to the current valuation date;
- 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
- 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 valuation date, were determined using the going concern demographic assumptions. The projected solvency 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.

The estimated incremental cost for the period December 31, 2021 to December 31, 2024 is \$3,557,000.

The Actuarial Standards Board (ASB) published amendments to the Standards of Practice (Section 3500: practice-specific standards for pension commuted values) on September 14, 2021 with an effective date no earlier than February 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 under the Newfoundland and Labrador *Pension Benefits Act, 1997* and is for information purposes only.

C. Hypothetical Wind-up Basis: Financial Position as at December 31, 2021

The wind-up financial position of the Plan as at December 31, 2021 would be the same as the solvency financial position. Therefore, if the Plan were to wind-up as at December 31, 2021, there would be a wind-up deficit of \$3,928,000.

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 results of the Plan's current service cost for the 12-month period following December 31, 2021 and the comparison with the required member contributions over this period.

CURRENT SERVICE COST

	% of Payroll	\$
Estimated contributory payroll for 2022 service		4,012,000
Estimated total current service cost	19.4	780,000
Estimated member required contributions	9.0	361,000
Estimated Government current service cost	10.4	419,000

The total current service cost in respect of the year following the valuation date is \$780,000, or 19.4% of contributory payroll. This compares to the total current service cost of 18.4% of contributory payroll as at the previous valuation.

CURRENT SERVICE COST RECONCILIATION

	% of Payroll
Total current service cost as at January 1, 2019	18.4
Changes in Plan demographics	0.7
Change in discount rate assumption	1.3
Change in salary scale assumption	(1.0)
Total current service cost as at January 1, 2022	19.4

Sensitivity Analysis

Below we show the impact on the current service cost as at December 31, 2021 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	\$931,000

The change in the discount rate would have the impact of increasing the current service cost by \$151,000 or 19.4% as at December 31, 2021.

B. Special Payments

The Plan is subject to a funding exemption under Section 41 of the Newfoundland and Labrador *Pension Benefits Act Regulations*, and therefore no special payments are required to amortize the Plan's solvency deficiency.

C. Eligible Contributions

Subsection 147.2(2) of the Income Tax Act (Canada) prohibits employer contribution to a registered pension plan if the actuarial surplus exceeds a stated threshold. If an *excess surplus* exists, no employer contributions are required under applicable provincial legislation, and there is a hypothetical wind-up excess, employer contributions must be suspended, to the extent permitted under applicable provincial legislation, until the excess surplus is eliminated.

An *excess surplus* is defined by paragraph 147.2(2)(d) of the Income Tax Act as the amount by which a Plan's going concern funding excess exceeds 25% of the actuarial liabilities. Based on this formula, the Plan has an excess surplus of \$1,442,000 as at December 31, 2021.

Because the Plan has an excess surplus but has a hypothetical wind-up deficiency, the Government may elect to contribute at a lower rate, by applying some, or all of the going concern excess towards its required contribution as long as the total contributions made do not exceed the hypothetical wind-up deficiency, which was \$3,928,000 as of December 31, 2021, plus interest from the valuation date at the applicable interest rate.

SECTION V ACTUARIAL OPINION

The following represent our primary conclusions as a result of our actuarial valuation as at December 31, 2021:

1. As at December 31, 2021 the Plan has a going concern excess of \$9,549,000.
2. In accordance with the Newfoundland and Labrador *Pension Benefits Act, 1997*, we have conducted tests of solvency, and have found the Plan has a solvency deficiency of \$3,928,000 determined as at December 31, 2021.
3. Pursuant to paragraph 41(2.1)(b) of the Newfoundland and Labrador *Pension Benefits Act Regulations*, the Plan is exempt from the minimum funding requirements of the Regulations. Therefore, no special payments are required to be made.
4. The current service cost in respect of the year following the valuation date is \$780,000 which amounts to 19.4% of active contributory payroll. Member required contributions are estimated to be \$361,000, or 9.0% of active contributory payroll.
5. The next valuation of the Plan must be completed as at a date no later than December 31, 2024.
6. If the Plan were to be wound up on the valuation date, there would be a deficit of \$3,928,000.
7. The maximum Government contribution permitted in 2021 is \$3,928,000.
8. The solvency ratio of the Plan is 91.4%.
9. Pursuant to the *Income Tax Act*, the excess surplus is equal to \$1,442,000 as of the valuation date. However, since the Plan has a wind up deficit, Government contributions can continue until the wind-up deficit is extinguished.
10. We are not aware of any events that occurred between the valuation date and the date this report was completed other than those described in Section I that would have a material impact on the results of this valuation.

11. In my 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 my opinions given, in accordance with accepted actuarial practice in Canada.

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

Respectfully submitted,



Philip Churchill, FCIA, FSA

APPENDIX A PLAN ASSETS

The pension fund is held in trust by CIBC Mellon. We have relied upon financial statements of the Plan for 2019, 2020, and 2021 as provided by the Treasury Board Secretariat.

The following is a summary of the market value of Plan assets by category as at December 31, 2021:

PLAN ASSETS AS AT DECEMBER 31, 2021

December 31, 2021	% actual	% target
Cash & cash equivalents	0	0
Fixed income	19	20
Canadian equity	26	25
Global equity	55	55
Total	100	100

Reconciliation of Plan Assets

A summary of pension fund transactions for the period January 1, 2019 to December 31, 2021 is summarized below:

RECONCILIATION OF ASSETS

Year Ending December 31	2019	2020	2021
Opening balance	\$24,999,000	\$29,711,000	\$34,929,000
Adjustment to opening balance	10,000	1,000	0
Adjusted opening balance	\$25,009,000	\$29,712,000	\$34,929,000
Plus:			
Member required contributions	400,000	406,000	411,000
Member past service contributions		63,000	612,000
Government contributions	400,000	406,000	411,000
Investment income	5,858,000	6,162,000	7,742,000
Less:			
Retirement benefits	1,471,000	1,587,000	1,619,000
Lump sum refunds	274,000	56,000	306,000
Administrative costs	211,000	182,000	203,000
Closing Balance	\$29,711,000	\$34,929,000	\$41,977,000
Going concern assets			\$41,977,000

Performance of Plan Assets

The rate of return on the pension fund's assets since the last valuation is shown below:

ANNUALIZED RATES OF RETURN

Year Ending	Gross Rate of Return	Return Net of Expenses
December 31, 2019	23.98%	23.01%
December 31, 2020	21.07%	20.39%
December 31, 2021	22.39%	21.74%

The average rate of return since the last valuation was 22.48% per year, or 21.71% net of expenses.

APPENDIX B ACTUARIAL METHODS AND ASSUMPTIONS

A. Going Concern Valuation

Asset Valuation Method

For the going concern valuation, we have continued to use the market value of assets as the actuarial value of assets.

Actuarial Cost Method

For the purposes of the going concern valuation, we have used the Projected Unit Credit actuarial cost method in the determination of current service cost as well as the accrued liabilities.

In using the Projected Unit Credit method, as a first step, a calculation is made of the liability in respect of all benefits that have accrued to members for 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 service cost has been calculated. 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 member contributions over that period. The difference represents the required additional contribution necessary in order for those 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 a member. Thus, the dollar cost rises steadily over an individual's working life. However, for the group as a whole, if the average age remains reasonably constant (which can occur through the retirement of older members and the addition of new, young members), the recommended contribution rate will remain relatively stable. If the Plan membership's average age increases, on the other hand, the current service costs will also increase. Such increases would be revealed in future valuations.

Actuarial Cost Method

For the purposes of the 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 giving consideration to 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 including the 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 such payment.

In order to do this, the actuary 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 salary increases;
- (b) future rates of mortality (and the corresponding life expectancies of the Plan members);
- (c) future rates of employee turnover (withdrawal from the Plan);
- (d) retirement experience.

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. It should be noted that, from a statistical point of view, actual experience data developed from a single pension plan has limited validity unless the number of plan members is very large. Therefore, it becomes necessary to use statistics developed from many other pension plans.

Going Concern Discount Rate Assumption

The discount rate has decreased from 6.15% used in the previous valuation to 5.75% in this valuation. 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. In particular, our approach consists of:

- determining the best estimate of long-term, expected future investment returns for each of the 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" total 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 based on the results of stochastic modelling conducted specific to the Plan's target asset mix; and
- making appropriate provision for expenses.

The "best estimate" discount rate is then reduced by a margin for adverse deviations.

In employing this approach, we recognize that there are a range of reasonable assumptions for each component of the model. In determining an overall best estimate assumption, we have neither selected the most optimistic nor the most pessimistic point of the range for each of these components. The result of our analysis is depicted in the following table:

GOING CONCERN DISCOUNT RATE

Discount Rate Components	
"Best estimate" return reflecting the Plan's investment policy	6.00%
Diversification / rebalancing	0.35%
Added value from active management	0.20%
Provision for expenses	(0.65%)
Estimated net investment return	5.90%
Provisions for adverse deviation	(0.15%)
Going concern discount rate assumption	5.75%

The best estimate asset return assumption was determined using the Plan's target investment mix and the expected return for each asset class. Expected returns are developed each year through a rigorous stochastic modelling process. This model is designed to simulate all key economic and market variables over thousands of different paths that are path-wise consistent. Key variables include bond yields (nominal and real), inflation, equity market returns, and alternative asset class returns. Adjustments for specific approaches to investment implementation are applied to asset class expected returns where appropriate.

Inflation

The inflation assumption has a direct bearing on the assumption with respect to active member salary increases and increases in the YMPE and Defined Benefit Limit. The inflation assumption is unchanged from the previous valuation, 2.00% per annum, and is in alignment with our overall economic outlook. This rate is also within the Bank of Canada's 1% - 3% inflation-control target range.

Committee Assumption

We have assumed that members who are currently not appointed to Secretarial / Committee positions will be appointed prior to death or retirement. For the purpose of calculating benefits, an additional \$5,200 has been added to their 2022 salaries. This amount is consistent with the assumption used in the prior valuation.

YMPE and CRA Defined Benefit Limit Increase

We have assumed the Year's Maximum Pensionable Earnings (YMPE) would increase at a rate of 2.75% per annum from the current known level of \$64,900 in 2022.

We have assumed the *Income Tax Act* defined benefit limit would also increase at a rate of 2.75% per annum from the current known level of \$3,420.00 for 2022. In combination with a member's pensionable service and their year of retirement, this limit determines the maximum pension that may be payable from a registered defined benefit pension plan under the *Income Tax Act*.

These assumptions have not changed since the previous valuation.

Salary Increases

We have assumed no salary increases until 2025, and 2.50% per annum thereafter. This reflects the expectation that salaries will not increase until the next election (expected in 2024) and increases in line with general wage inflation thereafter.

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. Adjustment factors of 0.90 for males and 0.95 for females were applied to the mortality table. The mortality assumption has not changed from the previous actuarial valuation.

Retirement Age

We have assumed that 8% of members who achieve eligibility for unreduced retirement under the SERP will retire each year for members under 60, and 60% per year for members between 60 and 64. It is assumed that 100% of members retire upon reaching age 65.

Termination Rates

We have assumed that 8% of all members are assumed to terminate each year after vesting, until they reach eligibility for an unreduced pension under the SERP.

Marital Status

We have assumed that at the earlier of retirement or death, 90% of members will have an eligible spouse. Further, we have continued to assume that male spouses are 3 years older than female spouses.

The following table details the actuarial assumptions that have been used in the going concern valuation.

GOING CONCERN VALUATION ACTUARIAL ASSUMPTIONS

	December 31, 2021	December 31, 2018
Discount rate:	5.75% per annum	6.15% per annum
Salary increases:	2.50% per annum, beginning January 1, 2025	3.00% per annum, beginning January 1, 2023
Maximum pension and YMPE:	2022: \$3,420.00 and \$64,900 2023+: Increase at 2.75% per annum	2019: \$3,025.56 and \$57,400 2020+: Increase at 2.75% per annum
Mortality:	Male: 90% of CPM 2014 Public Sector Mortality Table projected generationally with CPM Improvement Scale B Female: 95% of CPM 2014 Public Sector Mortality Table projected generationally with CPM Improvement Scale B	Male: 90% of CPM 2014 Public Sector Mortality Table projected generationally with CPM Improvement Scale B Female: 95% of CPM 2014 Public Sector Mortality Table projected generationally with CPM Improvement Scale B
Retirement age:	Upon reaching eligibility for an unreduced pension under the SERP, 8% per year for members under age 60; 60% per year for members between 60 to 64; 100% upon reaching age 65	Upon reaching eligibility for an unreduced pension under the SERP, 8% per year for members under age 60; 60% per year for members between 60 to 64; 100% upon reaching age 65
Marital status:	At retirement or death: 90% (male spouse is 3 years older)	At retirement or death: 90% (male spouse is 3 years older)
Termination rates:	For members with at least 5 years of service (i.e., vested), 8% per year, ceasing upon reaching eligibility for an unreduced pension under the SERP	For members with at least 5 years of service (i.e., vested), 8% per year, ceasing upon reaching eligibility for an unreduced pension under the SERP
Actuarial method:	Projected Unit Credit	Projected Unit Credit

B. Solvency Valuation

The Newfoundland and Labrador *Pension Benefits Act, 1997* prescribes a solvency valuation. A solvency valuation permits the regulator to assess the solvency 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. If solvency assets are not sufficient to fund solvency liabilities (i.e., the Plan has a solvency deficiency), then special payments are required in order to eliminate the deficiency, unless the Plan is subject to solvency relief in accordance with the Newfoundland and Labrador *Pension Benefits Act Regulations*. This Plan is not required to fund any solvency deficiency.

Benefits are assumed to be settled through a lump sum transfer for 100% of active members who are not eligible to retire immediately at the date of valuation. Benefits are assumed to be settled through the purchase of annuities for members who are eligible for retirement at the date of valuation and for all pensioners and deferred pensioners.

For active members whose benefits are assumed to be settled through lump sum transfer, the interest rate used for calculating solvency liabilities was 2.30% per annum for 10 years and 3.40% per annum thereafter. These rates were determined in accordance with Section 3500 of the Canadian Institute of Actuaries (“CIA”) Standards of Practice – Pension Commuted Values with rates in effect for the month of December 2021. The mortality assumption used was the CPM-2014 (Combined) mortality table projected with Scale CPM-B.

For those members whose benefits are assumed to be settled through purchase of annuities, the solvency liabilities were calculated using an interest rate of 2.86% per annum and mortality at CPM-2014 (Combined) mortality table projected with Scale CPM-B. These assumptions represent the estimated basis for settlement of the Plan’s obligations for retired lives by the purchase of insured annuities on the valuation date and are in accordance with the Canadian Institute of Actuaries Educational Note entitled “Assumptions for Hypothetical Wind-Up and Solvency Valuations with Effective Dates Between December 31, 2021 and December 30, 2022”.

The CIA’s Standards of Practice for Pension Commuted Values, effective December 1, 2020 states that the retirement age assumption is to be a 50% probability the member retires at the age which maximizes the commuted value and a 50% probability that the member retires at the earliest unreduced retirement age. However, the Newfoundland and Labrador *Pension Benefits Act Regulations* require the retirement age assumption to be the age which maximizes the commuted value, which has been used in this valuation.

Note that the solvency 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. In accordance with Directive #9 of the Newfoundland and Labrador *Pension Benefits Act, 1997*, the commuted value payable to members who are assumed to elect a transfer on wind-up is calculated to be not less than the estimated cost to purchase an annuity equal to the accrued pension from an insurance company.

The actuarial assumptions for the solvency valuation are described in the following table:

SOLVENCY VALUATION ACTUARIAL ASSUMPTIONS

	December 31, 2021	December 31, 2018
Interest rates for benefits to be settled through annuity purchase:	2.86% per annum	3.23% per annum
Interest rates for benefits to be settled through lump sum transfer:	2.30% per annum for 10 years and 3.40% thereafter	3.20% per annum for 10 years and 3.40% thereafter
Pre-retirement mortality:	None	None
Post-retirement mortality:	CPM-2014 Combined mortality, projected with Scale CPM-B	CPM-2014 Combined mortality, projected with Scale CPM-B
Retirement age:	Age that maximizes the value of the pension. All members are assumed to retire at the earliest date that they are eligible.	Age that maximizes the value of the pension. All members are assumed to retire at the earliest date that they are eligible.
Salary scale:	None	None
Married assumption:	90% married (male spouse is 3 years older)	90% married (male spouse is 3 years older)
Actuarial cost method:	Termination Method	Termination Method
Wind-up expenses	\$180,000	\$180,000

C. Wind-Up Valuation

The wind-up valuation liability assumptions are the same as those used in the solvency valuation.

APPENDIX C MEMBERSHIP DATA

The membership data in respect of this Plan is maintained by the Treasury Board Secretariat.

We have reviewed the data as to accuracy and reasonableness and we are satisfied that the data are complete. In addition, we have 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 valuation.

Appendix F contains confirmation by the Treasury Board Secretariat as to the accuracy and completeness of the data provided.

Plan membership data are summarized below. For comparison, we have also summarized corresponding data from the previous valuation.

MEMBERSHIP DATA

	December 31, 2021	December 31, 2018
Active Members		
Number	40	38
Average age	54.2	51.9
Total pensionable earnings	\$4,537,615	\$4,292,617
Average pensionable earnings	\$113,440	\$112,964
Average years of pensionable service		
▪ Member service	4.9	5.2
▪ Minister service	1.9	1.4
▪ Other service	0.8	0.5
Deferred Members in RPP and SERP		
Number	5	4
Average age	44.0	44.2
Total annual pension		
▪ total	\$232,842	\$180,189
▪ from RPP	\$111,774	\$74,356
▪ from SERP	\$121,068	\$105,833
Average annual pension		
▪ total	\$46,568	\$45,047
▪ from RPP	\$22,355	\$18,589
▪ from SERP	\$24,214	\$26,458
Total annual offset at age 65		
▪ total	\$8,584	\$10,217
▪ from RPP	\$359	\$695
▪ from SERP	\$8,225	\$9,522
Average annual offset at age 65 ¹		
▪ total	\$2,861	\$2,554
▪ from RPP	\$359	\$347
▪ from SERP	\$2,742	\$2,381

¹ Excludes members with no offset

	December 31, 2021	December 31, 2018
Deferred Members in RPP but retired in SERP		
Number	16	20
Average age	55.9	55.8
Total annual pension		
▪ total	\$856,614	\$904,894
▪ from RPP	\$436,384	\$439,281
▪ from SERP	\$420,230	\$465,613
Average annual pension		
▪ total	\$53,538	\$45,245
▪ from RPP	\$22,274	\$21,964
▪ from SERP	\$26,264	\$23,281
Total annual offset at age 65		
▪ total	\$53,428	\$48,172
▪ from RPP	\$8,177	\$9,819
▪ from SERP	\$45,251	\$38,353
Average annual offset at age 65 ¹		
▪ total	\$4,110	\$3,441
▪ from RPP	\$1,022	\$982
▪ from SERP	\$3,481	\$2,739
Pensioners and survivors		
Number in RPP	60	49
Number in SERP	145	138
Average age	74.7	73.5
Total annual pension		
▪ total	\$6,558,403	\$6,504,938
▪ from RPP	\$1,662,408	\$1,506,159
▪ from SERP	\$4,895,995	\$4,998,779
Average annual pension		
▪ total	\$45,230	\$47,137
▪ from RPP ²	\$27,707	\$30,738
▪ from SERP	\$33,765	\$36,223
Total annual offset at age 65		
▪ total	\$43,757	\$68,488
▪ from RPP	\$1,977	\$9,468
▪ from SERP	\$41,780	\$59,020
Average annual offset at age 65 ¹		
▪ total	\$3,978	\$4,566
▪ from RPP	\$659	\$1,052
▪ from SERP	\$3,798	\$3,935
Non-vested terminated members		
Number ³	4	5
Average age	55.7	60.2
Accumulated contributions with interest	\$108,718	\$141,005

¹ Excludes members with no offset

² Excludes members with no RPP pension

³ Includes one member with a lump sum payable from the SERP only

The membership movement for all categories of membership since the previous actuarial valuation is as follows:

RECONCILIATION OF MEMBERSHIP

	Active Members	Non-Vested Terminated Members	Deferred RPP / Deferred SERP	Deferred RPP / Retired SERP	Pensioners and Survivors	Total
Total at December 31, 2018	38	5	4	20	138	205
New members	21					21
Terminations paid out	(10)	(2)				(12)
Terminations to deferred	(2)		2			0
Terminations to non-vested	(1)	1				0
Return to active						0
Retirement in SERP	(3)		(1)	4		0
Retirement in RPP	(3)			(8)	11	0
New Survivor					12	12
Deaths (paid out)						0
Deaths (with survivor)					(12)	(12)
Deaths (no survivor)					(4)	(4)
Total at December 31, 2021	40	4	5	16	145	210

The distribution of the active members' pensionable earnings by age and pensionable service as at December 31, 2021, is summarized as follows

AGE / SERVICE DISTRIBUTION FOR ACTIVE MEMBERS

Age / Service:	<5	5-10	10-15	15-20	20+	Total
<25						
25-30						
30-35	1					1
35-40	2					2
40-45	2	2	1			5
45-50	4	1				5
50-55	1	3	1			5
55-60	5	4	1		1	11
60-65	2	3				5
65>	4	1		1		6
Total	21	14	3	1	1	40

The distribution of deferred vested members as at December 31, 2021 is as follows:

DISTRIBUTION OF DEFERRED VESTED MEMBERS

Deferred in RPP & Deferred in SERP				
Age	Total Pension		Age 65 Offset	
	Number	Average Annual Pension	Number	Average Annual Pension
Under 40	1	<>		
40-45	2	<>	2	<>
45-50	1	<>	1	<>
50-55	1	<>		
55-60				
Total	5	\$46,568	3	\$2,861

Deferred in RPP & Retired in SERP				
Age	Total Pension		Age 65 Offset	
	Number	Average Annual Pension	Number	Average Annual Pension
Under 45				
45-50				
50-55	5	\$43,588	3	\$3,513
55-60	11	\$58,061	10	\$4,289
60+				
Total	16	\$53,538	13	\$4,110

<> Data with only one or two people has been suppressed for privacy reasons

The distribution of the pensioners by age as at December 31, 2021, is summarized as follows:

DISTRIBUTION OF PENSIONERS RPP PENSIONS

Age	Total Pension		Age 65 Offset	
	Number	Average Annual Pension	Number	Average Annual Pension
Under 55				
55-60	3	\$59,711		
60-65	8	\$16,791	3	\$659
65-70	22	\$26,513		
70-75	13	\$35,702		
75-80	12	\$21,520		
80-85	2	<>		
85-90				
90+				
Total	60	\$27,707	3	\$659

DISTRIBUTION OF PENSIONERS TOTAL PENSIONS

Age	Total Pension		Age 65 Offset	
	Number	Average Annual Pension	Number	Average Annual Pension
Under 55				
55-60	3	\$82,855	2	<>
60-65	9	\$38,804	8	\$2,630
65-70	25	\$50,828		
70-75	32	\$50,833		
75-80	47	\$41,555		
80-85	18	\$43,602		
85-90	7	\$38,280		
90+	4	\$14,346		
Total	145	\$45,230	10	\$4,042

APPENDIX D 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 December 31, 2021 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.

	Plausible Adverse Scenario Results at December 31, 2021			
	Going Concern Results at Dec. 31, 2021	Interest rate risk (-0.45%)	Deterioration of asset values (17.4% red'n in MV)	Longevity risk (90% of base mortality)
Going concern assets	41,977,000	42,427,900	34,664,600	41,977,000
Going concern liabilities	32,428,000	34,169,100	32,428,000	32,894,000
Going concern excess / (unfunded liability)	9,549,000	8,258,800	2,236,600	9,083,000
Change in going concern financial position	-	(1,290,200)	(7,312,400)	(466,000)
Current service cost	780,000	844,000	780,000	788,000
Change in current service cost	-	64,000	-	8,000

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 of 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 45 basis points as of December 31, 2021.

With respect to the impact on fixed income assets, the scenario results in a decrease in long term yields on fixed income investments of 0.63%.

Based on the estimated duration of the Plan assets, liabilities and 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 a 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 returns, 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 lowest at the one-year horizon.

As such, under deterioration of assets values scenario, the market value of assets is decreased by 17.4% as of December 31, 2021.

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 mortality rates that are 90% of the base mortality assumption i.e., 81% for males and 85.5% for females of the mortality rates of the CPM 2014 public sector table, projected with generational mortality improvements according to Scale CPM-B as of December 31, 2021; that is, a more conservative mortality assumption than currently employed.

APPENDIX E SUMMARY OF PLAN PROVISIONS

Introduction

The *Members of the House of Assembly Retiring Allowances Act* is sponsored by the Government of Newfoundland and Labrador. This valuation is based on the provisions of the registered pension plan portion of the Plan, in effect on December 31, 2021. The following is a summary of the Plan's main provisions in effect on December 31, 2021. It is not intended as a complete description of the Plan.

Eligibility for Membership

A member who has been elected to a term of service in the House of Assembly is eligible to join the plan. If a member chooses not to join the plan, they must provide evidence that they are contributing and will continue to contribute to another registered pension plan or registered retirement savings plan.

A member who has been elected for a second or subsequent term of service in the House of Assembly is required join the plan.

Contributions

Members are required to contribute 9.0% of their MHA and minister salary to the registered pension plan, up to the maximum allowed under the *Income Tax Act*. The following members are not required to make contributions:

- members elected prior to the 44th General Assembly once they have accrued 17 years of Member and Minister service.
- members elected after the 43rd General Assembly once they have accrued 20 years of Member and Minister service.

The Government contributes based on the recommendations of the Plan's actuary.

Normal Retirement Date

A member in the Registered Pension Plan is eligible to retire once they have reached age 60 or have at least 30 years of pensionable service. The member must have served in two General Assemblies, or for at least five years.

Supplementary Pension Plan

A member in the Supplementary Plan who was first elected before January 1, 2010 is eligible to retire when the total of the years of Member service and the member's age are greater than or equal to 60. The Premier is eligible to retire when the total of the year of Member service and the member's age are greater than or equal to 55.

A member in the Supplementary Plan who was first elected between January 1, 2010 and November 29, 2015 is eligible to retire at age 55. The member must have served in two General Assemblies, or for at least five years.

A member in the Supplementary Plan who was first elected on or after November 30, 2015 is eligible to retire at age 60. The member must have served in two General Assemblies, or for at least five years.

Early Retirement Date

Supplementary Pension Plan

A member in the Supplementary Plan who was first elected between January 1, 2010 and November 29, 2015 is eligible to retire with a reduced pension as early as age 50. The member must have served in two General Assemblies, or for at least five years.

Pension at Normal Retirement

A member who was first elected before or during the 43rd General Assembly will be entitled to the sum of the following amounts upon retirement:

- 2.0% of the average of the member's best three years of MHA salary for each year of MHA service, up to a maximum of 17 years;
- 2.0% of the average of the member's best three years of Minister salary for each year of Minister service, up to a maximum of 17 years;
- 2.0% of the sum of the average of the member's best three years of MHA salary and the average of the member's best three years of Minister salary times their years of other service.

Once the member reaches age 65, their entitlement as described will be reduced by 0.6% of the member's three-year average YMPE for each year of MHA service between January 1, 1998 and December 31, 2004.

A member who was first elected after the 43rd General Assembly but prior to November 30, 2015 will be entitled to the sum of the following amounts upon retirement:

- 2.0% of the average of the member's best three years of MHA salary for each year of MHA service, up to a maximum of 20 years;
- 2.0% of the average of the member's best three years of Minister salary for each year of Minister service, up to a maximum of 20 years;
- If the member was first elected before the 46th General Assembly: 2.0% of the sum of the average of the member's best three years of MHA salary and the average of the member's best three years of Minister salary for each year of other service;
- If the member was first elected after the 45th General Assembly: 2.0% of the average of the member's best three years of MHA salary for each year of other service.

Once the member reaches age 65, their entitlement as described will be reduced by 0.6% of the member's average YMPE for each year of MHA service between January 1, 1998 and December 31, 2004.

A member who was first elected on or after November 30, 2015 will be entitled to the sum of the following amounts upon retirement:

- 2.0% of the average of the member's best three years of MHA salary for each year of MHA service, up to a maximum of 20 years;
- 2.0% of the average of the member's best three years of Minister salary for each year of Minister service, up to a maximum of 20 years;
- 2.0% of the average of the member's best three years of MHA salary for each year of service purchased under the past service purchase provisions described in the plan text.

Maximum Pension

The total annual pension payable under the provisions of the Plan upon retirement, death or termination of employment cannot exceed the maximum pension as determined under the *Income Tax Act*.

Death Benefits Before Retirement

If a member dies after serving in two General Assemblies and for at least five years, but prior to their normal retirement date and before any pension payments have begun, the member's surviving principal beneficiary is eligible to receive one of the following two benefits:

1. a survivor pension of 60% of the member's entitlement,
or
2. a lump sum payment equal to the greater of the following:
 - a) the commuted value of the survivor pension; or
 - b) the commuted value of the member's entitlement assuming they died at age 65.

If the surviving principal beneficiary dies after the original member, the survivor benefit will be paid to their surviving children while they are under the age of 18, or 25 if they are in school.

If a member who has served in two General Assemblies and for at least 5 years dies without a principal beneficiary, the commuted value of the member's entitlement will be paid to the member's estate.

Death Benefits After Retirement

The normal form of payment for a member without a principal beneficiary is a lifetime pension. The normal form of pension for a member with a principal beneficiary is a joint and survivor 60% pension. If the surviving principal beneficiary dies after the original member, the survivor benefit will be paid to their surviving children while they are under the age of 18, or 25 if they are in school.

There is a guarantee that when payments cease, the difference between the member's contributions with interest at the date the pension commenced and the total of all benefit payments will be paid to the person whose benefits ceased or to that person's estate.

Disability Benefits

If a member becomes totally and permanently disabled within the meaning of the *Income Tax Act* while serving as an MHA or Minister, the member is permitted to retire. The disability must also be approved by the Minister of Finance.

In such a case, they are eligible to receive the pension they would have been eligible to receive at age 65.

Termination Benefits

If a member's employment terminated for reasons other than death or retirement after serving in two General Assemblies and for at least five years, they are eligible to receive one of the two following benefits:

- 1) a commuted value transfer; or
- 2) a deferred lifetime pension beginning at their normal retirement date.

APPENDIX F ADMINISTRATOR CERTIFICATION

On behalf of the Administrator of the *Members of the House of Assembly Retiring Allowances Act* – Registered Pension Plan, I hereby certify that the employee data provided to Eckler Ltd. for the purposes of the actuarial valuation as at December 31, 2021 are accurate and complete.

Brad Sullivan

Name

B. Sullivan

Signature

Manager of Pension Investments

Title

Sept 21, 2022

Date