

**UNIFORMED SERVICES PENSION PLAN FOR THE
PROVINCE OF NEWFOUNDLAND AND LABRADOR**

**REPORT ON THE ACTUARIAL VALUATION
AS AT DECEMBER 31, 2023**

NL REGISTRATION No. 075048
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SUMMARY OF RESULTS

Going Concern Financial Position	December 31, 2023	December 31, 2020
Going concern value of assets	\$135,966,000	\$174,505,000
Going concern liability	531,081,000	508,093,000
Going concern excess / (unfunded liability)	(\$395,115,000)	(\$333,588,000)

Solvency Financial Position and Hypothetical Wind-Up Financial Position	December 31, 2023	December 31, 2020
Solvency assets	\$135,366,000	\$173,905,000
Solvency liabilities	553,245,000	730,760,000
Solvency excess / (deficit)	(\$417,879,000)	(\$556,855,000)

Funding Requirements (Annualized)	Year Following December 31, 2023	
	% of Payroll	\$
Estimated contributory payroll		64,050,000
Required member contributions ¹	8.7	5,563,000
Government matching required contributions	8.7	5,570,000
Total required contributions	17.4	11,133,000
Total value of benefits earned in the year	17.9	11,467,000
Estimated contribution deficit	(0.5)	(334,000)
Maximum eligible Government contribution ²		423,783,000

¹ Member contributions are capped at 9% of pay (the maximum contribution to the registered pension plan), while Government contributions are matched to total member contributions without recognition of the 9% cap

² Equal to wind-up deficiency plus eligible current service cost net of member contributions

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 *Uniformed Services Pension Plan for the Province of Newfoundland and Labrador* (the “Plan”) as of December 31, 2023. The last actuarial valuation was performed as at December 31, 2020.

The *Uniformed Services Pensions Act* consists of a registered pension plan under the *Income Tax Act* and a supplementary plan (“SERP”), which provides benefits in excess of what can be provided under the *Income Tax Act*. This report focuses only on the registered pension plan (“RPP”). It does not include any liabilities in respect of the SERP.

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* (“PBA”) and the *Income Tax Act*.

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, 2026 in accordance with the PBA.

Reliance

We have relied on the asset information as provided in the financial statements prepared by the Newfoundland and Labrador Treasury Board. We have also relied on the Plan administrator to provide all relevant data and to confirm the pertinent Plan terms.

Terms of Engagement

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

- For the going concern, hypothetical wind-up and solvency valuations we have been directed to use the market value of assets adjusting for amounts in transit and amounts payable.
- No margin for adverse deviations has been included in the economic assumptions.
- Plausible adverse scenarios are being applied to the going concern valuation.
- The terms of our engagement are in accordance with applicable pension regulations and accepted actuarial practice in Canada.

SECTION II PLAN CHANGES AND SUBSEQUENT EVENTS

The Uniformed Services Pension Plan for the Province of Newfoundland and Labrador was established on December 3, 1982 by the *Uniformed Services Pension Act*. It was preceded by the *Constabulary Pensions Act*.

There have been no new amendments or changes to the Plan since the last valuation.

A summary of the current plan provisions of the Plan is contained 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 6.00% per annum to 5.90% per annum to reflect current market conditions and a change to the target asset mix. The salary increase assumption for correctional officers has been changed since the previous valuation to reflect Plan experience and current collective bargaining agreements. Please refer to Appendix B for details of the assumptions used in this valuation and the rationale employed in setting these assumptions.

The change in the going concern discount rate has increased going concern liabilities by \$6,662,000 and increased the current service cost by \$268,000. The change in the salary assumption has increased the going concern liabilities by \$2,548,000 and increased the current service cost by \$143,000.

The solvency economic assumptions have been changed to reflect market conditions at the valuation date. These assumptions are summarized in Appendix B.

Subsequent Events

We are not aware of any 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 December 31, 2023

The following is the going concern valuation balance sheet as at December 31, 2023 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 E)

with comparative figures from the valuation as at December 31, 2020.

FINANCIAL POSITION – GOING CONCERN BASIS

	December 31, 2023	December 31, 2020
Going concern assets		
Net assets available for benefits	\$135,966,000	\$174,505,000
Going concern liabilities		
Actives	\$158,714,000	\$151,066,000
Retirees and survivors	370,563,000	355,352,000
Deferred vested members	1,804,000	1,675,000
Total going concern liabilities	\$531,081,000	\$508,093,000
New going concern excess / (unfunded liability)	(\$395,115,000)	(\$333,588,000)
Going concern funding ratio	25.6%	34.3%

As shown above, the December 31, 2023 actuarial valuation has revealed a going concern unfunded liability in the amount of \$395,115,000. This compares to a going concern unfunded liability at the previous valuation of \$333,588,000. There is no legislative requirement to make amortization payments to liquidate the Plan's going concern unfunded liability at the valuation date. For details, see Section IV – Funding Requirements.

Sensitivity Analysis

Below we show the impact on the going concern actuarial liability as at December 31, 2023 of a one percentage point drop in the discount rate assumption (i.e., from 5.90% per annum to 4.90% per annum). All other assumptions were kept unchanged.

GOING CONCERN SENSITIVITY

	Impact 1% Drop
Total Going Concern Actuarial Liability	\$604,704,000

The change in the actuarial liability would have the impact of increasing the liability by \$73,623,000 or 13.9% as at December 31, 2023.

Reconciliation of Going Concern Financial Position

The reconciliation provides an independent cross-check of the calculations performed and determines the main reasons for the change 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 year.

RECONCILIATION OF GOING CONCERN FINANCIAL POSITION

Going concern excess / (unfunded liability) as at December 31, 2020	(\$333,588,000)
Interest on unfunded liability at 6.00%	(63,721,000)
Contributions less than current service cost	(179,000)
Investment experience	4,618,000
Net Plan liability experience (see table below)	6,456,000
Change in discount rate assumption	(6,662,000)
Change in salary increase assumption	(2,548,000)
Other gain and loss items	509,000
Going concern excess / (unfunded liability) as at December 31, 2023	(\$395,115,000)

PLAN LIABILITY EXPERIENCE

	\$ Gain / (Loss)
Mortality experience	3,525,000
Salary experience	1,806,000
Retirement experience	1,482,000
Termination experience	(267,000)
Marriage breakdown experience	(90,000)
Net Plan experience	\$6,456,000

B. Solvency Basis: Financial Position as at December 31, 2023

The solvency valuation determines the funded status of the Plan if it were 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 were 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, 2023 and as at December 31, 2020 for comparison purposes is as follows:

FINANCIAL POSITION – SOLVENCY BASIS

	December 31, 2023	December 31, 2020
Solvency assets		
Market value of assets	\$135,966,000	\$174,505,000
Termination expense provision	(600,000)	(600,000)
Total solvency assets	\$135,366,000	\$173,905,000
Solvency liabilities		
Active members	\$125,680,000	\$214,340,000
Retirees and survivors	425,439,000	513,077,000
Deferred vested members	2,126,000	3,343,000
Total solvency liabilities	\$553,245,000	\$730,760,000
Solvency excess / (deficiency)	(\$417,879,000)	(\$556,855,000)
Solvency ratio	24.5%	23.8%

As shown above, the solvency valuation has revealed a solvency deficiency of \$417,879,000 as at December 31, 2023. This compares to a solvency deficiency of \$556,855,000 as at the previous valuation.

There is no legislative requirement to make amortization payments to liquidate the Plan's solvency deficiency at the valuation date. For details, see Section IV – Funding Requirements.

Sensitivity Analysis

Below we show the impact on the solvency actuarial liability as at December 31, 2023 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	\$632,335,000

The change in the actuarial liability would have the impact of increasing the liability by \$79,090,000 or 14.3% as at December 31, 2023.

Incremental Cost

In accordance with the Canadian Institute of Actuaries' Standard of Practice, we have estimated the incremental cost of the solvency liability as at December 31, 2023. This is the present value of the expected aggregate change in solvency liability between December 31, 2023 and the next valuation date, adjusted for expected benefit payments. The next valuation is expected to be as at December 31, 2026.

The estimated incremental cost for the period December 31, 2023 to December 31, 2026 is \$22,651,000. 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.

The methodology for calculating the incremental cost was to determine the solvency liability as at the end of the cost period, allowing for new benefits expected to accrue in the interim, but not incorporating estimates for new entrants. New benefits include future pension accruals and future qualification for early retirement benefits, if applicable. The present value of this future liability (adjusted for the impact of benefit payments made) was then compared to the current solvency liability to determine the incremental cost.

C. Hypothetical Wind-up Basis: Financial Position as at December 31, 2023

The wind-up financial position of the Plan as at December 31, 2023 would be the same as the solvency financial position. Therefore, if the Plan were to wind-up as at December 31, 2023, there would be a wind-up deficit of \$417,879,000.

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, 2023 and a comparison with the required member contributions over this period. The cost of benefits accruing in respect of the year following the valuation date is \$11,467,000. This amounts to 17.9% of active contributory payroll for 2024.

CURRENT SERVICE COST

	% of Payroll	\$
Estimated contributory payroll for 2024 service		64,050,000
Member required contributions ¹	8.7	5,563,000
Government matching required contributions	8.7	5,570,000
Estimated total required contributions	17.4	11,133,000
Total value of benefits for service (current service cost)	17.9	11,467,000
Estimated contribution deficit	(0.5)	(334,000)

The total current service cost in respect of the year following the valuation date is \$11,467,000 or 17.9% of contributory payroll. This compares to total current service cost of 17.6% of contributory payroll at the previous valuation.

CURRENT SERVICE COST RECONCILIATION

	% of Payroll
Current service cost as at January 1, 2021	17.6
Demographic changes	(0.1)
Salary experience	0.1
Change to salary assumption	(0.1)
Change to discount rate assumption	0.4
Current service cost as at January 1, 2024	17.9

¹ Member contributions are capped at 9% of pay, which is the maximum contribution permitted to the registered pension plan. Government contributions are matched to member contributions but are not capped at 9% of pay.

Because there is only one active firefighter in the Plan as at January 1, 2024, we have not shown the current service cost by division for privacy reasons.

Sensitivity Analysis

Below we show the impact on the current service cost as at December 31, 2023 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	\$14,656,000

The change in the discount rate would have the impact of increasing the current service cost by \$3,189,000 or 27.8% as at December 31, 2023.

B. Special Payments

Government contributions are determined in accordance with Section 7 of the *Uniformed Services Pensions Act* which requires the Government to match required member contributions. The Plan is subject to a funding exemption as per Section 41 of the Newfoundland and Labrador *Pension Benefits Act Regulations*, and therefore no special payments are required to amortize the Plan's going concern unfunded liability or solvency deficiency. Further, Government contributions are not required to cover any deficiency in the total current service cost.

For illustration purposes, if there was a requirement to fund the going concern unfunded liability of \$395,115,000, the schedule of fixed annual payments over various time periods would be as follows:

ANNUAL SPECIAL PAYMENTS DETERMINED AS AT DECEMBER 31, 2023

	Amortized over 20 years	Amortized over 30 years	Amortized over 40 years
Fixed annual payment amount	\$33,100,000	\$27,500,000	\$25,100,000
Annual payment amount as a fixed % of projected payroll	40.5%	29.3%	23.3%

Note that these illustrative special payments do not consider the current service cost deficit.

C. Maximum Contribution

The maximum Government contribution prior to the next valuation is equal to the hypothetical wind-up deficit plus the total current service cost, net of member contributions, totaling \$423,783,000.

SECTION V ACTUARIAL OPINION

The following represent our primary conclusions as a result of our actuarial valuation as at December 31, 2023:

1. The Plan has a going concern unfunded liability of \$395,115,000.
2. The Plan has a solvency deficiency of \$417,879,000.
3. Pursuant to paragraph 41(2)(b) of the Newfoundland and Labrador *Pension Benefits Act Regulations*, the Plan is exempt from funding the going concern unfunded liability and the solvency deficiency. Therefore, no special payments are required to be made at this time.
4. The cost of benefits accruing in respect of the year following the valuation date is \$11,467,000 which amounts to 17.9% of active contributory payroll. Member contributions, in aggregate, are 8.7% of projected payroll, estimated to be \$5,563,000 for the year following the valuation. We note that the *Uniformed Services Pensions Act* requires the Government to match employee contributions for most members of the Plan, which leaves a normal cost deficit of 0.5% of projected payroll, i.e., a deficit of \$334,000 for the year following the valuation.
5. The next valuation of the Plan must be completed as at a date no later than December 31, 2026.
6. The solvency ratio of the Plan is 24.5%.
7. If the Plan were to be wound up on the valuation date, there would be a deficit of \$417,879,000.
8. The maximum Government contribution permitted in 2024 is estimated to be \$423,783,000.
9. Pursuant to the *Income Tax Act and Regulations*, there is no excess surplus as of the valuation date.
10. We are not aware of any events subsequent to the valuation date that would have a material impact on the results of this valuation.

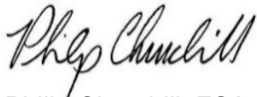
In our opinion,

- 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.

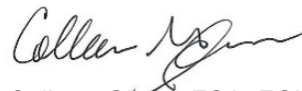
This report has been prepared, and my opinion given, in accordance with accepted actuarial practice in Canada.

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

Respectfully submitted,



Philip Churchill, FSA, FCIA



Colleen Glenn, FSA, FCIA, CERA

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APPENDIX A PLAN ASSETS

The pension fund is held in trust by CIBC Mellon Global Securities Service. We have relied upon audited financial statements of the Plan for 2021, 2022, and 2023. A new target asset allocation for the pooled pension fund was implemented in early 2024. The implementation of this new mix will occur in 2024, and was used in the development of the going concern discount rate for this valuation.

The following is a summary of the market value of Plan assets by category as at December 31, 2023 along with the prior and new target asset mix:

PLAN ASSETS AS AT DECEMBER 31, 2023

December 31, 2023	Actual (%)	Prior target asset mix (%)	New target asset mix (%)
Cash & cash equivalents	1	0	0
Fixed income	19	20	30
Canadian equity	25	25	18
Global equity	55	55	42
Infrastructure	0	0	10
Total	100	100	100

Reconciliation of Plan Assets

A summary of pension fund transactions for the period January 1, 2021 to December 31, 2023 is summarized below:

RECONCILIATION OF ASSETS

Year Ending December 31	2021	2022	2023
	\$000	\$000	\$000
Net Assets Available for Benefits January 1	\$174,505	\$179,682	\$140,741
Adjustments:			
Plus:			
Member Contributions - Regular	4,788	4,597	5,179
Member Contributions – Past Service and Reciprocal Transfers	368	639	208
Government Contributions	4,876	4,642	5,213
Investment income	29,306	(14,105)	18,470
Less:			
Retirement benefits	31,747	32,213	32,361
Lump sum refunds	1,573	1,755	800
Administrative costs	841	746	684
Total	\$179,682	\$140,741	\$135,966

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	Net of Expenses Return
December 31, 2021	18.04%	17.48%
December 31, 2022	(8.43%)	(8.86%)
December 31, 2023	14.30%	13.74%

The average rate of return since the last valuation was 7.30% per year, or 6.79% net of expenses.

APPENDIX B ACTUARIAL METHODS AND ASSUMPTIONS

A. Going Concern Valuation

Asset Valuation Method

For the purposes of the going concern valuation, the actuarial value of assets is the market value of assets, adjusted for payables and receivables. This method was also used in the previous valuation.

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 contributions 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 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 total current service cost will remain relatively stable. If the Plan membership's average age increases, on the other hand, the current service cost will also increase. Such increases would be revealed in future valuations.

Actuarial Assumptions

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 considering historical trends, future expectations and Plan specific experience, where possible. The assumptions chosen are expected to produce a stable pattern of funding.

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

1. the probability that a particular payment will be made at a certain time (for example, depending upon whether the individual concerned survives to that date); and
2. the expected amount of each 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, we have considered all of these factors. Where applicable, we have taken into account the actual experience of this Plan. However, 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 take into account statistics developed from many other pension plans.

Going Concern Discount Rate Assumption

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.

As directed by Government, the discount rate does not include a margin for adverse deviations. This is consistent with the prior valuation.

Based on the assumed inflation rate and other key economics expectations over the long term, the going concern discount rate assumption was developed as follows:

GOING CONCERN DISCOUNT RATE

Discount Rate Components	
"Best estimate" return reflecting the Plan's investment policy	5.91%
Diversification / rebalancing	0.34%
Added value from active management	0.20%
Provision for expenses	(0.55%)
Margin for adverse deviations	0.00%
Going concern discount rate assumption	5.90%

The resulting discount rate assumption is 5.90% per annum, a decrease from the 6.00% per annum used in the previous valuation.

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 has not changed from the 2020 assumption of 2.00% per annum. This rate is within the Bank of Canada's 1% - 3% inflation-control target range.

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 \$68,500 in 2024.

We have assumed the Canada Revenue Agency defined benefit limit would also increase at a rate of 2.75% per annum from the current known level of \$3,610 for 2024. 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 actuarial valuation.

Salary Increases

For RNC employees, we have assumed contractual increases of 2.50% plus merit and promotional increases of 13.50% per annum in the first four years of service, then 0.75% per annum up to the 24th year of service, then 1.00% per annum thereafter.

For correctional officers, we have assumed contractual increases of 10.00% on April 1, 2024, 2.50% per annum thereafter plus merit and promotional increases of 9.50% per annum in the first three years of service, then 0.50% per annum thereafter.

Salary increases for firefighters are assumed to be 3.50% per annum.

The assumption for correctional officers represents a change from the previous valuation, in line with the current collective agreement. The assumptions for RNC and firefighters have not changed since the previous valuation.

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 mortality patterns of Canadians participating in, or retired from, defined benefit pension plans in the public sector. Adjustment factors of 1.1 for males and 1.1 for females were applied to the mortality table. The mortality assumption has not changed since the previous actuarial valuation.

Retirement Age

We have maintained the same retirement assumption used in the last valuation.

For RNC employees, we have assumed that 25% of members retire at 25 years of service and the remainder retire at 30 years of service.

For correctional officers, we have assumed that 50% of members retire at 25 years of service and the remainder retire at 30 years of service.

For firefighters, we have assumed that 20% of members retire at 25 years of service, 50% of the remainder at 30 years of service, and the remainder at 35 years of service.

We have assumed that no members work after reaching age 60.

For those members over age 60 on the valuation date, we have assumed they retire in one year.

Marital Status

Consistent with the previous valuation, we have assumed that at the earlier of retirement or death, 85% of members will have an eligible spouse. Further, we have continued to assume that male spouses are 3 years older than female spouses.

Termination Assumption

We have assumed that there are no terminations prior to retirement. This assumption has not changed since the previous valuation.

Disability Assumption

We have continued to use the same rates of disability as used in the previous valuation.

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

GOING CONCERN VALUATION ACTUARIAL ASSUMPTIONS

	December 31, 2023	December 31, 2020
Discount rate:	5.90% per annum	6.00% per annum
Salary increases:	RNC: Contractual increase of 2.50% plus merit and promotion of 13.50% in the first four years of service, then 0.75% up to the 24 th year of service, then 1.00% thereafter Correctional Officers: Contractual increase of 10.00% on April 1, 2024, 2.50% per annum thereafter, plus merit and promotion of 9.50% for the first three years of service, then 0.50% thereafter Firefighters: 3.50%	RNC: Contractual increase of 2.50% plus merit and promotion of 13.50% in the first four years of service, then 0.75% up to the 24 th year of service, then 1.00% thereafter Correctional Officers: Contractual increase of 2.50% plus merit and promotion of 13.50% for the first three years of service, then 0.50% thereafter Firefighters: 3.50%
Maximum pension and YMPE:	2024: \$3,610 and \$68,500 2025+: Increase at 2.75% per annum	2021: \$3,245.56 and \$61,600 2022+: Increase at 2.75% per annum
Mortality:	110% of CPM 2014 Public Sector Mortality Table projected generationally with CPM Improvement Scale B	110% of CPM 2014 Public Sector Mortality Table projected generationally with CPM Improvement Scale B
Retirement age:	RNC: 25% at 25 years of service and the remainder at 30 years of service, or age 60 if earlier Correctional Officers: 50% at 25 years of service and the remainder at 30 years of service, or age 60 if earlier Firefighters: 20% at 25 years of service, 50% of the remainder at 30 years of service, and the remainder at 35 years of service, or age 60 if earlier Members who have reached age 60 at the valuation date are assumed to retire 1 year after the valuation date.	RNC: 25% at 25 years of service and the remainder at 30 years of service, or age 60 if earlier Correctional Officers: 50% at 25 years of service and the remainder at 30 years of service, or age 60 if earlier Firefighters: 20% at 25 years of service, 50% of the remainder at 30 years of service, and the remainder at 35 years of service, or age 60 if earlier Members who have reached age 60 at the valuation date are assumed to retire 1 year after the valuation date.
Marital status:	At retirement or death: 85% (male spouse is 3 years older)	At retirement or death: 85% (male spouse is 3 years older)
Termination rates:	None	None
Disability rates	0.10% for 35 and under, 0.15% at age 40, 0.30% at age 45, 0.80% at age 50, and 0.00% at age 55	0.10% for 35 and under, 0.15% at age 40, 0.30% at age 45, 0.80% at age 50, and 0.00% at age 55
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 to eliminate the deficiency, unless the Plan is subject to solvency relief or is exempt from funding in accordance with the Newfoundland and Labrador *Pension Benefits Act Regulations*.

Benefits are assumed to be settled through a lump sum transfer for 100% of active members who are not eligible for an unreduced pension as at the date of valuation. Benefits are assumed to be settled through the purchase of annuities for active members who are eligible for an unreduced pension 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 4.50% per annum for 10 years and 4.50% 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 2023. The mortality assumption used was the CPM-2014 (Combined) mortality table projected with Scale CPM-B. In accordance with the Newfoundland and Labrador *Pension Benefits Act Regulations*, we have assumed that all members retire at the age which maximizes the transfer value.

For those members whose benefits are assumed to be settled through purchase of annuities, the solvency liabilities were calculated using an interest rate of 4.55% 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 *Educational Note Supplement – Guidance for Assumptions for Hypothetical Wind-up and Solvency Valuations Update – Effective December 31, 2023, and Applicable to Valuations with Effective Dates on or after December 31, 2023, and no later than June 29, 2024*. We have assumed that active members to be settled through annuity purchase will the age which maximizes the annuity cost.

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 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.

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

SOLVENCY VALUATION ACTUARIAL ASSUMPTIONS

	December 31, 2023	December 31, 2020
Interest rates for benefits to be settled through annuity purchase:	4.55% per annum	2.59% per annum
Interest rates for benefits to be settled through lump sum transfer:	4.50% per annum for 10 years and 4.50% thereafter	1.40% per annum for 10 years and 2.90% 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 (lump sum transfer value basis):	Age that maximizes the value of the pension. All members are assumed to retire at the earliest date that they are eligible for an unreduced pension.	Age that maximizes the value of the pension. All members are assumed to retire at the earliest date that they are eligible for an unreduced pension.
Retirement age (annuity purchase basis):	Age that maximizes the value of the pension. All members are assumed to retire at the earliest date that they are eligible for an unreduced pension.	Age that maximizes the value of the pension. All members are assumed to retire at the earliest date that they are eligible for an unreduced pension.
Salary scale:	None	None
Married assumption:	85% married (male spouse is 3 years older)	85% married (male spouse is 3 years older)
Actuarial cost method:	Termination Method	Termination Method
Wind-up expenses	\$600,000	\$600,000

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. 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 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, 2023	December 31, 2020
Active Members (Non-Firefighters)		
Number	647	666
Average age	40.3	39.8
Total pensionable earnings	\$59,632,801	\$56,794,430
Average pensionable earnings	\$92,168	\$85,277
Average years of pensionable service	12.2	11.9
Active Members (Firefighters)		
Number	1	3
Average age	**	62.5
Total pensionable earnings	**	\$262,355
Average pensionable earnings	**	\$87,452
Average years of pensionable service	**	36.2
Deferred Members		
Number	13	17
Average age	47.9	46.5
Total annual pension	\$174,193	\$270,430
Average annual pension	\$13,399	\$15,908
Pending Terminations		
Number	30	17
Total pending refund	\$602,718	\$99,172
Average pending refund	\$20,091	\$5,834
Pensioners		
Number	973	949
Average age	69.8	68.5
Total annual lifetime pension	\$29,688,543	\$27,870,553
Average annual lifetime pension	\$30,512	\$29,368
Total annual bridge pension	\$2,811,959	\$2,934,393
Average annual bridge pension*	\$8,599	\$8,384

* Excludes members with no bridge amount.

** Not shown for privacy purposes

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

RECONCILIATION OF MEMBERSHIP

	Active Members	Deferred Members	Pending Terminations	Pensioners and Survivors	Total
Total at December 31, 2020	669	17	17	949	1,652
New members	71				71
Returned to active employment	1	(1)			
Retirements and disability pensions	(63)			63	
Terminations:					
Deferred pensions	(1)	1			
Non-vested or pending	(14)		14		
Fully settled	(10)	(4)	(1)		(15)
Deaths	(5)			(76)	(81)
New survivors				36	36
New limited members				1	1
Total at December 31, 2023	648	13	30	973	1,664

The distribution of the active members' pensionable earnings by age and pensionable service as at December 31, 2023, is summarized as follows

AGE/SERVICE DISTRIBUTION FOR ACTIVE RNC MEMBERS

Age Service:	<5	5-10	10-15	15-20	20-25	25-30	>30	Total
<25	5 77,884							5 77,884
25-30	20 79,686	14 102,479						34 89,071
30-35	16 89,029	47 102,298	23 105,448					86 100,672
35-40	7 81,983	23 102,429	52 106,029	23 116,055				105 105,833
40-45	1 <>	4 96,472	13 107,166	42 114,556	6 130,098			66 112,924
45-50	2 <>	1 <>	9 105,291	27 112,716	9 121,996	1 <>		49 110,665
50-55	1 <>		1 <>	11 114,914	9 118,930	7 121,279	2 <>	31 117,070
55-60				1 <>	2 <>	5 134,775	9 123,273	17 126,362
60-65				1 <>			2 <>	3 <>
>65							1 <>	1 <>
Total	52 82,195	89 102,100	98 105,971	105 113,693	26 123,274	13 126,600	14 121,996	397 106,405

<> Data has been suppressed for privacy reasons

AGE/SERVICE DISTRIBUTION FOR ACTIVE CORRECTIONAL OFFICERS

Age Service:	<5	5-10	10-15	15-20	20-25	25-30	>30	Total
<25	8 58,519							8 58,519
25-30	11 63,031	4 67,736						15 64,286
30-35	17 65,713	23 68,036	6 67,624					46 67,124
35-40	6 67,736	14 68,286	23 68,703	3 <>				46 68,486
40-45	4 67,736	11 68,694	17 69,761	11 72,801	1 <>			44 70,210
45-50	2 <>	8 69,079	15 72,882	11 76,242	6 80,999			42 73,640
50-55	1 <>	9 67,736	7 68,454	4 67,736	11 76,402	3 <>	1 <>	36 71,303
55-60		2 <>	4 70,771	2 <>	3 <>	2 <>		13 74,650
Total	49 63,804	71 68,232	72 69,824	31 72,699	21 78,816	5 79,262	1 <>	250 69,560

<> Data has been suppressed for privacy reasons

The distribution of the pensioners by age and years since retirement as at December 31, 2023 is summarized as follows:

AGE/YEARS SINCE RETIREMENT DISTRIBUTION FOR PENSIONERS

Age Years Since Retirement:	<5	5-10	10-15	15-20	20-25	25-30	>30	Total
<50	6 17,569					1 <>		7 16,849
50-55	26 35,050	7 29,963	1 <>	1 <>				35 33,392
55-60	37 49,618	35 38,987	20 24,347	2 <>				94 39,569
60-65	36 68,522	65 47,336	66 35,361	35 19,618	2 <>	2 <>	4 9,099	210 41,161
65-70	2 <>	34 50,913	53 36,415	48 23,098	19 13,286	3 <>	3 <>	162 31,531
70-75	2 <>	4 59,118	31 39,836	50 29,930	27 20,516	38 19,522	16 11,601	168 26,727
75-80	3 <>			18 29,021	26 30,801	36 24,712	71 20,001	154 23,825
80-85					9 27,090	11 22,472	70 19,032	90 20,258
85-90							42 18,117	42 18,117
90-95							9 19,322	9 19,322
95-100							1 <>	1 <>
>100							1 <>	1 <>
Total	112 48,339	145 45,646	171 35,203	154 25,064	83 22,499	91 21,349	217 18,246	973 30,512

<> Data has been suppressed for privacy reasons

Average annual pension is the annualized pension payable January 1, 2024, including bridge benefits.

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, 2023 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, 2023			
	Going Concern Results at Dec. 31, 2023	Interest rate risk (-0.80%)	Deterioration of asset values (14.9% red'n in MV)	Longevity risk (90% of base mortality)
Going concern assets	135,966,000	138,402,000	115,707,000	135,966,000
Going concern liabilities	531,081,000	555,209,000	531,081,000	538,235,000
Going concern excess / (unfunded liability)	(395,115,000)	(416,807,000)	(415,374,000)	(402,269,000)
Change in going concern financial position	-	(21,692,000)	(20,259,000)	(7,154,000)
Current service cost	11,467,000	12,488,000	11,467,000	11,553,000
Change in current service cost	-	1,021,000	-	86,000
% Change in liabilities		4.54%	0.00%	1.35%
% Change in current service cost		8.90%	0.00%	0.75%
Discount rate	5.90%	5.55%	5.90%	5.90%

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 35 basis points as of December 31, 2023.

With respect to the impact on fixed income assets, the scenario results in a decrease in long term yields on fixed income investments of 0.80%.

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 14.9% as of December 31, 2023.

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., 99% of the mortality rates of the CPM 2014 Combined table, projected with generational mortality improvements according to Scale CPM-B as of December 31, 2023; that is, a more conservative mortality assumption than currently employed.

APPENDIX E SUMMARY OF PLAN PROVISIONS

Introduction

The *Uniformed Services Pension Plan* 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, 2023. The following is a summary of the Plan's main provisions in effect on December 31, 2023. It is not intended as a complete description of the Plan.

Eligibility for Membership

All full-time employees are required to join the Plan on their date of employment.

Contributions

Members are required to contribute a percentage of their salary to the registered pension as follows:

- 9.95% of salary up to the employee's basic exemption under the Canada Pension Plan; plus
- 8.15% of salary in excess of the employee's basic exemption under the Canada Pension Plan up to the Year's Maximum Pensionable Earnings ("YMPE"); plus
- 9.95% of salary in excess of the YMPE.

Individual member contributions are subject to a cap of 9% of the member's salary. In accordance with Section 7 of the *Uniformed Services Pension Act*, member contributions are matched by the Government, without recognition of the 9% cap.

Normal Retirement Date

A member is eligible to retire once they have reached age 60 provided the member has at least 5 years of pensionable service.

Unreduced Early Retirement Date

A member may elect to retire and receive a pension on the first day of the month following the date the member has at least 25 years of pensionable service.

Reduced Early Retirement Date

A member is eligible to retire with an actuarially reduced pension as early as age 55 if they have at least 5 pensionable years of service.

Pension at Normal Retirement or Unreduced Early Retirement

The annual total pension payable on retirement on or after the normal or unreduced early retirement date is the sum of the following:

- Service from April 1, 1967 to March 31, 1993: 2.0% of the average of the member's best three years' salary multiplied by the years of pensionable service between April 1, 1967 and March 31, 1993; plus
- Service from April 1, 1993 to March 31, 1994: 1.7% for Police Management, 1.4% for Correctional Officers and 2.0% for the remaining members of the average of the member's best three years' salary multiplied by the years of pensionable service between April 1, 1993 and March 31, 1994; plus
- Service from April 1, 1994: 2.0% of the average of the member's best three years' salary multiplied by the years of pensionable service since April 1, 1994.

At age 65, the amount payable above is reduced by 0.60% of the minimum of the average of the member's best three years' salary and the average of the YMPE in the three years before retirement, multiplied by years of pensionable service, to a maximum of 35 years.

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 prior to pension commencement and prior to reaching 5 years of pensionable service, the beneficiary will receive a death benefit equal to the member's contributions with interest.

If a member dies prior to pension commencement and after reaching 5 years of pensionable service, the member's spouse is eligible to receive one of the following two benefits:

1. a survivor pension of 60% of the member's accrued pension to the date of death,
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 accrued pension assuming they terminated employment on the date of death.

If the spouse 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 dies prior to pension commencement and after reaching 5 years of pensionable service but does not have a spouse, the beneficiary is entitled to the commuted value of the member's accrued pension assuming the member terminated employment on the date of death.

Death Benefits After Retirement

The normal form of payment for a member without a spouse is a lifetime pension. The normal form of pension for a member with a spouse is a joint and survivor 60% pension. If the surviving spouse 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.

Minimum Pension Payments

If the total of all pension payments made to the member (and spouse and dependent children, if applicable) is less than the member's contributions with interest at pension commencement, the excess will be paid to the member's beneficiary or estate.

Disability Benefits

A member who has been credited with at least 5 years of pensionable service, has used up all sick leave entitlement, and is deemed totally and permanently disabled, shall be retired and receive the pension accrued by the member to the date of disability.

Termination Benefits

If a member's employment terminated for reasons other than death or retirement and has at least 5 years of pensionable service, they are eligible to receive one of the two following benefits:

- 1) a transfer equal to 100% of the commuted value of the member's accrued pension; or
- 2) a deferred lifetime pension beginning at their normal retirement date.

If a member's employment terminated prior to them attaining 5 years of pensionable service, they are eligible to receive a refund of their contributions with interest credited to the date of settlement.

APPENDIX F ADMINISTRATOR CERTIFICATION

On behalf of the Administrator of the *Uniformed Services Pension Plan for the Province of Newfoundland and Labrador*, I hereby certify to the best of my knowledge and belief:

The significant terms of engagement contained in Section I of this report are accurate and reflect the plan administrator's direction with respect to this valuation;

- The Summary of Plan Provisions contained in Appendix E of this actuarial report is a complete and accurate summary of the terms of the Plan which affect the funding requirements;
- The membership data provided to the actuary includes a complete and accurate description of every person who is entitled to benefits under the terms of the Plan for service up to December 31, 2023;
- The asset data provided or made available to the actuary is complete and accurate; and
- All events subsequent to December 31, 2023 that may have an impact on the valuation have been communicated to the actuary.

Dean Batten

Name



Signature

Manager of Pension Investments

Title

July 9, 2024

Date