MORNEAU SHEPELL

# Shared Risk Plan for Certain Bargaining Employees of New Brunswick Hospitals

## Actuarial Valuation Report as at December 31, 2016

Registration number:Canada Revenue Agency: #0385856
NB Superintendent of Pensions: #0385856

Report prepared in September 2017

Business. Needs. People.

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# Introduction

The Pension Plan for Certain Bargaining Employees of New Brunswick Hospitals ("Former CBE Plan") was converted to the Shared Risk Plan for Certain Bargaining Employees of New Brunswick Hospitals ("CBE SRP Plan" or "Plan") effective July 1, 2012.

This valuation is conducted as at December 31, 2016, being the fiscal year-end of the CBE SRP Plan. This report was prepared for the Board of Trustees ("Trustees") and the Superintendent of Pensions ("Superintendent") for the following purposes:

- to document the results of a funding policy valuation, as required under subsection 100.61(1) of the New Brunswick Pension Benefits Act ("PBA") and subsections 14(5) to 14(7) of Regulation 2012-75, and provide the related actuarial opinion;
- to document the results of the risk management procedures as required under paragraph 100.7(1)(e) of the PBA;
- to document the results of a hypothetical wind-up valuation of the CBE SRP Plan as required under the Standards of Practice of the Canadian Institute of Actuaries, and provide the related actuarial opinion.

The Board of Trustees is also seeking the approval of the Superintendent for the following items, as required under the PBA and Regulations:

- approval of the generational mortality table used in the funding policy valuation as required under sub-paragraph 14(7)(c)(ii) of Regulation 2012-75;
- approval of the asset liability model used, as described in Section 2, including the stochastic projection assumptions found under Appendix C, as required under subsection 15(1) of Regulation 2012-75; and
- approval of the economic assumptions used in the asset liability model, as described under Appendix C, as required under subsection 15(3) of Regulation 2012-75.

The Trustees for the CBE SRP Plan retained the services of Morneau Shepell Ltd ("Morneau Shepell") to prepare this report.

The last actuarial valuation report prepared for the CBE SRP Plan was performed as at December 31, 2015.

The next actuarial valuation report for the CBE SRP Plan will be due no later than one year following the effective date of this report in accordance with the requirements of subsection 100.61(1).

To our knowledge, there are no events subsequent to the valuation date which would materially impact the results of the valuation.

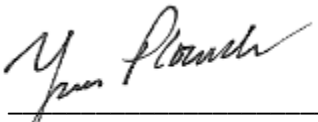
The recommendations and opinions are given exclusively from a financial viewpoint. This valuation report does not constitute a legal opinion on the rights and duties of the Trustees or the members of the plan over the pension fund.

Actuarial valuation results are only estimates. Actuarial valuations are performed based on assumptions and methods that are in accordance with sound actuarial principles. Emerging experience differing from these

assumptions will result in gains or losses, which may affect future open group funded ratios of the plan and future risk management procedures results, which in turn will impact the types and timing of any actions to be taken by the Trustees in accordance with the funding policy. These gains and losses will be revealed in future actuarial valuations.

The undersigned is available to provide supplementary information and explanation as appropriate, concerning this report.

Respectfully submitted,



Yves Plourde, FSA, FCIA

September 28, 2017
Date

*This report was peer reviewed by Jeff Penner FSA, FCIA.*

# Section 1 – Funding Policy Valuation

A funding policy valuation is required annually under subsection 100.61(1) of the PBA and subsections 14(5) to 14(7) of Regulation 2012-75. The results of the funding policy valuation of the CBE SRP Plan as at December 31, 2016 are found below.

The funding policy valuation results presented in this section are based on asset information found in Appendix A, membership data found in Appendix B, plan provisions summarized in Appendix D, and funding policy summarized in Appendix E of this report. The methods and assumptions used in the funding policy actuarial valuation are described later in this section.

## Funding Policy Valuation Funded Status

The funding policy valuation funded status of the CBE SRP Plan is determined by comparing the fair market value of the assets to the funding policy actuarial liabilities. The funding policy actuarial liabilities are based on the benefits earned up to the valuation date assuming the Plan continues indefinitely. The funding policy valuation funded status of the CBE SRP Plan as at December 31, 2016, along with the results in the previous valuation as at December 31, 2015, are found below:

Table 1.1 – Funding Policy Valuation Funded Status

| | December 31, 2016 | December 31, 2015 |
|---|---|---|
| Market Value of Assets | $M | $M |
| • Fair market value of assets (including receivables / payables) | 1,920.0 | 1,785.4 |
| Funding Policy Actuarial Liabilities | | |
| • Active members | 949.8 | 912.3 |
| • Retirees and beneficiaries | 725.9 | 658.3 |
| • Deferred vested and suspended members | 135.0 | 144.5 |
| • Outstanding refunds and withholding amounts | 1.1 | 1.4 |
| • Total funding policy valuation actuarial liabilities | 1,811.8 | 1,716.5 |
| Funding policy valuation excess (unfunded liability) | 108.2 | 68.9 |
| Termination value funded ratio [calculated in accordance with Reg. 14(6)(e)] | 106.0% | 104.0% |

The termination value funded ratio is used in the calculation of the “termination value” of any individual’s pension benefits at termination of employment, death, marriage breakdown, or retirement, as the case may be, in accordance with the terms of the CBE SRP Plan and subsection 18(1) of Regulation 2012-75. It is calculated in accordance with paragraph 14(6)(e) of Regulation 2012-75.

## Funding Policy Valuation Normal Cost and Excess Contributions

The table below provides the funding policy valuation normal cost, being the value of the pension benefits being earned in the twelve-month period after the valuation date. It compares the funding policy valuation normal cost to the level of member and employer contributions in order to determine the level of contributions being made to the Plan in excess of the funding policy valuation normal cost. Results for the year following December 31, 2016 are presented below, along with the results found in the previous valuation as at December 31, 2015:

Table 1.2 – Funding Policy Valuation Normal Cost and Excess Contributions

| | Year Following December 31, 2016 | | Year Following December 31, 2015 | |
|---|---|---|---|---|
| | $M | % of payroll | $M | % of payroll |
| A. Member and employer contributions | 86.9 | 15.6 | 86.1 | 15.6 |
| B. Funding policy valuation normal cost | 60.2 | 10.8 | 62.4 | 11.3 |
| C. Excess contributions (A. – B.) | 26.7 | 4.8 | 23.7 | 4.3 |
| Estimated payroll for following year | | $557.2M | | $552.2M |

## Determination of 15-Year Open Group Funded Ratio

The table below provides the 15-year open group funded ratio as calculated in accordance with the requirements of paragraph 14(6)(f) of Regulation 2012-75. This ratio is used extensively under the Funding Policy to determine the actions to be undertaken by the Trustees under the funding policy deficit recovery plan and the funding policy excess utilization plan. The 15-year open group funded ratio is calculated as follows:

Table 1.3 – 15-Year Open Group Funded Ratio

| | December 31, 2016 | December 31, 2015 |
|---|---|---|
| | $M | $M |
| A. Market value of assets (including receivables / payables) | 1,920.0 | 1,785.4 |
| B. Present Value of Excess Contributions over next 15 years [calculated in accordance with Reg. 14(6)(c)] | 350.7 | 321.2 |
| C. Funding policy valuation actuarial liabilities | 1,811.8 | 1,716.5 |
| D. 15-Year Open Group Funded Ratio [(A. + B.) / C.] | 125.3% | 122.7% |

## Reconciliation of Funding Policy Valuation Funded Status with Previous Valuation

The table below describes the change in the Plan's funded status between the last funding policy valuation as at December 31, 2015 and this funding policy valuation as at December 31, 2016:

Table 1.4 – Reconciliation of Funded Status

| | $M | $M |
|---|---|---|
| Funding policy valuation excess (unfunded liability) as at December 31, 2015 | | 68.9 |
| Expected changes in funded status | | |
| • Interest on funding excess (unfunded liability) | 3.3 | |
| • Contributions in excess of normal cost (shortfall) | 24.5 | |
| • Cost of implementation of Steps 1 to 4 effective January 1, 2017 | (47.1) | |
| • Total | | (19.3) |
| Expected funding policy valuation excess (unfunded liability) as at December 31, 2016 | | 49.6 |
| Actuarial gains (losses) due to the following factors | | |
| • Investment return on actuarial value of assets | 19.5 | |
| • Retirements | 2.3 | |
| • Terminations | (0.1) | |
| • Mortality | 2.0 | |
| • Removal of minimum liability provision | 29.9 | |
| • Miscellaneous factors | 5.0 | |
| • Total | | 58.6 |
| Funding policy valuation excess (unfunded liability) as at December 31, 2016 | | 108.2 |

The references to Steps 1 to 4 in the above table are related to the corresponding steps found in the Funding Excess Utilization Plan under the Funding Policy for the Plan.

## Reconciliation of Total Normal Cost

The factors contributing to the change in the total normal cost from the last funding policy valuation as at December 31, 2015 to this funding policy valuation as at December 31, 2016 are shown below:

Table 1.5 – Reconciliation of Total Normal Cost

| | % of payroll |
|---|---|
| Total normal cost as at December 31, 2015: | 11.3% |
| Impact of changes in demographics: | 0.2% |
| Impact due to removal of minimum liability provision | (0.7%) |
| Total normal cost as at December 31, 2016: | 10.8% |

## Sensitivity Analysis on the Funding Policy Basis

The Standards of Practice of the Canadian Institute of Actuaries require actuarial valuation reports to disclose the sensitivity of the liabilities to changes in the discount rate assumption. The table below illustrates the effect

of 1% decrease in the discount rate on the funding policy actuarial liabilities. With the exception of the discount rate, all other assumptions and methods used for this valuation were maintained.

Table 1.6 – Sensitivity of Actuarial Liabilities on the Funding Policy Basis

| | December 31, 2016 | Discount rate 1% lower |
|---|---|---|
| | $M | $M |
| Actuarial liabilities | | |
| • Active members | 949.8 | 1,151.8 |
| • Retirees and beneficiaries | 725.9 | 800.6 |
| • Deferred vested and suspended members | 135.0 | 162.8 |
| • Outstanding refunds and withholding amounts | 1.1 | 1.1 |
| • Total | 1,811.8 | 2,116.3 |
| Increase in actuarial liabilities | | 304.5 |

## Sensitivity Analysis on the Funding Policy Total Normal Cost

The table below illustrates the effect on the total normal cost of using a discount rate 1% lower than the one used for the funding policy valuation. All other assumptions and methods, as used in this valuation, were maintained.

Table 1.7 – Sensitivity of Funding Policy Total Normal Cost

| | As at December 31, 2016 | | Discount rate 1% lower | |
|---|---|---|---|---|
| | $M | % of payroll | $M | % of payroll |
| Total normal cost | 60.2 | 10.8 | 75.2 | 13.5 |
| Increase in total normal cost | | | 15.0 | 2.7 |

## Funding Policy Actuarial Methods

### Asset Valuation Method

The assets used under the funding policy valuation are equal to the fair market value of the assets. This is a requirement of paragraph 14(6)(d) of Regulation 2012-75.

### Actuarial Cost Method

The funding policy valuation actuarial liabilities and normal cost were calculated using the accrued benefit (or unit credit) actuarial cost method in accordance with the requirement of paragraph 14(7)(a) of Regulation 2012-75.

The funding policy valuation actuarial liabilities are equal to the actuarial present value of benefits earned by members for services prior to the valuation date, taking into account the actuarial assumptions as indicated hereafter. For greater certainty, it does not take into account the impact of any future salary increases, and the impact of any future increases in accrued pensions due to cost-of-living adjustments or other adjustments as may be granted from time to time by the Trustees in accordance with the plan terms and the funding policy.

A minimum liability equal to member contributions with interest was held in the past for each individual, where applicable. This minimum liability was removed for this valuation as such minimum is not expected to apply by the time each member reaches expected retirement.

The funding policy valuation normal cost is equal to the actuarial present value of benefits expected to be earned by members in the year following the valuation date. A salary increase estimate has been made to calculate the estimated normal cost and estimated member and employer contributions for the year following the valuation date.

The ratio of the total normal cost to the covered payroll for the period will tend to stabilize over time if the demographic characteristics of the active and disabled members remain stable. All other things being equal, an increase in the average age of the active and disabled members will result in an increase in this ratio.

For valuation purposes, to determine eligibility for benefits and for any other use, the age used is the age on the date of the nearest birthday.

## Funding Policy Actuarial Assumptions

The main actuarial assumptions employed for the funding policy actuarial valuation are summarized in the following table. Emerging experience differing from these assumptions will result in gains or losses, which will be revealed in future funding policy actuarial valuations. Experience gains and losses emerging in future funding policy actuarial valuations will impact among other things the open group funded ratio of the plan, which in turn will impact the types and timing of any actions to be taken by the Trustees in accordance with the funding policy. All rates and percentages are annualized unless otherwise noted.

Table 1.8 – Funding Policy Actuarial Valuation Assumptions

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | **December 31, 2016** |
| Discount rate | | | | | | | | | 4.75% per annum |
| Salary increase for year following valuation (for normal cost purposes only) | | | | | | | | | 3.25% |
| Seniority and promotional salary increases | | | | | | | | | 3% of salary at attainment of age 50 |
| YMPE increase for year following valuation (for normal cost purposes only) | | | | | | | | | 3.00% |
| Mortality | | | | | | | | | 2014 Public Sector Mortality Table (CPM 2014 Publ) projected using Improvement Scale B (CPM-B) with size adjustment factors of 106% for males and 116% for females |
| Retirement | | | | | | | | | |
| Retirement Age | Age at Conversion | | | | | | | | |
| | Under 25 or joined Plan after conversion | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60+ |
| 55 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 10.0% | 20.0% |
| 56 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 10.0% | 20.0% | 15.0% | 10.0% |
| 57 | 0.0% | 0.0% | 0.0% | 10.0% | 20.0% | 15.0% | 10.0% | 10.0% | 10.0% |
| 58 | 0.0% | 10.0% | 20.0% | 15.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 59 | 20.0% | 15.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| 60 | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 17.5% | 25.0% |
| 61 | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 17.5% | 25.0% | 15.0% | 5.0% |
| 62 | 10.0% | 10.0% | 10.0% | 17.5% | 25.0% | 15.0% | 5.0% | 4.5% | 4.0% |
| 63 | 10.0% | 17.5% | 25.0% | 15.0% | 5.0% | 4.5% | 4.0% | 3.5% | 3.0% |
| 64 | 25.0% | 15.0% | 5.0% | 4.5% | 4.0% | 3.5% | 3.0% | 2.5% | 2.0% |
| 65 | 15.0% | 12.5% | 10.0% | 8.0% | 6.0% | 4.5% | 3.0% | 2.0% | 1.0% |
| Termination (membership)<br>(Sample rates of termination other than by death, disability or retirement) | | | | Age | | | Rate | | |
| | | | | 20 | | | 7.4% | | |
| | | | | 25 | | | 5.0% | | |
| | | | | 30 | | | 3.0% | | |
| | | | | 35 | | | 1.9% | | |
| | | | | 40 | | | 1.4% | | |
| | | | | 45 | | | 1.0% | | |
| | | | | 50 | | | 0.6% | | |
| | | | | 55 | | | 0.0% | | |

Additional assumptions are required to determine the level of future cash flows to and from the pension plan, such as member and employer contributions, normal costs, benefit payments and expenses. These cash flows are calculated on a deterministic basis for each year following the valuation date for a period of 20 years, and allows the determination of the funding policy actuarial liability and assets at each future date, as well as the determination of the present value of 15-year excess contributions in accordance with paragraph 14(6)(c) of Regulation 2012-75. Furthermore, all this information is used in the stochastic analysis required under the risk management procedures for the Plan.

Table 1.9 – Additional Funding Policy Actuarial Valuation Assumptions for Purposes of Calculating Future Year Cash Flows and Actuarial Liability

| | December 31, 2016 | | |
|---|---|---|---|
| New entrants | Each active member is replaced at termination, death or retirement by a new entrant (with no net increase in the active membership of the plan) | | |
| Distribution of new entrants and salary at entry | Age | Distribution | Average Salary at Entry |
| | 23 | 25.0% | $63,500 |
| | 26 | 25.0% | $63,500 |
| | 30 | 25.0% | $63,500 |
| | 40 | 25.0% | $63,500 |
| | 90% female / 10% male | | |
| Work percentage | 85.0% | | |
| Inflation | 2.25% per annum | | |
| Salary increases | 3.25% per annum | | |
| YMPE increases | 3.00% per annum | | |

## Rationale for Material Actuarial Assumptions

The assumptions have been reviewed in light of current economic and demographic conditions.

### Inflation

Given the historical increases in consumer prices in Canada, the rates expected by the market, the portfolio managers' expectation, the Bank of Canada policy and the long-term forecasts of the Conference Board of Canada, Morneau Shepell believes that the expected long-term rate of inflation should be between 2.00% and 2.50%.

Consistent with this range, we have used an inflation assumption of 2.25% per annum.

### Discount Rate Development

The elements considered in the development of the discount rate assumption for purposes of the funding policy valuation are summarized in the table below.

Table 1.10 – Development of Funding Policy Valuation Discount Rate

| | % |
|---|---|
| Expected long-term nominal return based on the results of our stochastic analysis<br>(using long-term target asset mix, and including impact of rebalancing and diversification) | 5.75 |
| Value added for active management<br>(not exceeding the additional fees paid for active management [active management fees estimated at 0.25%] over passive management [passive management fees estimated at 0.10%]) | 0.15 |
| Assumed margin for adverse deviation | (0.80) |
| Expected expenses paid from the fund | (0.35) |
| Discount rate | 4.75 |

The expected long-term nominal return by asset class is provided in Appendix C. It should be noted that the return assumptions for bonds has been determined mainly on current market conditions while the return assumptions for equities and alternative investments are based more on long-term expectations.

### Expenses

The allowance for investment and administrative expenses paid from the fund as built into the discount rate is 0.35% of assets based on recent Plan history and our expectation for future expenses.

### Rate of Salary Increase

The salary increase assumption has three components, an inflationary salary increase, an allowance for general increases in productivity and merit and promotion, and a one-time seniority increase for nurses with 25 years as a registered nurse.

The long term salary increase assumption is based on the level of inflation of 2.25% per annum, plus an allowance for general increases in productivity and merit and promotion of 1.00% per annum, bringing the long term rate of salary increase to 3.25% per annum.

The nurses' seniority adjustment is a 3.00% one-time salary increase payable to all nurses who have been a registered nurse for 25 or more years. We have assumed that all nurses would receive the 3.00% increase at attainment of age 50. This adjustment is in addition to the regular assumed rate of salary increase shown above.

## Mortality

In order to take into account the improvements in life expectancy recently substantiated by the Canadian Institute of Actuaries in its report on Canadian Pensioners Mortality (published on February 13, 2014), we used the CPM-2014Publ Mortality Table, and the CPM-B Improvement Scale, which varies by gender, age and calendar year. Adjustment factors of 106% for males and 116% for females were also applied to the mortality table to take into account the expected mortality for employees in the medical and social services industry relative to the general public sector. The same adjustments were used for all participants before and after retirement. The mortality rates described above result in the following life expectancies for females and males.

Table 1.12 - Life expectancy for Females and Males

| **Females** | | | | | **Life expectancy by Age in Year…** |
|---|---|---|---|---|---|
| Age | 2017 | 2022 | 2027 | 2032 | 2037 |
| 55 | 33.0 | 33.3 | 33.6 | 33.8 | 34.1 |
| 60 | 28.2 | 28.5 | 28.7 | 29.0 | 29.2 |
| 65 | 23.5 | 23.8 | 24.0 | 24.3 | 24.5 |
| 70 | 19.1 | 19.3 | 19.5 | 19.7 | 19.9 |
| 75 | 14.8 | 15.0 | 15.2 | 15.4 | 15.6 |
| 80 | 10.9 | 11.1 | 11.3 | 11.4 | 11.6 |
| **Males** | | | | | **Life expectancy by Age in Year…** |
| Age | 2017 | 2022 | 2027 | 2032 | 2037 |
| 55 | 31.6 | 31.9 | 32.2 | 32.4 | 32.7 |
| 60 | 26.9 | 27.2 | 27.5 | 27.7 | 28.0 |
| 65 | 22.3 | 22.6 | 22.9 | 23.1 | 23.3 |
| 70 | 17.9 | 18.2 | 18.4 | 18.6 | 18.8 |
| 75 | 13.7 | 14.0 | 14.2 | 14.4 | 14.6 |
| 80 | 9.9 | 10.1 | 10.3 | 10.5 | 10.6 |

At the last actuarial valuation, the same mortality table was used.

### Termination

We have used the same termination rates as used in the previous valuation. We will continue to monitor this assumption for reasonableness.

### Rate of Increase in YMPE

We assume that the YMPE would increase at a rate that is 0.75% per annum higher than the inflation rate. We therefore assume a rate of increase in the YMPE of 3.00% per annum. This is the same rate as what was used in the prior valuation. The YMPE is automatically updated to its revised base level at each valuation date.

### Retirement

Given the changing early retirement subsidies for service after July 1, 2012 ("Conversion Date"), we estimate that Plan members will slowly start to delay retirement as we move away from the Conversion Date. As a result, we adopted retirement assumptions that vary depending on the member's age at conversion, and an ultimate retirement assumption for new members after conversion. A younger member at the valuation date will be expected to retire later on average than an older worker at the same date. This assumption was adopted at the last valuation and did not change for this valuation. We will continue to monitor this assumption for reasonableness.

## Opinion on Funding Policy Valuation

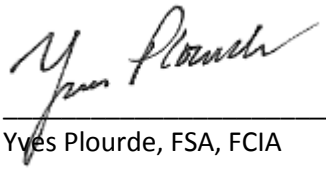
In my opinion, for the purposes of the funding policy valuation section of the report:

- The membership data on which the valuation is based is sufficient and reliable for the purposes of the valuation.
- The assumptions are appropriate for the purposes of the valuation.
- The methods employed in the valuation are appropriate for the purposes of the valuation.

This funding policy valuation report has been prepared, and my opinions given, in accordance with accepted actuarial practice in Canada.

The assumptions used under the funding policy valuation of this report were reasonable at the time this actuarial valuation report was prepared.

Respectfully submitted,



Yves Plourde, FSA, FCIA

September 28, 2017
Date

# Section 2 – Risk Management Goals and Procedures

## Meeting Risk Management Goals

The Plan was designed to achieve or exceed the risk management goals prescribed under the PBA and Regulation 2012-75. Certain procedures were developed to test whether these goals can be achieved given the contribution rules and benefits defined in the plan. These goals and procedures are described separately below, along with the results of the stochastic analysis that are relevant under the PBA as at December 31, 2016.

### Risk Management Goals

The primary risk management goal under the PBA is to achieve a 97.5% probability that base benefits will not be reduced over the 20 years following the valuation.

The goal is measured by taking into account the following funding management plans:

1. the funding deficit recovery plan except for reduction in past or future base benefits, and
2. the funding excess utilization plan excluding permanent benefit changes.

The funding deficit recovery plan and the funding excess utilization plan are described in Sections V and VI of the Funding Policy, respectively.

There are two secondary risk management goals under the PBA. These are:

- On average provide contingent indexing on base benefits (all members) that are in excess of 75% of CPI over the next 20 years.
- On average be expected to provide at least 75% of the value of the ancillary benefits described in the plan documents at conversion over the next 20 years.

For the purposes of meeting these goals, base benefits include the accrual of extra service of members and any contingent indexing provided based on the financial performance represented by each scenario tested.

If as a result, through the testing process, a scenario allows for indexing in a given future year, then this contingent indexing amount becomes part of the base benefits that is to be protected. In other words, the base benefit is dynamically adjusted based on the stochastic results for each economic scenario tested.

### Risk Management Procedures

The risk management goals are measured using an asset liability model with future economic scenarios developed using a stochastic process.

The model was run with 2,000 alternative economic scenarios over 20 years. This exceeds the minimum requirements under the PBA of 1,000 economic scenarios.

For each of these scenarios and for each year, the financial position of the Plan is measured. For each of these measurements, a decision consistent with the funding deficit recovery plan or the funding excess utilization

plan, as applicable, is modeled with the exceptions noted under the goals above. When modeling the funding deficit recovery plan actions over the 20-year period of each of the 2,000 economic scenarios, each of the five steps identified in the funding deficit recovery plan under Section V of the Funding Policy is implemented in sequence until such time as the open group funded ratio of the plan reaches 100% or higher. A "benefit reduction trial" is recorded (for purposes of the primary risk management goal calculation) when step 5 of the funding deficit recovery plan found in Section V of the Funding Policy is triggered (i.e. a reduction in past base benefits) at any point in the 20-year period of an economic scenario. The primary risk management measure is therefore the proportion of those 2,000 scenarios that do not lead to a base benefit reduction over a 20-year period. In order to pass the primary risk management goal, at least 1,950 of those 2,000 scenarios must not trigger a "benefit reduction trial" at any point over the 20-year period.

The asset liability model using a stochastic process requires that a number of important modeling assumptions be made. The main assumptions are described below:

- The economic assumptions are developed for each asset class and for key economic parameters based on a combination of past experience, current economic environment and a reasonable range of future expectations. These assumptions are reviewed annually and updated as required. They are also subject to approval by the Superintendent of Pensions (the "Superintendent"). These assumptions are found in Appendix C.
- The Plan's contributing member population is assumed to be stable in each year of the projection period. As such, each departure from the Plan, for any reason, is assumed to be replaced by a new entrant. The new entrant population reflects the profile of new Plan members expected in the future based on Plan experience. The profile of new entrants used for this analysis is found under Table 1.9 in Section 1 of this report.

The risk management goals were tested as at December 31, 2016, the effective date of this report. The results of these tests combined with the results of the funding policy actuarial valuation at the same date will determine the actions the Board of Trustees is required to take, or can consider, under the terms of the Funding Policy.

The primary risk management goal must be achieved or exceeded:

- At July 1, 2012 (i.e. the Conversion Date), which it was based on the results found in the initial actuarial valuation report as at that date;
- At the date a permanent benefit change as defined in the Regulations is made;
- At the date a benefit improvement as defined in the Regulations is made; or
- At the date contribution adjustments that exceed those provided under the Regulations are implemented.

The secondary risk management goals must be achieved or exceeded:

- At July 1, 2012 (i.e. the Conversion Date), which it was based on the results found in the initial actuarial valuation report as at that date; or
- At the date a permanent benefit change as defined in the Regulations is made.

The definitions of permanent benefit change and benefit improvement are as follows:

"permanent benefit change" means a change that is intended to permanently change the formula for the calculation of the base benefits or ancillary benefits after the date of the change, including a change made in accordance with the funding excess utilization plan.

"benefit improvement" means an escalated adjustment for past periods or an increase in other ancillary benefits allowed under the funding policy.

### Results of stochastic analysis as at December 31, 2016

The stochastic analysis undertaken as at December 31, 2016, took into account the main following items:

- Membership Data as at December 31, 2016 summarized in Appendix B;
- Economic and demographic assumptions as at December 31, 2016 for the funding policy valuation summarized in Section 1;
- Pension fund target asset mix as summarized in Table A.4 of Appendix A;
- Stochastic projection assumptions as summarized in Appendix C;
- Risk management procedures described above;
- CBE SRP Plan provisions as summarized in Appendix D;
- Funding deficit recovery plan found under Section V of the CBE SRP Plan's Funding Policy (except for reduction in past or future base benefits); and
- Funding excess utilization plan found under Section VI of the CBE SRP Plan's Funding Policy (excluding permanent benefit changes).

Based on the above, the results of the stochastic analysis for the various risk management goals as at December 31, 2016 are as follows:

Table 2.1– Results of Stochastic Analysis for the Various Risk Management Goals

| Risk Management Goal | Goal under PBA | Result for CBE SRP Plan as at December 31, 2016 |
|---|---|---|
| Primary Goal [Regulation 7(1)] -<br><br>There is at least a 97.5% probability that the past base benefits at the end of each year will not be reduced over a 20-year period | 97.5% | 98.45%<br><br>PASSED |
| Secondary Goal 1 [Regulation 7(3)(a)] -<br><br>Expected contingent indexing of base benefits of active members for service before the conversion date shall, on average over the next 20-year period, exceed 75% of the increase in the Consumer Price Index;<br>or<br>Expected contingent indexing of base benefits of retirees and deferred vested members for service rendered before the conversion date shall, on average over the next 20-year period, exceed 75% of the escalated adjustments specified in the pension plan immediately before it was converted to a shared risk plan (i.e. CPI to a maximum of 4.0% in any one year) | 75.0% of the assumed increase in CPI | 81.1% of the assumed increase in CPI<br><br>PASSED |
| Secondary Goal 2 [Regulation 7(3)(b)] -<br><br>The amount of ancillary benefits (other than contingent indexing) that are expected to be provided shall, on average over the next 20-year period, exceed 75% of the value of the ancillary benefits specified in the plan text | 75% of the value of ancillary benefits will be provided | At or above 95.95% (See Note below)<br><br>PASSED |

*Note: The Funding Policy provides for the reduction of one type of ancillary benefit under the Funding Deficit Recovery Plan at actions 2 and 3. This is the replacement of early retirement reductions for post conversion service under action 2, and for pre-conversion service at action 3, by a full actuarial reduction for members not yet eligible to receive an immediate pension. We expect these two ancillary benefits would be reduced in about 4.05% of our 2,000 20-yr scenarios. If those were the only two ancillary benefits reduced, and they were eliminated completely, then we can expect that 95.95% of the value of ancillary benefits will be provided over the 20-year period. Given that there are other ancillary benefits under the plan that will not be touched (because they are not mentioned as a benefit that can be reduced under the Funding Policy), the percentage for this test is expected to be higher than 95.95%, which is well above minimum required under the PBA of 75%.*

# Section 3 – Hypothetical Wind-up Valuation

A hypothetical wind-up valuation assumes that the Plan is wound-up on the valuation date and member's benefit entitlements are calculated as of that date. Although this type of valuation is not required under Part 2 of the New Brunswick Pension Benefits Act for a shared risk plan, the Standards of Practice of the Canadian Institute of Actuaries require that actuarial valuation reports provide information with respect to hypothetical wind-up situations.

Subsection 16(3) of Regulations 2012-75 under the Pension Benefits Act prescribes that if a shared risk plan is wound-up by the persons who established the plan within 5 years of its conversion date, the conversion of the plan is void and the plan has to be wound-up as a defined benefit plan under Part 1 of the PBA.

It is important to note that the Former CBE Plan was not subject to the PBA and the procedures to be followed if a wind-up occurred were not defined within the Former CBE Plan. As a result, the procedures for payments at wind-up were not defined. In conducting the hypothetical wind-up valuation as at December 31, 2016, we therefore made the assumption that the conversion to a shared risk plan would be void, and that the CBE SRP Plan would be wound-up as at December 31, 2016 in accordance with rules found under Part 1 of the PBA. This assumption has been made solely on the basis that Section 16(3) would apply, and does not represent a legal opinion on the validity of this scenario.

We have valued the wind-up liability using discount rates consistent with the requirements of the PBA for plan wind-ups under Part 1. The PBA requires that benefits paid out to each member upon wind-up be not less than the cost to purchase an annuity for that member. Accordingly, we have followed the Canadian Institute of Actuaries' recommendations for the estimated cost of fully indexed annuity purchases as at December 31, 2016.

## Hypothetical Wind-Up Funded Status

The hypothetical wind-up funded status under the scenario postulated above, including the results of the last hypothetical wind-up valuation, is as follows:

Table 3.1 – Hypothetical Wind-Up Funded Status

| | December 31, 2016 | December 31, 2015 |
|---|---|---|
| | $M | $M |
| Assets | | |
| • Market value of assets | 1,920.0 | 1,785.4 |
| • Provision for wind-up expenses | (1.5) | (1.5) |
| • Total | 1,918.5 | 1,783.9 |
| Hypothetical wind-up liabilities | | |
| • Active members | 2,533.3 | 2,547.0 |
| • Retirees and beneficiaries | 1,303.5 | 1,177.0 |
| • Deferred vested and suspended members | 364.8 | 391.1 |
| • Outstanding refunds and withholding amounts | 1.1 | 1.4 |
| • Total hypothetical wind-up liabilities | 4,202.7 | 4,116.5 |
| Assets less liabilities on the hypothetical wind-up basis | (2,284.2) | (2,332.6) |

The hypothetical wind-up funded status is presented for information purposes. There is no requirement under the PBA to fund the hypothetical wind-up deficit of the CBE SRP Plan while it is not in a wind-up state.

## Sensitivity Analysis on the Hypothetical Wind-up Basis

The Standards of Practice of the Canadian Institute of Actuaries require valuation reports to disclose the sensitivity of the liabilities to changes in the discount rate assumption. The table below illustrates the effect on the actuarial liabilities of using discount rates 1% lower than those used for the hypothetical wind-up valuation. All other assumptions and methods, as used in this valuation, were maintained.

Table 3.2 – Sensitivity of Actuarial Liabilities on the Hypothetical Wind-up Basis

| | December 31, 2016 | Discount rates 1% lower |
|---|---|---|
| | $M | $M |
| Actuarial liabilities | | |
| • Active members | 2,533.3 | 3,219.1 |
| • Retirees and beneficiaries | 1,303.5 | 1,499.2 |
| • Deferred vested and suspended members | 364.8 | 468.4 |
| • Outstanding refunds and withholding amounts | 1.1 | 1.1 |
| • Total | 4,202.7 | 5,187.8 |
| Increase in actuarial liabilities | | 985.1 |

## Incremental Cost on the Hypothetical Wind-up Basis

The incremental cost on the hypothetical wind-up basis represents the present value of the expected aggregate change in the actuarial liabilities from December 31, 2016 to December 31, 2017, adjusted for expected benefit payments in the inter-valuation period. This incremental cost is estimated to be $219.9M at December 31, 2016.

## Hypothetical Wind-up Asset Valuation Method

Wind-up assets are equal to the market value of assets less and allowance for wind-up expenses. This valuation method is the same as the one used in the last valuation.

## Hypothetical Wind-up Actuarial Cost Method

The hypothetical wind-up liabilities are determined using the accrued benefit (or unit credit) actuarial cost method. The hypothetical wind-up liabilities are equal to the actuarial present value of all benefits earned by members for services prior to the valuation date assuming the Plan is wound up on the valuation date. This method is the same as the one used in the last valuation.

For valuation purposes, to determine eligibility for benefits and for any other uses, the age used is the age on the date of the nearest birthday. This method is the same as the one used in the last valuation.

## Hypothetical Wind-up Actuarial Assumptions

The main actuarial assumptions used in the hypothetical wind-up valuation correspond to those prescribed by the PBA.

Although the Former CBE Plan was not subject to the PBA before it was converted to the CBE SRP Plan, in the absence of specific direction to the contrary in the Former CBE Plan, we have valued the hypothetical wind-up

liability using discount rates consistent with the requirements of the PBA if the Plan were to be wound up. The PBA requires that benefits paid out to each member upon wind-up be not less than the cost to purchase an annuity for that member. Accordingly, we have followed the Canadian Institute of Actuaries' recommendations for the estimated cost of fully indexed annuity purchases as at December 31, 2016. If the commuted value rates in accordance with the Canadian Institute of Actuaries' Standard of Practice Section 3500 – Pension Commuted Values produced a higher liability for members not eligible to retire, these rates were used. We adjusted the above rates with the implied rate of indexing of 3.30% per year for indexed annuities, or 1.09% per year for 10 years and 2.17% per year thereafter for commuted value rates, in order to obtain a net rate for valuation.

The main actuarial assumptions employed for the wind-up actuarial valuation are summarized in the following table. All rates and percentages are annualized unless otherwise noted. The rates in brackets represent the net rate after taking into account the above implied rates of indexing.

Table 3.3 – Hypothetical Wind-Up Actuarial Assumptions

| | December 31, 2016 | December 31, 2015 |
|---|---|---|
| Interest rate | | |
| • Interest rate for active members and deferred vested members under 55 | 3.21% (-0.09% net) per annum; or 2.2% (1.1% net) per annum for 10 years, 3.5% (1.3% net) per annum thereafter | 3.13% (-0.05% net) per annum; or 2.1% (1.3% net) per annum for 10 years, 3.7% (1.8% net) per annum thereafter |
| • Interest rate for all other members | 3.21% (-0.09% net) per annum | 3.13% (-0.05% net) per annum |
| Salary increases | None | None |
| Mortality | CPM2014 Composite table projected with Scale CPM-B | CPM2014 Composite table projected with Scale CPM-B |
| Termination (membership) | None | None |
| Wind-up expenses | $1,500,000 | $1,500,000 |
| Retirement | Age that maximizes the value of the pension | Age that maximizes the value of the pension |

The Canadian Institute of Actuaries (CIA) collects data annually from insurance companies and annually determines interest rates suitable for estimating the cost of single premium group annuities in hypothetical wind-up valuations. For pensioners and for active members and deferred vested members eligible for immediate retirement at the valuation date, the interest rate used in the present hypothetical wind-up valuation is an estimate of the rate that would be used by insurance companies in pricing single premium group annuities for annuitants already retired, based on the suggested rates for such annuitants published by the CIA.

The discount rate used for active members and deferred vested members not eligible for immediate retirement is the rate suggested by the CIA as an appropriate estimate of the cost of deferred annuities based on their survey data from insurance companies.

Emerging experience differing from these assumptions will result in gains or losses, which will be revealed in future hypothetical wind-up actuarial valuations.

## Termination scenario

The termination scenario used in the hypothetical wind-up valuation includes the following assumptions:

- Plan wind-up would not result from employer insolvency.
- All assets could be realized at their reported market value.
- CBE SRP Plan conversion would be void and the pension plan would be wound-up under Part 1 of the PBA.
- Fully indexed annuities would be purchased for all plan members.

## Margin for adverse deviations

As specified by the Standards of Practice of the Canadian Institute of Actuaries, the hypothetical wind-up assumptions do not include a margin for adverse deviations.

## Provision for fees

Allowance has been made for administrative, actuarial and legal costs which would be incurred if the Plan were to be wound up, based on sufficient and reliable data. It is assumed that the wind-up date, the calculation date and the settlement date are coincident, and as such, expenses related to investment policy reviews, investment and custodial fees are not included. Expenses related to the resolution of surplus and deficit issues are not taken into account. The amount of expenses is only an approximation and may differ significantly from real expenses incurred on plan wind-up, for example, in case of litigation or bankruptcy.

## Hypothetical Wind-up Incremental Cost

The method used to calculate the hypothetical wind-up incremental cost may be described as follows:

1. Present value of expected benefit payments between December 31, 2016 and December 31, 2017, discounted to December 31, 2016;

Plus

2. Projected hypothetical wind-up liabilities as at December 31, 2017, discounted to December 31, 2016;

Less

3. Hypothetical wind-up liabilities as at December 31, 2016.

## Opinion on Hypothetical Wind-up Valuation

In my opinion, for the purposes of the hypothetical wind-up valuation section of the report:

- The membership data on which the valuation is based are sufficient and reliable for the purposes of the valuation.
- The assumptions are appropriate for the purposes of the valuation.
- The methods employed in the valuation are appropriate for the purposes of the valuation.

This hypothetical wind-up valuation report has been prepared, and my opinions given, in accordance with accepted actuarial practice in Canada.

The assumptions used under the hypothetical wind-up valuation of this report were reasonable at the time this actuarial valuation report was prepared.

Respectfully submitted,

Yves Plourde, FSA, FCIA

September 28, 2017
Date

# Appendix A – Assets

## Description of Plan Assets

On July 29, 2016, the Plan entered into an Investment Management Agreement with Vestcor Investment Management Corporation ("VIMC"). Under the terms of this agreement, VIMC assumed custody of most of the assets in the fund and began a transition to pool unit trust funds managed by VIMC. RBC Investor & Treasury Services was the custodian for the assets of the pension fund prior to this.

## Statement of Market Value

The following table shows the asset mix as at December 31, 2016 extracted from the draftfinancial statements produced by Grant Thornton, and for comparison, the asset mix as at December 31, 2015 extracted from the same document:

Table A.1 – Assets at Market Value

| | December 31, 2016 | December 31, 2015 |
|---|---|---|
| | $M | $M |
| Invested assets | | |
| • Short Term | 4.0 | 40.0 |
| • Equities | 497.7 | 624.0 |
| • Fixed Income | 1,032.7 | 945.5 |
| • Real Estate | 161.9 | 146.5 |
| • Infrastructure | 171.2 | 25.0 |
| • Alternatives | 38.0 | 1.3 |
| • Other | 14.5 | 3.1 |
| Total assets | 1,920.0 | 1,785.4 |

## Changes to Plan Assets

The following table shows changes to the Plan assets during the inter-valuation period, based on market values. The reconciliation from January 1, 2016 to December 31, 2016 is based on the draft financial statements issued by Grant Thornton for the full calendar year 2016.

Table A.2 – Reconciliation

| | 2016 |
|---|---|
| | $M |
| Assets at beginning of period | 1,785.4 |
| Receipts | |
| • Contributions | 88.6 |
| • Investment income plus realized and unrealized capital appreciation and depreciation | 111.5 |
| • Transfers in/(out) | 2.8 |
| Total receipts | 202.9 |
| Disbursements | |
| • Pensions paid and refunds | 61.8 |
| • Expenses (fees) | 6.5 |
| Total disbursements | 68.3 |
| Assets at end of period | 1,920.0 |

## Return on Assets

The CBE SRP Plan assets earned the following rate of return, net of all expenses charged to the fund, based on our calculations which assume cash flow occurred in the middle of the period:

Table A.3 – Net Investment Return

| Year | Rate of Return |
|---|---|
| | % |
| 2016 | 5.8 |
| 2015 | 5.4 |
| 2014 | 10.5 |
| 2013 | 14.0 |

## Actuarial Value of Assets

We have used the market value of assets (including receivables / payables) without adjustment. The actuarial value of assets as at December 31, 2016 was $1,920.0M.

## Target Asset Mix under Shared Risk Plan

The statement of investment policy and goals for the CBE SRP Plan provides for the long term target asset mix shown in the table below. The target asset mix below includes recent changes developed by VIMC and approved by the Board of Trustees via email motion in July 2017.

Table A.4 – Target Asset Mix

| | Target |
|---|---|
| Asset classes | |
| • Domestic Fixed Income | |
| - Corporate Bonds | 20.0% |
| - Government Bonds | 17.5% |
| • Foreign Fixed Income | |
| - US High Yield Bonds | 5.0% |
| • Equities | |
| - Canadian Equities | 4.5% |
| - Canadian Low Volatility Equities | 4.5% |
| - Foreign Equities | 7.5% |
| - Foreign Low Volatility Equities | 7.5% |
| - Emerging Market Low Volatility Equities | 4.0% |
| • Alternatives | |
| - Real estate | 11.0% |
| - Infrastructure | 11.0% |
| - Absolute return | 7.5% |
| Total | 100.0% |

This target asset mix was used to determine the expected rate of return under the Plan, and to conduct the stochastic analysis required under the PBA to assess the various risk management goals.

# Appendix B – Membership Data

## Description of Membership Data

Data on Plan membership was obtained from Vestcor Pension Services Corporation (VPSC). The data was provided as at December 31, 2016. While the December 31, 2016 data did not include benefit improvements awarded under steps 2 and 3 of the funding policy as at January 1, 2017, information on these benefit improvements was retrieved from data provided in fall 2016 to calculate the impact on Plan liabilities, and was incorporated into the December 31, 2016 valuation data provided by VPSC.

The data was matched and reconciled with the data provided for the previous valuation as at December 31, 2015. Basic data checks were performed to ensure that age, salary and service data were reasonable for the purposes of the valuation and to ensure that the data was accurate, complete and consistent with previous data.

The accrued pension data for terminated and suspended members did not include the applicable pre-retirement indexing from the date of termination to the date of conversion. The correct accrued pensions for pre-conversion service for valuation purposes was calculated for those groups using the accrued pension data provided and pre-retirement indexing using a date field provided by VPSC.

## Summary of Membership Data

The following tables were prepared using data provided by VPSC regarding its active members, retirees and former members. Accrued pensions, in payment or not, for all members reflect the cost-of-living adjustment granted by the Board of Trustees effective January 1, 2017.

These tables show the following:

B.1 - Summary of Membership Data

B.2 - Changes in Plan Membership

B.3 - Age/Service Distribution for Active Members as at December 31, 2016

B.4 - Distribution of Retirees and Beneficiaries by Age Groups as at December 31, 2016

B.5 - Distribution of Deferred Vested and Suspended Members by Age Groups as at December 31, 2016

Table B.1 – Summary of Membership Data

| | | December 31, 2016 | December 31, 2015 |
|---|---|---|---|
| Active members[1] | Number | 8,485 | 8,380 |
| | Average salary | $66,537 | $66,657 |
| | Average age | 43.2 years | 43.1 years |
| | Average accrued lifetime pension | $12,065 | $11,380 |
| | Average accrued bridge benefit | $3,804 | $3,657 |
| | Average credited service | 11.0 years | 10.7 years |
| Retirees and beneficiaries | Number | 2,787 | 2,579 |
| | Average annual lifetime pension | $19,005 | $18,553 |
| | Average annual bridge benefit[2] | $6,476 | $6,461 |
| | Average age | 67.7 years | 67.6 years |
| Deferred vested and suspended members | Number | 2,140 | 2,092 |
| | Average annual lifetime pension | $6,571 | $6,762 |
| | Average annual bridge benefit[2] | $2,168 | $2,221 |
| | Average age | 43.5 year | 43.8 years |

[1] *Includes all actively contributing members, members on long-term disability, and members participating in the phased retirement program at valuation date. Any non-contributing members such as on a leave of absence, members who have signed an intra-provincial agreement, or suspended are grouped under Deferred vested and suspended members.*

[2] *Average for those entitled to or receiving a bridging benefit.*

Table B.2 – Changes in Plan Membership

| | Active Members | Retirees and Beneficiaries | Deferred Vested and Suspended Members | Total |
|---|---|---|---|---|
| Members at December 31, 2015 | 8,380 | 2,579 | 2,092 | 13,051 |
| New members | 497 | --- | --- | 497 |
| Retirements | (175) | 242 | (67) | --- |
| Returned to active status | 427 | (1) | (426) | --- |
| Terminations: | | | | |
| • with refunds or transfers out | (73) | --- | (23) | (96) |
| • with deferred pensions | (1) | --- | 1 | --- |
| Moved to a suspended status | (567) | --- | 567 | --- |
| Deaths: | | | | |
| • with no continuing benefits | (3) | (36) | (2) | (41) |
| • with survivors | --- | (11) | (2) | (13) |
| New survivor pensions | --- | 17 | --- | 17 |
| Guarantee periods expired | --- | (3) | --- | (3) |
| Data adjustments | --- | --- | --- | --- |
| Members at December 31, 2016 | 8,485 | 2,787 | 2,140 | 13,412 |

## Table B.3 – Age/Service Distribution for Active Members as at December 31, 2016

| Years of Service | Age | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60 and Over | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 - 4 | Num. | 251 | 787 | 465 | 273 | 250 | 266 | 188 | 150 | 98 | 2,728 |
| | Tot. Sal. | 14,487,360 | 48,957,249 | 28,868,490 | 16,549,523 | 14,481,816 | 15,359,217 | 10,485,999 | 8,053,263 | 4,857,316 | 162,100,231 |
| | Avg. Sal. | 57,719 | 62,207 | 62,083 | 60,621 | 57,927 | 57,741 | 55,777 | 53,688 | 49,564 | 59,421 |
| 5 - 9 | Num. | | 157 | 575 | 442 | 321 | 223 | 176 | 101 | 49 | 2,044 |
| | Tot. Sal. | | 11,587,145 | 41,099,859 | 29,986,500 | 21,372,321 | 14,766,874 | 11,563,629 | 6,277,711 | 3,372,982 | 140,027,020 |
| | Avg. Sal. | | 73,803 | 71,478 | 67,843 | 66,580 | 66,219 | 65,702 | 62,156 | 68,836 | 68,506 |
| 10 - 14 | Num. | | | 80 | 344 | 346 | 259 | 183 | 152 | 46 | 1,410 |
| | Tot. Sal. | | | 5,870,279 | 25,596,075 | 24,201,437 | 17,811,040 | 12,665,803 | 10,087,959 | 3,118,030 | 99,350,623 |
| | Avg Sal. | | | 73,378 | 74,407 | 69,946 | 68,768 | 69,212 | 66,368 | 67,783 | 70,461 |
| 15 - 19 | Num. | | | | 31 | 185 | 276 | 200 | 117 | 55 | 864 |
| | Tot. Sal. | | | | 2,322,248 | 13,551,379 | 19,834,408 | 13,501,674 | 7,955,561 | 3,891,303 | 61,056,574 |
| | Avg. Sal. | | | | 74,911 | 73,251 | 71,864 | 67,508 | 67,996 | 70,751 | 70,667 |
| 20 - 24 | Num. | | | | | 9 | 187 | 174 | 99 | 33 | 502 |
| | Tot. Sal. | | | | | 656,996 | 13,360,709 | 12,370,309 | 6,875,546 | 2,337,631 | 35,601,191 |
| | Avg. Sal. | | | | | 73,000 | 71,448 | 71,094 | 69,450 | 70,837 | 70,919 |
| 25 - 29 | Num. | | | | | | 100 | 359 | 139 | 29 | 627 |
| | Tot. Sal. | | | | | | 7,393,119 | 26,067,078 | 9,186,617 | 2,142,724 | 44,789,539 |
| | Avg. Sal. | | | | | | 73,931 | 72,610 | 66,091 | 73,887 | 71,435 |
| 30 - 34 | Num. | | | | | | | 79 | 156 | 15 | 250 |
| | Tot. Sal. | | | | | | | 5,751,422 | 10,392,676 | 1,236,220 | 17,380,318 |
| | Avg. Sal. | | | | | | | 72,803 | 66,620 | 82,415 | 69,521 |
| 35 + | Num. | | | | | | | | 32 | 28 | 60 |
| | Tot. Sal. | | | | | | | | 2,144,704 | 2,113,385 | 4,258,089 |
| | Avg. Sal. | | | | | | | | 67,022 | 75,478 | 70,968 |
| Total number | | 251 | 944 | 1,120 | 1,090 | 1,111 | 1,311 | 1,359 | 946 | 353 | 8,485 |
| Total salaries | | 14,487,360 | 60,544,393 | 75,838,627 | 74,454,346 | 74,263,949 | 88,525,367 | 92,405,914 | 60,974,038 | 23,069,592 | 564,563,586 |
| Average of salaries | | 57,719 | 64,136 | 67,713 | 68,307 | 66,844 | 67,525 | 67,996 | 64,455 | 65,353 | 66,537 |

*Average age: 43.2*

*Average number of years of service: 11.0*

*Notes:*
*The age is computed at the nearest birthday.*

*Years of service means the number of years credited for pension plan purposes, fractional parts being rounded to the nearest integer.*

*The salary used is the estimated salary rate as of January 1, 2017.*

*Membership for active members is composed of 804 males and 7,681 females.*

Table B.4 – Distribution of Retirees and Beneficiaries by Age Groups as at December 31, 2016

| Age Group | Number | Total Annual Payments | |
|---|---|---|---|
| | | Lifetime | Bridge |
| Under 60 | 317 | 5,972,417 | 1,746,540 |
| 60-64 | 849 | 18,227,628 | 5,687,571 |
| 65-69 | 780 | 15,028,516 | 0 |
| 70-74 | 399 | 6,662,497 | 0 |
| 75-79 | 206 | 3,516,119 | 0 |
| 80-84 | 140 | 2,310,508 | 0 |
| 85-89 | 68 | 899,196 | 0 |
| 90 and over | 28 | 349,452 | 0 |
| Total | 2,787 | 52,966,333 | 7,434,112 |

*Average age: 67.7*

*Notes:*

*Age groups are based on exact age.*

*The pension used is the pension payable as at January 1, 2017*

*Membership for retired members and beneficiaries is composed of 166 males and 2,621 females.*

Table B.5 – Distribution of Deferred Vested and Suspended Members by Age Groups as at December 31, 2016

| Age Group | Number | Total Annual Payments | |
|---|---|---|---|
| | | Lifetime | Bridge |
| Under 25 | 20 | 14,042 | 5,371 |
| 25 - 29 | 228 | 624,097 | 222,017 |
| 30 - 34 | 385 | 1,602,316 | 544,193 |
| 35 - 39 | 297 | 1,321,772 | 450,517 |
| 40 - 44 | 215 | 1,197,289 | 400,553 |
| 45 - 49 | 274 | 2,048,965 | 714,940 |
| 50 - 54 | 327 | 3,133,614 | 1,042,304 |
| 55 - 59 | 261 | 2,913,747 | 881,593 |
| 60 and over | 133 | 1,205,332 | 378,590 |
| Total | 2,140 | 14,061,173 | 4,640,078 |

*Average age: 43.5 years*

*Notes:*

*Age groups are based on exact age.*

*The pension used is the pension payable as at January 1, 2017.*

*Membership for deferred pensioners is composed of 197 males and 1,943 females.*

In addition there is a total of $0.7 M in outstanding refunds and withholding amounts for 37 individuals at December 31, 2016, and $0.4 M of outstanding refunds related to the retroactive payments granted under step 4 of the funding policy excess utilization plan as at January 1, 2017.

# Appendix C – Stochastic Projection Assumptions

Our assumptions for stochastic analysis are built each year using Conference Board of Canada (CBoC) forecasts, internal research, inflation expectations and by surveying the asset manager universe. This ensures we are not using inputs that are out of touch with broader expectations. We strive for a moderate level of conservatism in our assumptions, as high expectations can lead to biased results, understating the true risk level of plans.

Stochastic projection assumptions are updated annually by Morneau Shepell Asset and Risk Management with an anchor date of December 31st and a time horizon of up to 25 years. A multi-stage process is used to set the economic assumptions. First, a long term inflation rate assumption is selected based primarily on the current Bank of Canada Monetary Policy. Volatility for inflation is based on historical data since the early 1990's when the current monetary policy was introduced. Market implied inflation is used as an indicator of the market expectation for long term trends for inflation. Secondly, historical and current bond data is used to determine the long term interest rates for key bond indices. It is assumed that current yields will revert to the projected long term rates over a projected period of 10 years. Volatility assumptions are based on historical data modified to reflect current low yield rates. Expected return levels and standard deviations for Canadian bond indices are generated in a stochastic simulation approach.

The next stage is to determine nominal equity return assumptions. The process uses multiple sources including our inflation assumptions, historical data, GDP and other economic data, growth forecasts and dividend information. Standard deviations and correlations of equity returns are derived from historical data. Historical data is used to measure the return and volatility spreads between small-cap and large-cap equities. Alternative asset classes are primarily based on historical data but adjusted by factors specific for each asset class.

The following expected return and volatility by asset class was used as at December 31, 2016:

Table C.1 – Expected Return over 20 Years and Volatility (standard deviation) by Asset Class

| | Target Asset Mix | Expected Return | Volatility (standard deviation) |
|---|---|---|---|
| Inflation | | 2.25% | 1.2% |
| Asset classes | | | |
| • Domestic Fixed Income | | | |
| - Corporate Bonds (DCB) | 20.0% | 3.70% | 6.3% |
| - Government Bonds (DGB) | 17.5% | 2.85% | 7.5% |
| • Foreign Fixed Income | | | |
| - US High Yield Bonds (USHY) | 5.0% | 5.65% | 12.1% |
| • Equities | | | |
| - Canadian Equities (DE) | 4.5% | 6.75% | 16.7% |
| - Canadian Low Volatility Equities (DE LV) | 4.5% | 6.25% | 13.4% |
| - US Equities (US E) | 4.5% | 6.70% | 17.4% |
| - US Low Volatility Equities (US E LV) | 4.5% | 6.20% | 13.9% |
| - EAFE Equities (EAFE) | 3.0% | 7.35% | 16.2% |
| - EAFE Low Volatility Equities (EAFE LV) | 3.0% | 6.85% | 13.0% |
| - EM Low Volatility Equities (EM LV) | 4.0% | 9.05% | 19.9% |
| • Alternatives | | | |
| - Real estate (RE) | 11.0% | 6.25% | 10.5% |
| - Infrastructure | 11.0% | 6.90% | 13.6% |
| - Absolute return (AR) | 7.5% | 5.95% | 10.5% |

For every year in the 20-year projection, expenses of 20 basis points to reflect the cost of non-investment expenses and the cost of passive management is deducted from the expected return (the additional cost of active management is expected to be achieved in addition to the expected returns shown above and therefore are not included in the analysis).

The following correlation among the various asset classes identified in Table C.1 was also used as at December 31, 2016:

Table C.2 – Correlation Among Asset Classes

| | DGB | DCB | DE | DE LV | US E | US E LV | EAFE | EAFE LV | EM LV | USHY | RE | I | AR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DGB | 1.00 | 0.87 | -0.09 | -0.07 | 0.00 | -0.01 | -0.14 | -0.10 | -0.13 | -0.39 | 0.03 | -0.10 | -0.09 |
| DCB | | 1 .00 | 0.20 | 0.14 | 0.13 | 0.09 | 0.06 | 0.04 | 0.06 | -0.23 | -0.16 | -0.06 | 0.13 |
| DE | | | 1.00 | 0.70 | 0.34 | 0.25 | 0.57 | 0.42 | 0.51 | 0.38 | 0.02 | 0.12 | 0.71 |
| DE LV | | | | 1.00 | 0.24 | 0.24 | 0.42 | 0.42 | 0.51 | 0.28 | 0.01 | 0.12 | 0.54 |
| US E | | | | | 1.00 | 0.70 | 0.65 | 0.47 | 0.07 | 0.32 | 0.08 | -0.02 | 0.40 |
| US E LV | | | | | | 1.00 | 0.47 | 0.48 | 0.08 | 0.25 | 0.06 | -0.05 | 0.30 |
| EAFE | | | | | | | 1.00 | 0.70 | 0.42 | 0.39 | 0.25 | -0.01 | 0.40 |
| EAFE LV | | | | | | | | 1.00 | 0.43 | 0.29 | 0.19 | -0.05 | 0.29 |
| EM LV | | | | | | | | | 1.00 | 0.25 | 0.05 | 0.03 | 0.38 |
| USHY | | | | | | | | | | 1.00 | 0.03 | 0.27 | 0.29 |
| RE | | | | | | | | | | | 1.00 | 0.16 | 0.11 |
| I | | | | | | | | | | | | 1.00 | 0.36 |
| AR | | | | | | | | | | | | | 1.00 |

Using a Monte Carlo simulation technique, the expected returns, volatility and correlation of the various asset classes shown above are used to model 2,000 series of alternative economic scenarios over 20-year periods. This provides at least 40,000 observations from which to measure whether the risk management goals have been achieved.

This exceeds the minimum requirements under the PBA of 1,000 series of economic scenarios.

For each of these scenarios and for each year, the financial position of the CBE SRP Plan is measured on a funding policy basis. The discount rate of 4.75% per annum is used to project the funding policy liability and determine the present value of excess contributions throughout the projection period. The projection of the liability and future cash flows under the stochastic analysis uses the same demographic assumptions as used for the calculation of the funding policy liability, as required under paragraph 15(2)(c) of Regulation 2012-75.

The risk management procedures are described in Section 2 of this report.

# Appendix D – Summary of Plan Provisions

The following is a brief summary of the main provisions of the Shared Risk Plan for Certain Bargaining Employees of New Brunswick Hospitals ("CBE SRP Plan") effective December 31, 2016. For an authoritative statement of the precise provisions of the CBE SRP Plan, reference must be made to the official CBE SRP Plan documents.

## Introduction

The Pension Plan for Certain Bargaining Employees of New Brunswick Hospitals ("Former CBE Plan") became effective on January 1, 1975. At that time, the Former CBE Plan provided for continuation and improvement of benefits accrued under the Hospital Employees Pension Plan which came into effect on October 1, 1971.

The Former CBE Plan was amended at various times throughout its history. As at January 1, 1988, the responsibility for Plan management was transferred to a Pension Committee.

Effective July 1, 2012, the Former CBE Plan was converted to the CBE SRP Plan. The administration of the CBE SRP Plan is the responsibility of an independent Board of Trustees.

## Eligibility and Participation

Each Member of the Former CBE Plan joins the CBE SRP Plan on July 1, 2012. Active members of the Pension Plan for Part-Time and Seasonal Employees of the Province of New Brunswick who are eligible to join the CBE SRP Plan cease active membership in the said plan and are required to join the CBE SRP Plan as of July 1, 2012.

Each employee who commences full-time employment on or after July 1, 2012 is required to join the Plan from the first day of the month coincident with or next following the date of employment.

## Required Contributions

Effective July 1, 2012, each member is required to contribute 7.8% of earnings. Participating employers also contribute 7.8% of earnings from the same date.

Contributions are waived for periods during which a member is in receipt of long term disability benefits or periods where a member is participating in the plan's phased retirement program. However, pensionable service continues to accrue in respect of such periods.

Contribution rates are subject to change in accordance with triggers found under the Funding Policy for the CBE SRP Plan.

## Normal Retirement

The normal retirement date is the first day of the month coincident with or next following the sixty-fifth birthday.

A member's annual normal retirement pension is equal to the sum of:

(A) In respect of service before January 1, 1990, the product of:

(i) the number of years of the member's pensionable service before January 1, 1990, and

(ii) 2.0% of the annual average of the member's earnings during the period of five (5) consecutive years before July 1, 2012 during which such earnings are highest

and

(B)In respect of service from January 1, 1990 to July 1, 2012, the product of:

(i) the number of years of the member's pensionable service during that period, and

(ii) the difference between:

(a) 2.0% of the annual average of the Member's earnings during the period of five (5) consecutive years before July 1, 2012 during which such earnings are highest; and

(b) 0.7% of the annual average of her earnings up to the average YMPE during the period referred to in (a) above that is before July 1, 2012

and

(C) In respect of service from July 1, 2012, the sum of (i) and (ii) for each calendar year (or portion thereof):

(i) 1.4% of the Member's annualized earnings for the calendar year, up to the YMPE for the calendar year; and

(ii) 2.0% of the portion of the Member's annualized earnings for the calendar year that are in excess of the YMPE for the calendar year.

Pensions accrued above are subject to cost-of-living adjustments, before and after retirement, every January 1st following July 1, 2012, subject to approval by the Board of Trustees, and in accordance with the trigger requirements found under the Funding Policy for the CBE SRP Plan.

The following cost-of-living adjustments have been granted by the Board of Trustees based on the results of the actuarial valuation preceding the effective date of the adjustments and the terms of the Funding Policy.

Table D.1 – Cost of Living Adjustments

| Effective Date | Cost of Living Adjustment |
|---|---|
| January 1, 2013 | 2.40% (pro-rated by 50% for active members) |
| January 1, 2014 | 0.96% |
| January 1, 2015 | 1.43% |
| January 1, 2016 | 1.49% |
| January 1, 2017 | 1.40% |

Further increases to accrued pensions for active members may be awarded under the terms of the Funding Policy once cost-of-living adjustments have been awarded and the results of the actuarial valuation preceding the effective date of the adjustments allow the Board of Trustees to spend additional funds on pension increases.

The following increases have been granted by the Board of Trustees based on the results of the actuarial valuation preceding the effective date of the adjustments and the terms found under "Other Actions", Step 2, of the Funding Excess Utilization Plan of the Funding Policy.

### Table D.2 – Step 2 Pension Adjustments

| Effective Date | Step 2 Pension Increase (active members only) |
|---|---|
| January 1, 2017 | 100% of additional increase necessary to provide all active members a lifetime benefit calculated using a 5-year final average benefit formula at December 31, 2015 |

The following increases have been granted by the Board of Trustees based on the results of the actuarial valuation preceding the effective date of the adjustments and the terms found under "Other Actions", Step 3, of the Funding Excess Utilization Plan of the Funding Policy.

### Table D.3 – Step 3 Pension Adjustments

| Effective Date | Step 3 Pension Increase (pensioners only) |
|---|---|
| January 1, 2017 | 100% of additional increase necessary to provide all members receiving a pension at December 31, 2015 a lifetime benefit calculated using a 5-year final average benefit formula at their individual date of retirement. |

The following increases have been granted by the Board of Trustees based on the results of the actuarial valuation preceding the effective date of the adjustments and the terms found under "Other Actions", Step 4, of the Funding Excess Utilization Plan of the Funding Policy.

### Table D.4 – Step 4 Pension Adjustments

| Effective Date | Step 4 Pension Increase (pensioners only) |
|---|---|
| January 1, 2017 | Retroactive lump sum payment necessary to provide all members receiving a pension at December 31, 2015 a lifetime benefit calculated using a 5-year final average benefit formula at their individual date of retirement, retroactive to their pension start date. |

## Normal, Automatic and Optional Forms of Pension

The normal form of pension is a pension payable in equal monthly installments commencing on the member's pension commencement date and continuing thereafter during the lifetime of the member or for sixty months, whichever is the longer.

For a member with a spouse or common-law partner, the automatic form of pension is a joint and survivor pension which is payable in equal monthly installments for the life of the member and payable to the member's spouse or common-law partner after the member's death at 60% of the amount paid to the member. Such automatic form of pension is actuarially equivalent to the normal form of pension.

Optional forms of pension are also available on an actuarially equivalent basis.

## Early Retirement and Bridge Benefit

Early retirement is permitted on or after age 55 if the member has at least 5 years of employment or 2 years of plan membership.

On early retirement, a bridge benefit of $27 per month per year of pensionable service is payable in addition to the lifetime pension found under "Normal Retirement". The bridge benefit is payable to age 65 or to the death of the member, if earlier.

The portions of the lifetime pension and bridge benefit accrued for service before July 1, 2012 are unreduced if the pension and bridge commence to be paid at age 60 or later. If such pension and bridge commence to be paid before age 60, they are each reduced by 1/4% per month (3% per year) that the pension and bridge commencement date precedes age 60.

The portions of the lifetime pension and bridge benefit accrued for service on and after July 1, 2012 are reduced by 5/12% per month (5% per year) that the pension and bridge commencement date precedes age 65.

## Benefits on Termination of Employment

If a member terminates employment prior to completing five years of continuous employment and prior to completing two years of plan membership, the member is entitled to a refund of the total amount of his/her contributions to the plan, with interest.

If a member terminates employment before age 55 but after completing at least five years of continuous employment or two years of plan membership, the member may elect to receive:

(i) a deferred lifetime pension payable from normal retirement date equal to the accrued pension to which the member is entitled as at her date of termination in accordance with the formula specified above for the normal retirement pension; or

(ii) to transfer the termination value of the deferred lifetime pension calculated in accordance with the PBA, to a registered retirement savings arrangement as allowed under the PBA.

Members electing a deferred lifetime pension will also be entitled to retire early in accordance with the "Early Retirement" section, and will also be eligible for a bridge benefit.

## Death Benefits

If a member dies prior to completing five years of continuous employment and prior to completing two years of plan membership, the benefit payable is a refund of the member's own contributions to the plan, with interest.

If the member dies after completing at least five years of continuous employment or two years of plan membership, but before pension commencement, the death benefit payable is the termination value of the deferred pension determined in accordance with the PBA.

In the event of death after pension commencement, the benefit payable is determined in accordance with the form of pension selected by the member at retirement.

## Phased Retirement Option

A member must have at least 5 years of service, and be at least age 55 to participate. The member must select their ultimate retirement date in advance, between 1 to 5 years of the start of phase-in period. The member must continue to work 50% or 60% of full-time equivalent hours.

The pensionable service credited during the phase-in period is as if the member was a full-time employee (subject to ITA limits). Annual lump sum from plan are payable on January 1st to top-up employment earnings to 85% of full-time equivalent earnings at the start of the phase-in period.

The lifetime pension and bridge benefit at the ultimate retirement date is calculated as if there was no phase-in period, and then reduced by lifetime pension offsets calculated for each lump sum payment made during the phase-in period.

Phased retirement participants are considered active members until full retirement.

Required member and employer contributions are waived during phase-in period.

## Primary Purpose, Benefit Security and Cost-of-living Adjustments

The primary purpose of the CBE SRP Plan is to provide pensions to eligible employees after retirement and until death in respect of their service as employees. A further purpose of the CBE SRP Plan is to provide secure pension benefits to members, without an absolute guarantee, but with a risk-focused management approach delivering a high degree of certainty that full base benefits will be payable in the vast majority of potential future economic scenarios. As a shared risk plan, all future cost-of-living adjustments and other ancillary benefits under the CBE SRP Plan shall be provided only to the extent that funds are available for such benefits, as determined by the Board of Trustees in accordance with applicable laws and the Funding Policy.

# Appendix E – Summary of Funding Policy

The following is a brief summary of the main provisions of the Funding Policy for the Shared Risk Plan for Certain Bargaining Employees of New Brunswick Hospitals ("CBE SRP Plan") effective December 31, 2016. For an authoritative statement of the precise provisions of the Funding Policy, reference must be made to the official document.

## Purpose of Plan and Funding Policy

The purpose of the CBE SRP Plan is to provide secure pension benefits to members and former members without an absolute guarantee, but with a risk focused management approach delivering a high degree of certainty that base benefits can be met in the vast majority of potential future economic scenarios.

The primary focus is to provide a highly secure lifetime pension at normal retirement age. However, the intention is that additional benefits may be provided depending on the financial performance of the Plan.

The Funding Policy is the tool used by the Board of Trustees to manage the risks inherent in a shared risk plan. The Funding Policy provides guidance and rules regarding decisions that must, or can, be made by the Board of Trustees around funding levels, contributions and benefits.

## Benefit Objectives

The primary benefit objective for the Plan is to deliver benefits that closely replicate, to the extent possible, the benefits provided under the Plan prior to the conversion, including inflation protection.

Furthermore, benefit accruals under the Plan after the conversion are based on a normal retirement age of 65 with a 5% per year reduction for early retirement. This change reflects anticipated continued increases in life expectancy. The overall plan design objective with respect to retirement age is to provide each cohort of plan members with about the same expected number of years of pension payments for a similar amount of pension in current dollars at retirement. None of the above are guarantees.

## Risk Management

In accordance with legislation on shared risk plans, the primary risk management goal is to achieve a 97.5% probability that base benefits will not be reduced over the following 20 years.

In addition, secondary risk management goals are to provide, on average, contingent indexing on base benefits (for all members) in excess of 75% of CPI over the next 20 years, and to achieve at least a 75% probability that the ancillary benefits described in the Plan text at conversion can be provided over the next 20 years.

## Contributions

The initial total contribution rate is equal to 15.6% of earnings (members at 7.8% of earnings and employers matching the same).

Contribution adjustments may be made by the Board of Trustees. A total contribution increase of up to 1% of earnings is to be triggered by the Board of Trustees if the open group funded ratio of the Plan, as defined by the

PBA, falls below 100% for two successive year ends until such time as the open group funded ratio reaches 105% without considering the effect of the contribution increase and the primary risk management goal is met.

A reduction in contributions of up to a total of 2% of earnings can be triggered by the Board of Trustees if the conditions set forth in the funding excess utilization plan are met.

## Funding Deficit Recovery Plan

The funding deficit recovery plan must be implemented by the Board of Trustees if the open group funded ratio of the Plan falls below 100% for two successive plan year ends.

The funding deficit recovery plan consists of the following actions in the order of priority as listed below:

1. Increase contributions by up to a total of 1.0% of earnings.
2. Change early retirement rules for post-conversion service for members who are not yet eligible to retire and receive an immediate pension under the terms of the Plan to a full actuarial reduction for retirement before age 65;
3. Change early retirement rules for pre-conversion service for members who are not yet eligible to retire and receive an immediate pension under the terms of the Plan to a full actuarial reduction for retirement before age 60;
4. Reduce base benefit accrual rates for future service after the date of implementation of the deficit recovery plan by not more than 5%;
5. In addition to the reduction in step 4 above, reduce base benefits on a proportionate basis for all members regardless of membership status for both past and future service in equal proportions.

The above actions shall be taken one by one and when the primary risk management goal is met, no further actions are required at that time.

The base benefit reduction in point 5, if required, shall be such that both goals below are achieved:

- 105% open group funding level; and
- Primary risk management goal of 97.5% probability that base benefits need not be further reduced over the next 20 years.

Contribution increases shall take effect no later than 12 months following the date of the funding policy valuation report that triggered the need for contribution increases, and all other actions shall take effect no later than 18 months following the date of the funding policy valuation report that triggered the need for the action.

## Funding Excess Utilization Plan

The funding excess utilization plan describes the actions the Board of Trustees must take or consider when the open group funding levels exceeds 105%. If the open group funding level is at 105% or less, there are no actions that can be taken under the funding excess utilization plan.

The amount available for utilization is as follows:

- 1/6th of the excess funds that make up the difference between the open group funding level at the valuation date to a maximum of 140% and 105%; PLUS

- 100% of the excess above 140%.

If base benefits and/or ancillary benefits have been reduced, all excess available for utilization must first be used to reinstate those reductions. Afterwards, the following actions are to be taken in the following order of priority and no action can be taken until the immediately preceding action in the list below has been fully implemented:

1. Provide indexing of base benefits up to the full CPI since the last date where full CPI was achieved.
2. Provide further increases in base benefits of members not in receipt of a pension such that the base benefits are upgraded to a final five year average.
3. Provide a further increase to retired members such that a final average formula is reasonably replicated for each retired member at their retirement date and indexed to full CPI thereafter.
4. Provide a lump sum payment representing a reasonable estimate of missed past increased payments up to the levels of benefits arising out of steps 2 and 3.
5. Establish a reserve to cover the next 10 years of potential contingent indexing.
6. Apply contribution reduction adjustment of up to 2%.
7. Improve the normal form of pension for all members who are not in receipt of a pension.
8. Improve the bridge pension for all members eligible for a bridge pension whether or not in pay.
9. Improve the early retirement rules for service after June 30, 2012, provided that the Board of Trustees considers life expectancy experience as it develops.

Actions 1 to 4 can be applied with excess funds available when the open group funded ratio is below 140%. If all improvements from 1 through 4 above have been made and the open group funded ratio is still in excess of 140%, then actions 5 through 9 can be undertaken in sequence. After such actions have been undertaken, the Trustees may consider permanent benefit changes subject to the approval of the Province and Union and subject to most members being able to benefit from the changes.

Except for the timing of contribution reductions, the timing of the above actions shall be the first of the year that is 12 months after the date of the funding policy valuation report that triggered the actions.

Notwithstanding the above, with respect to actions taken by the Board of Trustees further to the actuarial valuation reports with effective dates from July 1, 2012 to December 31, 2014 inclusive, where the discount rate is 5.75% per annum, the Board of Trustees shall be prohibited from providing any increases in benefits other than as described in 1 above.

## Actuarial Assumptions

A funding policy actuarial valuation shall be conducted by the Plan's actuary at December 31st of each year. Effective December 31, 2015, the discount rate is 4.75% per annum. The intention is to keep the discount rate stable over time. On the advice of the plan's actuary, the Board of Trustees may consider a change in the discount rate for subsequent funding policy actuarial valuations provided it is required by the Superintendent, standards published by the Canadian Institute of Actuaries, applicable laws or if there are changes in the economy that in the plan's actuary's opinion warrant a change in the discount rate.

Other assumptions may be changed by the Board of Trustees as experience evolves.

# Appendix F – Plan Administrator Confirmation Certificate

With respect to the Actuarial Valuation Report of the Shared Risk Plan for Certain Bargaining Employees of New Brunswick Hospitals as at December 31, 2016, I hereby confirm that to the best of my knowledge:

- the data regarding CBE SRP Plan members and beneficiaries provided to Morneau Shepell as at December 31, 2016 constitutes a complete and accurate description of the information contained in the files;
- copies of the official plan text and funding policy of the CBE SRP Plan and all amendments to date were provided to Morneau Shepell; and
- there are no subsequent events other than those described in this valuation report, or any extraordinary changes to the plan membership from December 31, 2016 to the date of this valuation report, which would materially affect the results.

## The CBE SRP Plan Board of Trustees

R Luton

*Signature*

Name: RICHARD LUTON

Title: CHAIR

Date: 2017-09-21

MORNEAU SHEPELL

MENTAL HEALTH PARTNER

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