Shared Risk Plan for CUPE Employees of New Brunswick Hospitals

Actuarial Valuation Report as at December 31, 2013

Report prepared in September 2014

Registration number: Canada Revenue Agency #0385849
NB Superintendent of Pensions: NB 0385849

Table of Contents

Introduction

The Pension Plan for CUPE Employees of New Brunswick Hospitals ("Former CUPE Plan") was converted to the Shared Risk Plan for CUPE Employees of New Brunswick Hospitals ("CUPE SRP Plan") effective July 1, 2012, subject to approval by the New Brunswick Office of the Superintendent of Pensions ("Superintendent") and the Canada Revenue Agency ("CRA").

This report is conducted as at December 31, 2013, being the end of the fiscal year-end of the CUPE SRP Plan. Subsequent actuarial valuations will be conducted annually in accordance with the requirements of subsection 100.61(1). This report was prepared for the Board of Trustees ("Trustees") and the 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; and
- to document the results of a hypothetical wind-up valuation of the CUPE SRP Plan as required under the Canadian Institute of Actuaries Standard of Practice, 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 Regulation:

- 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 1, 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 CUPE SRP Plan retained the services of Morneau Shepell Ltd ("Morneau Shepell") to prepare this report.

The last actuarial valuation report prepared for the CUPE SRP Plan and filed with both the Office of the Superintendent of Pensions and the Canada Revenue Agency was performed as at December 31, 2012.

The next actuarial valuation report for the CUPE SRP Plan will be due no later than one year following the effective date of this report.

There are no events subsequent to December 31, 2013 which in our opinion would have a material impact on the results of this 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 will be revealed in future valuations.

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

Respectfully submitted,

Yves Plourde, FSA, FCIA

Sept. 30, 2014
Date

Section 1 – Funding Policy Valuation

A funding policy valuation is required annually under subsection 100.61(1) of the New Brunswick *Pension Benefits Act* ("PBA") and subsections 14(5) to 14(7) of Regulation 2012-75. The results of the funding policy valuation of the CUPE SRP Plan as at December 31, 2013 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, and plan provisions summarized in Appendix D 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 CUPE 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 CUPE SRP Plan as at December 31, 2013, along with the results in the previous valuation as at December 31, 2012 are found below:

Table 1.1 – Funding Policy Valuation Funded Status

	December 31, 2013	December 31, 2012
	$	$
Market Value of Assets		
> Fair market value of assets (including receivables / payables)	$598,595,000	$503,330,000
Funding Policy Actuarial Liabilities		
> Active members	$360,269,000	$342,935,000
> Terminated and suspended members	32,710,000	32,858,000
> Retired members and beneficiaries	393,038,000	366,701,000
> Outstanding refunds	509,000	908,000
> Total funding policy valuation actuarial liabilities	786,526,000	743,402,000
Funding policy valuation excess (unfunded liability)	(187,931,000)	(240,072,000)
Termination value funded ratio [calculated in accordance with Reg. 14(6)(e)]	76.1%	67.7%

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 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, 2013 are presented below, along with the results found in the previous valuation as at December 31, 2012:

Table 1.2 – Funding Policy Valuation Normal Cost and Excess Contributions

	Year Following December 31, 2013		Year Following December 31, 2012	
	$	% of payroll	$	% of payroll
A. Member and employer contributions	$61,395,000	19.1	$59,569,000	19.1
B. Funding policy valuation normal cost	34,105,000	10.6	32,420,000	10.4
C. Excess contributions (A. – B.)	27,290,000	8.5	27,149,000	8.7
Estimated payroll for year following	$321,442,000		$311,879,000	

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 by 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, 2013	December 31, 2012
A. Market value of assets (including receivables / payables)	598,595,000	503,330,000
B. Present Value of Excess Contributions over next 15 years [calculated in accordance with Reg. 14(6)(c)]	339,328,000	349,816,000
C. Funding policy valuation actuarial liabilities	786,526,000	743,402,000
D. 15-Year Open Group Funded Ratio [(A. + B.) / C.]	119.2%	114.8%

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, 2012 and this funding policy valuation as at December 31, 2013:

Table 1.4 – Reconciliation of Funded Status

	$	$
Funding policy funding excess (unfunded liability) as at December 31, 2012		(240,072,000)
Expected changes in funded status		
> Interest on funding excess (unfunded liability)	(10,803,000)	
> Excess contributions (shortfall)	27,172,000	
> Total		16,369,000
Expected funding policy excess (unfunded liability) as at December 31, 2013		(223,703,000)
Actuarial gains (losses) due to the following factors		
> Investment return on actuarial value of assets	45,164,000	
> Retirements	1,190,000	
> Terminations	445,000	
> Mortality	(440,000)	
> Miscellaneous factors	3,394,000	
> Total		49,753,000
Impact of cost-of-living adjustment granted effective January 1, 2014		(8,896,000)
Change in demographic assumptions		(5,085,000)
Funding policy valuation excess (unfunded liability) as at December 31, 2013		(187,931,000)

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, 2012 to this funding policy valuation as at December 31, 2013 are shown below:

Table 1.5 – Reconciliation of Total Normal Cost

	% of payroll
Total normal cost as at December 31, 2012:	10.4%
Impact of changes in demographics:	0.2%
Impact of changes in demographic assumptions:	0.0%
Total normal cost as at December 31, 2013:	10.6%

Sensitivity Analysis on the Funding Policy Basis

The Standards 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 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, 2013	Discount rate 1% lower
	$	$
Actuarial liabilities		
> Active members	$360,269,000	$433,855,000
> Terminated and suspended members	32,710,000	39,527,000
> Retired members and beneficiaries	393,038,000	431,500,000
> Outstanding refunds and withholding amounts	509,000	509,000
> Total	786,526,000	905,391,000
Increase in actuarial liabilities		118,865,000

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, 2013		Discount rate 1% lower	
	$	% of payroll	$	% of payroll
Total normal cost	$34,105,000	10.6	$43,027,000	13.4
Increase in total normal cost			$8,922,000	2.8

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 as may be granted from time to time by the Trustees in accordance with the plan terms and the funding policy.

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, 2013
Discount rate	4.50%
Salary increase for year following valuation (for normal cost purposes only, and inclusive of promotional increases)	2.75%
YMPE increase for year following valuation (for normal cost purposes only)	2.75%
Mortality	2014 Public Sector Mortality Table (CPM2014Publ) projected with Improvement Scale B (CPM-B) with size adjustment factors of 131% for males and 123% for females

Retirement

	Age at Conversion								
Retirement Age	Under 25 or joined Plan after conversion date	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
55	0%	0%	0%	0%	0%	0%	0%	12.5%	25%
56	0%	0%	0%	0%	0%	12.5%	25%	15%	5%
57	0%	0%	0%	12.5%	25%	15%	5%	5%	5%
58	0%	12.5%	25%	15%	5%	5%	5%	5%	5%
59	25%	15%	5%	5%	5%	5%	5%	5%	5%
60	5%	5%	5%	5%	5%	5%	5%	17.5%	30%
61	5%	5%	5%	5%	5%	17.5%	30%	17.5%	5%
62	5%	5%	5%	17.5%	30%	17.5%	5%	5%	5%
63	5%	17.5%	30%	17.5%	5%	5%	5%	5%	5%
64	30%	17.5%	5%	5%	5%	5%	5%	5%	5%
65	25%	22.5%	20%	17.5%	15%	12.5%	10%	7.5%	5%

Termination (membership)

Sample rates of termination other than by death, disability or retirement

Age	Male	Female
20	7.6%	12.6%
25	6.6%	9.7%
30	5.4%	7.5%
35	3.4%	5.7%
40	2.6%	4.1%
45	1.8%	2.8%
50	0.9%	1.4%
55	0%	0%

Expenses	A 5% loading is added to the total normal cost to cover non-investment administration expenses payable from the fund

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, 2013		
New entrants	Each active member is replaced at termination, death or retirement by a new entrant, subject to a net decrease in active membership of 1% per year for 2 years, and stable active membership thereafter for the next 18 years.		
Distribution of new entrants and salary at entry:	Age	Distribution	Average Salary at Entry
	25	33.3%	39,000
	35	33.3%	39,000
	45	33.3%	39,000
Work Percentage			85%
Inflation			2.25%
Salary increases			2.75%
YMPE increases			2.50%

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 (using long-term target asset mix, and including impact of rebalancing and diversification)	5.90
Value added for active management (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 (originally set to achieve a high probability of exceeding the discount rate over the next 20 years)	(1.30)
Expected investment related expenses paid from the fund	(0.25)
Discount rate	4.50

The expected long-term nominal return by asset class is provided in Appendix C. The target asset mix reflects changes that are being implemented as a result of the adoption of the shared risk plan model. 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.

Investment Expenses

The allowance for investment management expenses paid from the fund as built into the discount rate is 0.25% of assets based on recent Plan history and our expectation for future investment expenses.

Rate of Salary Increase

Based on the historical trends for this group we have assumed that long-term future salary increases will equal 2.75% per annum, including merit and promotion. Based on prior studies, merit and promotion increases for this group does not provide for much movement to higher earnings levels over a career.

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 131.0% and 123.0% for males and females, respectively, were also applied to the mortality table to take into account the level of pensioner benefits among plan beneficiaries, as well as the expected mortality for employees in the medical and social services industry relative to the general public sector. The same adjustments were used for other participants before and after retirement. At the last actuarial valuation, the full generational UP-94 mortality table with full generational mortality improvement using an “Enhanced NB Projection Scale AA”, with scalar adjustments of 115% for males and 105% for females to all mortality rates were used.

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	**2014**	**2019**	**2024**	**2029**	**2034**
55	32.5	32.7	33.0	33.3	33.5
60	27.6	27.9	28.2	28.4	28.7
65	23.0	23.3	23.5	23.8	24.0
70	18.6	18.8	19.1	19.3	19.5
75	14.4	14.6	14.8	15.0	15.2
80	10.5	10.7	10.9	11.1	11.2
Males	**Life expectancy by Age in Year…**				
Age	**2014**	**2019**	**2024**	**2029**	**2034**
55	29.8	30.1	30.4	30.7	31.0
60	25.1	25.5	25.8	26.1	26.3
65	20.7	21.0	21.3	21.6	21.8
70	16.3	16.7	17.0	17.2	17.4
75	12.3	12.6	12.9	13.1	13.3
80	8.7	9.0	9.2	9.4	9.5

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 have used a rate of increase of 2.50% per annum for all years. The YMPE is not affected by the salary increase considerations specific to this group of plan members. The YMPE is automatically updated to its revised base level at each valuation date.

Retirement

Given the changing early retirement subsidies for service after the 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 initial conversion to the shared risk plan and did not change for this valuation. We will continue to monitor this assumption for reasonableness.

Opinion on Funding Policy Valuation

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

The assumptions used under the funding policy valuation of this report were reasonable and consistent with the objectives of the plan at the time this actuarial valuation report was prepared.

Respectfully submitted,

Yves Plourde, FSA, FCIA

Sept. 30, 2014

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, 2013.

Risk Management Goals

The primary risk management goal 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. 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.
- 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.

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. For conservatism, our stochastic model also recorded a "benefit reduction trial" (for purposes of the primary risk management goal calculation) when any action beyond step 1 was required. 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. These assumptions are found in Appendix C.
- For purposes of this report, the Plan's contributing member population is assumed to reduce by 1.0% per year for a period of 2 years following December 31, 2013, and remain stable thereafter in each subsequent year of the projection period. As such, departures from the Plan, for any reason, are assumed to be replaced by the number of new entrants required to respect the said goals that the overall contributing member population reduces by 1.0% per year for a period of 2 years following December 31, 2013, and remains stable thereafter in each subsequent year of the projection period. 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, 2013, 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 are 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 the contribution adjustments are fully 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, 2013

The stochastic analysis undertaken as at December 31, 2013, took into account the main following items:

- Membership Data as at December 31, 2013 summarized in Appendix B;
- Economic and demographic assumptions as at December 31, 2013 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;
- CUPE SRP Plan provisions as summarized in Appendix D;
- Funding deficit recovery plan found under Section V of the CUPE SRP Plan's Funding Policy (except for reduction in past or future base benefits);
- Funding excess utilization plan found under Section VI of the CUPE 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, 2013 are as follows:

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

Risk Management Goal	Goal under PBA	Result for CUPE SRP Plan as at December 31, 2013
Primary Goal [Regulation 7(1)] - 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%**	**99.85%** **PASSED**
Secondary Goal 1 [Regulation 7(3)(a)] - 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; or 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. 2.0% per year)	We estimated that the combined impact of the Secondary Goal 1 for active members, retirees and deferred vested member represents an average indexing of 71.2% of the increase in the Consumer Price Index (CPI). Note: This is the weighted average of 75% of CPI for active members, and 66⅔% of CPI for retirees and deferred vested members (75% of 2.0% over assumed CPI of 2.25%).	**94.9%** of the assumed increase in CPI **PASSED**
Secondary Goal 2 [Regulation 7(3)(b)] - 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 99.85%** (See Note below) **PASSED**

Note: The Funding Policy only 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. In order to simplify the stochastic analysis and remain conservative, every time action is required beyond step 1 (increase in contributions), the model triggers a "benefit reduction scenario" for purpose of meeting the primary risk management goal. Therefore, it is expected that on average the Secondary Goal 2 above will exceed the primary risk management result of 99.85%, well above the minimum 75% level required under the PBA.

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.

In conducting the hypothetical wind-up valuation as at December 31, 2013, we therefore made the assumption that the conversion would be void, and that the plan would be wound-up as at December 31, 2013 in accordance with rules found under Part 1 of the PBA.

We have valued the wind-up liability using discount rates consistent with the requirements of the NB 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, 2013.

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, 2013	December 31, 2012
	$	$
Assets		
> Market value of assets	$598,595,000	$503,330,000
> Provision for wind-up expenses	(1,500,000)	(1,500,000)
> Total	597,095,000	501,830,000
Hypothetical wind-up liabilities		
> Active members	738,547,000	845,850,000
> Terminated and suspended members	63,687,000	36,555,000
> Retired members and beneficiaries	497,546,000	521,611,000
> Outstanding refunds and withholding amounts	509,000	910,000
> Total	1,300,289,000	1,404,926,000
Assets less liabilities on the hypothetical wind-up basis	(703,194,000)	(903,096,000)

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 CUPE 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, 2013	Discount rates 1% lower
	$	$
Actuarial liabilities		
> Active members	738,547,000	887,408,000
> Terminated and suspended members	63,687,000	77,437,000
> Retired members and beneficiaries	497,546,000	555,316,000
> Outstanding refunds and withholding amounts	509,000	509,000
> Total	1,300,289,000	1,520,670,000
Increase in actuarial liabilities		220,381,000

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, 2013 to December 31, 2014, adjusted for expected benefit payments in the inter-valuation period. This incremental cost is estimated to be $84,909,000 as at December 31, 2013.

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 CUPE Plan was not subject to the PBA before it was converted to the CUPE SRP Plan, in the absence of specific direction to the contrary in the Former CUPE 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 annuity purchases as at December 31, 2013. 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 fixed rate of indexing of 2.0% per year under the Former CUPE Plan 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 escalation of pension of 2.0% per year provided by the Former CUPE Plan.

Table 3.3 – Hypothetical Wind-Up Actuarial Assumptions

	December 31, 2013	December 31, 2012
Interest rate		
> Interest rate for active members and deferred vested members under 55	3.93% (1.89% net) per annum; or 3.1% (1.07% net) for 10 years, 4.6% (2.55%) per annum thereafter	2.96% (0.94% net); or 2.4% (0.39% net) for 10 years, and 3.6% (1.57% net) per year thereafter
> Interest rate for all other members	3.93% (1.89% net)	2.96% (0.94% net)
Salary increases	None	None
Mortality	UP-94 generational using Scale AA	UP-94 generational using Scale AA
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

Allowance has been made for administrative, actuarial and legal costs which would be incurred if the Plan were to be wound up in full or in part. No allowance has been made for costs which may be incurred in respect of resolving surplus or deficit issues on Plan wind up or the costs in respect of assets which cannot be readily realized.

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.
- CUPE SRP Plan conversion would be void and the pension plan would be wound-up under Part 1 of the PBA.

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, 2013 and December 31, 2014, discounted to December 31, 2013;

Plus

2. Projected hypothetical wind-up liabilities as at December 31, 2014, discounted to December 31, 2013;

Less

3. Hypothetical wind-up liabilities as at December 31, 2013.

Opinion on Hypothetical Wind-up Valuation

In our 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 our 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

Sept. 30, 2014

Date

Appendix A – Assets

Description of Plan Assets

The assets of the plan are held in a trust fund, and RBC Investor Services is the custodian for the assets of the pension fund.

Statement of Market Value

The following table shows the asset mix as at December 31, 2013, and for comparison, the mix as at December 31, 2012 extracted from the Plan's prior actuarial valuation:

Table A.1 – Assets at Market Value

	December 31, 2013	December 31, 2012
Invested assets		
> Canadian Equities	$117,221,550	$129,580,124
> Foreign Equities	171,879,920	162,701,977
> Fixed Income	279,277,058	187,059,430
> Real Estate	5,322,709	---
> Derivatives	(622,397)	---
> Short Term	16,638,709	18,104,225
> Net amount receivable	8,877,646	5,884,405
Total assets	$598,595,195	$503,330,161

Changes to Plan Assets

The following table shows changes to the Plan assets held by RBC Investor Services (the custodian) during the inter-valuation period, based on market values The reconciliation from January 1, 2013 to December 31, 2013 is based on the unaudited financial statements issued by the Department of Human Resources for the full calendar year 2013.

Table A.2 – Reconciliation

	2013
Assets at beginning of year	$503,330,161
Adjustment to beginning of year market value	(13,532)
Receipts	
> Contributions and transfers	64,015,077
> Investment income plus realized and unrealized capital appreciation and depreciation	70,090,046
Total receipts	134,105,123
Disbursements	
> Pensions paid and refunds	35,454,147
> Expenses (fees)	3,372,410
Total disbursements	38,826,557
Assets at end of year	$598,595,195

Return on Assets

Over the last year, the Plan assets earned the following rates of return, net of investment management fees and other 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
2013	13.24%

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, 2013 was $598,595,000.

Target Asset Mix under Shared Risk Plan

The statement of investment policy and goals for the CUPE SRP Plan, as modified by the Board of Trustees in order to ensure among other things that the risk management goals under the PBA could be met, provides for the following long term target asset mix.

Table A.4 – Target Asset Mix

	Target
Asset classes	
> Fixed Income – Domestic Universe Bonds (DUB)	10.0%
> Fixed Income – Domestic Long-term Bonds (DLB)	30.0%
> Fixed Income – US High Yield Bonds (USHY)	7.5%
> Fixed Income – Global Government Bonds (GGB)	7.5%
> Canadian Equities (DE)	10.0%
> Foreign Equities (FE)	15.0%
> Real Estate (RE)	10.0%
> Infrastructure (I)	10.0%
Total	100.0%

This target asset mix was used to determine the discount rate assumption 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 the PIBA pension system maintained by the Pension and Employee Benefits Division of the Department of Human Resources. The data was provided as at December 31, 2013.

The data was matched and reconciled with the data provided for the previous valuation as at December 31, 2012. Basic data checks were performed to ensure that age, salary, service and accrued pensions 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 the Department of Human Resources.

Summary of Membership Data

The following tables were prepared using data provided by the Pension and Employee Benefits Division 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, 2014.

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, 2013
B.4 Distribution of Retirees by Age Groups as at December 31, 2013
B.5 Distribution of Terminated and Suspended Members by Age Groups as at December 31, 2013

Table B.1
Summary of Membership Data

		December 31, 2013	December 31, 2012
Active members[1]	Number	8,191	8,323
	Total covered payroll[3]	$322,780,000	$311,879,000
	Average salary	$39,407	$37,472
	Average age	44.8 years	44.4 years
	Average accrued lifetime pension	$4,322	$3,982
	Average accrued bridge benefit	$1,719	$1,593
	Average credited service	7.8 years	7.3 years
Terminated and suspended members	Number	1,186	1,002
	Average annual lifetime pension	$2,704	$3,065
	Average annual bridge benefit[2]	$1,044	$1,151
	Average age	43.9 years	44.7 years
Retired members and beneficiaries	Number	3,125	2,991
	Average annual lifetime pension	$9,508	$9,315
	Average annual bridge benefit[2]	$5,229	$5,333
	Average age	69.5 years	69.4 years

[1] *December 31, 2013 figures include all actively contributing members 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 Terminated and Suspended members.*

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

[3] *Estimated total payroll for actively contributing employees, taking into account work percentage by individual for part-time employees.*

Table B.2 – Changes in Plan Membership

	Active Members	Terminated and Suspended members	Retired Members and Beneficiaries	Total
Members at December 31, 2012	8,323	1,002	2,991	12,316
New members	390	-	-	390
Retirements	(161)	(34)	195	-
Returned to active status	284	(284)	-	-
Reclassified to Suspended	(531)	531	-	-
Terminations:				
> deferred vested	(9)	9	-	-
> paid out	(58)	(24)	-	(82)
> outstanding refunds owing	(43)	(13)	-	(56)
Deaths:				
> with no continuing benefits	(4)	(1)	(65)	(70)
> with survivors			(8)	(8)
New survivor pensions			8	8
Guarantee periods expired			-	-
Data Adjustments	-	-	4	4
Members at December 31, 2013	8,191	1,186	3,125	12,502

Table B.3 – Age/Service Distribution for Active Members as at December 31, 2013

Years of Service		Under 24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 and Over	Total
0 - 4	Num.	262	572	583	611	548	507	420	311	180	3,994
	Avg. Sal.	38,187	38,591	38,133	37,697	35,888	36,006	35,066	33,629	32,681	36,638
	Avg. Pen.	729	1,092	1,215	1,218	1,059	1,071	1,049	1,012	922	1,080
5 - 9	Num.	1	90	257	291	312	325	329	221	108	1,934
	Avg. Sal.	*****	44,739	43,775	43,671	42,814	42,168	40,887	41,374	39,481	42,372
	Avg. Pen.	*****	3,408	3,749	3,821	3,787	3,834	3,775	3,843	3,763	3,780
10 - 14	Num.			29	83	148	197	227	192	77	953
	Avg. Sal.			42,099	43,819	42,329	41,575	41,623	41,075	40,513	41,728
	Avg. Pen.			5,870	6,480	6,352	6,406	6,469	6,376	6,334	6,391
15 - 19	Num.				6	41	54	111	79	40	331
	Avg. Sal.				44,373	44,112	42,734	40,294	40,812	40,816	41,426
	Avg. Pen.				9,062	9,204	9,494	8,949	8,970	9,236	9,111
20 - 24	Num.					18	126	157	110	35	446
	Avg. Sal.					42,254	42,018	41,400	41,786	42,407	41,784
	Avg. Pen.					11,721	12,592	12,591	12,647	13,229	12,620
25 - 29	Num.						32	187	82	18	319
	Avg. Sal.						41,685	41,397	41,960	43,303	41,678
	Avg. Pen.						15,202	15,349	15,544	15,420	15,388
30 and over	Num.						2	42	126	44	214
	Avg. Sal.						40,250	42,460	42,514	42,459	42,471
	Avg. Pen.						17,408	18,465	19,190	20,654	19,332
Total number		**263**	**662**	**869**	**991**	**1,067**	**1,243**	**1,473**	**1,121**	**502**	**8,191**
Average of salaries		**38,194**	**39,427**	**39,934**	**40,005**	**39,230**	**39,554**	**39,460**	**39,346**	**37,910**	**39,407**
Average of accrued lifetime pension		**738**	**1,406**	**2,120**	**2,470**	**3,084**	**4,563**	**6,630**	**7,298**	**6,133**	**4,322**

Average age: 44.8

Average number of years of service: 7.8

Notes:

Age groups are based on exact age.

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, 2014.

Membership for active members is composed of 2,133 males and 6,058 females.

Table B.4 – Distribution of Retired Members and Beneficiaries by Age Groups as at December 31, 2013

Age Group	Number	Total Annual Payments	
		Lifetime	Bridge
Under 60	350	3,992,078	1,815,287
60-64	708	7,767,321	3,632,822
65-69	786	7,747,446	-
70-74	514	4,809,980	-
75-79	313	2,506,197	-
80-84	228	1,557,467	-
85-89	140	853,909	-
90 and over	73	369,080	
Total	3,112	29,603,478	5,448,108

Average age: 69.5

Notes:

Age groups are based on exact age.

The pension used is the pension payable as at January 1, 2014

Membership for pensioners is composed of 670 males and 2,455 females.

In addition, there are payments continuing to be made to 13 beneficiaries under remaining guarantees after pensioners' deaths for a total of $109,088 annually.

Table B.5 – Distribution of Terminated and Suspended members by Age Groups as at December 31, 2013

Age Group	Number	Total Accrued Pensions	
		Lifetime	Bridge
Under 25	29	18,357	6,847
25 - 29	145	138,832	54,058
30 - 34	152	235,873	95,946
35 - 39	133	210,171	88,148
40 - 45	142	308,640	120,046
45 - 49	171	553,607	210,630
50 - 54	197	954,889	337,839
55 - 59	126	465,173	186,322
60 and over	91	314,024	95,170
Total	1,186	3,199,567	1,195,005

Average age: 43.9 years

Notes:

Age groups are based on exact age.

The pension used is the pension payable as at January 1, 2014.

Membership for terminated and suspended members is composed of 269 males and 917 females.

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. 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 mainly 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, 2013:

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

	Expected Return	Volatility (standard deviation)
Inflation	2.25%	1.2%
Asset classes		
> Fixed Income – Domestic Universe Bonds (DUB)	3.20%	6.0%
> Fixed Income – Domestic Long-term Bonds (DLB)	4.30%	9.6%
> Fixed Income – US High Yield Bonds (USHY)	5.35%	11.0%
> Fixed Income – Global Government Bonds (GGB)	3.45%	4.4%
> Canadian Equities (DE)	7.55%	17.0%
> Foreign Equities (FE)	7.45%	16.1%
> Real Estate (RE)	6.25%	12.5%
> Infrastructure (I)	6.95%	14.9%

For every year in the 20-year projection, expenses of 10 basis points to reflect 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). For the payment of non-investment related expenses, the normal cost has been increased by 5.0% (representing about 0.5% of payroll), and that amount is used for non-investment expenses in our stochastic analysis.

The following correlation among the various asset classes identified in Table C.1 was also used as at December 31, 2013:

Table C.2 – Correlation Among Asset Classes

	DUB	DLB	USHY	GGB	DE	FE	RE	I
DUB	1.00	0.85	-0.16	-0.03	0.11	0.07	-0.01	0.24
DLB		1.00	-0.06	0.05	0.11	0.06	0.25	0.28
USHY			1.00	0.68	0.50	0.42	0.00	0.05
GGB				1.00	0.31	0.19	0.03	0.17
DE					1.00	0.65	0.11	0.13
FE						1.00	0.16	-0.05
RE							1.00	0.06
I								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 CUPE SRP Plan is measured on a funding policy basis. For the purpose of the stochastic analysis, the margin for adverse deviation in the discount rate is modified in each future period in the projection such that the resulting discount rate remains fixed at 4.5% per year throughout the projection period. The discount rate of 4.5% per year 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 CUPE Employees of New Brunswick Hospitals ("CUPE SRP Plan") effective December 31, 2013. For an authoritative statement of the precise provisions of the CUPE SRP Plan, reference must be made to the official CUPE SRP Plan documents.

Introduction

The Pension Plan for CUPE Employees of New Brunswick Hospitals ("Former CUPE Plan") became effective on January 1, 1975. The Former CUPE Plan was amended at various times throughout its history.

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

Eligibility and Participation

Each Member of the Former CUPE Plan joins the CUPE 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 CUPE SRP Plan ceased active membership in the said plan and were required to join the CUPE 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 9.0% of earnings. Participating employers contribute at least 10.1% of earnings from the same date.

Contribution rates are subject to change in accordance with triggers found under the Funding Policy for the CUPE 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, 1997, the product of:

  (i) the number of years of the member's pensionable service before January 1, 1997, and

(ii) 1.75% of the annual average of the best five (5) consecutive years of earnings at July 1, 2012, up to the annual average YMPE for the same five (5) years, plus 2% of the excess of the annual average of the best five (5) consecutive years of earnings at July 1, 2012 over the annual average YMPE for the same five (5) years;

and

(B) In respect of service from January 1, 1997 to July 1, 2012, the product of:

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

(ii) 1.4% of the annual average of the best five (5) consecutive years of earnings at July 1, 2012, up to the annual average YMPE for the same five (5) years, plus 2% of the excess of the annual average of the best five (5) consecutive years of earnings at July 1, 2012 over the annual average YMPE for the same five (5) years;

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 CUPE SRP Plan. A cost-of-living adjustment of 2.0% was granted by the Board of Trustees effective January 1, 2013 (pro-rated by 50% for active members) based on the results of the initial actuarial valuation as at July 1, 2012 and the terms of the Funding Policy. Furthermore, a cost-of-living adjustment of 1.36% (0.96% related to the current year, and 0.4% related to the prior year) was granted by the Board of Trustees effective January 1, 2014 based on the results of the actuarial valuation as at December 31, 2012 and the terms of the Funding Policy.

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 $18.00 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 his/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.

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 CUPE Employees of New Brunswick Hospitals ("CUPE SRP Plan") effective December 31, 2013. 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 CUPE 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 19.1% of earnings (members at 9.0% of earnings and employer at 10.1% of earnings).

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:

1. 105% open group funding level; and
2. 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:

- $1/6^{th}$ 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. Provide a further increase to benefits of members who were not in receipt of a pension at the funding policy valuation date that triggered the action up to the rate of increase in the average wage.
6. Establish a reserve to cover the next 10 years of potential contingent indexing.
7. Apply contribution reduction adjustment of up to 2%.
8. Improve the normal form of pension for all members who are not in receipt of a pension.
9. Improve the bridge pension for all members eligible for a bridge pension whether or not in pay.
10. 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 5 can be applied with excess funds available when the open group funded ratio is below 140%. If all improvements from 1 through 5 above have been made and the open group funded ratio is still in excess of 140%, then actions 6 through 10 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.

Actuarial Assumptions

A funding policy actuarial valuation shall be conducted by the Plan's actuary at December 31st of each year. The discount rate is 4.5% per year and cannot be changed until the December 31, 2015 actuarial valuation. Other assumptions may be changed as experience evolves.

Appendix F – Plan Administrator Confirmation Certificate

With respect to the Actuarial Valuation Report of the Shared Risk Plan for CUPE Employees of New Brunswick Hospitals as at December 31, 2013, I hereby confirm that to the best of my knowledge:

> the data regarding Plan members and beneficiaries provided to Morneau Shepell as at December 31, 2013 constitutes a complete and accurate description of the information contained in the files;

> copies of the official plan text and funding policy of the CUPE SRP Plan and all amendments to date were provided to Morneau Shepell; and

> there are no subsequent events or any extraordinary changes to the plan membership from December 31, 2013, which would materially affect the results.

The CUPE SRP Plan Board of Trustees

Signature

Name: Renée Laforest — DAVID MATTHEWS

Title: Chair — VICE CHAIR

Date: September 23, 2014 — SEPT 25/2014