NEW BRUNSWICK TEACHERS' PENSION PLAN

INITIAL ACTUARIAL VALUATION REPORT AS AT JANUARY 1, 2014 AND CONVERSION PLAN

Report prepared in September 2014

Registration number:	Canada Revenue Agency: 0293696 NB Superintendent of Pensions: Pending

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INTRODUCTION

The New Brunswick Teachers' Pension Act ("Former TPA") was converted to the New Brunswick Teachers' Pension Plan ("NBTPP" or Plan) effective July 1, 2014, subject to approval by the New Brunswick Office of the Superintendent of Pensions ("Superintendent").

This report was prepared for the New Brunswick Teachers' Pension Plan Board of Trustees ("Trustees"), the Superintendent and the Canada Revenue Agency for the following purposes:

- to document the results of the initial funding valuation, as required under paragraph 17(1) of the New Brunswick *Teachers' Pension Plan Act* ("TPPA") and provide the related actuarial opinion;
- to documenter the Conversion Plan, as required under sub-paragraph 100.6(2)(a)(i) of the New Brunswick *Pension Benefits Act* ("PBA");
- to document the results of the going-concern actuarial valuation required under paragraph 16(1) of the TPPA in order to determine the maximum eligible employer contribution for the NBTPP under paragraph 147.2(2) of the *Income Tax Act* (Canada) ("ITA") and provide the related actuarial opinion; and
- to document the results of a hypothetical wind-up valuation of the NBTPP as required under the Canadian Institute of Actuaries Standards 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 TPPA, the PBA and Regulations:

- approval of the funding policy established at inception as required under sub-paragraph 100.4(1)(b) of the PBA;
- approval of the investment policy established at inception as required under sub-paragraph 100.4(1)(c) of the PBA;
- approval of the risk management goals and procedures found under the funding policy and reiterated in this initial valuation report under Section 4 as part of the Conversion Plan, as required under sub-paragraph 11(2)(a) of the TPPA;
- approval of the asset liability model used, as described in Section 4 as part of the Conversion Plan, including the stochastic projection assumptions found under Appendix C, as required under paragraph 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 paragraph 15(3) of Regulation 2012-75.

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

The last actuarial valuation report prepared for the Former TPA and filed with the Canada Revenue Agency was performed as at April 1, 2012.

The next actuarial valuation report for the NBTPP will be due no later than December 31, 2016.

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,

Conrad Ferguson, FSA, FCIA	Yves Plourde, FSA, FCIA
October 28, 2014	October 28, 2014
Date	Date

SECTION 1 – INITIAL FUNDING VALUATION

An initial plan funding valuation is required under sub-paragraph 100.6(2)(a)(ii) of the New Brunswick Pension Benefits Act ("PBA") and paragraph 17(1) of the TPPA. The results of this valuation of the NBTPP as at January 1, 2014 include the impact of changes as at July 1, 2014, effective date of the NBTPP. The changes are summarized in Section 4 of this report. The TPPA authorizes an initial valuation within the six months preceding the effective date of the NBTPP.

The initial funding valuation results presented in this section are based on asset information found in Appendix A, membership data found in Appendix B, and plan provisions after the conversion to a plan permitted under the TPPA, as summarized in Section 4 of this report and Appendix D. The methods and assumptions used in the funding valuation are presented later in this section.

FUNDING VALUATION FUNDED STATUS

The funding valuation funded status of the NBTPP is determined by comparing the fair market value of the assets to the funding actuarial liabilities. The funding actuarial liabilities are based on the benefits earned up to the valuation date assuming the Plan continues indefinitely.

TABLE 1.1 – FUNDING VALUATION FUNDED STATUS

	January 1, 2014
	$M
Market Value of Assets	
Fair market value of assets (including receivables / payables)	$4,653.2
Funding actuarial liabilities	
Active members	1,594.7
Retirees and survivors	3,026.8
Deferred vested members	23.2
Total funding valuation actuarial liabilities	$4,644.7
Funding valuation excess (unfunded liability)	$8.5
Termination value funded ratio [calculated in accordance with paragraph 17(7) of the TPPA]	100.2%

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. It is calculated in accordance with paragraph 17(7) of the TPPA.

FUNDING VALUATION NORMAL COST AND EXCESS CONTRIBUTIONS

The table below provides the funding valuation normal cost, being the value of the pension benefits accrued in the twelve-month period after the valuation date. It compares the funding valuation normal cost to the level of member and employer contributions in order to determine the level of contributions being made to the NBTPP in excess of the funding valuation normal cost.

TABLE 1.2 – FUNDING VALUATION NORMAL COST AND EXCESS CONTRIBUTIONS

	Year following January 1, 2014 (1)	
	$M	**% of payroll**
A. Funding valuation normal cost	$95.6	14.33%
B. Contributions:		
- Members	$60.0	9.00%
- Employer's initial contributions	65.0	9.75%
- Employers' temporary schedule 1 (for 5 years after 1-7-2014)	5.0	0.75%
- Employers' temporary schedule 2 (for 10 years after 1-7-2014)	5.0	0.75%
- Employers' temporary schedule 3 (for 15 years after 1-7-2014)	5.0	0.75%
Total	$140.0	21.00%
C. Excess contributions (B. – A.)	$44.4	6.67%
Estimated payroll for year following January 1, 2014	$667.0	

(1) Contribution rates shown take effect only on July 1, 2014, but for the purpose of presenting the results in this table are assumed to take effect as at January 1, 2014.

RECONCILIATION OF FUNDING VALUATION FUNDED STATUS WITH LAST GOING-CONCERN VALUATION

The table below describes the change in the Plan's funded status between the last going-concern valuation as at April 1, 2012 to this funding valuation as at January 1, 2014:

TABLE 1.3 – RECONCILIATION OF FUNDED STATUS

	$M	$M
Going-concern funding excess (unfunded liability) as at April 1, 2012		($594.8)
Expected changes in funded status		
Interest on funding excess (unfunded liability)	(70.4)	
Employer special contributions with interest	104.3	
Employer contributions in excess of residual normal cost with interest (shortfall)	(16.4)	
Total		$17.5
Expected funding excess (unfunded liability) as at January 1, 2014		($577.7)
Actuarial gains (losses) due to the following factors		
Investment return on actuarial value of assets	235.0	
Incidence of retirements	3.5	
Salary increases	(2.9)	
Increase in the YMPE	(2.5)	
Incidence of terminations of employment	1.0	
Incidence of mortality	(9.0)	
Service buyback	(4.7)	
Indexing of pensions in payment	(5.3)	
Other miscellaneous factors	(1.5)	
Total		$216.6
Gain (loss) due to changes in TPA funding assumptions		(48.8)
Impact of conversion to a plan allowed under the TPPA as at January 1, 2014		$418.0
Funding valuation excess as at January 1, 2014		$8.5

RECONCILIATION OF TOTAL NORMAL COST

The factors contributing to the change in the total normal cost from the last going-concern valuation as at April 1, 2012 to this funding valuation as at January 1, 2014 are shown below:

TABLE 1.4 – RECONCILIATION OF TOTAL NORMAL COST

	% of payroll
Total normal cost as at April 1, 2012	17.24%
Impact of changes in demographics	(0.65%)
Impact of changes in assumptions (before conversion)	1.08%
Impact of conversion to a plan allowed under the TPPA as at January 1, 2014	(3.34%)
Total normal cost as at January 1, 2014 (see Table 1.2)	14.33%

FUNDING ACTUARIAL METHODS

ASSET VALUATION METHOD

The assets used for the funding valuation are equal to the fair market value of the assets, adjusted to exclude any employer special contribution receivable under the Former TPA. It is likely that an asset smoothing method after the initial actuarial valuation will be used in the future.

ACTUARIAL COST METHOD

The funding valuation actuarial liabilities and normal cost were calculated using the accrued benefit (or unit credit) actuarial cost method in accordance with the requirements of paragraph 17(9) of the TPPA.

The funding 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. The actuarial liabilities take into account the increases in accrued pensions due to regular cost-of-living adjustments granted to active and retired members.

The funding 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 has been estimated for the year following the valuation date to calculate the estimated normal cost and estimated member and employer contributions for the year following the valuation date.

In this valuation, the membership data provided was as at April 1, 2013. We therefore calculated the funding liability as of that date and projected it forward to the valuation date of January 1, 2014 in order to obtain the actuarial liability shown in this report.

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 ACTUARIAL ASSUMPTIONS

The main actuarial assumptions employed for the initial funding 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 actuarial valuations. Experience gains and losses emerging in future funding actuarial valuations will impact the 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 1.5 – FUNDING VALUATION ACTUARIAL ASSUMPTIONS

	January 1, 2014
Discount rate	6.25%
Indexing of active members' accrued pensions	2.25%
Indexing of retiree pensions (including surviving spouses and dependent children), disability pensions and deferred vested members	1.69%
Salary increase for year following valuation (for normal cost purposes only)	2014: 2.00% plus merit and promotion
YMPE increase for year following valuation (for normal cost purposes only)	2.75%
Mortality	CPM-RPP2014Publ generational mortality using improvement scale CPM-B with an adjustment factor of 1.12 for males and 1.01 for females

Retirement	
Number of years before unreduced retirement age according to provisions in effect at December 31, 2013	Retirement Assumption
Under 5 years (valuation assumption as at April 1, 2012)	45% at 85 points 45% at 87 points 10% at 90 points but not later than attainment of 35 years of service or age 60
Over 5 years (adjusted assumptions)	45% at 89 points 45% at 91 points 10% at 94 points but not later than attainment of 37 years of service or age 62
Termination of employment	None
Investment and administrative expenses assumed by the fund	Implicit in the discount rate

RATIONALE FOR MATERIAL ACTUARIAL ASSUMPTIONS

The assumptions have been reviewed in light of current economic and demographic conditions, and the adoption of the plan model allowed under the TPPA.

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 discount rate is set out in the funding policy for the first two actuarial valuations submitted after the conversion date. The elements considered in the development of the discount rate assumption for purposes of the funding valuation are summarized in the table below.

TABLE 1.6 – DEVELOPMENT OF FUNDING VALUATION DISCOUNT RATE

	%
Expected long-term nominal return (based on the long-term target asset mix, including impact of rebalancing and diversification, and added value for active management)	6.45
Expected investment and administration expenses paid from the fund	(0.20)
Discount rate	6.25

The long-term target asset mix used in our analysis is found in Table A.3. It reflects the changes that are found in the Statement of Investment Policies resulting from the adoption of the NBTPP. 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 management and administrative expenses paid from the fund built into the discount rate is 0.20% of assets based on recent plan history and our expectation for future expenses.

Rate of Salary Increase

We use a salary increase assumption of 2.00% for 2014 and 2.75% per annum thereafter, based on a difference of 0.5% per annum above inflation.

In addition to regular salary increases, we include a promotional scale to reflect the various steps in pay scales and promotions during the career of a member. The recommended promotional salary scale varies by age and is greater at the younger ages in order to reflect the seniority increases typically granted early in an individual's career. The recommended scale is the same one used in the previous valuation and is equivalent to an additional cumulative increase of approximately 1.5% per annum over the age range 20 to 60, 1.00% per annum over the age range 30 to 60, 0.5% per annum over the age range 40 to 60 and 0.25% per annum over the age range 50 to 60. Thus, the aggregate provision for salary increases range from about 4.25% per annum for a member aged 20 and 3.00% per annum for a member aged 50.

Mortality

To take into account the improved life expectancy of Canadian pensioners as identified by the Canadian Institute of Actuaries in its Canadian Pensioners' Mortality Report released on February 13, 2014, this valuation report uses mortality table CPM-RPP2014Publ and mortality improvement scale CPM-B, varying by gender, age and calendar year. Furthermore, adjustment factors of 1.12 for males and 1.01 for females are applied to the mortality table to take into account retiree pension levels. The same adjustments are used for other members before and after retirement.

For existing disability pensioners, the mortality table adopted is the 1971 GAM Table. This table is the same as for the previous valuation for disabled pensioners and remains appropriate for this group of pensioners.

Rate of Increase in YMPE

We have continued to assume in this valuation that the YMPE will increase at the same rate as salary (before merit and promotional increase). As a result, we have used a rate of 2.75% per annum. The YMPE is automatically updated to its revised base level at each valuation date.

Retirement

The early retirement subsidies have changed for service after July 1, 2014. We estimate that members who are a few years from their retirement will not necessarily delay that date. We also estimate that those who are further from retirement will delay that date given the changes in the early retirement subsidies. As a result, we adopted retirement assumptions that vary depending on the number of years separating the member from the unreduced retirement age before the conversion. A member who is more than five years from the unreduced retirement date at the valuation data is expected to retire later on average than a member who is less than five years from that date. We will continue to monitor this assumption for reasonableness

OPINION ON FUNDING VALUATION

In our opinion, for the purposes of the funding 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; including an adjustment to the actuarial liability and normal cost to take into account the difference in the effective date of the membership data provided and the effective date of the valuation.

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

The assumptions used under the funding 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,

Conrad Ferguson, FSA, FCIA

October 28, 2014

Date

Yves Plourde, FSA, FCIA

October 28, 2014

Date

SECTION 2 – GOING-CONCERN VALUATION

The going-concern actuarial valuation is conducted in accordance with paragraph 16(1) of the TPPA in order to determine the maximum eligible employer contribution for the NBTPP under paragraph 147.2(2) of the *Income Tax Act (Canada)* ("ITA") and provide the required actuarial opinion.

The going-concern actuarial valuation results presented in this section are based on asset information found in Appendix A, membership data found in Appendix B, and plan provisions after the conversion to a plan allowed under the TPPA, as summarized under the Conversion Plan section of this report and Appendix D. The methods and assumptions used in the going-concern valuation are described later in this section.

GOING-CONCERN FUNDED STATUS

The funded status of the Plan on the going-concern basis is determined by comparing the actuarial value of the assets to the actuarial liabilities. The actuarial liabilities are based on the benefits earned up to the valuation date assuming the plan continues indefinitely. It also has a provision for future regular cost-of-living adjustments to be provided by the Trustees in accordance with the plan terms and the funding policy. Such a provision is acceptable under paragraph 147.2(2)(c) of the ITA.

TABLE 2.1 – GOING-CONCERN FUNDED STATUS

	January 1, 2014	April 1, 2012
	$M	$M
Actuarial value of assets		
Market value (including receivables / payables)	4,653.2	4,158.4
Actuarial liabilities		
Active members	2,449.4	1,636.5
Retirees and survivors	3,627.9	3,093.6
Deferred vested members	24.9	23.1
Total	6,102.2	4,753.2
Going-concern funding excess (unfunded liability)	(1,449.0)	(594.8)
Going-concern funded ratio	76.3%	87.5%

SENSITIVITY ANALYSIS ON THE GOING-CONCERN 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 going-concern actuarial liabilities. With the exception of the discount rate, all other assumptions and methods used for this valuation were maintained.

TABLE 2.2 – SENSITIVITY OF ACTUARIAL LIABILITIES ON THE GOING-CONCERN BASIS

	January 1, 2014	Discount rate 1% lower
	$M	$M
Actuarial liabilities		
Active members	2,449.4	3,065.0
Retirees and survivors	3,627.9	4,024.3
Deferred vested members	24.9	26.0
Total	6,102.2	7,115.3
Increase in actuarial liabilities		1,013.1

GOING-CONCERN RESIDUAL NORMAL COST

The table below summarizes the estimated going-concern residual normal cost of pension benefits being earned in the twelve-month period after the valuation date.

TABLE 2.3 – GOING-CONCERN RESIDUAL NORMAL COST

	As at January 1, 2014		As at April 1, 2012	
	$M	% of payroll	$M	% of payroll
Total normal cost	167.7	25.1	113.3	17.2
Less Member contributions	55.7	8.4	51.4	7.8
Residual normal cost	112.0	16.7	61.9	9.4
Estimated payroll for the year following	667.0		657.0	

SENSITIVITY ANALYSIS ON THE GOING-CONCERN RESIDUAL NORMAL COST

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

TABLE 2.4 – SENSITIVITY OF GOING-CONCERN RESIDUAL NORMAL COST

	As at January 1, 2014		Discount rate 1% lower	
	$M	% of payroll	$M	% of payroll
Total normal cost	167.7	25.1	218.5	32.8
Less Member contributions	55.7	8.4	55.7	8.4
Residual normal cost	112.0	16.7	162.8	24.4
Increase in residual normal cost			50.8	7.7

MAXIMUM ELIGIBLE EMPLOYER CONTRIBUTION UNDER THE INCOME TAX ACT

The maximum eligible employer contribution in accordance with the ITA is equal to the residual normal cost, plus the greater of the going-concern unfunded liability and the hypothetical wind-up deficiency. Under a plan allowed under the TPPA, the hypothetical wind-up liability will typically be nil. However, the anti-avoidance rule under Section 16 of Regulation 2012-75 may be triggered if a wind-up occurs in the first five years following the plan conversion allowed under the TPPA. For purposes of calculating the maximum eligible employer contribution, we have ignored the hypothetical wind-up deficiency that could exist for the first five years after conversion.

On the basis of the methods and assumptions in this report, the maximum eligible employer contribution for the year following January 1, 2014 is equal to $1,561.0M (representing $112.0M of residual normal cost and $1,449.0M of going-concern unfunded liability).

When spreading the going-concern unfunded liability over the next three years (period for which this going-concern valuation is valid under the PBA), the maximum eligible employer contribution for the three years following January 1, 2014 (ignoring interest and salary increases) would be as follows:

TABLE 2.5 – MAXIMUM ELIGIBLE EMPLOYER CONTRIBUTIONS SPREAD OVER THREE YEARS

Year following	Gong-Concern Unfunded Liability	Residual Normal Cost	Total	
	$M	$M	$M	% of payroll
January 1, 2014	483.0	112.0	595.0	89.2
January 1, 2015	483.0	106.4	589.4	88.4
January 1, 2016	483.0	103.1	586.1	87.9

Based on the above, the employer contribution requirements under the terms of the NBTPP of 12.0% of payroll (comprised of 9.75% of earnings in initial contributions, and 2.25% of earnings in temporary contributions) are eligible contributions under the ITA. Furthermore, should employer contributions be increased by a maximum of 1.5% of earnings as may be required under the Funding Policy if a deficit recovery plan is applied, those higher employer contributions would also be eligible contributions under the ITA up to the date of the next going-concern valuation scheduled for no later than January 1, 2017.

GOING-CONCERN VALUATION ACTUARIAL METHODS

The asset valuation method and the actuarial cost method under the going-concern valuation are identical to the asset valuation method and the actuarial cost method under the funding valuation. The going-concern valuation assumptions are also identical, except for the discount rate.

DISCOUNT RATE

In order to balance the need to fund intended benefits in a secure and responsible manner, while recognizing the necessity for CRA to monitor the impact of over-conservatism in assumptions, we developed a methodology to select an appropriate discount rate which we believe will balance those concerns. The discount rate selected is determined by using the nominal investment return expected from the long-term asset mix of the NBTPP over the next 20 years at its 75th percentile. This leads to a nominal discount rate of 5.00% per year.

OTHER GOING-CONCERN ACTUARIAL ASSUMPTIONS

All other assumptions in our going-concern valuation are identical to the assumptions used under the funding actuarial valuation detailed in Table 1.5 of Section 1 of this report, and the rationale for the choice of those assumptions also applies for the going-concern valuation.

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

OPINION ON GOING-CONCERN VALUATION

In our opinion, for the purposes of the going-concern 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; including an adjustment to the actuarial liability and normal cost to take into account the difference in the effective date of the membership data provided and the effective date of the valuation.

This going-concern valuation report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada.

The assumptions used under the going-concern valuation of this report were reasonable at the time this actuarial valuation report was prepared.

Respectfully submitted,

Conrad Ferguson, FSA, FCIA

October 28, 2014

Date

Yves Plourde, FSA, FCIA

October 28, 2014

Date

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 plan allowed under the TPPA, the Standards of Practice of the Canadian Institute of Actuaries require that actuarial valuation reports provide information with respect to hypothetical wind-up situations.

Section 16(3) of Regulation 2012-75 under the *Pension Benefits Act* prescribes that if a plan allowed under the TPPA 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 January 1, 2014, we therefore made the assumption that the conversion to a plan allowed under the TPPA would be void, and that the plan would be wound-up as at January 1, 2014 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 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 January 1, 2014.

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

	January 1, 2014	April 1, 2012
	$M	$M
Assets		
Market value of assets	4,653.2	4,158.0
Provision for expenses	(2.5)	(2.0)
Total	4,650.7	4,156.4
Hypothetical wind-up liabilities		
Active members	3,376.8	2,182.8
Retirees and survivors	4,678.7	4,441.7
Deferred vested members	11.0	8.2
Total	8,066.5	6,632.7
Assets less liabilities on the hypothetical wind-up basis	(3,415.8)	(2,476.3)

The hypothetical wind-up funded status is presented for information purposes. There is no requirement under the TPPA or PBA to fund the hypothetical wind-up deficit of the NBTPP 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

	January 1, 2014	Discount rates 1% lower
	$M	$M
Actuarial liabilities		
Active members	3,376.8	4,457.9
Retirees and survivors	4,678.7	5,285.3
Deferred vested members	11.0	13.4
Total	8,066.5	9,756.6
Increase in actuarial liabilities		1,690.1

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 January 1, 2014 to January 1, 2015, adjusted for expected benefit payments in the inter-valuation period. This incremental cost is estimated to be $269.4M as at January 1, 2014.

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.

In this valuation, the membership data provided was as at April 1, 2013. We therefore calculated the liability as of that date and projected it forward to the valuation date of January 1, 2014 in order to obtain the actuarial liability shown in this report. The projection of liability used the same methodology as the one used to calculate the incremental cost, but applied to the period from April 1, 2013 to January 1, 2014 (nine-month period).

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 TPA was not subject to the PBA before it was converted to the NBTPP, in the absence of specific direction to the contrary in the Former TPA, 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 indexing annuity purchases as at January 1, 2014.

The primary 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 estimate annuity purchase rates for indexed annuities after taking into account the escalation of pension provided by the plan.

TABLE 3.3 – HYPOTHETICAL WIND-UP ACTUARIAL ASSUMPTIONS

	January 1, 2014	April 1, 2012
Interest rate		
Interest rate for active members and deferred vested members under 55	3.93% per year (0.15% net)	2.6% per year (1.2% net) for 10 years, 4.1% (1.5% net) thereafter
Interest rate for retired members and those 55 and over	3.93% per year (0.15% net)	0.51% per year (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	$2,500,000	$2,000,000
Retirement	Age which maximizes the value of the pension	Age which 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 used for pensioners without adjustment, as 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.
- NBTPP conversion would be void and the 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, bankruptcy and eventual replacement by a third-party administrator.

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 January 1, 2014 and January 1, 2015, discounted to January 1, 2014;

Plus

2. Projected hypothetical wind-up liabilities as at January 1, 2015, discounted to January 1, 2014;

Less

3. Hypothetical wind-up liabilities as at January 1, 2014.

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; including an adjustment to the actuarial liability to take into account the difference in the effective date of the membership data provided and the effective date 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,

Conrad Ferguson, FSA, FCIA	Yves Plourde, FSA, FCIA
October 28, 2014	October 28, 2014
Date	Date

SECTION 4 – CONVERSION PLAN

The Former TPA was converted to the NBTPP effective July 1, 2014, subject to approval by the New Brunswick Office of the Superintendent of Pensions ("Superintendent").

The PBA sub-paragraph 100.6(2)(a)(i) (as amended by TPPA paragraph 7(2)) mandates that the Conversion Plan:

- demonstrate how existing benefits under the Former TPA are converted to benefits under the NBTPP;
- specify the base benefits and ancillary benefits under the NBTPP;
- specify the initial contributions of the employer and the members and the automatic change allowed by the funding policy; and
- demonstrate to the satisfaction of the Superintendent that the contributions are sufficient to pay for the projected base benefits and to meet the risk management goal under the TPPA.

CONVERSION OF BENEFITS

We provide below a table of the main benefit provisions of the Former TPA and how they are treated for purposes of the conversion to the NBTPP. The table below deals with the benefits earned before July 1, 2014, effective date of the conversion.

TABLE 4.1 – SUMMARY OF CHANGE IN BENEFIT PROVISIONS FOR SERVICE PRIOR TO JULY 1, 2014

Provision	Under Former TPA	Under NBTPP
Normal retirement age	Age 65 with 5 years of pensionable service	Age 65, with 5 years of continuous service or 2 years of pensionable service or plan membership
Earliest retirement age	80 points, or age 60 with 5 years of pensionable service	80 points, or age 55 with 5 years of continuous service or 2 years of pensionable service or plan membership
Earliest unreduced retirement age	87 points; Age 60 with 20 years of pensionable service; 35 years of pensionable service; or Age 65 with 5 years of pensionable service	87 points; Age 60 with 20 years of pensionable service; 35 years of pensionable service; or Age 65, with 5 years of continuous service or 2 years of pensionable service or plan membership

Early retirement reduction factor	5/12% per complete month that pension commences before the unreduced retirement age indicated above, applied to both the lifetime pension and bridge benefit	5/12% per complete month that pension commences before the unreduced retirement age indicated above, applied to both the lifetime pension and bridge benefit
Lifetime pension	1.3% of the annual average of the best five (5) consecutive years of earnings up to the annual average YMPE for the year of termination or retirement and the two preceding years plus 2.0% of the excess of the annual average of the best five (5) consecutive years of earnings over the annual average YMPE for the year of termination or retirement and the two preceding years, times pensionable service	1.3% of the annual average of the best five (5) consecutive years of earnings before July 1, 2014, up to the annual average YMPE for years 2014, 2013 and 2012, plus 2.0% of the excess of the annual average of the best five (5) consecutive years of earnings before July 1, 2014 over the annual average YMPE for years 2014, 2013 and 2012, times pensionable service up to July 1, 2014
Bridge benefit to age 65	0.7% of the lesser of the annual average of the best five (5) consecutive years of earnings and the annual average YMPE for the year of termination or retirement and the two preceding years, times pensionable service	0.7% of the annual average of the best five (5) consecutive years of earnings before July 1, 2014, up to the annual average YMPE for years 2014, 2013 and 2012, times pensionable service up to July 1, 2014
Maximum lifetime pension for service after December 31, 1991	In accordance with the provisions of the ITA for service after December 31, 1991	Defined benefit limit of $2,770.00 per year of service from December 31, 1991 to July 1, 2014 (non-contributory service purchased after December 31, 1991 for a period before January 1, 1990 is subject to a defined benefit limit of 2/3rd of the above limit)

Normal form of pension	The pension is payable for the member's lifetime, with 50% of the lifetime pension (before application of reductions for early retirement) continues after the member's death to his/her spouse or common-law partner at the time of the member's death, for the spouse or common law partner's remaining lifetime. Dependent children pensions are also payable after the spouse or common-law partner's death, or if there is no spouse or common-law partner upon the member's death. The bridge benefit is only payable while the member is alive and ceases at age 65. A minimum amount equal to the member's contributions with interest is payable.	The pension is payable for the member's lifetime, with 50% of the lifetime pension (before application of reductions for early retirement) continues after the member's death to his/her spouse or common-law partner at the time of the member's death, for the spouse or common law partner's remaining lifetime. Dependent children pensions are also payable after the spouse or common-law partner's death, or if there is no spouse or common-law partner upon the member's death. The bridge benefit is only payable while the member is alive and ceases at age 65. A minimum amount equal to the member's contributions with interest is payable.
Optional forms of pension	Various forms available on an actuarially equivalent basis to the normal form of pension for a member with a spouse or common-law partner.	Various forms available on an actuarially equivalent basis to the normal form of pension for a member with a spouse or common-law partner.
Indexing of pension for retirees (including surviving spouses and dependent children), the disability pension and deferred vested members	Automatic annual increase equal to the increase in the Consumer Price Index (CPI), subject to a maximum of 4.75% (or 6.0% for members who reached age 60 and were still employed on May 1, 1995 or for members who were approved before May 1, 1995 to retire under an early retirement program and former members who ceased employment before May 1, 1995). Increases of less than 1% were delayed until the increase in the CPI justified an increase of more than 1%.	Indexing on January 1, 2015 is provided at 0.96%, plus regular indexing of 75% of the increase in the Consumer Price Index (CPI), to a maximum of 4.75%. Regular indexing after that date is 75% of the increase in the CPI to a maximum of 4.75%, contingent on NBTPP financial condition as outlined in the NBTPP Funding Policy, subject to ITA limits. Regular indexing is subject to a prorated adjustment to reflect the months of retirement during the 12 months for retirees in 2014. In addition, the 0.96% indexing indicated above only applies to retirees as at December 31, 2013.

Indexing of active members accrued pensions	Not applicable – pension benefit is of a final average nature, there is no need to index accrued pensions while active. Increases in earnings provide implicit automatic indexing.	Regular indexing of pensions accrued on July 1, 2014 is 50% of the increase in the CPI subject to a maximum of 4.75% and granted on January 1, 2015, and regular indexing after that date is 100% of the increase in the CPI subject to a maximum of 4.75%, contingent on NBTPP financial condition as outlined in NBTPP Funding Policy, subject to ITA limits.
Termination of Employment	With less than five years of pensionable service: • refund of member's own contributions with interest. With five years of pensionable service or more: • refund of member's own contributions with interest, or • the accrued deferred pension and bridge benefit, indexed prior to retirement. Deferred pensions and bridge benefits can start as early as the conditions of one of the early retirement rules are met, subject to the usual early retirement reductions described above.	With less than 5 years of continuous service and less than 2 years of pensionable service or plan membership: • refund of member's own contributions with interest. With 5 years of continuous service or 2 years of pensionable service or plan membership: • the accrued deferred pension and bridge benefit subject to future contingent indexing in accordance with terms of NBTPP; or • a transfer of the Termination Value to a prescribed retirement savings arrangement under the PBA. The Termination Value will not be less than a member's own contributions with interest. Deferred pensions and bridge benefits can start as early as age 55, or upon meeting the conditions of one of the early retirement rules, if earlier, subject to the usual early retirement reductions described above.

Pre-retirement death	With less than five years of pensionable service: • refund of member's own contributions with interest. With five years of pensionable service or more: • payment of a pension of 50% of the accrued lifetime pension (before application of early retirement reduction) continues after the member's death to his/her spouse or common-law partner at the time of the member's death, for the spouse or common law partner's remaining lifetime. Dependent children pensions are also payable after the spouse or common-law partner's death, or if there is no spouse or common-law partner upon the member's death; or • refund of member's own contributions with interest, if the member has no spouse or common-law partner, or dependent children or dependents upon the member's death.	With less than 5 years of continuous service and less than 2 years of pensionable service or plan membership: • refund of member's own contributions with interest. With 5 years of continuous service or 2 years of pensionable service or plan membership: • payment of a pension of 50% of the accrued lifetime pension (before application of early retirement reduction) continues after the member's death to his/her spouse or common-law partner at the time of the member's death, for the spouse or common law partner's remaining lifetime. Dependent children pensions are also payable after the spouse or common-law partner's death, or if there is no spouse or common-law partner upon the member's death. Any amount by which the Termination Value, as defined under the PBA, exceeds the aggregate of all pension payments made, shall be paid to the last recipient of the survivor pension, or his/her estate; or • refund of member's own contributions with interest, if the member has no spouse or common-law partner, or dependent children or dependents upon the member's death.

The table below provides a summary of the benefit provisions under the NBTPP for service on and after July 1, 2014:

TABLE 4.2 – SUMMARY OF NBTPP BENEFIT PROVISIONS FOR SERVICE ON AND AFTER JULY 1, 2014

Provision	Under NBTPP
Normal retirement age	Age 65, with 5 years of continuous service or 2 years of pensionable service or plan membership
Earliest retirement age	- if a member of the Former TPA before July 1, 2014: 80 points, 35 years of pensionable service, or age 55 with 5 years of continuous service or 2 years of pensionable service or plan membership - if a new member after July 1, 2014: 84 points, 35 years of pensionable service, or age 55 with 5 years of continuous service or 2 years of pensionable service or plan membership -
Earliest unreduced retirement age	91 points; age 62 with 20 years of pensionable service; 35 years of pensionable service; or age 65 with 5 years of continuous service or 2 years of pensionable service or plan membership
Early retirement reduction	5/12% per complete month (5% per year) that pension commences before the earliest unreduced pension age
Postponed retirement	Continue pension accrual and contributions until postponed retirement date. Pension commencement no later than the end of the calendar year in which the member reaches age 71.
Lifetime pension	For each year of service (or part thereof), 1.3% of the Member's annualized earnings up to the YMPE for the year, plus 2.0% of the excess of the Member's annualized earnings over the YMPE for the year, pro-rated by the number of teaching hours worked during the year compared to the full-time equivalent teaching hours.
Bridge benefit	For each year of service (or part thereof), 0.7% of the Member's annualized earnings up to the YMPE for the year, pro-rated by the number of teaching hours worked during the year compared to the full-time equivalent teaching hours.
Maximum lifetime pension for ITA purposes	Accrual for each year limited to the defined benefit limit for the year under the ITA.

Normal form of pension	The pension is payable for the member's lifetime, with 50% of the lifetime pension (before application of reductions for early retirement) continuing after the member's death to his/her spouse or common-law partner at the time of the member's death, for the spouse or common law partner's remaining lifetime. Dependent children pensions are also payable after the spouse or common-law partner's death, or if there is no spouse or common-law partner upon the member's death. The bridge benefit is only payable while the member is alive and ceases at age 65. A minimum amount equal to the member's contributions with interest is payable.
Optional forms of pension	Various forms available on an actuarially equivalent basis to the normal form of pension for a member with a spouse or common-law partner.
Indexing of accrued lifetime pension and bridge benefit for active members, deferred vested members, and pensions in payment for retirees (including surviving spouses and dependent children)	Regular indexing before termination of employment is 100% of the increase in the CPI subject to a maximum of 4.75%, granted on January 1 of each year on the accrued pension at January 1 of the prior year, contingent on NBTPP financial condition as outlined in the NBTPP Funding Policy, subject to ITA limits. Regular indexing after termination of employment is 75% of the increase in the CPI subject to a maximum of 4.75%, granted on January 1 of each year on the accrued pension at January 1 of the prior year (including pensions to surviving spouses and dependent children), contingent on NBTPP financial condition as outlined in the NBTPP Funding Policy, subject to ITA limits.
Termination of Employment	With less than 5 years of continuous service and less than 2 years of pensionable service or plan membership: • refund of member's own contributions with interest. With 5 years of continuous service or 2 years of pensionable service or plan membership: • the accrued deferred pension and bridge benefit subject to future regular contingent indexing in accordance with terms of NBTPP; or • a transfer of the Termination Value to a prescribed retirement savings arrangement under the PBA. The Termination Value will not be less than the member's own contributions with interest.

Pre-retirement death	With less than 5 years of continuous service and less than 2 years of pensionable service or plan membership: • refund of own contributions, with interest. With 5 years of continuous service or 2 years of pensionable service or plan membership: • payment of a pension of 50% of the accrued lifetime pension (before application of early retirement reduction) continues after the member's death to his/her spouse or common-law partner at the time of the member's death, for the spouse or common law partner's remaining lifetime. Dependent children pensions are also payable after the spouse or common-law partner's death, or if there is no spouse or common-law partner upon the member's death. Any amount by which the Termination Value exceeds the aggregate of all pension payments made above, shall be paid to the last recipient of the survivor pension, or his/her estate; or • refund of the member's own contributions with interest, if the member has no spouse or common-law partner, or dependent children or dependents upon death.
Benefit Security	The NBTPP was constructed to achieve a high degree of benefit security but not absolute security. As a result, benefits may be reduced in accordance with the terms of the Funding Policy as part of the funding deficit recovery plan in the unlikely event that the plan's experience is such that reductions are required.

BASE BENEFITS AND ANCILLARY BENEFITS

The table below identifies various benefit provisions and whether they are part of the Base Benefit or an Ancillary Benefit, as defined under the PBA.

TABLE 4.3 – IDENTIFICATION OF BASE AND ANCILLARY BENEFITS

Provision	Base Benefit or Ancillary Benefit
Normal retirement age	Base Benefit
Early retirement reduction	As per the definition under Section 100.2 of the PBA, it is an Ancillary Benefit, becoming a Base Benefit once the member reaches eligibility for an immediate pension.
Lifetime pension	Base Benefit
Bridge benefit	As per the definition under Section 100.2 of the PBA, it is an Ancillary Benefit, becoming a Base Benefit once the member reaches eligibility for an immediate pension.
Normal form of pension	As per the definition under Section 100.2 of the PBA, it is an Ancillary Benefit, becoming a Base Benefit once the member reaches eligibility for an immediate pension.
Indexing of accrued lifetime pension and bridge benefit for active members, deferred vested members, and pensions in payment for retirees (including surviving spouses and dependent children) and disability pensions	As per the definition under Section 100.2 of the PBA, it is an Ancillary Benefit when talking about future potential increases, and a Base Benefit, once indexing is granted.

You will find below a summary of other plan provisions that are changing effective July 1, 2014.

TABLE 4.4 – SUMMARY OF OTHER CHANGING PROVISIONS

Provision	**Before July 1, 2014 Under Former TPA**	**On and After July 1, 2014 Under NBTPP**
Administrator	Minister of Finance	Board of Trustees
Member contributions *	7.3% of earnings up to the YMPE, 9.0% of earnings in excess of the YMPE	From July 1, 2014 to June 30, 2015: 8.5% of earnings up to the YMPE, 10.2% of earnings in excess of the YMPE From July 1, 2015 to June 30, 2016: 9.0% of earnings up to the YMPE, 10.7% of earnings in excess of the YMPE From July 1, 2016 to June 30, 2017: 9.5% of earnings up to the YMPE, 11.2% of earnings in excess of the YMPE From July 1, 2017 to June 30, 2029: 10.0% of earnings up to the YMPE, 11.7% of earnings in excess of the YMPE After July 1, 2029: formula designed to obtain about 9.25% of earnings up to the YMPE, 10.95% of earnings in excess of the YMPE, as established in the Funding Policy.
Employer contributions *	In accordance with Section 26 of Former TPA	From July 1, 2014 to June 30, 2019: 11.5% of earnings up to the YMPE, 13.2% of earnings in excess of the YMPE From July 1, 2019 to June 30, 2024: 10.75% of earnings up to the YMPE, 12.45% of earnings in excess of the YMPE From July 1, 2024 to June 30, 2029: 10.0% of earnings up to the YMPE, 11.7% of earnings in excess of the YMPE After July 1, 2029: amount equal to member contributions

** Member and Employer contributions on and after July 1, 2014 are subject to change in accordance with the terms of the Funding Policy, based on the funded level of the plan.*

CONTRIBUTION RATES AND AUTOMATIC CHANGES

The contribution rates for the members and the employer are as summarized in the previous section. All those rates are subject to change in accordance with the terms of the Funding Policy. We reproduce below the relevant section of the Funding Policy related to initial contribution rates and automatic adjustments.

TABLE 4.5 – EXCERPT FROM FUNDING POLICY – "SECTION III – CONTRIBUTIONS"

III. CONTRIBUTIONS

The contributions required by the Plan include the contribution schedule agreed to by the Parties and contribution adjustments as may be required by the Funding Policy. The contribution schedule includes an allowance above the normal cost of the Plan to provide for the accumulation of a Contingency Reserve.

A. Teacher and Employer Contributions

The contribution rates for the 15-year period starting with the Conversion Date are as shown below. The contribution rates for year 16 and later are as defined below the table. The "Employer" for purposes of this Funding Policy includes the Province and any entity that employs a teacher eligible to participate in the Plan.

TABLE III.1 - Schedule of Contributions Agreed to by Parties

Year	Teachers			Employer		
	Below YMPE	Above YMPE	Approx. Average	Below YMPE	Above YMPE	Approx. Average
1	8.5%	10.2%	9.0%	11.5%	13.2%	12.00%
2	9.0%	10.7%	9.5%	11.5%	13.2%	12.00%
3	9.5%	11.2%	10.0%	11.5%	13.2%	12.00%
4	10.0%	11.7%	10.5%	11.5%	13.2%	12.00%
5	10.0%	11.7%	10.5%	11.5%	13.2%	12.00%
6 to 10	10.0%	11.7%	10.5%	10.75%	12.45%	11.25%
11 to 15	10.0%	11.7%	10.5%	10.00%	11.70%	10.50%
16 and	As defined below			As defined below		

Effective as of the date that is 15 years after the Conversion Date, contributions shall be reset as set out below.

(a) The aggregate contribution amount shall be determined as follows:

The average Teacher contribution rate produced by the Teacher contribution formula of 9.25% of Earnings for Earnings up to the YMPE and 10.95% of Earnings above the YMPE shall be determined at such time and 9.75% shall be added to such amount. The sum shall then be divided by two (each a "**Contribution Amount**").

(b) the aggregate contribution amount shall be split as follows:

(i) The new Teacher contribution rate shall be determined by adjusting the Contribution Amount below and above the YMPE as appropriate at that time; and

(ii) The Employer will match Teacher contributions by contributing the Contribution Amount.

Subject to paragraph B.3 below, these contribution rates are to remain as shown in the table, unless altered by:

- Contribution adjustments triggered under the Funding Policy;
- A reduction required under the Income Tax Act (the "**ITA**");
- A permanent benefit change resulting in a contribution rate change as may be agreed to by the Parties and subject to the requirements of the Pension Benefits Act ("**PBA**"), Regulation 2012-75 under the PBA (the "**Regulation**"), TPPA and the ITA;
- Other changes to the Plan beyond those contemplated by this Funding Policy and only if agreed to by the Parties and subject to the requirements of the PBA, Regulation, TPPA and the ITA.

B. Contribution Adjustments

Adjustments to the contribution rates in Table III.1 shall be made by the Board of Trustees based on the conditions set out below.

1. *Contribution Rate Increases*

The Board of Trustees must trigger an equal increase in the Teacher and Employer contribution rates of up to 1.5% of Earnings (3% total) if the following conditions are met:

- the closed group funded ratio of the Plan, as defined by the TPPA, falls below 100%,; and

- the required increase in contributions exceeds 1% of payroll (0.5% each for Teachers and the Employer), taking into account contributions in excess of the funding normal cost over 15 years.

The calculation above shall be based on a three year moving average of the results.

If the above conditions are met, the contributions shall be increased in steps as shown in Table III.2 below.

Table III.2 – Contribution Increases

Amount of required Funding Correction	Increase in Teacher Contributions	Increase in Employer Contributions	Total Increase in Contributions
Between 1.00% and 1.24%	0.50%	0.50%	1.00%
Between 1.25% and 1.74%	0.75%	0.75%	1.50%
Between 1.75% and 2.24%	1.00%	1.00%	2.00%
Between 2.25% and 2.74%	1.25%	1.25%	2.50%
2.75% and above	1.50%	1.50%	3.00%

The contribution rates increase shall take effect no later than twelve (12) months following the funding valuation date that triggered the need for the contribution rates increase. The contribution rates increase shall be removed no later than twelve (12) months following a funding valuation date that reveals that the Plan's contribution rates as specified in Table III.1, or the contributions under section B.4 below if applicable, are sufficient to fully fund any unfunded liability over no more than 15 years.

As mentioned in the Funding Deficit Recovery Plan in Section IV, if the maximum increased contributions are in effect for six consecutive years and no additional Funding Corrections have been implemented, the escalated adjustments shall be reduced as described below in Section IV to a level that produces a financial result equivalent to the level of contribution rate increases.

2. *Contribution Rate Reduction*

The Board of Trustees shall trigger a reduction in contribution rates if a valuation reveals a funding level of greater than 115%. The reduction in contribution rates shall take effect no later than twelve (12) months following the funding valuation date that triggered the need for the change.

Both the Employer contribution rate and the Teacher contribution rate shall be decreased in equal amounts of up to 1.5% of Earnings each.

The reduction in contribution rates shall be removed no later than twelve (12) months following a funding valuation date that reveals a closed group funded ratio below 110%.

3. *Contribution Rate – Change in Plan Membership*

A change in membership not contemplated when the plan was established could have a material impact on future plan performance, positively (if membership is increased) and negatively (if membership is decreased). As a result, it is prudent for the Board of Trustees to test the impact on required contributions of a material change in membership and inform the Parties of the results.

Consequently, if at any time, the Province announces an increase or a decrease in the number of Teachers employed of more than 5% over a period not exceeding 5 years, the contribution rates defined in Table III.1 shall be re-calculated. Such re-calculation shall be completed by no later than the end of the year following the filing of the next funding valuation and reported to the Parties and the Superintendent.

C. Income Tax Act Limit

In the event that all actions contemplated under the Funding Excess Utilization Plan in Section V have been implemented and the contributions to the Plan still exceed the limit allowed under the ITA, then the contribution rates shall be further reduced for both the Teachers and the Employer to the limit allowed under the ITA.

D. Sharing of Contributions

All contributions shall be shared between Teachers and the Employer based on the rules set out above. Contribution holidays may only be taken in the event they are required under the ITA. In the unlikely event that the ITA required a contribution holiday, the contribution holiday would apply equally to both Teachers and the Employer; provided that if the Employer contribution rate is in excess of the Teachers contribution rate at the time of such contribution holiday, any such contribution holidays must be applied first to the Employer contributions until such time as the Employer and Teachers contributions are equal. Once the contribution levels are equal, any further contribution decreases shall be applied equally to the Teachers and the Employer.

E. Expenses

All expenses pertaining to the administration and investment of the Plan and Fund shall be paid by the Fund, unless otherwise agreed by the Parties. For the purposes of the risk management procedures, the funding policy discount rate is set net of all assumed Plan expenses.

MEETING RISK MANAGEMENT GOAL

The NBTPP was designed to achieve or exceed the risk management goal prescribed under the TPPA. Certain procedures were developed to test whether this goal can be achieved. The goal and procedures are described separately below, along with the relevant results of the stochastic analysis required under the TPPA as at January 1, 2014.

Risk Management Goal

The risk management goal is to achieve a 97.5% probability that past base benefits at the end of each year 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 IV and V of the Funding Policy, respectively.

For the purposes of meeting this goal, base benefits include the accrual of extra service of members and any regular indexing insofar as it is 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 regular 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 goal is 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 goal 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 IV of the Funding Policy is implemented in sequence until such time as the Plan expects to achieve a closed group funded ratio of 100% over a period of no more than 15 years. A "benefit reduction trial" is recorded (for purposes of the risk management goal calculation) when step 6 of the funding deficit recovery plan found in Section IV 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 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 2.00% per year for a period of 5 years following April 1, 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 2.00% per year for a period of 5 years following April 1, 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 4.6.

The risk management goal was tested as at January 1, 2014, the valuation date allowed under the TPPA (up to six months prior to the effective date of July 1, 2014). The results of this test 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 risk management goal must be achieved or exceeded:

- At January 1, 2014 (i.e., the Conversion 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 excluding any catch-up related to the level of regular indexing; or
- At the date the contribution adjustments exceeding those set out in the Funding Policy are applied.

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, other than an improvement in scheduled escalated adjustments, or an increase in other ancillary benefits allowed under the funding policy.

ADDITIONAL ASSUMPTIONS ON A FUNDING BASIS FOR THE PURPOSE OF THE STOCHASTIC ANALYSIS

Other assumptions are needed for the stochastic analysis required under the risk management procedures for the plan. These additional assumptions are used to establish future Plan membership as well as future earnings, so as 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 for the next 20 years. These cash flows are calculated on a deterministic basis for each year following the valuation date for a period of 20 years, and allow the determination of the funding actuarial liability and assets at each future date, as well as the present value of possible future funding corrections set out in the funding policy.

TABLE 4.6 – ADDITIONAL ASSUMPTIONS FOR PURPOSE OF THE STOCHASTIC ANALYSIS

			January 1, 2014
New entrants	Active members are replaced at death or retirement by new entrants such that the total active population under the NBTPP reduces by 2.00% per year for a period of 5 years following April 1, 2013, and remains stable thereafter.		
Distribution of new entrants and salary at entry	Age	Distribution	Average Salary at Entry
	25	50,0%	$51,500
	30	40,0%	$51,500
	35	10,0%	$51,500
Inflation			2.25%
Salary increases			2014:2.00% 2015+:2.75% plus merit and promotions as described under the funding valuation
YMPE increases			2.75%

RESULTS OF STOCHASTIC ANALYSIS AS AT JANUARY 1, 2014

The stochastic analysis undertaken as at January 1, 2014, took into account the main following items:

- Membership Data as at April 1, 2013 summarized in Appendix B;
- Economic and demographic assumptions as at January 1, 2014 for the funding valuation summarized in Section 1 and the additional assumptions in Table 4.6;
- Pension fund target asset mix as summarized in Table A.3 of Appendix A;
- Stochastic projection assumptions as summarized in Appendix C;
- Risk management procedures described above;
- NBTPP provisions, after plan conversion, in accordance with the Conversion Plan of this Section 4, and summarized in Appendix D;
- Funding deficit recovery plan found under Section IV of the NBTPP's Funding Policy (except for reduction in past base benefits);
- Funding excess utilization plan found under Section V of the NBTPP's Funding Policy (excluding permanent benefit changes).

Based on the above, the results of the stochastic analysis for the risk management goal as at January 1, 2014 is as follows:

TABLE 4.7 – RISK MANAGEMENT GOAL

	Minimum Requirement under TPPA	Result for NBTPP as at January 1, 2014
Risk Management Goal [Paragraph 11(1) of TPPA] - 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%	98.3% PASSED

As indicated in the table above, the risk management goal under the TPPA was achieved as at January 1, 2014, since the 98.3% probability exceeds the minimum requirement of 97.5% under the TPPA.

APPENDIX A – ASSETS

DESCRIPTION OF PLAN ASSETS

As at December 31, 2013, the assets of the plan were held in a trust fund and were being managed by the New Brunswick Investment Management Corporation (NBIMC). The NBIMC provided the information on fund assets as at December 31, 2013.

CHANGES TO PLAN ASSETS

The following table shows changes to the Former TPA assets during the inter-valuation period, based on market values. The reconciliation from April 1, 2012 to April 1, 2013 is based on the audited financial statements issued by the NBIMC, while the reconciliation from April 1, 2013 to December 31, 2013 was obtained from unaudited statements provided to us by the NBIMC adjusted for payables and receivables as at December 31, 2013.

TABLE A.1 – RECONCILIATION OF ASSETS ITEMS

	April 1, 2013 to December 31, 2013 $M	April 1, 2012 to March 31, 2013 $M
Assets at beginning of period	$4,448,5	$4,158,4
Receipts		
Member contributions	36.4	47.9
Employer contributions	31.4	46.1
Employer special contributions	0.0	98.6
Investment income plus realized and unrealized capital appreciation and depreciation	346.4	370.6
Total receipts	$414.2	$563.2
Disbursements		
Pensions paid and refunds	203.0	265.6
Expenses (fees)	6.5	7.5
Total disbursements	$209.5	$273.1
Assets at end of period	$4,653.2	$4,448.5

RETURN ON ASSETS

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.2 – NET INVESTMENT RETURN

Year	%
April 1, 2012 to March 31, 2013	9.2%
April 1, 2013 to December 31, 2013 (nine months – not annualized)	8.1%

TARGET ASSET MIX UNDER THE PLAN

The Statement of Investment Policies for the NBTPP, as adopted by the Board of Trustees, provides for the following long term target asset mix.

TABLE A.3 – TARGET ASSET MIX

	Target Allocation (%)
Asset classes	
Fixed income	
Short term assets	1.50%
Government bonds	27.00%
Corporate bonds	11.50%
Real return bonds	9.00%
Public Equity	
Canadian equities (allocation split equally between standard and low-volatility strategies)	10.33%
US equities (allocation split equally between standard and low-volatility strategies)	10.33%
EAFE equities (allocation split equally between standard and low-volatility strategies)	10.34%
Private Equity	5.00%
Absolute return strategy	5.00%
Real estate and infrastructure	10.00%
Total	100.00%

This target asset mix was used to conduct the stochastic analysis required under the NBTPP to assess the risk management goal.

APPENDIX B – MEMBERSHIP DATA

DESCRIPTION OF MEMBERSHIP DATA

Data on Plan membership was obtained from the PIBA pension system maintained by the Pensions and Employee Benefits Division of the Office of Human Resources. The data was provided as at April 1, 2013.

The data was matched and reconciled with the data provided for the previous valuation as at April 1, 2012. 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.

Finally, we have taken the following additional steps to review data for accuracy, completeness and consistency purposes:

- A reconciliation of data was performed in order to follow the changes concerning some of the active members, retirees and vested members.
- Basic data checks were performed to ensure that age, salary and service data were reasonable for the purposes of the valuation.

The effective date of the conversion to a plan allowed under the TPPA is July 1, 2014. The TPPA allows a valuation six months before the conversion date. As a result, the effective date of the initial actuarial valuation is January 1, 2014. The actuarial valuation results obtained using April 1, 2013 data was therefore projected forward for nine months.

Any differences between the above projection and the use of actual January 1, 2014 data was deemed immaterial for the purposes of the actuarial valuations.

SUMMARY OF MEMBERSHIP DATA

The following tables were prepared using data provided by the Pensions and Employee Benefits Division regarding its active members, retirees and former members. Tables B.5 and B.6 do not reflect cost-of-living adjustments awarded at January 1, 2014. However, actuarial liabilities presented throughout this report on the various bases reflect the cost-of-living adjustment of 0.96% for retirees and deferred pensions to be granted at January 1, 2015 (related to the cost of living at 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 April 1, 2013
- B.4 Summary of Part-time Membership Data as at April 1, 2013
- B.5 Distribution of Retirees by Age Groups as at April 1, 2013
- B.6 Distribution of Deferred Pensioners by Age Groups as at April 1, 2013

TABLE B.1 –SUMMARY OF MEMBERSHIP DATA

		April 1, 2013	April 1, 2012
Active members	Number	9,145	9,148
	Total covered payroll	$666,686,700	$661,633,200
	Average salary	$72,900	$72,300
	Average age	41.8 years	41.5 years
	Average credited service	12.1 years	11.9 years
Deferred vested members	Number	40	42
	Average accrued annual pension	$12,200	$10,800
	Average age	52.9 years	53.2 years
Retirees and survivors	Number	8,562	8,426
	Average annual pension	$31,100	$30,500
	Average age	69.4 years	69.0 year
Suspended members	Number	796	847
	Average annual pension	$10,500	$10,500
	Average age	48.7 years	47.5 years

TABLE B.2 – CHANGES IN PLAN MEMBERSHIP

	Active Members	Deferred Vested Members	Retirees and Survivors	Suspended Members	Total
Members at April 1, 2012	9,148	42	8,426	847	18,463
New members	248	0	0	5	253
Retirements	(222)	(10)	237	(5)	0
Members who returned to active	68	0	0	(68)	0
Terminations					
with refunds or transfers out	(33)	0	0	(36)	(69)
with deferred pensions	(5)	8	0	(3)	0
suspended	(56)	0	0	56	0
Deaths					
with no continuing benefits	0	0	(105)	0	(105)
with survivors	(3)	0	(46)	0	(49)
New survivor pensions	0	0	50	0	50
Data adjustments	0	0	0	0	0
Members at April 1, 2013	9,145	40	8,562	796	18,543

TABLE B.3 – AGE/SERVICE DISTRIBUTION FOR ACTIVE MEMBERS AS AT APRIL 1, 2013

		Age									
Years of Service		Under 25	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 and over	Total
0 - 4	Number	37	637	548	235	178	107	72	49	29	1892
	Tot. Sal.	1,752,961	35,441,642	33,680,697	15,263,247	11,940,427	7,296,833	5,078,330	3,621,029	2,054,916	116,130,082
	Avg. Sal.	47,377	55,638	61,461	64,950	67,081	68,195	70,532	73,899	70,859	61,379
5 - 9	Number	0	148	919	579	316	164	98	48	22	2294
	Tot. Sal.	0	9,423,060	63,286,688	42,053,769	22,881,415	12,008,907	7,103,559	3,500,371	1,626,511	161,884,279
	Avg. Sal.	0	63,669	68,865	72,632	72,410	73,225	72,485	72,924	73,932	70,569
10 - 14	Number	0	0	50	652	630	236	125	78	22	1793
	Tot. Sal.	0	0	3,867,434	50,710,753	48,352,571	18,131,835	9,596,429	5,916,241	1,624,961	138,200,225
	Avg. Sal.	0	0	77,349	77,777	76,750	76,830	76,771	75,849	73,862	77,078
15 - 19	Number	0	0	0	83	514	244	107	72	32	1052
	Tot. Sal.	0	0	0	6,700,816	40,706,682	19,159,682	8,332,731	5,524,153	2,424,291	82,848,356
	Avg. Sal.	0	0	0	80,733	79,196	78,523	77,876	76,724	75,759	78,753
20 - 24	Number	0	0	0	0	131	538	283	136	51	1139
	Tot. Sal.	0	0	0	0	10,162,611	42,705,372	22,197,382	10,500,311	3,948,233	89,513,909
	Avg. Sal.	0	0	0	0	77,577	79,378	78,436	77,208	77,416	78,590
25 - 29	Number	0	0	0	0	0	134	397	122	29	682
	Tot. Sal.	0	0	0	0	0	10,682,369	31,882,298	9,629,075	2,242,611	54,436,353
	Avg. Sal.	0	0	0	0	0	79,719	80,308	78,927	77,331	79,819
30 - 34	Number	0	0	0	0	0	0	91	158	11	260
	Tot. Sal.	0	0	0	0	0	0	7,393,259	12,656,349	931,762	20,981,370
	Avg. Sal.	0	0	0	0	0	0	81,245	80,103	84,706	80,698
35 et plus	Number	0	0	0	0	0	0	0	19	14	33
	Tot. Sal.	0	0	0	0	0	0	0	1,559,151	1,133,001	2,692,151
	Avg. Sal.	0	0	0	0	0	0	0	82,061	80,929	81,580
Total number		37	785	1517	1549	1769	1423	1173	682	210	9145
Total salaries		1,752,961	44,864,702	100,834,820	114,728,585	134,043,707	109,984,997	91,583,988	52 906 680	15,986,285	666,686,724
Average of salaries		47,377	57,152	66,470	74,066	75,774	77,291	78,077	77 576	76,125	72,902

Average age: 41.8 years

Average number of years of service: 12.1 years

Notes:

The age is computed at the nearest birthday.

The salary used is the estimated salary rate as at April 01, 2013. The estimated salary rate was obtained by increasing the annualized earned salary for the year preceding the valuation by the salary increase assumption and applicable merit and promotion adjustment.

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

Membership for active members is composed of 2,156 males and 6,989 females.

TABLE B.4 – DISTRIBUTION OF RETIREES AND SURVIVORS BY AGE GROUPS AS AT APRIL 1, 2013

		Total Annual Payments	
Age Group	**Number**	**Lifetime**	**Bridge**
Under 55	81	$1,491,300	$289,900
55 - 59	768	$23,820,400	$6,923,200
60 - 64	2,205	$62,035,900	$19,503,800
65 - 69	2,135	$58,641,900	---
70 - 74	1,412	$40,044,800	---
75 - 79	852	$24,340,500	---
80 - 84	539	$15,239,500	---
85 and over	570	$13,591,600	---
Total	8,562	$239,205,800	$26,716,900

Average age: 69.4 years
Note: Age groups are based on exact age. The pension used is the pension payable as at April 1, 2013. Membership for pensioners is composed of 3,089 males and 5,473 females.

TABLE B.5 – DISTRIBUTION OF DEFERRED PENSIONERS BY AGE GROUPS AS AT APRIL 1, 2013

		Total Annual Payments	
Age Group	**Number**	**Lifetime**	**Bridge**
Under 50	11	$78,300	$30,000
50 - 54	7	$62,100	$24,000
55 - 59	21	$211,500	$76,200
60 and over	1	$5,400	$0
Total	40	$357,300	$130,200

Average age: 52.9 years
Note: Age groups are based on exact age. Membership for deferred pensioners is composed of 9 males and 31 females.

APPENDIX C – STOCHASTIC PROJECTIONS 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. Purchasing power parity is assumed in setting foreign equity return assumptions. 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 January 1, 2014:

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		
Short term assets (ST)	1.65%	1.5%
Government bonds (GB)	3.05%	6.6%
Corporate bonds (CB)	3.70%	5.3%
Public Equity		
Canadian equities (Can E)	7.55%	17.0%
US equities (US E)	7.30%	17.8%
EAFE equities (EAFE)	7.55%	17.1%
Private Equity (PE)	10.05%	26.1%
Absolute return strategy (ARS)	5.65%	10.6%
Real estate (RE)	6.25%	12.5%
Infrastructure (IN)	6.95%	14.9%

** The SIPG provides for half of public equities to be invested using a low volatility strategy. For purposes of our stochastic analysis, we did not attempt to model the impact of a low volatility strategy and have used the standard indices for each equity asset class for such strategy. We also assumed equal allocation between real estate and infrastructure as was contemplated in the Memorandum of Understanding.*

It is assumed that active management fees will be offset by additional returns over 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 January 1, 2014:

TABLE C.2 – CORRELATION AMONG ASSET CLASSES

Asset Classes	ST	GB	CB	Can E	US E	EAFE	PE	ARS	RE	IN
ST	1.00	-0.13	-0.10	-0.12	0.02	-0.14	0.01	0.03	0.11	-0.01
GB		1.00	0.28	0.02	0.00	0.00	0.00	-0.04	0.03	0.23
CB			1.00	0.25	0.20	0.14	0.20	0.29	-0.09	0.17
Can E				1.00	0.44	0.69	0.54	0.78	0.11	0.13
US E					1.00	0.63	0.65	0.51	0.11	-0.08
EAFE						1.00	0.52	0.45	0.19	-0.01
PE							1.00	0.56	0.05	0.00
ARS								1.00	0.11	0.11
RE									1.00	0.06
IN										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 20 years.

For each of these scenarios and for each year, the financial position of the NBTPP is measured on a funding basis. For the purpose of the stochastic analysis, the discount rate remains fixed at 6.25% per year throughout the projection period. The discount rate of 6.25% per year is used to project the funding liability and determine the value of any funding correction under the funding policy. 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 liability, as required under paragraph 15(2)(c) of Regulation 2012-75.

The risk management procedures are described in Section 4 of this report.

APPENDIX D – SUMMARY OF PLAN PROVISIONS

The following is a brief summary of the main provisions of the New Brunswick Teachers' Pension Plan (NBTPP) effective July 1, 2014. For an authoritative statement of the precise provisions of the NBTPP, reference must be made to the official NBTPP documents.

INTRODUCTION

The New Brunswick Teachers' Federation/Fédération des enseignants du Nouveau-Brunswick, the Province of New Brunswick and the Minister of Finance, in his capacity as plan governor and administrator of the Former TPA entered into a Memorandum of Understanding pursuant to which they agreed to convert the Former TPA to the NBTPP effective July 1, 2014. As of that date, the *Teachers' Pension Act* ("Former TPA") was repealed by *An Act Respecting Pensions Under the Teachers' Pension Plan Act* (New Brunswick) which provided that the Former TPA be converted to a plan allowed under the TPPA.

Effective July 1, 2014, the NBTPP is administered by an independent Board of Trustees.

ELIGIBILITY AND PARTICIPATION

Each Member of the Former TPA joins the NBTPP on July 1, 2014. Each Teacher is required to join the Plan upon employment.

REQUIRED CONTRIBUTIONS

From January 1, 2014 to June 30, 2014, each member is required to contribute 7.3% of earnings up to the YMPE, plus 9.0% of earnings in excess of the YMPE.

From July 1, 2014 to June 30, 2015, each member is required to contribute 8.5% of earnings up to the YMPE, plus 10.2% of earnings in excess of the YMPE.

From July 1, 2015 to June 30, 2016, each member is required to contribute 9.0% of earnings up to the YMPE, plus 10.7% of earnings in excess of the YMPE.

From July 1, 2016 to June 30, 2017, each member is required to contribute 9.5% of earnings up to the YMPE, plus 11.2% of earnings in excess of the YMPE.

From July 1, 2017 to June 30, 2029, each member is required to contribute10.0% of earnings up to the YMPE, plus 11.7% of earnings in excess of the YMPE.

As of July 1, 2029, each member is required to contribute consistent with a contribution formula of 9.25% of earnings up to the YMPE, plus 10.95% of earnings in excess of the YMPE, as defined in the funding policy.

From July 1, 2014 to June 30, 2019, the employer is required to contribute 11.5% of earnings up to the YMPE, plus 13.2% of earnings in excess of the YMPE.

From July 1, 2019 to June 30, 2024, the employer is required to contribute 10.75% of earnings up to the YMPE, plus 12.45% of earnings in excess of the YMPE.

From July 1, 2024 to June 30, 2029, the employer is required to contribute 10.0% of earnings up to the YMPE, plus 11.70% of earnings in excess of the YMPE.

From July 1, 2029, the employer is required to match the teachers' contributions.

The YMPE is the Year's Maximum Pensionable Earnings under the Canada Pension Plan, and is equal to $52,500 in 2014.

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

NORMAL RETIREMENT

The normal retirement date is the first day of the month following the member's sixty-fifth birthday.

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

A. In respect of service before July 1, 2014, the product of:
   i. the number of years of the member's pensionable service before July 1, 2014, and
   ii. 1.3% of the annual average of the best five (5) consecutive years of earnings at July 1, 2014, up to the annual average YMPE for 2014, 2013 and 2012, plus 2.0% of the excess of the annual average of the best five (5) consecutive years of earnings at July 1, 2014 over the annual average YMPE for 2014, 2013 and 2012;

and

B. In respect of service from July 1, 2014, the sum of (i) and (ii) for each calendar year (or pro-rated for a portion thereof):
   i. 1.3% 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 regular indexing every January 1st following July 1, 2014, equal to 100% of the increase in the Consumer Price Index (CPI) (subject to a maximum of 4.75%) while the Teacher is active, and equal to 75% of CPI (subject to a maximum of 4.75%) after the Teacher's termination of employment, and contingent on the NBTPP's financial condition as outlined in the Funding Policy.

NORMAL AND OPTIONAL FORMS OF PENSION

The normal form of pension is a pension payable in equal monthly instalments commencing on the member's pension commencement date and continuing thereafter during the lifetime of the member. For a member with a spouse or common-law partner at the time of the member's death, 50% of the member's pension (before application of reductions for early retirement) continues to such spouse or common-law partner in equal monthly instalments for the life of the spouse or common-law partner. Should the member have dependent children at the time of his/her death, such dependent children may be entitled to a pension if there is no spouse or common-law partner or after the death of such spouse or common-law partner. A minimum amount of pension equal to the member's own contribution with interest to retirement will be payable in total.

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

EARLY RETIREMENT AND BRIDGE BENEFIT

Early retirement is permitted as of the earliest of age 55, or 35 years of pensionable service or the age at which the member reaches 80 points (or 84 points if the member became a teacher after July 1, 2014).

On early retirement, an annual bridge benefit is payable in addition to the lifetime pension found under "Normal Retirement". The annual bridge benefit is payable to age 65 or to the death of the member, if earlier, and is equal to the sum of:

A. In respect of service before July 1, 2014, the product of:

   i. the number of years of the member's pensionable service before July 1, 2014, and

   ii. 0.7% of the annual average of the best five (5) consecutive years of earnings at July 1, 2014 up to the annual average YMPE for 2014, 2013 and 2012;

and

B. In respect of service from July 1, 2014, for each calendar year (or pro-rated for a portion thereof), 0.7% of the Member's annualized earnings for the calendar year up to the YMPE for the calendar year.

The portions of the lifetime pension and bridge benefit accrued for service before July 1, 2014 are unreduced if the pension and bridge commence to be paid upon or after fulfilment of one of the following criteria:

- Achievement of the 87 points rule (age + years of pensionable service)
- Age 60 and 20 years of pensionable service
- 35 years of pensionable service
- Age 65 and 5 years of continuous service or 2 years of pensionable service or plan membership

If payment commences before any of these criteria are met, the lifetime pension and bridge benefit shall each be reduced by 5/12% per month (5% per year) that the pension and bridge commencement date precedes the first day of the month in which the criterion is met.

The portions of the lifetime pension and bridge benefit accrued for service on and after July 1, 2014 are reduced by 5/12% per month (5% per year) that the pension and bridge commencement date precedes the first day of the month following the first of the following events:

- Achievement of the 91 points rule (age+ years of pensionable service)
- Age 62 and 20 years of pensionable service
- 35 years of pensionable service
- Age 65 and 5 years of continuous service or 2 years of pensionable service or plan membership.

BENEFITS ON TERMINATION OF EMPLOYMENT

If a member terminates employment prior to completing 5 years of continuous service and prior to completing 2 years of pensionable service or plan membership, the member is entitled to a refund of the total amount of his/her contributions to the NBTPP and Former TPA, if any, with interest.

If a member terminates employment before age 55 but after completing at least 5 years of continuous service or 2 years of pensionable service or plan membership, the member may elect to receive:

i. a deferred lifetime pension payable from the 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 calculated in accordance with the TPPA, 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 5 years of continuous service and prior to completing 2 years of pensionable service or plan membership, the benefit payable is a refund of the member's own contributions to the NBTPP and Former TPA, if any, with interest.

If the member dies after completing at least 5 years of continuous service or 2 years of pensionable service or plan membership, but before pension commencement, the death benefit is as follows:

- a pension of 50% of the accrued lifetime pension payable to the surviving spouse or surviving common-law partner; or to dependent children if there is no surviving spouse or following the death of the surviving spouse an amount equal to the spouse's pension (split equally among dependent children). Any amount by which the Termination Value exceeds the aggregate of all pension payments made above, shall be paid to the designated beneficiary(ies) or estate.
- If no pension is payable to the surviving spouse or the surviving common-law partner, and if there is no dependent child or dependent at the time of death, the benefit payable is a refund of the member's own contributions to the NBTPP and Former TPA, if any, with interest, to the estate.

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.

PRIMARY GOAL, BENEFIT SECURITY AND COST-OF-LIVING ADJUSTMENTS

The primary goal of the NBTPP is to provide pensions to eligible teachers after retirement and until death in respect of their service as teachers. A further purpose of this NBTPP 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 plan allowed under the

TPPA, all future cost-of-living adjustments and other ancillary benefits under the NBTPP 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 – PLAN ADMINISTRATOR CONFIRMATION CERTIFICATE

With respect to the Initial Actuarial Valuation Report of the New Brunswick Teachers' Pension Plan as at January 1, 2014, I hereby confirm that to the best of my knowledge:

- the data regarding plan members and beneficiaries provided to Morneau Shepell as at April 1, 2013 constitutes a complete and accurate description of the information contained in our files;
- copies of the official plan text, funding policy and statement of investment policies of the NBTPP 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 April 1, 2013 to July 1, 2014 or thereafter which would materially affect the results, other than those noted in this report.

THE NBTPP BOARD OF TRUSTEES

Signature

Name: Larry Jamieson

Title: Chair - NBTPP Trustees

Date: October 27, 2014