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March 7, 2016

CONFIDENTIAL

New Brunswick Teachers' Pension Plan Board of Trustees
c/o Mr. Larry Jamieson, Chair
440 King Street
York Tower, Suite 581
Fredericton, NB E3B 5H8

RE: New Brunswick Teachers' Pension Plan
Cost Certificate as at August 31, 2015

Dear Mr. Jamieson:

The New Brunswick Teachers' Pension Act ("Former TPA") was repealed and replaced with the New Brunswick Teachers' Pension Plan ("NBTPP" or "Plan") effective July 1, 2014.

The initial and most recent actuarial valuation of the Plan was carried out as at January 1, 2014. It included the impact of all the changes effective July 1, 2014 that saw the repeal of the Former TPA and the creation of the NBTPP. The detailed results of the actuarial valuation can be found in our *Initial Actuarial Valuation Report As At January 1, 2014 And Conversion Plan* prepared in September 2014 and filed with the Superintendent of Pensions. The next actuarial valuation of the Plan is to be conducted as at August 31, 2016, being the Plan year end date falling no later than three years after the initial valuation date. In the meantime, the legislation requires that cost certificates be prepared annually at each Plan year-end. The first cost certificate following the initial valuation was prepared as at August 31, 2014 and filed with the Superintendent of Pensions within nine months following that date in accordance with the requirements of the Pension Benefits Act ("PBA").

This cost certificate is the second one following the initial valuation of the Plan and is conducted as at August 31, 2015 for the NBTPP Board of Trustees ("Trustees") and is suitable for filing with the Superintendent of Pensions in accordance with the requirements of subsection 14(2) of the Teachers' Pension Plan Act, SNB 2014 ("TPPA").

The cost certificate outlines:

- The extrapolated financial position of the Plan as at August 31, 2015 on the funding basis required under Section 17 of the TPPA;
- The estimated normal cost for benefits to accrue over the plan year following August 31, 2015, and estimated Teacher and Employer contributions requirements for the same period in accordance with the terms of the Plan; and

- A review of any action or actions that may be required by the Board of Trustees under the terms of the Funding Policy for the NBTPP further to the results found in the cost certificate.

Actuarial Methods and Assumptions

The actuarial methods and assumptions underlying the extrapolation of the funding liability to August 31, 2015 are the same as the ones used in the funding valuation of the Plan as at January 1, 2014 and extrapolation to August 31, 2014, except for the discount rate. Given the continued decline in the general level of bond yields since the initial valuation, we suggest that the discount rate be reduced from 6.25% per annum to 6.00% per annum for this cost certificate as at August 31, 2015. The change in discount rate increases the extrapolated funding liability by $174.5M as at August 31, 2015, and also increases the normal cost to 14.44% of payroll for the year following August 31, 2015. No other changes to the methods and assumptions are suggested at this time. The methods and assumptions are summarized in Appendix 1 to this cost certificate. The methods and assumptions are discussed in detail in our *Initial Actuarial Valuation Report As At January 1, 2014 And Conversion Plan* prepared in September 2014.

The membership data and Plan terms are also summarized in our *Initial Actuarial Valuation Report As At January 1, 2014 And Conversion Plan* prepared in September 2014, and are not repeated in this cost certificate.

Approach

The extrapolation uses the funding liability and the total normal cost found in the *Initial Actuarial Valuation Report As At January 1, 2014 And Conversion Plan* dated September 2014 and extrapolated to August 31, 2014 as a starting point. The total extrapolated funding liability as at August 31, 2014 is $4,725.4M. The total normal cost as a percent of payroll for the period from September 1, 2014 to August 31, 2015 is 14.33% of payroll.

Actual member and employer contributions for the period from September 1, 2014 to August 31, 2015 are used to determine the covered payroll for the period, and in turn estimate the cost of accruing benefits for the period using the normal cost percentages found above. Actual benefit payments for the period are also used to reduce the actuarial liability as benefits are paid out.

Assets

The actual contributions and benefit payments for the period September 1, 2014 to August 31, 2015 were provided to us by the New Brunswick Investment Management Corporation ("NBIMC") in unaudited financial statements for the Plan for the period in question.

The reconciliation of assets for the period from September 1, 2014 to August 31, 2015, as provided by the NBIMC, is as follows:

Table 1 – Reconciliation of Assets

	September 1, 2014 to August 31, 2015
	$M
Market value of assets at September 1, 2014	$5,014.9
Adjustment to market value of assets at September 1, 2014	(0.2)
Receipts	
Member contributions	58.5
Employer contributions	72.4
Investment income plus realized and unrealized capital appreciation and depreciation	382.5
Total receipts	513.4
Disbursements	
Pensions paid and refunds	(275.7)
Expenses (fees)	(10.5)
Total disbursements	(286.2)
Market value of assets as at August 31, 2015	$5,241.9
Investment return on market value of assets (net of expenses charged to the fund)	7.5%

Note: The market value of assets as at August 31, 2015 shown above is taken from unaudited financial statements prepared by NBIMC and may not include all amounts receivable and payable. The net impact of such outstanding receivables and payables is deemed not to be material for the purposes of this cost certificate based on prior years' level of such amounts.

Extrapolated Funding Liability

The result of the extrapolation of the funding liability to August 31, 2015 using the approach described above, and member and employer contributions and benefit payments found in the asset reconciliation above, is presented in Table 2 below.

Table 2 – Extrapolated Funding Liability as at August 31, 2015

	$M
Funding liability as at August 31, 2014	$4,725.4
Normal cost for period from September 1, 2014 to August 31, 2015 (14.33% of payroll)	$92.3
Benefit payments for period from September 1, 2014 to August 31, 2015	($275.7)
Impact of change in discount rate from 6.25% to 6.00% per annum	$174.5
Interest on above components	$289.6
Extrapolated funding liability as at August 31, 2015	$5,006.1

Extrapolated Funding Valuation Funded Status

The extrapolated funding valuation funded status is determined by comparing the fair market value of the assets to the extrapolated funding liability as at August 31, 2015. The resulting extrapolated funded status as at August 31, 2015, along with the extrapolated funded status in the last filed cost certificate as at August 31, 2014, is found in Table 3 below.

Table 3 – Extrapolated Funding Valuation Funded Status

	August 31, 2015	August 31, 2014
	$M	$M
Market value of assets	$5,241.9	$5,014.9
Extrapolated funding liability	$5,006.1	$4,725.4
Extrapolated funding valuation excess (unfunded liability)	$235.8	$289.5
Extrapolated Termination Value Funded Ratio (subsection 17(7) of TPPA) or Extrapolated Closed Group Funded Ratio (section 1 of TPPA)	104.7%	106.1%

Extrapolated Normal Cost and Contributions

We estimate the normal cost and contributions to the Plan for the year following August 31, 2015 to be as follows, based on the payroll figure established for the above extrapolation and projected for the period from September 1, 2015 to August 31, 2016:

Table 4 – Extrapolated Normal Cost and Contributions

	Extrapolation for Year following August 31, 2015	
	$M[1]	% of payroll[2]
A. Funding valuation normal cost	94.8	14.44
B. Contributions:		
Teachers	62.4	9.5
Employer's initial contributions	64.0	9.75
Employers' temporary schedule 1 (for 5 years after 1-7-2014)	4.9	0.75
Employers' temporary schedule 2 (for 10 years after 1-7-2014)	4.9	0.75
Employers' temporary schedule 3 (for 15 years after 1-7-2014)	4.9	0.75
Total	141.2	21.5
C. Excess contributions (B. – A.)	46.4	7.06
Estimated annual payroll for year following August 31, 2015	$656.9	

[1] Contribution amounts are calculated using the estimated annual payroll for the year following August 31, 2015, adjusted for members working on less than full-time basis.

[2] Contribution rates shown here are the average rates for the Plan (actual Teacher contribution rates are 9.0% up to the YMPE and 10.7% above the YMPE and Employer initial contribution rates are 11.5% up to the YMPE and 13.2% above the YMPE) and have effect from July 1, 2015 to June 30, 2016. On July 1, 2016, Member contribution rates increase by 0.5% of payroll, and Employer contribution rates remain constant.

Review of Funding Policy Actions

In accordance with the annual process followed by the Board of Trustees under the Funding Policy for the Plan, the Board must consider its options for action based on the funded status of the Plan (NBTPP Funding Policy, Section VII - Annual Review, Subsection B. Application of Funding Policy, Bullet 6).

Such actions would be found under either Section IV – Funding Deficit Recovery Plan or Section V – Funding Excess Utilization Plan, depending on the level of the Closed Group Funded Ratio.

Section IV – Funding Deficit Recovery Plan of the Funding Policy requires the Board of Trustees to implement a Funding Deficit Recovery Plan when:

- the Closed Group Funded Ratio of the Plan falls below 100%; and
- any funding correction would exceed 1% of payroll when taking into account total contributions made in excess of normal cost over the next 15 years.

Given that the Closed Group Funded Ratio is in excess of 100%, the first condition above is not met, and therefore the Board of Trustees does not have to implement a Funding Deficit Recovery Plan on the basis of this cost certificate.

Section V – Funding Excess Utilization Plan of the Funding Policy describes the actions the Board of Trustees must take or consider when the Closed Group Funded Ratio exceeds 100%. In such cases, certain funding corrections applied in the past can be reversed. At this time, no past funding corrections have ever been applied.

The next step in the Funding Excess Utilization Plan calls for the establishment of a contingency reserve of up to 10% of the funding liability of the Plan. We understand that such contingency reserve is not meant to be held separate and apart from the Plan, but rather be interpreted as a "buffer" to be held within the Plan. In that sense, a contingency reserve of 10% of the funding liability of the Plan would be reached when the Closed Group Funded Ratio equals 110%. Until such time as such contingency reserve is achieved, the Board of Trustees is not in a position to implement further actions provided under Section V – Funding Excess Utilization Plan of the Funding Policy.

Based on the information reviewed above and the extrapolated Closed Group Funded Ratio of 104.7% calculated as at August 31, 2015, it is determined that the Funding Policy does not provide for immediate action to be taken by the Board of Trustees under either the Funding Deficit Recovery Plan or the Funding Excess Utilization Plan.

Update of Termination Value Funded Ratio

The Termination Value Funded Ratio is used in calculating the value of lump sum payments payable from the Plan to Teachers who terminate employment before being eligible for an immediate pension and elect to receive a transfer outside the Plan.

The legislation does not require that the Termination Value Funded Ratio established at the onset of the Plan be changed until such time as a complete actuarial valuation of the Plan is conducted (unless it is believed that it has changed by more than 10%). It also does not prevent the Board of Trustees from updating the ratio at an earlier date.

As such, the Board of Trustees adopted the extrapolated Termination Value Funded Ratio as at August 31, 2014 for purposes of calculating lump sum payments from the Plan for Teachers with a termination date on or after the date that the August 31, 2014 cost certificate was approved for filing by the Board of Trustees (May 13, 2015).

In order to follow the same practice, the Board of Trustees may wish to adopt the extrapolated Termination Value Funded Ratio as at August 31, 2015 (along with the updated discount rate) for purposes of calculating lump sum payments from the Plan for Teachers with a termination date on or after the date this cost certificate is approved for filing.

This ensures that the most up-to-date information is taken into account in calculating such lump sum payments. Updating the ratio and the assumptions used in the calculation annually is also consistent with the process followed by other public service plans in the Province that use a similar approach to calculating lump sum transfers.

Subsequent Events

We are not aware of any events or changes in Plan provisions or in legislation governing the Plan subsequent to August 31, 2015 which would materially affect the extrapolation presented above.

Opinion

In my opinion, for the purposes of the extrapolation of the funding valuation found in this cost certificate:

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

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

The assumptions used under the funding valuation extrapolation were reasonable and consistent with the objectives of the plan at the time this cost certificate was prepared.

Respectfully submitted,

Yves Plourde, FSA, FCIA

Peer reviewed by Conrad Ferguson, FSA, FCIA

Appendix 1

Table A.1 – New Brunswick Teachers' Pension Plan Funding Valuation Actuarial Assumptions

Discount rate	As at August 31, 2014: 6.25% As at August 31, 2015: 6.00%
Inflation rate	2.25%
Indexing of active members' accrued pensions	100% of inflation*
Indexing of retiree pensions (including surviving spouses and dependent children), disability pensions and deferred vested members	75% of inflation*
Salary increase for year following valuation (for normal cost purposes only)	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	
• Under 5 years	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	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

* Inflation is adjusted down by 0.15% for purposes of indexing to take into account the impact of the 4.75% cap applied under the Plan for indexing purposes.

Market Value of Assets by Asset Class

The market value of the assets as at August 31, 2015 is $5,241.9M. This figure was taken from unaudited financial statements published by the New Brunswick Investment Management Corporation as at August 31, 2015. A distribution of the market value of assets by the major asset classes, as published by the NBIMC, is provided below:

Table A.2 – Market Value of Assets by Asset Class

Asset Class	As at August 31, 2015
	(in $M)
Fixed Income	$1,628.3
Equities	2,279.6
Inflation Linked Assets	719.3
Alternative Investments	614.7
Total	$5,241.9