PENSION PLAN FOR NON-TEACHING EMPLOYEES OF THE SCHOOL BOARDS OF NOVA SCOTIA

ACTUARIAL VALUATION AS AT DECEMBER 31, 2013 FOR FUNDING PURPOSES

Report prepared in December 2014

Registration number: Nova Scotia and Canada Revenue Agency #0694778

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INTRODUCTION

This report presents the results of the actuarial valuation as at December 31, 2013 of the Pension Plan for Non-Teaching Employees of the School Boards of Nova Scotia ("Plan"), which is sponsored by the Nova Scotia School Boards Association ("NSSBA"). The NSSBA retained the services of Morneau Shepell Ltd ("Morneau Shepell") to perform this actuarial valuation. The last complete valuation that was filed with the the Nova Scotia Department of Labour and Advanced Education, Pension Regulation Division and the Canada Revenue Agency was performed as at December 31, 2012.

This report was prepared for the NSSBA, the Nova Scotia Department of Labour and Advanced Education, Pension Regulation Division and the Canada Revenue Agency for the following purposes:

- to determine the funded status of the Plan on the going-concern basis;
- to determine the funded status of the Plan on both solvency and hypothetical wind-up bases;
- to estimate the employer contributions required under the Plan during the period from December 31, 2013 up to the effective date of the next valuation in accordance with the Nova Scotia *Pension Benefits Act*; and
- to provide the information and the actuarial opinion required by the Nova Scotia *Pension Benefits Act* and the *Income Tax Act* (Canada).

The solvency and hypothetical wind-up bases have been updated to reflect market conditions as at the valuation date. In addition, changes were made to the actuarial assumptions on the going-concern basis.

TERMS OF ENGAGEMENT

This report takes into account discussions with the client on the terms of engagement.

RESTRICTION ON USE OF THIS REPORT

This report was prepared for the NSSBA. It will also be filed with the Nova Scotia Department of Finance and Treasury Board, Pension Regulation Division and the Canada Revenue Agency. This report and any of its content may not be distributed, published, made available or relied upon by any other person, without the express written permission of Morneau Shepell, unless and only to the extent otherwise provided by applicable law.

SECTION 1 – ACTUARIAL OPINION

This opinion is given with respect to the Pension Plan for Non-Teaching Employees of the School Boards of Nova Scotia, registration number 0694778 (Nova Scotia). We performed a valuation of the Plan as at December 31, 2013, based on the Plan provisions and data as at that date. The NSSBA has confirmed that, between December 31, 2013 and December 8, 2014, no subsequent events, modifications or extraordinary changes to the membership or the Plan that would materially affect the results of this actuarial valuation have occurred, except as indicated in this report.

We hereby certify that, in our opinion, as at December 31, 2013:

- The Plan is not fully funded on the going-concern basis. The actuarial liabilities exceed the actuarial value of assets by $6,658,000.
- According to the solvency test required under the Nova Scotia *Pension Benefits Act*, the Plan is not solvent. On the solvency basis, the actuarial liabilities exceed the value of assets by $26,964,000. In accordance with subsection 5(2A) of the Regulations of the Nova Scotia *Pension Benefits Act*, the Plan is exempt from making any special payments in respect to past solvency deficiencies. In addition, any special payments with respect to any new solvency deficiencies arising on and after December 31, 2013 are not required to be made.
- The solvency ratio of the Plan, as defined under the Nova Scotia *Pension Benefits Act*, is equal to 0.789. Because this ratio is below 0.85 and the Plan is exempt from solvency funding as described above, in accordance with the Regulations of the Nova Scotia *Pension Benefits Act*, the next actuarial valuation of the Plan must be performed at a date no later than December 31, 2014.
- The Plan assets would have been less than the actuarial liabilities by $30,250,000 if the Plan had been wound up on the valuation date.
- The transfer ratio of the Plan, as defined under the Nova Scotia *Pension Benefits Act*, is equal to 0.761. The participating employers may have to make additional contributions if Plan members transfer the commuted value of their accrued benefits out of the Plan. The Plan actuary should be consulted on this matter as to how and when.

- The residual normal cost (i.e., normal cost less employee required contributions) is equal to 6.47% of payroll.
- For 2014, the minimum amortization payments should be 1.68% of payroll, and the minimum total employer contribution is equal to 8.15% of payroll. The estimated employee contribution and employer contributions for normal cost and amortization payments for 2014 are shown in the table below:

Table 1.1 – Estimated Employee Contributions and Residual Normal Cost and Minimum Annual Amortization Payments

Plan year	Employee contributions	Residual normal cost	Minimum amortization payment	Total Employer contribution
	$	$	$	$
2014	3,750,000	2,846,000	$739,000	3,585,000

We note that the Employer matches employee contributions, and that therefore more than the minimum required special payment will be made. Higher amortization payments are acceptable but they cannot exceed $30,250,000 plus interest in aggregate. The Plan actuary should be consulted if the amortization payments in any year are greater than the minimum required.

These contributions conform to the eligibility requirements of the *Income Tax Act* (Canada) if contributed within the fiscal year or remitted within 120 days after the end of the fiscal year. They also conform to the Nova Scotia *Pension Benefits Act*. This Act requires that the current service employer contributions and the employee contributions be remitted to the fund monthly, within 30 days of the month to which they pertain. It also requires that amortization payments be made at least monthly.

In our opinion, for the purposes of this report:

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

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

The assumptions that form the going-concern basis used in this report were reasonable at the time this actuarial valuation report was prepared and contributions were determined.

This actuarial valuation was performed in accordance with the going-concern and solvency standards prescribed under the Nova Scotia *Pension Benefits Act*.

The calculations in the actuarial valuation report have been prepared in accordance with subsection 147.2(2) of the *Income Tax Act* (Canada).

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 Plan administrator, the NSSBA or participating employers or the members 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 may result in gains or losses, which may affect future contribution levels. These gains or losses will be revealed in future actuarial valuations.

The next actuarial valuation will have to be performed not later than as at December 31, 2014.

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

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SECTION 2 – GOING-CONCERN FUNDED STATUS

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.

Table 2.1 – Going-Concern Funded Status

	December 31, 2013	December 31, 2012
	$	$
Actuarial value of assets		
Market value	100,552,000	83,382,000
In-transits	407,000	505,000
Asset smoothing adjustment	(2,978,000)	2,218,000
Total	97,981,000	86,105,000
Actuarial liabilities		
Active members	74,246,000	69,337,000
Pensioners	26,203,000	22,276,000
Deferred and inactive members	3,716,000	2,970,000
Voluntary contributions	475,000	537,000
Total	104,640,000	95,120,000
Actuarial surplus (unfunded liability)	(6,658,000)	(9,015,000)
Funding ratio	93.6%	90.5%

Figures may not add up due to rounding.

In addition to the above, the assets in the Defined Contribution fund as of December 31, 2013 total $2,838,000.

RECONCILIATION OF GOING-CONCERN FUNDED STATUS

The table below describes the change in the Plan's going-concern funded status since the last valuation:

Table 2.2 – Reconciliation of Going-Concern Funded Status

	$	$
Actuarial surplus (unfunded liability) as at December 31, 2012		(9,016,000)
Remove asset smoothing adjustment at December 31, 2012		(2,218,000)
Expected changes in funded status		
Interest on surplus (unfunded liability)	(646,000)	
Contributions in excess of current service cost with interest	1,048,000	
Total		402,000
Expected surplus (unfunded liability) as at December 31, 2013		(10,832,000)
Actuarial gains (losses) due to the following factors		
Investment return on actuarial value of assets	6,879,000	
Terminations	(168,000)	
Retirements	87,000	
Mortality	229,000	
Status changes	80,000	
Salary increases	1,250,000	
Other factors	(532,000)	
Total		7,825,000
Changes in actuarial assumptions		
Salary increase assumption	(999,000)	
New mortality assumption	326,000	
Total		(673,000)
Add asset smoothing adjustment at December 31, 2013		(2,978,000)
Actuarial surplus (unfunded liability) as at December 31, 2013		(6,658,000)

Figures may not add up due to rounding.

SENSITIVITY ANALYSIS ON THE GOING-CONCERN BASIS

The table below illustrates the effect of a 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 2.3 – Sensitivity of Actuarial Liabilities on the Going-Concern Basis

	December 31, 2013	Discount rate 1% lower
	$	$
Actuarial liabilities		
Active members	74,246,000	88,341,000
Pensioners	26,203,000	28,881,000
Deferred and inactive members	3,716,000	4,286,000
Voluntary contributions	475,000	475,000
Total	104,640,000	121,983,000
Increase in actuarial liabilities		17,343,000

Figures may not add up due to rounding.

SECTION 3 – SOLVENCY AND HYPOTHETICAL WIND-UP FUNDED STATUS

SOLVENCY FUNDED STATUS

A solvency valuation is a hypothetical valuation prescribed by the Nova Scotia *Pension Benefits Act* and which imposes a floor on required contributions and a ceiling on what may be transferred out of the pension fund upon termination of membership. A solvency valuation may, however, differ from the valuation required on plan wind-up. For more detail on the estimated funded position if the Plan were to wind up, please see the **Hypothetical Wind-up Funded Status** details later in this section.

Table 3.1 – Solvency Funded Status

	December 31, 2013	December 31, 2012
	$	$
Solvency assets		
Market value of assets	100,552,000	83,382,000
In-transits	407,000	505,000
Solvency asset adjustment	(2,978,000)	2,218,000
Wind-up expenses	(500,000)	(500,000)
Subtotal (used for transfer ratio)	97,481,000	85,605,000
Present value of 5 years of going concern special payments	2,978,000	3,599,000
Total solvency assets	101,080,000	89,204,000
Solvency liabilities		
Active members	92,394,000	100,985,000
Pensioners	30,389,000	28,639,000
Deferred and inactive members	4,786,000	4,588,000
Voluntary contributions	475,000	537,000
Total	128,044,000	134,749,000
Solvency surplus (deficiency)	(26,964,000)	(45,545,000)
Solvency ratio (solvency assets/solvency liabilities)	78.9%	66.2%
Transfer ratio	76.1%	63.5%

Figures may not add up due to rounding.

The solvency liabilities of the Plan exclude the value of grow-in rights. Grow-in rights represent the additional benefits payable on Plan wind-up to Plan members where age and service total at least 55 at the date of Plan wind-up. For these individuals, their pension rights (in terms of, for example, eligibility for a pension or the calculation of unreduced retirement date) are based on the assumption that the service with the employer continues beyond the Plan wind-up date. In this case, grow-in benefits affect the date on which some members may retire with an unreduced pension.

In addition to the above, the assets in the Defined Contribution fund as of December 31, 2013 total $2,838,000.

While the Nova Scotia *Pension Benefits Act* requires the identification of any solvency deficiency, the Plan is exempt from funding such deficiencies under subsection 5(2A) of the Regulations of the Nova Scotia *Pension Benefits Act*.

The Nova Scotia *Pension Benefits Act* requires annual valuations when the solvency ratio is below 0.85 and triennial valuations when the solvency concern ratio is 0.85 or above. Since the solvency ratio of the Plan is below 0.85 as at December 31, 2013, the next actuarial valuation is to be performed no later than as at December 31, 2014.

SOLVENCY ASSET ADJUSTMENT

As permitted under the Nova Scotia *Pension Benefits Act*, the solvency asset adjustment is an amount by which the value of the solvency assets are adjusted as a result of applying an averaging method that stabilises short-term fluctuations in the market value of the Plan assets calculated over a period of not more than five years.

HYPOTHETICAL WIND-UP FUNDED STATUS

Since the solvency assets have been adjusted and because certain grow-in benefits were excluded from the solvency liability, if the Plan had been liquidated as at December 31, 2013 and assuming that the asset liquidation value had been equal to the market value, the hypothetical wind-up funded status would have been different from the solvency funded status shown in Table 3.1:

Table 3.2 – Hypothetical Wind-up Funded Status

	December 31, 2013	December 31, 2012
	$	$
Hypothetical wind-up assets		
Market value of assets	100,552,000	83,382,000
In-transits	407,000	505,000
Wind-up expenses	(500,000)	(500,000)
Total	100,459,000	83,387,000
Hypothetical wind-up liabilities		
Active members	95,013,000	103,958,000
Pensioners	30,389,000	28,639,000
Deferred and inactive members	4,832,000	4,684,000
Voluntary contributions	475,000	537,000
Total	130,709,000	137,818,000
Hypothetical wind-up surplus (deficiency)	(30,250,000)	(54,431,000)

Figures may not add up due to rounding.

SENSITIVITY ANALYSIS ON THE SOLVENCY BASIS

The table below illustrates the effect on the actuarial liabilities of using discount rates 1% lower than those used for the solvency valuation. All other assumptions and methods, as used in this valuation, were maintained.

Table 3.3 – Sensitivity of Actuarial Liabilities on the Solvency Basis

	December 31, 2013	Discount rates 1% lower
	$	$
Actuarial liabilities		
Active members	92,394,000	107,562,000
Pensioners	30,389,000	33,851,000
Deferred and inactive members	4,786,000	5,593,000
Voluntary contributions	475,000	475,000
Total	128,044,000	147,481,000
Increase in actuarial liabilities		19,437,000

INCREMENTAL COST ON THE SOLVENCY BASIS

The incremental cost on the solvency basis represents the present value of the expected aggregate change in the solvency liabilities from December 31, 2013 to December 31, 2014, adjusted for expected benefit payments in the inter-valuation period. This incremental cost is $8,648,000 as at December 31, 2013.

SECTION 4 – NORMAL COST AND AMORTIZATION PAYMENTS

NORMAL COST

The table below summarizes the estimated going-concern cost of pension benefits being earned in the twelve-month period after the valuation date (the normal cost) for the Plan's Defined Benefit provision.

Table 4.1 – Normal Cost

	As at December 31, 2013	As at December 31, 2012
Normal cost	6,596,000	6,362,000
Estimated payroll in following year	44,014,000	43,161,000
Normal cost as % of payroll	14.99%	14.74%
Employee Contributions	3,750,000	3,685,000
Residual Normal Cost	2,846,000	2,677,000

With respect to the Plan's Defined Contribution provision, both the members and the employers are required to contribute 5.0% of earnings.

RECONCILIATION OF NORMAL COST

The factors contributing to the change in the DB normal cost are shown below:

Table 4.2 – Reconciliation of Normal Cost

	% of payroll
Normal cost as at December 31, 2012	14.74
Change due to member experience	0.16
Change due to salary increases	(0.14)
Change due to new mortality assumption	(0.03)
Change due to salary increase assumption	0.26
Normal cost as at December 31, 2013	14.99

Figures may not add up due to rounding.

SENSITIVITY ANALYSIS ON THE GOING-CONCERN BASIS

The table below illustrates the effect on the 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 4.3 – Sensitivity of normal cost on the going-concern basis

	As at December 31, 2013		Discount rate 1% lower	
	$	% of payroll	$	% of payroll
Normal cost	6,596,000	14.99	8,174,000	18.57
Increase in normal cost			1,577,000	3.58

AMORTIZATION PAYMENTS

The Plan has an unfunded liability of $6,658,000 on the going-concern basis as of December 31, 2013 and the deficiency is amortized over 15 years in accordance with the Nova Scotia *Pension Benefits Act*.

The Plan has a solvency deficiency of $26,964,000 as of December 31, 2013. In accordance with Section 5(2A) of the Regulations to the Nova Scotia *Pension Benefits Act*, the Employer is not required to fund the solvency deficiency going forward. As such, there is no solvency special payments schedule.

In accordance with Section 6 of the Regulations to the Nova Scotia *Pension Benefits Act*, the special payment schedule in respect of the going-concern deficiency has been determined as a percentage of projected payroll, as shown in the following table:

Table 4.4 – Present Value of Previously Scheduled Special Payments

Nature of liability or deficiency	Start date	End date	Annual amortization payment	Balance going-concern
	mm-dd-yyyy	mm-dd-yyyy	$	$
Going-concern unfunded liability	01-01-2013	12-31-2027	1.68% of payroll	8,786,000

Because the present value of previously scheduled special payments exceeds the current going-concern unfunded liability, but a solvency deficiency still exists, the minimum special payments scheduled for the next five years remain at 1.68% of payroll. The special payments for the period from January 1, 2019 to December 31, 2027 are reduced to 0.98%, such that the present value of all scheduled special payments equal the current going concern unfunded liability of $6,658,000.

In 2014, the special payment 1.68% of payroll is projected to be $739,000.

TRANSFER DEFICIENCY PAYMENTS

As at December 31, 2013, the transfer ratio, as defined under the Nova Scotia *Pension Benefits Act*, is equal to 76.1%. Therefore, the Plan may transfer the commuted value of a pension on a 100% basis only if:

- An amount equal to the transfer deficiency has been remitted to the fund (the transfer deficiency is equal to 23.9% of the total commuted value payable); or:
- The transfer deficiency for the individual is less than 5% of the YMPE for that year (i.e. the commuted value is less than $11,000 for 2014), and the aggregate of the transfer deficiency for all transfers made since the last review does not exceed 5% of the assets of the Plan at that time.

If these conditions are met, the Nova Scotia *Pension Benefits Act* allows a former member's entire entitlement to be transferred out of the Plan.

TOTAL CONTRIBUTIONS

The following table summarizes the minimum required contributions for the Defined Benefit provision of the Plan.

Table 4.5 –Minimum Contribution Requirement in 2014

	Minimum Required Contribution in 2014	
	$	% of payroll
Normal cost	6,596,000	14.99
Annual amortization payment	739,000	1.68
Total contributions	7,335,000	16.67

As shown in the above table, the minimum required contributions as a percentage of payroll for 2014 is 16.67%.

The required employee contributions are 8.5% of earnings up to the YMPE and 11.0% of earnings above the YMPE, subject to the maximum allowable under the *Income Tax Act*. Total projected employee contributions are equal to 8.52% of payroll, or $3,750,000 in 2014.

According to the Plan provisions, the participating employers are required to contribute any amounts, in excess of employee contributions, required to fund the benefits under the Plan. Since inception of the Plan, the employers and the employees have been contributing the same percentage of pay, and the total expected contribution in 2014 is equal to 17.04% of payroll. This amount exceeds the minimum required contribution in respect of normal cost and deficiency amortization payments.

The maximum 2014 contribution permitted under the *Income Tax Act* is $36,846,000. It constitutes the total normal cost of $6,596,000 and the wind-up shortfall of $30,250,000. The total contributions remitted to the Plan in 2014 are not allowed to exceed the maximum contributions permitted.

With respect to the Defined Contribution provision, both the members and the employers are required to contribute 5.0% of earnings.

APPENDIX A – GOING-CONCERN ACTUARIAL BASIS

ASSET VALUATION METHOD

The actuarial value of the assets used to determine the solvency funded status smoothes investment gains and losses relative to the going-concern discount rate over a 5 year period. This method is the same as the one used in the last valuation.

ACTUARIAL COST METHOD

The actuarial liabilities and the normal cost on the going-concern basis were calculated using the projected accrued benefit (or projected unit credit) actuarial cost method.

The 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 assumptions as indicated hereafter.

The normal cost is equal to the actuarial present value of benefits expected to be earned by members in the year following the valuation date. The residual normal cost is the excess of the normal cost over employees' required contributions.

The valuation method for determining the actuarial liabilities and the normal cost is the same as the one used in the last valuation.

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 members remain stable. All other things being equal, an increase in the average age of the active 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.

ACTUARIAL ASSUMPTIONS

The main actuarial assumptions used in the going-concern valuation are summarized in the following table. Some assumptions used in this valuation are different from those used in the previous valuation. For comparison purposes, the assumptions used in the last valuation are also included in the table. All rates and percentages are annualized unless otherwise noted.

Table A.1 – Going-Concern Actuarial Assumptions

	December 31, 2013	December 31, 2012
Discount rate	5.75%	5.75%
Inflation	2.50%	2.50%
Salary increase	3.50%	3.25%
YMPE increase	3.25%	3.25%
Pre-retirement mortality	None	None
Post-retirement mortality	CPM-RPP2014Publ Table (Final) with generational projection using improvement scale CPM-B Sex distinct Size adjustment factors of 1.25 for males and 1.10 for females	CPM-RPP2014Publ Table (Draft) with generational projection using improvement scale CPM-A Sex distinct Size adjustment factors of 1.25 for males and 1.10 for females
Termination	None	None
Retirement	Active members: 60% at age 60, 40% at age 65 Inactive and deferred: 100% at 60	Active members: 60% at age 60, 40% at age 65 Inactive and deferred: 100% at 60
% with eligible survivors	80%	80%
Difference in age between spouses	Male is 4 years older than female	Male is 4 years older than female
Asset methodology	5-year smoothing	5-year smoothing

CHOICE OF ASSUMPTIONS

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

Inflation rates

As stated in its monetary policy, the Bank of Canada aims to keep inflation at the 2% target, i.e. the midpoint of the 1% to 3% inflation-control target range. Given historical increases in consumer prices in Canada, the rates expected by the market, portfolio managers' expectations and the Bank of Canada policy, an expected rate of inflation of 2.50% has been used.

Margins and provision for adverse deviations

A margin for adverse deviation is required by the Terms of Engagement. A margin of 0.25% has been used which, using stochastic projections, is expected to result in the actual Plan returns exceeding the discount rate with a 53% probability.

Discount rate

The elements considered in the development of the discount rate assumption for going-concern purposes are summarized in the table below:

Table A.2 – Discount Rate

	%
Expected inflation	2.50
Expected real return	3.55
Value added for rebalancing and diversification effect	0.40
Margin for adverse deviations	(0.20)
Expected expenses	(0.50)
Discount rate	5.75

The following table shows the expected real return by asset class for passive management. It should be noted that the return assumptions for bonds has been determined mainly (but not totally) on current market conditions while the return assumptions for equities are based more on long term expectations. In addition, the Plan Trustees elected to amend the Plan's investment policy to allocate 10% of the Canadian Equity portfolio to Real Estate, which is expected to be implemented in the spring of 2015, and to gradually lengthen the duration of the Canadian bond portfolio. These changes have been reflected in developing the expected real return.

Table A.3 – Expected real return by asset class (passive management)

Asset classes	**Target asset mix**	**Expected real return**
	%	%
Canadian bond	30	1.30
Global bond	10	2.40
Canadian equity	20	5.30
US equity	15	4.65
International equity	15	5.00
Real estate	10	4.00
Expected average real return		3.55

Portfolio rebalancing will affect the portfolio's expected long-term return. In other words, realigning portfolio's weightings to the target determined in the investment policy from time to time will have an impact on the long-term return. The impact of portfolio rebalancing depends on its frequency, the weightings between asset classes, the level of diversification in the portfolio and the investment horizon. The expected return is also influenced by the level of diversification of the portfolio (this is independent of rebalancing). The expected impact of rebalancing and diversification on the portfolio's return (weighed average of returns of asset classes) was estimated on the basis of a log-normal distribution.

The discount rate has been adjusted to reflect fees related to asset management and plan administration.

Mortality

The Plan is not large enough to provide its own statistically credible mortality experience. In order to take into account the improvements in life expectancy recently substantiated by the Canadian Institute of Actuaries in its final report on Canadian Pensioners Mortality (published in February of 2014), we used the CPM-RPP2014 Mortality Table for public sector employees, and the CPM-B Improvement Scale, which varies by gender, age and calendar year. Adjustment factors of 1.25 and 1.10 for males and females, respectively, were also applied to the mortality table to take into account the level of pensioner benefits and the projected pension benefits of active members. The same adjustments were used for all participants after retirement. This represents a change from the 2013 valuation, in which the draft tables of the Canadian Institute of Actuaries' study were used.

APPENDIX B – SOLVENCY AND HYPOTHETICAL WIND-UP ACTUARIAL BASIS

ASSET VALUATION METHOD

The actuarial value of the assets used to determine the solvency funded status smoothes investment gains and losses relative to the going-concern discount rate over a 5 year period. This valuation method is the same as the one used in the last valuation.

The actuarial value of the assets used to determine the hypothetical wind-up funded status is equal to the market value of assets, adjusted for amounts payable and receivable. This valuation method is the same as the one used in the last valuation.

ACTUARIAL COST METHOD

The solvency liabilities are determined using the accrued benefit (or unit credit) actuarial cost method. The solvency 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, but excluding the value of grow-in rights. Grow-in rights represent the additional benefits payable on Plan wind-up where members whose age and service total at least 55. For these individuals, their pension rights (in terms of, for example, eligibility for a pension or the calculation of an unreduced retirement date) are based on the assumption that the service with the employer continues beyond the Plan wind-up date. In this case, grow-in benefits affect the date on which some members may retire with an unreduced pension. This method is the same as the one used in the last valuation.

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

ACTUARIAL ASSUMPTIONS

The main actuarial assumptions used in the solvency and hypothetical wind-up valuations correspond to those prescribed by the applicable legislation.

These assumptions are summarized in the following table. For comparison purposes, the assumptions used in the last valuation are also included. All rates and percentages are annualized unless otherwise noted.

Table B.1 – Solvency and Hypothetical Wind-Up Actuarial Assumptions

	December 31, 2013	December 31, 2012
Discount rates (settlement by transfer of values)	3.00% for the first 10 years 4.60% thereafter	2.40% for the first 10 years 3.60% thereafter
Discount rates (settlement by purchase of annuities)	3.93%	2.96%
Member election	Members under age 50 are assumed to elect the commuted value of their benefits Members age 50 or over are assumed to elect to purchase an annuity from an insurance company	Members under age 50 are assumed to elect the commuted value of their benefits Members age 50 or over are assumed to elect to purchase an annuity from an insurance company
Salary increase	None	None
Pre-retirement mortality	None	None
Post-retirement mortality	UP94 with generational projection using scale AA Sex distinct	UP94 with generational projection using scale AA Sex distinct
Termination	None	None
Retirement	Age that maximizes the value of each member's benefits	Age that maximizes the value of each member's benefits
% with eligible survivors	80%	80%
Difference in age between spouses	Male is 4 years older than female	Male is 4 years older than female
Asset methodology	5-year smoothing	5-year smoothing
Wind up expenses	$500,000	$500,000

Termination scenario

The termination scenario used in the solvency and hypothetical wind-up valuations includes the following assumptions:

- Plan wind-up would not result from employer insolvency.
- All assets could be realized at their reported market value.

This approach is the same as the one used in the last valuation.

Margin for adverse deviations

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

CHOICE OF ASSUMPTIONS

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. 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.

INCREMENTAL COST

The incremental cost on the solvency basis is based on the actuarial method and assumptions described below.

Actuarial Cost Method

The method used to calculate the incremental cost may be described as follows:

1. Present value of expected benefit payments between December 31, 2013 and December 31, 2014, discounted to December 31, 2013;

   Plus

2. Projected solvency liabilities as at December 31, 2014, discounted to December 31, 2013;

   Less

3. Solvency liabilities as at December 31, 2013.

The projected liabilities as at December 31, 2014 take into account:

- expected decrements and related changes in membership status between December 31, 2013 and December 31, 2014;
- accrual of service to December 31, 2014; and
- projection of pensionable earnings to December 31, 2014.

Actuarial Assumptions

The assumptions used to calculate the expected benefit payments in item 1. above and decrement probabilities, service accruals, projected changes in benefits and projected changes in the pensionable earnings in item 2. above correspond to those used in the going-concern valuation as at December 31, 2013.

The assumptions used to calculate the projected solvency liabilities as at December 31, 2014 in item 2. above correspond to those used for the solvency valuation as at December 31, 2013, taking into account the method of settlement applicable to each member as at December 31, 2014.

However, we assume that the discount rates remain at the levels applicable as at December 31, 2013 and that the select period is reset as at December 31, 2014 for discount rate assumptions that are select and ultimate.

We also assume that the standards of practice for the calculation of commuted values and the guidance for estimated annuity purchase costs in effect as at December 31, 2013 remain in effect as at December 31, 2014.

The projected solvency liabilities as at December 31, 2014 in item 2. above is calculated using the same postulated scenario as is used for the solvency valuation as at December 31, 2013.

No new entrants were considered between December 31, 2013 and December 31, 2014 as the impact on the incremental cost is not material.

APPENDIX C – ASSETS

SOURCE OF INFORMATION

All information pertaining to the assets has been extracted from the financial statements provided by the Plan custodian, Manulife Financial. There was no indication of any problem with the assets in the financial statements.

Tests have been performed to ensure that contributions, benefits payments and investment earnings were reasonable.

STATEMENT OF NET ASSETS (MARKET VALUE)

DB Provision

The following table shows the asset allocation as at December 31, 2013.

Table C.1 – Net Assets (Market Value)

	December 31, 2013
	$
Invested assets (market value)	
– Fixed income	38,114,019
– US equity	15,802,710
– Canadian equity	30,490,698
– International equity	16,144,292
Total invested assets	100,551,719

DC Provision

The assets in respect of the Defined Contribution Provision of the Plan were $2,838,000 as at December 31, 2013.

The following table shows the asset mix as at December 31, 2013.

Table C.2 – Asset Mix by Asset Class

Asset classes	Asset mix	Target asset mix
	%	%
Fixed income	37.9	40.0
Canadian equity	30.3	30.0
US equity	15.7	15.0
International equity	16.1	15.0
Total	100.0	100.0

CHANGES IN NET ASSETS

The following table shows changes affecting the assets during the inter-valuation period, based on market values.

Table C.3 – Reconciliation

	2013	2012	2011
	$	$	$
Net assets – beginning of period	83,381,987	73,202,402	70,012,977
Increase in assets			
Contributions			
– Member contributions	4,006,466	3,654,251	3,602,778
– Employer contributions	4,005,662	3,653,411	3,602,078
– Total	8,012,128	7,307,662	7,204,856
Investment income	12,286,388	5,342,513	(1,404,413)
Total	20,298,516	12,650,175	5,800,443
Decrease in assets			
Benefits paid			
– Pensions in payment	1,816,528	1,464,159	1,218,665
– Transfer and refunds	848,523	588,441	921,807
– Total	2,665,051	2,052,600	2,140,472
Expenses	463,732	417,990	470,546
Total	3,128,784	2,470,589	2,611,018
Net assets – end of period	100,551,719	83,381,987	73,202,402

Figures may not add up due to rounding.

RETURN ON ASSETS

The annual rates of return achieved on assets, after investment management fees and other fees charged to the fund are as follows:

Table C.4 – Return on Assets after expenses

Year	Market Value Basis
	%
2010	9.16
2011	(2.57)
2012	6.50
2013	13.75

ACTUARIAL VALUE OF ASSETS

The following shows the determination of the actuarial value of assets as at December 31, 2013 in respect of the DB Provision:

TABLE C.5 – ACTUARIAL VALUE OF ASSETS (DB PROVISION)

	$	$
Market value of assets		100,552,000
Less 4/5 of the excess investment gain or add 4/5 of the excess investment loss in 2013 (0.8 * (6,879,000))	(5,504,000)	
Less 3/5 of the excess investment gain or add 3/5 of the excess investment loss in 2012 (0.6 * 3,000)	2,000	
Less 2/5 of the excess investment gain or add 2/5 of the excess investment loss in 2011 (0.4 * 6,612,000)	2,958,000	
Less 1/5 of the excess investment gain or add 1/5 of the excess investment loss in 2010 (0.2 * (1,834,000))	(434,000)	
Smoothing adjustment		(2,978,000)
Net amount in-transit		407,000
Actuarial value of assets		97,981,000

Figures may not add up due to rounding.

APPENDIX D – MEMBERSHIP DATA

DESCRIPTION OF MEMBERSHIP DATA

Morneau Shepell maintains the data for the Plan as the designated third party administrator. The data was compiled as at December 31, 2013. We have taken the following steps to review the data to ensure sufficiency and reliability:

- individual benefit statements as at December 31, 2013 were distributed to the members who were requested to report any errors;
- the contributions and payments made since the previous valuation shown in the financial statements were compared with the equivalent values produced by the data;
- a reconciliation was prepared in order to follow the changes concerning some of the active and disabled members and vested members;
- basic data checks were performed to ensure that employee accounts, age, salary and service data were reasonable for the purposes of the valuation.

SUMMARY OF MEMBERSHIP DATA

The following tables were prepared using data provided by the School Boards of Nova Scotia regarding its active and disabled members, retirees and former members.

These tables show the following:

D.1 A summary of membership data

D.2 Changes in Plan membership

D.3 Distribution of active and disabled members according to age and service as at December 31, 2013

TABLE D.1 - SUMMARY OF MEMBERSHIP DATA

		December 31, 2013	December 31, 2012
Active members	Number	1,610	1,574
	Average Age	51.7 years	51.3 years
	Average Salary	$31,095	$30,643
	Average Contributions with Interest	$21,978	$21,472
	Average Credited Service	8.3 years	8.2 years
Inactive and Deferred Members	Number	173	149
	Average Age	49.6 years	50.0 years
	Average Benefit	$2,015	$2,058
Pensioners	Number	343	297
	Average Age	67.7 years	67.5 years
	Average Benefit	$5,939	$5,750

TABLE D.2 - CHANGES IN PLAN MEMBERSHIP

	DB members					DC members
	Actives	Inactives	Deferred and Pending	Pensioners	Total	Total *
At December 31, 2012	1,574	56	93	297	2,020	297
New members	138	0	3	0	141	7
Paid out terminations	(22)	(3)	(7)	0	(32)	(7)
To deferred or pending	(16)	(4)	20	0	0	(3)
To inactive	(34)	34	0	0	0	0
To active	16	(16)	0	0	0	0
Retirements	(45)	(1)	(2)	48	0	(7)
Deaths	(1)	0	0	(8)	(9)	(2)
Survivors	0	0	0	5	5	0
Limited member	0	0	0	1	1	0
Data correction	0	0	0	0	0	(1)
At December 31, 2013	**1,610**	**66**	**107**	**343**	**2,126**	**284**

* *Membership reconciliation of DC plan is provided by Manulife.*

TABLE D.3 - AGE/SERVICE DISTRIBUTION FOR ACTIVE MEMBERS AS AT DECEMBER 31, 2013

Age	Credited Service	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
20-24	Number	15							15
	Average 2013 Salary	$30,661							$30,661
	Average of Accrued Pension	$469							$469
	Average CWI	$2,617							$2,617
25-29	Number	18	2						20
	Average 2013 Salary	< >	< >						$34,836
	Average of Accrued Pension	< >	< >						$821
	Average CWI	< >	< >						$4,696
30-34	Number	44	21	2					67
	Average 2013 Salary	$31,131	< >	< >					$32,517
	Average of Accrued Pension	$785	< >	< >					$1,915
	Average CWI	$4,488	< >	< >					$10,388
35-39	Number	47	35	6	1				89
	Average 2013 Salary	$28,858	$32,612	< >	< >				$31,197
	Average of Accrued Pension	$751	$3,584	< >	< >				$2,409
	Average CWI	$4,328	$19,526	< >	< >				$12,761
40-44	Number	73	67	15	6	2			163
	Average 2013 Salary	$29,580	$31,715	$29,791	< >	< >			$30,998
	Average of Accrued Pension	$1,123	$3,478	$5,496	< >	< >			$2,941
	Average CWI	$6,411	$18,731	$26,893	< >	< >			$15,451
45-49	Number	107	97	37	10	8	2		261
	Average 2013 Salary	$29,201	$30,226	$36,444	$34,172	< >	< >		$31,197
	Average of Accrued Pension	$1,028	$3,434	$6,552	$8,885	< >	< >		$3,491
	Average CWI	$5,911	$18,737	$32,029	$42,627	< >	< >		$18,206
50-54	Number	91	155	74	18	9	10	3	360
	Average 2013 Salary	$28,408	$30,131	$31,122	$36,093	$34,236	< >	< >	$30,812
	Average of Accrued Pension	$960	$3,613	$5,899	$9,090	$10,814	< >	< >	$4,408
	Average CWI	$5,554	$19,473	$28,183	$41,106	$54,704	< >	< >	$22,791
55-59	Number	63	134	69	30	12	8	6	322
	Average 2013 Salary	$26,628	$31,017	$34,157	$34,129	$36,389	$45,627	$37,425	$31,804
	Average of Accrued Pension	$980	$3,692	$6,648	$8,870	$11,930	$18,823	$18,719	$5,240
	Average CWI	$5,616	$19,852	$32,682	$44,336	$59,740	$126,199	$121,479	$28,120
60-64	Number	44	81	67	14	11	13	6	236
	Average 2013 Salary	$26,146	$28,029	$34,112	$38,796	$45,731	$34,351	< >	$31,536
	Average of Accrued Pension	$1,124	$3,303	$6,567	$10,181	$15,331	$13,968	< >	$5,805
	Average CWI	$6,542	$17,887	$31,855	$57,001	$90,710	$87,646	< >	$32,236
65+	Number	29	28	14	5		1		77
	Average 2013 Salary	$21,204	$26,729	$31,773	< >		< >		$25,725
	Average of Accrued Pension	$504	$3,132	$5,925	< >		< >		$3,078
	Average CWI	$2,859	$17,115	$31,667	< >		< >		$16,659
Total		531	620	284	84	42	34	15	1,610
Average 2013 Salary		$28,525	$30,346	$33,544	$35,444	$39,167	$40,244	$38,976	$31,095
Average of Accrued Pension		$930	$3,521	$6,363	$9,118	$12,848	$16,419	$19,323	$4,123
Average CWI		$5,345	$19,041	$31,035	$45,191	$67,919	$100,868	$123,279	$21,978

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APPENDIX E – SUMMARY OF PLAN PROVISIONS

Defined Benefit Provision of the Plan

INTRODUCTION

The *Pension Plan for the Non-Teaching Employees of the School Boards of Nova Scotia* became effective April 1, 1992.

ELIGIBILITY FOR MEMBERSHIP

A full-time employee must join the Plan on the first day of the month coincident with or next following his date of hire.

A part-time employee may join the Plan on the first day of any month coincident with or next following the completion of 24 months of continuous service subject to having worked not less than 300 hours, or having employment earnings of not less than 35% of the YMPE, in each of the two immediately preceding calendar year.

CONTRIBUTIONS

Since August 1, 2012, members are required to contribute 8.5% of earnings in excess of the YMPE and 11.0% in excess of YMPE, up to the maximum allowable contribution under the *Income Tax Act*. However, member contributions may not fund more than 50% of the pension benefit accrued by the member. Calculations to determine if there are "excess" member contributions are made on termination, retirement, or death.

Employers contribute such amounts as are necessary, based on the advice of the actuary, to provide the benefits under the Plan. In the past, employees and the employers have been contributing equal amounts to the Plan.

RETIREMENT DATE

Normal Retirement Date

The normal retirement date is the first day of the month coincident with or next following the member's 60^{th} birthday.

Optional Retirement Date

The optional retirement date is the first day of the month coincident with or next following the date on which the member attains age 55 and age plus Eligibility Service is greater than or equal to 80.

Early Retirement Date

If a member has been in the Plan for at least two years, the member may choose to retire as early as age 50.

RETIREMENT BENEFITS

Normal Retirement

The normal retirement benefit is equal to:

a) 1.5% of a member's Best Average Earnings multiplied by Credited Service prior to January 1, 2002 plus;

b) 1.5% of a member's Best Average Earnings up to the average YMPE plus 2.0% of his Best Average Earnings in excess of his average YMPE multiplied by his Credited Service after December 31, 2001.

Where:

Best Average Earnings means the annual average of each member's earnings during the best five consecutive years of credited service; and

Average YMPE means the average of the annual YMPE in the year of retirement, termination or death, plus the four preceding years.

Early Retirement Pension

If a member retires early, the member will be entitled to a pension that is calculated the same way as for a normal retirement, with a reduction equal to the lesser of:

- ½% per month that the actual retirement date precedes the normal retirement date; and
- ½% per month for each month the actual retirement date precedes the date that he would have reached his optional retirement date based on continuous service at the actual retirement date.

Postponed Retirement Pension

A member may elect to postpone retirement. In that case, the member continues to contribute and accrue normal benefits.

DEATH

Death before Retirement

If a member dies before the normal retirement date, the member's spouse or beneficiary will receive a lump sum payment to the member's contributions with interest to the date of death. If, however, the member has completed at least two years of plan membership and is survived by a spouse, the member's spouse is entitled to a lump sum payment equal to 60% of the commuted value of the member's accrued pension.

Death after Retirement

The normal form of payment is a lifetime pension guaranteed for five years for members without a spouse. If a member has a spouse at date of retirement, then the normal form is a lifetime pension and payable after the member's death to the member's spouse for life in the amount of 60% of the amount being paid to the member.

TERMINATION BENEFITS

If a member's employment terminates for reasons other than death or retirement, the benefits payable from the Plan will depend on the member's length of plan membership, as follows:

Benefits in the Event of Termination of Employment

If member has:	The Plan will pay:
Less than 2 years of membership	A refund of the member's contributions with interest
At least 2 years of membership	A deferred pension based on the member's earnings, contributions and credited service up to the date of termination.

Deferred pensions are payable commencing at the Normal Retirement Date, or at the Optional Retirement Date (based on the member's service at the date of termination). However, a member may elect to receive a reduced early retirement pension from age 50 or later.

If a member is entitled to a deferred pension, the member may, in lieu of the deferred pension, transfer the commuted value of that pension into another retirement vehicle in accordance with the applicable federal and provincial legislation.

Defined Contribution Provision of the Plan

CONTRIBUTIONS

Employees are required to contribute 5.0% of their earnings and the Employer matches the employee contributions.

RETIREMENT DATES

Normal Retirement Date

The normal retirement date is the first day of the month coincident with or next following the member's 60th birthday.

Early Retirement Date

If a member has been in the Plan for at least two years, the member may choose to retire as early as age 50.

Postponed Retirement Date

An active member may postpone retirement beyond the normal retirement date.

BENEFITS

Retirement, Termination and Death before Retirement

Upon retirement, termination of employment or death before retirement, a member is entitled to a refund of his contributions accrued with interest to the date of the event. However, if a member has at least 2 years of membership in the Plan as of the date of the event, the member is entitled to a lump sum in the amount of the sum of his contributions and contributions made by the Employer on his behalf, with interest.

DEATH

Death after Retirement

Upon death after retirement, the member's beneficiary will be entitled to benefits in accordance with the member's election upon retirement.

APPENDIX F – EMPLOYER CERTIFICATION

With respect to the actuarial valuation report of the Pension Plan for Non-Teaching Employees of the School Boards of Nova Scotia as at December 31, 2013, we hereby confirm that to the best of our knowledge:

- the data regarding Plan members and beneficiaries provided to Morneau Shepell constitutes a complete and accurate description of the individuals entitled to benefits;
- copies of the official text of the Plan and all amendments to date were provided to Morneau Shepell and the summary of Plan provisions contained in this report is accurate; and
- there are no subsequent events nor any extraordinary changes to the membership other than those listed in this actuarial report on the Plan, which would materially affect the results.

Nova Scotia School Boards Association

____

Signature

____

Name (printed)

____

Title

____

Date