MORNEAU SHEPELL

Pension Plan for Non-Teaching Employees of the School Boards of Nova Scotia

Actuarial Valuation as at December 31, 2014 for Funding Purposes

Report prepared December 2015

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, 2014 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"). Along with the NSSBA, a number of school boards (collectively, the "Employers") participate in the Plan.

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 Nova Scotia Department of Finance, Pension Regulation Division and the Canada Revenue Agency was performed as at December 31, 2013.

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

- to provide the information and actuarial opinion required by the *Income Tax Act* (Canada) in support of the NSSBA's request for a waiver under section 8503(5) of the Regulations of the *Income Tax Act* ("ITA Regulations") to allow member contributions in excess of the limit set under section 8503(4)(a), with effect from January 1, 2016;
- 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 this valuation date up to 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, 2014, based on the Plan provisions and data as at that date. We note that subsequent to the date of the valuation:

- The Regulations of the Nova Scotia *Pension Benefits Act* were amended with effect from June 1, 2015. The impact of these changes has not been taken into account in this report but will be taken into account in future reports.
- On June 15, 2015, the Actuarial Standards Board promulgated the use of the 2014 Canadian Pensioner Mortality Table (CPM2014), combined with improvement scale CPM Improvement Scale B (CPM-B), for use in the calculation of pension commuted values, effective October 1, 2015. The impact of the use of CPM2014 and CPM-B in determining pension commuted values for solvency purposes has not been taken into account in this report but will be taken into account in future reports.

The NSSBA has confirmed that, between December 31, 2014 and the date of this valuation report, no other 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, 2014:

- The Plan is not fully funded on the going-concern basis. The actuarial liabilities exceed the actuarial value of assets by $6,427,000.
- 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 $39,453,000. 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 of solvency deficiencies.
- The solvency ratio of the Plan, as defined under the Nova Scotia *Pension Benefits Act*, is equal to 0.756. 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, 2015.
- The Plan assets would have been less than the actuarial liabilities by $46,957,000 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 0.729. 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 6.53% of payroll.

- For 2015, the minimum amortization payments should be 1.72% of payroll, and the minimum total employer contribution is equal to 8.25% of payroll. The estimated employee contribution and employer contributions for normal cost and amortization payments for 2015 are shown in the following table:

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
	$	$	$	$
2015	3,936,000	3,011,000	$790,000	3,801,000

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 $46,957,000 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.

- The Employers contributed $103,900 in excess of the minimum required during 2014.

- In conjunction with this report, the NSSBA is formally requesting a waiver under section 8503(5) of the ITA Regulations to allow member contributions in excess of the limit set under section 8503(4)(a), with effect from January 1, 2016. The present value of regular required member contributions for each active member divided by the present value of future benefits in respect of regular pensionable service is 49.98%.

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 and 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, 2015.

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

Mike O'Connell

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December 18, 2015

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, 2014	December 31, 2013
	$000	$000
Actuarial value of assets		
Market value	117,389	100,552
In-transits	739	407
Asset smoothing adjustment	(6,936)	(2,978)
Total	111,192	97,981
Actuarial liabilities		
Active members	81,720	74,246
Retired members and beneficiaries	31,620	26,203
Deferred, disabled, and other inactive members	3,928	3,716
Voluntary contributions	351	475
Total	117,619	104,640
Actuarial surplus (unfunded liability)	(6,427)	(6,658)
Funding Ratio	94.5%	93.6%

Figures may not add due to rounding

The going-concern statement of financial position shown above identified a going-concern unfunded liability of $6,427,000. As such, additional special payments are required (details in Section 4 of this report).

In addition to the above, the assets in the Defined Contribution fund as of December 31, 2014 total $3,086,000.

Changes Since the Previous Valuation

Changes since the previous valuation are discussed below. The financial impact of these changes is in the section entitled “Reconciliation of Going-Concern Financial Position”.

Changes in Plan Provisions

There have been no changes to the Plan terms since the last valuation. We note that the Regulations to the Nova Scotia *Pension Benefits Act* were amended with effect on June 1, 2015, and that the impact of these changes will be reflected in future valuation reports. Please refer to Appendix E for a summary of the Plan provisions at the date of the valuation.

Changes in Actuarial Basis

The changes to the actuarial assumptions described below have been made since the last valuation.

- The inflation rate was reduced from 2.50% to 2.25% per annum.
- The salary scale has changed from 3.50% to 3.25% per annum.
- The increase in the YMPE limits has changed from 3.25% to 3.00% per annum.
- The going-concern interest rate was reduced from 5.75% to 5.60% per annum.
- Disabled members are now assumed to retire at age 65. Disabled members were assumed to retire at age 60 in the previous valuation.

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

	$000	$000
Actuarial surplus (unfunded liability) as at December 31, 2013		(6,658)
Remove asset smoothing adjustment at December 31, 2013		2,978
Expected changes in funded status:		
Interest on surplus (unfunded liability)	(212)	
Contributions in excess of current service cost with interest	1,128	
Total		916
Expected surplus (unfunded liability) as at December 31, 2014		(2,764)
Actuarial gains (losses) due to the following factors:		
Investment return on actuarial value of assets	5,171	
Termination experience	11	
Retirement experience	614	
Member mortality	(91)	
Disability / temporary leave experience	255	
Salary increases	(1,570)	
Other factors	275	
Total		4,665
Actuarial gains (losses) due to assumption changes:		
Salary and YMPE increase	1,034	
Discount rate	(2,522)	
Retirement age for disabled members	96	
Total		(1,392)
Add asset smoothing adjustment at December 31, 2014		(6,936)
Actuarial surplus (unfunded liability) as at December 31, 2014		(6,427)

Figures may not add due to rounding

The main sources of gain relate to the payments of special payments towards the Plan’s unfunded liability, positive investment experience (which is tempered by the 5-year asset smoothing methodology applied), and continued positive retirement experience.

The main sources of loss relate to the net impact of changes in actuarial assumptions, and negative salary experience. The salary experience mainly relates to the retroactive increase of salaries, due to contract settlements which occurred in 2014.

Sensitivity Analysis on the Going-Concern Basis

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 2.3 – Sensitivity of Actuarial Liabilities on the Going-Concern Basis

	December 31, 2014	Discount rate 1% lower
	$000	$000
Actuarial liabilities		
Active members	81,720	97,184
Retired members and beneficiaries	31,620	34,866
Deferred, disabled, and other inactive members	3,928	4,584
Voluntary contributions	351	351
Total	117,619	136,985
Increase in actuarial liabilities		19,366

Figures may not add 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*. It 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, 2014	December 31, 2013
	$000	$000
Solvency assets		
Market value of assets	117,389	100,552
In-transits	739	407
Solvency asset adjustment	0	(2,978)
Wind-up expenses	(500)	(500)
Subtotal (used for transfer ratio)	117,628	97,481
Present value of 5 years of going-concern special payments	4,357	3,599
Total solvency assets	121,985	101,080
Solvency liabilities		
Active members	114,203	92,394
Retired members and beneficiaries	40,680	30,389
Deferred and inactive members	6,204	4,786
Voluntary contributions	351	475
Total	161,438	128,044
Solvency surplus (deficiency)	(39,453)	(26,964)
Solvency ratio (solvency assets/solvency liabilities)	75.6%	78.9%
Transfer ratio	72.9%	76.1%

Figures may not add due to rounding

We note that the main reason for the increase in the solvency deficiency was a decline in market interest rates. This was partially offset by positive investment experience over the year, and the change in asset valuation methodology from a smoothed asset value to the market value.

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, 2014 total $3,086,000.

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, 2014, the next actuarial valuation is to be performed no later than as at December 31, 2015.

Solvency Asset Adjustment

For the 2014 valuation, the asset valuation method was changed for solvency purposes, such that asset smoothing was removed and no solvency asset adjustment is applied to the market value of assets.

Hypothetical Wind-Up Funded Status

Because certain grow-in benefits were excluded from the solvency liability, if the Plan had been liquidated as at December 31, 2014 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, 2014	December 31, 2013
	$000	$000
Hypothetical wind-up assets		
Market value of assets	117,389	100,552
In-transits	739	407
Wind-up expenses	(500)	(500)
Total	117,628	100,459
Hypothetical wind-up liabilities		
Active members	117,188	95,013
Retired members and beneficiaries	40,680	30,389
Deferred and inactive members	6,366	4,832
Voluntary contributions	351	475
Total	164,585	130,709
Hypothetical wind-up surplus (deficiency)	(46,957)	(30,250)

Figures may not add 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, 2014	Discount rates 1% lower
	$000	$000
Actuarial liabilities		
Active members	114,203	135,170
Retired members and beneficiaries	40,680	45,693
Deferred and inactive members	6,204	7,405
Voluntary contributions	351	351
Total	161,438	188,619
Increase in actuarial liabilities		27,181

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, 2014 to December 31, 2015, adjusted for expected benefit payments in the inter-valuation period. This incremental cost is $12,109,000 as at December 31, 2014.

Subsequent Events

On June 15, 2015, the Actuarial Standards Board promulgated the use of the 2014 Canadian Pensioner Mortality Table (CPM2014), combined with improvement scale CPM Improvement Scale B (CPM-B), for use in the calculation of pension commuted values, effective October 1, 2015. The impact of the use of CPM2014 and CPM-B in determining pension commuted values for solvency purposes has not been taken into account in this report but will be taken into account in future reports.

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, 2014		As at December 31, 2013	
	$000	% of payroll	$000	% of payroll
Normal cost	6,947	15.08	6,596	14.99
Less employee contributions	3,936	8.55	3,750	8.52
Residual normal cost	3,011	6.53	2,846	6.47

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 Defined Benefit normal cost are shown below:

Table 4.2 – Reconciliation of Normal Cost

	% of payroll
Normal cost as at December 31, 2013	14.99
Change due to membership experience	(0.09)
Change due to discount rate	0.44
Change due to salary assumption	(0.26)
Normal cost as at December 31, 2014	15.08

Figures may not add 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, 2014		Discount rate 1% lower	
	$000	% of payroll	$000	% of payroll
Normal cost	6,947	15.08	8,598	18.67
Increase in normal cost			1,651	3.59

Amortization Payments

The Plan has an unfunded liability of $6,427,000 on the going-concern basis as of December 31, 2014 and the deficiency is amortized over 15 years in accordance with the Nova Scotia *Pension Benefits Act*.

The Plan has a solvency deficiency of $39,453,000 as of December 31, 2014. In accordance with Section 5(2A) of the Regulations to the Nova Scotia *Pension Benefits Act*, the NSSBA 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	12-31-2018	1.68% of payroll	
	01-01-2019	12-31-2027	0.98% of payroll	6,220,000

Based on the funded status of the Plan shown in Sections 2 and 3 (noting that the NSSBA is not required to fund the solvency deficiency), a new amortization schedule must be created in the manner and order set out by the Nova Scotia *Pension Benefits Act* as follows:

Table 4.4 – Amortization Payments – Current Valuation

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	12-31-2018	1.68% of payroll	
	01-01-2019	12-31-2027	0.98% of payroll	6,220,000
Going-concern unfunded liability	01-01-2015	12-31-2029	0.04% of payroll	207,000

In 2015, the total special payment of 1.72% of payroll is projected to be $790,000.

Transfer Deficiency Payments

As at December 31, 2014, the transfer ratio, as defined under the Nova Scotia *Pension Benefits Act*, is equal to 72.9%. 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 27.1% 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 $8,535 for 2015), 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 2015

	Minimum Required Contribution in 2015	
	$	% of payroll
Normal cost	6,947,000	15.08
Annual amortization payment	790,000	1.72
Total contributions	7,737,000	16.80

As shown in the above table, the minimum total required contributions as a percentage of payroll for 2015 is 16.80%.

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 8.55% of payroll, or $3,936,000 in 2015.

According to the Plan provisions, the 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 2015 is equal to 17.10% of payroll. This amount exceeds the minimum required contribution in respect of normal cost and deficiency amortization payments.

The maximum 2015 contribution permitted under the *Income Tax Act* is $53,904,000. It constitutes the total normal cost of $6,947,000 and the wind-up shortfall of $46,957,000. The total contributions remitted to the Plan in 2015 are not allowed to exceed this amount.

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

Income Tax Regulation 8503(5) Waiver Request

The current Member contribution rate with effect from July 29, 2012, is 8.50% of his Earnings up to the YMPE and 11.0% of Earnings in excess of the YMPE, subject to the limits of section 8503(4)(a) of the ITA Regulations. The NSSBA is requesting a waiver (as permitted under section 8503(5) of the ITA Regulations, and as permitted in accordance with section 4.1 of the Plan text) of the contribution condition under section 8503(4)(a), with effect from January 1, 2016.

Assuming the contributions stated above, the following calculations are as requested by the Registered Plans Directorate in support of the NSSBA's request for a waiver under subsection 8503(5):

- The aggregate present value of future employee contributions (PVEEC) for each active member was determined. This equals the sum of each active member's regular accumulated contributions with interest as of December 31, 2014 plus the present value of contributions to be made by the member from the valuation date to the member's date of retirement based on the contribution formula assuming waiver is granted.
- The present value of future benefits (PVFB) for each active member was determined. This is the liability for benefits in respect of all periods of regular pensionable service (i.e. both past and future service).
- The PVFB does not include any liability relating to the minimum employer contribution rule (i.e., the 50% rule) of the Nova Scotia *Pension Benefits Act*.
- The ratio of the sum of the PVEEC to the sum of the PVFB was determined.

Table 4.6 – 8503(5) Waiver Request Results

Aggregate PVEEC	74,707,000
Aggregate PVFB	149,481,000
Ratio of Aggregate PVEEC to Aggregate PVFB	0.4998

- The present value of regular required member contributions for each active member divided by the present value of future benefits in respect of regular pensionable service is 49.98%.

We note that a significant portion of the total credited service (9.0%) and total member contributions with interest (14.4%) at December 31, 2014 relates to individual service purchases. This is the result of the option provided to employees to purchase eligible employment service when the funds available in their prior plans were not sufficient to recognize their entire employment period under the NSSBA Plan. For these calculations, we have excluded both the past service contributions and obligation relating to the purchased service.

The data used in preparing these calculations is the active data shown in Appendix D. The actuarial assumptions are those used for the going-concern liability calculations as shown in Appendix A.

Appendix A – Going-Concern Actuarial Basis

Asset Valuation Method

The actuarial value of the assets used to determine the going-concern 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, 2014	December 31, 2013
Discount rate	5.60%	5.75%
Inflation	2.25%	2.50%
Salary increases	3.25%	3.50%
YMPE increases	3.00%	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 (Final) with generational projection using improvement scale CPM-B 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 LTD members: 100% at age 65 Inactive and deferred: 100% at 60	Active members: 60% at age 60 40% at age 65 LTD 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 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, the expected rate of inflation was reduced to 2.25% for this valuation.

Margins and provision for adverse deviations

A margin for adverse deviation is required by the Terms of Engagement. A margin of 0.19% has been used which, using stochastic projections, is expected to result in the actual Plan returns exceeding the discount rate with a 54% 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	2.25
Expected real return	3.54
Value added for rebalancing and diversification effect	0.50
Margin for adverse deviations	(0.19)
Expected expenses	(0.50)
Discount rate	5.60

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 was partially implemented in the fall of 2015, with the remainder expected to be implemented in the winter of 2016. Additionally, the decision to gradually lengthen the duration of the Canadian bond portfolio is currently being implemented based on a combination of pre-determined triggers relating to market bond yields and elapsed time. In October 2015, 40% of the Canadian Fixed Income Portfolio was allocated to long-bonds with an ultimate target of 60% to be reached no later than October 2016. The long-term allocations have been reflected in developing the long-term expected real return.

Table A.3 – Expected Real Return by Asset Class (Passive Management)

Asset classes	Target asset mix	Expected real return
	%	%
Canadian fixed income	30	1.20
Foreign fixed income	10	2.40
Canadian equity	20	4.85
US equity	15	5.05
International equity	15	5.40
Real estate	10	4.00
Expected average real return		3.54

Figures may not add due to rounding

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.

Salary increases

The salary and YMPE increase assumption has been reduced to reflect the reduction in the inflation rate assumption and to reflect expectations of long-term increases.

Appendix B – Solvency and Hypothetical Wind-Up Actuarial Basis

Asset Valuation Method

The method used to determine the actuarial value of the assets for the solvency valuation was changed to a market value basis from the previous method which smoothed investment gains and losses relative to the going-concern discount rate over a 5-year period.

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, 2014	December 31, 2013
Discount rates (settlement by transfer of values)	2.50% for the first 10 years 3.80% thereafter	3.00% for the first 10 years 4.60% thereafter
Discount rates (settlement by purchase of annuities)	2.82%	3.93%
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	3.25*	3.50%*
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
Wind-up expenses	$500,000	$500,000
Asset methodology	Market value	5-year smoothing

** Used for calculation of solvency incremental cost.*

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, 2014 and December 31, 2015, discounted to December 31, 2014;

Plus

2. Projected solvency liabilities as at December 31, 2015, discounted to December 31, 2014;

Less

3. Solvency liabilities as at December 31, 2014.

The projected liabilities as at December 31, 2015 take into account:

- expected decrements and related changes in membership status between December 31, 2014 and December 31, 2015;
- accrual of service to December 31, 2015; and
- projection of pensionable earnings to December 31, 2015.

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, 2014.

The assumptions used to calculate the projected solvency liabilities as at December 31, 2015 in item 2. above correspond to those used for the solvency valuation as at December 31, 2014, taking into account the method of settlement applicable to each member as at December 31, 2015.

However, we assume that the discount rates remain at the levels applicable as at December 31, 2014 and that the select period is reset as at December 31, 2015 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, 2014 remain in effect as at December 31, 2015.

The projected solvency liabilities as at December 31, 2015 in item 2. above is calculated using the same postulated scenario as is used for the solvency valuation as at December 31, 2014.

No new entrants were considered between December 31, 2014 and December 31, 2015 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, 2014.

Table C.1 – Net Assets (Market Value)

	December 31, 2014
	$000
Invested assets (market value)	
Canadian Fixed Income	35,193
Foreign Fixed Income	11,735
Canadian Equity	35,556
US Equity	17,441
International Equity	17,464
Total invested assets	117,389

Figures may not add due to rounding

DC Provision

The assets in respect of the Defined Contribution Provision of the Plan were $3,086,000 as at December 31, 2014.

The following table shows the asset mix in the Defined Benefit provision as at December 31, 2014.

Table C.2 – Asset Mix by Asset Class

Asset classes	Asset mix	Target asset mix
	%	%
Canadian fixed income	30.0	30.0
Foreign fixed income	10.0	10.0
Canadian equity	30.2	30.0
US equity	14.9	15.0
International equity	14.9	15.0
Total	100.0	100.0

Figures may not add due to rounding.

Changes in Net Assets

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

Table C.3 – Reconciliation

	2014
	$000
Net assets – beginning of period	100,552
Increase in assets	
Contributions	
• Member	4,180
• Employer	4,172
• Total	8,352
Investment income	11,667
Total increase	20,020
Decrease in assets	
Benefits paid	
• Pensions in payment	2,225
• Transfer and refunds	398
• Total	2,623
Expenses	560
Total decrease	3,183
Net assets – end of period	117,389

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
	%
2011	(2.57)
2012	6.50
2013	13.75
2014	10.76

Actuarial Value of Assets

The following shows the determination of the actuarial value of assets for the going-concern valuation as at December 31, 2014 in respect of the Defined Benefit Provision:

Table C.5 – Actuarial Value of Assets (DB Provision)

	$000	$000
Market value of assets		117,389
Less 4/5 of the excess investment gain or add 4/5 of the excess investment loss in 2014 (0.8 * (5,171))	(4,137)	
Less 3/5 of the excess investment gain or add 3/5 of the excess investment loss in 2013 (0.6 * (6,879)) plus expected interest to December 31, 2014	(4,365)	
Less 2/5 of the excess investment gain or add 2/5 of the excess investment loss in 2012 (0.4 * 3) plus expected interest to December 31, 2014	1	
Less 1/5 of the excess investment gain or add 1/5 of the excess investment loss in 2011 (0.2 * 6,612) plus expected interest to December 31, 2014	1,564	
Smoothing adjustment		(6,936)
Net amount in-transit		739
Actuarial value of assets		111,192

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, 2014. We have taken the following steps to review the data to ensure sufficiency and reliability:

- individual benefit statements as at December 31, 2014 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 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 members according to age and service as at December 31, 2014

Table D.1 – Summary of Membership Data

	December 31, 2014	December 31, 2013
Active members		
Number	1,624	1,610
Average Age	51.8 years	51.7 years
Average Salary	$32,951	$31,095
Average Contributions with Interest:		
• Regular	$19,794	$18,286
• Past Service	$3,330	$3,692
• Total	$23,124	$21,978
Average Credited Service:		
• Regular	7.8 years	7.4 years
• Past Service	0.8 years	0.9 years
• Total	8.6 years	8.3 years
Disabled members		
Number	20	10
Average Age	53.1 years	52.7 years
Average Benefit	3,175	2,231
Inactive and deferred members		
Number	172	163
Average Age	50.3 years	49.4 years
Average Benefit	$2,105	$2,002
Retired members and beneficiaries		
Number	402	343
Average Age	67.8 years	67.7 years
Average Benefit	$6,063	$5,939

Table D.2 – Changes in Plan Membership

	DB Members					DC Members
	Actives	LTD	Deferred and Inactive	Pensioners	Total	Total
Members as at December 31, 2013	1,610	10	163	343	2,126	284
New members	133	—	4	—	137	9
Disability	(9)	10	(1)	—	—	
Terminations:						
Deferred or pending	(28)	—	28	—	—	
Refund or transfer	(28)	—	(15)	—	(43)	8
Death – pension cessation	—	—	—	(2)	(2)	
Retirements	(54)	—	(7)	61	—	6
Members as at December 31, 2014	1,624	20	172	402	2,218	279

[*] *Membership reconciliation of DC plan is provided by Manulife. Note that some individuals included in the DC members total also have a DB entitlement and are counted in the DB member statistics.*

Table D.3 – Age/Service Distribution for Active Members as at December 31, 2014

Age	Credited Service	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Grand Total
20 - 24	Number	7							7
	Average 2014 Salary	25,936							25,936
25 - 29	Number	28	1						29
	Average 2014 Salary	37,921	<>						37,537
30 - 34	Number	44	14	2					60
	Average 2014 Salary	34,196	31,110	<>					33,769
35 - 39	Number	46	28	11	1				86
	Average 2014 Salary	32,915	35,987	43,899	<>				35,546
40 - 44	Number	70	60	24	6	1			161
	Average 2014 Salary	30,734	33,273	35,263	37,393	<>			32,660
45 - 49	Number	80	77	46	15	7	2		227
	Average 2014 Salary	28,218	33,123	35,016	42,918	39,118	<>		32,716
50 - 54	Number	98	114	101	42	10	9	2	376
	Average 2014 Salary	32,271	31,163	30,259	37,529	38,226	40,257	<>	32,400
55 - 59	Number	57	82	95	41	12	5	8	300
	Average 2014 Salary	26,754	32,176	35,436	34,807	34,671	51,894	40,531	33,189
60 - 64	Number	27	70	75	49	14	13	5	253
	Average 2014 Salary	29,996	29,486	33,952	39,314	41,826	45,742	41,946	34,532
65+	Number	41	31	25	17	3	3	5	125
	Average 2014 Salary	24,007	27,326	32,494	33,476	29,181	34,387	38,989	28,788
Total	Number	498	477	379	171	47	32	20	1,624
	Average 2014 Salary	30,427	31,696	33,792	37,540	37,979	44,055	40,958	32,951

Notes:

The age is computed at the nearest birthday.

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

Cells marked <> are not shown for confidentiality.

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 60th 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, 2014, 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

Morneau Shepell is the largest company in Canada offering human resources consulting and outsourcing services. The Company is the leading provider of Employee and Family Assistance Programs, as well as the largest administrator of pension and benefits plans. Through health and productivity, administrative, and retirement solutions, Morneau Shepell helps clients reduce costs, increase employee productivity, and improve their competitive position. Established in 1966, Morneau Shepell serves more than 20,000 clients, ranging from small businesses to some of the largest corporations and associations in North America. With approximately 3,600 employees in offices across North America, Morneau Shepell provides services to organizations across Canada, in the United States, and around the globe. Morneau Shepell is a publicly traded company on the Toronto Stock Exchange (TSX: MSI).