MORNEAU SHEPELL

Nova Scotia Public Service Long Term Disability Plan

Actuarial Valuation as at December 31, 2016

Prepared April 2017

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Executive Summary

This report has been prepared at the request of the Board of Trustees (the "Board") of the Nova Scotia Public Service Long-term Disability Plan Trust Fund (the "Plan"). The Board has retained Morneau Shepell to perform an actuarial valuation of the Plan as at December 31, 2016. The main purposes of the valuation are to assess the funded position of the Plan and to determine whether current premium levels are adequate.

The results of the valuation are summarized below.

Funding Position as at Dec. 31, 2016

Item	Amount
Net Assets Available for Benefits (market value)	$153,988,000
Total Liabilities	$82,985,000
Funding Margin	$71,003,000

The Plan's total liabilities of $82,985,000 have been calculated using a discount rate of 3.0%. The liabilities include both active in-force claims as of the valuation date and allowance for claims incurred before the valuation date but not yet reported or adjudicated. It also includes a provision for future administrative expenses on claims incurred as of the valuation date equal to 8.5% of expected benefit payments.

The Plan's funding margin of $71,003,000 represents a $3.4 million improvement over the funding margin that existed at the time of the last valuation (December 31, 2014). The main items contributing to this change in funded position are:

- Investment returns in 2015 and 2016 greater than expected (3.0%) coupled with interest on the Trust's existing funding margin at December 31, 2014;
- Experience gains on claims incurred as at the last valuation; and
- Higher than expected costs for disabilities incurred in 2015 and 2016.

We have estimated the cost of providing ad hoc indexing at December 31, 2017 and December 31, 2018 to be $1,928,000. If adopted, such indexing would provide inflation protection to qualifying claimants (i.e. those who have been on claim for at least 24 months by the indexation date) for CPI increases to December 31, 2018. It would lower the Plan's funding margin to $69,075,000.

We have also estimated a range for the expected cost of new claims for the 2017 disability year. Based on the Plan's new claim cost experience from 2012 to 2016, we expect new claims costs in 2017 to be between $14.0 million and $15.4 million. Please note that this is a best-estimate range and does not include any margin for adverse deviation. The Plan's estimated 2017 premiums ($13.3 million) are less than the lower bound of the best-estimate range for 2017 new claim costs. To the extent that Plan premiums collected are different than the actual cost of new claims, there will be a gain or loss to the Plan's funded position. However, given the Plan's significant funding margin, new claims costs slightly exceeding Plan premiums does not represent an immediate risk to the Plan's financial position.

As part of its risk oversight function, the Board monitors the adequacy of the Plan's surplus level using both plan-specific targets and standard insurance industry targets along with assessing the match between the Plan's assets and liabilities. On all three measures the Plan appears to be in a solid financial position. In particular:

- The Plan's target contingency reserve is 136% funded;
- Application of insurance industry targets shows that the Plan has over three times the standard required capital amount; and
- Cash flow projections show a good match between asset income from the Plan's liability-hedging portfolio (in-flows) and expected benefit payments (out-flows).

More background on each of these measures and their results is given in Section 4 (Risk Oversight) of this report.

Introduction

This report has been prepared at the request of the Board of Trustees (the "Board") of the Nova Scotia Public Service Long-term Disability Plan Trust Fund (the "Plan"). The Board has retained Morneau Shepell to perform an actuarial valuation of the Plan as at December 31, 2016 (the "valuation date"). The previous valuation of the Plan was performed as at December 31, 2014.

The purpose of this actuarial valuation is:

- To determine the going-concern funded position of the Plan as at December 31, 2016; and
- To estimate the cost of new long-term disability claims incurred after December 31, 2016 until the date of the next actuarial valuation (scheduled for December 31, 2018).

Certain results from the actuarial valuation will also be used for financial reporting purposes by the Plan in accordance with its accounting standards.

The valuation was performed in accordance with Terms of Engagement signed by management of the Plan and Morneau Shepell. The Terms of Engagement define the scope and purpose of the valuation, and describe the methodology and assumptions to be used. The significant terms of the engagement include:

- The valuation is to be conducted on a best-estimate basis and does not include any specific provisions for adverse deviation.
- The discount rate for the valuation considers the expected rate of return on the Trust's total investment assets (i.e. both the liability-hedging and return-generating portfolios).
- The valuation does not include any calculation of taxes that the Trust may owe under Health and Welfare trust rules as a result of operations up to the valuation date. It also does not include any projection of taxes that may become payable in the future as result of the Trust's operations.

For full details on the terms for the December 31, 2016 valuation, please reference the actual signed Terms of Engagement document.

This report is organized as follows:

- Section 1 contains our Actuarial Statement of Opinion;
- Section 2 outlines the Plan's financial position as at the valuation date along with the major items contributing to its change since the last valuation;
- Section 3 contains our estimate of the cost of new claims for the Plan;
- Section 4 reviews the results of certain metrics used by the Plan to assess its funding adequacy and asset-liability mismatch risk; and
- Our concluding comments are given in Section 5.

Various appendices are attached to this report that present more detail on the methodology, data and results of the calculations.

Section 1 – Statement of Actuarial Opinion

We have completed a going-concern funding valuation of the benefit liabilities of the Nova Scotia Public Service Long-term Disability Plan Trust Fund (the "Plan") as at December 31, 2016 (the "valuation date"). Details of the data, actuarial assumptions, valuation methods, and results are included in the actuarial valuation report as at the valuation date, of which this statement forms part. The valuation reflects our understanding of the provisions of the Plan, and its associated policies and procedures as of the date of this report. To the best of our knowledge, there have been no subsequent events as of the date of this report that would have a material impact on this valuation.

Our estimate of the liabilities for the Plan is $82,985,000. This figure includes both active in-force claims as of the valuation date and allowance for claims incurred before the valuation date but not yet reported or adjudicated. It also includes a provision for future administrative expenses on claims incurred as of the valuation date. It does not include any provision for future indexing of benefit amounts. The estimated additional cost to provide indexing to qualifying claimants for the next two calendar years is $1,928,000. If approved, such indexing would increase the estimated liabilities to $84,913,000.

Finally, our estimated range for the annual cost of new disabilities is $14.0 million to $15.4 million (2017 dollars).

In our opinion:

- the data on which the valuation is based are sufficient and reliable for the purpose of the valuation;
- the assumptions are appropriate for the purpose of this valuation; and
- the methods employed in the valuation are appropriate for the purpose of the valuation.

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

Emerging experience, differing from the assumptions used in this valuation, will give rise to gains or losses which will be revealed in future actuarial valuations of the Plan. The next full actuarial valuation of the Plan is scheduled for December 31, 2018.

We are available to respond to any comments or questions regarding this report.

Respectfully submitted,

Mark Simpson, F.S.A., F.C.I.A.
Principal

This report has been peer reviewed by Allen Furlong, ACIA.

April, 2017

Section 2 – Financial Position

Balance Sheet as at December 31, 2016

The financial position of the Plan as at December 31, 2016 is presented in the table below (all dollar figures are in 1,000's). Results are shown with the potential ad hoc indexing separately identified. The net market value of assets figures were obtained from the Plan's financial statements. For reference, the results from the last valuation as at December 31, 2014 (the "previous valuation") are also shown.

	December 31, 2014	December 31, 2016
Market Value of Net Assets Available for Benefits	$145,746	$153,988
Actuarial Liabilities		
• Claims currently in payment	$60,609	$66,884
• Claims incurred but not reported or approved (IBNR)	$9,462	$9,600
• Future admin expenses on claims currently in payment	$5,956	$6,501
Total Liabilities	$76,027	$82,985
Funding Margin / (Deficiency)	$69,719	$71,003
Funded Percentage	191.7%	185.6%
Cost of ad hoc indexing for 2 years	$2,093	$1,928
Total Liabilities Including ad hoc Indexing	$78,120	$84,913
Funding Margin / (Deficiency) Including ad hoc Indexing	$67,626	$69,075
Funded Percentage Including ad hoc Indexing	186.6%	181.3%

The assumptions and methods used to calculate the liability figures for the current valuation are outlined in Appendix A – Actuarial Basis. As well, the data on which the calculations are based is described in more detail in Appendix B. Finally, Appendix C shows a reconciliation of the Plan's market value of net assets figure from the previous valuation to the current valuation.

Reconciliation of Financial Position

The following table shows a reconciliation of the change in the financial position of the Plan from December 31, 2014 to December 31, 2016 (all figures are in $1,000's):

	Adjustments	Funding Margin
Funding Margin as at December 31, 2014		**$67,626**
Interest on funding margin at 3.00% for two years	4,118	
Gain due to investment returns higher than assumed	1,943	
Revenue loss due to new claim costs in excess of premiums	(10,611)	
Experience gain on claims incurred as at December 31, 2014	7,879	
Liability change due to revisions to CPPD offset assumption	299	
Other sources of gain (loss)	(251)	
Funding Margin as at December 31, 2016, prior to ad hoc indexing		**$71,003**
Cost of ad hoc indexing for 2017 and 2018	(1,928)	
Funding Margin as at December 31, 2016, after ad hoc indexing		**$69,075**

Overall, the Plan's funding position improved by $3.4 million since the previous valuation. This net improvement results from a combination of several gain and loss items.

- As at December 31, 2014 the Plan had a funding margin of $67.6 million. Even if the assumptions used in the previous valuation had been exactly realized, the Plan's funding margin would have grown due to investment income earned by the existing margin amount. A 3.0% rate of return earned for two years would have increased funding margin by $4.1 million.
- The previous valuation assumed that the Trust assets would earn 3.0% per annum, net of investment-related expenses. Actual investment returns (net of investment expenses) over the past two years have averaged 3.65% per annum. The Trust's better than expected investment performance has resulted in a gain of $1.9 million over the two-year period.
- The calculated cost of new long-term disability claims incurred since the previous valuation (including associated expenses) has exceeded the premiums (including EI rebates) collected over this time period. This shortfall in revenue has reduced the Plan's funding position by $10.6 million.
- There has been a significant experience gain on claims incurred as at the previous valuation (i.e. claims from disability years 2014 and prior). Overall, the net experience gain on claims incurred as at December 31, 2014 is $7.9 million and is composed of several items:
    - $1.7 million gain due to claims terminating earlier than expected.
    - $1.5 million gain due to net benefit amounts being lower than anticipated.
    - $4.1 million gain for less claims emerging than provided for in last valuation's Incurred But Not Reported liability.
    - $0.6 million gain due to actual payments made during 2015 and 2016 being less than expected.

- As discussed in Appendix A, the Plan has updated its approach to projecting CPP disability ("CPPD") pension offsets. The updated assumption reduces Plan liabilities and produces a gain of $0.3 million.
- The "Other sources of gain (loss)" in the table above represent the net of all other factors plus any imprecision in the attribution analysis. The net impact allocated here is a loss of $0.3 million.

Estimated Cost of Ad Hoc Indexing

We have estimated the cost of providing ad hoc indexing for calendar years 2017 and 2018 to be $1.928 million. This estimate is based on an assumed inflation rate of 2.0% per annum for 2017 and 2018. Please note that this ad hoc indexing is available only to claimants who have reached their "change of disability definition date" (24 months after the end of the elimination period) by the indexation date. There is currently no guarantee of benefit increases in recognition of future inflation beyond January 1, 2017.

Sensitivity Analysis

A sensitivity analysis was completed on the Plan's liability (not including ad-hoc indexing). Specifically, the liabilities were calculated using a discount rate that is 1.0% below the valuation discount rate (i.e. using a discount rate of 2.0%). The results are shown in the table below.

Discount Rate	Liability	Percent Change
2.0%	$86,921,000	+4.7%

A discount rate of 2.0% increases liabilities by $3,936,000 to $86,921,000. Consequently, the Plan's funding margin would be reduced to $67,067,000 if this rate were used for the valuation.

Section 3 – Cost of New Claims

Aside from measuring the funded position of the Plan, the other primary purpose of the actuarial valuation is to estimate the cost of new long-term disability claims incurred after the valuation date until the date of the next actuarial valuation (scheduled for December 31, 2018). This is necessary to assess whether current premium levels are likely to be sufficient to support the cost of new claims expected in the future along with their associated administrative expenses.

The assumptions and methods used to estimate the cost of new claims are described in Appendix A. The results of our analysis are summarized below. The figures presented do not consider potential ad hoc indexing for 2017 and 2018 since new claims incurred in 2017 and 2018 will not be eligible for those indexing adjustments even if they are approved.

Estimated Cost of New Claims Excluding Administrative Expenses (in $ millions)

Year	Total Costs*
2012	11.803
2013	11.830
2014	10.940
2015	16.182
2016	18.766
Average	**13.904**

The figures in the above table have all been adjusted to make them consistent with 2016 coverage volumes and benefit levels.

Inspection of the results in the above table show that the cost of new claims varies from year to year. We have used an average of the results for the previous five disability years as a best-estimate of the expected cost of new claims going forward. We believe that this is a reasonable approach for estimating the expected cost of new claims. However, the volatility of the results in above table show that the actual cost of new claims for a future disability year could be higher or lower than our best-estimate.

Based on the above table, the estimated average cost of new claims for the period 2012 to 2016 is $13.9 million in 2016 dollars. This figure does not include any provision for administrative expenses. In order to incorporate administrative expenses, the following adjustments were made:

- An 8.5% loading ($1.2 million) was applied to the estimated cost of new claims to allow for future administrative expenses on those claims
- $1.0 million was added in order to provide for estimated current year administrative costs
- $1.7 million was subtracted in order to account for expected EI rebates

The assumed current year administrative costs and EI rebates are based on the Plan's recent financial history. In particular, the $1.0 million provision for current year administrative costs is based on total expected administrative costs for the Plan less those expenses covered by the Plan's future administrative expense liability.

These adjustments result in an estimated cost of new claims including expenses of $14.4 million. Applying an assumed inflation rate of 2.0% suggests a reasonable best estimate of the cost of new claims for 2017 is $14.7 million. This is a single point estimate. Allowing for a 5% variance around this estimate gives a best-estimate range for 2017 new claim costs of $14.0 to $15.4 million. Use of a range takes account of the inherent volatility in new disability costs, along with the various uncertainties involved in their estimation.

The Plan collected premiums of $13.0 million in 2016. Applying the same 2.0% inflation assumption to the 2016 premiums collected by the Plan gives an estimate for the Plan's 2017 premiums of $13.3 million.

For 2017, premiums are expected to be less than the lower end of the best-estimate range for 2017 new claim costs. However, given the plan's strong current funding position, premiums slightly below expected new claim costs is not of significant immediate concern. In addition, assuming a 3% investment return, the current $71.0 million funding margin will generate additional income to the Trust of about $2.1 million each year that could help to offset any deficiency in premium levels in the short-term. However, emerging experience should be monitored carefully to determine whether the increase in new claim costs in recent years is due to an underlying trend rather than a normal fluctuation in experience.

Finally, it is important to distinguish between the cost of new claims incurred in a year and the amount of benefits and expenses paid in a particular calendar year. New claims cost for a disability year is the amount of funds that are needed to pay for all projected benefits (current year and future years), including associated administrative expenses, on all claims incurred in that year. For instance, new claims costs for the 2016 disability year is the amount of funds that are needed to provide for all projected LTD benefits and expenses on all disabilities incurred in 2016. This is different than the cash amount of benefits and expenses paid in 2016, which includes amounts attributable to disabilities incurred in other years (not just 2016) and does not consider any expected future benefit payments. Premiums for a year should be set to cover the expected new claims cost for that year as this is the amount that needs to be collected to fund the expected disabilities incurred during that year. This also aligns the premium payment period with the exposure period that gives rise to the LTD claims that the premiums are meant to fund. The fact that payments for benefits and expenses made during a year may differ from the premiums collected does not imply that the premiums are either too high or too low.

Section 4 – Risk Oversight

As part of its risk oversight functions, the Board of Trustees regularly assesses the adequacy of the Plan's funding levels and the match between Trust assets and liabilities. In particular, the Board reviews:

- The Trust's funding level in comparison to a general target surplus requirement based on insurance company standards in Canada;
- The Trust's funding level in comparison to a plan-specific target contingency reserve; and
- Projected benefit payments from the Trust in comparison to expected asset cash flows from the Trust's liability-hedging portfolio.

The first two tests are meant to assess the adequacy of the Trust's funding level. The last test is a measure of the Trust's exposure to asset-liability mismatch risk. The background and results of each of these tests are discussed in turn, below.

Target Surplus Levels – General Insurance Standards

One measure the Board uses to assess the adequacy of the Plan's funding level is the Minimum Capital and Continuing Surplus Requirements (MCCSR). The MCCSR is used by the Office of the Superintendent of Financial Institutions (OSFI – the federal regulator of insurance companies) as part of its review of the continuing viability of insurance companies in Canada. The MCCSR standard establishes target surplus requirements based on the amount and nature of both the liability promise itself and the assets held to secure the commitment. Larger liability promises that are fixed for an extended period of time require higher surplus levels than those with shorter duration that may be more flexible should circumstances deteriorate. Highly secure asset investments that generate cash payments that match well against the expected payments to plan beneficiaries require modest levels of surplus while more volatile investments which do not match up well against the payments to disabled claimants generate higher required surplus levels.

For this test, we have compared the actual Plan surplus to the target level of surplus that OSFI would require the Plan hold based on the MCCSR. While an imperfect standard, this does provide an independent, third-party basis to consider surplus levels. It is worth noting that OSFI will be replacing the MCCSR with a new guideline, the Life Insurance Capital Adequacy Test or LICAT, effective January 1, 2018.

Details of the calculation of the target MCCSR level for the Plan are included in Appendix D. Our MCCSR calculations assume that $107.9 million of the Plan's assets are invested in a fixed income liability-hedging portfolio (i.e. 130% of the Plan's liabilities of $83.0 million), with the remaining Plan assets invested in the return-generating portfolio. Both portfolios are assumed to be invested according to their strategic asset allocation.

OSFI's normal supervisory standard for total capital ratios is 150%. If a company's total capital ratio falls below this level, it is subject to increased supervision and potential intervention by OSFI. As a result, 150% target is the practical minimum capital for insurance companies in Canada. Based on this minimum, the total MCCSR for the Plan is estimated to be $20.7 million ($10.2 million for asset / investment risk plus $10.5 million for claims / liability risk). The actual December 31, 2016 funding margin of $71.0 million is $50.3 million above, or over three times, the minimum target implied by MCCSR standards.

The results of the MCCSR analysis are presented below for the current and previous valuation. The funding margin figures in the table below exclude the estimated impact of any future ad hoc indexing that may have subsequently been approved by Plan Sponsors. All dollar figures are in millions.

	December 31, 2014	December 31, 2016
Funding Margin	$69.7	$71.0
MCCSR Minimum Target Surplus (150%)	$22.0	$20.7
Residual Surplus	$47.7	$50.3
Ratio of Funding Margin to Target Surplus	317%	343%

Target Surplus Levels – Plan Specific Analysis

In addition to the MCCSR results, the Board has an internal funding target for the Plan. This target is meant to define an appropriate level of funding margin that constitutes a reasonable, prudent contingency reserve for the Trust.

The Plan's funding target is based on the major risks for the Plan and its actual operations. It was developed assuming that the Plan is an ongoing entity so it explicitly considers the relationship between premium revenue and expected claim costs in addition to the risk of deterioration in the experience for in-force and new LTD claims. The focus of the contingency reserve is to preserve the stability of Plan benefits and premiums. In particular, a fully funded contingency reserve should be able to withstand reasonably adverse experience for up to five years without having to initiate premium or benefit changes.

Details on the elements of the funding policy and the calculation of the target contingency reserve are given in Appendix E. A summary of the calculations as at December 31, 2016 are given in the table below.

Component	$ millions	$ millions
a. Assets		**154.0**
b. Asset Adjustment	(7.0)	
c. Adjusted Assets (a + b)		**147.0**
d. Base Liabilities		**83.0**
e. Base Margin	24.9	
f. Claims Fluctuation Reserve	22.1	
g. Target Contingency Reserve (e + f)		**47.0**
h. Adjusted Funding Margin (c – d)		**64.0**
i. Residual Margin (h – g)		**17.0**
j. Contingency Reserve Funding Ratio (h / g)		**136%**

Based on the current valuation, expected premiums levels are below expected new claim costs resulting in a negative asset adjustment in the table above. Comparing the adjusted assets ($147.0 million) to the current estimate of base liabilities ($83.0 million) gives an adjusted funding margin of $64.0 million as at the valuation date. The funding policy indicates that $47.0 million of the margin is needed to fully fund the Plan's target contingency reserve. This leaves the Plan with $17.0 million of additional margin as at the valuation date and a contingency reserve funding ratio of 136%.

The contingency reserve funding ratio was 165% at the last valuation. The decline in the contingency reserve funding ratio since then can be largely attributed to the asset adjustment used in the calculation (item b in the above table). This factor is meant to adjust Plan assets for any expected imbalance between premiums and new claims costs going forward. Based on the analysis presented in Section 3, Plan premiums are expected to be less than the cost of new claims (including administrative expenses) going forward. This produces a negative asset adjustment in the calculations which represents a notional allocation of current assets to cover this expected premium shortfall in the medium term. In addition to this impact, the Plan's base liabilities have grown faster than its assets resulting in additional downward pressure on the contingency reserve funded ratio. While the contingency reserve funded ratio has decreased since the last valuation, the Plan still enjoys a comfortable residual funding margin.

The Plan's funding target determines a target contingency reserve for the Plan of $47.0 million, while the MCCSR calculation indicates a target surplus requirement of $20.7 million. The difference in the two measures is due to the differing purposes for which they were developed. The MCCSR is a standard for insurance companies in Canada based on an analysis of general risk factors for the insurance industry. The Plan's funding target, on the other hand, is based on a specific analysis of the Plan's major risks, operations, and goals.

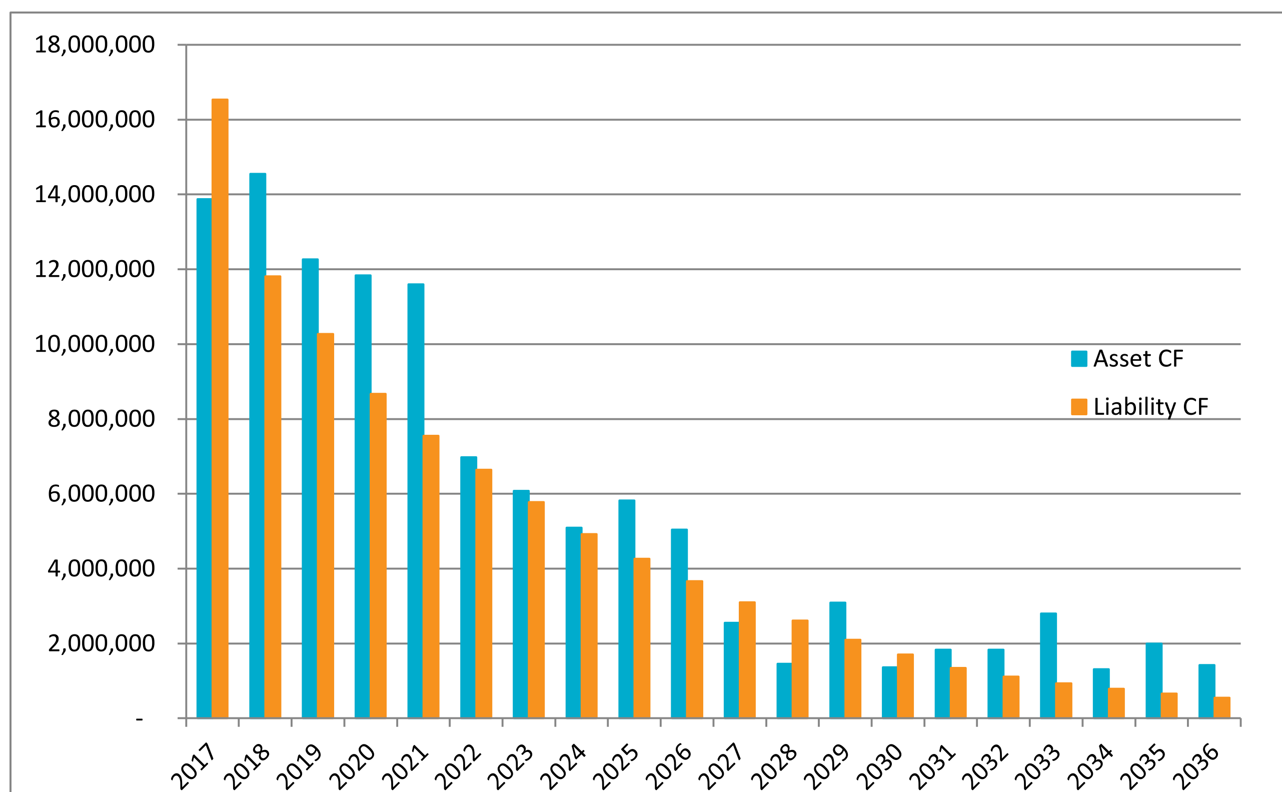
Projected Cash Flows

To provide further information to assist with the prudent operation of the Plan, we have analyzed the expected future cash flows for the Plan. In particular, we have compared the expected future benefit payments under the Plan for disabilities incurred up to December 31, 2016 to the expected future income from the assets held in the Plan's liability-hedging portfolio.

An insurance program can reduce its exposure to future changes in market interest rates by maintaining a close relationship between its required benefit payments and the income generated by its assets. For example, if the cash generated by the plan's assets is inadequate to cover the plan's required benefit payments in a particular year, then the plan could be forced to sell assets to cover the shortfall. If market interest rates at that time were such that the investments had declined in value, this forced sale could generate losses for the plan. Conversely, if the cash generated by the plan's assets is more than its required benefit payments in a particular year, the plan would need to reinvest the excess cash. Should market interest rates be lower at the time of reinvestment, the program would earn a lower rate of return in future years. By maintaining a reasonably close match between cash inflows and benefit payment outflows, the level of interest rate risk faced by the program is significantly reduced.

The cash flows illustrated in the charts below were produced by projecting the cash inflows generated by assets in the Plan's liability-hedging portfolio and cash outflows resulting from disability claims incurred up to December 31, 2016. The projection horizon is 20 years. This analysis does not include either the impact of any premium receipts in future years nor does it account for the costs of claims incurred on or after January 1, 2017. Further details on the methodology used to project the cash flows can be found in Appendix F.

PROJECTED CASH FLOWS (CF) – 10% IN T-BILLS, 90% IN FTSE TMX BOND



As the chart above illustrates, the Plan is expected to have positive total net cash flows over the next 20 years. This is not surprising given the liability-hedging portfolio is to hold assets equal to 130% of the Plan's current liabilities. It also shows that the liability-hedging portfolio provides a good match to expected liability cash flows over the next 20 years and, in particular, in the first 10 years when the majority (over 80%) of the liability will be settled. While there is a slight shortfall projected for certain years, including year 1 of the projection, these may be funded at least partially with current premiums or from reinvestment of past excess cash flow. Overall, the projections do not indicate a significant need for asset sales to meet cash flow demands. Instead the Plan can likely work with the manager of the liability-hedging portfolio to fund any required cash draws from maturing bonds and/or coupon income.

The long-term bonds in the FTSE TMX universe result in a duration for the liability-hedging portfolio that is slightly longer than the Plan's liabilities (7 years vs. 5 years). However, as the above chart illustrates, funding the liability-hedging portfolio to a level equal to 130% of Plan liabilities largely eliminates the potential for forced asset sales to make benefit payments, and provides a cushion for slight differences in duration.

Section 5 – Conclusions

The primary purpose of this valuation is to assist the Board of Directors in assessing the financial condition of the Plan and the adequacy of its premium rates. The results of the valuation show that the Plan is currently in a strong funding position. The Board's risk oversight tests show that the Plan's funding margin is adequate using both industry and plan-specific standards, and cash flow projections show that there is a good match between liability-hedging portfolio assets and expected benefit payments.

The Plan's current premium levels are slightly below the best-estimate range for expected new claim costs including administrative expenses. Given the Plan's strong funding position, this is not a cause for immediate concern. However, emerging experience should be monitored carefully to ensure any difference between new claim costs and premiums is manageable for the Plan.

Appendix A – Actuarial Basis

In estimating the present value of the Plan's liabilities, it is necessary to make certain assumptions with respect to the factors that will affect these liabilities in the future. These assumptions, along with the methodologies used to calculate results, form the actuarial basis and are described below.

Assumptions

The main assumptions used for the valuation are listed in the table below. For reference, the assumptions used in the previous valuation have also been included. More details on the valuation assumption and their rationale are given following the table.

Item	Dec. 31, 2014 Valuation		Dec. 31, 2016 Valuation	
Inflation	2.25%		2.00%	
Discount Rate	3.00%		3.00%	
Rates of Termination	1987 GLTD Basic Tables modified for Plan historical experience		1987 GLTD Basic Tables modified for Plan historical experience	
	Year on Claim	Scaling Factor	Year on Claim	Scaling Factor
	1	50%	1	50%
	2	150%	2	150%
	3	325%	3	325%
	4	200%	4	200%
	5	150%	5	150%
	6	125%	6	125%
	7+	125%	7+	125%
Retirement Age	Pre May 2002: Age 63 May 2002 to Dec. 2008: Age 60 Post Dec. 2008: Age 63 (those over 63 at time of disability get 2 years of benefits)		Pre May 2002: Age 63 May 2002 to Dec. 2008: Age 60 Post Dec. 2008: Age 63 (those over 63 at time of disability get 2 years of benefits)	
Future Admin Expense Liability	8.5% of expected benefit payments		8.5% of expected benefit payments	
CPPD Offsets:				
Pending Apps:	70% successful immediately		90% successful at 6 months following the valuation date	
Not Applied Yet:	No provision for CPPD offsets		90% will apply and be successful at 12 months following valuation date	

Inflation

The Bank of Canada has a target range for inflation of 1% to 3%. Actual inflation experience over the last 10 to 20 years suggests a rate in the 1.5% to 2.5% range. Given the expected duration of benefits, we have used a 2.0% inflation assumption consistent with recent actual experience.

Discount Rate

The Plan's assets are partitioned into two accounts: a liability-hedging portfolio that is invested 100% in fixed income assets providing a reasonable match to the duration and cash flow profile of the LTD Plan liability, and a return-generating portfolio that is invested in a balanced fund. The target for the liability-hedging portfolio is to hold assets equal to 130% of the Plan's liabilities. Given the Plan's current liabilities of $83.0 million, this implies a target for the liability-hedging portfolio of $107.9 million, or 70% of Plan assets.

Per the Board's funding approach, the present value of expected future benefits is calculated using the expected rate of return on the Plan's total assets (liability-hedging and return-generating portfolios combined) as the discount rate. Based on the expected split of Plan assets between the two portfolios, their individual strategic asset allocations, and expected future returns, we have maintained a discount rate of 3.0% per annum for the current valuation. This rate is net of expected investment-related expenses for the Plan.

In order to estimate an expected return for the Plan's total assets, we first determined the target allocation for the combined portfolio. This was determined by combining the strategic asset allocation for each of the sub-portfolios with its expected proportion of total Plan investments (using an implied target for liability-hedging portfolio of 70% of total assets, as noted above). The results of this calculation are shown below.

Strategic Allocation for Total Investment Assets

	Liability Hedging Portfolio	Return Generating Portfolio	Combined Portfolio
Expected Proportion of Total Assets	70%	30%	100%
Strategic Allocations:			
• T-Bills	10.0%	5.0%	8.5%
• Bonds (Universe)	90.0%	40.0%	75.0%
• Canadian Equity	0%	30.0%	9.0%
• US Equity	0%	12.5%	3.75%
• International Equity	0%	12.5%	3.75%

Next we combined the target allocation for the Plan's total investment assets with expected returns for each of the underlying asset classes. In our analysis of the combined portfolio, we have examined both a low and a high scenario. These scenarios represent a best-estimate of future returns developed by Morneau Shepell's Asset and Risk Management practice. The expected real returns were established by reviewing historical returns for various periods, current market conditions, and fund manager's long-

term expectations. We have used a medium-term horizon for the expected real returns given the relatively short duration for the expected benefit payments (~95% of the projected payments underlying the liability are discharged after the 15 years). These calculations are shown in the following table.

Calculation of Expected Return – Trust Assets

Asset Classes	Target Allocation	Expected Real Return (Low)	Expected Real Return (High)
T-Bills	8.5%	-0.50%	-0.40%
Bonds (Universe)	75.0%	0.25%	0.65%
Canadian Equity	9.0%	3.95%	5.05%
US Equity	3.75%	3.90%	5.00%
International Equity	3.75%	4.50%	5.50%
Total Real Return	100.0%	0.82%	1.30%
Expected Inflation		2.00%	2.00%
Value Added for Rebalancing & Diversification		0.20%	0.20%
Offset for investment-related expenses		-0.30%	-0.30%
Total Expected Return		**2.72%**	**3.20%**

The range presented above suggests that a valuation discount rate of 3.00% is reasonable.

Claims Termination

It has been assumed that disabled members would terminate from claim based on a modification of the 1987 GLTD Basic Tables for a 3 month elimination period (the GLTD tables). The GLTD tables provide termination rates based on sex, age at disability, and time on claim. The tables include monthly termination rates for the first 2 years and annual rates thereafter. The rates are given for 9 central ages at disability (i.e. 22, 27, 32, 37, 42, 47, 52, 57 and 62).

The modification applied for purposes of this valuation involves multiplying a factor by the base termination rates in the GLTD tables. The chosen factors are based on a detailed analysis of the Plan's actual termination experience completed during 2014.

Retirement Age

For disabilities occurring before May 1, 2002:

- We have assumed that all members would retire at age 63. The selection of age 63 is meant to represent the aggregate expected experience of the Plan. Individual claimants will retire prior to or after age 63 depending on their own length of service under the Public Service Pension Plan (PSPP), or other pension plan as applicable. For any claimants over age 63 at the valuation date, we have assumed a retirement age of 65.

For disabilities occurring on or after May 1, 2002 but before January 1, 2009:

- Benefits end at the earlier of age 60 or attainment of 35 years of pensionable service. As a result, we have assumed that all such members will retire at age 60. If there are claimants who reach 35 years of service before age 60, then the Plan will realize a modest gain relative to the retirement assumption used.

For disabilities occurring on or after January 1, 2009:

- We have assumed that all members would retire at age 63. The selection of age 63 is meant to represent the aggregate expected experience of the Plan. Individual claimants will retire prior to or after age 63 depending on their own length of service under the Public Service Pension Plan (PSPP), or other pension plan as applicable. For any claimants over age 63 at the valuation date, we have assumed a retirement age of 65. Finally, the valuation incorporates a 2 year benefit term for any claimant who begins receiving disability benefits after the age of 63.

Expenses

An implicit allowance has been made for investment-related expenses as the discount rate of 3.0% is the expected rate of return on the Plan's assets net of investment-related expenses.

A liability for future administrative expenses on claims incurred as of the valuation date equal to 8.5% of expected benefit payments is held in respect of claims incurred as of the valuation date. The purpose of this provision is to provide for all future administrative expenses on claims incurred as of the valuation date, independent of the on-going operation of the Plan. The 8.5% provision is meant cover expenses related to ongoing claims management, the insurer's general fee and rehabilitation expenses. It is based on figures provided by Plan staff in 2014. While we do not have access to records that would allow us to independently verify this provision, based on a review of past financial statements and the operating costs of other similar programs, it does not appear unreasonable.

Benefit Amount

The future benefits for current LTD claimants have been based on each member's net benefit as at the date of our data file (December 31, 2016), i.e. including all offsets in effect at that time, with the exception of any rehab offsets as these are considered to be non-permanent.

Additionally, we have assumed that claimants with pending CPP disability pension ("CPPD") applications and those who have not yet applied for CPPD will receive a CPPD award in 90% of cases. Claimants with pending CPPD applications are assumed to receive a decision on their application at 6 months following the valuation date. Claimants who have not yet applied for CPPD are assumed to apply and receive a decision on their application at 12 months following the valuation date. For both groups of claimants, the LTD benefit amount is adjusted to take this into consideration, and the resulting liability is also adjusted to reflect up to 12 months of projected CPPD recoveries. A CPPD award of $995 per month was assumed for projected recoveries based on the average amount for claimants with a CPPD offset in the valuation data.

For disabilities occurring after January 1, 2009, we have assumed that, after three years on claim, the gross disability benefit payable increases from 65% to 70% of pre-disability income, in accordance with the terms of the Plan.

External Sources of Funding

While the majority of funding for the Plan is shared between the covered members and the employers, the Plan also receives rebates from Employment Insurance (EI) on a regular basis. As well, the Plan realizes third party recoveries from time to time. As discussed below, we have assumed that EI rebates will continue and will be used to help cover current year administrative expenses (i.e. other than investment-related expenses) in the required premium calculation. We have not made any assumption regarding third party recoveries in the future and to the extent that they occur there would be a gain to the Plan.

Methodology

The methodologies used to calculate the liabilities are the same as those used for the previous valuation.

In-Force Claims

A liability was established for each disabled member in receipt of benefits as at the valuation date as the present value of expected future benefits taking into account probability of receiving each benefit payment based on the assumptions described above. As noted above, we have adjusted active claims liabilities for projected CPPD recoveries from the date of disability to the valuation date.

The structure of the GLTD tables required that we rounded each claimant's duration at the valuation date to the nearest month. Further, the annual termination rates given for durations after two years were converted to equivalent monthly factors for the valuation projections. Finally, the rates for central age 62 were used for all claimants over age 60 at the time of their disability.

Incurred But Not Reported Claims

The liability for active claimants includes only those members in receipt of benefits as at the valuation date. We have therefore established a liability for Incurred But Not Reported claims (IBNR) for those claimants who were disabled as at the effective date of the valuation but either have not yet reported a claim or have reported a claim but have not yet been approved for benefits (i.e. are pending).

For the current valuation, we have updated the IBNR liability estimate based on the Plan's recent experience. We have based our current estimate on the Plan's actual IBNR claim experience since 2014. Specifically, we calculated the cost (historical payments and future liability) for claims with dates of disability prior to December 31, 2014 which were not included in the previous valuation. The observed pattern and cost for these claims were then related to the estimated in-force liabilities for their respective disability year as at December 31, 2014 to determine an appropriate loading for IBNR claims. The assumed loadings were then applied to the estimated in-force liabilities for the pertinent disability years as at December 31, 2016 to give an updated IBNR liability. Based on this methodology, we have included an IBNR loading of 85% for the 2016 disability year and 5% for the 2015 disability year in the current valuation.

Cost of New Claims

To determine an updated estimate of the cost of new claims, we proceeded as follows. For each calendar year beginning January 1, 2012 and ending December 31, 2016 (i.e. the most recent 5 calendar years), we determined the amount of funds that would have been sufficient to cover the costs (past and future) related to claims initiated in that particular year. Specifically, for claims that began in a

particular calendar year, we discounted their corresponding benefit payments to the mid-point of the calendar in which the claims were made. We also discounted the applicable liability that was determined as at December 31, 2016 to the mid-point of the appropriate year. These calculations included the liability for incurred but not reported claims. The assumptions and methods used to calculate liabilities are the same as those described in this Appendix for the 2016 valuation.

In order to incorporate administrative expenses into the required premium calculation, the following adjustments were made:

- An 8.5% loading was applied to the estimated cost of new claims to allow for future administrative expenses on those claims
- A provision is added in order to provide for current year administrative costs not covered by the 8.5% provision
- Expected EI rebates are subtracted

The assumed current year administrative costs and EI rebates are based on the Plan's recent financial history.

Appendix B – Membership Data

The valuation data was obtained from the Plan's Disability Claims Manager (Manulife Financial) and was provided to us by Plan staff. There are two main data files required for the valuation. The first is a database of in-force claims which includes both benefit and offset amounts along with claimant demographic information (gender, date of birth, date of disability, etc.). The second file contains details on benefit payments by claim over the period January 1, 2015 to December 31, 2016. This second file is used in our cost of new disability claims and IBNR liability calculations.

We are not in a position to confirm that the data supplied is complete and accurate because we do not have access to independent records that would allow such verification. We do, however, apply checks of reasonableness, and have concluded that the data are sufficient and reliable for the purposes of the valuation.

The checks we applied were of three principal types, namely:

- To check the internal consistency of various data elements within each data set;
- To check the consistency of common or related data elements in different sets (including data supplied for the previous valuation and indexing calculations); and
- To check the consistency of various data elements with other separate information sources (e.g. data contained in the Plan's financial statements).

A few minor problems were identified and were resolved satisfactorily through provision of additional explanation or data by Manulife and Plan staff, as necessary.

Claims data at the current and previous valuation dates are summarized in the table below:

	December 31, 2014	December 31, 2016
Number of Active LTD Claims	534	568
Average Age of Claimant	54.3	54.6
Average Bi-weekly Gross Benefit	$1,317	$1,390
Average Bi-weekly Net Benefit	$964	$1,079
Average Duration (months since disability)	101.1	94.3
Average Months Paid	95.7	88.9

A breakdown of the current active claimant population by benefit category is given below. Significant changes were made to the benefit provisions of the Plan on May 1, 2002 and again on January 1, 2009, resulting in three different sets of benefit provisions depending on a claimant's date of disability: Pre May 2002, May 2002 to December 2008, or Post December 2008. The information in the following table is broken down according to the benefit provisions applied to the current in-force claimant population. More information on the benefit provisions can be found in Appendix G or by referring to the official Plan document.

	Pre May 2002 Disabilities	May 2002 to Dec 2008 Disabilities	Post Dec 2008 Disabilities	Total
Number of Active LTD Claims	123	72	373	568
Average Age of Claimant	58.5	53.1	53.6	54.6
Average Bi-weekly Gross Benefit	$1,261	$1,280	$1,453	$1,390
Average Bi-weekly Net Benefit	$808	$836	$1,215	$1,079
Average Duration (months)	249.3	134.7	35.4	94.3
Average Months Paid	243.1	129.3	30.2	88.9

The next table shows a summary of the December 31, 2016 active claims by major participating employer/department. Note that the column on the far right shows the calculated liability for each subgroup.

Department/ Employer Name	Number of Active LTD Claims	Number with CPP Offset	Number with Pending CPP Claim	Average Age (years)	Average Bi-weekly Gross Benefit	Average Bi-weekly Net Benefit	Total In-force Liability (000's)
Community Services	72	46	7	53.9	$1,490	$1,187	$9,431
Justice	70	38	10	53.5	$1,421	$1,168	$8,465
Service NS	37	23	9	51.4	$1,214	$921	$4,869
Transportation and Infrastructure Renewal	64	36	6	58.5	$1,209	$954	$4,567
Environment	19	15	3	56.1	$1,535	$1,156	$2,323
Education and Early Childhood Development	12	10	2	50.7	$1,422	$1,059	$2,016
All Other Nova Scotia Government	111	66	16	54.0	$1,515	$1,242	$14,494
Subtotal for Nova Scotia Government Bodies	**385**	**234**	**53**	**54.4**	**$1,412**	**$1,129**	**$46,166**
Nova Scotia Health Authority	133	103	7	55.1	$1,374	$997	$15,855
NSCC	36	26	4	55.2	$1,194	$883	$3,217
All Other Departments	14	14	0	54.8	$1,439	$980	$1,646
TOTAL	**568**	**377**	**64**	**54.6**	**$1,390**	**$1,079**	**$66,884**

**Numbers may not add up exactly due to rounding*

The premium amounts paid and EI rebates received in respect of 2016 is shown below for the largest employers in the Plan. Note that the total premiums paid for the Province of Nova Scotia are not split out by department. For reference, a list of departments included in the Province of Nova Scotia is also provided. The 2016 premium and EI rebate information was provided by Plan staff.

Participating Employer	2016 Paid Premiums	2016 EI Rebates
Province of Nova Scotia	10,007,000	1,413,000
Nova Scotia Health Authority	1,638,000	144,000
NS Community College	780,000	46,000
NS Legal Aid Commission	196,000	24,000
NS Business Inc.	96,000	12,000
Property Valuation Services Corporation	92,000	6,000
NSGEU	75,000	8,000
APSEA	50,000	10,000
NS Utility & Review Board	48,000	7,000
All Other Employers	40,000	5,000
Total	**13,022,000**	**1,675,000**

Departments Included under the Province of Nova Scotia	
Justice	Nova Scotia Advisory Council on the Status of Women
Municipal Affairs	Nova Scotia Immigration
Natural Resources	Nova Scotia Pension Services Corporation
Environment	Alcohol and Gaming Division
Community Services	Trade Centre Limited
Health and Wellness	Communities, Culture and Heritage
Education and Early Childhood Development	Elections Nova Scotia
Transportation and Infrastructure Renewal	Nova Scotia Department of Energy
Agriculture	Executive Council Office
Nova Scotia Tourism Agency	Fisheries and Aquaculture
Innovacorp	Freedom of Information and Protection of Privacy Review Office
Finance and Treasury Board	Intergovernmental Affairs
Service Nova Scotia	Labour and Advanced Education
Nova Scotia Human Rights Commission	Nova Scotia Lands
Nova Scotia Department of Seniors	Police Complaints Commissioner's Office
Office of the Premier	Nova Scotia Securities Commission
Office of the Auditor General	Ombudsman
The Nova Scotia Legislature	Public Service Commission
Communications Nova Scotia	Sydney Tar Ponds Agency
Public Prosecution Service	Workers' Compensation Appeals Tribunal
Office of Aboriginal Affairs	Nova Scotia Municipal Finance Corporation
Legislation	

Appendix C – Plan Assets

The custodian of Plan assets is CIBC Mellon. The assets are managed by Beutel Goodman.

The following shows the progress of the fund (in $1,000's) over the previous two calendar years, from January 1, 2015 to December 31, 2016, with investments shown at market value. This information was obtained from the Plan's financial statements.

Calendar Year	2015	2016
Opening Value ($1,000's) as at Jan. 1st	**145,746**	**149,146**
Plus		
• Premiums	13,034	13,023
• Investment Income	4,442	7,200
• EI Rebates	1,595	1,673
Less		
• Benefits paid (net of recoveries)	(13,337)	(14,415)
• Non-investment fees and expenses	(1,903)	(2,190)
• Investment management & custodian fees	(431)	(449)
Closing Value as at Dec. 31st	**149,146**	**153,988**

The breakdown of the net assets is as follows:

	December 31, 2014	December 31, 2016
Assets ($1,000's)		
• Investments, Market Value	144,567	154,534
• Cash	4,746	3,673
• Accounts Receivable	815	689
• Fixed Assets	14	13
Total Assets	**150,142**	**158,908**
Liabilities ($1,000's)		
• Accounts Payable	(4,396)	(4,920)
• Other Current Liabilities	-	-
Total Liabilities	**(4,396)**	**(4,920)**
Net Assets Available for Benefits	**145,746**	**153,988**

Appendix D – MCCSR Calculation Details

Nova Scotia Public Service Long Term Disability Plan Trust Fund Surplus Adequacy Test as at Dec. 31, 2016 ($ millions)				
	Exposure	**Factor**	**Requirement (120%)**	**Minimum (150%)**
ASSET RISK				
Asset Default (C-1) & Currency Risk				
Liability-Hedging Portfolio				
• Fixed Income Assets	107.9	1%	1.3	1.6
Return-Generating Portfolio				
• Fixed Income Assets	20.7	1%	0.2	0.3
• Canadian Equity	13.8	15%	2.5	3.1
• Global Equity	11.5	23%	3.2	4.0
Total C-1	154.0		7.2	9.0
Interest Rate Change (C-3) Risk				
Liability	83.0	1%	1.0	1.2
TOTAL ASSET RISK (C3 + C1)			**8.2**	**10.2**
MORBIDITY RISK				
New Claims Risk				
Cost of New Claims (2017 estimate)	14.7	25%	4.4	5.5
Continuing Claims Risk				
Liability	83.0	4%	4.0	5.0
TOTAL MORBIDITY RISK			**8.4**	**10.5**
MINIMUM REQUIRED SURPLUS				**20.7**
	Total Assets			154.0
	Total Liability			83.0
	Total Surplus			**71.0**
	Minimum Required Surplus			**20.7**
	Residual Surplus			**50.3**

Appendix E – Funding Target Details

The Board has established a target contingency reserve to cover the major financial risks to the Plan, other than investment risk. The Board has addressed investment risk by implementing a liability-hedging strategy with part of its investment assets. Excluding investment risk, an in-depth review of the Plan revealed its finances are most sensitive to the following:

- Risk that in-force claims stay on claim longer than expected (i.e. return to work or retire later than anticipated); and
- Risk that new claim costs (i.e. number of claims and/or average cost per claim) are higher than expected.

Development of the target involved modeling adverse scenarios in each of these risk factors and determining the amount of funds required to withstand the adverse experience. The target was designed such that the Plan can withstand reasonably adverse experience to its main risk factors for five years before having to respond (either through premium increases, suspension of benefit indexing, and/or benefit reductions). The target assumes that the Plan will continue to operate as an ongoing entity and, as such, considers the balance between premium revenue and anticipated new claim costs going forward.

The funding target contains three major components:

(1) Base Margin – This is designed to protect benefits payable to in-force claims, along with future ad hoc inflation increases, in the event that existing claims remain in receipt of benefits for longer than anticipated. In order to fund the estimated cost of an adverse change in claim duration, plus protect indexing of existing claims, the required Base Margin was determined to be equal to 30% of current base benefit liabilities (i.e. benefit liabilities excluding any amount for future indexation of benefits).

(2) Claims Fluctuation Reserve (CFR) – This is designed to protect against increasing new claims costs due to higher numbers of claims and/or increased average cost per claim. In order to withstand a 30% increase in claims costs for five years, the CFR was set equal to 150% of the most recent estimate of the new claim costs for the Plan (150% = 30% increase in costs per year for 5 years).

(3) Asset Adjustment – This is designed to adjust Trust assets for any margin or deficiency in Plan premiums versus anticipated claims costs over the next 5 years. The Asset Adjustment is five times the estimated annual premium margin or deficiency.

The Plan's Target Contingency Reserve is determined as the sum of 1 and 2 above. Adjusted Assets are equal to the assets in the Trust Fund plus (or minus) the Asset Adjustment determined in 3. The Plan's adjusted funding margin can be determined as Adjusted Assets less current plan base liabilities. Finally, the Plan's Contingency Reserve Funded Ratio is equal to its adjusted funding margin divided by the Target Contingency Reserve.

A summary of Plan's target funding results as at the valuation date are given in the table below.

Component			$ Millions
a.	Expected New Claim Costs		14.7
b.	Expected Premiums		13.3
c.	Assets		154.0
d.	Asset Adjustment (5 x (b – a))	(7.0)	
e.	**Adjusted Assets (c + d)**		**147.0**
f.	**Base liabilities**		**83.0**
g.	Base Margin (30% x f)	24.9	
h.	Claims Fluctuation Reserve (1.5 x a)	22.1	
i.	**Target Contingency Reserve (g + h)**		**47.0**
j.	Adjusted Funding Margin (e – f)		64.0
k.	**Residual Margin (j – i)**		**17.0**
l.	**Contingency Reserve Funding Ratio (j / i)**		**136%**

Appendix F – Cash Flow Projection Method

The cash flows illustrated in Section 4 of this report were estimated by projecting the cash inflows generated by the assets in the Plan's liability-hedging portfolio and the expected cash outflows required to pay disability claims. The specific details of the projection methodology are discussed below.

Asset Cash Flows (Inflows):

- Assume a liability-hedging portfolio balance of $107.9 million (130% of Plan liabilities of $83.0 million)
- Do not incorporate any additional premiums paid in respect of coverage after December 31, 2016
- Assume that assets in the liability-hedging portfolio are invested according to their benchmark, that is 10% T-Bills and 90% FTSE TMX Universe Bond Index
- Are based on the characteristics (coupon, par value, maturity) of the actual bonds that make up the FTSE TMX Universe Bond Index as at December 31, 2016

Liability Cash Flows (Outflows):

- Reflect total liabilities of $83.0 million as at December 31, 2016
- Do not incorporate any additional claims incurred after December 31, 2016
- Do not include any provision for future CPI indexing after January 1, 2017
- Assume that all other factors affecting future claims payments (i.e. claims termination rates, CPP disability approvals, etc.) are as assumed in the 2016 actuarial valuation

Appendix G – Summary of Plan Provisions

The following is a summary of the main provisions of the Plan. For an authoritative statement please review the official Plan document.

Eligibility and Level of Benefit

In order to qualify for LTD benefits, an employee must first be disabled to the extent of being unable to perform the regular duties of his occupation for 100 consecutive work days. Following completion of this elimination period will be eligible to receive LTD benefits in accordance with the applicable Plan terms.

If the disability occurred before May 1, 2002:

- An employee will be eligible to receive LTD benefits for up to 30 months as long as he continues to be unable to perform his own occupation. Thereafter, an employee continues to be eligible for LTD benefits, but not beyond age 65, provided he is unable to perform the duties of any occupation for which the employee is or may become suited through education, training, experience or rehabilitation, which occupation pays not less than 80% of the current rate of the position, class and step he held immediately prior to disability.
- The bi-weekly LTD benefit is 70% of the employee's salary at time of disability, to a maximum of $2,000.

If the disability occurred on or after May 1, 2002 and prior to January 1, 2009:

- An employee will be eligible to receive LTD benefits for up to 24 months as long as he continues to be unable to perform his own occupation. Thereafter, an employee continues to be eligible for LTD benefits until age 60, or until they attain 35 years of pensionable service, whichever is earlier, provided he is unable to perform the duties of any occupation for which the employee is or may become suited through education, training, experience or rehabilitation, which occupation pays not less than 75% of the current rate of the position, class and step he held immediately prior to disability.
- The bi-weekly LTD benefit is 65% of the employee's salary at time of disability, to a maximum of $3,000.

If the disability occurred on or after January 1, 2009:

- And the claimant's elimination period ends before or on the day they turn 63 years, the benefit will cease at age 65 or the attainment of 35 years of service, whichever is earlier.
- And the claimant's elimination period ends after they turn 63 years, the benefit will cease 2 years after the end of the elimination period or the attainment of 35 years of service, whichever is earlier.
- An employee will be eligible to receive LTD benefits for up to 24 months as long as he continues to be unable to perform his own occupation. Thereafter, an employee continues to be eligible for LTD benefits provided he is unable to perform the duties of any occupation for which the employee is or may become suited through education, training, experience or rehabilitation, which occupation pays

not less than 75% of the current rate of the position, class and step he held immediately prior to disability.

- The bi-weekly LTD benefit is 65% of the employee's salary at time of disability, to a maximum of $4,375, for the first three years of benefits, and thereafter 70% of the employee's salary at the time of disability, to a maximum of $4,711.54

Benefit Offsets

The benefits are reduced by:

1) the amount of disability benefit entitlement, excluding children's benefits, under the Canada Pension Plan at the date of disability;
2) the amount of benefits payable from any other group disability plan or pension plan, sponsored by the Employer;
3) 50% of the amount of income received from rehabilitative employment;
4) the amount of Workers' Compensation payments, except permanent partial disability awards;
5) the amount of benefits payable from any disability plan sponsored by any employer, since inception of this Plan;
6) the amount of benefits payable as a result of a disability which occurred at work and is deemed to be less than 70 percent compensable by the Workers' Compensation Board;
7) the amount of income received by an employee from self-employment as set out in guidelines made pursuant to this Plan;
8) the amount of earnings recovered through a legally enforceable cause of action against some other person or corporation.

Termination of Benefits

Benefits terminate on the earliest of:

1) the date the employee returns to work;
2) the date the employee ceases to qualify for LTD benefits, as defined under the Plan;
3) death;
4) attainment of:
    a. age 65 for claims incurred before May 1, 2002,
    b. the earlier of attaining age 60 or 35 years of service for claims incurred after April 30, 2002 but before January 1, 2009, and
    c. the earlier of attaining age 65 and 35 years of service for claims incurred after December 31, 2008 and whose elimination period ends before or on the day the employee turns 63

d. the earlier of 2 years of payment and attaining 35 years of service for claims incurred after December 31, 2008 and whose elimination period ends after the employee turns 63

5) upon the effective date of the employee's early retirement under the PSSP.

Termination of Employee's Coverage

Termination of coverage for employees at work takes effect on the earliest of:

1) 100 working days prior to the end of the month in which the employee attains 35 years of service;

2) The date the employee occupies a position that is not eligible for coverage in accordance with the terms of the Plan;

3) The date of the employee's termination or retirement from service.

Rehabilitation

The Plan makes provision for rehabilitation employment opportunities where deemed appropriate. For employees who qualify for rehabilitation employment, their LTD benefit will be reduced by 50% of their rehabilitation income for employees disabled prior to January 1, 2009 or disabled after December 31, 2008 and have been in receipt of benefit payments for less than 5 years, or reduced by 35% for employees disabled after December 31, 2008 who have been in receipt of benefit payments for more than 5 years. There is a further stipulation that where the total of LTD and any rehabilitation income exceeds the current rate of pay for the position and class held by the employee immediately prior to his date of disability, the LTD benefit shall be reduced in order that such total not exceed 100% of such rate of pay.

Appendix H – Employer Certification

With respect to the actuarial valuation report of the Nova Scotia Public Service Long Term Disability Plan as at December 31, 2016, we hereby confirm that to the best of our knowledge:

- the data regarding Plan members provided to Morneau Shepell constitutes a complete and accurate description of the information contained in our files;
- the summary of Plan assets contained in this report is accurate;
- 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;
- there are no subsequent events nor any extraordinary changes to the membership other that those listed in the December 31, 2016 actuarial report on the Plan, which would materially affect the results.

Anna MacIsaac

Name

Chief Executive Officer

Title

May 1, 2017

Date

MENTAL HEALTH PARTNER

Morneau Shepell is the only human resources consulting and technology company that takes an integrative approach to employee assistance, health, benefits, and retirement needs. The Company is the leading provider of employee and family assistance programs, the largest administrator of retirement and benefits plans and the largest provider of integrated absence management solutions in Canada. 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 approximately 20,000 clients, ranging from small businesses to some of the largest corporations and associations in North America. With almost 4,000 employees, 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). For more information, visit morneaushepell.com.