Proprietary and Confidential

Actuarial Valuation as at April 1, 2017

Legislative Assembly of Nunavut Retiring Allowances Act

Canada Revenue Agency Registration Number: 1054915

May 2018

Empower Results®

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Executive Summary

An actuarial valuation has been prepared for the Legislative Assembly of Nunavut Retiring Allowances Act (the "Plan") as at April 1, 2017 for the primary purpose of establishing a funding recommendation for the Plan until the next actuarial valuation is performed. This section provides an overview of the important results and the key valuation assumptions which have had a bearing on these results.

Summary of Principal Results

	April 1, 2017	April 1, 2014
	Target Margin	**Target Margin**
Assets	$ 11,707,400	$ 6,157,700
Liabilities	10,951,800	7,139,500
Position	**$ 755,600**	**$ (981,800)**

Contribution Requirements

Considering the funding status of the Plan, the minimum Assembly contributions recommended in this report with effect for the first plan year following April 1, 2017, and those recommended at April 1, 2014, are as follows:

	April 1, 2017	**April 1, 2014**
Assembly Current Service Cost	$ 978,600	$ 831,200
Special Payments	0	87,100
Application of Surplus	(65,100)	0
Total Assembly Contribution	**$ 913,500**	**$ 918,300**

Key Assumptions

The principal assumptions to which the valuation results are most sensitive are outlined in the following table.

	April 1, 2017	**April 1, 2014**
Discount rate (Target Margin)	3.40%	3.80%
(Best Estimate)	4.75%	
Inflation rate	2.00%	2.00%
Pensionable earnings	3.00%	3.00%
Mortality table	CPM2014_B generational	CPM2014_B generational
Retirement rates	Active: Later of age 50, 4 years of service or end of current session Deferred: Age 50	Active: Later of age 50, 4 years of service or end of current session Deferred: Age 50

Section 1: Introduction

Purpose and Terms of Engagement

We have been engaged by the Management and Services Board of the Legislative Assembly of Nunavut, and hereafter referred to as the “Board”, to conduct an actuarial valuation of the Plan as at April 1, 2017 for the general purpose of determining the minimum and maximum funding contributions, based on the actuarial assumptions and methods summarized herein. More specifically, the purposes of the valuation are to:

- Determine the financial position of the Plan on a best estimate and target margin basis as at April 1, 2017;
- Determine the funding requirements of the Plan as at April 1, 2017; and
- Provide the necessary actuarial certification required under the *Income Tax Act.*

The results of this report may not be appropriate for accounting purposes or any other purposes not listed above.

The next valuation will be performed as at April 1, 2018 to reflect the results of the general election held on October 30, 2017.

Summary of Changes Since the Last Valuation

The last such actuarial valuation in respect of the Plan was performed as at April 1, 2014. Since the time of the last valuation, we note that the following events have occurred:

- Actuarial assumptions have been revised. The changes to key assumptions are summarized on the previous page and more details are contained in Appendix D.

Information and Inputs

In order to prepare our valuation, we have relied upon the following information:

- A copy of the previous valuation report as at April 1, 2014;
- Membership data compiled as at April 1, 2017 by the Assembly;
- Asset data taken from the Plan's unaudited financial statements from April 1, 2014 to March 31, 2017 prepared by RBC Investor Services; and
- A copy of the latest Retiring Allowances Act and Regulations.

Furthermore, our actuarial assumptions and methods have been chosen to reflect our understanding of the Assembly's desired funding objectives, as set out in the Funding Policy, with due respect to accepted actuarial practice and regulatory constraints.

Subsequent Events

As of the date of this report, we have not been made aware of any subsequent events which would have an effect on the results of this valuation. However, the following points should be noted in this regard:

- Actual experience deviating from expected after April 1, 2017 will result in gains or losses which will be reflected in the next actuarial valuation report; and
- To the best of our knowledge, the results contained in this report are based on the regulatory and legal environment in effect at the date of this report and do not take into consideration any potential changes that may be currently under review. To the extent that actual changes in the regulatory and legal environment transpire, any financial impact on the Plan as a result of such changes will be reflected in future valuations.

Section 2: Target Margin Valuation Results

Target Margin Financial Position of the Plan

The target margin valuation provides an assessment of the Plan's financial position at the valuation date on the premise that the Plan continues on into the future indefinitely.

The selection of the applicable actuarial assumptions and methods reflect the Plan's Funding Policy, actuarial standards of practice, and pension standards.

On the basis of the plan provisions, membership data, target margin assumptions and methods, and asset information described in the Appendices, the target margin financial position of the Plan as at April 1, 2017 is shown in the following table. The results as at April 1, 2014 are also shown for comparison purposes.

Target Margin Financial Position

	April 1, 2017	April 1, 2014
Actuarial Value of Assets	**$ 11,707,400**	**$ 6,157,700**
Target Margin Liabilities		
▪ Active Members	$ 5,476,200	$ 1,864,800
▪ Deferred Vested Members	948,100	1,028,600
▪ Retired Members and Beneficiaries	4,527,500	4,246,100
Total Liabilities	**$ 10,951,800**	**$ 7,139,500**
Excess/(Unfunded Liability)	**$ 755,600**	**$ (981,800)**
Funded Ratio	**106.9%**	**86.2%**

On the basis of the plan provisions, membership data, target margin assumptions and methods and asset information described in the Appendices, the target margin current service cost of the Plan as at April 1, 2017 is shown in the following table. The current service cost as at April 1, 2014 is also shown for comparison purposes.

Target Margin Current Service Cost

	April 1, 2017	April 1, 2014
Current Service Cost		
Total Current Service Cost	$ 1,209,100	$ 1,054,900
Required Member Contributions	(230,500)	(223,700)
Assembly Current Service Cost	**$ 978,600**	**$ 831,200**
Total pensionable earnings (in year following valuation date)	$ 2,934,600	$ 2,851,400
As a % of total pensionable earnings	33.3%	29.2%

Change in Financial Position

During the period from April 1, 2014 to April 1, 2017, the target margin financial position of the Plan changed from a deficiency of $981,800 to an excess of $755,600. The major components of this change are summarized in the following table.

Reconciliation of the Target Margin Financial Position for the Period from April 1, 2014 to April 1, 2017

Excess/(Unfunded Liability) as at April 1, 2014	$	(981,800)
Expected interest on excess (unfunded liability)		(116,200)
Assembly deficit contributions during inter-valuation period		973,900
Expected Excess/(Unfunded Liability) as at April 1, 2017	**$**	**(124,100)**
Change in liabilities due to experience gains/(losses)		
Gain/(loss) due to investment experience		1,220,100
Gain/(loss) due to retirement experience		32,700
Gain/(loss) due to salary experience		(10,700)
Gain/(loss) due to termination experience		124,000
Gain/(loss) due to mortality experience		23,300
Gain/(loss) due to contribution experience		(89,700)
Gain/(loss) due to indexing experience		64,100
Gain/(loss) due to ITA maximum increases		63,500
Excess/(Unfunded Liability) after experience gains/(losses) as at April 1, 2017	**$**	**1,303,200**
Change in liabilities due to change in economic assumptions		(643,900)
Net gain/(loss) due to other experience and miscellaneous items		96,300
Excess/(Unfunded Liability) as at April 1, 2017	**$**	**755,600**

Discussion of Changes in Assumptions

Effective April 1, 2017, the interest rate assumption was changed from 3.80% per annum to 3.40% per annum.

This assumption change increased the target margin liabilities by $643,900 and the Assembly current service cost by $76,800.

Target Margin Valuation Sensitivity Results

In accordance with the Canadian Institute of Actuaries Standards of Practice specific to pension plans, the table below presents the sensitivity of the target margin liabilities and the total current service cost of using a discount rate 1% lower than that used for the target margin valuation.

	Valuation Basis April 1, 2017	Based on Rate of 1% Lower	Effect $	Effect %
Target Margin Liabilities	$ 10,951,800	$ 12,866,600	$ 1,914,800	17.5%
Current Service Cost	$ 1,209,100	$ 1,439,000	$ 229,900	19.0%

Note that using a discount rate 1% higher than that assumed would result in a comparable reduction in the Plan's target margin liabilities and current service cost.

Section 3: Best Estimate Valuation Results

Financial Position of the Plan – Best Estimate Basis

The best estimate valuation provides an assessment of the Plan's financial position at the valuation date on the premise that the Plan continues on into the future indefinitely. This basis contains no margin for adverse experience.

On the basis of the plan provisions, membership data, best estimate assumptions and methods, and asset information described in the Appendices, the best estimate financial position of the Plan as at April 1, 2017 is shown in the following table.

Best Estimate Financial Position

		April 1, 2017
Actuarial Value of Assets	**$**	**11,707,400**
Best Estimate Liabilities		
▪ Active Members	$	4,441,100
▪ Deferred Vested Members		767,300
▪ Retired Members and Beneficiaries		3,790,500
Total Liabilities	**$**	**8,998,900**
Excess/(Unfunded Liability)	**$**	**2,708,500**
Funded Ratio		**130.1%**

On the basis of the plan provisions, membership data, best estimate assumptions and methods and asset information described in the Appendices, the best estimate current service cost of the Plan as at April 1, 2017 is shown in the following table.

Best Estimate Current Service Cost

		April 1, 2017
Current Service Cost		
Total Current Service Cost	$	977,300
Required Member Contributions		(230,500)
Assembly Current Service Cost	**$**	**746,800**
Total pensionable earnings (in year following valuation date)	$	2,934,600
As a % of total pensionable earnings		25.4%

Section 4: Contribution Requirements

Funding Policy

The Board's Funding Policy outlines the contribution strategy the Assembly intends to follow in order to reach the target funding level in a reasonable period of time. The Board has decided on a target funding level of 120% of best estimate liabilities.

The contribution strategy that the Assembly will follow in a given year must be greater than the minimum funding requirements set out in the Retiring Allowances Act, and be no more than the maximum contributions allowed under the *Income Tax Act*. In meeting these requirements, and balancing the various interests of the Plan's stakeholders, the Plan's Funding policy sets out that the Assembly will contribute within the following range:

- A minimum contribution of the current service cost (on a best estimate basis), plus special payments to eliminate any deficit (on a best estimate basis) over a period of no more than 15 years, less any Surplus (on a best estimate basis).
- A maximum contribution of the current service cost (on a target margin basis), plus any unfunded liability (on a target margin basis) less any excess surplus (on a target margin basis).

With that said, the Board will consider a target contribution of the current service cost (on a target margin basis), less the amortization of any excess surplus above the target funding level (on a target margin basis) over 15-years.

Development of Minimum Contributions

The table below presents the development of the minimum Assembly contributions for the Plan year commencing April 1, 2017. While we have shown a fixed Assembly current service cost in the table below, the Assembly may fund the current service cost as a percentage of pensionable earnings.

Plan Year Commencing	**April 1, 2017**
Current Service Cost (Best Estimate)	
Total Current Service Cost	$ 977,300
Required Member Contributions	$ 230,500
Assembly Current Service Cost	**$ 746,800**
Surplus (Best Estimate Basis)	$ 2,708,500
Minimum Contributions	
Assembly Current Service Cost	$ 746,800
Less: Application of Surplus	$ 2,708,500
Minimum Assembly Contributions (cannot be less than zero)	**$ 0**

Development of Maximum Permissible Assembly Contribution

The Income Tax Act requires that any excess surplus first be applied to reduce or eliminate the Assembly contribution requirements. Excess surplus is defined in Section 147.2(2)(d) of the Income Tax Act, as the portion of excess (if any) that exceeds 25% of the target margin liabilities.

Since the excess of $755,600 is less than 25% of the target margin liabilities of $10,951,800, there is no excess surplus and therefore it does not impact the development of the Assembly contribution requirements.

The table below presents the development of the maximum permissible Assembly contribution for the Plan year commencing April 1, 2017. While we have shown a fixed Assembly current service cost in the table below, the Assembly may fund the current service cost as a percentage of pensionable earnings.

Plan Year Commencing	**April 1, 2017**
Assembly current service cost	$ 978,600
Special payments toward amortizing unfunded liability	0
Required application of excess surplus	0
Maximum Permissible Assembly Contribution	**$ 978,600**

If the Assembly wishes to make the maximum permissible Assembly contribution, it is advisable to contact the Plan actuary before making such contribution to ensure that the contribution will be permissible and that any regulatory requirements are considered.

Development of Funding Policy Recommended Contributions

The table below presents the development of the recommended Assembly contributions for the Plan year commencing April 1, 2017. While we have shown a fixed Assembly current service cost in the table below, the Assembly may fund the current service cost as a percentage of pensionable earnings.

Plan Year Commencing	**April 1, 2017**
Current Service Cost (Target Margin)	
Total Current Service Cost	$ 1,209,100
Required Member Contributions	$ 230,500
Assembly Current Service Cost	**$ 978,600**
Surplus (Target Margin Basis)	$ 755,600
Application of Surplus	$ (65,100)
Funding Policy Recommended Contributions	
Assembly Current Service Cost	$ 978,600
Less: Application of Surplus	$ (65,100)
Assembly Contributions	**$ 913,500**

In the event an updated funding recommendation is not certified before April 1, 2018, the rule for determining the Assembly contributions recommended in the above tables will continue to be appropriate for the plan year commencing on the next valuation date of April 1, 2018. Adjustment to the Assembly contributions (retroactive to April 1, 2018) may be required once the next actuarial funding recommendations are certified.

Section 5: Actuarial Certificate

Actuarial Opinion, Advice and Certification for the Legislative Assembly of Nunavut Retiring Allowances Act

Canada Revenue Agency Registration Number: 1054915

Opinion

This actuarial certification forms an integral part of the actuarial valuation report for the Plan as at April 1, 2017. I confirm that I have prepared an actuarial valuation of the Plan as at April 1, 2017 for the purposes outlined in the Introduction section to this report and consequently:

My advice on funding is the following:

- The Assembly should contribute the amounts within the range of minimum and maximum contribution levels outlined in **Section 4** of this report.
- The next actuarial valuation for the purpose of developing funding requirements should be performed no later than as at April 1, 2018.

I hereby certify that, in my opinion:

- With respect to the purposes of determining the Plan's financial position on a target margin basis as at April 1, 2017:
  - The Plan has a target margin excess of $755,600 as at April 1, 2017, based on target margin assets of $11,707,400 less target margin liabilities of $10,951,800.
  - There is no excess surplus as defined by Section 147.2(2) of the *Income Tax Act* in the Plan at April 1, 2017.
  - The pre-1990 maximum pension restrictions in Subsection 8504(6) of the Regulations to the *Income Tax Act* do not apply to any Members of the Plan.
- With respect to determining the funding requirements of the Plan:
  - The estimated total current service cost for the Plan year commencing April 1, 2017, including the portions of the current service cost attributed to Members and the Assembly are as follows:

Plan Year Commencing	**April 1, 2017**
Current Service Cost	
Total Current Service Cost	$ 1,209,100
Required Member contributions	(230,500)
Assembly Current Service Cost	**$ 978,600**
Total pensionable earnings	$ 2,934,600
As a % of pensionable earnings	33.3%

- The contribution range as outlined in this report is expected to be sufficient to satisfy the Plan's funding requirements.
- The Assembly contributions recommended in this report are eligible contributions under Section 147.2(2) of the *Income Tax Act.*
- For the purposes of the valuation:
  - The data on which this valuation is based are sufficient and reliable;
  - The assumptions used are appropriate; and
  - The actuarial cost methods and the asset valuation methods used are appropriate.
  - This report and its associated work have been prepared, and my opinion given, in accordance with accepted actuarial practice in Canada and in compliance with the requirements outlined in subparagraphs 147.2(2)(a)(iii) and (iv) of the Income Tax Act.
- Notwithstanding the above certifications, emerging experience differing from the assumptions will result in gains or losses that will be revealed in subsequent valuations.

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Appendix A: Glossary of Terms

- The **actuarial value of assets** is the asset value used for target margin valuation purposes. Smoothing methods are sometimes used to smooth investment gains and losses over a certain period.
- The **best estimate liabilities** are the actuarial present value of benefits earned in respect of service prior to the valuation date. The best estimate liabilities are calculated using the best estimate assumptions and methods summarized in Appendix D of this report, which includes no margin for adverse experience.
- The **target margin liabilities** are the actuarial present value of benefits earned in respect of service prior to the valuation date. The target margin liabilities are calculated using the target margin assumptions and methods summarized in Appendix D of this report, which include a margin (contained fully within the discount) equal to approximately 20% of liabilities calculated on a best estimate basis.
- The **target margin position** is the difference between the actuarial value of assets and the target margin liabilities.
- The **maximum deductible Assembly contribution** refers to an eligible contribution pursuant to Section 147.2(2) of the *Income Tax Act*. Under Subsection 8502(b) of the Regulations to the *Income Tax Act*, each Assembly contribution made after 1991 in respect of a defined benefit provision of a registered pension plan must be such eligible contribution.

  In an assembly's fiscal year, the following contributions are eligible under Section 147.2 of the *Income Tax Act*.

  - The Assembly current service cost on a target margin basis, eligible under Section 147.2(2) subject to certification by the actuary and approval by the Canada Revenue Agency; plus
  - Special payments eligible under Section 147.2(2) up to the amount of the unfunded liability on a target margin basis, subject to certification by the actuary and approval by the Canada Revenue Agency; less
  - Required application of excess surplus on a target margin basis.

  The Assembly current service cost and special payments for this Plan will be deductible under Section 147.2(2) of the *Income Tax Act*, subject to the approval of the Canada Revenue Agency.

  In order to be deductible in a given fiscal year, Assembly contributions must be made not later than 120 days after the end of the fiscal year.
- The **minimum required Assembly contribution** for each Plan year is equal to:
  - The Assembly current service cost on a best estimate basis; plus
  - Special payments toward amortizing any unfunded liability, determined on a best estimate basis, over 15 years from the date on which the unfunded liability was established; less
  - Required application of excess surplus; less
  - Permitted application of excess.

- The **special payments** are payments required to liquidate the unfunded liability:
  - The target margin special payments are payments required to liquidate the unfunded liability, with interest at the target margin valuation discount rate, by equal monthly instalments over a period of 15 years beginning on the valuation date of the report in which the target margin unfunded liability was determined;
- The **excess/(unfunded liability)** is the difference between the actuarial value of assets and the sum of the target margin liabilities.
- The **total current service cost** is the actuarial present value of benefits expected to be earned in respect of service for each year starting on the valuation date. Required Member contributions (if any) are deducted from the total current service cost to determine the Assembly current service cost. The total current service cost is calculated using both the target margin and best estimate valuation assumptions and methods summarized in Appendix D of this report.

Appendix B: Assets

Asset Data

The Plan assets are held by RBC Investor Services and invested by Beutel-Goodman Investment Counsel. The asset information presented in this report is based on the unaudited financial statements of the pension fund from April 1, 2014 to April 1, 2017 prepared by RBC Investor Services.

Tests of the sufficiency and reliability of the asset data were performed and the results were satisfactory. The tests included:

- A reconciliation of actual cash flow with expected cash flow from the previous actuarial report; and
- A reconciliation of any anticipated benefit payments from April 1, 2014 to April 1, 2017 (for retirees, terminated or deceased Members) against the financial statements of the pension fund for confirmation of payments.

Market Value of Assets

The following is a summary of the composition of the Plan's assets by asset type as reported by RBC Investor Services as at April 1, 2017. For comparison purposes, the composition at the previous valuation date of April 1, 2014 is also shown.

	April 1, 2017		**April 1, 2014**	
	$	**%**	**$**	**%**
Cash and short term	$ 136,800	1%	$ 152,200	2%
Fixed-income	3,799,600	31%	2,158,100	31%
Canadian equities	4,014,700	32%	2,166,400	32%
U.S. equities	2,026,600	16%	1,159,000	17%
Non-North American equities	2,455,500	20%	1,254,800	18%
Total Invested Assets	**$ 12,433,200**	**100%**	**$ 6,890,500**	**100%**

Target Asset Mix

The target asset mix of the Plan is contained in the Plan's Statement of Investment Policies and Procedures and is as follows:

	Minimum (%)	Target (%)	Maximum (%)
Equities			
Canadian Equities	25	30	55
Foreign Equities			
▪ U.S. Equities	7	12	20
▪ Non-North American Equities	8	13	20
Total Foreign Equities	**15**	**25**	**40**
Total Equities	**45**	**55**	**75**
Fixed Income	**30**	**40**	**55**
Cash and Short Term	**0**	**5**	**15**
Total Fund		**100**	

Reconciliation of Changes in Market Value of Assets

The table below reconciles changes in the market value of assets between April 1, 2014 and April 1, 2017.

Plan Year Commencing April 1,		2014		2015		2016
Market Value of Assets, Beginning of Plan Year	$	6,890,516	$	8,582,459	$	10,178,487
Contributions During Plan Year						
Member	$	219,406	$	217,641	$	231,689
Assembly current service cost		924,000		872,700		916,200
Assembly special payments		0		920,900		0
Total	**$**	**1,143,406**	**$**	**2,011,241**	**$**	**1,147,889**
Benefit Payments During Plan Year						
Non-retired Members	$	0	$	0	$	(237,662)
Retired Members		(218,292)		(225,776)		(228,723)
Total	**$**	**(218,292)**	**$**	**(225,776)**	**$**	**(466,385)**
Fees/Expenses						
Investment fees/expenses	$	(43,532)	$	(51,481)	$	(54,712)
Non-investment fees/expenses		(7,567)		(10,922)		(14,362)
Total	**$**	**(51,099)**	**$**	**(62,403)**	**$**	**(69,074)**
Investment Income	$	817,928	$	(127,034)	$	1,642,327
Market Value of Assets, End of Plan Year	**$**	**8,582,459**	**$**	**10,178,487**	**$**	**12,433,244**
Rate of return, net of fees/expenses		10.43%		-2.00%		14.96%

Development of Adjusted Market Value of Assets

The adjusted market value of assets is equal to the market value of assets adjusted to reflect any contributions, benefit payments, transfers and fees/expenses in-transit as of the valuation date. The development of the adjusted market value of assets is shown below.

		April 1, 2017
Market value of assets	$	12,433,200
Contributions receivable		20,000
Benefits payable		0
Transfers (payable)/receivable		0
Fees/expenses payable		(18,500)
Adjusted market value of assets	**$**	**12,434,700**

Development of Actuarial Value of Assets

The actuarial value of assets is determined by modifying the adjusted market value of assets to recognize asset gains (losses) (i.e., the difference between actual investment return and expected investment return based on the target margin discount rate assumption) over a 4-year period.

The development of the actuarial value of assets as of April 1, 2017 is shown below:

Year Ending		**Original Amount of (Gain) Loss**		**(Gain) Loss Admitted in Prior Years**		**(Gain) Loss Admitted in Current Year**		**(Gain) Loss to be Admitted in Future Years**
March 31, 2015	$	(487,500)	$	(243,800)	$	(121,800)	$	(121,900)
March 31, 2016	$	549,400	$	137,400		137,300		274,700
March 31, 2017	$	(1,173,500)	$	0		(293,400)		(880,100)
					$	**(277,900)**	**$**	**(727,300)**
Adjusted market value of assets, April 1, 2017								**12,434,700**
Actuarial value of assets, April 1, 2017							**$**	**11,707,400**

Appendix C: Membership Data

Source of Data

This funding valuation was based on Member data provided by the Assembly as of April 1, 2017. Tests of the sufficiency and reliability of the Member data were performed and the results were satisfactory. The tests included:

- A reconciliation of membership status against the membership status at the last valuation. This test was performed to ensure that all Members were accounted for. A summary of this reconciliation follows on the next page;
- A reconciliation of birth, hire, and participation dates against the corresponding dates provided for the last valuation to ensure consistency of data;
- A reconciliation of credited service against the corresponding amount provided for the last valuation to ensure that no Member accrued more than 3 years of credited service from April 1, 2014. This test also revealed any Members who accrued less than 3 years of credited service;
- A reconciliation of pensionable earnings against the corresponding amounts provided for the last valuation to identify any unusual increases or decreases (more than 20%);
- A reconciliation of accrued benefits against the corresponding amounts provided for the last valuation to identify any unusual benefit accruals;
- A reconciliation of any stated benefit payments between April 1, 2014 and April 1, 2017 (for retired, terminated or deceased Members) against the financial statements of the pension fund for confirmation of the payments;
- A reconciliation of inactive Member benefit amounts against the corresponding amounts provided for the last valuation to ensure consistency of data.

A copy of the administrator certification certifying the accuracy and completeness of the Member data (and the plan provisions summarized in this report) is included in **Appendix F** of this report.

Membership Summary

The table below reconciles the number of Members as of April 1, 2017 with the number of Members as of April 1, 2014 and the changes due to experience in the period.

	Active Members	Deferred Vested Members	Retired Members	Total
Members, April 1, 2014	21	2	18	41
Changes due to:				
New entrants	2	-	-	2
Termination				
Deferred vested pension	(1)	1	-	-
Lump sum	(1)	-	-	(1)
Death				
Pensioner with survivor	-	-	(1)	(1)
Surviving beneficiary	-	-	1	1
Retirement	-	(1)	1	-
Net change	-	-	1	1
Members, April 1, 2017	**21**	**2**	**19**	**42**

Membership Summary

Active Members

April 1, 2017	Male	Female	Total
Number	19	2	21
Average age	58.2	58.1	58.2
Average credited service – MLA	4.4	4.5	4.4
Minister	3.1	1.5	3.0
Other	4.4	2.4	4.1
Average pensionable earnings[1] – MLA			$ 101,817
Minister			$ 77,330
Other			$ 32,127

April 1, 2014	Male	Female	Total
Number	18	3	21
Average age	53.8	53.8	53.8
Average credited service – MLA	1.6	2.3	1.7
Minister	1.2	1.0	1.1
Other	1.4	1.5	1.4
Average pensionable earnings – MLA			$ 97,815
Minister			$ 78,394
Other			$ 34,961

Deferred Vested Members

	April 1, 2017	April 1, 2014
Number	2	2
Average age	54.0	52.5
Average annual pension	$ 23,987	$ 23,930
Proportion female	50%	0%

[1] Expected earnings in the year following the valuation date.

Retired Members

	April 1, 2017	April 1, 2014
Number	19	18
Average age	64.9	62.4
Average annual pension	$ 12,165	$ 11,660
Proportion female	15.8%	11.1%

Appendix D: Assumptions and Methods

Assumptions and Methods

A Member's entitlements under a pension plan are generally funded during the period over which service is accrued by the Member. The cost of each Member's benefits is allocated in some fashion over the Member's service. An actuarial valuation provides an assessment of the extent to which allocations relating to periods prior to a valuation date (often referred to as the actuarial liabilities) are covered by the plan's assets.

The target margin valuation provides an assessment of a pension plan on the premise that the plan continues on into the future indefinitely based on assumptions in respect of future events upon which a plan's benefits are contingent and methods that effectively determine the way in which a plan's costs will be allocated over the Members' service. The true cost of a plan, however, will emerge only as experience develops, investment earnings are received, and benefit payments are made.

This appendix summarizes the target margin assumptions and methods that have been used for the target margin valuation of the Plan at the valuation date. The target margin assumptions and methods have been chosen to reflect our understanding of the Plan's Funding Policy. For purposes of this valuation, the target margin methods and assumptions were reviewed and changes as indicated were made.

The best estimate assumptions and methods are identical to those of the target margin basis, with the exception of the discount rate, which hold no margin for adverse experience.

Assumptions and Methods

The actuarial assumptions and methods used in the current and previous valuations are summarized below and described on the following pages. With the exception of discount rates, the assumptions used in the target margin and best estimate basis have the same assumptions

	April 1, 2017	April 1, 2014
Economic Assumptions		
Discount rate (target margin) (best estimate)	3.40% 4.75%	3.80%
Inflation rate	2.00%	Same
Increases in pensionable earnings	3.00%	Same
Increases in maximum pension limit	In accordance with *Income Tax Act*, then 2.50%	Same
Demographic Assumptions		
Mortality	2014 Canadian Pensioners' Mortality Table combined with mortality improvement scale CPM-B No mortality assumed prior to retirement	Same
Retirement	Actives: Later of age 50, 4 years of service or end of current session Deferred: Age 50 or current age if older	Same
Termination of employment	None	Same
Proportion married		
Non-retired proportion with spouse	100%	Same
Non-retired spousal age differential	Males three years older	Same
Retired Members	Actual marital status and ages are used	Same
Methods		
Actuarial cost method	Projected Unit Credit Cost Method	Same
Asset valuation method	Smoothed market value of assets adjusted to recognize asset gains and losses over a four year period and to reflect contributions and benefit payments in transit as of the valuation date.	Same

Justification of Actuarial Assumptions and Methods

The Management Services Board of the Legislative Assembly of Nunavut adopted a formal funding policy in December 2011. The objective of the funding policy is to provide a reasonable level of benefit security to plan beneficiaries at a cost level that is sustainable for the long term.

The funding policy provides the following guidance:

- When performing an actuarial valuation, the emphasis is on the going concern value of the plans' liabilities.
- The risk of wind-up is negligible which makes solvency funding inappropriate for the plans.
- The Board works with the plan actuary to develop "best estimate" assumptions regarding future economic and demographic variables that affect plan costs.
- The Board and the actuary may then add an explicit provision for adverse deviation (margin of conservatism) to the assumptions, typically the discount rate.
- The actual margin that is applied to the best estimate assumptions may change over time to allow for some smoothing of the contribution rates.
- The long-term funded ratio target is 120% of liabilities (best estimate).

Economic Assumptions

Discount Rate

We have used a discount rate of 3.40% for the target margin valuation and 4.75% for the best estimate valuation.

The overall expected return ("best estimate") is 5.22%. This best estimate rate of return was developed using best estimate returns for each major asset class in which the pension fund is invested and then using a building block approach, based on the Plan's investment policy, to develop an overall best estimate rate of return for the entire pension fund. Any additional gains from rebalancing and diversification have been included above.

In order to set the discount rate, we have incorporated the following adjustments to the overall expected rate of return:

Development of Discount Rate	
Overall expected return	5.22%
Non-investment expenses	(0.10)%
Investment expenses	(0.40)%
Additional returns due to active management	0.00%
Margin for adverse experience	(1.32)%
Unrounded Discount Rate	**3.40%**

Therefore, we have arrived at a discount rate of 3.40% per year for the target margin valuation.

This assumption is changed from the previous valuation when a discount rate of 3.80% was used.

The best estimate valuation used the same methodology to calculate the discount rate, however no margin was held for adverse experience. Therefore a rate of 4.75% (rounded from 4.72%) was used.

Inflation Rate

The inflation rate is assumed to be 2.00% per year. This reflects our best estimate of future inflation considering current economic and financial market conditions.

Increases in Pensionable Earnings

We have assumed future remuneration increases will be 3.00% per annum based on the assumed rate of inflation of 2.00% per annum, plus 0.50% per annum for the effect of productivity growth in the Canadian economy and 0.50% for merit increases.

Increases in the Maximum Pension Limit

Pensions are limited to the maximum limits under the *Income Tax Act*. The maximum lifetime annual pension per year of pensionable service payable under the *Income Tax Act* is $2,914.44 in 2017. It is assumed that the maximum limit will increase at 2.50% per year after 2017. This is comprised of an annual increase of 2.00% on account of inflation, plus 0.50% on account of productivity, which is consistent with historical real economic growth.

Expenses

Since the discount rate has been established net of all expenses, no explicit assumption is required for expenses. This is unchanged from the previous valuation.

Economic Margins for Adverse Deviations

Margins for conservatism or provisions for adverse experience have been built into the target margin assumptions, as outlined in the Funding Policy. The margin determined in the Funding Policy was chosen so as to balance the need for financial security for existing Plan Members against overly conservative contribution requirements that potentially result in intergenerational inequity among Members and unnecessary financial strain on the Assembly.

A margin for adverse deviations of 1.32% has been reflected in the interest rate assumption.

The actuary has discussed the Plan's experience with the Board and compared it to the expected experience. This review indicates that there is a need for use of margins for adverse deviations. The margins for adverse deviations incorporated in the assumptions reflect this review and the Assembly's desire to maintain safety cushions.

Demographic Assumptions

Mortality

During 2014, the CIA completed a study of Canadian pensioner mortality levels and trends. The 2014 study published mortality rates split by sector and included Public, Private and Combined tables, as well as possible pension size adjustment factors. A generational projection scale, CPM-B, was also developed to allow for improvements in mortality after 2014. The analysis undertaken during the last filed valuation continues to hold. Therefore, the continued use of this mortality table and projection scale are considered reasonable.

Retirement

Members are assumed to retire at the later of age 50, four years of service or the end of current session. The benefit on early retirement is subject to a reduction of 3% per annum before the earliest of age 60, 30 years of service or 80 points. In ordered to be vested in pension benefits, Members must have 4 years of service or serve at least one full term as a member of the Assembly. Based on historical experience, most members remain in the Assembly for the entire session and very few members choose to defer their pension benefits when they leave the Assembly.

Termination of Employment

No allowance has been made for termination of membership prior to retirement on the basis that the impact of including such an assumption would not have a material impact on the valuation results. Terminations after meeting the vesting requirement are treated as retirements, which are explained above. This is unchanged from the previous valuation.

Proportion of Members with Spouses and Spousal Age Differential

These assumptions are relevant to the valuation of benefits since there is a subsidized joint and survivor benefit available for Members with a spouse. The proportion of Members who will have a spouse is based on broad population statistics. The spousal age difference was based on observance of actual age differences in the group for Members where the spouse age is known. This is unchanged from the previous valuation.

Other

Actuarial Cost Method

An actuarial cost method is a technique used to allocate in a systematic and consistent manner the expected cost of a pension plan over the years of service during which plan Members earn benefits under the Plan. By funding the cost of a pension plan in an orderly and rational manner, the security of benefits provided under the terms of the plan in respect of service that has already been rendered is significantly enhanced.

The projected accrued benefit actuarial cost method has been used for this valuation. Under this method, the actuarial present value of benefits in respect of service prior to the valuation date, but based on pensionable earnings projected to retirement, is compared with the actuarial asset value, revealing either an excess or an unfunded actuarial liability.

With respect to service after the valuation date, the expected value of benefits for service in the year following the valuation date (i.e., the current service cost) net of any required Member contributions is expressed as a percentage of the expected value of participating payroll for that year. The employer current service cost contributions are determined each year by applying this percentage to the actual participating payroll for the year.

When calculating the actuarial present value of benefits at the valuation date, the present value of all retirement, withdrawal and pre-retirement death benefits are included. For each Member, the retirement, withdrawal and pre-retirement death benefits for a particular period of service are first projected each year into the future taking into account future vesting, early retirement entitlements and minimum pension/value entitlements. These projected benefits for each future year are then capitalized, multiplied by the probability of the Member leaving the Plan in that year and discounted with interest and survivorship to the valuation date. The actuarial present value of benefits for the particular period of service is then determined by summing the present values of these projected benefits.

The pattern of future contributions necessary to pre fund future benefit accruals for any one particular individual will increase gradually as a percentage of their pensionable earnings as the individual approaches retirement. For a stable population (i.e., one where the demographics of the group remain constant from year to year), the current service cost will remain relatively level as a percentage of payroll. The projected accrued benefit actuarial cost method therefore allocates contributions among different periods in an orderly and rational manner for a stable population group.

In the event of future adverse experience, contributions in addition to the current service cost calculated under the projected accrued benefit actuarial cost method may be required to ensure that the Plan assets are adequate to provide the benefits. Conversely, favourable experience may generate excess which may serve to reduce future contribution requirements.

Asset Valuation Method

The actuarial value of assets (AVA) methodology used described in Appendix A, was used to moderate fluctuations in contribution rates. The method used tracks market value, and would asymptotically approach market value if rates of return matched target margin assumptions. The method chosen does not deviate materially from market value, and additionally, we have set a corridor for the method to produce actuarial values within plus or minus 10% of market value should the method produce an AVA outside of this range. The method does not have undue influence on investment transactions, i.e., sale of an asset will not have an impact on the AVA. A 4-year period of averaging was chosen which is within the typical range of an economic cycle. There is no bias in the method, as we believe there is an equal probability of the AVA being higher or lower than the market value of assets.

Appendix E: Summary of Plan Provisions

This summary contains the main provisions of the Legislative Assembly of Nunavut Supplementary Retiring Allowances Act and Regulations (the "Plan") as at April 1, 2017. For a complete description of the Plan, reference should be made to the Legislative Assembly Retiring Allowances Act and Regulations.

Effective Date	April 1, 1999.
Eligibility	All Members of the Legislative Assembly are Members of the Plan.
Credited Service	Service since April 1, 1999
Member Contributions	Members contribute 9.0% of earnings (up to a maximum which is the defined benefit limit divided by 2%) to the fund unless they do not participate in the Supplementary Retiring Allowances Act, in which case they contribute 6.5%.
Pensionable Age	The earliest of: (a) the age of 60 years (b) 30 years of service the aggregate of age and service equal to 80
Late Retirement	Up to age 71
Retirement Pension at Pensionable Age	2% of the average best earnings over any four years as an MLA multiplied by Credited Service as an MLA, plus 2% of the average best earnings over any four years in an eligible position multiplied by Credited Service in that position. A position must be held for at least one year for a pension to be paid, and the pension for each position is calculated separately.

Maximum Pension	The annual benefit for a Member cannot exceed the lesser of: a) the defined benefit limit as prescribed in the Income Tax Act of Canada for the year in which the pension commences, times years of Credited Service b) 2% of average annual pensionable remuneration adjusted with average wage increase to the year in which the pension commences, times years of Credited Service The combined pension amount under the Nunavut Legislative Assembly Retiring Allowances Act and the Nunavut Legislative Assembly Supplementary Retiring Allowances Act shall not exceed 75% of the average best earnings over any four years.
Early Retirement	If a Member elects to retire prior to pensionable age, the benefit shall be reduced by 0.25% for each month preceding pensionable age. There is no reduction for early retirement at pensionable age.
Form of Pension	The normal form of pension is a joint and 66-2/3% survivor pension reducing on the death of the member with a guarantee of 5 years in any event. Each dependent will receive a pension of 10% of the retirement pension (to a maximum total of 33-1/3%) if the spouse survives. If there is no surviving spouse, a benefit of 25% of the retirement pension (to a maximum total of 100%) will be paid to each dependent. Pensions payable to a dependent cease when they no longer qualify as a dependent under the Plan.
Increases in Pension	Pensions in pay and deferred pensions are increased every January 1 based on increases in the Consumer Price Index up to the preceding September 30.

Pre-Retirement Death Benefits	If a Member or Former Member dies before retirement and is not eligible to receive a pension, his accumulated contributions with interest will be returned to the beneficiary. If the Member was eligible to receive a pension, the spouse will receive an annuity of 100% of the retirement pension for the first 5 years and 66-2/3% of the pension for the remaining lifetime. Each dependent will receive a pension of 10% of the retirement pension (to a maximum total of 33-1/3%) if the spouse survives. If there is no surviving spouse, a benefit of 25% of the retirement pension (to a maximum total of 100%) will be paid to each dependent. Pensions payable to a dependent cease when they no longer qualify as a dependent under the Plan.
Withdrawal Benefits	A Member who ceases to be a Member with four or more years of service or serves at least one full term as a Member of the Assembly is entitled to a retirement pension. The Member may elect to transfer the retirement pension to an RRSP, which must be locked-in if the Member is over age 55. All other Members who terminate will receive a lump sum payment of their accumulated contributions with interest.

Appendix F: Administrator Certification

With respect to the Legislative Assembly of Nunavut Retiring Allowances Act, forming part of the actuarial report as at April 1, 2017, I hereby certify that, to the best of my knowledge and belief:

- The asset data contained in Appendix B of this report is complete and accurate;
- The membership data summarized in Appendix C of this report form a complete and accurate description of all persons who are entitled to benefits under the terms of the plan in respect of service up to the date of the valuation;
- The summary of the Plan provisions contained in Appendix F is an accurate summary of the Plan provisions up to and including April 1, 2017; and
- The actuary has been notified of all relevant events subsequent to the valuation measurement date.

Marc Rose
Name (print) of Authorized Signatory

Director - Financial Services
Title

Signature

May 16/18
Date

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