



# HRM Pension Plan Update Presented to HRM Council

January 15, 2019



# Agenda

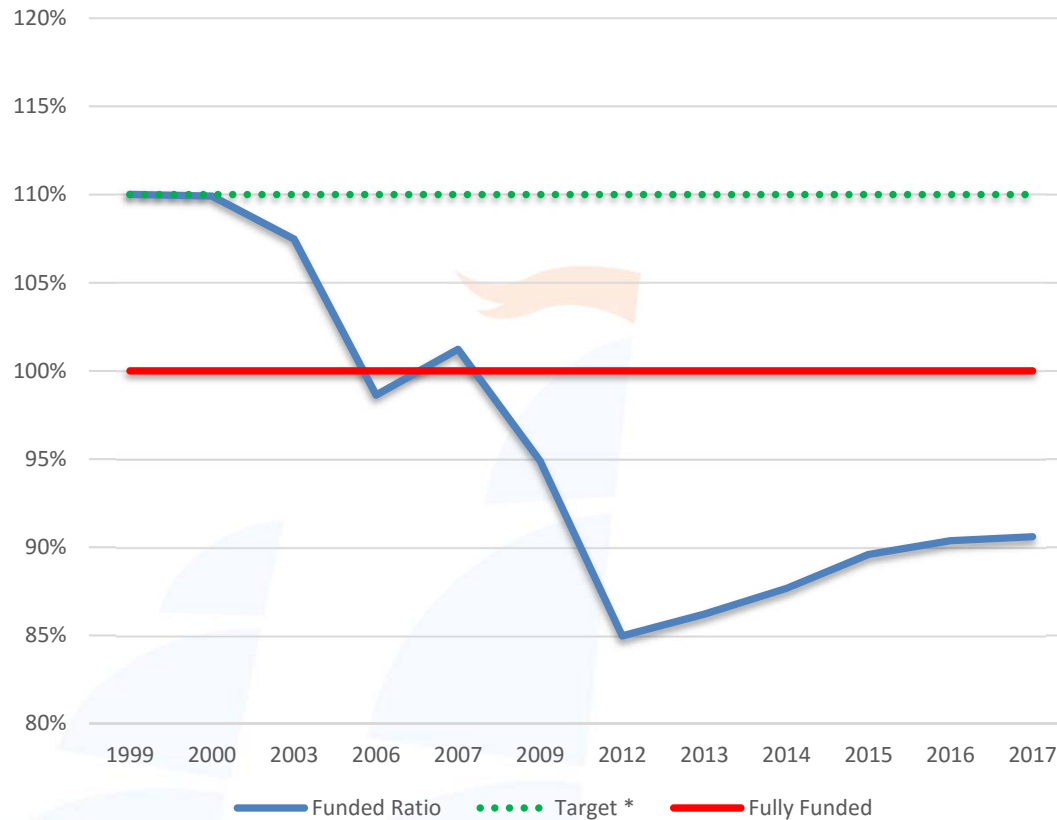
- Plan Status
- Pressures and Developments
- Pension Committee Response
- Next Steps and Implications
- Questions
- Glossary of Terms
- Appendices
- Enclosures
  - 2017 HRM Pension Plan Annual Report
  - December 31, 2017 Actuarial Valuation Report



# Plan Status



# Historical Funded Ratio



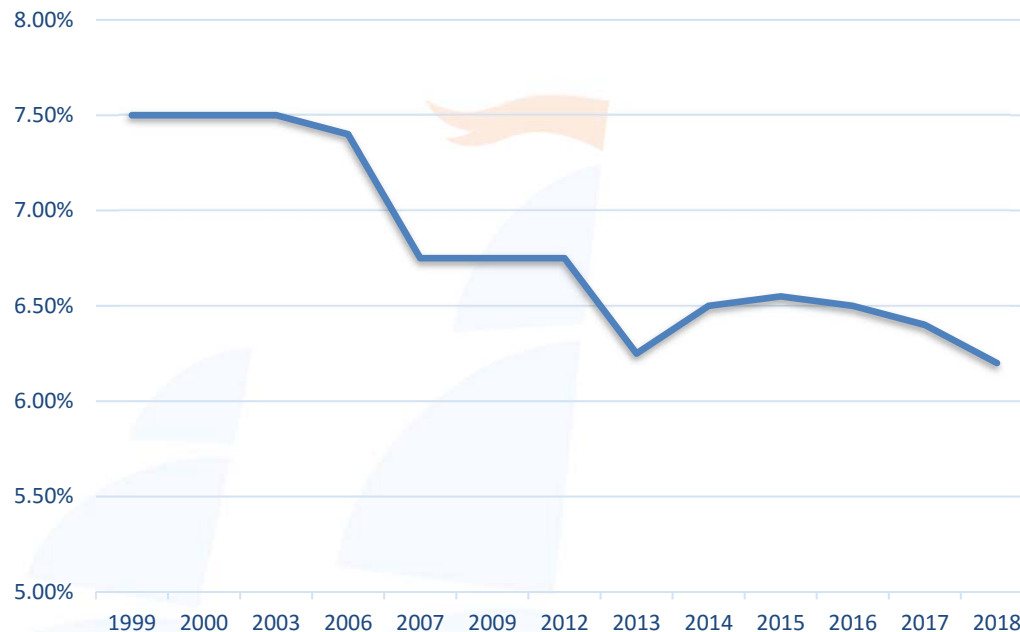
- Since market correction in 2008 Plan has been slowly working towards 100% funded ratio level
- Although asset returns have been good and contribution rates have been high, achieving a 100% funded ratio has proven challenging
- Lowering the discount rate, increasing longevity and the 2008 market adjustment have contributed to not achieving a fully funded status

\* The Pension Committee has set ~110% as their target funded ratio



# Historical Discount Rate

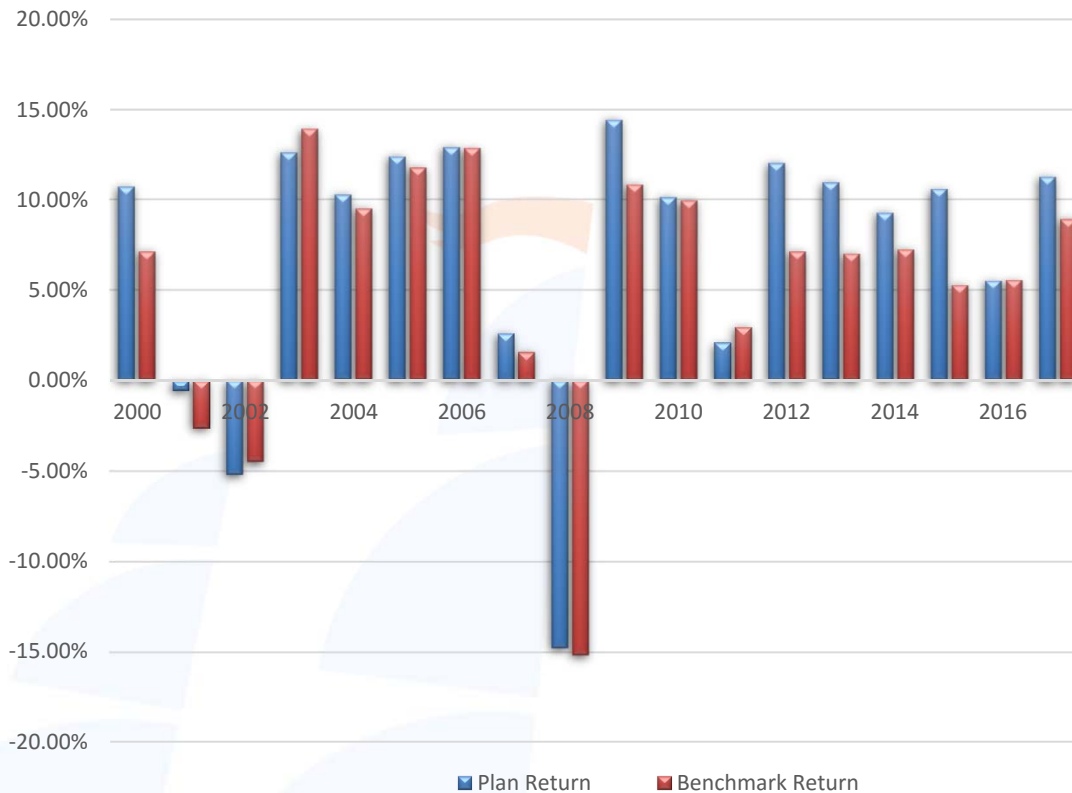
Valuation Discount Rate



- Trend towards using a more conservative discount rate
- Reflects expected market conditions in the future
- HRM Plan discount rate is still on the high end compared to other plans across the province and country (see Appendix 1<sup>(a)-(b)</sup>)



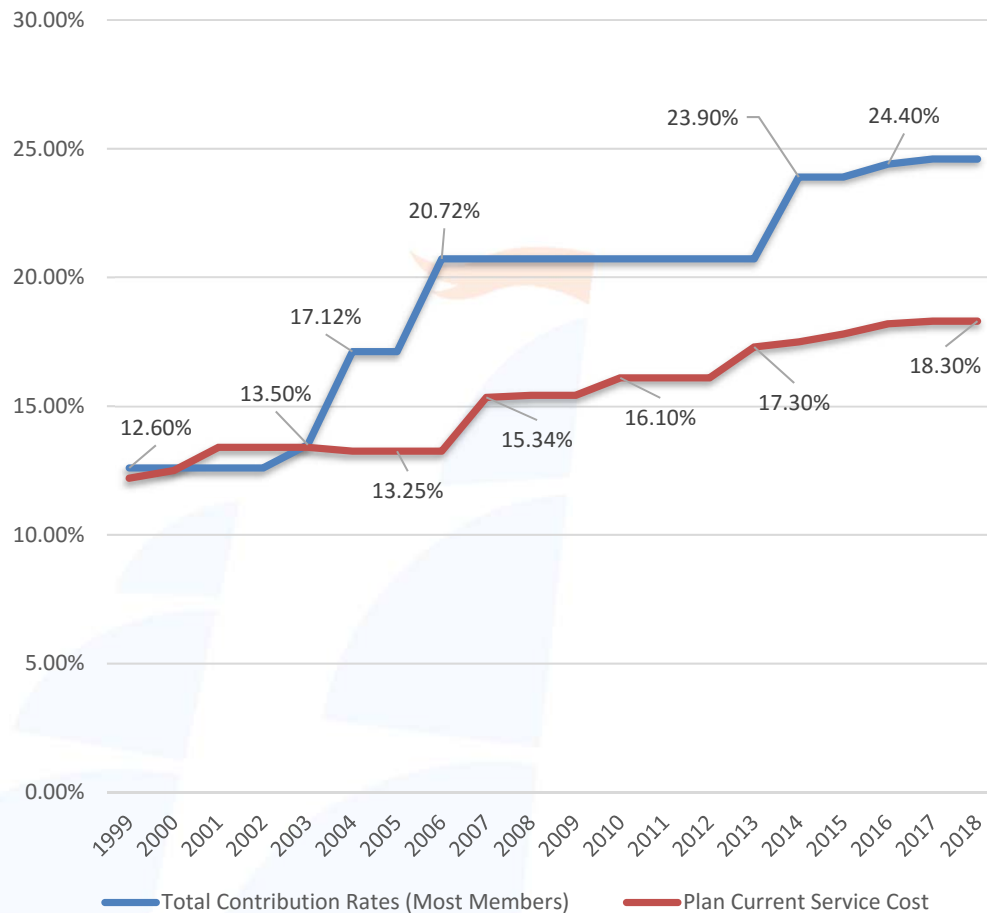
# Historical Investment Performance



- Average return of ~7% since 2000
- Consistently outperforming the Plan's benchmark return
- Total Plan assets approaching \$2B



# HRM Plan Contribution Rates



- Current service cost represents the expected long term cost of the Plan
- The space between the two lines represents the additional contributions that have gone into the Plan to fund any ongoing deficits (i.e. special payments)
- Plan has become more expensive over time
  - Special payments have become a large portion of total contributions



# HRM Plan Provisions

Pre 65 Pension	Post 65 Pension	Unreduced Retirement Criteria	Early Retirement Reduction	Indexing	Normal Form of Pension	Pension Limit
2.0% of Best 3-year average earnings	2.0% of Best 3-year average earnings	<b>Non-Public Service Occupations:</b> - Age 60 or 80 points  <b>Public Service Occupations:</b> - Age 60 or 75 points	6.0% / year prior to unreduced retirement date	Ad hoc	<b>Married Members:</b> Joint and survivor with 67% reversion to spouse upon death of member  <b>Single Members:</b> Lifetime pension with 10 year guarantee	- Income Tax Act Pension Limit - No Service Cap

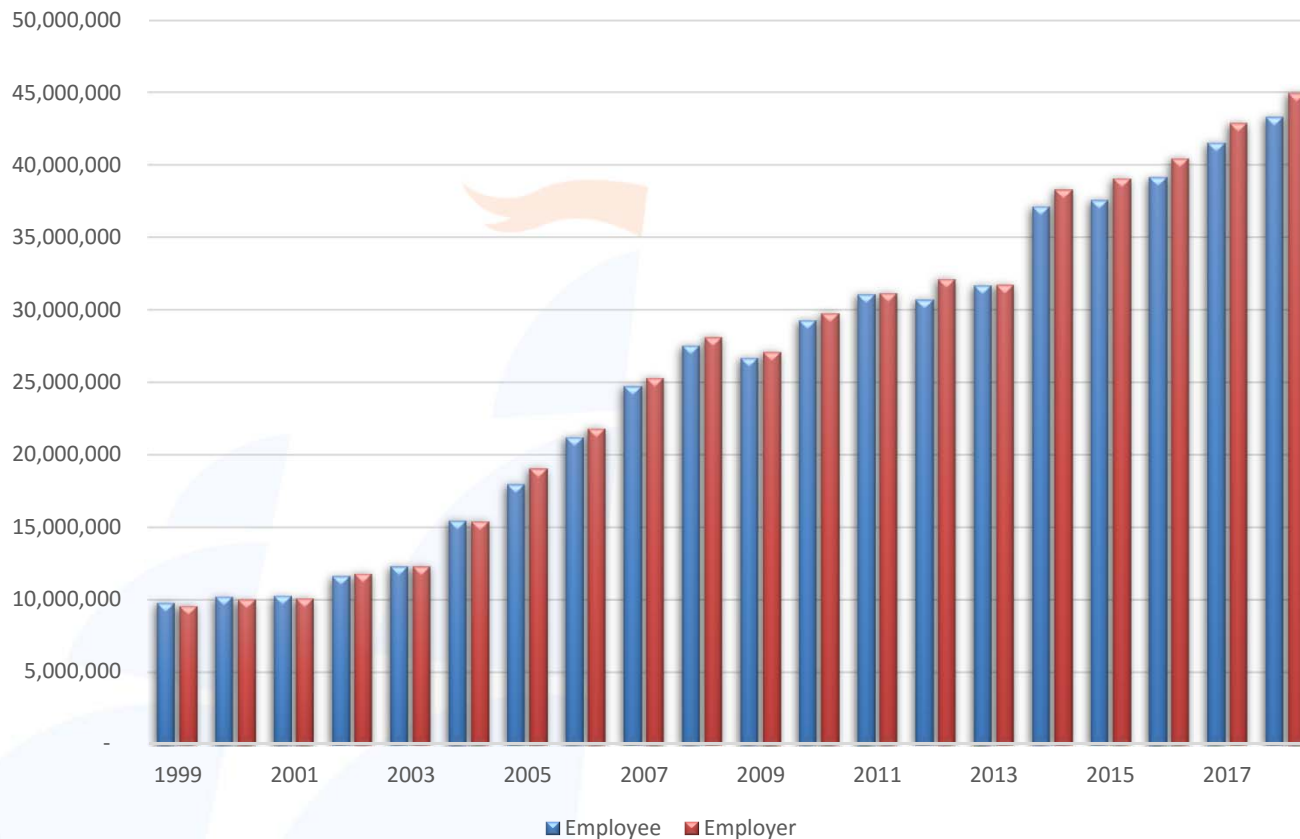
- HRM Plan was compared to many other large pension plans across the country
  - Appendix 2<sup>(a)-(c)</sup> provides detailed comparison
- HRM Plan provides more generous features than the vast majority of plans across the country
  - After considering CPP and OAS many HRM Plan Members retire with more net cash flow than they had pre-retirement
  - Flat 2.0% accrual rate that is not integrated with CPP. Vast majority of public sector plans are integrated with CPP
  - Generous early retirement provisions
  - One area where some plans provide more benefit than HRM is with regards to post-retirement indexation of pensions
- HRM contribution rates among the highest in the country (see Appendix 3)





# Total HRM Pension Plan Contributions

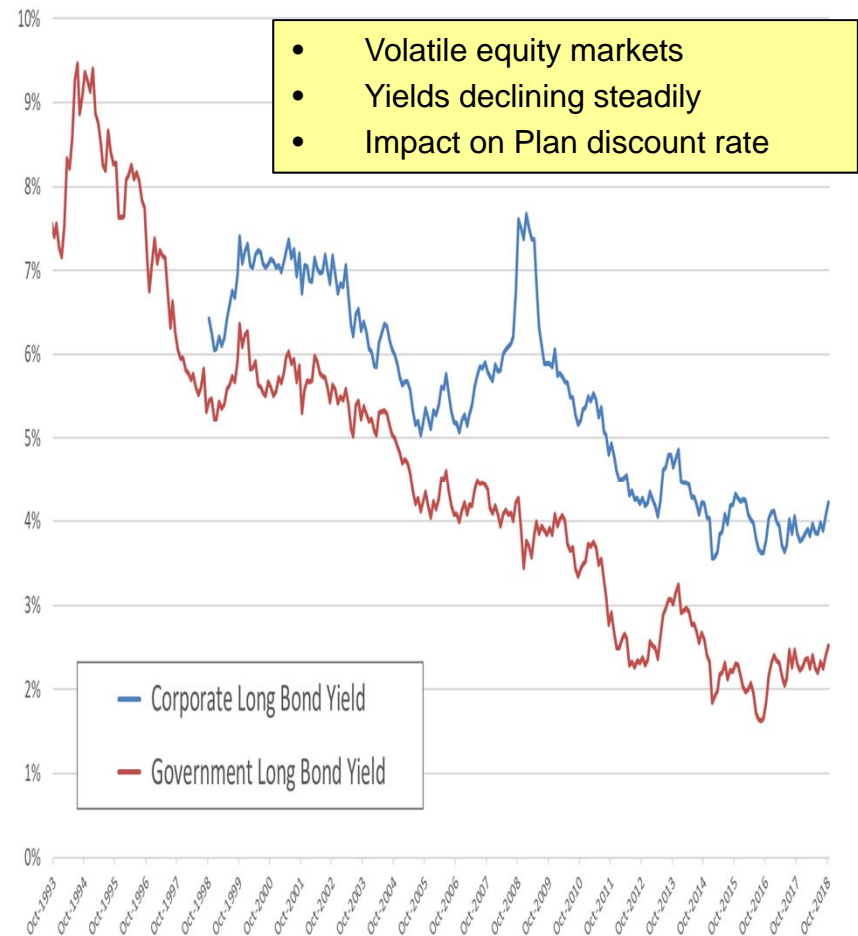
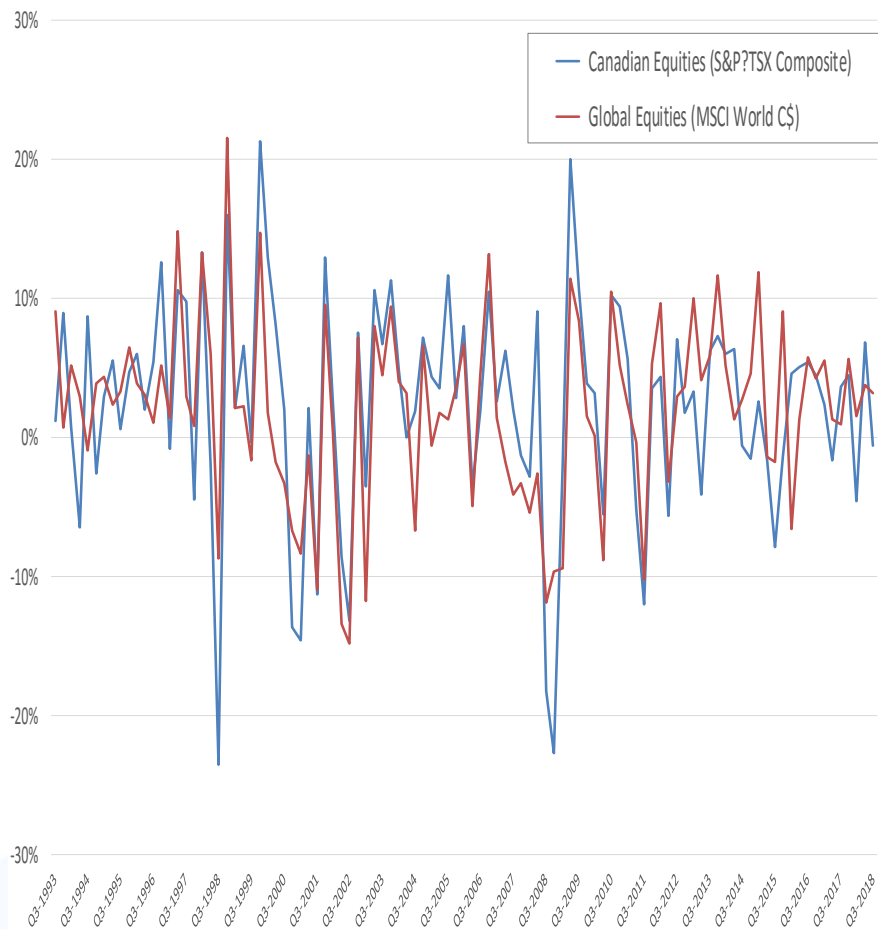
## Historical Contributions



- Total dollar amount of contributions continues to increase
- Total combined employee and employer annual contributions approaching \$90M
- Expected that this trend will continue unless adjustments are made to the Plan's design

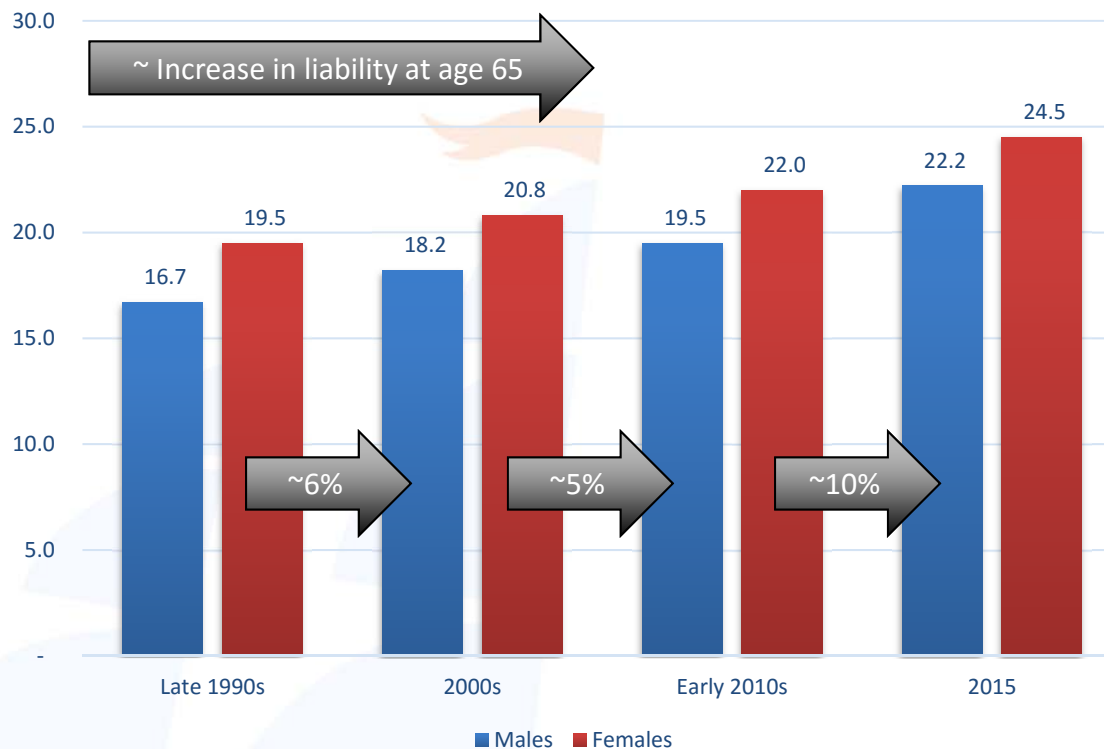
# Pressures and Developments

# Challenging Capital Market Conditions



# Increased Longevity

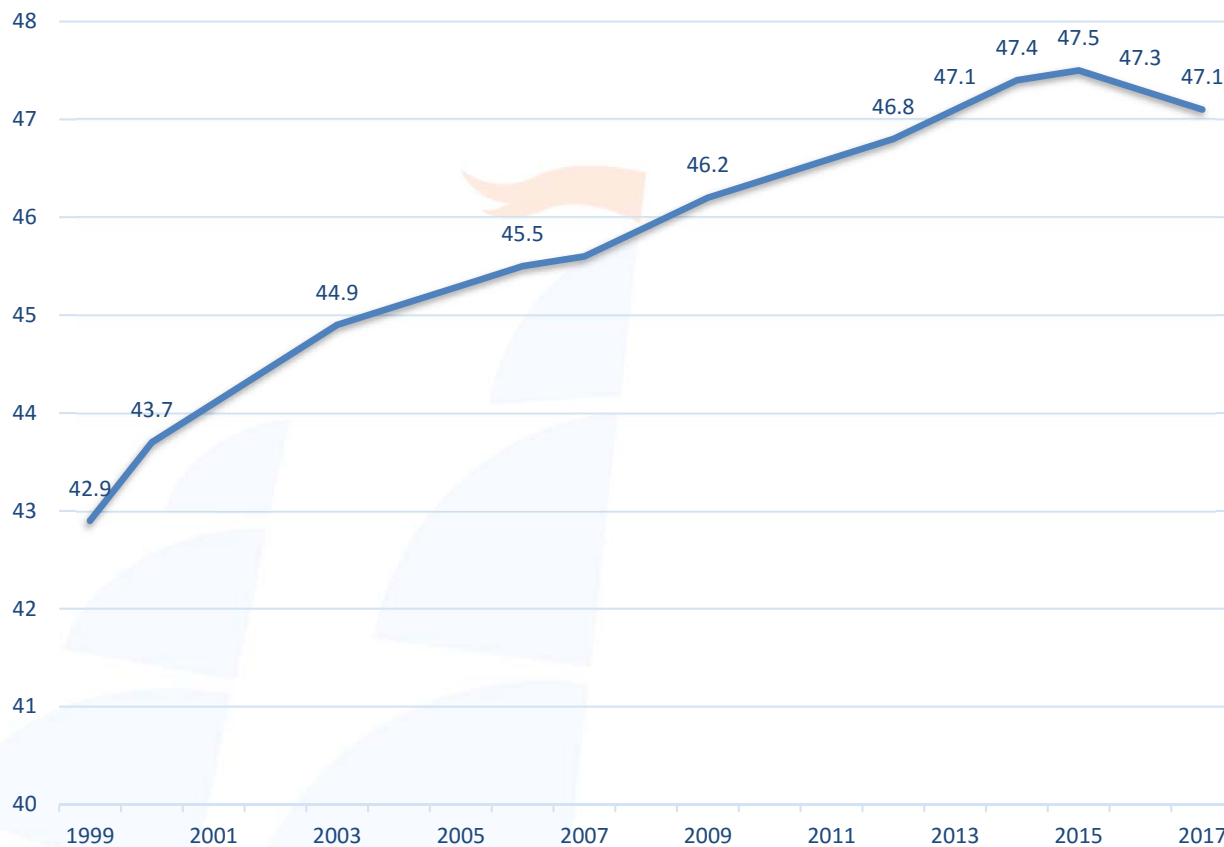
Life Expectancy at Age 65



- As Canadians continue to live longer, pensioners can expect to receive benefits for a longer period of time in retirement
- These increases in longevity put an added strain on Plan funding
- Newest recommended mortality table expected to be required sometime in 2019/2020 will increase Plan liabilities by ~0.50%
  - Equates to ~\$10M increase in liabilities and ~\$1M increase in total annual required contributions

# Ageing Active Membership

Average Age of Active Members



- Over the last 18 years the average age of an active member in the Plan has increased from 42.9 years to 47.1 years
- Each 1 year increase in average age for active members increases active liabilities by ~4-6%.
  - A 5% increase in active member liabilities is ~\$45M
  - These increases in liabilities must be funded via additional contributions to the Plan



# Pension Funding Reform

- Most provinces across the country have taken steps to reform their legislation surrounding the funding of defined benefit pension plans
- Superintendent of Pensions in Nova Scotia issued a consultation paper in September 2017
- New rules expected to be released in Q1 2019
- Ontario has already released and implemented their revised funding rules
  - Nova Scotia largely mirrors Ontario with regards to pension legislation
  - Once fully implemented, changes will likely result in increased funding requirements of 2-4% of payroll for the Plan, assuming no adjustments to Plan design
  - Total Plan payroll of ~\$370M\* implies each 1% payroll contribution equates to ~\$3.7M

\* \$370M = ~\$295M for HRM employees and ~\$75M for School Board employees



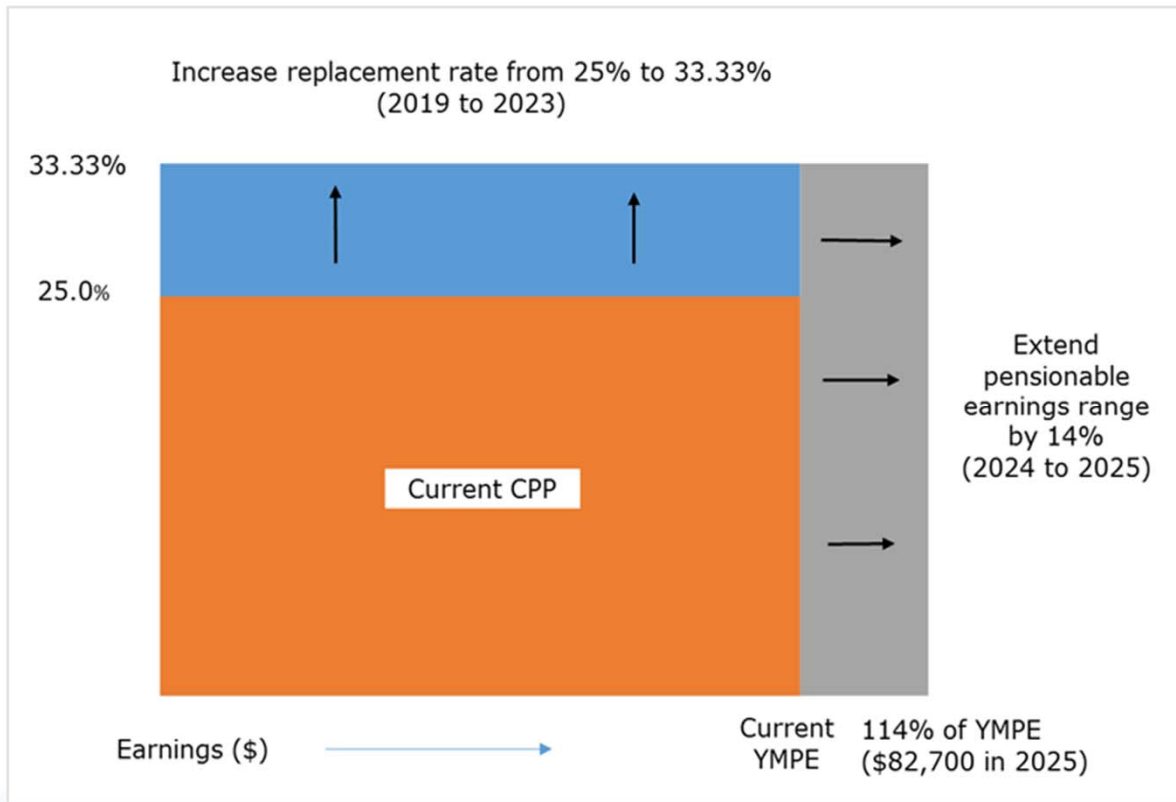
# Nova Scotia Pension Reform – Potential Impact

	12.31.2017 – Final Valuation	12.31.2017 – Final Valuation new mortality	12.31.2017 – Alt. Funding Rules <sup>1</sup> 8% Required Margin	12.31.2017 – Alt. Funding Rules <sup>1</sup> 10% Required Margin
Unfunded Liability <sup>2</sup>	(\$183,900,000)	(\$193,700,000)	(\$254,900,000)	(\$292,300,000)
Funded Ratio <sup>2</sup>	90.6%	90.1%	87.4%	85.8%
<b>Total Required Contributions</b>				
% of Payroll	24.5%	24.8%	27.1%	28.7%
Total \$ Amount <sup>3/4</sup>	91,000,000	92,100,000	100,600,000	106,500,000

1. Exact required margin to be finalized in 2019
2. Results shown on Going Concern basis, assuming changes made effective January 1, 2018
3. All amounts are based on an estimated total Plan payroll of ~\$370M. Contribution amounts to be split equally between employees and employers
4. Increases to contributions related to enhanced CPP are in addition to the amounts shown in the table above. Once fully implemented, enhanced CPP will increase contributions by an estimated ~2.3% of payroll annually. These contribution increases are being phased in over the next 6 years
5. See Appendix 4<sup>(a)-(b)</sup> for a more detailed breakdown of the amounts shown above



# Canada Pension Plan Benefit Enhancement



- Changes to CPP starting January 1, 2019
- Both the amount of earnings that are covered and the level of coverage offered on these earnings are increasing
- Employee and employer contributions will increase to fund the enhanced benefit (see Appendix 5<sup>(a)-(b)</sup> for detailed summary of increased contributions)





## Canada Pension Plan Benefit Enhancement

- The additional benefit that will be provided under the enhanced CPP program is approximately equivalent to a 0.2% accrual under the HRM Pension Plan
  - If the 2.0% accrual rate in the HRM Plan was dropped to 1.8%, members would be in the same net position after retirement as they currently are with current HRM Pension Plan and current CPP
  - The total cost of the HRM Plan would be ~2% of payroll less with a 1.80% accrual rate vs. the current 2.0%

# Pension Committee Response



# Pension Committee Response

## Long-term Planning

- In 2018 the Pension Committee (the “Committee”) embarked on a detailed review of the projected financial health of the Plan
- Key financial metrics were established (see Appendix 6)
- Using appropriate assumptions and stochastic modelling the Plan’s financial results were projected out 30 years
- The Plan, as currently structured, did not pass the financial metrics established by the Committee (see Appendix 6)



# Pension Committee Response

## Governance

- Any change to the Plan's structure, including benefit levels, requires unanimous agreement from the Employer and all Sponsor Unions. This has limited the Committee's ability to respond to challenges other than with contribution increases
- The Committee and senior leadership of the Sponsor Unions have achieved agreement to amend the single-union veto process. The agreement is being documented and will require unanimous approval from each Sponsor Union and the Employer (Q1 2019 target)



# Next Steps and Implications



## Next Steps and Implications

- Continue the Governance and Long-term Planning work streams
- Integrate revised Nova Scotia funding rules into Long-term Planning work
- Use prospect of significant contribution increases along with continued focus on the total level of retirement benefits offered to HRM employees to engage Employers and Sponsor Unions in discussions surrounding appropriate and affordable levels of retirement benefits and contribution rates
- If no changes are made to benefit levels, an increase in contributions will be required
  - With all other variables held constant, and assuming no changes to Plan benefits, it is estimated that total required annual contributions related to retirement benefits will increase by ~5.6% of payroll (~21M annually in today's dollars) in total over the next 6-7 years
    - 2.3% related to enhanced CPP, 3.0% related to changes in Nova Scotia funding rules and 0.3% related to new mortality projection scale
    - See Appendix 7 for detailed breakdown of estimated contribution increases



# Questions ?



# Glossary of Terms

- Accrual Rate – The rate at which members accumulate retirement benefits for each year of service they have under the plan
- Actuarial Value of Assets – An adjusted asset value that smooths fluctuations in market values to reduce contribution volatility
- BAE – The “best average earnings” over a set number of years of an employee’s career
- Benchmark Return – The standard against which the performance of a fund is measured
- CPP – The Canada Pension Plan
- Current Service Cost – The value of the pension benefits to be earned in the upcoming year
- Discount Rate – The rate of return the plan’s assets are expected to earn over the long-term
- Funded Ratio - Ratio of plan assets to liabilities. An indicator of pension plan financial health
- Going Concern Basis – A set of assumptions that assumes the plan continues to provide benefits to members indefinitely into the future
- Margin – A “cushion” used to protect plans from adverse movements in liabilities or asset values
- OAS – Canada’s Old Age Security program
- Pension Liability – The present value of the plan’s promised benefits measured using the discount rate
- Special Payments – Additional amounts that are contributed to the plan, in excess of the current service cost, to fund any deficits
- ITA Limit – The “Income Tax Act” limit. The maximum defined benefit pension that is permissible under the Income Tax Act of Canada
- URD – A members “unreduced retirement date”. The date at which a member can retire without a reduction to their benefit
- Yield – A measure of the earnings that are generated by an investment
- YMPE – The “year’s maximum pensionable earnings”. Contributions to the Canada Pension Plan are only deducted on earnings up to this amount each year





# Appendices



## Comparison of Discount Rates

	Real rate of return	Inflation	Discount rate	Active:Inactive <sup>1</sup> ratio	Funded ratio
<b>Real Risk-Free</b>	0.55%	2.00%	2.30%		
<b>OTPP</b>	2.75%	2.00%	4.80%	0.89	106%
<b>LAPP</b>	3.25%	2.00%	5.25%	1.65	98%
<b>OP Trust</b>	3.40%	2.00%	5.40%	0.96	101%
<b>HOOPP</b>	3.45%	2.00%	5.45%	1.73	122%
<b>Win. Civic Emp.</b>	3.50%	2.00%	5.50%	1.13	104.5%
<b>Win. Police</b>	3.50%	2.00%	5.50%	1.00	102.7%
<b>NLTPP</b>	3.50%	2.50%	6.00%	0.43	98%
<b>BCMPP</b>	3.50%	2.75%	6.25%	1.51	101%
<b>CAAT</b>	3.60%	2.00%	5.60%	1.75	113% AGG
<b>OPB</b>	3.70%	2.00%	5.70%	0.95	97%
<b>NL PSPP</b>	3.75%	2.25%	6.00%	1.00	98%
<b>NS Teachers</b>	4.15%	2.00%	6.15%	0.68	78%
<b>NSPSSP</b>	4.15%	2.00%	6.15%	0.94	104%
<b>OMERS</b>	4.20%	2.00%	6.20%	1.50	93%
<b>HRM</b>	4.30%	2.10%	6.40%	1.30	90.4%

**Average Discount  
Rate 5.75%**

(1) The inactive category includes all members not contributing to the plan



## Historical Discount Rate

Valuation Year	Discount Rate
2017	6.20%
2016	6.40%
2015	6.50%
2014	6.55%
2013	6.50%
2012	6.25%
2009	6.75%
2007	6.75%
2006	6.75%
2003	7.40%
2000	7.50%
1999	7.50%

# HRM Plan Provisions Comparison

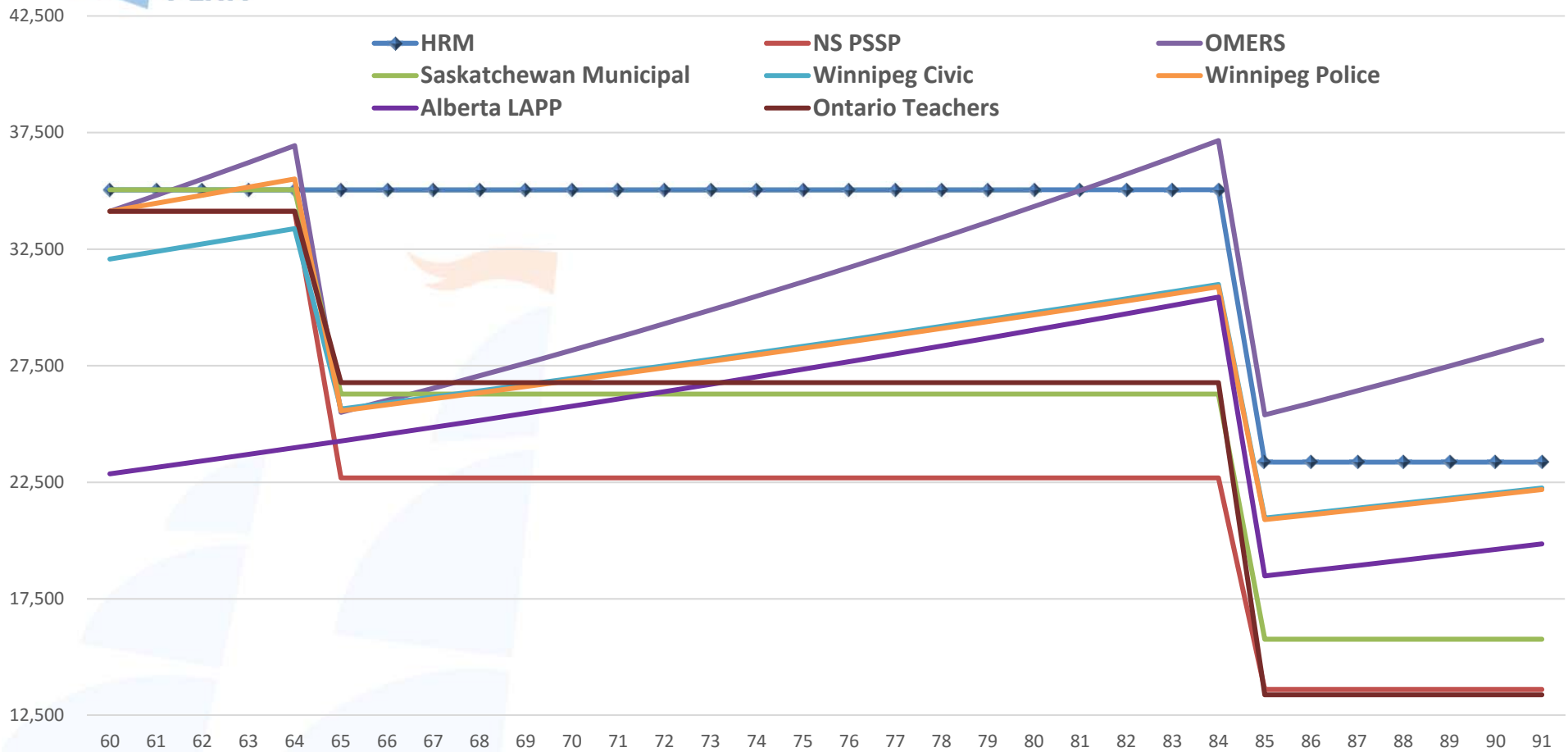
Pension Plan	Pre 65 Pension	Post 65 Pension	Unreduced Retirement Criteria	Early Retirement Reduction	Indexing	Normal Form	Pension Limit
HRM	2.0% BAE 3	2.0% BAE 3	<b>Non-PSO:</b> - Age 60 or 80 points  <b>PSO:</b> - Age 60 or 75 points	6.0% / year prior to URD	Ad hoc	<b>Married:</b> JS 67%  <b>Single:</b> Life 10	- ITA Limit - No Service Cap
NS PSSP	2.0% BAE 5	1.3%/2.0% BAE 5	<b>All Members:</b> - Age 60 with 2 years of service - 85 pts. with min. age 55 - 35 years of service	6.0% / year prior to URD	Current: 0.85% per year until 2020  2020+: Dependent on funded status	<b>Married:</b> JS 60% G5  <b>Single:</b> Life 5	- ITA Limit - 35 year service cap
NS Teachers	2.0% BAE 5	1.3%/2.0% BAE 5	<b>All Members:</b> - 35 years of service - 85 pts. min. age 55 - Age 60 with 10 years of service - Age 65 with 2 years of service	Varies dependent on age and service at retirement	Current: 0% for new retirements  Future: Tied to the funded ratio of the Plan	<b>Married:</b> JS 60%  <b>Single:</b> Life 0	- ITA Limit - 35 year service cap
Ontario Municipalities	2.0% BAE 5	1.325%/2.0% BAE 5	<b>All Members:</b> - 30 years of service - Age 65 (60 PSO) - 90 points (85 points for PSO)	5.0% / year prior to URD	100% of CPI up to 6% (excess carried forward)	<b>Married:</b> JS 67%  <b>Single:</b> Life 0	- ITA Limit - 35 year service cap
Saskatchewan Municipal	2% BAE 3	<b>Regular:</b> 1.50% BAE 3 <b>Emergency:</b> 1.70% BAE 3	<b>Regular Employees:</b> 80 points <b>Emergency Employees:</b> - Age 55 or, - 75 Points or, - 25 years of service	Regular: 3% / year prior to URD points rule with min. age service requirement	Ad hoc based on funded position of the Plan	<b>Married:</b> JS 60% G5  <b>Single:</b> Life 15	- ITA Limit - No Service Cap

# HRM Plan Provisions Comparison

Pension Plan	Pre 65 Pension	Post 65 Pension	Unreduced Retirement Criteria	Early Retirement Reduction	Indexing	Normal Form	Pension Limit
HRM	2.0% BAE 3	2.0% BAE 3	<b>Non-PSO:</b> - Age 60 or 80 points  <b>PSO:</b> - Age 60 or 75 points	6.0% / year prior to URD	Ad hoc	<b>Married:</b> JS 67%  <b>Single:</b> Life 10	- ITA Limit - No Service Cap
Winnipeg Civic	2.0% BAE 5	1.5%/2.0% BAE 5	All Members: - Age 60 - 80 pts. with min. age 55	4.0% / year prior to URD	Tied to funded ratio of the Plan with a 50% of CPI expectation (80% of CPI paid in 2017)	Married: JS 67% (with reduction based on age of spouse)  Single: Life 0	- ITA Limit - No Service Cap
Winnipeg Police	2.0% BAE 5	1.4%/2.0% BAE 5	All Members: - Age 55 - 25 years of service	3.6% / year prior to URD	Tied to funded ratio of the Plan (52% of CPI paid in 2018)	Married: JS 67%  Single: Life 0	- ITA Limit - No Service Cap
Alberta LAPP	1.4%/2.0% BAE 5	1.4%/2.0% BAE 5	All Members: - Age 65 - 85 pts. min. age 55	3.0% / year prior to URD	60% of Alberta CPI	Life 5 (adjustment for married members)	- ITA Limit - 35 year service cap
Ontario Teachers	2.0% BAE 5	1.55%/2.0% BAE 5	All Members: - Age 65 - 85 pts.	Minimum of: a) 2.5% for each point prior to 85 pts. b) 5% for each year prior to age 65	Pre 2010 SVC: 100% of CPI  2010-2013 SVC: 50%-100% of CPI  Post 2013 SVC: 0%-100% of CPI– Tied to the funded ratio of the Plan	Married: JS 50%  Single: Life 10	- ITA Limit - No Service Cap



# Age 60 Pension for Member earning \$60K with 30 years of service

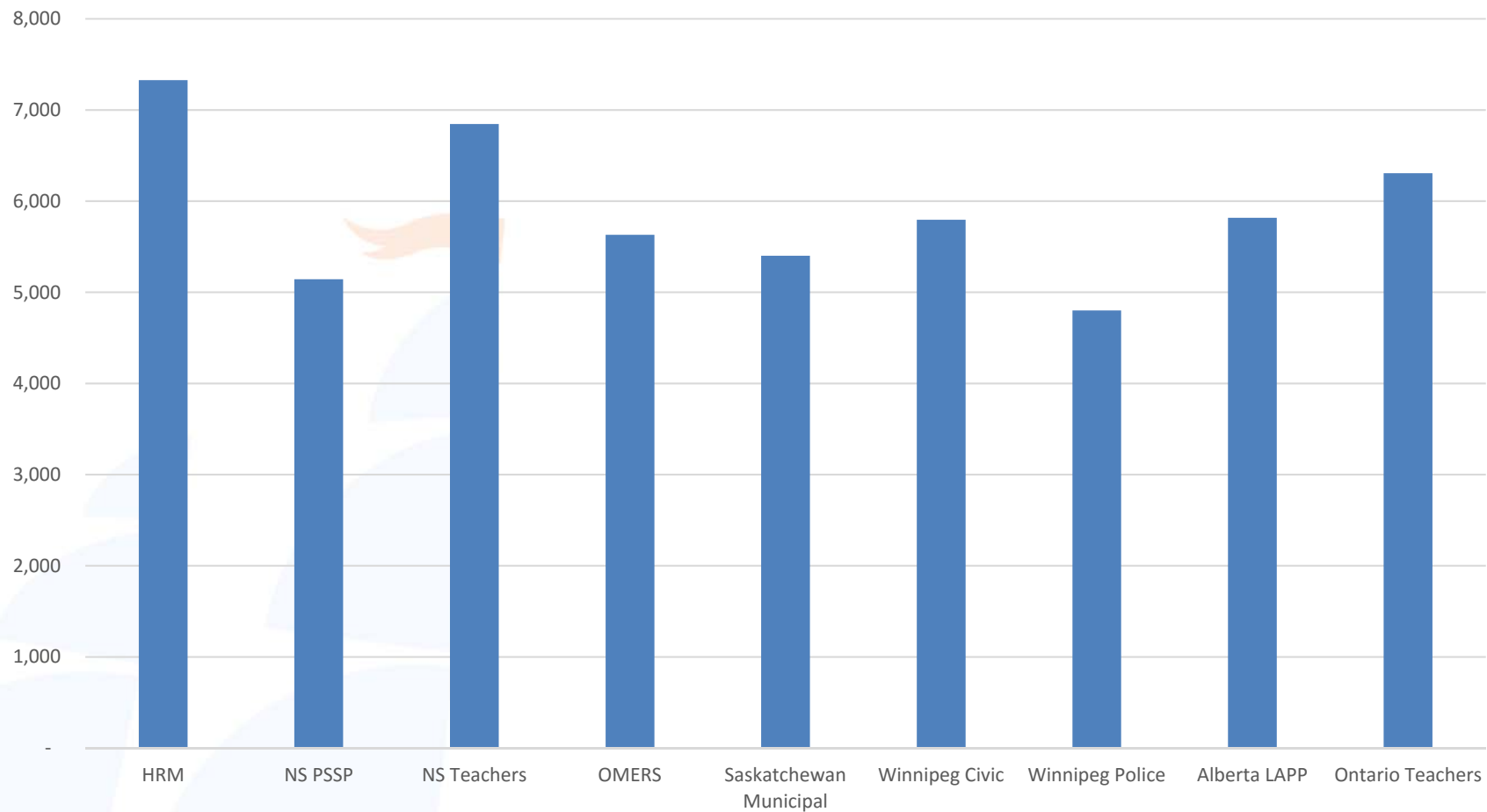


\* Graph assumes member deceased at age 85 and post-85 benefit assumed to continue to spouse



# Member Contribution Rates

Based on member earning \$60,000 per year





## Nova Scotia Pension Reform – Liabilities and Funded Ratio Impact

	12.31.2017 – Final Valuation	12.31.2017 – Final Valuation new mortality	12.31.2017 – Alt. Funding Rules 8% Required Margin	12.31.2017 – Alt. Funding Rules 10% Required Margin
Actuarial Value of Assets	\$1,764,600,000	\$1,764,600,000	\$1,764,600,000	\$1,764,600,000
Best Estimate Going Concern Liabilities	\$1,860,600,000	\$1,860,600,000	\$1,860,600,000	\$1,860,600,000
<b>With applicable margin<sup>1</sup> &amp; new mortality projection scale</b>	<b>\$1,948,500,000</b>	<b>\$1,958,300,000</b>	<b>\$2,019,500,000</b>	<b>\$2,056,900,000</b>
Unfunded Liability <sup>2</sup>	(\$183,900,000)	(\$193,700,000)	(\$254,900,000)	(\$292,300,000)
Funded Ratio <sup>2</sup>	90.6%	90.1%	87.4%	85.8%

1. Exact required margin to be finalized in 2019
2. Results shown on Going Concern basis





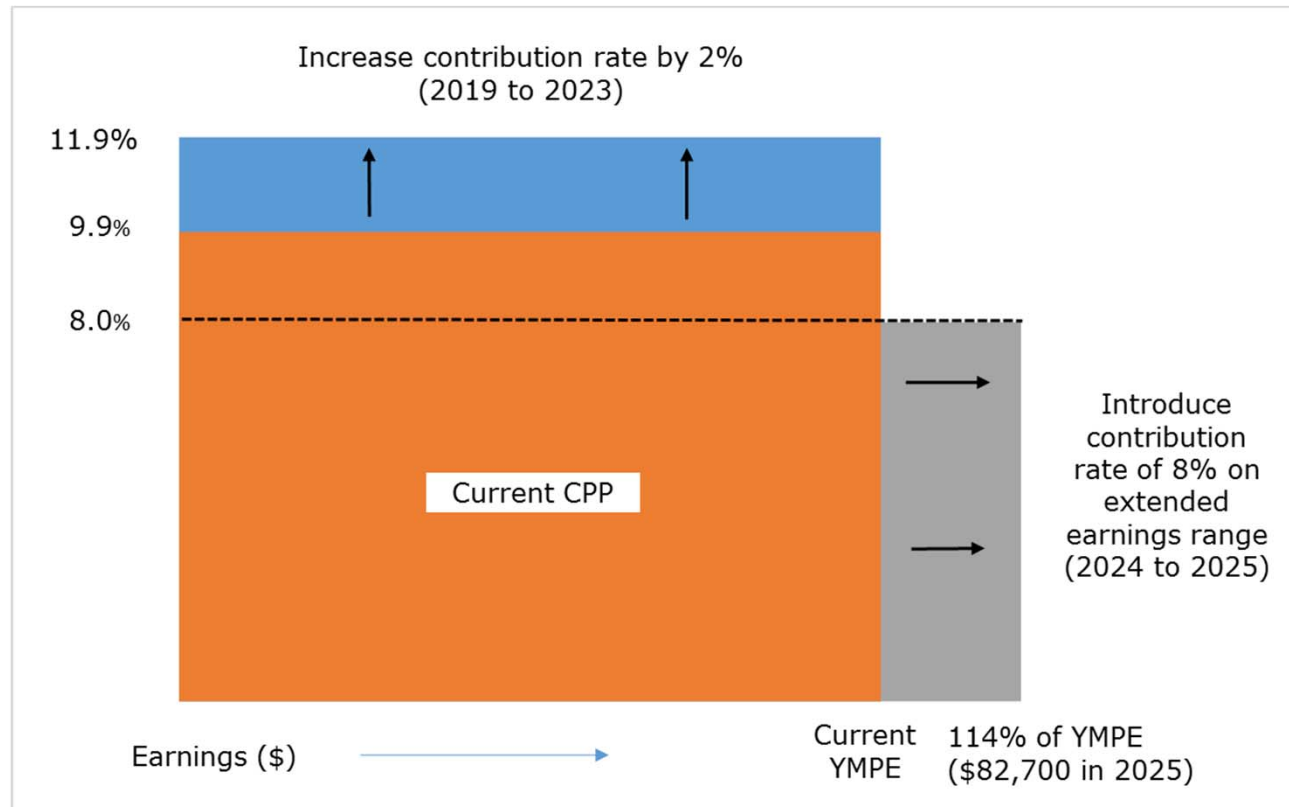
## Nova Scotia Pension Reform— Service Cost and Contributions

Estimated Required Contributions <sup>1/2</sup>	12.31.2017 – Final Valuation		12.31.2017 – Final Valuation & New Mortality Scale		12.31.2017 – 8% Required Margin		12.31.2017 – 10% Required Margin	
	% Payroll	\$	% Payroll	\$	% Payroll	\$	% Payroll	\$
Current Service Cost	18.3%	68,000,000	18.4%	68,300,000	18.5%	68,700,000	18.8%	69,800,000
Special Payments	6.2%	23,000,000	6.4%	23,800,000	8.6%	31,900,000	9.9%	36,700,000
Buffer	0.1%	400,000	-	-	-	-	-	-
<b>Total<sup>3</sup>:</b>	<b>24.6%</b>	<b>91,400,000</b>	<b>24.8%</b>	<b>92,100,000</b>	<b>27.1%</b>	<b>100,600,000</b>	<b>28.7%</b>	<b>106,500,000</b>

1. Amounts assume changes made effective January 1, 2018. Totals to be split equally between HRM and employees
2. All amounts are based on an estimated payroll of ~\$370M
3. Increases to contributions related to enhanced CPP are in addition to the amounts shown in the table above



# Enhanced CPP Contributions





## CPP Contribution Rate Schedule

- The following table outlines the total employee and employer contribution rates under the enhanced CPP regime

Year	2018	2019	2020	2021	2022	2023	2024	2025+
<u>Below YMPE Contribution Rates</u>								
Employer	4.95%	5.10%	5.25%	5.45%	5.70%	5.95%	5.95%	5.95%
Employee	4.95%	5.10%	5.25%	5.45%	5.70%	5.95%	5.95%	5.95%
<u>Between YMPE and Upper YMPE Limit (equal to YMPE + 14%)</u>								
Employer	0%	0%	0%	0%	0%	0%	4.0%	4.0%
Employee	0%	0%	0%	0%	0%	0%	4.0%	4.0%



## Pension Committee Response

### Results of Modelling

Key Metric	Target	Current Plan
1. Long-term cost	Normal cost $\leq$ 18%	<b>22%</b>
2. Annual volatility	At most a 15% chance of the total contribution in 2035 and 2050 each exceeds 25%	<b>27.9%/12.0%</b>
3. Long-term contributions	At most a 15% chance of average contributions being greater than 25% over the next 30 years	<b>41.5%</b>



## Estimated Cost Impact<sup>1</sup>

Change	2019	2020	2021	2022	2023	2024	2025+
Enhanced CPP	0.3%	0.6%	1.0%	1.5%	2.0%	2.3%	2.3%
Revised Funding Rules <sup>2</sup>	-	1.0%	2.0%	3.0%	3.0%	3.0%	3.0%
Revised Mortality Table <sup>3</sup>	-	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
<b>Total % Increase:</b>	<b>0.3%</b>	<b>1.9%</b>	<b>3.3%</b>	<b>4.8%</b>	<b>5.3%</b>	<b>5.6%</b>	<b>5.6%</b>
<b>Total \$ Increase<sup>4</sup>:</b>	<b>1.1M</b>	<b>7.4M</b>	<b>13.2M</b>	<b>19.8M</b>	<b>22.5M</b>	<b>24.4M</b>	<b>25.1M</b>

1. Costs represent absolute increase in contributions as a percentage of payroll, assuming no changes in benefits and no change in any other variables. Increases to be split equally between employers and employees
2. Assuming new Nova Scotia rules mirror Ontario rules and any impact is smoothed in over 3 years. Estimated based on midpoint of 2-4% potential impact range
3. Table expected to be required for December 31, 2019 valuation, impacting contributions starting in 2020. Mortality improvements are subject to further revision post-2020.
4. Total increase relative to current required contribution levels. Assumes total payroll of ~\$380M in 2019 increasing by 2.75% per year