FEBRUARY 9, 2017

Nova Scotia Public Service Superannuation Plan

Independent Review

Eckler
CONSULTANTS + ACTUARIES

pink larkin
LAWYERS | AVOCATS

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SECTION 1 EXECUTIVE SUMMARY

In accordance with section 47 of the Public Service Superannuation Act (the "Act") we have conducted a comprehensive review of the public service superannuation plan continued by the Act (the "Plan")

We conducted a detailed review of the Act and the Public Service Superannuation Plan Regulations (the "Regulations") and the amendments thereto.

We looked particularly at the Act and Regulations with respect to the funding policy, benefit design, contribution levels, plan governance, trustee board composition, trustee director selection, appointment and remuneration together with the arrangements with the Plan administrator.

We also reviewed the input collected from the Trustee directors and stakeholders.

Further we also undertook an industrywide review of major jointly sponsored pension plans (see Appendices B&C hereto) and drew comparisons relevant to the issues noted above. We also evaluated the Plan against CAPSA Guideline 4: Pension Governance and Guideline 7: Pension Plan Funding Policy Guideline.

Finally, we reviewed the operation of the Plan and Trustee by looking at projects planned and undertaken, minutes of meeting, actuarial reports and studies and financial statements and meeting with the Trustee board to share our preliminary observations and ask questions to further our understanding and analysis.

The results of our review are set out in this report (the "Report").

It is clear from our review that throughout the review period the Plan has been diligently and thoughtfully managed by the directors of the Public Service Superannuation Plan Trustee Incorporated (the "Trustee").

The funded status of the Plan has meant that no contribution increases or benefit reductions have been required. However, according to the latest valuation of the Plan at December 31, 2015, the funded ratio was just 100.8%, leaving little room for fluctuation. We therefore are recommending a comprehensive stochastic modelling exercise be undertaken to assist the Trustees in better understanding the risks the Plan is facing. This exercise should identify what, if any, changes in contributions and/or benefits may be needed in the future to secure the financial stability of the Plan with a greater degree of certainty.

The Plan has had a successful initial period as a jointly sponsored pension plan. The recommendations contained in the Report are intended to respond to stakeholder concerns, changes in the Canadian pension landscape and to build on the Plan's success.

Our main recommendations can be summarized as follows:

1. The Trustee should consider conducting a risk assessment to identify and document the key risks faced by the Plan. Once identified and prioritized, a study on how those risks may affect the Plan and their potential impact on funded status, contribution rates and the likelihood of granting future indexation would be warranted. Any study of this nature should be integrated with the Plan's investment beliefs and policies. To help the Trustees gain a comprehensive understanding of the plan and its future, we are recommending that the study be done through a stochastic modelling exercise.

   Further, a number of potential benefit changes were suggested by stakeholders. Recommendations with respect to those changes could not be made without modelling the costs and funding impacts but could be considered as part of the aforementioned modelling exercise.

2. The Trustees should continue to find opportunities to expand the Plan membership and contributor base, particularly where the new member group is of a younger demographic.

   Considerations should be given to devising lower cost benefit options within the Plan which would make the Plan more financially possible for smaller municipalities and others.

3. The name of the Plan should be changed in order to reflect the current and proposed expansion of members.

4. In considering options to manage longevity risk, it is critical that the Trustees understand the details of the Plan's longevity risk, assess the costs of hedging that risk and ultimately determine which, if any, options make the most sense for the Plan.

5. The Trustees should assess the impact of the amended CPP benefits and contributions rates on their membership and determine what, if any, changes should be made to the Plan going forward.

6. The Trustees should consider whether there ought to be professional directors with extensive experience in the investment and administration of Canadian pension plans on the board of the Trustee.

7. With respect to the appointment of directors, in addition to considering how to make room for professional directors, it will be necessary to consider what representation, and how to effect that representation, for new entrant groups to the Plan.

8. If there are to be changes to the director appointment process if would seem prudent to "phase in" those changes.

9. The remuneration of directors should be changed. Professional directors will require remuneration. In addition, it would seem appropriate for directors not employed by the government of Nova Scotia or one of the participating unions to be remunerated.

10. Investments should no longer be subject to the Trustee Act. The fiduciary obligations of the Trustee and the directors will be governing. Again, additional investment expertise on the board of the Trustee would be prudent. Further, environmental, social and governance factors ("ESG") ought to be referenced in the investment policy and the Trustee ought to be required to consider whether it is appropriate, and to the extent it is appropriate, for the investments of the Plan to reflect ESG matters, always being cognizant of the financial best interests of the Plan beneficiaries.

11. The question of how secondments and acting pay should affect pension accrual should be addressed. How both of those roles operate in both the public sector and some of the more recent additions to the Plan membership should be considered.

12. A number of sections of the Act and Regulations should be amended to reflect that the Minister of Finance has transferred all responsibility and liability to the Trustee. A full rewrite of the Regulations may be useful to clarify the drafting. Also amendments to the Act and the Regulations should consider what changes are necessary to support further expansion of the Plan membership. Finally, consideration should be given to removing the Plan from legislation and regulations. An appropriate sponsors' agreement would then need to be developed if the Plan was removed from the legislation and regulations.

SECTION 2 RECOMMENDATIONS

1. FUNDING POLICY

The purpose of a Funding Policy is to establish a framework for funding a defined benefit plan taking into account factors including:

- Benefit security
- Stability and/or affordability of contributions
- The financial position of the sponsor
- The demographic characteristics of the plan's beneficiaries
- Minimum funding requirements under law
- The financial position of the pension plan
- Terms of the plan documents and collective bargaining agreements, if any
- *Income Tax Act* (Canada) (the "ITA") Limits
- Legislative and plan provisions regarding utilization of surplus

The role of the administrator should be documented in the funding policy. It should also document the plan's funding objectives and methods for achieving them and identify risk factors facing the plan, how they affect the funding requirements and security of benefits and how to mitigate/manage them.

The funding policy should improve decision making process around funding options and help improve transparency surrounding funding decisions and increase members' understanding of funding issues.

A funding policy should provide guidance to the plan actuary when selecting assumptions and methods taking into consideration the plan's risk tolerance and should be consistent with the plan's investment policy.

Our evaluation of the key elements of the Plan's Funding Policy as documented in the legislation is summarized as follows:

CAPSA Recommendation	Plan Provision	Comments
Plan overview	Covered in Regulations	Funding policy addressed within the Act and Regulations
Funding objectives	Tactically expressed as Funding Target, which is the goal to reach 100% funded on a going-concern basis in the ten years following a 5-year cycle	Broader objectives not addressed
Key risks faced by the Plan	Not addressed	
Funding Volatility Factors and	Not addressed	

CAPSA Recommendation	Plan Provision	Comments
Management of Risk		
Funding Target Ranges	Funding Target defined as a ratio of at least 100% by the end of the ten-year period commencing on the first day of the five-year cycle next following a five-year actuarial valuation report that identifies the funded ratio of the Pension Plan as being below 100%.	
Cost Sharing Mechanisms	Where funded ratio below 90%: 1. Must increase contribution rates 2. Reduce benefits if necessary Where funded ratio is at or above 90% but below 96%: 1. Must increase contribution rates 2. Reduce benefits if necessary Where funded ratio at or above 96% but below 100%: 1. May increase contribution rates	To achieve Funding Target. No difference in guidance where funded ratio below 90% or between 90% and 96%.
Utilization of Funding Excess	Where funded ratio at least 100% but below 110%: 1. Indexing permitted, not more than 50% CPI 2. Add to funding reserve Where funded ratio at least 110% but below 120% 1. Indexing permitted, not to exceed CPI 2. At least 50% of surplus set aside as funding reserve 3. Contribution rates may be reduced and/or benefits enhanced after providing for 1. and 2. Where funded ratio at least 120% 1. Indexing mandated, not to	

CAPSA Recommendation	Plan Provision	Comments
	exceed CPI 2. 50% of surplus > 120% used for indexing, 50% to reduce contributions 3. At least 50% of surplus between 100-120% used for reserve 4. At least 50% of the balance of surplus between 100-120% used for indexing 5. Balance of surplus used to reduce contribution rates	
Actuarial Methods, Assumptions and Reporting	Recommended by corporation to Plan actuary. Approved by trustee.	Broader philosophy (risk tolerance, margins, etc.) not addressed.
Frequency of Valuations	Performed annually at the direction of the Corporation. Five-year cycle used to set indexing, benefits and contributions.	Frequency between five-year cycle determined by corporation.
Monitoring	Addressed where COLA is granted - Trustee to monitor economic situation.	
Communication Policy	Separate communication and disclosure policy exists.	

The Trustee should consider conducting a risk assessment to identify and document the key risks faced by the Plan. Once identified and prioritized, a stochastic modelling exercise projecting how those risks may affect the Plan and their potential impact on funded status, contribution rates and the likelihood of granting future indexation would be warranted. This will enable the Trustee to better articulate its risk tolerance and establish a broader philosophy on funding that will address mechanisms to manage those risks including actuarial valuation methods, asset valuation methods, actuarial assumptions and margins, the use of insurance, hedging, etc. The study should also address the sensitivity of contribution rates and establish acceptable thresholds within which the Plan must remain.

Any study of this nature should be integrated with the Plan's investment beliefs and policies.

As noted in the June 12, 2015 minutes, the Trustee was presented with two options for the asset valuation methodology, smoothed and market value. Under the smoothed valuation approach, the preliminary results as at December 31, 2014 revealed that the funded status of the plan was 99.9% whereas on a market value basis it was estimated to be 104.7%. Although the previous valuation had used a smoothed approach, the Trustee opted to change its methodology to market value, thereby enabling them to grant partial COLA. The adoption of

a broader philosophy on funding – includes specific guidance on choosing assumptions and methodologies – should limit this type of discretion in the future.

2. BENEFIT DESIGN

The benefit design and plan formula of the Plan are in line with the majority of the 14 other jointly sponsored public sector plans that we reviewed.

PLAN FORMULA

With the exception of one plan, all plans provide a final five-year average defined benefit pension, providing 2% for earnings above the Yearly Maximum Pensionable Earnings (YMPE). For earnings below the YMPE, the rate ranged from 1.3% to 1.55% with the majority at 1.3%. Nine of the 14 plans cap pensionable service at 35 years. Consideration could be given as to whether it would be beneficial to remove the 35 year maximum service cap. It would be necessary to consider whether it would be beneficial to incent plan members to remain employed longer, or not.

INFLATION PROTECTION

Only one out of the 14 other plans reviewed does not pay any form of inflation protection. Eight pay some form of inflation protection, conditional on the funded status of the plan or the amount available in the Inflation Adjustment Account. The remaining five still guarantee inflation protection, with three Ontario plans at 100% of the Consumer Price Index.

EARLY RETIREMENT PROVISIONS

All plans provide some form of subsidization on early retirement, using a variety of criteria including age, age and service, points or just service, with age 60 being the most common unreduced early retirement age, points ranging from 80 to 90 and service at 30 or 35 years.

EARLY RETIREMENT PROVISIONS			
Pension Plan	**Age**	**Points**	**Service**
Nova Scotia Public Sector Superannuation Plan	**60 & 2**	**80 (hired before Apr 6 2010)** **85 (hired on or after Apr 6 2010)**	

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EARLY RETIREMENT PROVISIONS			
Pension Plan	**Age**	**Points**	**Service**
Alberta Local Authorities Pension Plan		85	
Alberta Teachers' Retirement Fund		85	
British Columbia Municipal Pension Plan	60 & 2	90	
British Columbia Public Sector Pension Plan	60 & 2	85	
British Columbia Teachers' Pension Plan	60 & 2	90	
Healthcare of Ontario Pension Plan	60		30
Manitoba Teacher Retirement Allowances Fund	60 & 10	80	
Nova Scotia Teachers' Pension Plan	60 & 10	85	35
Ontario Colleges of Applied Arts and Technology Pension	60 & 20	85	
Ontario Municipals Employees Retirement System		90	30
Ontario Pension Board	60 & 20	90	30
Ontario Teacher's Pension Plan		85	
OPTrust	60 & 20	90	
Saskatchewan Healthcare Employees' Pension Plan		80	

CONTRIBUTION LEVELS

All of the plans reviewed integrate contributions with the Canada Pension Plan by requiring a lower rate below the YMPE and a higher one above. The contribution rates below the YMPE fall between 6.4% up to 12.5%, with the PSSP's rate of 8.4% falling near the midpoint. The range of contribution rates above the YMPE is between 9.2% and 15.34%, with the PSSP's rate of 10.9% also falling near the midpoint. Of note is that some plans charge more for certain groups due to differences in their benefit provisions.

3. DEMOGRAPHICS

Of the plans reviewed, the Plan's membership is the most heavily weighted with retirees. Specifically, there are about eight retired members for every ten active and deferred vested members.

Pension Plan	Ratio
Alberta Local Authorities Pension Plan	32%
British Columbia Municipal Pension Plan	38%
Healthcare of Ontario Pension Plan	39%
Saskatchewan Healthcare Employees' Pension Plan	40%
Ontario Municipals Employees Retirement System	44%
Ontario Colleges of Applied Arts and Technology Pension	50%
Alberta Teachers' Retirement Fund	50%
Ontario Teacher's Pension Plan	53%
Manitoba Teacher Retirement Allowances Fund	59%
British Columbia Public Sector Pension Plan	60%
British Columbia Teachers' Pension Plan	62%
OPTrust	63%
Nova Scotia Teachers' Pension Plan	70%
Ontario Pension Board	75%
Nova Scotia Public Sector Superannuation Plan	81%

This demographic make-up exposes the plan to certain risks including a reducing contributor base and a greater exposure to longevity risk.

The initiatives the Trustees have taken to expand the plan membership help to expand the contributor base and, where the new member groups have a younger demographic, lengthen the contribution runway.

As Trustees, it is common to choose to retain some degree of interest rate and investment risks, since these risks have significant reward potential. However, there's no reward potential for retaining longevity risk. Currently, the most popular options to manage longevity risk are annuity buy-ins and buyouts which are not practical nor attractive options for the Plan. However, hedging the risk with a longevity insurance type product may be a viable option.

The purpose of longevity insurance is simple: to protect a pension plan against longevity risk — the financial cost of plan members living longer than expected.

As with other common types of insurance, the insurer charges the Plan an ongoing premium — calculated as a percentage of the Plan's benefits payments — in exchange for the insurer taking on longevity risk. However, it's unlike the traditional group annuities purchased by pension plans, where the entire premium is paid up front. Depending on the size of the liabilities, the insurer may also hedge its own longevity risk by working with a reinsurer behind the scenes.

Entering into a longevity hedging transaction removes the uncertainty around the payments to be made and transfers this risk to the insurance company.

The Trustees should continue to find opportunities to expand the Plan membership and contributor base, particularly where the new member group is of a younger demographic.

In considering options to manage longevity risk, it is critical that the Trustees understand the details of the Plan's longevity risk, assess the costs of hedging that risk and ultimately determine which, if any, options make the most sense for the Plan.

4. CPP INTEGRATION

On October 6, 2016, the federal government introduced Bill C-26, An Act to Amend the Canada Pension Plan, the Canada Pension Plan Investment Board Act and the Income Tax Act. Bill C-26 sets out a two-step process to increase CPP contributions, starting in 2019.

Step 1: First Additional Contribution — This is an extra contribution to the Canada Pension Plan ("CPP") on eligible earnings between the year's basic exemption (YBE) and the year's maximum pensionable earnings (YMPE). Contribution rates start at 0.15% for both employers and employees in 2019 and will ultimately reach 1.00% in 2023.

Step 2: Second Additional Contribution — This is an additional contribution on earnings above the YMPE but below the newly defined year's additional maximum pensionable earnings (YAMPE). The YAMPE will eventually equal 114% of the YMPE. Second additional contributions — at a rate of 4% for both employees and employers — will start in 2024.

The Trustees may wish to integrate CPP benefit improvements into the Plan design. Since the defined benefit formula for future service currently integrates with CPP by providing a lower accrual rate on earnings up to the YMPE and a higher rate above the YMPE, the Trustees may want to consider:

- Widening the band of earnings at which the lower accrual rate applies, up to the new YAMPE; and/or
- Reducing the accrual rate on earnings up to the YAMPE by 0.2% of earnings for each year of service.

This adjustment equals 8% of CPP-covered earnings after 40 years of service, which is approximately equal to the difference between the new CPP income replacement rate of 33.3% and the existing income replacement rate of 25%.

As the plan requires member contributions at varying rates above and below the YMPE, corresponding changes could also apply to the member contribution formula.

Plan members nearing the end of their career will not earn much of a CPP enhancement. However, early-career members who make 40 years of enhanced CPP contributions will see more of their income replaced by CPP benefits in retirement. For example, a member who is 20 in 2016, currently earning approximately $60,000, could earn approximately 10% more of their pre-retirement income from the enhanced CPP at age 65.

The Trustees should therefore assess the impact of the amended CPP benefits and contributions rates on their membership and determine what, if any, changes should be made to the plan going forward.

5. NAME

The name of the Plan ought to be changed. A new name will assist the Plan in its new and reinvigorated role in the pension landscape in Nova Scotia. In addition, growing the Plan will result in many members not being from the true public sector and therefore the name will be inappropriate.

6. APPOINTMENT AND REMUNERATION OF DIRECTORS

There should be a fixed number of Ministerial appointments.

The role of union directors and management directors needs to be reflected upon. These are the following concerns:

Each party may want to consider foregoing a position on the Board of Directors upon retirement of a current director so that appointment can be replaced by a professional director, preferably someone who has extensive experience in investment and administration of Canadian pension plans.

Over time the directors may want to consider advancing all of the directors or at least a majority to be independent directors. Those independent directors would be appointed by the same parties currently recommending directors. Independent directors would have experience in the pension industry and would be able to bring a different insight to the operation.

As the pension grows exponentially outside of its core, the directors need to consider how representation from the non-public sector unions and management are to be represented. Do these new participants deserve a director? The concept of independent director may eliminate the need for this consideration.

Directors who are retired from employment who desire to remain as directors should continue to serve for a limited period of time. There ought to be an opportunity to engage new directors from employers and not have those seats held indefinitely by a retired director.

Directors who are not employed ought to be remunerated from the Plan for their services. Obviously if there were independent directors appointed there would be fees to be paid to those individuals.

Payment of directors is an issue which must be dealt with. An annual stipend or per diem is not unusual. A review of the cross Canada landscape indicates that a retainer in the amount of approximately $1,000 a month seems reasonable for non-professional directors.

Consideration should be given regarding whether the current voting structure should be retained. Block voting (employers with one vote and employees with one vote) would make the number of persons present irrelevant and would remove the need for the non-union employee represented. Quorum issues would also be eliminated.

7. INVESTMENTS

It is not necessary to have reference to the Trustees Act. There is a fiduciary duty upon the Directors to make proper investments and the failure to meet those fiduciary obligations covers everything under the Trustees Act. Again, considerations ought to be made of the potential for directors with extensive experience in investments. Further, environmental, social and governance factors ("ESG") ought to be reference in all investment policies and the Trustee ought to be required to consider whether it is appropriate, and to the extent it is appropriate, for the investments of the Plan to reflect ESG matters, always being cognizant that the primary test for all investment decision is whether the investment is in the financial best interest of the Plan beneficiaries.

8. ADMINISTRATION

Should Section 25 of the Act not simply state that the Corporation is the administrator until changed by the Board of Directors.

9. FIVE YEAR REVIEW

The directors will have comments on the five-year review as to its thoroughness and ability to analyze all outstanding issues. This will inform the directors as to whether the time and/or the process for the review ought to be altered. A six month period for the preparation of the review report might be more appropriate.

10. ANNUAL AUDIT AND OTHER GOVERNMENT INVOLVEMENT

The reference to the Auditor General in Section 50 of the Act, and the annual audit, ought to be changed such that the audit is done by the auditor of the Plan.

In addition, a number of sections, included sections 44 and 49, could now be removed on the basis that the Plan is independent of the Government.

11. COST OF LIVING ADJUSTMENT ("COLA") REGULATIONS

It might be possible to remove the dates relating to COLA now that the system is operational.

12. REPLACEMENT TRUSTEES

All reference to replacement trustee should be removed from the Act. Replacement directors should be in the jurisdiction of the parties currently recommending directors alone.

Replacement directors under the Regulations should be removed as it falls into the exclusive jurisdiction of the parties currently recommending directors and further, the role of the Minister as exclusive appointee of the Chair of the Board of Directors should be removed as it should be a function of the directors themselves, not a function of the Minister. All references to the Minister as an authoritative presence over the operation of the Act should be removed.

13. NON-UNION MEMBER DIRECTOR

As noted above, you may wish to consider whether the interests of the management non- union members are identical to the union members

A reflection on representation by the new members to the Plan should also occur. The Directors should consider a method to have the employees and employers who join the plan represented on the Board of Directors if there continue to be Directors from the parties currently recommending directors. There ought to be a threshold for participants who do not currently recommend directors to being able to appoint a director. In our view when such groups reach a specified number of members in total then something should be done. We do not believe that every new employer who joins the plan should have a seat on the board, but a council of non-government employers could be established to appoint a management representative and the employees of those employers should appoint a union representative. The directors could invite those non-public sector employers to come together at a meeting hosted by the corporation to elect representatives for a

five year term. The employers and employee groups could have proportionate representation on the council for the purpose of voting.

14. GROWTH

The Directors should devise a marketing plan to expand participation in the Plan to a variety of new employers.

The Directors have felt a comfort level in inviting public sector and quasi public sector employers to join the Plan. Municipalities and others public and quasi public employers should be encouraged to join.

The Directors could consider devising a method within the Plan to provide lower cost benefits to smaller municipalities and others who are unable to afford the current contribution rates.

The Directors could consider expanding their offerings to non-public sector or quasi public sector employers i.e. private employers. The rationale for rejecting this expansion in the past has been that there are always issues of delinquency. Delinquency is an issue in all pension plans. However, if a private sector employer were to join the Plan and have a delinquency problem, it could mean that the obligations of the Plan to those employers would cease upon non payment of contributions and notice would be provided to their employees to advise them of same.

The concept of having a large, well-managed, financially strong, pension plan for Nova Scotians is something which is most attractive. Expansion of the Plan to encompass new opportunities will provide growth which has previously been stymied by systemic issues within the Province.

Expansion into the public sector outside the Province of Nova Scotia is also a possibility, but not one which should tie the hands of the Directors. There may be limited opportunities outside the Province in Canada but there may be opportunities in small Caribbean countries or others who could utilize the services of your Plan.

MINOR ISSUES

1. We are not recommending general compliance with the Nova Scotia Pension Benefits Act due to the funding and cost issues, and in light of the structure and governance of the Plan.

2. We understand that a draft appeals process is being prepared so we will not comment on that issue.

3. Additional Voluntary Contributions ("AVCs") are not common in JSPPs and limited tax room would be available to Plan members. There would also be a systems costs with respect to providing such benefits. Accordingly, it would not seem appropriate to recommend that the Plan provide AVCs although a number of stakeholders have requested additional retirement savings opportunities.

4. Compliance certification could be obtained annually from the Nova Scotia Pension Services Corporation (the "Corporation"). Such certification would include compliance with the service level agreement, the plan terms and all laws.

5. Performance measures for Trustee directors could be developed.

6. The legislation could be amended to permit a longer time for the 5 year review in order to allow more Trustee input.

7. Term Limits for directors could be left to the parties recommending appointment to determine.

8. Section 54 of the Act could be removed as the Plan is no longer related to the Nova Scotia Teachers Pension Plan.

MATTERS CONSIDERED TO BE OUT OF SCOPE

1. Supplementary Pensions

2. Benefit changes not currently required by the funded status. Modelling of any potential changes would be required.

3. Rental arrangements of the Corporation

4. Investment Policies

5. Valuation Methodology. This encompasses assumptions, methods and funding policy. We offer the following information from our industry-wide review:

Pension Plan	Report Date	Gross Discount Rate	Inflation	Real Return	Margin for Adverse Deviation
Nova Scotia Public Sector Superannuation Plan	**12/31/2015**	**6.15%**	**2.00%**	**4.07%**	**0.14%**
Alberta Local Authorities Pension Plan	12/31/2015	5.25%	2.00%	3.19%	0.70%
Alberta Teachers' Retirement Fund	8/31/2015	6.00%	2.25%	3.67%	1.00%
British Columbia Municipal Pension Plan	12/31/2015	6.25%	2.75%	3.41%	0.25%
British Columbia Teachers' Pension Plan	12/31/2014	6.50%	3.00%	3.40%	0.25%
Healthcare of Ontario Pension Plan	12/31/2015	5.65%	2.00%	3.58%	
Manitoba Teacher Retirement Allowances Fund	1/1/2015	6.00%	2.00%	3.92%	0.23%
Nova Scotia Teachers' Pension Plan	12/31/2015	6.25%	2.00%	4.17%	0.25%
Ontario Colleges of Applied Arts and Technology Pension	12/31/2015	5.70%	2.00%	3.63%	
Ontario Municipals Employees Retirement System	12/31/2015	6.34%	2.00%	4.25%	
Ontario Pension Board	12/31/2014	5.95%	2.10%	3.77%	
Ontario Teacher's Pension Plan	12/31/2015	4.80%	2.00%	2.75%	
OPTrust	12/31/2015	5.55%	2.00%	3.48%	

Pension Plan	Report Date	Gross Discount Rate	Inflation	Real Return	Margin for Adverse Deviation
Public Service Pension Plan of British Columbia	3/31/2014	6.50%	3.00%	3.40%	0.25%
Saskatchewan Healthcare Employees' Pension Plan	12/31/2015	6.50%	2.25%	4.16%	

Asset Valuation Method: Three of the other 14 plans do not use smoothing when valuing the plan's assets. Eight use a method that smooths assets over a five-year period and one over a three-year period. One plan did not specify.

Liability Valuation Method: There are a number of different ways to value the actuarial liabilities of a pension plan, with the most common being the Projected Unit Credit Method, the Entry Age Method and the Aggregate Method. The main difference between the valuation methods is the way they allocate costs to past and future service. Of the 14 other plans, four use the Projected Unit Credit Method, three use Entry Age, three use the Aggregate Method, one uses a combination and three did not specify. The characteristics of the Projected Unit Credit Method are that it matches year-by-year costs of benefits expected to be earned by the active members each year to the contributions required for those years and since it results in a pattern of progressively increasing costs for an individual member as that member ages, it may also result in progressively increasing costs for the plan as a whole if the average age profile of the plan membership increases from year to year.

Respectfully submitted,

Kathryn Bush

Ronald Pink

Jill Wagman