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Draft of Educational Note

Alternative Settlement Methods for Hypothetical Wind-Up and Solvency Valuations

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Committee on Pension Plan Financial Reporting

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Ce document est disponible en français

Members should be familiar with educational notes. Educational notes describe but do not recommend practice in illustrative situations. They do not constitute Standards of Practice and are, therefore, not binding. They are, however, intended to illustrate the application (but not necessarily the only application) of the Standards of Practice, so there should be no conflict between them. They are intended to assist actuaries in applying Standards of Practice in respect of specific matters. Responsibility for the manner of application of Standards of Practice in specific circumstances remains that of the members in the pension practice area.

Memorandum

To: All Pension Actuaries

From: Phil Rivard, Chair
Practice Council

Gavin Benjamin, Chair
Committee on Pension Plan Financial Reporting

Date: December 14, 2012

Subject: **Draft Educational Note – Alternative Settlement Methods for Hypothetical Wind-Up and Solvency Valuations**

Actuarial valuation reports for pension plans prepared for filing with regulators are generally required by the Standards of Practice to include the results of a hypothetical wind-up valuation. The purpose of the hypothetical wind-up valuation is to inform users of a report as to the security of benefits in the event that a plan is wound up. Solvency valuations are required by law and are generally based on a hypothetical wind-up but may include modifications required or permitted by law. Solvency valuations form the basis for minimum funding requirements which vary between Canadian jurisdictions.

On June 6, 2011, the Actuarial Standards Board (ASB) published a notice of intent which proposed to incorporate standardized assumptions for hypothetical wind-up and solvency valuations. That notice of intent provides extensive background on hypothetical wind-up and solvency valuations. On April 3, 2012, the ASB published a Response to Notice of Intent document that indicated that, considering the comments received, the ASB would not proceed with incorporating standardized assumptions into the standards.

Given that the ASB will not proceed with incorporating standardized assumptions into the standards, the Committee on Pension Plan Financial Reporting (PPFRC) has prepared this draft educational note containing guidance on alternative settlement methods for hypothetical wind-up and solvency valuations for pension plans with very large liabilities, and certain plans with benefits that are partially or fully indexed to the Consumer Price Index, where it may not be possible to purchase annuities due to capacity limits in the Canadian group annuity market.

On October 15, 2012, the ASB published a notice of intent proposing revisions to the Standards of Practice which would complement the methodologies proposed in this draft educational note.

The PPFRC is soliciting feedback on this draft educational note from members of the CIA and other stakeholders. Comments are invited **by February 22, 2013**. Please send them, preferably in an electronic format, to Gavin Benjamin at his CIA online directory address, gavin.benjamin@towerswatson.com.

PR, GB

ALTERNATIVE SETTLEMENT METHODS FOR HYPOTHETICAL WIND-UP AND SOLVENCY VALUATIONS

Due to capacity constraints within the Canadian group annuity purchase market, it is likely that pension plans with very large liabilities would have difficulty purchasing a single group annuity to settle their immediate and deferred pension liabilities in the event of a plan wind-up.

It is believed that groups with non-indexed annuity liabilities exceeding approximately $500 million may have difficulty in effecting a single annuity purchase to settle their liabilities. Capacity constraints to purchase annuities that are partially or fully indexed to the Consumer Price Index (CPI) are significantly more acute. It is believed that groups with indexed annuity liabilities exceeding approximately $100 million may have difficulty in settling their liabilities through a single annuity purchase.

It is difficult to predict how the benefits of members who are entitled to an immediate or deferred pension would be settled in the event of an actual wind-up for plans with liabilities significantly above the thresholds noted above. Notwithstanding this fact, in performing a hypothetical wind-up or solvency valuation of such a plan the actuary may assume that the benefits would be settled through a single annuity purchase even if such a purchase would not be practical. If choosing to follow this approach, the actuary would estimate the theoretical cost of purchasing the annuity by applying the prevailing guidance with respect to annuity purchase pricing, as published by the PPFRC, calculated as if there were no capacity constraints. In this situation, the actuary would disclose the practical difficulties associated with actually settling liabilities in this manner.

Alternatively, in performing a hypothetical wind-up or solvency valuation of such a plan, the actuary may make a reasonable hypothesis for the manner in which the benefits may be settled, which would be consistent with the postulated wind-up scenario. Such hypothesis may contemplate an exercise of regulatory discretion or change in legislation to permit the settlement of benefits in an alternative manner. In making such a hypothesis, the actuary would consider relevant legislative requirements, regulatory guidance, and applicable precedents (e.g., an exercise of regulatory discretion or enacting of special legislation under similar circumstances). For greater certainty, the actuary would only contemplate an alternative settlement method if such method and the assumptions used are permissible under legislation, or if the actuary has reason to believe that it may be acceptable to the regulator, even if such method may require a change to legislation upon actual wind-up.

If an alternative settlement method is contemplated, the actuary would:

- Provide a clear description of the applicable legislative requirements and/or regulatory policies for settling benefits upon wind-up;
- Provide a detailed description of the hypothesis for the method in which benefits would be settled and the rationale for using this method;
- Note the existence of any permissive regulatory policy, relevant precedents, or discussions with the regulators if the alternative settlement method is not expressly permitted under legislation;

- Acknowledge any conflicts with legislative requirements for settling benefits on wind-up;
- Provide comments on changes to the nature of member entitlements, if any, as a result of the alternative settlement method; and
- Discuss the implications of the alternative settlement method on the benefit security of members, relative to a single annuity purchase.

The actuary would also disclose the liabilities determined under the prevailing guidance with respect to annuity purchase pricing, as published by the PPFRC, calculated on the basis that there were no capacity constraints.

Possible alternative settlement approaches that may be considered include:

1. The purchase of a series of annuities over a period of a few years;
2. The establishment of a replicating portfolio in trust to provide for the payment of pension benefits over an extended period of time;
3. Lump sum payments to plan beneficiaries; or
4. An assumed modification to the terms of the benefit promise (e.g., substituting fixed rate increases for benefits indexed to CPI increases).

Other settlement approaches, including combinations or variations of the above approaches, may be appropriate in certain situations.

Considerations associated with each of the four approaches described above are noted below.

1. Purchase of a Series of Annuities

For plans with liabilities that are less than five times the capacity thresholds noted above, it may be reasonable to assume that the liabilities would be settled through a series of annuity purchases over a period of five years or less.

In calculating the estimated cost of settling the liabilities in this manner, the actuary would make appropriate assumptions regarding the benefits to be settled in each annuity purchase. For example, the actuary may assume that the same proportion of each member's benefit entitlement would be settled through each annuity purchase, or may make assumptions regarding which plan members' liabilities would be settled through each purchase. In all cases, the actuary would reflect the fact that, in the interim, the plan would continue to pay the portion of the pension benefits that have not been settled.

In calculating the estimated cost of the initial annuity purchase, the actuary would apply the prevailing guidance with respect to annuity purchase pricing, as published by the PPFRC, calculated on the basis that there were no capacity constraints.

In calculating the estimated cost of annuity purchases in subsequent years, the actuary would make adjustments to the discount rate underlying the annuity purchase price to reflect the expected development of the relevant yield curve(s) implied by the forward interest rate(s).

The liability would be determined as the present value of the series of annuity premiums and pension payments expected to be paid from the pension fund. The present value would typically be determined based on yields on high-quality, zero-coupon fixed income securities with terms that match the expected timing of the annuity purchases and partial pension payments.

2. Establishment of a Replicating Portfolio

An alternative approach to settling benefits may be the establishment of a portfolio of assets that produces cash flows that match the expected benefit payments to plan members on an approximate basis.

In developing the expected benefit cash flows, the actuary would:

- Reflect plan-specific mortality experience (or, reflect the experience of groups with similar characteristics such as occupation, demographics and pension size);
- Make an appropriate allowance for future mortality improvements on a fully generational basis; and
- Make reasonable best-estimate assumptions regarding the exercise of any remaining options by the plan members (e.g., with respect to the timing of commencement of pensions).

In considering the portfolio of assets that would need to be established, the actuary would assume that the primary asset class used is investment-grade fixed income investments. Since the timing of some benefit cash flows are likely to extend beyond the maturity of available fixed income investments, the actuary would need to consider how additional fixed income investments to match these later cash flows would be obtained through re-investing cash flows from the portfolio in the future. The actuary would make reasonable assumptions regarding the level of expenses that would be associated with maintaining such a portfolio and administering the ongoing payment of benefits.

Under the replicating portfolio approach, there would typically be no recourse to additional funding from the plan sponsor or any other entity should the initial assets set aside prove to be insufficient to provide the benefits. Consequently, the actuary would include sufficient margins for adverse deviations to ensure a high probability that the benefit promises will ultimately be met. The margins would include provisions for contingencies such as longevity experience, asset defaults and/or downgrades, and reinvestment risk due to cash flow mismatches.

In the absence of legislative requirements or an applicable regulatory policy, the actuary would make an assumption regarding the size of the margin that the regulator would likely require in an actual wind-up scenario, considering any precedents or indications from regulators. The actuary would disclose a quantification of the probability of all the benefit promises being met based on the size of the selected margin and the assumed distribution of outcomes. The actuary would discuss the effect of the approach on plan members, the risks associated with this settlement method, and any intergenerational impact.

3. Lump Sum Payments to Beneficiaries

Under this approach, the actuary would assume that all members would be **required** to receive a lump sum payment in lieu of their entitlement to a deferred or immediate periodic pension.

The lump sum approach alters the nature of the benefit entitlement and transfers all the investment risk and longevity risk from the pension plan to the plan members.

The actuary would consider whether the mandatory lump sum amounts would be higher than the minimum commuted values provided for under section 3500 of the Standards of Practice in order to compensate members for the transfer of risk. Alternatively, the actuary may consider the possibility of providing for a lump sum amount sufficient for each member to purchase an individual annuity without substantial loss of the original entitlement.

The actuary would discuss the effect of the approach on plan members, particularly the change in the nature of their benefit entitlements (e.g., the potential immediate disruption to the monthly pensions being paid to retired members), the transfer of risk to the members, and the tax consequences of receiving a lump sum. The actuary would provide an indication of the level of benefit loss, if any, typical members would likely experience if they were to use the lump sum amount to purchase an individual annuity.

A variation of this alternative is that some or all members may be given the option to receive a lump sum payment in lieu of their entitlement to a deferred or immediate periodic pension when such option would otherwise not be available. Under this method, the actuary would consider whether the options provided to the members result in additional liabilities due to anti-selection, and would make appropriate allowances.

4. Assuming Modifications to Benefit Terms

Under this approach, certain plan terms are altered in order to allow for the settlement of benefits through an annuity purchase. For example, while it may not be possible to purchase a group annuity covering liabilities of $150 million related to pensions indexed to the CPI, it is readily possible to purchase a group annuity of this size that covers pensions indexed at a fixed rate. This variation of the plan terms may be expressly permissible under legislation, or could occur through the exercise of regulatory discretion or legislative change.

Where such a modification of plan terms is contemplated, the actuary would discuss the effect of the modification on plan members. Where plan members would be exposed to additional risk as a result of the assumed modifications, it may be appropriate to contemplate some compensation for this additional risk. For example, if CPI-linked indexation is being replaced by a fixed annual percentage increase, plan members would be exposed to the risk of inflation. In this situation, it may be appropriate to assume that the fixed increase percentage would be higher than the best estimate of future inflation levels.