Guide

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Introduction

The Office of the Superintendent of Financial Institutions (OSFI) is responsible for administering a number of federal statutes, including the statute applicable to the regulation of federal private pension plans, the *Pension Benefits Standards Act, 1985* (PBSA). As part of the regulatory process, OSFI reviews actuarial reports[1] filed with the Superintendent by administrators of pension plans registered or having filed an application for registration under the PBSA.

Purpose

The purpose of this instruction guide (the Guide) is to set out the reporting requirements of actuarial reports filed with OSFI for pension plans with defined benefit provisions. The Guide updates the previous one published in November 2023 to reflect

- updated requirements regarding the maximum going concern discount rate; and
- updated funding requirements with regards to negotiated contribution plans.

The Guide applies to actuarial reports with a valuation date[2] on and after December 31, 2024. Early adoption is permitted.

Actuarial reports must be prepared in accordance with the federal pension legislation and directives, which includes the

- PBSA;
- PBSR; and
- *Directives of the Superintendent Pursuant to the Pension Benefits Standards Act, 1985* (Directives).

OSFI expects actuaries to prepare their actuarial reports in accordance with accepted actuarial practice, i.e. to follow the CIA Standards of Practice – General and Practice-Specific for Pension Plans (CIA Standards) and to consider their application as illustrated in CIA Educational Notes. Research papers published by the CIA may also be of assistance to actuaries for the purpose of developing assumptions for their actuarial reports. Actuaries are expected to be familiar with the relevant CIA educational notes and research papers material (CIA Guidance).

OSFI does not generally approve actuarial reports.[3] It relies on but reviews the work of actuaries. The Superintendent determines which assumptions or methods are appropriate for the preparation of actuarial reports.[4] OSFI may inform the administrator[5] to revise an actuarial report if, in the opinion of the Superintendent, the report has not been prepared in accordance with legislative requirements. When reviewing an actuarial report, OSFI may consider factors or require documentation not mentioned in the Guide.

Transparency and appropriate disclosure are part of good governance. OSFI expects actuaries to provide sufficient details in their actuarial reports to enable another actuary to assess the reasonableness of the data, assumptions and methods used.[6]

Stakeholders may consult the OSFI website for any future notices or the InfoPensions newsletter on pension issues related to the valuation of defined benefit pension plans. Additional information is also available in the Frequently Asked Questions.

The Guide does not address specific reporting requirements related to some transactions, such as plan terminations, conversions, asset transfers or amendments reducing benefits, which may lead to additional disclosure or funding requirements in the actuarial report. These transactions are subject to the authorization of the Superintendent and this should be mentioned in the actuarial report. Guidance detailing additional content requirements of the actuarial report for these events is available on the OSFI website.

The PBSA and the PBSR are the authoritative sources for requirements applicable to actuarial reports filed with OSFI. In the event of discrepancies between the information included in the Guide and the federal pension legislation, the latter shall prevail.

1.0 Reporting Requirements

1.1 Frequency of Filing

1.1.1 Regular Filing

The administrator, or its agent, must file an actuarial report if a pension plan

- has defined benefit provisions; and
- is registered or has filed an application for registration under the PBSA.

An actuarial report must generally be filed[7] as at the effective date of the plan and annually thereafter as at the plan year-end. An administrator of a pension plan will be permitted to file an actuarial report as at the plan year-end that is not later than three years after the valuation date of the previous actuarial report if

- the pension plan meets the definition of a designated plan[8]; or
- the solvency ratio[9] disclosed in the previous actuarial report filed with OSFI was 1.20 or greater.

An actuarial report may be filed at other intervals or times as the Superintendent may direct.[10] The administrator may also file an actuarial report to support an application for the authorization of a transaction by the Superintendent (e.g. plan termination or asset transfer).

The Actuarial Information Summary (AIS) contains information set out in the actuarial report. The AIS should be completed and submitted to OSFI with any actuarial report required to be filed.[11]

The Replicating Portfolio Information Summary (RPIS) also contains information set out in the actuarial report, but specific to a replicating portfolio. The RPIS should be completed and submitted to OSFI with any actuarial report required to be filed, if the pension plan uses a replicating portfolio approach as an alternative settlement method for solvency valuation purposes.[12]

The administrator must file the actuarial report, AIS, and RPIS using the Regulatory Reporting System (RRS)[13]. The actuarial report must be submitted by uploading a copy of the document in RRS.

For further information on how to file using RRS, please consult the Manage Financial Returns User Guide for Insurance Companies and Private Pension Plans (PDF) and other RRS training material available on the OSFI website. RRS training material can also be found in RRS in the Documents folder under Training and Support.

Where an actuarial report is intended to support an application for the authorization of a transaction by the Superintendent, it should be submitted directly to OSFI by electronic mail along with any required approval request form.

1.1.2 Plan Amendment that Alters the Cost of Benefits

An amendment to a pension plan may result from a modification to any plan-related document (e.g. a collective bargaining agreement) and could increase or reduce[14] benefits, which may alter their cost and the financial position of the plan. The federal pension legislation requires that an actuarial report be prepared as at the effective date of such an amendment.[15] Therefore, unless the amendment was reflected in the previous actuarial report or that

report was subsequently modified to reflect the cost of the amendment, an actuarial report should be prepared as at the effective date of the amendment and filed with OSFI.

An interim actuarial report would normally satisfy this requirement. While its contents may be condensed, the actuary should still ensure that any interim report, adjusted based on the nature of the plan amendment being valued, complies with the reporting requirements of the CIA Standards[16] and Guidance.

The AIS should be completed and submitted with the interim actuarial report.

The interim actuarial report should disclose the amendment's impact on the financial position of the plan and any new special payments required to amortize a new unfunded liability and solvency deficiency, as applicable. Actuarial assumptions and methods should not change from those used in the previous report.[17]

An amendment which results in a solvency ratio below the prescribed level will be void unless authorized by the Superintendent.[18] Specifically, if the amendment would have the effect of reducing the solvency ratio to a level below 0.85, or if the solvency ratio is already below 0.85 when an amendment increasing accrued benefits is considered, then the interim actuarial report should disclose the payment to the pension fund required in order for the amendment not to be considered void. If such a payment is made or is expected to be made after the date of the amendment, the actuary should refer to section 2.6.2 of the Guide that describes the circumstances under which receivable amounts may be included in plan assets for valuation purposes.

1.2 Valuation Date

An actuarial report should be prepared as at the effective date of the plan and generally annually thereafter as at the plan year-end. Most plans have an established practice of preparing actuarial reports as at either the first day or the last day of the plan year (e.g. December 31 or January 1). OSFI does not object to this practice as long as it is applied consistently from one year to the other.

An administrator who wants to change the reporting date of the plan from the expected valuation date should advise OSFI in writing at least 60 days prior to the plan year-end and explain the reason for the modification. An actuarial report with a valuation date earlier than the plan year-end may be accepted if contributions to the pension fund are increased as a result of the change in the valuation date. If the change in reporting date is not acceptable,

OSFI may require the actuarial report to be revised using the reporting date that was initially scheduled in the previous actuarial report.

Filing of an interim actuarial report prepared as a result of an amendment does not impact the next reporting date. The next actuarial report should still be prepared as at the next regular reporting date for the plan.

1.3 Timeline for Filing

An actuarial report must generally be filed within six months after the end of the plan year to which it relates.[19] If the administrator does not file the actuarial report within this timeline, OSFI may request an explanation for the delay and may require that persons entitled to benefits under the plan be informed of the late filing.

The timing of the filing may be different if the administrator files an actuarial report to support an application for the authorization of a transaction by the Superintendent.

2.0 Content of the Actuarial Report

The actuarial report should include the valuation date and the report date, and would generally include discussion and disclosure on the following elements:

- Highlights
- Subsequent events
- Actuarial opinion
- Membership data
- Summary of plan provisions
- Plan assets
- Actuarial basis - Assumptions and valuation methods
- Financial position - Going concern and solvency valuations
- Reconciliation of financial position - Going concern valuation[20]
- Funding requirements
- Risk management

The level of discussion and disclosure should be appropriate for the materiality of each element.

If the pension plan includes a defined contribution component in addition to a defined benefit component, information on the defined contribution component should be included in the actuarial report if the defined benefit and defined contribution components interact with each other, for example when:

- assets of the two components are commingled;
- funding of the defined contribution component by the defined benefit component is permitted by the terms of the plan; and
- liabilities and costs of the defined benefit component may be impacted by the defined contribution component.

If the pension plan includes a defined contribution component, the actuarial report should at a minimum disclose that such component exists. Where the report includes information with respect to a defined contribution component, the following elements are expected to be addressed:

- Membership data
- Summary of plan provisions
- Reconciliation of assets
- Funding requirements

2.1 Highlights

OSFI considers it is good practice for the actuary to provide a summary of the key findings of the actuarial report and significant events that have occurred since the previous actuarial report that have an impact on funding requirements according to the standard of materiality[21] used for the report. The approach facilitates review by regulators and stakeholders. Actuarial report highlights would generally include

- amendments that were not included in the previous report;
- transactions subject to OSFI authorization, such as asset transfers or amendments reducing benefits;
- benefit conversions;
- changes in methods and assumptions;

- date of the next actuarial report; and
- description of subsequent events that have a material impact on the valuation results.

2.2 Subsequent Events

The actuarial report should disclose any subsequent events[22] that emerged between the valuation date and the report date, and whether these events were reflected in the valuation, as may be appropriate.[23] If there are no subsequent events of which the actuary is aware, the report should include a statement to that effect.[24]

2.3 Actuarial Opinion

OSFI expects the actuary to express an opinion on all assumptions and methods used in the actuarial report.[25] OSFI will not accept a report in which the actuarial opinion with respect to the assumptions and methods is modified by a reservation. Any reservations, limitations, or deviations concerning other aspects of the report should be clearly disclosed.

The actuary should include a statement confirming that the actuarial report was prepared in accordance with applicable legislation. The PBSA is applicable to pension plans that provide benefits to employees in included employment.[26] For multijurisdictional pension plans, minimum member benefits may vary from one jurisdiction to another. Individual entitlements of members, former members with deferred vested pensions, retirees and survivors are determined with regard to the legislative requirements of their respective jurisdictions. A statement that minimum member benefits stipulated by all applicable provincial pension legislation were taken into account in the valuation should also be included in the report.

For plans subject to the 2020 Agreement Respecting Multi-Jurisdictional Pension Plans (PDF) (the 2020 Agreement) the minimum funding requirements of the "major authority" apply for benefits subject to that agreement. The 2020 Agreement has been amended in order to bring in the governments of Manitoba and Newfoundland and Labrador effective July 1, 2023. All governments in Canada with pension legislation, and all multi-jurisdictional pension plans in Canada are now subject to the 2020 Agreement.[27]

2.4 Membership Data

It is the actuary's responsibility to ensure that the data are sufficient and reliable for the purposes of the valuation. The following membership information should be included[28] in the actuarial report:

- Number of persons
- Average age
- Distribution or proportion of male and female persons
- For active members, depending on the benefit formula and type of plan, information such as the following:
  - average credited service and salary
  - average contributions accumulated with interest
  - average accrued pension benefit
  - average hours worked per year
- For former members with deferred vested pensions and inactive members, average pension and bridge benefits, if applicable

The above membership information should be provided separately according to group, as applicable, for:

- each category of persons, such as members (active members, disabled members, inactive members), former members with deferred vested pensions, retirees and survivors;
- deferred members and retirees for whom a buy-in annuity has been purchased by the plan; and
- if the information is material for assessing the valuation results:
  - each identifiable sub-group where the assumptions and methods used to value the entitlements of the group differ (e.g. disabled members receiving payments from the plan)
  - members subject to distinct benefit formulas (e.g. final average benefit vs. flat benefit)
  - members subject to different applicable pension legislations

If the actuarial report includes information with respect to a defined contribution component, the membership data pertaining to the defined benefit and defined contribution components should be shown separately.

Membership information should be shown as at the valuation date of the actuarial report and of the previous actuarial report. The report should also include a reconciliation of membership by category from the previous actuarial report and an explanation of any large fluctuations in membership.

The actuarial report should include information on the tests performed to ascertain the accuracy of membership data.[29] If membership data is insufficient or unreliable, OSFI expects the actuary to opine on the impact on valuation results, justify this opinion, and state, as applicable, the steps being taken to correct this problem before the next actuarial report.

2.5 Summary of Plan Provisions

The actuarial report should include a detailed summary of the plan provisions that have a material impact on the valuation results, such as the following:

- Member contributions formula
- Benefit formula
- Pensionable age[30]
- Normal retirement age (if different from pensionable age)
- Normal pension benefit
- Early retirement age and benefit[31]
- Bridge benefit
- Benefits on cessation of membership, including whether portability is available after members reach early retirement age
- Pre-retirement death benefit
- Normal form of pension with a clear description of post-retirement death benefits, including the minimum legislated joint and survivor pension benefit if the member has a spouse or common-law partner[32], and whether the spousal benefit is subsidized
- Disability benefit
- Maximum pension, including whether the maximum pension is calculated at cessation of employment, termination of the plan, or retirement

- Indexation benefit
- Ancillary benefits
- 50% employer cost rule

The benefits payable on individual or plan termination should be clearly described in the actuarial report. In particular, the report should define early retirement benefits payable to former members with deferred vested pensions such as whether the early retirement pension is

- the actuarial equivalent of the benefit payable at pensionable age; or
- the benefit payable at pensionable age, reduced by the early retirement factors applicable to members choosing early retirement.

Where the plan provides for the use of early retirement reduction factors, the actuarial report should confirm that the resulting early retirement benefits are at least actuarially equivalent to the unreduced pension at pensionable age. OSFI expects the actuary to test for this minimum benefit when determining the going concern liabilities, the current service cost[33], and the solvency liabilities.

If a member ceases to be a member, the pension benefit in respect of the member is increased by the amount that can be provided by the excess contributions (i.e. the member's required contributions plus interest in excess of 50% of the commuted value[34]). The additional benefit resulting from the application of the 50% rule is calculated only once and added to the member's pension benefit as of the date of the event leading to the benefit determination (e.g. cessation of membership, death, retirement). The benefit attributable to the 50% rule then becomes part of the pension benefit on which any subsequent calculation of a commuted value is based.[35] Therefore, it is not expected that the actuarial report would show excess contributions for former members with deferred vested pensions.

Alternatively, the terms of the plan may include a provision forcing members to transfer their excess contributions on cessation of membership or death.[36] If this is the case it should be disclosed in the actuarial report.

2.6 Plan Assets

2.6.1 Asset Data

The actuarial report should disclose the sources of the asset data used in the valuation, and to the extent possible, the actuary should

- use asset data that is consistent with the Certified Financial Statements (CFS) of the plan; and
- explain any material differences between the market value of assets reflected in the report and the market value reported in the CFS.

The actuarial report should include information on the tests performed to ascertain the sufficiency and reliability of the asset data.[37]

2.6.2 Receivables

Receivables are any amounts owing to the pension fund as at the valuation date of the actuarial report, such as contributions and investment income. Amounts due to be remitted will generally be consistent with the CFS.

Future payments in part or in full of a deficit or transfer deficiency should not be included in the plan assets as at that valuation date, unless the amount was to be remitted prior to that date.

It is generally acceptable to adjust the assets for amounts to be transferred to or from other pension plans. However, where such amounts are material to the plan, the actuarial report should disclose the liabilities associated with these transfers and information on the transaction, such as the date of application for approval.

2.6.3 Asset Mix

The actuarial report should disclose the actual asset mix of the plan by major asset class at the valuation date. Pension fund assets held in investment funds, if any, should be allocated by major asset class and included in the asset mix of the plan.

The administrator must submit the Statement of Investment Policies and Procedures (SIP&P) to the actuary for a plan with defined benefit provisions.[38] The actuarial report should also disclose the following information included

in the SIP&P of the plan:

- Target asset mix
- Range of permissible allocations to the major asset categories

The SIP&P might not include asset mix ranges if it provides for a periodic rebalancing of the assets on an automatic basis. If this is the case, the actuary should include a justification as to why asset mix ranges were not included in the actuarial report.

2.6.4 Reconciliation of Assets

The actuarial report should include a reconciliation of assets, year by year, for each period since the valuation date of the previous actuarial report. This reconciliation should include separately the changes in assets from various material sources, which typically include the following:

- Member contributions
- Employer current service cost contributions
- Special payments
- Transfer deficiency payments
- Investment income
- Commuted value transfers
- Pension payments
- Administrative expenses
- Investment management expenses

Investment management expenses should be disclosed clearly and separately from investment income. This requirement applies to all plans, including those participating in a master trust or whose assets are invested in investment funds where investment management expenses are not paid directly from the pension fund, but indirectly through investment income being net of expenses. In this case, where investment management expenses are not available separately, such expenses may be estimated based on the fee structure of the master trust or investment fund. Notwithstanding the foregoing, separate disclosure of investment expenses and income for

alternative asset classes is not required if the information on expenses is not available to the actuary.

If the actuarial report includes information with respect to a defined contribution component, the assets and reconciliation pertaining to the defined benefit and defined contribution components should be shown separately.

2.7 Actuarial Basis

The CIA Standards and Guidance address the selection, appropriateness, and disclosure of going concern and solvency methods and assumptions. These documents also require the actuary to take into account the requirements of applicable legislation. This section of the Guide describes OSFI's requirements with respect to the valuation methods and assumptions used to determine the financial position of the plan for going concern and solvency valuation purposes.

The selection of asset valuation and actuarial cost methods is viewed as a fundamental element of the funding policy[39] of the administrator or employer provided to the actuary as part of the terms of engagement. The report should provide an explanation of the methodology used to determine the asset, liability, and current service cost values.

The employer and administrator are ultimately responsible for risk management decisions. The administrator has fiduciary responsibilities to any persons entitled to benefits under the plan. It is the responsibility of the administrator to read the actuarial report and ask appropriate questions to understand its content.

Methods are not expected to change from one report to another. Any modification to the actuarial methods should be clearly disclosed in the actuarial report and include the rationale for the modification and its financial impact.

The actuary should exercise care in using approximations in the actuarial report to ensure that the impact on the valuation results is not material. If an approximation has a material impact on the valuation results, OSFI expects the actuary to provide an explanation. If an approximation is used but the actuary is unable to assess the resulting error, the approximation becomes, in effect, an assumption.[40]

2.7.1 Asset Valuation Method

Letters of Credit

Letters of credit may not be included in the assets for going concern valuation purposes.

For solvency valuation purposes, where letters of credit have been obtained in lieu of solvency special payments being made, assets should include the aggregate face value of letters of credit in effect on the valuation date, up to a maximum of 15% of the solvency liabilities of the plan as determined at that date.[41] The maximum limit for the face value of letters of credit applicable until the actuarial report is filed should be based on the solvency liabilities included in the previous actuarial report.

The actuarial report should disclose the face value of any letters of credit included in the solvency assets. It should also show a reconciliation of the face value of letters of credit from the valuation date of the previous actuarial report. This reconciliation should include the amount of solvency special payments that were due during the year and replaced by a letter of credit, and employer contributions reducing the amount of letters of credit in force, as applicable.

Smoothing of Assets

The actuarial report should describe the methodology used to smooth going concern assets, if applicable. Smoothing of going concern assets is allowed, provided the asset valuation method is reasonable[42], that is

- it does not result in a value of assets that deviates excessively from its market value. OSFI believes that the going concern asset value should not exceed 110% or be less than 90% of the market value to establish a corridor of acceptable values; and
- it does not produce asset values that are systematically greater than the market value of the total portfolio in the case of non-immunized portfolios or of the class of assets in the case of immunized portfolios, as applicable.

OSFI does not expect the asset valuation method to change repeatedly over a relatively short period of time. Smoothing of assets is prohibited for solvency valuation purposes.

Risk Mitigation Strategies

Some pension plans use buy-in annuity products to limit exposure to various risks related to retiree liabilities. Buy-in annuities are not considered immediate or deferred annuities (buy-out annuities) but are rather considered investments of the plan. The actuary should use an acceptable method for valuing buy-in annuities to be included in plan assets.[43]

Buy-out annuities may also be used by pension plans to limit exposure to risks. OSFI expects any assets and liabilities related to buy-out annuities to be excluded from the going concern and solvency balance sheets.

Another risk mitigation strategy using longevity risk hedging contracts allows pension plans to focus more narrowly on longevity risk. As is the case when an administrator of an ongoing plan purchases buy-in annuities, an administrator that enters into a longevity risk hedging contract retains the ultimate responsibility for paying pension benefits. OSFI expects the actuary to consider the actuarial valuation implications of these contracts in the actuarial report.[44]

2.7.2 Going Concern Assumptions and Valuation Method

A going concern valuation is required to be prepared using actuarial assumptions and methods that are in accordance with accepted actuarial practice, and to be included in the actuarial report of a plan that is not terminating or winding-up. The purpose of this valuation is to determine the plan's assets and liabilities on the valuation date, ongoing funding requirements (current service cost), and any additional funding requirements (special payments). Annual special payments to liquidate the unfunded liability should be equal.[45]

Actuarial assumptions developed by the actuary should be best estimates reflecting future expectations while taking into account pertinent observable experience and plan characteristics. The actuary should select a set of actuarial assumptions which are appropriate in aggregate for the purpose of the valuation as well as independently reasonable.

The nature of the assumptions and methods used or whether an assumption is needed will depend on materiality for the purpose of the valuation. The rationale for the selection of each assumption and method should be provided in the actuarial report. Any change in assumptions and methods from the previous actuarial report should be

clearly identified and justified in the report.

Actuarial Cost Method

All benefits to which members, former members with deferred vested pensions, retirees and survivors are entitled and which have a material impact on the valuation results should be valued, including those provided by the plan that are over and above the minimum requirements of the PBSA. If the plan provides benefits that were not valued because including liabilities associated with these benefits would not have a material impact on the valuation results, the report should include a statement to that effect.

OSFI does not prescribe a specific approach for allocating the actuarial present value of benefits and expenses to time periods provided it complies with CIA Standards[46]. The forecast method is not appropriate to value plans where the benefit for current members, former members with deferred vested pensions, retirees and survivors are fully funded by the current service cost and special payments (i.e. where benefits of current members, former members with deferred vested pensions, retirees and survivors are not subsidized by future members).

Provision for Adverse Deviations

CIA Standards provide that assumptions for the going concern valuation can be best estimates modified to incorporate margins for adverse deviations to the extent required by law or the terms of engagement.[47] OSFI expects that a set of actuarial assumptions as a whole would include an appropriate margin for adverse experience. One or several of the following sources of adverse experience may result in a margin:

- Misestimation of the level of best estimate assumptions
- Misestimation of the future trend of best estimate assumptions
- Volatility risk due to random fluctuations

While not responsible for setting margins for adverse deviations, the actuary generally assists the administrator or employer in developing these, which are then included in the terms of engagement. In performing this role, OSFI expects the actuary to consider the funding policy of the plan, their knowledge of the risk tolerance of the administrator or employer, investment risk and plan characteristics (e.g. mismatch of assets and liabilities, Consumer Price Index (CPI) linked indexation provision, mature plan).[48]

It is not necessary that a margin for adverse deviations be included in the actuarial report for each assumption or that each source of adverse experience be considered explicitly or separately. It would be acceptable, for instance, to select best estimate assumptions for all contingencies except the discount rate. The overall margin would then be included entirely in the discount rate assumption. Alternatively, the overall margin could be expressed as a multiplier to the liabilities and current service cost.

Special payments determined by the solvency valuation should not affect the margins for adverse deviations for the going concern valuation, as each valuation basis is independent. Assumptions should not be based on facts that are unrelated to the expected experience of the plan with respect to the relevant assumption.

Margins for adverse deviations should be explicitly disclosed. In particular, if additional margins for adverse deviations are included in economic assumptions other than the discount rate (e.g. salary increase), or in demographic assumptions (e.g. mortality), these margins should be explicitly stated in the actuarial report.

Discount rate

The discount rate is typically the most significant assumption used in the determination of the liabilities and current service cost in the going concern valuation.[49] OSFI does not prescribe a specific methodology for setting the discount rate, but believes that the best estimate rate of return on assets should not exceed a certain level to ensure the assumption used by actuaries in their actuarial reports remains reasonable. Consistent with this expectation, the maximum going concern discount rate is applied before any margin for adverse deviation. The application of the maximum going concern discount rate should not be considered to explicitly result in a higher margin for adverse deviations.

The approach used by OSFI in setting the maximum going concern discount rate is not unduly influenced by short-term financial market volatility and interest rate fluctuations underlying the pricing of fixed-income securities. OSFI monitors financial market conditions and future expected returns and is currently of the view that generally the discount rate for a plan should not exceed 6.75%, before implicit margins for adverse deviations and expenses. The return and expenses related to active investment management should be ignored for determining whether the discount rate used in the actuarial report satisfies this requirement.

The maximum rate should be adjusted by the actuary for a plan using an asset mix expected to generate a lower return, and may be adjusted for a plan using an asset mix expected to generate a higher return, than that obtained by using a 50% fixed-income allocation. It is expected that the actuary would calibrate their asset model such that this asset allocation would result in a median rate of return that is not higher than 6.75%. The actuary should disclose the adjusted maximum rate in the actuarial report calculated based on the asset mix and expected return for each asset class of the plan.

For pension plans using an overlay strategy, the target asset mix of the plan fund without regard to the overlay strategy can first be used for the purpose of determining the maximum rate, if appropriate. If the overlay strategy is expected to impact the long-term expected return, an additional adjustment to the maximum rate may also be made. Such additional adjustment should reflect the cost of overlay financing.

The actuarial report should include a description of the approach used to determine the discount rate, including quantification of the main components making up the discount rate, as appropriate. For instance, if a building-block approach is used by taking into account the target asset mix in the SIP&P, the actuarial report should disclose the inflation and real return assumptions, as well as any margin for the payment of expenses from the pension fund and any margin for adverse deviations. Any allowance for rebalancing and diversification should be consistent with the asset mix used with the approach. The equity risk premium should be reasonable and consistent with the expected return of each asset class. Economic assumptions should not be unduly influenced by short-term financial market volatility and interest rate fluctuations underlying the pricing of fixed-income securities.

Some pension plans use a stochastic model, which should be managed following good practice[50], to determine the discount rate based on the distribution and correlation of the expected return of each asset class included in the SIP&P. OSFI expects the actuarial report to include disclosures on model inputs and outputs based on the requirements for a statutory funding valuation that specifically requires the use of stochastic models[51] adapted as necessary based on the model used, relevance and materiality for the going concern valuation.

It is generally acceptable to assume that active investment management will generate additional return[52] only to the extent that management fees associated with active management exceed those for passive management. However, it may not be the case in some instances given the investment management structure and SIP&P of the

pension plan. Under some circumstances and in the absence of an appropriate justification included in the actuarial report, it may not be reasonable to recognize additional return due to active management to the full extent of the corresponding expenses. As such, OSFI would expect the discount rate to be adjusted accordingly. Any adjustment should not explicitly affect the margin for adverse deviations, which should be set independently based on the funding policy of the plan as reflected in the terms of engagement.

The assumed additional return due to active investment management should be disclosed in the actuarial report even where such return is assumed to be exactly offset by the additional associated expenses. If the discount rate includes a positive added value (net of active investment management expenses) due to employing an active investment management strategy, the actuary should provide relevant supporting data in the actuarial report that demonstrates that such additional return will be consistently and reliably earned over the long term.[53]

Some plans use a select and ultimate approach to set the going concern discount rate resulting in rate variations from one year to another. The rate for some years could then be higher than the maximum going concern discount rate. The approach is acceptable to OSFI provided that the total plan liabilities and current service cost are not less than they would have been had the maximum rate been applied to all years. Where a select and ultimate approach is used, the actuarial report should disclose the equivalent level discount rates that would result in the same total plan liabilities and current service cost, respectively.

Some de-risking strategies may result in different discount rates being used for some categories of persons or groups. The approach is acceptable to OSFI provided that total plan liabilities are not less than they would have been had the maximum going concern discount rate been applied to all categories of persons or groups. Where the discount rate differs by category of persons or group, the actuarial report should disclose the equivalent level discount rate that would result in the same total plan liabilities.

Use of a discount rate in the calculation of the current service cost that is higher than that used in the calculation of the liabilities for retirees and survivors or some groups of retirees and survivors is acceptable, provided that

- the discount rate used in the calculation of the current service cost is consistent with that used in the calculation of liabilities for active members; and

- the discount rates used for each category of persons or group are individually reasonable and consistent in the aggregate with the investment policy, which should still meet the requirements of the federal pension legislation[54].

Pension benefits are expected to be valued using an actuarial cost method such that no future gains or losses will occur if the experience of the plan does not deviate from assumptions. As such, for plans where the underlying assets for active members are expected to be subject to a different investment policy once they retire, OSFI expects that the rate of return on assets for active members on which the discount rate is based should be assumed during only those years when a member is expected to be active. For years during which a current active member is expected to be retired, the discount rate related to the retiree group should be used.

The rationale for using different discount rates for some category of persons or group should be clearly described in the actuarial report. It may result in additional disclosure with respect to the investment policy and the assets associated with each rate.

Expenses

Provisions for expenses should cover administration, passive investment management, and active investment management expenses.[55] Expense margins should be clearly and separately disclosed in the actuarial report, and quantified so that the appropriateness of expense provisions taken individually and as a whole may be assessed.

Expense assumptions should be developed based on actual and expected expenses to be paid by the pension fund, taking into account assets, membership, and other relevant factors for the period under consideration. The assumption for administrative expenses should represent a best estimate of all administrative expenses to be incurred by the plan, including any irregular expenses, which might be expected and would therefore be included in a best estimate assumption. The actuarial report should include the rationale for establishing an expense assumption that is materially lower than expenses experienced by the plan over previous years.

For plans pursuing an active investment management strategy, the approach used for determining a reasonable split between passive and active investment management expenses should be explained in the actuarial report. Passive management expenses should reflect the costs of maintaining a passive investment portfolio based on the

target asset mix stipulated in the plan's SIP&P, which would typically include investment administration, rebalancing, transaction, and custodial fees relating to the management of assets.

Investment returns and expenses for alternative asset classes that are traditionally actively managed (e.g. infrastructure, real estate, private equity, hedge funds) may not be available separately if returns are expressed on a net-of-expenses basis. As such, investment management expenses may not be easily split between active and passive management. No assumption for active investment management expenses (and return) for such investments is required to be disclosed in the actuarial report if the information on expenses is not readily available to the actuary.

OSFI nevertheless expects that an assumption for passive investment management expenses would be made even for investments that are traditionally actively managed, as the actuary should not assume that the investment manager would outperform other managers with a similar mandate. The assumption for passive management expenses may be based on a proxy, such as the expense ratio of one or more representative investment vehicles having similar characteristics to the investments. The approach used for determining the assumption should be explained in the actuarial report.

Some risk mitigation strategies (e.g. currency hedging, longevity swaps) are not expected to generate additional return over the long term. Expenses related to these strategies should be excluded from active management expenses and treated as passive management expenses.

In some cases (e.g. where a plan buys units of an investment fund), investment management expenses might not all be paid directly by the pension fund, but rather indirectly when the associated investment income is net of expenses. These expenses, which may be approximated based on available information, should be clearly and separately disclosed in the actuarial report, and taken into consideration in the determination of the expense provision.

Mortality

The mortality assumption includes two components: current mortality rates and adjustments for future improvement in mortality.[56]

Selection of the mortality assumption requires professional judgement. OSFI expects one of the base mortality tables (i.e. CPM2014, CPM2014Publ or CPM2014Priv)[57] to be used for going concern valuations. Generally, employment sector (public vs. private) may be sufficient basis for using CPM2014Publ or CPM2014Priv as opposed to CPM2014, but it may not be the case in some instances. The actuarial report should include a justification for the selection of the table and any adjustments made in accordance with the CIA mortality study (e.g. for pension size or industry), or in some instances for not making any adjustments.

The resulting mortality tables of the CIA mortality study provide an industry standard of expected mortality with respect to Canadian pension plans. As such, other adjustments to the base mortality tables are generally not warranted but might be appropriate in certain cases, for example for groups with substandard or superior mortality, or for groups with characteristics (e.g. type of employment or salary) that are different than those underlying the base mortality table.

The justification as to how the adjustments were determined should refer to relevant experience analysis, credible life-years of exposure, and plan characteristics considered. Very large plans with fully credible experience may choose to develop their own mortality table to reflect actual experience. Other plans may have partially credible experience to develop broad adjustments to a published table.

The actuary should also consider the industry with which the plan is associated, and the fact that the nature of employment may have changed with time, for example with improvements in technology. As a result, previous mortality experience may not be a good indicator of future mortality experience in some cases. While the CIA report includes actual to expected (A/E) ratios for industries, it also warns that industry analysis has not proven to be conclusive and that A/E ratios used to adjust mortality should be used with caution. Mortality experience for larger and more homogeneous groups within an industry is expected to exhibit more credible results than that for smaller or diverse industries.

Where a mortality table is constructed based on plan experience or uses adjustments to a base table based on plan experience, the actuarial report should provide sensitivity information in comparison to the relevant CPM base mortality table (and appropriate projection scale) to allow for an assessment of the strength of the assumption. The life expectancy at age 65 using the valuation's mortality table and the CPM table (and appropriate projection scale)

should be disclosed in the actuarial report. The financial impact on the going concern liabilities and current service cost of using a modified table (and appropriate projection scale) should also be shown.

OSFI expects that a provision for future mortality improvement using an appropriate generational projection scale in accordance with CIA Guidance should be made.[58]

Retirement

While the actuary may assume that active members and former members with deferred vested pensions will retire at different ages, the pensionable age for each category of persons should be the same. A vested member terminating before pensionable age is entitled to a deferred pension payable on the same terms and conditions as the immediate pension the member would have received upon attaining pensionable age.[59]

Members and former members are eligible to receive an immediate pension benefit commencing ten years before pensionable age.[60] For a plan that includes material early retirement subsidies, OSFI would not consider reasonable the use of a retirement age assumption that ignores the possibility of members and former members taking advantage of the plan's early retirement options.

Liabilities for former members with deferred vested pensions who are past pensionable age at the valuation date should include retroactive payments with interest from the later of the date of cessation of membership and the date they reached pensionable age.

Termination

OSFI expects the actuary to use withdrawal assumptions (withdrawal rates, commuted value take-up rates, interest and mortality rates) in the determination of commuted values, if these have a material impact on the valuation results. Where the actuary assumes members might terminate before retirement, the actuarial report should state how benefit entitlements are expected to be settled (commuted value transfer or deferred pension). The proportion of members assumed to elect a commuted value transfer and a deferred pension should be stated. Other assumptions used should be clearly disclosed in the report.

Assumptions used to calculate the liability for members assumed to choose a commuted value transfer would generally be determined based on CIA Standards.[61] Alternatively, going concern assumptions could be used if the impact on the liabilities and current service cost, including experience gains or losses that might result from one report to another, is not considered material.

Benefits Subject to Consent

Some plans offer benefits that are subject to administrator or employer consent[62], such as unreduced early retirement benefits. In these cases, the actuary should make a reasonable assumption as to the proportion of members being granted consent and clearly disclose this assumption in the actuarial report. Unless plan experience justifies otherwise, it would generally not be acceptable to assume that no members will be granted consent.

Flexible Benefits

Some pension plans may have flexible benefit features. If the pension plan is a flexible pension plan with optional contributions under the defined benefit provision, these contributions accumulated with interest and the liabilities for the corresponding benefits should be included in the going concern balance sheet.[63] Pension benefits are expected to be valued using an actuarial cost method such that no future gains or losses will occur if the experience of the plan does not deviate from assumptions. As such, for plans where the underlying assumptions used to purchase the benefits from the flexible account may be different from the going concern valuation assumptions, it is not appropriate to realize the expected associated gain or loss at the time of retirement. Therefore, flexible benefits liabilities may differ under the going concern and solvency valuations.

The flexible feature of the pension plan may be included in a defined contribution component, in which case the plan would be considered an enhanced flex plan[64]. Under such a plan, optional contributions may be transferred to the defined benefit component at retirement to acquire or enhance ancillary benefits. Alternatively, optional contributions may remain in the defined contribution component.

In order to reflect a realistic manner of settling benefits for an enhanced flex plan, OSFI expects the actuarial report to include an assumption as to the proportion of members' flexible money purchase contributions that will be transferred to the defined benefit component of the plan at retirement. The resulting amount and the liabilities for

the corresponding benefits should then be reflected in the balance sheet of the defined benefit component of the pension plan. The assets and liabilities in the balance sheet of the defined contribution component should be reduced by this resulting amount.

2.7.3 Solvency Assumptions and Valuation Method

A solvency valuation[65] is required to be prepared using actuarial assumptions and methods that are in accordance with accepted actuarial practice, and assuming the plan is terminated as at the valuation date. A solvency valuation would also be prepared as at the effective termination date of a plan.[66] The purpose of the solvency valuation is to determine the plan's assets and liabilities as at the valuation date and any additional funding requirements (special payments). Annual special payments to liquidate the solvency deficiency should be equal to the amount by which the solvency deficiency divided by 5 exceeds the amount of going concern special payments payable during the year.[67]

The solvency valuation implicitly requires the hypothetical or effective full wind-up of the plan upon its termination, and therefore also the settlement of benefits.[68] The actuary should select a set of actuarial assumptions which are appropriate for the purpose of the valuation.

The nature of the assumptions and methods used or whether an assumption is needed will depend on materiality for the purpose of the valuation. The rationale for the selection of each assumption should be provided in the actuarial report. Any change in assumptions from the previous actuarial report should be clearly identified and justified in the report. Justification is not required for changes in commuted value and annuity purchase (annuity proxy) rates determined in accordance with CIA Standards or Guidance.

Actuarial Cost Method

All benefits to which members, former members with deferred vested pensions, retirees and survivors would be entitled upon plan termination should be valued, including those in the plan that are over and above the minimum requirements of the PBSA. The accrued benefit actuarial cost method should be used to calculate liabilities.

The approach developed by the actuary should reflect the nature of the benefit entitlements or the plan provisions, and not assume that the benefit would be changed, for example, by modifying pension indexation from an increase

related to the CPI to a fixed increase.

Termination Scenario

The postulated termination scenario should be clearly identified in the actuarial report[69], for example as the result of voluntary termination of the plan or bankruptcy of the employer. OSFI expects this scenario to be based on a reasonable expectation of the most likely situation that would lead to the plan terminating at the valuation date. Where all such scenarios are equally unlikely, the termination scenario would be based on the most pessimistic scenario as it relates to benefit security, i.e. the scenario with the highest liabilities, where no additional amounts are assumed to be paid to the pension fund after the termination date and all future expenses are assumed to be paid by the plan.

The determination of solvency liabilities should be consistent with the selected scenario. If pension benefits depend on continued employment, an assumption for increases in future salaries and the maximum pension limit defined in the *Income Tax Act* (ITA) may be required. A reasonable projection of salaries should be included for solvency valuation purposes if

- the plan provides benefits based on the final average earnings of a member and the plan defines final average earnings over a term that continues until employment ends, irrespective of whether the plan has been terminated; and
- the postulated scenario includes continued employment after plan termination.

Where the pension amount is determined by taking into account a period of employment which continues after plan termination, OSFI expects its calculation to be consistent between options the member could elect. As such, the assumption for future salary increases should be the same for members electing a commuted value transfer or a deferred pension.

If employment continues after plan termination, reasonable retirement and termination rates may be used in recognition that members may not act so as to maximize the value of their benefit or reach pensionable age. In determining assumptions, the actuary should ensure that the assumed increases in salaries and in the average wage index are consistent.[70]

The actuarial report should include appropriate disclosure and explanation.

Form of Benefit Settlement

The actuarial report should clearly identify how benefit entitlements would be expected to be settled (commuted value transfer or the purchase of an immediate or deferred annuity) for each of the following category of persons:

- Active members eligible for early retirement
- Other active members
- Former members with deferred vested pensions eligible for early retirement
- Other former members with deferred vested pensions

Where it is expected that members and former members with deferred vested pensions eligible to retire would, upon plan termination, be offered the choice of an annuity or the commuted value, at least 50% of the liability of each of those members and former members should be based on the option that creates the highest solvency liability. The actuary should disclose the assumption in the actuarial report.

Portability options offered to members and former members eligible for early retirement should be based on the plan provisions. While the administrator could still choose to offer portability on plan termination even where the plan provisions do not provide for it, the actuary should not assume that plan provisions would be changed for solvency valuation purposes.

OSFI considers that it would generally not be reasonable to assume that benefits of all former members with deferred vested pensions not entitled to an immediate pension would be settled by a commuted value transfer. These former members would be eligible to elect a deferred annuity upon plan termination. Although other portability options available to members could also be offered to former members with deferred vested pensions by the administrator on plan termination, it is generally not reasonable to assume that all members who have already opted willingly or by default for a deferred pension will choose to receive a commuted value upon plan wind-up. Assuming that all benefits for these former members would be settled by annuity purchase may also not be reasonable.

A commuted value may be recalculated where portability under the plan is offered beyond what is required under the federal pension legislation[71]. The assumption for the form of benefit settlement should be consistent with OSFI's policy on the recalculation of commuted values.

The actuary is expected to consider these observations in setting and justifying the assumption used for the settlement of benefits for former members with deferred vested pensions on plan termination.

Discount Rate

The discount rate used to value benefits expected to be settled by a commuted value transfer should be determined according to CIA Standards.[72]

Benefits expected to be settled by the purchase of an annuity should be valued using an interest rate assumption based on the rate recommended in the most recently issued CIA Guidance[73] relevant to the report date. Where pension benefits are not fully indexed to the CPI, the actuarial report should disclose the duration of the liabilities expected to be settled by the purchase of an annuity.

If the discount rate is rounded, the approach and rationale for rounding should be explained in the actuarial report. The decision to round and the approach used is not expected to change from one report to another, including the termination report should the plan effectively terminate.

Alternatively, an actual quotation representing the cost of purchasing annuities provided by a life insurance company may be used to estimate the solvency liabilities. If an annuity quotation is used, the following information should be included in the actuarial report:

- Confirmation that all relevant information that should be included in the quotation by the life insurance company has been provided to the actuary
- Other information as stipulated in CAPSA Guidance[74]

Indexation Rate

Some plans offer pension indexation that is not fully related to the CPI, i.e. partial indexation or indexation with a cap. The actuary should clearly explain in the actuarial report the approach used to determine the indexation

assumption or the net discount rate. In particular, the portion of the inflation risk premium considered in the determination of the discount rate is expected to be discussed.

A stochastic model may be used to determine the impact of the cap on indexation. The actuary should refer to section 2.7.2 related to the discount rate for OSFI's expectations on model information to disclose in the actuarial report, adapted as necessary for the indexation rate assumption.

Mortality

The mortality assumption should be determined using the latest mortality table and projection scale promulgated by the Actuarial Standards Board (ASB) for the purpose of the calculations.[75] Separate mortality rates should be used for males and females.[76] The PBSA does not require the use of a unisex mortality approach in the calculation of a commuted value transfer.[77]

However, the terms of the plan or the administrator, if so empowered by the plan provisions, may require the determination of a commuted value that does not vary according to the sex of the person. For multijurisdictional plans, some provincial pension legislation may also require the use of a unisex mortality approach. The actuary would then use a mortality table based on a blend of the sex-distinct tables or a weighted average of the commuted values based on the sex-distinct tables.[78] The weights should be appropriate for the pension plan and only based on the value of benefits expected to be settled by a commuted value transfer.

Where a unisex mortality approach is used, the actuarial report should explain, based on the administration of the plan and using supporting data, how the mortality basis and weights were derived. OSFI expects the report to state that total liabilities for persons entitled to benefits under the plan subject to a unisex mortality approach is the same as the total liabilities that would have resulted had sex-distinct mortality been used.

The mortality assumption (i.e. mortality table and projection scale) used to value benefits expected to be settled by the purchase of an annuity is provided in CIA Guidance. Where a mortality table other than the CPM2014 is chosen or where adjustments are made in accordance with the CIA mortality study (e.g. for pension size or industry), a detailed justification should be included in the actuarial report.

The justification as to how the adjustments were determined should refer to relevant experience analysis, credible life-years of exposure, and plan characteristics considered. Very large plans with fully credible experience may choose to use their own mortality table to reflect actual experience. Other plans may have partially credible experience to develop broad adjustments to a published table. The adjusted basis should still provide for future mortality improvement.

The actuarial report should disclose the notional solvency liabilities and solvency ratio that would have resulted from using an unadjusted CPM2014 mortality table and the annuity proxy rate. If a mortality table other than the CPM2014 is used in the report, the underlying adjustment to the CPM2014 mortality table as a percentage of the CPM2014 mortality rates that would result in the solvency liabilities of the report should also be disclosed.

Any adjustment in mortality rates should reflect that it is uncertain how an insurer might view a particular plan's mortality and how this might be reflected in the actual mortality basis assumed for a given plan. A life insurance company would not normally use the same mortality basis for the purchase of annuities as is used for the going concern valuation. However, insurers generally do consider occupational, demographic, and other relevant factors in establishing mortality assumptions. OSFI expects the actuary to make adjustments for groups with demonstrated substandard or superior mortality, or where persons entitled to benefits under the plan are expected to experience different mortality than that of a typical group annuity purchase (e.g. "grey" collar).

Retirement

The assumed retirement age should be disclosed in the actuarial report.

For benefits expected to be settled by a commuted value transfer, the assumed retirement age would be determined in accordance with CIA Standards.[79] This generally results in the assumption that members will choose to start their pension at the age that maximizes the value of benefits with a probability of 50%, and at their pensionable age with a probability of 50%. The rationale for using a different retirement age assumption should be clearly described in the actuarial report. Where a different retirement age is assumed, the report should nevertheless disclose the solvency liability that would have resulted using the above assumption.

For benefits assumed to be settled by annuity purchase, the assumed retirement age (e.g. the age that maximizes the value of benefits with a probability of 100%) may differ from that used for a commuted value transfer. OSFI expects the assumed retirement age to be determined consistent with the approach used by a life insurance company when immediate or deferred annuities with early retirement subsidies are purchased.

Liabilities for former members with deferred vested pensions who are past pensionable age at the valuation date should include retroactive payments with interest from the later of the date of cessation of membership and the date they reached pensionable age.

Determining Benefits Payable at Pensionable Age

Members are assumed to grow into any minimum age requirement.[80] If there is no service component in the plan's pensionable age, members are entitled to any benefit payable at pensionable age. If there is a service component, the benefit payable at pensionable age should be provided to members who have met the service requirement at the valuation date.

Deferred pension benefits payable at pensionable age are fully vested, i.e. pensionable age must be the same for active members and former members with deferred vested pensions. OSFI considers indexing and bridge benefits payable at pensionable age to be part of the member's pension benefit and, therefore, payable to a member or former member at pensionable age.[81]

Benefits Subject to Consent

OSFI allows the exclusion from solvency liabilities of benefits genuinely subject to consent[82] of the administrator. If the plan includes such benefits, the actuarial report should specify whether consent to these benefits is assumed to be granted for solvency valuation purposes. When making this assumption the actuary should

- consider how the benefits are administered in practice; and
- obtain confirmation from the administrator of the treatment of consent benefits in the event of a plan termination.

Projection of the Maximum Pension Limit

A projection of the maximum pension limit defined in the ITA is required if the plan automatically reflects future changes in the limit, and its determination for the purpose of pension benefit calculation is made at retirement rather than at termination of employment or plan termination.[83] The increase in the ITA maximum should be based on the increase in the CPI plus 1%.[84] OSFI expects the same approach to be used for commuted value and annuity purchase liabilities.

The actuary may decide not to project the maximum pension amount when it should be projected because it is determined that the impact of doing so would not be material. The actuarial report should disclose this assumption.

Termination Expenses[85]

The solvency valuation should provide for expenses that may reasonably be expected to be paid from the pension fund, under the postulated termination scenario, between the valuation date and the wind-up of the plan, i.e. the date when all plan benefits are settled and assets are distributed. OSFI expects the termination expense assumption to be based on historical expenses of the plan, adjusted to reflect that expectations might differ from the past given that the plan is terminating. The provision for termination expenses should be related to the termination scenario of the plan.

In order to provide for a realistic manner of settling benefits, the assumed termination date, settlement date, and wind-up date should not be the same. OSFI expects the actuary to make and disclose the assumption as to when the wind-up of the plan might reasonably occur after the termination date, allowing time to

- prepare and file the termination report with OSFI;
- have the termination report reviewed by OSFI and approved by the Superintendent; and
- effectively pay the benefits.

For plans using a replicating portfolio, the assumed timing of the settlement of benefits not subject to the replicating portfolio should be disclosed.

Termination expenses should be deducted from the market value of assets in calculating the solvency ratio and not be netted from future investment income. The termination expense provision would usually include

- actuarial, administrative, legal, and other consulting expenses incurred in terminating the plan up to its wind-up, including costs associated with locating individuals;
- expenses associated with benefit settlement, and, if applicable, fees associated with a Replacement Administrator[86] or Designated Actuary[87];
- regulatory fees;
- custodial and auditing related expenses;
- investment expenses, including management and transaction fees relating to the liquidation of assets; and
- expenses associated with revising the investment policy.

Where a replicating portfolio is assumed, expenses related to its establishment should be discussed in the actuarial report and reflected in the termination expense assumption. If a series of group annuity purchases until the full wind-up of the plan is assumed, an adjustment to the termination expense assumption would similarly be required.

Where it is assumed that the employer would pay some of the termination expenses, the assumption made by the actuary with respect to the proportion of termination expenses payable by the employer should be supported by the administrator and disclosed in the actuarial report. The assumption is not expected to change from one report to another, including the termination report should the plan effectively terminate. The actuary is expected to opine on the reasonableness of the assumption in consideration of the financial position of the employer at the valuation date.[88]

Flexible Benefits

Some pension plans may have flexible benefit features. The actuary should refer to section 2.7.2 related to flexible benefits for OSFI's expectations on assumptions to use and information to disclose in the actuarial report, adapted as necessary for the solvency valuation.

2.7.4 Alternative Settlement Methods

OSFI expects benefits to be distributed without undue delay after the Superintendent has approved the termination report.[89] For large pension plans, OSFI recognizes that it might not be possible to settle a pool of immediate and deferred pension liabilities by means of a single group annuity purchase. The federal pension legislation does not preclude using alternative settlement methods[90] for solvency valuation purposes, but the use of such methods cannot result in pension benefits being surrendered in any year or in aggregate[91].

For solvency valuation purposes, it is expected for all plans that the wind-up of assets would be considered first through a single group annuity purchase. If this is not possible due to capacity constraints of the Canadian annuity market, then settlement through a series of group annuity purchases may be considered, as contemplated under CIA Guidance.

In order to reflect a realistic manner of settling benefits, where the capacity of the Canadian annuity market would not permit the settlement of pension liabilities[92] by a single or a series of group annuity purchases[93], OSFI expects that benefits in payment and deferred pensions would be settled by the establishment of a replicating portfolio, the objective of which is to establish a series of cash flows that match the expected benefit payments to retirees and survivors. However, to simplify the approach, the actuary may assume that benefits would be settled by the purchase of annuities regardless of any capacity limitation in the Canadian annuity market.[94]

OSFI assumes that generally pension plans could effectuate a series of group annuity purchases over a 5-year period and therefore settle up to 5 times the liability threshold specified in CIA Guidance through that process. If a plan uses a replicating portfolio approach for liabilities below this level, the actuarial report should explain, based on recent experience (e.g. annuity quote), plan characteristics and market conditions, why it is believed a lower threshold should be considered.

Therefore, only plans for which the capacity of the Canadian annuity market would not permit the settlement of pension liabilities by a single or a series of group annuity purchases for the following persons entitled to benefits under the plan should use a replicating portfolio approach:

- Retirees and survivors

- Former members with deferred vested pensions not assumed to elect a commuted value transfer
- Members assumed to take an immediate or deferred pension

Replicating Portfolio Assets

The replicating portfolio assets provide for pension benefits that would otherwise be payable by a life insurance company. Therefore, OSFI expects that the replicating portfolio assets in addition to the assumed available financial support from the employer would be sufficient to ensure that the likelihood of the plan being able to fully pay all benefits due is similar to that obtained from a group annuity purchase.

The table below defines credit rating categories based on those of recognized ratings agencies operating in Canada.

Credit Rating Category	Credit Rating				
	DBRS	Fitch	Moody's	S&P	KBRA
AAA	Higher than AA(high)	Higher than AA+	Higher than Aa1	Higher than AA+	Higher than AA
AA	AA(high) to AA(low)	AA+ to AA-	Aa1 to Aa3	AA+ to AA-	AA to AA-
A	A(high) to A(low)	A+ to A-	A1 to A3	A+ to A-	A+ to A-
BBB	BBB(high) to BBB(low)	BBB+ to BBB-	Baa1 to Baa3	BBB+ to BBB-	BBB+ to BBB-
BB	BB(high) to BB(low)	BB+ to BB-	Ba1 to Ba3	BB+ to BB-	BB+ to BB-
B	B(high) to B(low)	B+ to B-	B1 to B3	B+ to B-	B+ to B-
Lower than B	Lower than B(low)	Lower than B-	Lower than B3	Lower than B-	Lower than B-

The primary asset class of investment-grade fixed-income investments (i.e. BBB and higher) of the portfolio should include a substantial allocation to high-quality fixed-income securities. The allocation should remain substantial every year, not only on average. OSFI considers that, for a fixed-income investment to be deemed of high-quality, the rating should be in the two highest credit rating categories (i.e. AA and AAA).

Non-public investments may be included provided they meet the minimum credit rating equivalent. The actuarial report should disclose the proportion of the replicating portfolio assets for each credit rating. An explanation of

how the rating of non-public investments was determined should also be included.

The actuary should discuss whether the capacity of the market would allow for the purchase of the fixed-income securities needed to establish the replicating portfolio. Simply assuming that market capacity is available to achieve the desired portfolio would not be sufficient.

Liabilities under a Replicating Portfolio Approach

The liabilities for the payment of benefits and expenses payable from the plan should be equal to the sum of the following amounts, which are further described in the remainder of the section:

- Actuarial present value of benefits and expenses
- Provision for adverse deviations for economic and non-economic risks, net of the assumed available financial support from the employer
- Adjustment due to the correlation between economic and non-economic risks

Each amount and its components should be disclosed separately in the actuarial report.

The liabilities of the plan should be determined using a discount rate based on a best estimate assumption of the rate of return of the replicating portfolio reduced to account for expected asset defaults.

The use of a replicating portfolio approach assumes that a portion of the pension fund will be maintained and not wound up on plan termination. Therefore, OSFI expects economic and demographic assumptions under the replicating portfolio approach to be consistent, as applicable, with those used under the going concern valuation, notwithstanding differences in margins for adverse deviations used in each of the two valuations.

Economic Risks

OSFI expects economic risks to be evaluated using a system or process involving the use of stochastic simulation. An economic scenario generator should be used to model the economic environment to produce simulations of the joint behaviour of financial market values and economic variables.[95] The development of scenarios should also consider the selection of market indices and proxies, and calibration of risk-free interest rates and investment returns.[96]

In many respects, running a stochastic model is similar to performing numerous runs of a deterministic model, and as such, CIA Guidance covers their use. However, when a stochastic model is used, additional consideration should be given to certain other elements.

When the model inputs or assumptions vary with each scenario, the actuary should ensure that their distribution is reasonable, paying particular attention to items such as the trend, mean, median, symmetry, skewness, and tails of such distributions. The actuary should also ensure that the correlation between each of the inputs or assumptions is appropriate, and that these capture a reasonable likelihood of downside scenarios. The potential change of the correlation between variables at the mean as compared to the tail ends of the respective distributions should be addressed.

While it is impractical to review the results from every simulation, OSFI expects the actuary to validate the results based on CIA Guidance. The actuary should be mindful that the result of a stochastic model is usually itself a statistical estimate that has its own mean and variance. The variance can be lessened by running more scenarios, but it cannot be eliminated.

The distribution of asset values will be required under a large number of scenarios. OSFI expects the number of scenarios to be commensurate with the confidence level for the Value at Risk (VaR) being calculated in the model, projected over the runoff period of the liabilities. The actuary should test that the number of scenarios used to calculate the assets required to meet the pension promise yields an acceptable level of precision that meets the standard of materiality used for the stochastic simulation. To increase the precision of the calculation, it may be necessary to increase the number of scenarios significantly.

OSFI considers that a provision for adverse deviations determined at the 80% confidence level ensures a high probability that the pension promise will be met. An additional provision determined at the 97.5% confidence level would ensure that the probability is similar to that obtained from a group annuity purchase, while mitigating model risk. However, a confidence level lower than 97.5% may be sufficient if financial support can be assumed to be available from the employer as measured at the valuation date.

The credit rating of senior unsecured and unsubordinated debt of the employer, or the credit rating of the organization fully liable for actions undertaken by the employer acting within its mandate, as applicable, at the

valuation date should be used as an indicator of the available financial support from the employer. The provision for adverse deviations for economic risks should ensure that the probability of the pension plan being fully funded, prior to consideration of non-economic risks, is consistent with the confidence level indicated in the table below. Where different credit ratings are assigned by different ratings agencies, professional judgement would be required to determine the appropriate confidence level. OSFI expects the actuary to include in the report a rationale supporting the credit rating reflected in the determination of solvency liabilities. The approach should be reasonable, i.e. it does not produce consistently lower liabilities by systematically selecting the highest credit rating.

Credit Rating Category	Confidence Level (%)
AAA	80.0
AA	85.0
A	87.5
BBB	90.0
BB	92.5
B	95.0
Lower than B	97.5

Non-economic Risks

Non-economic risks are the risks of loss arising from the obligation to pay out benefits and expenses in excess of expected amounts under the replicating portfolio approach. Non-economic risks include the following:

- Longevity risk is the risk associated with the longer period of payment of pension benefits due to increase in life expectancy. This increase can result from changes in the level and trend of mortality rates.
- Expense risk is the risk associated with the unfavorable variability of expenses incurred by the pension plan. The increase can result from changes in the level and trend of investment management and administrative expenses.

The total provision for longevity and expense risks is equal to the sum of the difference between the actuarial present value of the cash flows under each adverse scenario and the actuarial present value of the best estimate

cash flows.

The adverse scenarios should be constructed by applying the following stresses to the best estimate assumptions:

- Longevity risk for annuities that are exposed to this risk
  - Level: Decrease of 10% in the best estimate assumption for the mortality rate at each age, i.e. 90% of the best estimate assumption. Where mortality is based on credible plan experience, the provision for the level of longevity risk may be adjusted.
  - Trend: Increase of 75% in the best estimate assumption for mortality improvement at each age, i.e. 175% of the best estimate assumption. The shock applies per year of mortality improvement in perpetuity; and
- Expense risk
  - Increase of 20% in the best estimate assumption for expenses in the first year, followed by a 10% increase in the best estimate assumption in all subsequent years, i.e. 120% of the best estimate assumption in the first year and 110% of the best estimate assumption in all subsequent years.

The provision for non-economic risks may be adjusted downwards based on the credit rating or deemed credit rating of the employer, as applicable, at the valuation date. An acceptable approach would be to adjust the provision for non-economic risks described above in the same manner as for economic risks. That is, the adjustment to the provision for non-economic risks would be proportionate to that for economic risks after considering the confidence level corresponding to the credit rating category of the employer compared to that based on a 97.5% confidence level. The approach used for determining the adjustment to the provision for non-economic risks according to the credit rating category of the employer should be explained in the actuarial report.

Correlation

The total provision for adverse deviations is equal to the sum of the provisions for economic risks and non-economic risks, determined in accordance with the methodology described above. An adjustment may be made to the total provision to consider diversification benefits, i.e. risk margins may not be required all at once. The correlation assumed between the two classes of risks should be at least 25%. The approach used for determining the adjustment to the provision for adverse deviations due to correlation should be explained in the actuarial

report.

Disclosure

Even if an alternative settlement method (i.e. a series of group annuity purchases or a replicating portfolio) is used, the actuarial report should still disclose the notional solvency liabilities and solvency ratio that would have resulted if the single purchase of a group annuity had been assumed, determined in accordance with CIA Guidance. The assumption for the form of benefit settlement should be the same under the annuity purchase approach as under the alternative settlement method. The report should also disclose the underlying equivalent annuity proxy rate that would result in the same solvency liability as that determined using the alternative settlement method. The mortality and the indexation rate assumptions used in these calculations should also be disclosed and should be the same as those obtained based on CIA Guidance had the solvency valuation assumed the single purchase of a group annuity.

OSFI expects the actuary to provide meaningful disclosures regarding the benefit security implications of using the replicating portfolio approach instead of assuming the purchase of annuities. The actuary should refer to section 2.7.2 related to the discount rate for OSFI’s expectations on model information to disclose in the actuarial report, adapted as necessary for the provision for economic and non-economic risks.

Disclosure on model outputs should also include the following elements:

- A quantification of the probability that the pension benefit promise will be met
- The average payout ratio in percentage of the full amount in cases where pension benefits are not expected to be fully paid, assuming the full funding requirement under the federal pension legislation does not apply

2.8 Financial Position

2.8.1 Going Concern Valuation

The actuarial report should include a balance sheet showing the going concern assets and liabilities as at the valuation date of the actuarial report and of the previous actuarial report. The balance sheet should include the following items separately:

- Assets broken down between the actuarial value of assets adjusted for receivables and payables, and buy-in annuities
- Liabilities broken down by category of persons, such as members, former members with deferred vested pensions, retirees, and survivors
- Liabilities for transfer deficiencies
- Liabilities for buy-in annuities
- Excess or deficit

If the actuarial report includes information with respect to a defined contribution component, the related assets and liabilities should be shown separately. Additional voluntary contributions, if any, should be excluded from the balance sheet of the defined benefit component.

If the plan is an enhanced flex plan, the proportion of members' optional contributions assumed to remain in the plan at retirement should be reflected in the balance sheet of the defined benefit component. The remaining amount should be reflected in the balance sheet of the defined contribution component.

The actuarial report should also include in separate notes to the balance sheet

- the provision (actuarial present value of the margin in dollars) for future expenses payable by the pension plan and included in liabilities. The provisions for administration and passive investment management expenses[97] should be clearly and separately disclosed; and
- the provision (actuarial present value of the margin in dollars) for adverse deviations included in liabilities.

If best estimate assumptions are selected for all contingencies except the discount rate, the provision for adverse deviations that should be disclosed in the actuarial report is the actuarial present value of the margin for adverse deviations included in the discount rate. If additional margins for adverse deviations are included in other economic or demographic assumptions, the provision should include the present value of these margins as well.

2.8.2 Solvency Valuation

Balance Sheet

The actuarial report should include a balance sheet showing the solvency assets and liabilities as at the valuation date of the actuarial report and of the previous actuarial report. The balance sheet should include the following items separately:

- Assets broken down between the market value of assets adjusted for receivables and payables, the face value of letters of credit, and termination expenses
- Liabilities broken down by category of persons, such as members, former members with deferred vested pensions, retirees, and survivors
- Liabilities for transfer deficiencies
- Liabilities for buy-in annuities
- Surplus or shortfall

If the actuarial report includes information with respect to a defined contribution component then the related assets and liabilities should be shown separately. Additional voluntary contributions, if any, should be excluded from the balance sheet of the defined benefit component.

If the plan is an enhanced flex plan, the proportion of members' optional contributions assumed to remain in the plan at retirement should be reflected in the balance sheet of the defined benefit component. The remaining amount should be reflected in the balance sheet of the defined contribution component.

If the plan is using a replicating portfolio, the actuarial report should include in separate notes to the balance sheet

- the provision (actuarial present value in dollars) for future expenses payable by the pension plan and included in liabilities. The provisions for administration and passive investment management expenses should be clearly and separately disclosed; and
- the provision (actuarial present value in dollars) for adverse deviations included in liabilities.

Solvency Ratio

The actuarial report should show the solvency ratio of the plan as at the valuation date of the actuarial report and of the previous actuarial report. If the actuarial report includes information with respect to a defined contribution component then related assets and liabilities should not be included in the determination of the solvency ratio.

The actuarial report should state whether assets would exceed liabilities had the plan been terminated at the valuation date. Where the solvency ratio is less than 1.00, all aspects of the restrictions that may apply to the transfer of commuted values and the purchase of annuities which may affect the portability of benefits, including a portability freeze, and result in additional funding requirements should be discussed in the actuarial report.[98]

Average Solvency Ratio Used to Determine Funding Requirements

The actuarial report should include a solvency balance sheet showing the adjusted solvency asset amount (i.e. the product of the average solvency ratio and the solvency liabilities), the solvency liabilities, and the excess or deficiency at the valuation date of the actuarial report and of the previous actuarial report. If the actuarial report includes information with respect to a defined contribution component then the related assets and liabilities should be shown separately.

The actuarial report should show the average solvency ratio used for funding purposes, which is the arithmetic average of the adjusted solvency ratios[99] at the valuation date, prior valuation date and prior second valuation date.

If adjustments are made to the current and prior year solvency ratios to determine the average solvency ratio, the actuarial report should provide details of the calculation for each of those solvency ratios, which may include the following items:

- Present value of special payments and underlying discount rate used
- Contribution holidays
- Plan amendments
- Plan mergers
- Additional payments in excess of minimum funding requirements

- Face value of letters of credit

Transfer deficiency payments are not considered special payments because they do not improve the plan's solvency ratio. They restore the solvency ratio of the plan to its level prior to the payout of the commuted value to the member. Therefore, transfer deficiency payments should not be included in the adjustments of prior solvency ratios to determine the average solvency ratio.

2.9 Reconciliation of Financial Position

2.9.1 Going Concern Valuation

OSFI expects the actuarial report to include a reconciliation of the going concern valuation results since the valuation date of the previous actuarial report. This allows the reader to understand the sources of changes in the financial position of the plan since the valuation date of the previous actuarial report and to assess the reasonableness of the actuarial assumptions. The reconciliation would generally show separately

- the expected interest on the opening surplus or deficit;
- any utilization of surplus;
- special payments made to the pension fund;
- transfer deficiency payments made to the pension fund;
- the material sources of experience gains and losses;
- the impact of changes in actuarial assumptions;
- the impact of changes in actuarial methods; and
- the impact of plan amendments.

Experience gains and losses should be shown separately for each assumption made in the actuarial report, unless the gain or loss related to the assumption is considered not material. Where gains and losses with respect to two or more assumptions are combined, the report should state that gains or losses for assumptions not shown separately are not considered material.

The actuary should explain any significant or unusual gains or losses in the actuarial report.

Consistent and material experience losses from year to year that relate to a given assumption would generally indicate that the assumption may not be appropriate. OSFI expects the actuary to review and, if required, strengthen assumptions on a regular basis.

The impact of each assumption changed in the actuarial report should be described and disclosed separately. However, it is acceptable to combine some assumptions for this purpose provided these are related (e.g. changes to several economic assumptions resulting from a modification in the underlying inflation assumption).

2.9.2 Solvency Valuation

If the actuarial report does not include a going concern valuation (e.g. a termination report), a reconciliation of the solvency position should be included in the report, showing the experience gains and losses since the valuation date of the previous actuarial report.

2.10 Funding Requirements

The actuarial report should provide the following information[100] with respect to the current service cost[101] and special payments:

- The rule for determining the current service cost in respect of the period from the valuation date of the actuarial report until that of the next report. This rule should be expressed in dollars per member or in percentage of payroll or member contributions, as appropriate.
- The current service cost as at the valuation date of the actuarial report and of the previous actuarial report. The total current service cost should be split between the employer current service cost and estimated member contributions, as applicable.
- The provision (actuarial present value in dollars) for future expenses and the provision for expenses in the year following the valuation date, payable by the pension plan and included in the current service cost. The provisions for administration and passive investment management expenses should be clearly and separately disclosed.
- The provision (actuarial present value in dollars) for adverse deviations included in the current service cost

- The sources of any material change to the rule for determining the current service cost from that included in the previous actuarial report
- Each schedule of going concern special payments at the valuation date of the actuarial report and of the previous actuarial report, including for each
  - unamortized balance,
  - monthly payment, and
  - beginning and expiry dates.
- The schedule of monthly solvency special payments at the valuation date of the actuarial report and of the previous actuarial report

The actuarial report should state that contributions and special payments are required to be remitted to the pension fund on a monthly basis.[102] Outstanding contributions will accrue with interest.[103]

Given that the actuarial report is generally prepared after the beginning of the plan year to which the funding recommendation applies, OSFI expects that, until a subsequent actuarial report is filed, current service contributions and special payments continue to be paid based on the most recent actuarial report[104]. A subsequent actuarial report may reveal required current service cost contributions or special payment amounts that are greater than those paid to the plan since the beginning of the plan year. In this case, the amounts that were due 30 days after the end of the period in respect to which the installments would have been paid, accumulated with interest from the required payment date, are outstanding when the report is filed. The receivable amounts are due and continue to accrue with interest until the date of the remittance.

In cases where a subsequent actuarial report indicates a reduction in the amount of required contributions, the employer is not permitted to withdraw the contributions already paid into the pension fund. Additionally, no interest adjustment should be made in the case where special payments were made in excess of those required.

The actuarial report should state that any adjustments to current service cost contributions and special payments applicable to the year should be made when the report is filed.

Pre-Existing Going Concern Special Payments

Pre-existing going concern special payments need to be considered when preparing an actuarial report. These payments are present when a previous actuarial report disclosed a going concern unfunded liability. The remaining balance of any pre-existing going concern special payments

- should be considered to determine whether an unfunded liability exists at the valuation date;
- should be carried over from one report to the next; and
- should not be eliminated or reduced unless their present value exceeds the going concern deficit.

The excess of the present value of all pre-existing going concern special payments over the going concern deficit shall be applied to reduce the outstanding balance of any unfunded liability. The amortization period of a schedule cannot be reduced but flexibility is available in choosing which schedule or schedules to adjust. Once a schedule to be reduced has been identified, the remaining payments of that schedule should be reduced pro rata.[105]

Where changes in going concern assumptions or methods occurred since the previous actuarial report, the actuary should consider the net effect of plan experience and changes in assumptions or methods to determine funding requirements. For instance, experience gains may not be applied to reduce payments if this is followed by a change in assumptions that leads to the introduction of a new special payment, as the net effect would be longer amortization than if the total net financial change was applied.

Contribution Holidays

Contribution holidays are limited by the going concern and solvency positions of the plan as at the valuation date. Employer contributions payable until the next actuarial report must be at least equal to

- the employer current service cost; minus
- the lesser of
  - the going concern surplus at the valuation date; and
  - the amount by which solvency assets exceed 105% of solvency liabilities.[106]

Additional Payments in Excess of Minimum Funding Requirements

If payments greater than the sum of the minimum required special payments are made in a plan year toward an unfunded liability or a solvency deficiency, these additional payments may be used to reduce the amount of a special payment in a subsequent plan year (consecutive or non-consecutive).[107] The actuarial report should include a reconciliation of the balance of unallocated additional payments since the valuation date of the previous actuarial report, showing new payments made and how required special payments have been reduced.

Additional payments should be included in assets for the balance sheet on a going concern and solvency basis. To determine funding requirements, going concern and solvency assets should be reduced by the amount of the additional payments that will be applied to reduce special payments in respect of periods after the valuation date. [108]

Solvency Relief Measures

Legislative provisions such as the use of letters of credit, ministerial reductions[109] or the Distressed Pension Plan Workout Scheme[110] provide solvency relief measures that may impact funding requirements.

OSFI expects the actuarial report to include sufficient details and explanations for the reader to be able to follow from one valuation to another the impact of these provisions on special payments. As such, the report should provide a reconciliation of the amounts having an impact on the reduction of special payments since the valuation date of the previous actuarial report. Also, the interaction of these amounts to the extent they affect special payments should be disclosed.

2.11 Risk Assessment

Stress testing (e.g. sensitivity testing and scenario analysis) and stochastic modeling (e.g. asset-liability modeling) are key tools that can be used by the administrator to inform better risk management of a pension plan.[111] While OSFI expects that some form of stress testing or stochastic modeling will be considered for most pension plans, it is the responsibility of the administrator to assess the types and extent of risk management tools that are appropriate for their plan. The sophistication of a pension plan's stress testing should be proportionate to the size and complexity of the plan's design and investment strategy (e.g. use of derivatives[112]).

The actuary should select plausible adverse scenarios to identify and assess various risks that might reasonably be expected to occur, affecting a plan's ability to meet its future benefit obligations, and include relevant information in the actuarial report under at least one of the valuations[113]. OSFI expects that plausible adverse scenarios will be adjusted from one plan to another and over time, based on internal and external factors of the plan. As a result, the selection and application of a plausible adverse scenario is a stress-testing process on various risks to the funded status and service cost of the pension plan[114].

Other than as described in the Guide, OSFI does not require that results from stress testing or stochastic modeling be included in the actuarial report.

2.11.1 Going Concern Valuation

The actuarial report should include the impact on the going concern liabilities and current service cost of using a discount rate that is 1% lower than the rate used for the valuation.[115]

A deterministic or stochastic approach can be used in the assessment of the risks.

2.11.2 Solvency Valuation

The actuarial report should include the impact on the solvency liabilities of using a discount rate that is 1% lower than the rate used for the valuation.[116]

3.0 Negotiated Contribution Plans

Negotiated contribution plans are multi-employer, defined benefit pension plans with employer contributions that are limited to amounts determined in accordance with an agreement, statute, or regulation and that do not vary as a function of the applicable minimum funding requirements.[117] Where a pension plan is considered a negotiated contribution plan, the actuarial report should disclose, in addition to the membership data disclosure requirements [118], the expected number of hours worked annually in each plan year until the next actuarial report, or any other information relevant to the plan's benefit structure. The report should also include a summary of any additional and relevant provisions of the collective agreement and work contract provided by the administrator to the actuary that relate to contribution and pension credit amounts, other than those already included in the terms of the plan.

OSFI expectations set out in preceding sections of this Guide apply to negotiated contribution plans, unless indicated otherwise below.

3.1 Funding Requirements

Negotiated contribution plans are subject to enhanced going concern funding requirements, based on a current service cost and liabilities that must include a provision for adverse deviations. The PBSR requires a minimum provision of 5% to be included in the current service cost, while the provision included in the liabilities is determined by the administrator.[119] Despite the mandatory minimum provision, it may be appropriate to add other margins to the current service cost discount rate assumption. OSFI does not prescribe a specific margin or method for including such margin in the going concern liabilities but believe that an appropriate margin for adverse deviations should be determined based on actuarial consideration and the funding policy.

In comparison to other defined benefit plans, the generally more limited ability of negotiated contribution plans to increase funding levels in response to changing circumstances makes it especially important that these plans closely monitor their funded status.

OSFI expects the minimum funding requirements under the PBSA to be met and disclosed in the actuarial report. Also, the actuarial report should either

- state that expected contributions in each plan year until the next actuarial report are adequate to fund the plan, i.e. show that the estimated contributions exceed the total current service cost plus any special payments; or
- describe the increase in contributions in each plan year, the reduction in benefits or a combination thereof required to address the funding shortfall until the next actuarial report. Other options considered to address the shortfall may also be discussed.[120]

OSFI expects the actuary to comment in the actuarial report on recent plan experience and trends, if relevant, relating to key indicators such as

- number of active members;
- average age of active members;

- number of hours worked;
- active versus retiree liability breakdown; and
- other relevant economic and demographic factors.

The administrator should strive to have the information necessary to perform their duty to monitor the risks facing the plan and assess how these risks may affect the likelihood that benefits will be paid.[121]

In considering these factors and risks, and taking into account the duration of collective agreements in force, the actuary is expected to opine in the actuarial report on the likelihood that the plan will meet funding requirements for at least the next three years after the valuation date. The actuary should discuss possible adverse events that could have a significant impact on the funded status of the pension plan, supported by the results of stress testing or other risk management tools. The actuarial report should disclose the results that are relevant to support the discussion and may reference any related work.

3.2 Solvency Valuation

Although negotiated contribution plans are exempt from solvency funding, the solvency position must be disclosed in the actuarial report. Assumptions used to calculate the liability for members assumed to choose a commuted value transfer would generally be determined based on assumptions consistent with the going concern valuation, adjusted as applicable.[122] No standards currently apply to negotiated contribution plans with respect to the determination of commuted values in the case of a plan termination.[123]

OSFI expects pension benefits assumed to be settled by a commuted value transfer to be valued based on the assumptions and adjustments to assumptions used for the ongoing administration of the plan for active members and deferred members. Benefit entitlements should be determined assuming the plan has neither a surplus nor a deficit.[124] As such, no adjustment for the funded status of the plan should be made.

In addition to the above requirements, the actuarial report should provide the value of the plan liabilities calculated as the cost of settling the pension benefit through an annuity purchase, regardless of whether benefits could be adjusted for the funded status of the plan.[125]

4.0 Designated Plans

In the case of a designated plan, an employer may not make contributions in excess of the amount of eligible contributions under the *Income Tax Regulations* (ITR), unless the Minister of National Revenue has waived the designated status of the plan.[126] These contributions are determined based on a maximum funding valuation using actuarial assumptions prescribed under the ITR.

In spite of the funding limitations under the ITR, the actuarial report of a designated plan that is registered under the federal pension legislation should be prepared in accordance with OSFI expectations applicable to any other pension plan as outlined in the Guide. These expectations require that the usual information on going concern and solvency valuations be included in the actuarial report.

If contributions to the pension fund are constrained by the ITR, the balance sheet resulting from the maximum funding valuation of the plan and the amount of eligible contributions under the ITR should be clearly and separately disclosed in the actuarial report.

4.1 Going Concern Assumptions

The assumptions prescribed under the ITR for the maximum funding permitted under the ITR should not be used as the basis to value the going concern liabilities or current service cost of the plan under the federal pension legislation. OSFI expects the actuary to select reasonable going concern assumptions without regard to the fact that the plan is a designated plan. In particular, OSFI believes that the discount rate, mortality, and retirement age (if the plan includes early retirement subsidies) assumptions prescribed under the ITR are not necessarily appropriate assumptions for a going concern valuation.

4.2 Required Contributions

Current service contributions, as well as going concern and solvency special payments required under the PBSR, should be calculated regardless of the maximum funding permitted by the ITR. The information should be clearly and separately disclosed in the actuarial report.

OSFI expects the minimum required contributions under the PBSR to be paid to the pension fund unless these amounts do not qualify as eligible contributions under the ITR. Total contributions equal to the sum of the unfunded liability and current service cost until the date of the next actuarial report on the basis of the maximum funding valuation are considered eligible contributions under the ITR.

Notwithstanding section 2.6.2 of the Guide, contributions and special payments that have not been made prior to the actuarial report because of the ITR restriction and cannot be paid according to the actuarial report should not be included as receivables in the report. The unfunded liability resulting from these amounts will be amortized over future years.

Contact Details

For further information, please visit the OSFI website or contact us at:

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E-mail: information@osfi-bsif.gc.ca.

Footnotes

1 Subsection 2(1) of the *Pension Benefits Standards Regulations, 1985* (PBSR).

2 Subsection 2(1) of the PBSR.

3 Termination reports require the approval of the Superintendent.

4 Subsection 9(2) of the PBSA.

5 Subsection 2(1) of the PBSA.

6 Paragraphs 3260.17 and 3330.05 of the CIA Standards.

7 Subsection 12(2) of the PBSA.

8 See section 8515 of the *Income Tax Regulations* for more information.

9 Subsection 2(1) of the PBSR.

10 Section 2 of the Directives.

11 See the OSFI Instruction Guide – Actuarial Information Summary for more information.

12 See the OSFI Instruction Guide – Replicating Portfolio Information Summary for more information.

13 Returns are not considered received at OSFI until the filing process is complete and the returns have been accepted in RRS. If the plan has not registered to use RRS, it should do so immediately. The administrator must contact the Bank of Canada, as host of the RRS system, to register for access to the Bank of Canada secure site and RRS. For assistance in registering, please contact RRS Support at the Bank of Canada by phone at 1-855-865-8636, or by e-mail at rrs-sdr@bank-banque-canada.ca.

14 See OSFI Instruction Guide – Authorization of Amendments Reducing Benefits in Defined Benefit Pension Plans for more information.

15 Paragraph 2(b) of the Directives.

16 Section 1700 and subsection 3260 of the CIA Standards.

17 Subsection 9(13) of the PBSR.

18 Subsection 10.1(2) of the PBSA and section 9.3 of the PBSR.

19 Subsection 12(4) of the PBSA.

20 A reconciliation of the solvency position might also be required if the actuarial report does not include a going concern valuation.

21 See subsection 1240 of the CIA Standards for more information.

22 See subsection 1430 of the CIA Standards for more information.

23 See CIA Guidance on Events Occurring After the Calculation Date of an Actuarial Opinion for a Pension Plan for more information.

24 Paragraph 3260.01 of the CIA Standards.

25 Paragraphs 3260.15 and 3330.03 of the CIA Standards.

26 Subsection 4(4) of the PBSA.

27 See Frequently Asked Questions on the 2020 Agreement Respecting Multi-Jurisdictional Pension Plans for more information.

28 Individual information may be left out to protect confidentiality, if necessary. Such information should be available to OSFI upon request.

29 Paragraph 3260.01 of the CIA Standards.

30 Subsection 2(1) of the PBSA.

31 Subsection 16(2) of the PBSA.

32 Section 22 of the PBSA.

33 Also referred to as normal cost.

34 Also referred to as pension benefit credit.

35 Subsection 21(1) of the PBSA. Effective July 1, 2011, the PBSA was amended to provide that the 50% rule applies to all years of plan membership.

36 Subsection 26(3) of the PBSA.

37 Paragraph 3260.01 of the CIA Standards.

38 Paragraph 7.1(3)(b) of the PBSR.

39 See Pension Plan Funding Policy Guideline No. 7 (PDF) from the Canadian Association of Supervisory Authorities (CAPSA) for more information.

40 Subsection 1410 of the CIA Standards.

41 Subsection 2(1) of the PBSR.

42 See CIA Guidance on Asset Valuation Methods for more information.

43 See OSFI Instruction Guide – Buy-in Annuity Products for more information.

44 See OSFI Policy Advisory – Longevity Insurance and Longevity Swaps for more information.

45 Subsection 9(3) of the PBSR.

46 See paragraph 3210.15 of the CIA Standards for more information.

47 Paragraph 3230.01 of the CIA Standards.

48 See CIA Research Paper – Provisions for Adverse Deviations in Going Concern Actuarial Valuations for more information.

49 See CIA Educational Note – Determination of Best Estimate Discount Rates for Going Concern Funding Valuations for more information.

50 See CIA Educational Note – Use of Models for more information.

51 See subsection 3270 of the CIA Standards for more information.

52 i.e. provide returns above those obtained using a passive investment management strategy.

53 Paragraph 3230.03 of the CIA Standards.

54 Subsection 8(4.1) of the PBSA.

55 See CIA Educational Note – Expenses in Funding Valuations for Pension Plans for more information.

56 See CIA Educational Note – Second Revision: Selection of Mortality Assumptions for Pension Plan Actuarial Valuations for more information.

57 See CIA Final Report – Canadian Pensioners' Mortality for more information.

58 See CIA Educational Note Supplement – Mortality Improvements Research for more information.

59 Section 17 of the PBSA.

60 Subsection 16(2) of the PBSA.

61 See section 3500 of the CIA Standards for more information.

62 See OSFI Policy Advisory – Benefits Subject to Consent for more information.

63 See OSFI Policy Paper – Flexible Pension Plans for more information.

64 See the Registered Pension Plans Glossary of the Canada Revenue Agency for more information.

65 Subsection 2(1) of the PBSR.

66 See OSFI Instruction Guide – Termination of a Defined Benefit Pension Plan for more information.

67 Paragraphs 9(4)(c) and 9(4)(d) of the PBSR.

68 Subsection 29(11) of the PBSA.

69 Paragraph 3240.03 of the CIA Standards.

70 Paragraph 3540.12, 3570.02 and 3570.06 of the CIA Standards.

71 Subsection 26(1) of the PBSA.

72 See section 3500 of the CIA Standards for more information.

73 For example, the July 2024 CIA Educational Note – Assumptions for Hypothetical Wind-Up and Solvency Valuations with Effective Dates on or after June 30, 2024, and No Later Than June 29, 2025.

74 See CAPSA Guidance on Solvency or hypothetical wind-up liabilities based on actual life insurance company annuity quotation (PDF) for more information.

75 See ASB Final Communication of a Promulgation of the Mortality Table Referenced in the Standards of Practice for Pension Plans (Subsection 3530) for more information.

76 Paragraph 3530.01 of the CIA Standards.

77 Subsection 27(3) of the PBSA.

78 Paragraph 3530.11 of the CIA Standards.

79 See section 3500 of the CIA Standards and CIA Educational Note – Section 3500 of the Practice-Specific Standards for Pension Plans – Pension Commuted Values (other than Subsection 3570) for more information.

80 See OSFI Guidance – Pensionable Age and Early Retirement for more information.

81 Section 17 of the PBSA.

82 See OSFI Policy Advisory – Benefits Subject to Consent for more information.

83 See CIA Educational Note – Reflecting Increasing Maximum Pensions Under the *Income Tax Act* in Solvency, Hypothetical Wind-Up and Wind-Up Valuations for more information.

84 Paragraph 3540.12 of the CIA Standards.

85 Also referred to as wind-up expenses.

86 Section 7.6 of the PBSA.

87 Section 9.01 of the PBSA.

88 Paragraph 3240.14 of the CIA Standards.

89 Subsection 29(11) of the PBSA.

90 See CIA Educational Note – Alternative Settlement Methods for Hypothetical Wind-Up and Solvency Valuations for more information.

91 Subsection 36(4) of the PBSA.

92 Liabilities of other pension plans sponsored by the same corporate entity could also be considered in the analysis.

93 Thresholds specified in CIA Guidance may be used as a reference. For example, a plan may have difficulty in effecting a series of group annuity purchases where liabilities are in excess of $6.25B (5 × $1,250M) for non-indexed annuities and $2.00B (5 × $400M) for indexed annuities.

94 Paragraph 3240.06 of the CIA Standards.

95 See Economic Scenario Generators – A Practical Guide (PDF) for more information.

96 Where no calibration standards exist for pension plan valuations, the actuary may refer to metrics used for the valuation of insurance contract liabilities as a comparator benchmark. CIA Guidance and criteria promulgated by the ASB for investment returns and risk-free interest rates used for the calibration of stochastic models, adapted as necessary, may serve as a starting point for pension model calibration.

97 Active management expenses are generally offset by active management return, therefore having no impact on the liabilities.

98 See sections 8 and 9 of the Directives for more information.

99 See subsections 9(8) through 9(11) inclusive of the PBSR for more information.

100 Section 9 of the PBSR.

101 Defined as the cost of providing the benefits and the provision for expenses, allocated to a time period by the actuarial cost method, excluding special payments.

102 Subsection 9(14) of the PBSR.

103 Section 10 of the PBSR.

104 See Reminder regarding funding requirements for defined benefit pension plans in Issue 30 of InfoPensions for more information.

105 Subsection 9(7) of the PBSR.

106 Subsection 9(5) of the PBSR.

107 Subsection 9(6) of the PBSR.

108 Paragraphs 9(8)(c) and 9(8)(d) of the PBSR.

109 Section 9.16 of the PBSA.

110 Subsection 29.03(1) of the PBSA.

111 See OSFI Guideline – Stress Testing Guideline for Plans with Defined Benefit Provisions for more information.

112 See OSFI Guideline – Derivatives Sound Practices for Federally Regulated Private Pension Plans for more information.

113 Paragraph 3260.10-11 of the CIA Standards.

114 Paragraph 3260.12-13 of the CIA Standards.

115 Paragraph 3260.07 of the CIA Standards.

116 Paragraph 3260.08 of the CIA Standards.

117 Subsection 2(1) of the PBSA.

118 See section 2.4 of the Guide.

119 Subsection 2(1) of the PBSR.

120 Paragraph 3260.14 of the CIA Standards.

121 See OSFI Guidance – Administration of Negotiated Contribution Plans for more information.

122 See section 3570 of the CIA Standards and Frequently Asked Questions on Revised Standards of Practice of the Canadian Institute of Actuaries Applicable for the Determination of Commuted Values for more information.

123 See CIA Educational Note – Section 3500 of the Practice-Specific Standards for Pension Plans – Pension Commuted Values (Subsection 3570) for more information.

124 Paragraph 3240.02 of the CIA Standards.

125 Paragraph 3260.05 of the CIA Standards.

126 Subsection 8515(2) of the ITR.