

## *Exposure Draft*

# **Revisions to the Standards of Practice Parts 1000 and 4000 – General Standards and Practice-Specific Standards for Actuarial Evidence**

**Actuarial Standards Board**

**June 2022**

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## MEMORANDUM

**To:** All Fellows, Affiliates, Associates and Correspondents of the Canadian Institute of Actuaries, and other interested parties

**From:** Josephine Marks, Chair  
Actuarial Standards Board

Kelley McKeating, Chair  
Designated Group

**Date:** June 30, 2022

**Subject:** **Exposure Draft to Revise the Standards of Practice Parts 1000 and 4000 – General Standards and Practice-Specific Standards for Actuarial Evidence**

**Comments Deadline:** **September 30, 2022**

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### Introduction

In late 2019, the Actuarial Standards Board (ASB) established a designated group (DG) to review the *Standards of Practice* (SOP) for actuarial evidence work (Part 4000 and portions of Part 1000; hereinafter, AE-SOP). A [notice of intent](#) (NOI) was issued in July 2020 with a September 30, 2020, comment deadline.

The NOI presented few specific proposals for change. It was structured primarily in the form of questions to solicit input and discussion from the actuarial evidence practice area.

Generally speaking, there is consensus in the actuarial evidence practice area that the current AE-SOP is an excellent document that does not require significant changes. Lawyers who have reviewed the AE-SOP have high praise for it, and it has been put forth as a model that other experts in dispute resolution proceedings may wish to use as a model in their own practice.

The DG is in agreement with this perspective. For this reason, the changes presented in this exposure draft can best be characterized as finetuning or clarification of the current AE-SOP – with one exception.

- When Section 4500 of the AE-SOP (pension valuations on relationship breakdown) was last reviewed, more than 10 years ago, the risk-sharing type of target benefit pension plan was not as prevalent as today (particularly in Atlantic Canada). In addition, target benefit plans in general (either “fixed benefits-fixed contributions” or “risk-sharing” – descriptors that will become clear to readers

upon review of the exposure draft) were not distinguished from other pension plans in the SOP, even though the funding mechanisms and underlying benefit security of both types of target benefit plans differ from more traditional defined benefit pension plans. This exposure draft proposes changes to Section 4500 that explicitly address both types of target benefit pension plans.

Substantive comments regarding the NOI were received from the Committee on Actuarial Evidence (AEC) and three members of the CIA. Comments from one external organization and one CIA member did not pertain to the AE-SOP and were forwarded to other entities for appropriate action.

The discussion in this memorandum follows the order of the current SOP. Comments received that responded directly to the NOI are presented first, other comments second.

Before reviewing the exposure draft, the DG recommends that actuaries read the entirety of Subsection 1130 of the General Standards and that they keep paragraphs 1130.10 to 1130.13 in mind as they read this exposure draft:

- .10 “Should” is the strongest mandating word in these standards, appearing only in recommendations, often in the expression, “The actuary should...”
- .11 “Would” is a suggestive word appearing in the explanatory text, often in the expression, “The actuary would...”, and is less forceful than the mandative “should”.
- .12 “May” is a permissive word, appearing in both recommendations and the explanatory text, often in the expression, “The actuary may...” and often with conditions attached. It defines a safe harbour. For example, in paragraph 1510.01, the recommendation is that “The actuary may use and take responsibility for another person’s work if such actions are justified.” and the explanatory text describes steps that constitute justification. The actuary who is satisfied that the actions are justified has done all that may be reasonably expected and has therefore complied with accepted actuarial practice, even if the use turns out not to be well-founded.
- .13 The examples are often simplified and are not all-inclusive.

## **Comments in direct response to NOI discussion**

### **Quality assurance**

#### **Comments re. paragraph 1460.09**

One member voiced support for the general principle set out in the NOI regarding quality assurance in the context of actuarial evidence work. However, that member expressed concern about the apparent suggestion in the NOI that peer review “may not be appropriate” in some circumstances. Another member recommended caution in making changes and noted that peer review is only one aspect of quality assurance.

## Response

The DG considered the comments received and agrees that changes to paragraph 1460.09 must be carefully drafted.

Actuarial evidence work is distinguished from most other types of actuarial practice in these key areas:

- In actuarial evidence, the work product is an expert opinion (either a written report or verbal testimony) intended to assist the “trier of fact” (usually a judge) in coming to a decision.

The court expects each expert’s opinion to be theirs and theirs alone.

- By definition (paragraph 1160.04), actuarial evidence work is performed in the context of a confrontational situation – a dispute resolution proceeding. The opposing side in the dispute is free to, and often does, retain their own expert to review and critique the work of the first actuary without the first actuary being aware of such review.

This type of review is common-place in the legal system. Thus, in a dispute resolution proceeding, the expectation of the parties and the court is that peer review of an expert’s work (if any) would be done by an expert who is retained by the opposing side. Where that second expert in a dispute resolution proceeding is also an actuary, paragraph 1530.22 regarding the review of another actuary’s work would apply.

- A statement within an actuarial evidence report that a second actuary peer reviewed the first actuary’s expert opinion could create an impression with the judge, mediator, and/or opposing counsel that the expert opinion of the first actuary was influenced by the second actuary.

If an expert report states that a peer review has occurred, the credibility of the expert may be called into question by opposing counsel. Is the opinion expressed that of the signer or that of the peer reviewer? To what extent was the signer’s opinion affected by input from the peer reviewer? To delve into this question, opposing counsel may seek to cross-examine the peer reviewer to explore such questions.

- In some jurisdictions (notably Nova Scotia, but also Ontario and PEI), the expert is required by the rules of court to sign an acknowledgement regarding the objectivity and independence of their opinion, and to take personal responsibility for that opinion.
- The trend in some jurisdictions (British Columbia, for example) toward the joint retention of experts (by the two opposing parties) further emphasizes the expert’s obligation to provide an unbiased, independent opinion that assists in the resolution of the dispute.
- The rules of court regarding experts do not distinguish between types of experts. The same rules that apply to doctors and accident reconstruction specialists apply to actuaries. With respect to these and other experts, peer review is not

the norm. It is neither expected nor required. What *is* expected of an expert, regardless of their profession, is that the opinion being expressed be theirs and theirs alone.

As currently worded, paragraph 1460.09 states that:

“For some types of work, particularly some engagements of actuarial evidence work, peer review may not be required due to the circumstances affecting the work. The absence of peer review of an actuary’s work would not necessarily be considered as an indication of a weakness in the quality of assurance processes applied to the work. Where the actuary is expected or required to be independent in performing the work, the scope of the peer review would be defined so as not to impair such independence.”

The DG proposes the following new wording:

“For actuarial evidence work, peer review might be precluded due to the circumstances affecting the work. The absence of peer review under such circumstances would not indicate a weakness in the quality of assurance processes applied to the work. Where the actuary is expected or required to be independent in performing the work, the scope of any peer review would be defined so as not to impair such independence.”

## **Circumstances affecting the work – General**

### **Comments re. paragraph 4210.03**

One member voiced support for the proposed change. There were no other comments. The DG has adopted the proposed wording change.

## **Calculations other than relationship breakdown and criminal rate of interest**

### **Comments re. Section 4300**

With respect to the proposed changes to this section as set out in the NOI, the AEC indicated that it is not in favour of any changes because the current wording has not caused problems to date. One member also voiced opposition to the NOI proposal.

### **Response**

Having considered the input received, the DG recognizes that this proposal has the potential to create undue confusion. However, the DG is aware of situations where the current wording has caused problems and is concerned about the absence of a “plausibility” requirement in actuarial evidence work pertaining to relationship breakdown pension valuations and criminal rates of interest. In light of this, the DG instead proposes to move paragraphs 4320.03, 4320.04, 4320.05, and 4340.01 to Section 4200 to create new Subsections 4260 and 4270. This change resolves the issues of concern without making undue modifications to the AE-SOP. The paragraphs to be moved from Subsection 4320 are the following:

4320.03 The actuary should ensure that any assumptions stipulated by the terms of the engagement are plausible.

4320.04 The assumptions and methods used by the actuary should take account of the circumstances affecting the work, including applicable law, regulation, court practice, and established legal principles relevant to the work.

4320.05 The assumptions and methods selected by the actuary should not be influenced by the party to the dispute resolution proceeding that has retained the actuary.

## **Relationship breakdown**

### **Comments re. paragraph 4510.03**

In response to an NOI question, one member suggested that the list of exclusions in this paragraph be expanded.

### **Response**

Based on the comments received, the DG concluded that there may be some confusion regarding the general applicability of Section 4500. The goal of paragraph 4510.03, when originally drafted, was probably to clarify that Section 4500 does not apply:

- a. when calculating amounts to be paid by the plan in the course of regular pension administration activities (member termination or death). Although not stated, the maximum transferable amount on relationship breakdown would also fall into this exclusion category.
- b. When offering an expert opinion regarding amounts to be paid by any party as the result of personal injury or wrongful dismissal litigation.

As a result, this paragraph has been modified as follows

The standards in this Section 4500 do not apply when the purpose of the calculation is to calculate an amount, in respect of a pension benefit, to be paid:

- By the plan to the plan member or beneficiary as a result of the plan member's death or termination of membership; or
- By any party in connection with litigation other than in respect of a marriage breakdown.

### **Comment re. paragraph 4520.08**

In response to the NOI question, one member expressed a preference for leaving this paragraph as is and concern that the DG might be proposing jurisdiction-specific additions to the SOP.

### **Response**

The DG agrees that jurisdiction-specific additions would not be appropriate. However, it may sometimes be appropriate for the actuary to value conditional spousal survivor benefits that may not have vested irrevocably on retirement. For example, the spousal survivor benefits may be payable if the parties separate after retirement but not if they divorce after retirement.

The DG proposes the following revised wording for this paragraph:

The plan member's benefits to be valued would exclude spousal survivorship benefits. Spousal survivor benefits would be valued if those benefits have vested upon retirement prior to the calculation date. Depending on the circumstances of the case, the actuary may provide a value for spousal survivor benefits that are conditionally vested or that vested after the calculation date. When spousal survivor benefits are valued, their value would be reported separately from the value of the plan member's pension benefits.

**Comment re. paragraphs 4520.10 through 4520.13**

There were no comments received in support of amending these paragraphs to provide more clarity on their intent. Given that no concerns were expressed, the DG determined that there should be no changes made to these paragraphs.

**Comments re Paragraph 4520.17**

The only member who commented on this proposal was supportive.

The consensus of the DG is that the standards in effect as of the calculation (valuation) date should be used even if there are two or more calculation dates. The current wording of this paragraph can be problematic. For example, it is not always known in advance that there will be more than one calculation date. Also, there may be inconsistencies between valuations if both parties have pensions and one pension is valued using two calculation dates and the other pension is valued using one (the earlier of the two) calculation date. To eliminate these potential problems, the new wording for this paragraph is as follows:

The applicable standards are those in effect at the calculation date. If there are two or more calculation dates, the applicable standards for each calculation date are those in effect on that calculation date.

In conjunction with this change, the DG deleted paragraph 4520.16. The appropriate calculation date is a matter of fact and law. To suggest that another calculation date might result in a much higher or lower value would encourage inappropriate "cherry picking" of calculation dates.

**Salary increase assumption – Relationship breakdown**

**Comments re. paragraph 4520.23**

One member agreed that changes to this paragraph would be advisable, but did not agree with the DG's proposal that the default prescribed assumption be "increases aligned with the average industrial wage (AIW)," with a different assumption being permitted where there is evidence to support that different assumption.

**Response**

The DG agrees that there should be room for professional judgment with respect to the salary increase assumption, particularly given the range of jurisdictional legal precedent across Canada. The DG is also of the opinion that an actuary should be permitted to use

a salary increase assumption specified by the client (the lawyer) so long as that assumption is plausible or appropriate to the circumstances of the work.

The DG therefore proposes the following new wording for paragraph 4520.23:

The assumed salary increases after the calculation date would be consistent with average wage index assumption prescribed by paragraph 4530.12, except where there is evidence that an alternate salary increase assumption would be reasonable or the terms of an appropriate engagement require a different assumption.

## **Assumptions – Relationship breakdown**

### **Comments re. paragraphs 4530.02 and 4530.03**

The AEC made observations regarding potential issues pertaining to promulgated mortality tables for individuals who identify as non-binary.

#### **Response**

The DG suggests that the AEC forward these observations to any designated group that may be set up in future to consider and promulgate a new set of mortality tables.

### **Comment re. select non-indexed discount rate, traditional defined benefit (DB) plans (paragraph 4530.18)**

The DG received comments from one member regarding aspects of Subsection 4530 (economic assumptions for marriage breakdown pension valuations). This member suggested that the select non-indexed discount rate be reviewed and revised on an annual basis.

#### **Response**

The DG is of the opinion that the current quinquennial review cycle for the AE-SOP is both reasonable and sufficient. Annual changes, particularly when disputes over separation date are not uncommon, would lead to added complexity and would not serve the public interest. The sample spreads over the past four years differ only by 30 basis points, which would not have a material impact on the value of most pensions for relationship breakdown purposes.

The DG therefore proposes no change to the formula for the select non-indexed discount rate for traditional DB plans.

### **Comment re. length of select period (paragraphs 4530.11 and 4530.18)**

With respect to the length of the select period, a member supported maintenance of the current 20-year select period because an individual could invest in a term structure based on a 20-year period, and would have to reinvest afterwards. The member also stated that the underlying bonds being assumed for the select period should change if the length of the select period changes.

#### **Response**

The DG considered the following:



- Prior to the current marriage breakdown standards (MB-SOP) coming into effect on July 1, 2011, the select period had been 15 years since the first recommendations pertaining to pension valuations on relationship breakdown came into force on September 1, 1992 (<https://www.cia-ica.ca/publications/publication-details/9343>).
- As of July 1, 2011, the select period was changed to 20 years. The rationale was an assumption that the non-member spouse would invest either in provincial strip bonds with terms of at least 20 years or other assets with a similar yield (see discussion on page 7 of the 2010 *Second Revised Exposure Draft for Capitalized Value of Pension Plan Benefits for a Marriage Breakdown (Section 4300)*): <https://www.cia-ica.ca/publications/publication-details/210036>).
- In its June 2020 draft educational note: *IFRS 17 Discount Rates for Life and Health Insurance Contracts* (<https://www.cia-ica.ca/publications/publication-details/220079>), the Committee on Life Insurance Financial Reporting (CLIFR) discusses an “observable” period of approximately 30 years during which risk-free rates of return are typically “observable and relevant” for IFRS 17 purposes. The analysis in the draft educational note also addresses the appropriate range to be assumed for a long-term risk-free rate of return during the “unobservable” period which begins after about 30 years. Since the gist of the draft educational note is to assist actuaries in developing a “discount curve,” the breakpoint at 30 years between observable and unobservable risk-free rates of return may not be relevant to the determination of an appropriate select period for a stepped discount rate assumption.
- A paper published in the 1985 *Transactions of the Society of Actuaries* (vol. 37) (<https://www.soa.org/globalassets/assets/library/research/transactions-of-society-of-actuaries/1985/january/tsa85v3711.pdf>), prepared by the SOA’s Committee on Pension Principles and Related Research, includes an early argument for two-tiered interest rates. At the top of page 358, the committee suggests that the select period should be 10 to 15 years. This was based on an asset-liability matching (Macaulay duration) approach and a calculation of the duration of the assets in the pension fund. In a pension valuation on relationship breakdown situation, this would be the assets assumed for matrimonial property valuation purposes. Since today’s interest rates and bond yields are very low compared to those in 1985, the Macaulay duration of a pension would be longer today than was the case in 1985.

<b>Term certain:</b>	<b>20 years</b>	<b>25 years</b>	<b>20 years</b>	<b>25 years</b>
<b>Commencement:</b>	<b>Immediate</b>	<b>Immediate</b>	<b>Deferred 20 yrs</b>	<b>Deferred 20 yrs</b>
2%	9.8433	11.9745	29.8433	31.9745
4%	9.2091	10.9925	29.2091	30.9925
6%	8.6051	10.0722	28.6051	30.0722
10%	7.5081	8.4580	27.5081	28.4580

This suggests that – based on the 1985 analysis – the select period should be somewhat longer than 15 years.

After considering all of the available information and after extensive discussion, the DG concluded that there is insufficient justification to change the select period. The recommendation is therefore to maintain the select period at 20 years.

**Comment re. ultimate non-indexed discount rate, traditional DB plans (paragraph 4530.18)**

The member who commented recommended an ultimate rate of 4.5% or 5%, *after* adjustments for liquidity or other factors. The member recommended that the ultimate rate be reviewed, and possibly changed, on an annual basis.

**Response**

The premise for a fixed ultimate discount rate is that yield rates, whether high or low at present, will eventually revert to “historic norms.” While it is true that expectations regarding “historic norms” will evolve over time, the DG is not of the opinion that expectations should change on an annual basis. The ASB has determined that the AE-SOP would be reviewed every five years. The consensus of the DG is that it is more desirable, from a principles perspective, to reconsider the ultimate discount rate every five years rather than every year.

The DG is in agreement that the expectation of “historic norms” has changed since the last time the AE-SOP was reviewed. The inflation-targeting framework of the Bank of Canada has played a part in the very low interest rate environment of the last decade or more. If the inflation-targeting framework continues indefinitely, as is expected at present, then interest rates may not increase to the levels that were considered normal or even low 20 to 30 to 40 years ago.

According to CLIFR’s draft educational note (pp. 14–19), “it is expected that an ultimate long-term risk-free rate of 3.5% to 5% would be reasonable in Canada.” The draft educational note goes on to discuss a variety of reasonable approaches that can be taken in order to select a reasonable long-term risk-free interest rate or “unobservable ultimate rate.” In the context of a stepped discount rate structure, the DG determined that the midpoint of this range (4.25%) would be an appropriate ultimate risk-free rate of return assumption.

The DG then considered the appropriate spread from the risk-free rate taking into account the philosophical underpinnings to the relationship breakdown pension valuation process:

- Since the pension is being valued for the purpose of equalizing or dividing matrimonial property, the value of the pension should not be based solely on the investment intentions of the non-member spouse.
- This said, the investment intentions of a relatively sophisticated individual investor may be determinative.
- According to page 9 of the 2010 *Second Revised Exposure Draft* for the 2011 MB-SOP, the current ultimate rate of 5.5% was determined based on assumed inflation of 2% per annum + real rate of return of 3% per annum + 0.5% additional yield, after expenses, through investing in provincial bonds instead of

Government of Canada bonds. In other words, the ultimate rate is based on a 5% risk-free rate of return, plus 0.5%.

The DG has determined that the most appropriate assumption of a risk-free rate of return, for the next quinquennial cycle, is 4.25% (the midpoint of the CLIFR range) and that the spread for additional yield should remain at 0.50%.

As a result, the DG has determined that the ultimate non indexed (NI) rate should be  $4.25\% + 0.50 = 4.75\%$ , and that the ultimate non-indexed discount rate should be reviewed along with other aspects of the AE-SOP on a quinquennial basis or at whatever other frequency the ASB deems appropriate.

**Comment re. select inflation rate, traditional DB plans (paragraph 4530.11)**

One member remarked that past concerns over use of the Break-even Inflation Rate (BEIR – the ratio of the yield on nominal bonds to the yield on real return bonds) continue to be valid due to supply/demand imbalances in the nominal and real return bond markets. This member recommended an approach similar to the one recommended by the AEC’s Marriage Breakdown Working Group (MBWG) in 2009.

**Response**

The DG agrees that use of the BEIR has historically been controversial within the actuarial evidence practice area. The DG also acknowledges that the BEIR is more accepted in other areas of actuarial practice and that it has the advantage of being, for the most part, more stable from month to month than actual consumer price index (CPI) changes (see table on next page). The DG has decided not to recommend any change to the prescribed approach for the select inflation rate.

**Comment re. ultimate inflation rate, traditional DB plans (paragraph 4530.11)**

One member commented that the current ultimate inflation assumption of 2.25% should probably be reduced to 2%. That member noted that the 2009 AEC MBWG recommended 2.5% based on the Bank of Canada’s long-term inflation target of 2%, plus 0.5% to reflect the probability that periods of higher-than-2% inflation would be more prevalent than periods of lower-than-2% inflation. The justification for the 2.25% ultimate inflation assumption in the current AE-SOP is 2% for the Bank of Canada’s long-term inflation target, plus 0.25% to reflect the expected value that the market might apply to a CPI-linked pension promise.

The DG is of the opinion that this latter perspective is inconsistent with the principles underlying the valuation of a pension for matrimonial property purposes. The pension asset is not being “sold.” It is being valued, along with other assets, for purposes of property equalization or division. This said, the anticipated upwards pressure on CPI did not emerge for more than 10 years. Although there has been recent and significant pandemic-related upwards inflation pressure, the Bank of Canada’s actions and the expert opinion of economists suggest that this upward pressure will not continue indefinitely.

In both personal injury litigation (in jurisdictions where the inflation assumption is a matter of expert professional opinion) and in going-concern pension valuations, the

dominant long-term inflation assumption is 2%. Taking this and the average inflation rate since Canada's inflation-targeting framework was introduced (see the CPI column in table below), the DG has determined that the ultimate inflation assumption should be reduced to 2%.

### **Comments re. target benefit plans**

One member suggested that the basic economic assumptions be the same for traditional plans and target benefit plans, but that a formula or methodology be implemented to reflect the probability of future benefit changes.

### **Response**

The DG agrees, in general, with the member's perspective. Specifically, the DG has determined that it would be inappropriate to adopt economic assumptions for target benefit plans that differ from the economic assumptions prescribed for traditional defined benefit plans.

The DG is of the opinion that the most appropriate way to address the conditional nature of target benefit plans is to introduce a requirement for the actuary to report values based on a reasonable range of assumptions regarding the probability of the conditional benefits (ancillary, basic, or both) being granted and paid out.

There are two types of target benefit plans:

- Fixed benefit-fixed contributions – Usually collectively bargained. Defined benefit, but pension contributions are also defined. If assets are insufficient to provide the promised benefits, contributions may be increased but benefits may be (and often are) decreased.
- Risk-sharing – Often collectively bargained. There are clearly defined decision algorithms or mechanisms to either increase contributions or reduce benefits (specifying the priority and magnitude of benefit reductions to both ancillary and basic benefits). The plans are carefully monitored and the probability of benefit reductions over a specified time horizon is publicly communicated.

The proposed approach (paragraphs 4530.20 to 4530.23 of the AE-SOP exposure draft, with the previous paragraphs 4530.20 and 4530.21 being renumbered to 4530.24 and 4530.25) set out the range of useful scenarios that may apply to one or both types of target benefit plans. The proposed approach permits the actuary to apply professional judgment in deciding which scenarios to illustrate, but requires appropriate disclosure regarding the nature of the conditional benefits and the likelihood of future benefit reductions.

The DG wishes to emphasize that the scenarios listed are ones that the actuary "may include." There is no requirement and no expectation that the actuary would illustrate all of the listed scenarios. As per paragraph 1130.10 of the *General Standards*, "may" is permissive.

### Average wage index (paragraph 4530.12)

The current AE-SOP prescribes an average wage index assumption that is 1% higher than the select and ultimate inflation assumptions.

From 1992 to 2021 (30 years), the difference between the average wage index that is used for the year's maximum pensionable earnings calculation and the calendar-year CPI changes has averaged 0.46% and has exceeded 1% only seven times:

Year	Wage index	CPI	Difference
1992	3.5%	1.5%	2.0%
1993	1.8%	1.8%	0.0%
1994	1.7%	0.2%	1.5%
1995	1.0%	2.2%	-1.2%
1996	2.1%	1.6%	0.5%
1997	2.0%	1.6%	0.4%
1998	1.5%	1.0%	0.5%
1999	1.2%	1.7%	-0.5%
2000	2.4%	2.7%	-0.4%
2001	0.3%	2.5%	-2.2%
2002	2.4%	2.3%	0.1%
2003	2.7%	2.8%	-0.1%
2004	2.6%	1.8%	0.8%
2005	3.9%	2.2%	1.7%
2006	2.5%	2.0%	0.5%
2007	4.3%	2.1%	2.2%
2008	2.9%	2.4%	0.5%
2009	1.5%	0.3%	1.2%
2010	3.6%	1.8%	1.8%
2011	2.5%	2.9%	-0.4%
2012	2.5%	1.5%	1.0%
2013	1.8%	1.0%	0.8%
2014	2.6%	1.9%	0.7%
2015	1.8%	1.1%	0.7%
2016	0.5%	1.4%	-0.9%
2017	2.0%	1.6%	0.4%
2018	2.6%	2.3%	0.3%
2019	2.7%	2.0%	0.7%
2020	2.6%	0.7%	1.9%
2021	2.7%	3.4%	-0.7%

From information available to the DG, the wage index assumption used by actuarial consulting firms in pension valuation work ranges from 0.25% to 1% per annum, and the median assumption appears to be in the 0.5% to 0.75% range. Given the historical data and the other information available, the DG has determined that it would be appropriate to reduce the wage index adjustment from 1% to 0.75%. The DG

recommends that this aspect of the AE-SOP be reviewed, and potentially adjusted, on a quinquennial basis in the future.

### **Model text, external user report – Relationship breakdown**

#### **Comments re. paragraph 4540.01**

The one comment received was supportive of the DG's proposal.

#### **Response**

The DG notes that only three Canadian jurisdictions can be formally characterized as “equalization” provinces (Manitoba, Ontario, New Brunswick). Matrimonial property law in the other Canadian jurisdictions envisages each individual matrimonial asset being divided. In these latter jurisdictions, however, equalization is often adopted as a more practical approach to resolving property issues after relationship breakdown.

The DG further notes that paragraph 4540.01 provides model wording, which actuaries may modify if and when appropriate, and that many actuaries already use standard wording that differs slightly from the current model text.

The DG proposes minor changes to this paragraph, replacing the word “marriage” with “relationship” and replacing the phrase “division of pension benefits” with “equalization of family property”:

I have determined the capitalized value of the pension benefits and prepared this report in accordance with accepted actuarial practice in Canada, for purposes of an equalization of family property resulting from relationship breakdown under the [Family Law Act] of [province]. In my opinion, the capitalized values are appropriate for this purpose.

### **Criminal rate of interest**

#### **Comments re. Section 4600**

The AEC and two CIA members submitted comments pertaining to Section 4600.

The AEC is of the opinion that the formula (paragraph 4630.01) used to determine the effective interest rate “may be considered a model” and that, “where the model produces more than one result, it may indicate a limitation in that model.”

The AEC further suggests considering whether the wording in paragraph 4630.02 meets the requirement in paragraph 1710.01 (External user reports): “If the report is supported by the use of a model, disclose limitations in the model relevant to the intended purpose.”

One member is of the opinion that the section should not be changed or rewritten in any substantive way.

The other member observed that criminal rate of interest calculations can be very complex and suggested additional definitions be added to the SOP. This second member also suggested that the prohibition regarding the reporting of negative interest rates (paragraph 4630.02) be removed.

## **Response**

With respect to the AEC comments, the consensus of the DG is that the formula used to determine an effective interest rate is a formula and not a model. In any event, Subsection 4710 (External User Reports) would take precedence over paragraph 1710.01.

The DG agrees that criminal rate of interest calculations can be very complex. Questions regarding who is the borrower and who is the lender are factual, and the DG has modified paragraph 4620.03 to remind the actuary to obtain clarification on this point where required. The new wording for this paragraph is as follows:

If data are not clear from the initial terms of the engagement, the actuary would obtain clarification from his or her client (for example, whether or not a particular item falls within the statutory definition of “interest,” which party is the lender and which is the borrower, and/or the timing of a particular payment that could be made on various alternate dates).

The consensus of the DG is that negative effective interest rates are not plausible in a transaction that is alleged to be charging a criminal rate of interest. In particular, a situation where a “loan” is made after said loan is repaid may not be plausible. The DG has determined that it would not be appropriate to remove the prohibition on the reporting of negative interest rates. By moving paragraph 4320.03 to new Subsection 4260, the actuary is now required to ensure that any assumption stipulated by the terms of the criminal rate of interest engagement be plausible.

Actuaries who opine on criminal rates of interest are reminded that they should be familiar with *all* relevant sections of the AE-SOP, including Section 4200, and not only with Section 4600.

## **Other comments – Additional to issues raised in the notice of intent**

The DG received and considered the following comments pertaining to sections of the AE-SOP that were not specifically referenced in the NOI.

### **Models**

#### **Comment re. Subsection 1450**

One member suggested an analysis of this section of the SOP to determine whether Part 4000 should be modified to clarify the applicability of Subsection 1450 to actuarial evidence work.

### **Response**

The opinion of the DG is that models, as defined by paragraph 1120.40 of the SOP, are rarely used in traditional actuarial evidence work (personal injury law, employment law, family law), but may be used in aspects of actuarial evidence work related to pension plan or insurance litigation. In other words, Subsection 1450 would rarely apply to traditional actuarial evidence work.

Since there is no indication that the current wording of Subsection 1450 has created problems for actuaries doing actuarial evidence work, the DG does not recommend any

changes. The view of the DG is that it is up to each actuary to use their professional judgment regarding whether or not Subsection 1450 applies to a specific engagement. The 2017 *Educational Note: Use of Models* (<https://www.cia-ica.ca/publications/publication-details/217007>) may be helpful reading in this regard.

This said, the DG agrees that a plain reading of Subsection 1450 of the SOP can be confusing and observes that the educational note on the use of models is 28 pages long while Subsection 1450 is less than two pages long. With respect to the educational note:

- Example 6.4 is inappropriate because it suggests that the role of an actuary doing actuarial evidence work is to perform calculations rather than offer an expert opinion.
- The wording of the first example that “is a model” on page 6 should be revised to better reflect the reality of actuarial evidence work. In actuarial evidence work, certain mortality assumptions and/or interest assumptions are commonly used by actuaries and other economic loss experts and are routinely accepted by the courts even though not prescribed by standards or regulation. Use of the Life Tables, Canada would be one example. Use of the Ontario prescribed discount rates in New Brunswick would be another example.

The DG has suggested that the ASB consider a review of the 2017 educational note on the use of models to address the above two issues.

### **Calculations – General**

#### **Comments re. paragraph 4250.05**

The DG received a comment from the AEC, suggesting that this section be expanded to clarify how the actuarial present value method balances overcompensation and undercompensation and observing that this would be of educational benefit to the public.

#### **Response**

The DG is of the opinion that the appropriate vehicle for such a discussion would be a public education document or educational note, and that changes to this paragraph of the SOP are not required.

### **Marriage/relationship breakdown pension valuations**

#### **Comment re. Section 4500**

One member suggested that the term “marriage breakdown” be replaced with the term “relationship breakdown” in Section 4500 and elsewhere in Part 4000.

#### **Response**

The DG agrees with this suggestion and has implemented the change. Members are reminded that it is a legal issue whether property should be equalized or divided after the breakdown of a common-law relationship and that practices vary in different jurisdictions.



## Income tax adjustments – Relationship breakdown

### Comment re. paragraph 4520.27

One member expressed concern with the current wording of this paragraph, stating that the required calculation yields inappropriate results with respect to the income tax adjustment.

### Response

It should be noted that this paragraph applies to the valuation of pension benefits on relationship breakdown. It does not apply to income tax calculations that an actuary might perform to assist with an overall property settlement after relationship breakdown.

Expert opinions regarding the income tax adjustment to apply to before-tax capitalized values are provided on a routine basis in some jurisdictions, less frequently in others.

Based on the comment received, the DG recognized the potential for this paragraph to be misunderstood and/or misinterpreted – particularly in jurisdictions where it is not regularly used.

The DG has therefore modified the paragraph to clarify the prescribed methodology. The new wording is as follows:

Income tax may be taken into account in the calculation in order to convert the before-tax value of the pension into an after-tax value. If income tax is to be taken into account, then the actuary would do so by estimating the average income tax rate during the member's retirement years based upon the member's anticipated retirement date and anticipated retirement income including accrued and projected future pension income, Canada Pension Plan, Old Age Security, and other anticipated income in retirement. The projected retirement income would be computed in "current" dollars and would assume continuance of the tax environment at the report date or the calculation date (i.e., assuming continuation of the existing tax rates, brackets, surtaxes, and clawbacks applied to the projected income in retirement expressed in "current" dollars). The actuary would disclose which date was used. If the tax environment is as at the report date, the actuary would disclose the use of any tax provisions that have not yet been enacted. If income tax is taken into account, the actuary would disclose both the before-tax value and the after-tax value of the pension.

The previous wording was as follows:

Income tax may be taken into account in the calculation. If it is to be taken into account, then the actuary would do so by calculating the average income tax rate based upon the member's anticipated retirement income computed in "current" dollars, including accrued and projected future pension income, Canada Pension Plan, Old Age Security, and other anticipated income, and continuance of the tax environment at the report date or the calculation date; i.e., assuming continuation of the existing tax rates, brackets, surtaxes, and clawbacks, applied to the projected income on retirement expressed in "current"

dollars. The actuary would disclose which date was used and if the tax environment is as at the report date, would disclose the use of any tax provisions that have not yet been enacted.

## **Members of the DG**

The members of the DG are Kelley McKeating (Chair), Craig Allen, Greg Gillis, Jamie Jocsak, Patrick Lefebvre, and David Wolgelerenter. The DG also wishes to recognize the contributions of prior members Neil Chicoine, David Hart, and Don Tettmar.

## **Timeline**

The DG hopes to publish final standards after considering the comments and feedback received on the exposure draft.

## **Desired feedback**

The DG is soliciting feedback on this exposure draft from members of the CIA, members of the legal community, and any other interested groups.

Feedback is welcomed on the key questions and proposals described above. In addition, the DG is interested in feedback on any other changes that respondents believe would be desirable, including areas where educational guidance might be helpful.

Parties wishing to comment on this exposure draft should direct those comments to Kelley McKeating at [kelly@mckeating-actuarial.com](mailto:kelly@mckeating-actuarial.com) **by September 30, 2022**. A copy should also be sent to Chris Fievoli at [chris.fievoli@cia-ica.ca](mailto:chris.fievoli@cia-ica.ca). Due to the current pandemic-related restrictions, no specific forums for submitting comments, other than through submitting written comments, are planned regarding this exposure draft.

It is the responsibility of the ASB to make final decisions regarding revisions to the AE Standards. It expects to make final decisions regarding the revised AE Standards as soon as consultations in accordance with due process have been completed.

Due process was followed in the development of this exposure draft.

JM, KM

A standard actuarial method used within a model in its proper context would be considered appropriate without further justification; for example, actuarial present value method for a pension valuation and the chain ladder method and Bornhuetter-Ferguson method for unpaid claims liabilities.

## 1460 Quality Assurance

.01 This subsection 1460 applies to quality assurance processes that are at the instigation of the actuary responsible for the work. Such processes include quality control in the actuary's firm or employer as well as review by persons external to the actuary's firm or employer.

.02 The actuary should implement appropriate quality assurance processes prior to the release of work to users. [Effective July 1, 2019]

.03 In deciding what quality assurance processes are appropriate and proportionate, whether different processes are suitable for different elements of the work, and when the processes would be carried out, the actuary would consider the relevant circumstances, including:

- The degree of difficulty of the various elements of the work, the extent to which professional judgment is required and the overall complexity of the work;
- The purpose of the work and the extent (if any) to which the users may reasonably be expected to challenge it;
- The significance of the work, including any financial, reputational or other consequences for the users;
- The reasonable expectations of the users;
- Whether the way in which the work is carried out makes it vulnerable to errors;
- The novelty of the work and the actuary's experience in performing similar engagements; and
- Whether there are legislative or regulatory requirements for the work to be peer reviewed.

.04 Quality assurance processes include calculation control procedures and model validation, as described in subsection 1470, calculation result examination as described in subsection 1480, self-checking of the work, repetition of the work and peer review. Appropriate quality assurance processes may differ for different elements of the work.

.05 Peer review is a process by which one or more components of an actuary's work are considered by at least one other individual for the purpose of providing assurance as to the quality of the work in question. Peer review can be an important component of the quality assurance process for an actuary's work.

.06 The actuary should select a peer reviewer with the appropriate experience and expertise to perform the peer review. If a person is qualified to have performed the work to be reviewed, then that is prima facie evidence that the person is also qualified to perform the peer review. [Effective July 1, 2019]

.07 The actuary would consider to what extent any peer review should be in the form of independent peer review, whereby one or more components of an actuary's work are considered by at least one other individual who is not otherwise involved in the work in question, who has the appropriate experience and expertise to perform the peer review, and is in a position to effectively challenge the work. The perceived objectivity of a reviewer is enhanced if the reviewer is independent of the actuary performing the work.

.08 Where one or more individuals is involved in the quality assurance processes, the actuary would clarify each person's role and responsibilities.

.09 For ~~some types of work, particularly some engagements of~~ actuarial evidence work, peer review ~~may not be required~~ might be precluded due to the circumstances affecting the work. The absence of peer review ~~under such circumstances of an actuary's work~~ would not ~~necessarily be considered as an indication of~~ indicate a weakness in the quality of assurance processes applied to the work. Where the actuary is expected or required to be independent in performing the work, the scope of ~~the any~~ peer review would be defined so as not to impair such independence.

## 1470 Control

.01 Control procedures that detect errors and decrease the effect of errors should be performed for calculations. [Effective February 1, 2018]

.02 To mitigate model risk, the actuary should perform model validation and employ other strategies appropriate for the financial significance of the results and the complexity of the model. [Effective January 1, 2018]

.03 A calculation that is data-intensive, that is complex, that involves physically separate steps like manual and data processing steps or parallel data processing steps, or especially, a combination of them, is prone to error that appropriate control procedures may prevent or, failing prevention, detect. Appropriate control procedures also help to meet the need for consistency between the actuary's work and other related work; for example, a uniform cut-off date in the preparation of financial statements.

**4000—Actuarial Evidence**

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## 4100 Scope

- .00 Part 1000 applies to work within the scope of this part 4000.
- .01 The standards in part 4000 apply to actuarial evidence work.
- .02 With respect to actuarial evidence work:
- An expert is an actuary who is qualified by knowledge, skill, experience, training, or education to render an opinion or otherwise testify concerning the matter at hand; and
  - An expert opinion is a conclusion drawn from actuarial knowledge and experience or from the application of one or more actuarial methods to a body of data.
- .03 An expert opinion may be provided in a written report, oral or written testimony, or both.
- .04 The provision of an expert opinion which is actuarial evidence work and which involves a practice area such as insurance or pensions is work in both that practice area and the actuarial evidence practice area. The actuary would refer to the standards applicable to that practice area, in addition to the standards in part 4000.

### Examples

- .05 Examples of actuarial evidence work are:
- Determination of the capitalized value of pecuniary losses arising as a result of an event such as personal injury, death, or wrongful dismissal from employment;
  - Determination of capitalized values of pensions in marriage or common-law relationship breakdown proceedings;
  - Expert opinions given in litigation arising from work completed in respect of a pension plan or an insurance business;
  - Work as an expert advisor to a mediating official, such as a judge;
  - Determination of effective rates of interest in cases of alleged charging of criminal interest rates; and
  - Provision of an expert opinion with respect to another actuary's work that is being challenged or in cases of alleged professional negligence.

- .06 Work in a practice area, such as insurance or pensions, may be performed in an adversarial environment but not involve an anticipated expert opinion for a dispute resolution proceeding. Such work would not normally be considered to be actuarial evidence work. Examples of such work, where the standards in part 4000 are not applicable, are:
- Pension plan valuations or costings related to union negotiations, or actuarial assistance with the merger of pension plans or the valuation of a pension plan in connection with the sale of a business; and
  - Actuarial assistance with the valuation of an insurer, the merger of insurers, or the acquisition of an insurer.

**Fact evidence**

- .07 The standards in part 4000 do not apply to the work of an actuary who is providing only fact evidence, and not an expert opinion. For example, an actuary testifying in his or her own defense in a proceeding related to professional negligence would normally be providing fact evidence, and not an expert opinion. As another example, an actuary may be providing evidence in a dispute resolution proceeding regarding his or her involvement in work performed in a practice area such as insurance or pensions. If the circumstances were not adversarial and there was no anticipation of a dispute resolution proceeding at the time the work was performed, the actuary's evidence in the dispute resolution proceeding would normally be fact evidence and not an expert opinion. The standards in part 4000 would apply, however, if the actuary's role includes providing an expert opinion in a dispute resolution proceeding, where such opinion is expected or required to be independent.

**Litigation advice**

- .08 The terms of an appropriate engagement may require that the actuary provide only litigation advice, other than an expert opinion that is expected or required to be independent, such as assisting counsel or a client in identifying and analyzing legal or actuarial issues, advising in connection with relevant case law, and preparing for cross-examination of opposing witnesses. In such cases, provided that the actuary makes it clear that the work product does not represent an expert opinion that is actuarial evidence work, the standards in part 4000 would not apply.
- .09 The terms of an appropriate engagement may require that the actuary provide both litigation advice that is not actuarial evidence work and also an expert opinion. If work related to the expert opinion meets the definition of actuarial evidence work, then the standards in part 4000 would apply to that aspect of the engagement.



**Additional guidance**

~~10~~ Repealed

## 4200 General

### 4210 Circumstances affecting the work

- .01 When performing actuarial evidence work, the actuary should take into account the circumstances affecting the work. [Effective February 1, 2018]
- .02 The circumstances affecting the work would include:
- Relevant legislative or regulatory provisions;
  - Rules of civil procedure and rules of court in the relevant jurisdictions;
  - Other rules that may be applicable to the dispute resolution proceeding;
  - Established legal principles relevant to the work; and
  - Terms of an appropriate engagement under which the work is being performed.
- .03 Relevant legislative or regulatory provisions may include:
- Provisions relating to allowable pecuniary damages under automobile insurance legislation or regulations;
  - Provisions related to division of assets under a marital property act or regulations; and
  - Provisions relating to pensions, benefits, insurance, or workers' compensation.
- .04 Rules of civil procedure and rules of court, as well as other rules that may be applicable to the dispute resolution proceeding, may include:
- Mandated assumptions;
  - Required content and format of reports;
  - Role of experts; and
  - Duties and obligations of experts.
- .05 Established legal principles relevant to the work may address:
- Issues relevant to the actuary's engagement; and
  - Role and obligations of experts.
- .06 The terms of an appropriate engagement would define the role of the actuary and the purpose, context, and scope of the work. An engagement for actuarial evidence work would not be appropriate if it would impair the ability of the actuary to perform independent and objective work.

- .07 Significant terms of an appropriate engagement may stipulate one or more of:
- Assumptions to be used in the actuary's work;
  - Methods to be used in the actuary's work; and
  - Various scenarios to be considered by the actuary.
- .08 An engagement may be appropriate if its terms require that the actuary assist his or her client or counsel with challenging the application or a particular interpretation of existing law, regulation, court practice, or established legal principles relevant to the work. Nothing in part 4000 is intended to prevent the actuary from assisting with a challenge of the application or a particular interpretation of existing law, regulation, court practice, or established legal principles relevant to the work, even if the result of such challenge of the application or a particular interpretation would otherwise, in the opinion of the actuary, be inconsistent with accepted actuarial practice.

#### **4220 Financial interest of the actuary**

- .01 The amount of the actuary's compensation should not be related to the outcome of the matter (e.g., dispute resolution proceeding) in connection with which the work is done. [Effective December 31, 2013]
- .02 For example, contingency fees that depend on the outcome of the dispute resolution proceeding would not be appropriate.

#### **4230 Role as expert**

- .01 The actuary's actuarial evidence work should be independent and objective. [Effective December 31, 2013]
- .02 The actuary's role as an expert should be to assist the court or other entity in the dispute resolution proceeding in its search for truth and justice, and the actuary should not be an advocate for one side of the matter in dispute. [Effective December 31, 2013]
- .03 Where the terms of the engagement require that the actuary provide both litigation advice that is not actuarial evidence work and also an expert opinion that is actuarial evidence work, the litigation advice role should not influence the independence and objectivity of such expert opinion. [Effective December 31, 2013]

- .04 Where the actuary is providing both litigation advice that is not actuarial evidence work and an expert opinion that is actuarial evidence work, the actuary would have a clear understanding of the differences between the two roles included in the engagement. The actuary would clearly identify in any work product which component of the engagement is involved, and would ensure that the litigation advice role does not impair his or her ability to perform the actuarial evidence work.

#### 4240 Testimony

- .01 The actuary's testimony should be independent, objective, and responsive. [Effective December 31, 2013]
- .02 Where the terms of the engagement require that the actuary provide both litigation advice that is not actuarial evidence work and also an expert opinion that is actuarial evidence work, the actuary should be aware that full disclosure of all work and work products with respect to both roles within the engagement may be required in any testimony. [Effective December 31, 2013]
- .03 In the course of providing testimony in the dispute resolution proceeding, the actuary should:
- Present a balanced view of the factors surrounding the actuarial aspects of the questions put to him or her;
  - Answer all the questions that are asked on the basis of his or her own best assessment of all the relevant factors;
  - Apply best efforts to ensure that the evidence is clear and complete, that the information the actuary is providing will not be misunderstood or misinterpreted, and that the audience will be able to utilize it correctly; and
  - Indicate when a particular issue or question falls outside his or her expertise. [Effective December 31, 2013]
- .04 The actuary should respond truthfully and fully to questions posed in the course of providing testimony, but the actuary need not volunteer information which is beyond the scope of the question posed. [Effective December 31, 2013]
- .05 Testimony is the actuary's communication presented in the capacity of an expert witness in any dispute resolution proceeding where the actuary is examined or cross-examined. Such testimony may be oral or written, direct or responsive, formal or informal.
- .06 When responding to a direct question relating to any error or shortcoming the actuary perceives in the report of another actuary or expert witness, the actuary would respond truthfully and fully, notwithstanding paragraph 4710.08.

## 4250 Capitalized Values

- .01 The actuary should calculate the capitalized value of future amounts payable in respect of an individual utilizing the actuarial present value method. [Effective December 31, 2013]
- .02 Actuarial evidence work frequently deals with the determination of the capitalized value of amounts for purposes of a dispute resolution proceeding. These amounts are often payable in respect of an individual and sometimes in respect of a group of individuals. Such calculations must often be performed within a framework established by law, regulation, and/or legal precedent.
- .03 Payment of the capitalized value is an alternative to payment of defined amounts to which an individual is entitled. Often the courts and others have recourse to require payment of a capitalized value when payment of the defined amounts comprising that value is not practical or not desired.
- .04 Calculation of the capitalized value is within the domain of actuarial practice.
- .05 The actuary would not calculate the capitalized value of future amounts that are subject to any contingent event as the present value of an annuity certain. For example, when utilizing the actuarial present value method in respect of a life annuity, the capitalized value of each life annuity payment is weighted by the probability of survival to the date of that payment. Under this method, the present value of possible overcompensation in an individual circumstance is balanced by the present value of possible undercompensation.

## 4260 Assumptions and methods

- .01 The actuary should ensure that any assumptions stipulated by the terms of the engagement are plausible. [Effective December 31, 2013]
- .02 The assumptions and methods used by the actuary should take account of the circumstances affecting the work, including applicable law, regulation, court practice, and established legal principles relevant to the work. [Effective February 1, 2018]
- .03 The assumptions and methods selected by the actuary should not be influenced by the party to the dispute resolution proceeding that has retained the actuary. [Effective December 31, 2013]

## 4270 Application of law

- .01 In a situation where law, regulation, court practice, or established legal principles relevant to the work mandates that a method or assumption be adopted in an actuarial evidence calculation, a broad interpretation of accepted actuarial practice in Canada is appropriate, so that in most such situations the law, regulation, court practice, or established legal principles relevant to the work would be considered to be within the range of accepted actuarial practice in Canada.

## 4300 Actuarial Evidence Calculations, Other than Capitalized Value of Pension Plan Benefits for a Marriage-Relationship Breakdown and Criminal Rate of Interest

### 4310 Scope

- .01 The standards in section 4300 apply to an actuary's advice when performing actuarial evidence calculations, other than for the capitalized value of pension plan benefits for a marriage relationship breakdown and for a criminal rate of interest.

### 4320 Assumptions and methods

- .01 The assumptions and methods selected by the actuary should be appropriate in the aggregate, taking into account the purpose of the work and the parts of the standards that are applicable to the actuary's work. [Effective December 31, 2013]
- .02 The assumptions selected by the actuary should be best estimate assumptions, unless it is appropriate to incorporate margins for adverse deviations in accordance with the circumstances affecting the work. [Effective February 1, 2018]
- ~~.03 The actuary should ensure that any assumptions stipulated by the terms of the engagement are plausible. [Effective December 31, 2013]~~
- ~~.04 The assumptions and methods used by the actuary should take account of the circumstances affecting the work, including applicable law, regulation, court practice, and established legal principles relevant to the work. [Effective February 1, 2018]~~
- ~~.05 The assumptions and methods selected by the actuary should not be influenced by the party to the dispute resolution proceeding that has retained the actuary. [Effective December 31, 2013]~~
- .06 Examples of the circumstances affecting the work where it would be appropriate to incorporate a margin for adverse deviations in an assumption include, but are not limited to:
- The assumption or the requirement for a margin for adverse deviations is mandated by law, regulation, court practice, or established legal principles relevant to the work; and
  - The actuary's work relates to a practice area such as insurance or pensions, and the standards for that practice area require or permit the inclusion of a margin for adverse deviations for such work.

- .07 Notwithstanding paragraph 4320.03, the terms of an appropriate engagement may stipulate assumptions that are not considered plausible by the actuary or methods that are not considered appropriate by the actuary. In such case, if the actuary performs the work in accordance with the terms of the engagement, the actuary would report the deviation from accepted actuarial practice in Canada.
- .08 The terms of the engagement may require that the actuary complete calculations for related items, such as one calculation for the capitalized value of a pecuniary loss and another calculation for the income tax gross-up. The underlying assumptions would be consistent for the calculation of these related items. In this example, the actuary would utilize the same underlying assumptions, such as the same real rate of interest, the same rate of price inflation, and the same mortality assumption, for both the calculation of the capitalized value of the loss and the calculation of the income tax gross-up.
- .09 Where there are insufficient data to support a particular assumption regarding a contingency incorporated in the actuary's work, the actuary may present a range of results.

### 4330 Contingencies

- .01 The actuary should consider incorporating any contingency where, in the actuary's opinion, there are adequate legal, theoretical, or empirical grounds to justify this. The actuary should disclose the omission from the work of any contingencies he or she considers material. [Effective December 31, 2013]
- .02 If the actuary gives advice on the effect of a specific contingency, that advice should be based on an assessment of that contingency, both alone and in combination with other factors, using appropriate actuarial methods. [Effective December 31, 2013]

- .03 Where the actuary has prepared results under more than one scenario, the actuary's report would show the results of the actuarial calculations separately for each scenario and identify which contingencies have been incorporated in each scenario. For example, the results of the actuarial calculations under one scenario may include precise recognition of only net investment return and mortality. The results taking into account any other provision for contingencies would be prepared under another scenario and would be reported separately.
- .04 Recognition of a contingency may create a positive or negative effect on a calculation.

### 4340 Application of law

- ~~.01.02 In a situation where law, regulation, court practice, or established legal principles relevant to the work mandates that a method or assumption be adopted in an actuarial evidence calculation, a broad interpretation of accepted actuarial practice in Canada is appropriate, so that in most such situations the law, regulation, court practice, or established legal principles relevant to the work would be considered to be within the range of accepted actuarial practice in Canada.~~

~~.02~~ ~~Repealed~~

~~.03.02~~ Where an assumption is mandated by law, regulation, court practice, or established legal principles relevant to the work, such assumption may be outside of the range of assumptions that the actuary considers to be reasonable.



## 4400 Capitalized Value of Amounts Other than Pension Plan Benefits for a **Marriage-Relationship** Breakdown

### 4410 Scope

- .01 The standards in section 4400 apply to an actuary's advice when calculating the capitalized value of amounts other than pension plan benefits for a **marriage-relationship** breakdown. A capitalized value relates to amounts payable at various times, each amount subject to various contingencies related to the individual or to the individual's dependants. Examples of situations where capitalized values may be calculated are:

<b><u>Event</u></b>	<b><u>Capitalized Value of:</u></b>
Disability	individual's loss of earnings, loss of household services, and/or cost of extraordinary expenses attributable to the disability.
Death	dependant's loss of financial support and/or loss of household services.
Wrongful dismissal	individual's loss of earnings, pension benefits, and/or employer-sponsored benefits other than pensions.
<b>Marriage-Relationship</b> breakdown	individual's support obligations.

### 4420 Assumptions and methods

#### Past loss

- .01 In some cases, the capitalized value is the present value of amounts payable both before and after the date at which the capitalized value is established. For example, in an accident caused by negligence, litigation of the damages may result in the capitalized value becoming payable several years after the accident. Then the damages consist of those in respect of both the period before and the period after the date at which the capitalized value is established, called "past losses" and "future losses", respectively.

#### Income tax

- .02 Subject to the terms of the engagement, the actuary may include an appropriate allowance in the capitalized value calculation for the expected effect of income tax, taking account of applicable law, regulation, court practice, and established legal principles relevant to the work. The actuary's report would deal with income tax in an internally consistent way, and the report would fully disclose the assumptions and methods utilized.

**Investment expenses**

- .03 Subject to the terms of the engagement, the actuary may include an appropriate allowance in the capitalized value calculation for any expenses expected with respect to the future investment, management, or administration of any settlement amount, taking account of applicable law, regulation, court practice, and established legal principles relevant to the work. The actuary's report would deal with such investment expenses in an internally consistent way, and the report would fully disclose the assumptions and methods utilized.

## 4500 Capitalized Value of Pension Plan Benefits for a ~~Marriage-Relationship~~ Breakdown

### 4510 Scope

- .01 The standards in this section 4500 apply to an actuary's advice when the capitalized value of a pension plan's benefits is needed for calculating the value of family property at the breakdown of the marriage or common-law relationship of a plan member.
- .02 For the purposes of this section 4500, "plan" means "pension plan" and is broadly defined, including not only a plan that is registered under the federal Income Tax Act but also an unregistered plan, such as a retirement compensation arrangement and an unfunded pension plan.
- .03 The standards in this section 4500 do not apply when the purpose of the calculation is to calculate an amount, in respect of a pension benefit, to be paid:
  - By the plan to the plan member or beneficiary as a result of the plan member's death or termination of membership; or
  - By any party ~~other than the plan~~ in connection with litigation other than in respect of a marriage-relationship breakdown.
- .04 The standards in this section 4500 may provide useful guidance for similar calculations for other deferred compensation arrangements, such as a partnership retirement buy-out agreement, a sick leave buy-out plan, and a retirement lump sum allowance, but they do not provide useful guidance for current compensation arrangements such as group life and disability insurance.
- .05 The standards in this section 4500 do not apply when applicable legislation mandates a different basis for the calculation of the value of a pension for family property purposes at the breakdown of the marriage or common-law relationship of a plan member.

### 4520 Method

- .01 The benefits to be valued are the plan's benefits in respect of the member (including survivor benefits vested in the member's spouse) at the calculation date or calculation dates. [Effective January 1, 2004]
- .02 The value of the member's benefits is the capitalized value of the benefits to be valued, but assuming that the member has no spouse. The value of the survivor benefits vested in the member's spouse is the excess, if any, of the capitalized value of the benefits to be valued over the value of the member's benefits. [Effective January 1, 2004]

### Principle

- .03 The capitalized value would conform to the intent of applicable family law. The capitalized value may, thus, differ from the corresponding transfer value from a registered pension plan. Transfer values typically include only unconditional rights, whereas property under family law typically includes both vested and contingent rights. Thus, such contingent rights as early retirement rights, bridging benefits, and ad hoc inflation adjustments are property to be considered in a calculation for marriage-relationship breakdown purposes.
- .04 The standards in this section will often produce more than one result, by taking account of alternative possibilities for:
- Pension commencement age;
  - Future increases in accrued benefits before and after retirement;
  - Allocation of value earned before marriage or cohabitation;
  - Inclusion or exclusion of non-vested benefits; or
  - Special circumstances, such as buy-back or transfer of benefits.
- .05 If the actuary has reason to believe that the plan's financial position is so weak that payment of the capitalized benefits is doubtful, then the actuary would so report, making clear that allowance for this factor could significantly reduce the present values calculated, given that such present values have been calculated assuming that the plan would meet its obligations. In making that assessment, the actuary would take into account any benefits payable under provincial pension guarantee legislation. The actuary would take into account further the extent to which plan benefits are provided through a retirement compensation arrangement and/or an unfunded pension plan.
- .06 The terms of the actuary's engagement may determine some or all of:
- The relevant law or jurisdiction;
  - The calculation date or calculation dates;
  - Retirement age, but only if established as a matter of fact pursuant to an agreement of the parties or a determination by the court; and
  - Inclusion or exclusion of the effect of income taxes.

### Benefits to be valued

- .07 The benefits to be valued would include all of the plan's contractual benefits, including pre- and post-retirement death benefits, and any contractual inflation protection and non-contractual inflation protection.
- .08 The plan member's benefits to be valued would exclude spousal survivorship benefits. Spousal survivor benefits would be valued if those benefits have vested upon retirement prior to the calculation date. Depending on the circumstances of the case, the actuary may provide a value for spousal survivor benefits that are conditionally vested or that vested after the calculation date. When spousal survivor benefits are valued, their value would be reported separately from the value of the plan member's pension benefits, except to the extent that these may have vested upon retirement prior to the calculation date.

- .09 The form of plan benefits that would be valued would be the most favourable of any optional form available to the member with no spouse. For example, a 15-year guaranteed pension option would have a greater value than a five-year guaranteed pension option for a member with impaired mortality. However, if the applicable law disregards a particular optional form of plan benefit, then the actuary may omit that option in calculating the capitalized value.
- .10 The benefits may include or exclude any non-vested benefits. Non-vested benefits may be included in the values, or may be illustrated separately, and would be valued without discount for the possibility of future forfeiture. Separately from the illustrated values, the report may contain comments including suggestions for recognizing the contingent nature of non-vested benefits. The references in this paragraph to inclusion of values of non-vested benefits apply in jurisdictions where the inclusion of such values depends on the plan provisions applicable to a deferred vested member. In other jurisdictions, the inclusion of such values depends on the extent to which continued employment is assumed.
- .11 The capitalized values would include ancillary benefits that are provided by the plan as of the calculation date and are expected to become available to the member after the calculation date if the plan member continues as an active member of the plan, but are not available to the member as of the calculation date, such as unreduced early retirement benefits.
- .12 The actuary would disclose whether or not the benefits valued include benefits that will be provided by the plan after the calculation date and that are expected to become available to the member after the calculation date if the plan member continues as an active member of the plan, but are not available to the member as of the calculation date, for example:
- A future increase in benefits as a result of a collective bargaining agreement; or
  - A future increase in benefits as a result of an adopted plan amendment.
- .13 The benefits referred to in paragraph 4520.11 are those payable by the plan as a going concern, and not those payable on plan wind-up, if different, unless the plan has been fully wound up or partially wound up with respect to the plan member.
- .14 Where various legal interpretations for a specific question appear possible, the actuary would obtain clarification of such unclear matters from the instructing lawyer or from another authoritative source. If that is not possible, the actuary would advise that various interpretations exist, and would report the effects of these interpretations or report values that, in the actuary's opinion, are most consistent with accepted actuarial practice.

### Calculation date

- .15 The calculation date may be single or multiple, depending on the circumstances and applicable law. The possibilities include:
- The date of separation;
  - The date of marriage or commencement of cohabitation;
  - The date of trial; and
  - The report date.

~~.16 If the use of an alternative calculation date, close to the calculation date, would significantly affect the capitalized value, then the actuary would so report. Examples are:~~

- ~~• The date at which the member becomes eligible for early retirement with unreduced benefits; and~~
- ~~• The date at which the plan is amended to enhance its benefits.~~

### Applicable standards

- ~~.17.16 The applicable standards are those in effect at the calculation date. If there are two or more calculation dates, however, and if the standards applicable to one differ from the applicable standards applicable to another, then the actuary would use the same standards for each all calculation dates are those in effect on that calculation date. The choice of standards would be governed by the latest of the calculation dates, except that the choice would be governed by the base calculation when the actuary selects an alternative calculation date, close to the calculation date, in accordance with the previous paragraph.~~

### Future service

- ~~.18.17 If the member's employment terminated before the calculation date and was not reinstated at the report date, then the actuary would include nothing in the capitalized value on account of assumed service after the calculation date, even if reinstatement is possible after the report date. The actuary may, however, report a useful alternative calculation that assumes reinstatement.~~
- ~~.19.18 If the member's employment terminated between the calculation date and the report date and was not reinstated at the report date, then the actuary may, with disclosure, exclude from the capitalized value any non-vested benefits forfeited by the termination of employment.~~

### Effect on capitalized value of minimum benefits

- ~~.20.19 In calculating the capitalized value, the actuary would take account of any minimum benefit related to member contributions, for example:~~
- ~~• The so-called "50% minimum employer contribution rule"; and~~
  - ~~• A minimum benefit equal to the member's contributions accumulated with interest.~~
- ~~.21.20 The minimum benefit would not necessarily be limited only to the value determined on a termination of employment assumption. The capitalized value would incorporate the relevant minimum benefit rule according to the event.~~

### Effect on capitalized value of salary increases after the calculation date

~~22.21~~ If the pension is an earnings-related benefit, then the possibilities are:

- The capitalized value takes account of all the member's salary increases—general increases, promotional increases, and seniority increases—after the calculation date;
- The capitalized value takes account of the member's salary increases that result from general (as opposed to promotional and seniority) salary increases after the calculation date. A rationale for this possibility is that the member's spouse has no entitlement to the effect of promotions or seniority increases that the member earns after the calculation date;
- The capitalized value does not take account of the member's salary increases after the calculation date. A rationale for this possibility is that the member's spouse has no entitlement to the effect of salary increases, which depend on the member's continued employment after the calculation date.

~~23.22~~ The assumed salary increases after the calculation date would be consistent with the average wage index assumption prescribed ~~economic assumptions by paragraph 4530.12~~, except when there is evidence that an alternate salary increases-increase assumption revealed by subsequent events would be reasonable or the terms of an appropriate engagement require a different assumptionsubstituted for the corresponding assumed increases.

### Effect on capitalized value of non-contractual indexing of pensions and other benefit adjustments

~~24.23~~ In calculating the capitalized value, the actuary would assume continuance of the plan's established practice or current policy, if any, for non-contractual indexing for inflation of pensions after pension commencement age and of vested deferred pensions before pension commencement age, unless there is explicit reason not so to assume. The actuary would report:

- The established practice or current policy; and
- The indexation assumption.

~~25.24~~ If that assumption is doubtful, then the actuary would also report the numerical effect on the capitalized value of helpful alternative assumptions.

~~26.25~~ In the case of a final or best average earnings plan, there would be no allowance made for indexing of vested deferred pensions before pension commencement age in the period for which salary increases are projected after the calculation date.

### Effect on capitalized value of income tax

~~27.26~~ Income tax may be taken into account in the calculation in order to convert the before-tax value of the pension into an after-tax value. If ~~it~~ income tax is to be taken into account, then the actuary would do so by calculating-estimating the average income tax rate during the member's retirement years based upon the member's anticipated retirement date and anticipated retirement income computed in "current" dollars, including accrued and projected future pension income, Canada/Quebec Pension Plan, Old Age Security, and other anticipated income in retirement. The projected retirement income would be computed in "current" dollars and would assume, and continuance of the tax environment at the report date or the calculation date; (i.e., assuming continuation of the existing tax rates, brackets, surtaxes, and clawbacks, applied to the projected income on-in retirement expressed in "current" dollars). The actuary would disclose which date was used, and if the tax environment is as at the report date, the actuary would disclose the use of any tax provisions that have not yet been enacted. If income tax is taken into account, the actuary would disclose both the before-tax value and the after-tax value of the pension.

~~28.27~~ The actuary may report useful alternative calculations that take income tax into account.

### 4530 Assumptions

.01 The actuary should select all assumptions, except those depending upon interpretation of applicable law. [Effective January 1, 2004]

#### Mortality rates

.02 The actuary should assume mortality rates in accordance with a mortality table promulgated from time to time by the Actuarial Standards Board for the purpose of these calculations, modified, if appropriate, to reflect the member's or the member's spouse's impaired health, if medically determinable. [Effective January 1, 2012]

.03 Tobacco use (or lack of tobacco use) would not, in itself, be sufficient reason to modify the mortality rates identified above.

.04 Use of unisex mortality rates would not be appropriate except that it may be appropriate in situations where the plan member has terminated employment and has elected, or has the option to elect, a transfer value that was or would be calculated under a unisex basis.

#### Retirement age

.05 If the retirement age is a matter of fact (i.e., one agreed by the parties or determined by the court), then the actuary would report the selection of the assumed retirement age as such.

.06 The retirement of the member before the report date does not necessarily preclude assumption of a different retirement age.



.07 Unless paragraph 4530.05 applies, the actuary would usually assume and report the results for a range of useful retirement ages, based on data at the calculation date, which would include:

- The earliest age at which the member is entitled to a pension whose amount is not reduced on account of early retirement, assuming that the member’s service ceases at the calculation date;
- The earliest age at which the member is entitled to a pension whose amount is not reduced on account of early retirement, assuming that the member continues in service either to that age or to an earlier age after the calculation date;
- If there is an upper limit to the number of years of credited service, the earliest age at which the member has attained, or will attain, that upper limit and becomes entitled to a pension whose amount is not reduced on account of early retirement; and
- The normal retirement age.

**Economic assumptions**

.08 The actuary should select economic assumptions that depend on the reported rates for the applicable CANSIM series for the calendar month immediately preceding the month in which the calculation date falls. [Effective January 1, 2012]

.09 The actuary should determine from the CANSIM series the following four factors:

CANSIM Series	Description	Factor
V122487	average long (>10 yrs) Government of Canada bond yields (final Wednesday of month)	$G_L$
V122544	long-term Government of Canada benchmark bond yield, annualized (final Wednesday of month)	$b_L$
V122553	long-term Government of Canada real return bond yield, annualized (final Wednesday of month)	$r_L$
$(1 + b_L)/(1 + r_L) - 1$	break-even inflation rate	BEIR

Note that the factors determined above do not reflect the reported CANSIM series, but the annualized value of the reported figure. [Effective January 1, 2012]

### Inflation and indexing

- .10 The actuary should calculate the projected benefit obligation for a pension that is fully indexed to increases in the Consumer Price Index using an assumed inflation rate of EI. For pensions that are partially indexed to increases in the Consumer Price Index, the actuary should derive inflation rates in a like manner by applying to the stipulated inflation rates the partial indexing formula of the plan. [Effective January 1, 2012]
- .11 The actuary should determine the assumed rate of inflation EI as:
- First 20 years             $EI_{0-20} = BEIR$
  - After 20 years             $EI_{20+} = 2.025\%$
- EI should be rounded to the nearest multiple of 0.01%. [Effective ~~January 1, 2012~~ Month XX, 202X]
- .12 Where increases in pensions are related to increases in the average wage index or where increases in salaries are assumed to occur in line with the average wage index, the actuary should assume that the average wage index will increase at rates that are 0.75% one percentage point higher than EI. [Effective ~~January 1, 2012~~ Month XX, 202X]
- .13 The capitalized value of a fully- or partially-indexed pension should be at least equal to the capitalized value applicable to a non-indexed pension in the same amount and having similar characteristics. [Effective January 1, 2012]
- .14 Where the plan so provides, the indexing in any of the above arrangements may be modified by:
- Applying a maximum or minimum annual increase, with or without carry forward of excesses or deficiencies to later years; or
  - Prohibiting a decrease in a year where the application of the formula would otherwise cause a decrease.
- The actuary would then adjust the expected inflation rate for a year to reflect the probability and extent of modification for that year.
- .15 If the pension is indexed using an “excess investment return” approach, the expected indexation rate would be determined using the “floor rate” and the interest rates determined in accordance with paragraph 4530.18 to produce an expected indexation rate consistent with excess interest situations.
- .16 For a pension in a plan that has a policy or a history of indexing on an ad hoc basis, the actuary would determine an indexation rate consistent with the indexing policy or history.

### Interest rates

- .17 The actuary should calculate two interest rates, one applicable to the first 20 years following the calculation date, and the second one applicable to all years thereafter. [Effective January 1, 2012]
- .18 The actuary should determine the interest rates as:
- First 20 years  $i_{0-20} = G_L + 0.50\%$
  - After 20 years  $i_{20+} = \del{5.50}4.75\%$
- Prior to calculating the capitalized value, the actuary should round the rates of interest for the first 20 years determined in accordance with this paragraph to the nearest multiple of 0.1%. [Effective ~~January 1, 2012~~Month XX, 202X]
- .19 The actuary should calculate the capitalized value of a pension using a two-tier interest rate of:
- $i_{0-20}$  for the first 20 years; and
  - $i_{20+}$  thereafter. [Effective January 1, 2012]

### Target Pension Arrangements

- .20 A target pension arrangement is a pension plan for which applicable legislation contemplates the reduction to the accrued pensions of plan members and beneficiaries while the pension plan is ongoing as one of the available options for maintaining the funded status of the pension plan, and where the reduction in accrued pensions is not necessarily caused by the financial distress of the plan sponsor or sponsors, as contemplated in paragraph 4520.05.

- .21 The actuary should disclose that the pension is from a target pension arrangement. If the actuary believes that the target pension arrangement, based on the funded status and structure of the pension plan, results in pension benefits that are much less secure than pension benefits from a pension plan which is not a target pension arrangement, the actuary would so disclose. [Effective Month XX, 202X]

- .22 If the actuary is aware that an adjustment to the target benefits in a target pension arrangement has occurred after the calculation date, either to accrued pensions or conditionally granted ancillary benefits, or has reason to believe that an adjustment to the target benefits in the target pension arrangement is likely to occur in the future, the actuary would so report.

- .23 For a target benefit arrangement, when possible based on the data available and when useful given the nature of the of target benefit arrangement, the actuary would assume and report the results for a range of useful scenarios, which may include:
- Value of pension benefits based on the current target benefits of the pension plan, including conditionally granted ancillary benefits.
  - Value of pension benefits excluding or partially excluding ancillary benefits which are conditionally granted on an ongoing basis based on the funded status of the plan.

- Value of pension benefits assuming adjustments to target benefits in the future, based on actual changes to target benefits after the calculation date, based on the funded status of the pension plan or other factors the actuary feels are relevant.
- Value of pension benefits based on the current target benefits of the pension plan, including conditionally granted ancillary benefits, adjusted by the funded ratio of the pension plan. The funded ratio of the plan used to determine the adjustment would usually be based on the most recent funding actuarial valuation report or cost certificate that is publicly available at the calculation date or at the report date. The actuary would use judgment when deciding which funded ratio to use in this scenario and may apply adjustments to the funded ratio. For example, the actuary may consider it appropriate to apply adjustments to the funded ratio to exclude any provision for adverse deviations in the assumptions used to determine the funded ratio and include any part of the plan assets not included in the calculation of the funded ratio. The actuary would provide details on any adjustments applied to the funded ratio of the pension plan and the rationale for such adjustments.

#### Assumptions selected by client

- 21.24 The actuary would obtain instructions from the client with respect to assumptions dependent upon the interpretation of applicable law.
- 22.25 The actuary would report his or her reliance on an assumption selected by the client.

#### 4540 Reporting: external user report

- .01 Here is model text if the actuary reports without reservation with regard to marriage relationship breakdown:

I have determined the capitalized value of the pension benefits and prepared this report in accordance with accepted actuarial practice in Canada, for purposes of settlement of a division of pension benefits an equalization of family property resulting from marriage relationship breakdown under the [Family Law Act] of [province]. In my opinion, the capitalized values are appropriate for this purpose.

Respectfully submitted,

[actuary]

Fellow, Canadian Institute of Actuaries

## 4600 Calculation of Criminal Rate of Interest

### 4610 Scope

- .01 The standards in section 4600 apply to an actuary's advice when determining whether the interest rate for a particular agreement or arrangement is a "criminal rate".
- .02 The Criminal Code of Canada defines "criminal rate" as meaning an effective annual rate of interest calculated in accordance with generally accepted actuarial practices and principles that exceeds 60 percent on the credit advanced under an agreement or arrangement.

### 4620 Data

- .01 The actuary should ascertain or make assumptions regarding the quantum and timing of all amounts actually or deemed to be advanced as well as all amounts actually or deemed to be repaid either as principal or as "interest" as defined in the Criminal Code. [Effective December 31, 2013]
- .02 The actuary should report all data used in the calculation, and their sources. [Effective February 1, 2018]
- .03 If data are not clear from the initial terms of the engagement, the actuary would obtain clarification from his or her client (for example, whether or not a particular item falls within the statutory definition of "interest," which party is the lender and which is the borrower, and/or the timing of a particular payment that could be made on various alternate dates).

### 4630 Method

- .01 The actuary should calculate and report the effective rate of interest compounded annually, "i", such that the following equality is established:

$$\sum_{r=1}^m A_r \times (1+i)^{t_r} = \sum_{s=1}^n B_s \times (1+i)^{t_s}$$

where

- m is the total number of payments advanced by the lender to the borrower;
- n is the total number of payments repaid by the borrower to the lender;
- $A_r$  is the amount of the  $r^{\text{th}}$  payment advanced by the lender;
- $B_s$  is the amount of the  $s^{\text{th}}$  payment repaid by the borrower, consisting of principal, "interest" as defined, or a combination of both;

- $t_r$  is the period measured in years (including fractional parts of a year) between the time that the  $r^{\text{th}}$  payment is advanced by the lender to the borrower and the time on which the final repayment is made by the borrower to the lender; and
- $t_s$  is the period measured in years (including fractional parts of a year) between the time that the  $s^{\text{th}}$  payment is repaid by the borrower to the lender and the time on which the final payment is made by the borrower to the lender. [Effective December 31, 2013]

- .02 If the calculation produces only one result, then the actuary would report that result. If the calculation produces more than one result, then the actuary would report only those that are positive and real, or zero.
- .03 The formula in paragraph 4630.01 applies in most, but not all, situations.

## 4700 Reporting

### 4710 External user report

- .01 For work pursuant to part 4000, any external user report that is prepared should:
- Identify the person for whom the report was prepared and, if that person is acting on behalf of a party to the dispute, that party to the dispute;
  - State the effective date of the report and the effective date of any actuarial opinions and calculations in the report;
  - Describe any terms of the appropriate engagement that are material to the actuary's work, including the role of the actuary, the scope and purpose of the work, any limitations or constraints on the work and any stipulated assumptions or methods;
  - Where the actuary is aware of circumstances where the independence of his or her expert opinion may reasonably be questioned, disclose such circumstances;
  - Disclose the results of the work;
  - Describe the data, methods, and assumptions used for the work, including the terms and the amounts of the payments relevant to any calculations, for each of the scenarios presented in the report;
  - Identify the assumptions and methods that are constrained by law, regulation, court practice, or established legal principles relevant to the work;
  - Identify the differences between scenarios where the results of multiple scenarios are presented;
  - Identify any margins for adverse deviations that are included, except where the assumption or method is mandated by law, regulation, court practice, or established legal principles relevant to the work, and the rationale for inclusion of any identified margins for adverse deviations;
  - Describe every contingency that has been taken into account, and state that there may be other contingencies that could have a positive or negative effect that have not been taken into account;
  - Disclose the extent of the actuary's reliance on others;
  - List the sources of information on which the actuary has relied; and
  - Include any other information required in accordance with the rules of civil procedure, the rules of law, or other rules that may be applicable for the relevant jurisdiction. [Effective February 1, 2018]

- .01.1 Notwithstanding paragraph 1710.01, the actuary is not required to provide an opinion on assumptions which are stipulated by the terms of engagement provided such assumptions are plausible in accordance with paragraph 4320.03. [Effective February 1, 2018]
- .01.2 Notwithstanding paragraph 1710.01, the actuary is not required to provide an opinion on assumptions or methods described in paragraph 4340.01 which are within the range of accepted actuarial practice pursuant to paragraph 4340.01. [Effective February 1, 2018]
- .02 The actuary's external user report should be sufficiently detailed to enable another actuary to assess the reasonableness of the results. [Effective December 31, 2013]

- .03 The actuary would prepare any draft reports and other documentation, taking into account the potential disclosure of such documents that may be required as part of the dispute resolution proceedings.
- .04 Where the actuary reports the results of a capitalized value calculation without reservation, the disclosure wording that may be used is:

I have determined the capitalized value of those aspects of the pecuniary damages described herein and prepared this report in accordance with accepted actuarial practice in Canada. It is my opinion that the assumptions and methods for which I have taken responsibility are appropriate in the circumstances of this case and for the purpose of this report.

Respectfully submitted,

[actuary]

Fellow, Canadian Institute of Actuaries

#### **Reporting with reservation**

- .05 Reporting with reservation or stating that the reporting requirements have not been followed would not excuse an actuary from these reporting standards.
- .06 Notwithstanding paragraph 4340.01, the circumstances affecting the work may result in deviation from accepted actuarial practice in Canada. For example, the terms of the engagement may require that the actuary use an assumption that is outside of the range that the actuary considers plausible, or that the actuary use a method that the actuary considers is not appropriate, or that the actuary assist counsel with challenging a specific interpretation of the law. In such case, the actuary would disclose such deviation in the report.

#### **New information**

- .07 Notwithstanding paragraph 1420.01, where an event occurs, such as the availability of new information, after the actuary has completed his or her report, the actuary would consider the potential effect of such event on his or her work, and would advise his or her client on a timely basis, if appropriate and subject to the terms of the engagement.



**Disclosure of other expert's report**

- .08 The external user report need not disclose any error or shortcoming that the actuary identifies in the report of another actuary or other expert witness.

**4720 Internal user report**

.01 Unless an internal user report conforms to the recommendations for an external user report, an internal user report should state that it is not to be given to an external user. [Effective December 31, 2013]

- .02 For the purpose of determining whether or not the work is in accordance with accepted actuarial practice, an internal user report continues to be an internal user report even if, in breach of the statement required by paragraph 4720.01, it is given to an external user or utilized in the dispute resolution proceeding.